

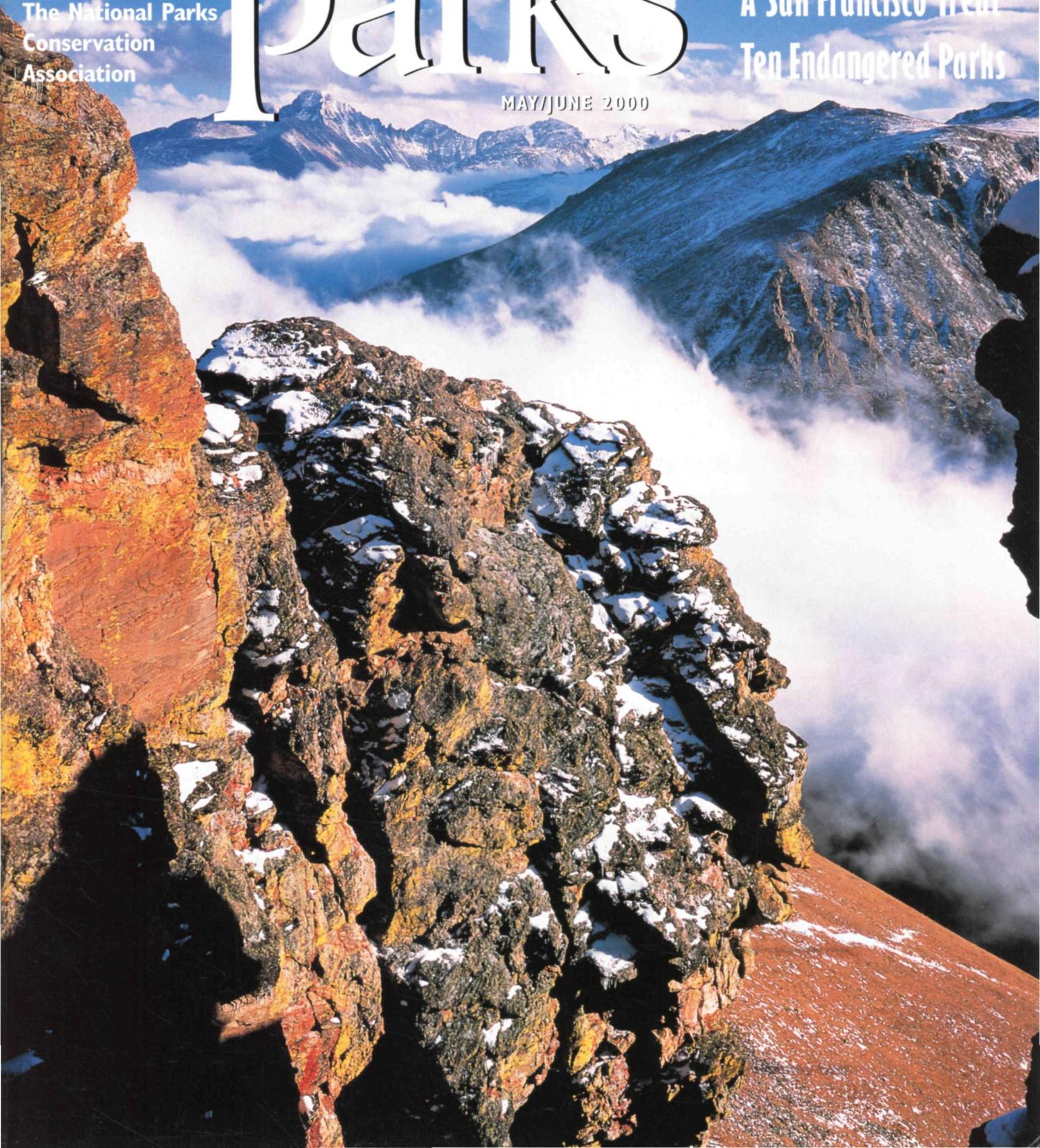
National Parks

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The Magazine of
The National Parks
Conservation
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MAY/JUNE 2000

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Island Ecosystems
The Beef with Livestock
A San Francisco Treat
Ten Endangered Parks



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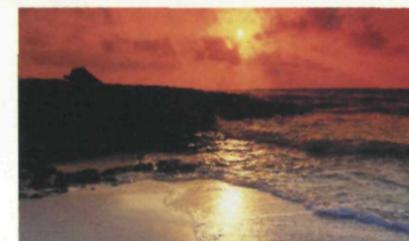
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National parks

Vol. 74, No. 5-6
May/June 2000

The Magazine of the National Parks
Conservation Association

FEATURES

30 Guardians of the Parks
The contributions of thousands of people help the Park Service do its job. Their dedication benefits all of us. Here are four examples.
By **Bess Zarafonitis Stroh**

35 A Land Apart
Island syndrome—a common malady among offshore islands and the parks they support—is becoming more prevalent at mainland parks. A growing human population with needs for land is fragmenting habitat and marooning plants and animal populations within national parks.
By **Elizabeth G. Daerr**

40 The Beef with Livestock
Grazing is allowed at about three dozen parks and preserves. Although the practice is legislatively mandated, it frequently causes conflicts with wildlife and natural resource policies. The clash is most apparent at Grand Teton National Park.
By **Todd Wilkinson**



COVER: Snow rests on cliffs above Forest Canyon in Rocky Mountain National Park. Activists lobbied for legislation to have flightseeing banned in the park. Photo by Scott T. Smith.



KEVIN D. DOBLER

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OUTLOOK

Parks in Danger

Yellowstone National Park makes NPCA's Ten Most Endangered Parks list again.

DURING RECENT visits to Yellowstone, I had two dramatically different experiences. This past fall, I traveled to the park and had the opportunity to listen to the percolating sounds of the bubbling mudpots—a sound that is almost impossible to describe, but gives one a sense of the essence of nature. Then in early February, I returned to the same spot with Tony Jewett, NPCA's Northern Rocky Mountains regional director and the Park Service's Marv Jensen, assistant superintendent of Yellowstone. The magical sounds had vanished, drowned out by the incessant whining of the snowmachines riding through the park.

Although I have experienced and understand the thrill of riding a snowmachine, I now believe the noise and air pollution they generate, their impact on wildlife, and their assault on the senses puts them in direct conflict with the purposes and values of Yellowstone.

It is primarily because of the inappropriate and excessive number of snowmachines in Yellowstone, but also because of the damage caused by non-native plants and animals (such as the lake trout), that NPCA chose to put Yellowstone on the Ten Most Endangered Parks list again this year (see page 28).

This year's list of Ten Most Endangered Parks is both daunting and discouraging. Besides Yellowstone, our list includes the profoundly underfunded Underground Railroad Network to



SCOTT SUCHMAN

Freedom, Joshua Tree National Park, which may have a massive garbage dump as a neighbor, and both Everglades National Park and Big Cypress National Preserve, which will require a national commitment of up to 20 years to restore water flows. Big Cypress also suffers from damage caused by off-road vehicles.

Despite the breadth of threats facing our parks, a look at NPCA's list from last year gives reason for hope. Gettysburg National Military Park in Pennsylvania made last year's list because Civil War artifacts at the park were kept in inadequate storage facilities. As a result the swords, saddles, and other artifacts were rusting and mildewing. Local economic interests tried to block a proposal for a new storage facility.

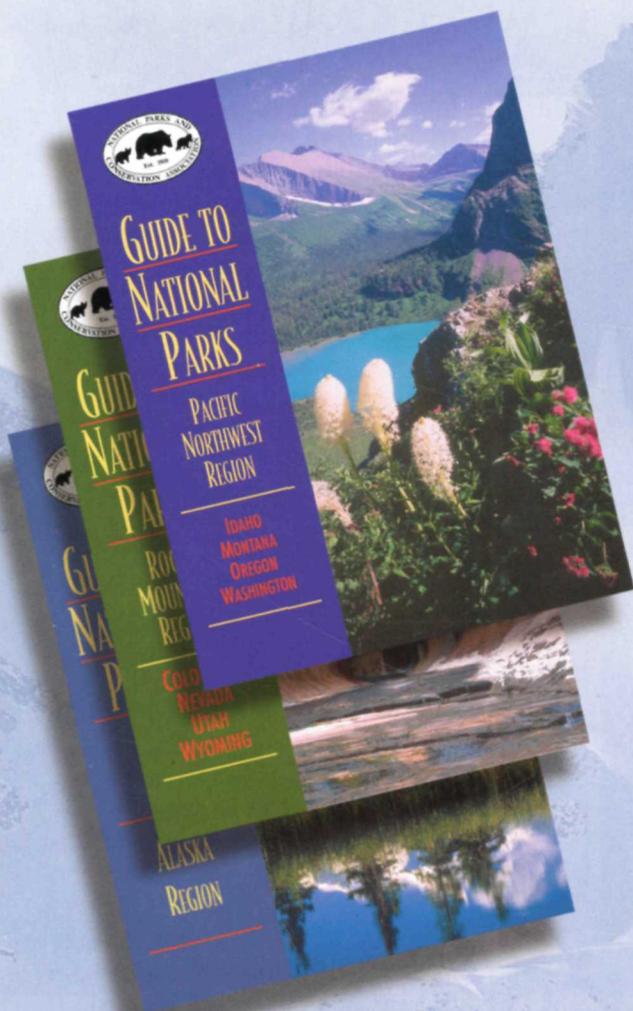
The park came off the list this year because all of these threats are being addressed, thanks to the leadership of the National Park Service, the energy from a newly formed public-private partnership, and guidance and support from NPCA.

As demonstrated by our actions at Gettysburg, there is hope that if we have the leadership of the National Park Service and support from the American public, we can live up to the vision of "the best idea America ever had." It will take nothing less.

**Thomas C. Kiernan
President**

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SOUTHWEST. Grand Canyon and 50 additional parks. Arizona, New Mexico, Oklahoma, Texas.

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NORTHEAST. Acadia and 105 additional parks. Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia.



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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.

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NEARLY EVERYONE WHO loves the outdoors has a special place to retreat to when times are tough or energy is flagging.

For many people, those special places are found in the National Park System. Some find tranquillity while hiking in a bird-song filled forest, others find it where the ocean meets the shore, and still others, like Barbe Barker, find that peace hundreds of feet below the Earth's surface. Barker, unlike many of us, has taken her love of Carlsbad Caverns one step farther. She has translated it into an avocation. She and three other individuals and groups are featured in "Guardians of the Parks" (see page 30).

During an era of ever-increasing needs and limited resources, the Park Service could not continue to protect the sites entrusted to its care without the help and support of volunteers.

The National Park System contains 379 units, ranging in type, complexity, and size from the Jefferson Memorial in Washington, D.C., to Wrangell-St. Elias National Park in Alaska, which is larger in acreage than Maryland, Massachusetts, and Delaware combined.

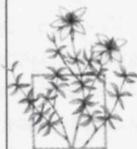
The Park Service employs thousands of people to work in its parks, yet volunteers provide invaluable aid. Some clear or mark trails, others, such as the League of Women Voters of Estes Park, Colorado, jump into a political fray to block an action that could harm the park they love. Thanks in large part to the league's effort, Congress passed legislation to ban flightseeing tours over Rocky Mountain National Park. Others raise funds, provide volunteer staff, or advocate for the parks.

Treasuring the outdoors for these and hundreds of other people means enjoying it for themselves and ensuring that the places exist in the future for others to enjoy. We hope this story engages you, and perhaps, inspires you.

Linda M. Rancourt
Editor-in-Chief

The Desert That Glistened With Water.

Southeastern New Mexico is
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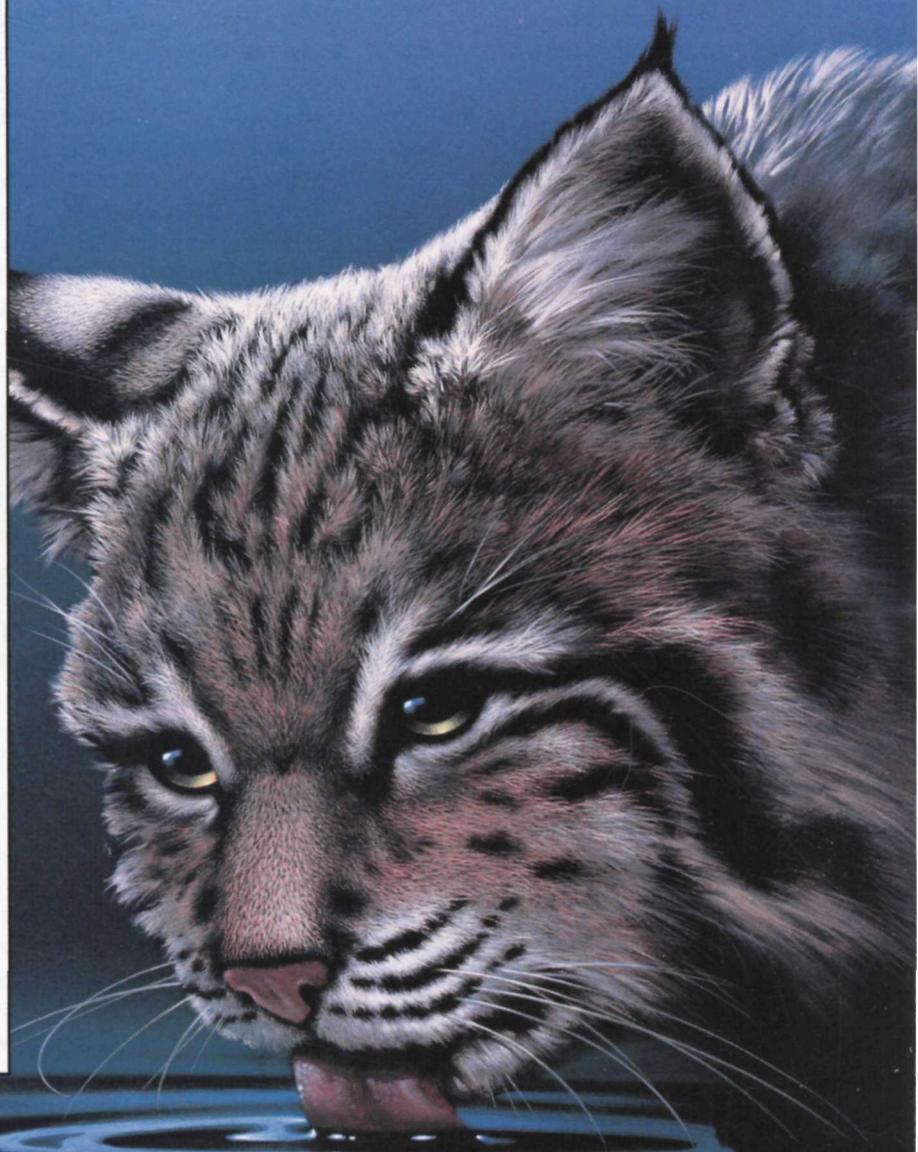


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Cultural Diversity, Alaska, Green Energy

Cultural Diversity

I read with interest your article "The Cultural Challenge" [January/February 2000] that set forth ideas on cultural diversity issues in the national parks. The bottom line was to urge the behemoth National Park Service to notice and represent the average people, including minorities.

However, there was no indication that the best solution is to concede most of the cultural units to local public or private agencies, preferably nongovernment organizations, and in that way allow nearby residents to have control over their administration.

A lack of trust in the people and unadulterated arrogance contend that the Mexican community cannot run San Antonio Missions; or that a local black organization should not run Maggie L. Walker; or local history buffs, the Hamilton Grange.

Isn't it time to consider, on a case-by-case basis, other institutions and alliances for the day-to-day management of a much larger portion of the system?

George Childs
Miami, FL

National Park Service Director Robert Stanton has it wrong. At least when I signed up with the Civil Service, one was selected on merit, not on the basis of color or race. Does his agency not have to follow Office of Personnel Management procedures or policy? I've been retired five years but haven't heard of any wholesale change in hiring practices. We need the best at the park gates, not favoritism.

Albert W. Oakes
Anchorage, AK

Where do Asians, Hispanics, and African Americans go on vacation? We have lived and vacationed in many states. We have stayed in motels in large and small cities, at mountain resorts, seashores, and near other recreational facilities. Except for foreign tourists, we seldom

see people of color anywhere.

My family has been visiting and camping in national parks and national forests for more than 30 years. We were not the privileged few with money to spend. We bought a tent, and each week bought an extra can of food to set aside for our trips.

How do you make a national park relevant and welcoming to everyone? How do you improve upon something as beautiful as Bryce Canyon or as awesome as Carlsbad Caverns or Mammoth Cave? These parks have been there for everyone from the very first.

Once we get over skin color, maybe we can all enjoy the heritage this nation has to offer.

Elizabeth Wright
Meridian, MS



The policy positions being suggested and designed to address racial ethnicity in national parks serve as yet another example of pure and simple racism. Just exactly when will people commence identifying and categorizing people more on the basis of the color of their hearts and minds, and less on the color of their skins? When are we intending to cease discriminating on the basis of what people look like and commence valuing people on what they believe and how they behave?

The beauty in the Grand Canyon, a towering redwood tree, or flight of a monarch butterfly need not be any more or less so only because of the color of one's skin or the narrowness of one's eyes.

I do not want anyone coming into the national parks or working for the National Park Service, if the only reason for them wanting to do so is because they are being paid to fulfill some arbitrary ethnic and/or racial goal. I want people who have a demonstrated understanding and appreciation of the values national parks have been created to preserve and protect, and these values come without any racial or ethnic pre-judgments. Even when we try to do right, we do wrong.

S.N. Luttich
Geneva, NE

It would take someone with a strong racist viewpoint to use the term "lily-white," a term not found on any census, survey, or poll.

There is a plaque in one of our parks in memory of a great friend of the National Park System. It thanks him for his contributions to the "American People." It does not say "lily-white," "black," "yellow," "pink," Greek, Japanese, Mexican, or Native American. The labels are self-serving. It says American. It does not refer to color, country, or creed. Neither did Ellis Island.

G.Wayne Stoddard
Rutland, MA

EDITORIAL REPLY: NPCA believes diversifying the population that visits the parks is as vital to the parks' future as boosting funding. It is an established fact that African, Asian, Latin, and Native Americans do not visit the parks in as great numbers as white Americans. That fact has little to do with economic means. Instead, it has a great deal to do with whether people feel welcome and whether the parks seem relevant to a person's history and culture. In a few years, Caucasians will be a minority in this country. If the park system does not reflect the values, contributions, and history of a broad American public, these sacred lands will not have the constituency necessary for protection.

Alaska Special Report

I have just finished reading your special report on Alaska [January/February 2000]. While I am sympathetic to much of what you say, I must also add that I resent the lumping of all recreational vehicles with snowmobiles.

Not all "motorized recreational vehicles" contribute to the problems at Denali National Park. Many of your most conservation-minded supporters drive motorhomes. We hike, we camp, we photograph carefully and in full consciousness of how precious the wilderness of Alaska is.

Those of us who travel the highways of Alaska (and we are legion) do not pollute. We believe our Golden Age Passports, battered and well used, are something special. We do nothing to endanger the parks.

To lump us with those who would build a railroad to Wonder Lake is unfair. We wait patiently for our campsite reservations, we do not pressure or complain, and we certainly do not agitate for more sites.

Please remember: It is not the motorhome that the courts have given free rein in Denali.

Dick Stott
Goffstown, NH

The special report on Alaska [January/February 2000] regarding the desire of some to use off-road vehicles in national park units brought to mind an incident my family experienced.

On a camping trip, we chose our site and were nearly finished setting up when a family of three moved into the next site with a camper. They climbed out, opened the back door, lowered a ramp, and backed an all-terrain-vehicle out. Dad gassed it up, the boy (perhaps six years old) climbed on and started riding around the campsites making more than enough racket and dust.

We were there to get away from the smog of the city and had hoped to have a nonaggravating weekend.

I enjoy fishing on the lakes and despise the speedboaters and personal watercraft users who find it necessary to pass close by when there are acres of water all about. And I suspect, skiers feel much the same about snowmobilers.

I can appreciate the local residents

not wanting their park run over by outsiders. If four-wheelers and ATV enthusiasts want to run roughshod over the terrain, they should form a group and buy some land and do just that but leave the parks to those who wish to preserve them as they found them.

Larry Buell
Prescott, AZ

Green Energy

Secretary of Energy Bill Richardson makes some great suggestions [Forum, January/February 2000] and provides valuable information about what parks are doing to help air quality. I would like to offer another suggestion: bicycles. Specifically mountain bikes.

Bikes get people out of their cars, and they allow people to connect with their surroundings and with each other. Certainly bicycling would not be an option for some visitors, but for most people it is a viable and healthy alternative to motor vehicles.

Many national parks have roads that would be perfect for mountain biking, and a number of parks currently have dirt roads and trails that allow bicycle access, including Acadia, Big Bend, and Great Smoky Mountains national parks and Big South Fork National River and Recreation Area to name a few.

These are examples of places where the Park Service is successfully working to encourage people to leave their vehicles behind and enjoy the outdoors by bicycle. I hope the Park Service will increasingly consider mountain bikes as a way to reduce environmental impact at national park units.

Heather Szabo
Boulder, CO

Acadia Shuttle Buses

I applaud Acadia National Park for its successful debut of a shuttle bus system [Regional Report, January/February 2000]. Being a Westerner, I've been to Acadia only once (July 1991). Park roads and parking lots were very crowded, and Bar Harbor, a traffic mess. I hope the Acadia program is just the beginning, and other parks will follow. I've long been eager for public transport in the national parks.

Julian M. Babad
Tucson, AZ

"YOU ARE HERE"

The park's 20,558 acres of wilderness protect many animals including bull alligator, three kinds of poisonous snakes, fiddler crabs, racoon, armadillo, which arrived in 1974, white-tail deer, and many bird species.

Seashore, Georgia
Answer: Cumberland Island National

CORRECTIONS

The photo that ran with Rare and Endangered in the March/April issue was the whorled pogonia.

Jamie Clark was misidentified in the March/April issue. She is the director of the U.S. Fish and Wildlife Service.

The group working to aid sea otters is called Friends of the Sea Otter.

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.

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Park News

BY ELIZABETH G. DAERR

RESOURCE PROTECTION

Park Service to Issue Rules on Off-Road Vehicles

Snowmobile and personal watercraft use may be reduced.

WASHINGTON D.C.—The National Park Service (NPS) plans to announce two policies that will affect certain off-road vehicle uses throughout the National Park System. One policy would eliminate snowmobiles from Yellowstone and Grand Teton national parks, while the second regulation will close some parks to personal watercraft (PWC), commonly known by the brand name Jet Ski.

NPS was planning to announce in late April its intention to close Yellowstone to all motorized vehicles in winter except snowcoaches beginning in 2002 or 2003. The decision was based on reviews of public comments on a draft winter-use plan, scientific data on the environmental impacts of snowmobiles, agency policy on the protection of wildlife and natural resources, and an executive order restricting snowmobiles in national parks.

“The rise of snowmobile use in Yellowstone has shattered the experience of other visitors. The noise, exhaust, and commotion are so pervasive that the park no longer offers a fulfilling opportunity to witness the wonders of this park in winter,” said Tony Jewett,

NPCA’s Northern Rockies regional director. Yellowstone made NPCA’s Ten Most Endangered Parks this year because of snowmobiles (see page 28).

A report released in March by NPS found that the approximately 700 snowmobiles that enter the park each winter day release an average of seven tons of hydrocarbons and 19 tons of carbon monoxide. By contrast, the 9,200 cars that enter the park on any given day in July produce three tons of hydrocarbons and 18 tons of carbon monoxide. In a separate report released by NPCA and the Greater Yellowstone Coalition, snowmobile noise was found to be audible from 12 of 13 test sites scattered throughout the park. At eight of the sites, snowmobile noise could be heard 90 percent of the time. (To view the report, go to www.npca.org.)

The Park Service has also indicated that it will more strictly enforce regulations limiting snowmobiles at other parks, but no announcement had been

made at press time. The restrictions are expected to draw criticism from local communities, which may lose jobs and business as a result of the ban. An environmental impact statement for winter use in Yellowstone estimated that banning snowmobiles from the park would produce a one-time loss of \$16.5 million and approximately 400 jobs to the 17-county region.

In a related announcement, NPS was expected to issue a ban on snowmobile use in the core of Denali National Park, Alaska. The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 expanded Denali by 4 million acres, and snowmobiles are allowed in this section. Some snowmobile advocates maintain that snowmobiling is permitted in the 2 million acres of the original park. The law allows snowmachines to be used for “traditional activities,” and snowmobile advocates say that the machines were historically used in the original park. Proponents of a



Snowmobiles in Yellowstone (above) may be eliminated by 2003.

ban state that snowmachines were never allowed in this area. The new park regulation will for the first time clearly define “traditional activities” and is expected to ban snowmachines from the original part of the park.

NPS’s second policy is the long-awaited rule on personal watercraft, scheduled to take effect April 20. NPS expects PWC use to continue in ten national recreation areas. Eleven other parks where PWC use already exists will have a two-year grace period to decide what, if any, new regulations will be adopted. Some of those parks include: Cumberland Island, Cape Cod, and Padre Island national seashores, Pictured Rocks National Lakeshore, and Big Thicket National Preserve.

Although the rule will have little immediate effect on the existing level of PWC use, it prohibits their introduction in about 50 parks where the machines are not currently used. A report released in April by the Noise Pollution Clearinghouse found that beachgoers were willing to spend as much as \$900 million annually to avoid using lakes, rivers, bays, and beaches that allow PWCs because of the noise they generate. Health care costs from air pollution from PWCs add another \$240 million annually.

NPCA and the Bluewater Network, an environmental group working to protect public waters, say the rule does not go far enough to protect national parks from noise and water pollution.

“The Park Service itself admits that the vast majority of PWC use in the National Park System will be unaffected by the rule,” said Kevin Collins, NPCA’s legislative representative. “This is a major disappointment for those of us who think the Park Service should aggressively protect these places.”

Russell Long, director of Bluewater Network, says, “The Park Service knows quite well that Jet Skis threaten public safety, shatter natural quiet, and destroy visitor enjoyment. What’s surprising is that the agency charged with protecting our national heritage is ignoring this damage and will condemn nearly two dozen parks to an onslaught of Jet Ski destruction.”



LEO G. NICO

Biologists are working to slow the spread of the Asian swamp eel.

NONNATIVE SPECIES

Asian Swamp Eel Invades Florida

Nonnative predator threatens aquatic wildlife in Everglades.

EVERGLADES N.P., FLA.—A new top predator may soon reach Everglades National Park. Unfortunately, it is the virtually indestructible nonnative Asian swamp eel that threatens much of the aquatic life in its path. With no known natural predators and an incredible ability to survive in adverse conditions, the eel threatens to further damage the already fragile ecosystem.

Although they have not yet reached the park, tens of thousands of swamp eels are estimated to inhabit nearly 55 miles of two water canal systems in southern Florida, one in the north Miami area and another on the eastern edge of Everglades National Park. Two other populations of the eel have been discovered since 1993—one outside of Tampa, Florida, and one in southern Georgia near the Chattahoochee River. One or more of the populations are believed to be the result of an intentional or accidental release of the creature

from a home aquarium or fish farm. However, some populations may have been the result of an attempt by a few local residents to establish the eels as a food source; the eels are popular food in some parts of Asia.

The eel consumes a variety of small prey, such as fish, shrimp, worms, frogs, and aquatic insects. It sucks small prey into its throat like dust into a vacuum cleaner. Prey larger than a mouthful are grabbed and spun quickly until they are torn in half, making them easier to swallow. Beyond reducing the population sizes of some wildlife, the eels may be competing for food with larger aquatic species and wading birds.

Endemic to southern and eastern Asia, swamp eels live in ditches, ponds, streams, and rice paddies in their native countries. “They’ve evolved in marshes and could survive for a long time in wetlands,” says Dr. John Curnutt, a research ecologist with the U.S. Geologic Survey (USGS) who is working to develop methods to control the eel. “That makes them especially dangerous if they get into the Everglades.”

The eels are amphibious, and during dry periods that normally kill many of Florida’s nonnative species, the Asian swamp eel either survives buried in the mud until the rains fall again or simply slithers across land in search of other water sources. As part of their attempts

to eliminate the eels, scientists have netted, electroshocked, and dynamited the creatures and have laboratory tested the use of certain chemicals to kill them. But the eels have shown a resistance to commonly used poisons, and avoid the other invasive techniques by taking refuge deep inside excavated burrows or within limestone crevices.

Curnutt says that because the eels are not good swimmers, they have not been moving quickly toward the Everglades; however, a recent event may change that. The U.S. Army Corps of Engineers, responsible for maintaining water flows throughout south Florida, has begun pumping more water through canals on the eastern side of the park to lower water levels in critical nesting habitat for the endangered Cape Sable seaside sparrow in the western region of the park. Eels were found in some of the eastern canals, and increased water volume may push them into the park. Both agencies are working with physical barriers to keep the species from entering the park.

With the impending threat, Sue

Perry, an ecologist at Everglades, says it is even more important that the Everglades Restoration Plan, which would require the return of natural water flows, move forward. Anecdotal evidence shows that the eels have favored the eastern border of the park, where water has been restricted to help agricultural interests.

In Asia, the swamp eel is wide-ranging, occurring in both tropical and temperate climates. In warm areas such as south Florida, the eels are apparently breeding throughout the year. Consequently, many eel populations are likely to multiply more rapidly, particularly after a severe dry period. "It's not just that the exotic gets into the Everglades, it's the fact that it has a much better environment without the water and survives," Perry said.

Leo Nico, a biologist with USGS who discovered the Tampa population, says the best the scientific team can hope for is to slow the swamp eel's spread. "Once they get in open water, they're almost impossible to stop."

LEGISLATION

New Law Limits Park Overflights

NPCA wins battle to ban overflights in many national parks.

WASHINGTON D.C. — Six years after park advocates, led by NPCA, began working on efforts to protect the tranquility of park air space, Congress passed legislation that will ban tourist overflights in one park and potentially limit or eliminate them in others.

The new law, which, at press time, was expected to be signed by President Clinton, bans tourist flights over Rocky Mountain National Park; requires all parks subject to flights to complete air-tour management plans specifying when, where, how, and how often flights can occur; and requires the Federal Aviation Administration (FAA) to cooperate with the National Park Service on protection of the quiet of national parks' skies.

According to a recent study completed by NPCA, 100 national parks are affected by noise pollution from tourist aircraft. The organization hopes that the new law will help administrators in the effected parks to participate in controlling flightseeing activity.

"In parks across the United States, you will once again be able to hear uninterrupted the sighing of the wind and the singing of birds," said Thomas C. Kiernan, NPCA president. "This is landmark legislation. It ensures protection for that increasingly rare quality, our endangered silence."

Sen. John McCain (R.-Ariz.) and Rep. John Duncan (R.-Tenn.) actively sponsored the bill in Congress.

"I have always believed that when everybody works together on an issue such as this, we can produce legislation that protects the environment without causing economic damages that really end up hurting the citizens of this country," Duncan said.

McCain often mentioned issues relat-

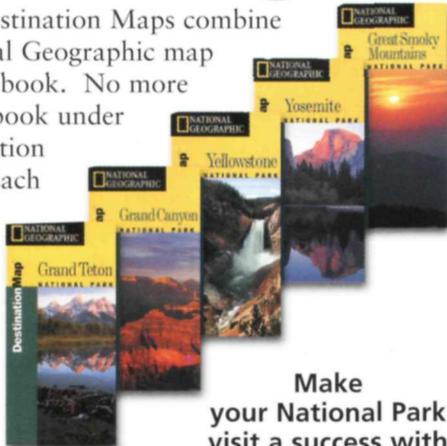


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ed to national parks funding and management in his recent run for the Republican presidential nomination.

"I am very pleased that we finally have laws in place that protect the natural quiet and safety of our nation's natural parks," he said. "With the rapidly increasing number of Americans visiting our national parks each year, we must be even more vigilant of problems that threaten their enjoyment."

The law does not affect Alaska, which was excluded from the FAA authorization language. At Grand Canyon, the site of contention over tourist flights for years, President Clinton has issued a new rule—to become effective later this year—that will cap the number of overflights at 1997 levels—90,000 per year. The Park Service estimates that the new rule will restore "natural quiet" to 40 to 50 percent of the park.

—William A. Updike

RESOURCE PROTECTION

Safety Zone Set for Denali Wolves

Alaskan governor asks for no-hunting zone next to Denali.

JUNEAU, ALASKA—In an effort to protect and enhance opportunities to view wolves and grizzly bears in and around Denali National Park and Preserve, Alaska Gov. Tony Knowles (D) has announced his desire to create a buffer zone on state lands east of the park where no wolves could be hunted. Despite reluctance from the Alaska Board of Game, which must approve the measure, the proposed buffer zone is the first step in the governor's effort to recognize Alaskan wildlife for more than its consumptive value.

In a statement, Knowles called for a "new era of wildlife management" based on a broader range of values. The current wildlife management plan "is a one-sided approach that places undue emphasis on the consumptive

use of moose, caribou, and other ungulates and does not reflect the broad range of values most Alaskans have for wildlife," he said.

Hunting for food and recreation is widespread in Alaska, and traditionally it has been given the highest priority when making state wildlife management decisions. But Alaskans' desire to view wildlife, increasing tourism, and a 1996 public initiative that gave wolves more protection from hunters have persuaded Knowles that the aesthetic values of wildlife must be equally recognized.

Knowles has also refused to implement two predator-control programs authorized by the Alaska Board of Game—one in the McGrath area, west of Denali National Park, and the other in the Nelchina basin, southeast of the park—unless his request is met.

Subsistence and recreational hunters are demanding that the Alaska Department of Fish and Game (ADFG) kill more wolves because they say that the predators take too many moose, reducing harvests for hunters. For example, in

the Nelchina basin, an easily accessible area from Anchorage and Fairbanks, hunters reported killing 860 moose in the 1998-1999 season. The average number of kills for the three previous seasons was 944.

In contrast, ADFG reported that the approximately 500 wolves and 1,500 bears in the area killed between 9,000 to 12,000 moose in the 1998-1999 season. The department's goal for moose populations in the Nelchina area is between 20,000 to 25,000, but there is no accurate count available now.

Public demonstrations outside the game board's annual meeting in Fairbanks this March were an indication of the strong support for both sides of the issue. However, the board has historically favored hunting interests and voted to defer action on the buffer zone until the fall, which means that trapping could continue in the area.

Fish and Game Commissioner Frank Rue says he believes a balance of interests can be struck, but it would be impossible for the department to enact

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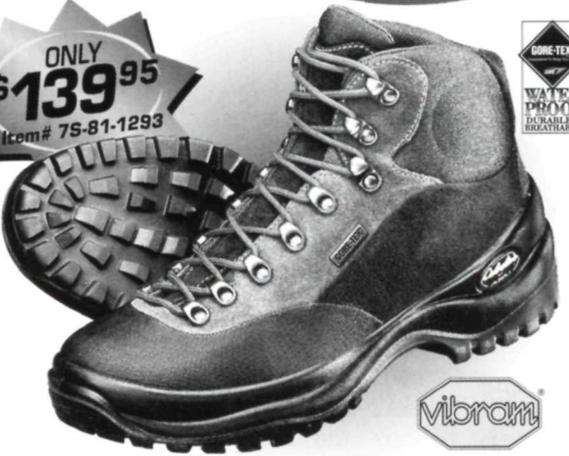
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Budget proposal includes increases for major land acquisition.

predator control on the scale that many local residents want. Because of wolves' high reproductive rate, "you can't do wolf control for two or three years. It's got to be long-term," he said.

In addition to the high costs involved, history shows that the public does not tolerate extended periods of predator control. In Alaska, "we've seen almost no lethal predator control programs that have been completed," Rue says. "They've all been stopped in the courts or with public pressures."

An experimental nonlethal program, which involves sterilizing the breeding alpha pair and relocating subadults, has been tested around a northern caribou herd. Rue said the program has support from a broad range of users and has shown some success. It may be an alternative for some areas that need predator control.

In spite of recent public support to limit predator control measures, the Alaska Board of Game just passed a regulation that allows hunters to shoot wolves from a moving snowmobile.

The state legislature is also working to pass a law that would ban ballot initiatives on wildlife management. That move comes in response to the 1996 ballot initiative that banned shooting wolves and other fur-bearing animals the same day they are sighted from a plane. The initiative passed overwhelmingly across the state.

"There's no question that Alaska is still a hunting state, it just means that people want a basic sense of fairness," says Chip Dennerlein, NPCA's Alaska regional director. "Running down wolves with a snowmobile is not fair."

In Juneau, the governor intends to convene a working group of wildlife activists, hunters, and naturalists to address statewide wildlife management issues. Dennerlein says that the group will review Alaska's hunting laws and regulatory process and recommend changes that will accommodate all wildlife interests.

As envisioned, such laws would favor subsistence hunting in some areas, recreational hunting in others, and wildlife viewing in alternate areas, such as the governor's proposed buffer zone.

WASHINGTON, D.C.—President Clinton has proposed more than \$2 billion for the National Park Service's fiscal year 2001 budget, increasing the available funds for natural resource protection, land acquisition, and cultural resource preservation. The parks' operating budget, which addresses operations and resource management, would increase by \$93 million to \$1.4 billion.

A major component of the budget proposal is \$317 million to fund the president's Lands Legacy initiative, which provides money for federal, state, and local efforts to protect wildlife, preserve coastal wetlands and farmlands, and expand urban green spaces across the country. Of that, \$147 million would be used for federal land acquisition, a main focus of the president's proposal. Priority projects are: \$80 million for Everglades restoration, \$22 million for Civil War battlefield protection at Gettysburg, Manassas, and Harper's Ferry, and \$15 million to protect the Lewis and Clark Trail along the Missouri River.

The growing recognition of the need to preserve open space in the United States is reflected both in the president's Lands Legacy initiative and in several pieces of legislation in Congress. These bills would provide permanent funding for federal and state land protection through the Land and Water Conservation Fund (LWCF). LWCF uses royalties from offshore oil- and gas-drilling leases to purchase critical lands, but in the past Congress has redirected much of the money to fund unrelated programs. Bills moving through Congress now would require the government to

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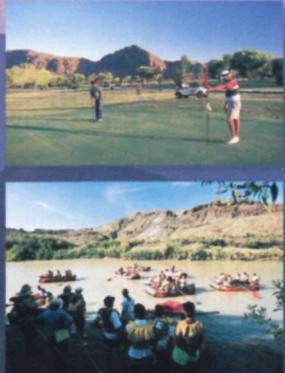
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spend \$900 million each year, split equally between federal and state land acquisition programs.

One bill, H.R. 701, The Conservation and Reinvestment Act (S. 2123 in the Senate), has substantial support in Congress, but has weaknesses that many environmental groups find troubling. H.R. 701 and S. 2123 both lack a guarantee that federal land acquisition dollars will be spent every year by Congress.

In contrast, S. 2181, The Conservation and Stewardship Act, introduced by Sen. Jeff Bingaman (D-N. Mex.), guarantees that all federal LWCF funds will be spent on land protection every year. And unlike H.R. 701, the Bingaman bill does not include incentives for additional offshore drilling.

TAKE ACTION: To ensure full, permanent funding for LWCF, either sign and send the postcard provided in this issue or write to Senate Majority Leader Trent Lott asking him to bring legislation to the floor for a vote. Address: The Hon. Trent Lott, S 230 Capitol Bldg., Washington, DC 20510.

RESOURCE PROTECTION

Assateague Uses 'Green' Methods to Renovate

Park programs take lead in the reduce, reuse, recycle ethic.

ASSATEAGUE ISLAND N.S. MD. — When Assateague Island National Seashore Superintendent Marc Koenings heard that mice were eating the countertops in one of his park's buildings, his response may have surprised some.

"I didn't think it was a disaster. I was kind of tickled that it was organic enough that they could eat the thing," he said with a laugh. The countertop is made of a bio-based material created from sunflower seed hulls. Using or-

ganic materials for construction is just one of many ways that Assateague is trying to reduce, reuse, and recycle.

The countertops are among the sustainable design projects under way at Assateague. Most of the projects fall under the Green Energy Parks program, a joint venture of the Department of the Interior (DOI) and the Department of Energy (DOE), [see Forum, Jan/Feb 2000]. The program was launched last year in an effort to reduce the amount of water and energy used at national parks and to educate the public about the benefits of sustainable design. With nearly 280 million annual visitors and an agency mission that includes protecting natural resources, the National Park Service (NPS) seemed an obvious choice for this type of program.

Koenings agrees. "We (NPS) should be a national environmental leader, demonstrating better ways to use resources." From alternative energies to portable buildings, Assateague Island is at the forefront of the program.

One of the major projects is the renovation of the Toms Cove Visitor Center, adjacent to Chincoteague National Wildlife Refuge at the southern end of the seashore. Energy-efficient technologies are being added, such as lights that shut off automatically when a room is unoccupied and skylights that provide natural light without excessive heat loss. To make Assateague less dependent on the city's power supply, solar electric panels and wind turbines will provide power to the building. Eventually, the park hopes to have "net metering," which will allow it to draw power from the city energy supply during peak visitation and return excess energy during peak generating times.

Even the lumber for the Toms Cove project has been salvaged from existing park structures. Instead of demolishing an unused bathhouse, park staff dismantled the structure and used the wood for reconstruction at the visitor center. The seashore has also recycled 12 miles of abandoned telephone poles that were installed in the 1950s to prepare for future development. The unsightly poles have been taken down and transformed into a new guardrail that

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separates pedestrians and bicyclists from cars along a busy park entrance road. Not only has that project provided low-cost materials, but it has also improved the visitor experience in Koenings' opinion. "That program did more to put nature back into this place than anything else," he said.

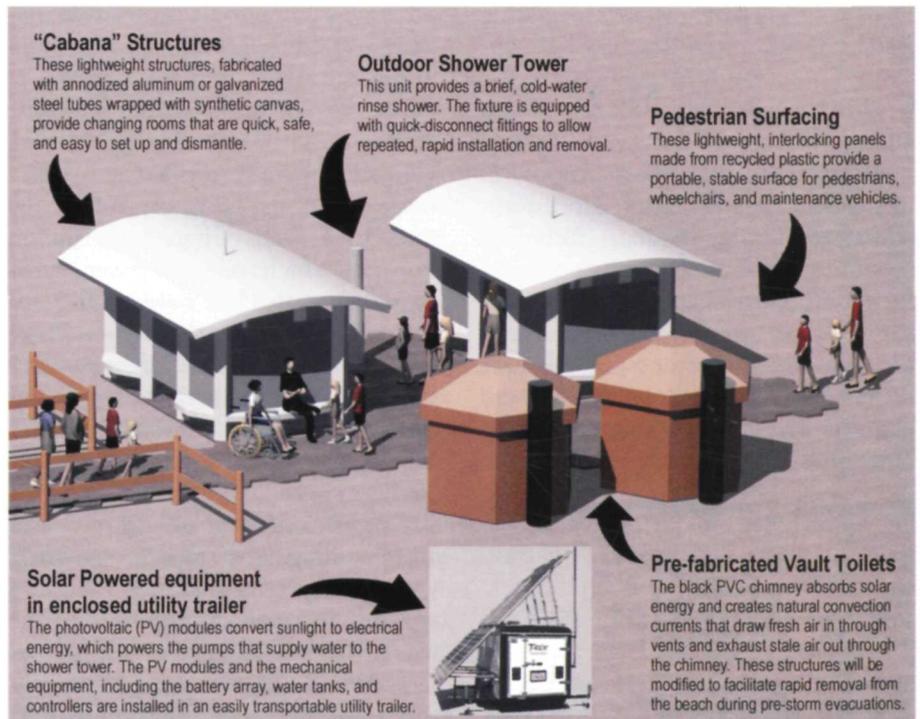
The park also has come up with some innovative methods of dealing with hurricanes and the effects of moving sand. The answer has been to create bathhouses made of heavy metal frames and canvas walls that can be dismantled and moved on a few hours' notice. The "cabanas" include changing areas, cold-water rinse showers, and outhouses that ventilate naturally through large black tubes. The tubes heat naturally, drawing stale air outside. The solar collectors that power the site are mounted on a trailer for quick removal.

"One of the challenges has been to design a bathhouse that could be broken down but also stand up to a corrosive coastal environment of constant wind, sun, and seawater," says NPS architect Chris Finlay. In addition, he needed to find construction materials that were created with minimal environmental impact and keep the design consistent with the historical and natural landscape. A prototype of the cabana will be on the beach this summer.

Although the program is in its early phase, improvements at Assateague thus far have been a success. In fact, it has caught the attention of policymakers in neighboring Worcester County, Maryland, who asked the park to advise them on sustainable design techniques for a new county building.

Funding for the projects at Assateague comes from a variety of sources, including grants from DOE, DOI, the Department of Transportation, and money generated from the Park Service's trial fee-demonstration program. The systemwide program, which began in 1998, allows parks to keep 80 percent of the money from entrance and campground fees to be used for projects that directly benefit park visitors instead of being returned to the national treasury.

In December, DOE announced Green



Designs for the new portable bathhouse "cabanas" at Assateague Island N.S.

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Energy Program awards totaling \$460,000 for alternative fuel development in 32 national parks. Congress allocated \$3.8 million for the Green Energy Program for fiscal year 2000.

Nearly 75 national parks, mostly in the Northeast and Pacific Northwest, participate in the program. Keonings says the program's success is necessary for the future of the nation's parks. "If we don't get a handle on these issues, between global warming and resource degradation, these things that we call national parks will just be a fleeting remnant of American history," he said.

TRANSPORTATION

New Shuttles at Zion Aim to Curb Traffic Congestion

Transit program also offers additional interpretive exhibits.

ZION N.P., UTAH—Zion National Park's 2.5 million annual visitors can expect improved views and less traffic congestion this year as a result of a new free shuttle system debuting at the park May 23. With few exceptions, private cars will be banned along the six-mile drive through Zion Canyon, the most popular sightseeing route in the park.

On average, 4,000 to 5,000 cars enter Zion daily during the long peak season from April to October, competing for approximately 400 parking spaces along the main route. Many frustrated visitors waste time circling parking lots for a space, while others simply pull off to the side of the road, damaging vegetation and obstructing scenic views. The National Park Service (NPS) estimates that for every bus that cruises through the canyon, 20 cars will be eliminated from the narrow corridor.

"This will just be a fundamentally different way for people to enjoy the park," says park Superintendent Donald

Falvey. "It's going to be much more pedestrian and bike friendly, and we think people will take a more leisurely trip."

The purpose of the system is to soften the impact of visitation on the park while still giving visitors a quality experience. With that goal in mind, the buses have been designed to run on propane, which releases fewer emissions and creates less noise than gasoline or diesel powered engines. Large windows and overhead skylights provide great views of the canyon walls and open to circulate air without the excessive noise created by conventional air conditioners.

Visitors can get on and off the buses at eight designated stops in the park. Buses are expected to pass by each stop every six to seven minutes during the busiest part of the day and 30 minutes at other times. For additional interpretive information, each bus will be decorated with some flora or fauna of the park. For instance, one of the first buses has a tree frog decorating the outside. That bus will carry information about the tree frog and its role in the Zion ecosystem. Foreign language interpretation tapes will also be available. To make the service as convenient as possible for visitors, the shuttles are wheelchair accessible, have bike racks, and will run from 6:30 a.m. to 11 p.m.

The system is made up of two loops, one through the gateway town of Springdale, Utah, and the other through the park. The park loop starts at the south entrance at the new Zion Canyon Visitor Center where visitors can park, pay the entrance fee, and transfer to the free shuttle. One of the park's stops is a new interpretive museum—renovated from the former visitor center and opening spring 2002. Other stops include the Zion Lodge, Weeping Rock, and the Temple of Sinawava. For now, visitors who have reservations at Zion Lodge will be allowed to drive into the hotel but must take the shuttle to go beyond it.

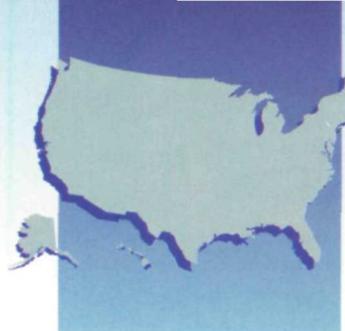
Visitors staying in Springdale and town residents can pick up the shuttle from any of six stops in town and transfer to the park system at the visitor center. Some businesses in Springdale have

donated parking space and created shuttle stops on their property. Town Mayor Phillip Bimstein says that although some residents have been skeptical about the system, overall he believes people feel it will be beneficial.

"We'll be the only town in Utah to have a free transit system, which will benefit our residents enormously," he said. "We also hope that it encourages more people to be pedestrians or ride bikes in town."

Skepticism has stemmed from business concerns that park visitors might resent being stripped of their cars and bypass the park and the local businesses that depend on tourist dollars. But Bimstein says he expects that most of the lost visitors would be of the "windshield tour" variety, those who drive right through the park without ever getting out of their cars.





REGIONAL REPORT

ON NPCA'S WORK IN THE PARKS

Text by Elizabeth G. Daerr

■ ALASKA

The state of Alaska has signed a Memorandum of Agreement with the U.S. Geological Survey for a cooperative science and research program in Glacier Bay National Park and Preserve. This is the first major step toward implementing the Cooperative Conservation strategy, which was part of compromise legislation passed by Congress in October 1998. The agreement mandates state cooperation with the Park Service for marine research and continued sustainable commercial fishing in park waters outside of Glacier Bay proper. "This is another major milestone in implementing the legislation and setting the long-term future course of Glacier Bay National Park and Preserve," says Chip Dennerlein, NPCA's Alaska regional director. In addition, the Dungeness crab fishery operating in the wilderness waters of the bay has been closed, and the federal government has reimbursed those fishermen who have not relocated for economic losses because of the closure.

■ CENTRAL ROCKIES

Conservation group American Rivers has included the Green River, which runs through Dinosaur and Canyonlands national parks in Colorado and Utah, on its Most Endangered Rivers Report this year. NPCA nominated the river for this year's report because regulated waterflows upstream at the Flaming Gorge Dam in Wyoming have severely degraded the wildlife habitat in the parks and have been integral to the endangered status of four native fish (see Rare and Endangered, page 50).

Restricted waterflows have reduced the available floodplain habitat on which the fish and other wildlife depend for food and protection. According to federal studies, restoring

the habitat will depend on allowing greater amounts of spring runoff to flow through the dam. American Rivers' Most Endangered Rivers Report is released each year, and rivers are chosen based on the magnitude and imminence of the threat, likelihood of major action during the year, and whether the threats are representative of those facing other rivers across the country.

For more information, call American Rivers at 202-347-7550 or go to their web site at www.americanrivers.org. Or contact NPCA's Central Rockies Regional Director Mark Peterson at mpeterson@npca.org or 970-493-2545.

■ HEARTLAND

A special resource study for national park status is under way in the unique geological area of western Iowa known as the Loess Hills. The 600,000 acres, which run along the Missouri River separating Nebraska from Iowa, contain

the windswept deposits of a unique silt called loess that accumulated after the last glacial period. In one area, the deposits are more than 200 feet high—the highest in North America. The only other known loess site in the world with equal geologic and ecological significance is along the Yellow River in northern China.

Although two sites, one in Iowa and the other in Nebraska, have been protected as National Natural Landmarks since 1986, NPCA believes that national park status will give long-term protection to the more than 260 plant species, birds, and terrestrial animals that are supported by the Loess Hills. The Park Service expects the study to be completed before the end of the year, followed by the agency's draft recommendation for protection as a national park, national heritage site, or some other conservation designation. The draft will be open for public comment.

NEWS UPDATE

Eagle Mountain Landfill—NPCA has filed a lawsuit against the Bureau of Land Management (BLM) for transferring lands on the border of Joshua Tree National Park in California that will allow the construction of the nation's largest landfill. If constructed, the dump could receive 20,000 tons of garbage daily for a period of 117 years. Despite strong opposition from the National Park Service, BLM transferred public lands neighboring the park to the dump developers and issued rights-of-way that allow garbage trucks to cross other BLM lands critical to the survival of the threatened desert tortoise.

Ivanpah Airport—The House of Representatives has passed legislation that would authorize the sale of Bureau of Land Management (BLM) land for the construction of an airport serving Las Vegas, Nevada. The proposed facility would be near the Mojave National Preserve in California. A compromise was reached in the House that makes the Department of the Interior a joint leader with the Federal Aviation Administration on the environmental review on alternative sites and the proposed facility. At press time, the bill, which NPCA believes needs further improvements, was expected to be taken up by the Senate Committee on Energy and Natural Resources.

REGIONAL REPORT

ON NPCA'S WORK IN THE PARKS

■ NORTHEAST

The distinctive scaffolding, which was erected around the Washington Monument to facilitate cleaning and renovation, has been removed. The tubes and blue nylon netting, designed by architect Michael Graves, drew both praise and criticism. The Park Service asked Graves to design the scaffolding so that the aesthetic effect of the monument would not be diminished. Despite some public interest in keeping the scaffolding, the Park Service said it had no plans to keep the monument covered. Renovations include: additional space on the observation deck, larger windows, a new heating and cooling system, and a new interpretive exhibit. The monument is expected to reopen to the public July 5 after being closed since 1998.

■ NORTHERN ROCKIES

Some Wyoming outfitters have been luring elk out of Yellowstone National Park with salt, a valued food supplement of the ungulates. It is believed that outfitters are engaging in the activity as a means of providing their hunting clients with an easy kill. Most of the activity is taking place in the Bridger-Teton National Forest south of the park,



Wyoming hunters are baiting elk.

and neither the U.S. Forest Service (USFS) nor the Wyoming Department of Game and Fish (WDGF) has been aggressive in stopping it. Many of the outfitted clients take only heads and other prized parts of the trophy elk, leaving behind usable meat. This practice has attracted the park's grizzly bears, causing human conflicts and endangering the bears as pressure is brought on managing agencies to control them. In response to recent media attention, USFS has begun to remove the salt. And WDGF may step up its enforcement of a regulation that requires hunters to use most of the meat from an animal kill.

TAKE ACTION: Write to the director of the Wyoming Game and Fish Department and ask him to stop the practice of baiting elk. Write to: Director John Boughman, Wyoming Dept. of Game and Fish, 5400 Bishop Blvd., Cheyenne, WY 82006. To send an electronic letter, visit www.npca.org.

■ PACIFIC

Yosemite National Park has released the second of two plans that aim to restore Yosemite Valley by reducing traffic congestion and crowding, promote visitor understanding, and allow natural processes to prevail. To accomplish these goals, the Yosemite Valley Plan includes proposals for removing roads, limiting private automobiles, reducing campsites, and establishing a 150-foot wide protected zone around the Merced

River. The plan would reduce park traffic by 60 percent. Interior Secretary Bruce Babbitt announced that the Park Service had no intention of restricting the number of visitors. "The problem is not that there's too many people," Babbitt said. "The problem is that there's too many cars."

The Yosemite Valley Plan was released March 28, and the public comment period runs for 90 days. A schedule of Yosemite Valley Plan public meetings is now available on the park's web site at www.nps.gov/yose/planning. Please visit NPCA's web site at www.npca.org for guidance on what to include in your comments on the Yosemite plan.

■ SOUTHEAST

NPCA is asking North Carolina Gov. James Hunt to rescind a permit granted to a company that plans to construct a limestone rock quarry directly within sight of the Appalachian National Scenic Trail. Hikers anticipating the magnificent views normally seen from Roane Highlands—one of the trail's most scenic sections—would instead look into the rock quarry. When the state granted the permit, officials did not consider the location of the rock quarry in relation to the trail. The government has the right to deny a mine based on adverse impacts to public lands.

TAKE ACTION: Write to the governor asking him to rescind the permit for the rock quarry. Write: Gov. James B. Hunt, Jr., Office of the Governor, 20301 Mail Service Center, Raleigh, NC 27699-0301. Visit www.npca.org to send an electronic letter. NPCA's North Carolina members may call the governor at 1-800-662-7952.

■ SOUTHWEST

Grand Canyon National Park Superintendent Robert Arnberger has announced that the National Park Service (NPS) has stopped the planning process for the park's wilderness management program, which has been under preparation for three years and addresses protection of the park's forests and the

NPCA REGIONAL DIRECTORS:

ALASKA: Chip Dennerlein

CENTRAL ROCKIES: Mark Peterson

HEARTLAND: Lori Nelson

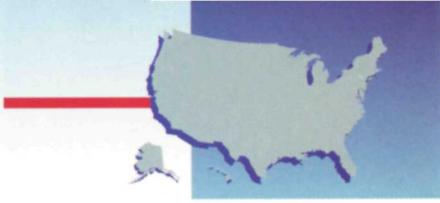
NORTHEAST: Eileen Woodford

NORTHERN ROCKIES: Tony Jewett

PACIFIC: Brian Huse

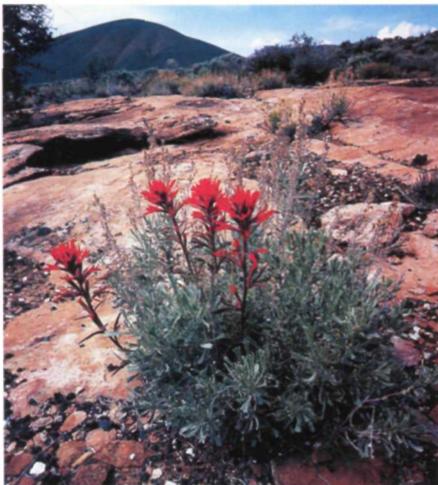
SOUTHEAST: Don Barger

SOUTHWEST: Dave Simon



Colorado River. With annual visitation reaching 5 million, the Grand Canyon is suffering from increased pollution, congestion, and motorized use on the river. The growing use of motors has increased conflicts with rafters. Under the Wilderness Act, motor boats and mechanized transport are prohibited in federally designated wilderness, and the National Park Service is obligated to stop its use. More than 1.1 million acres at the Grand Canyon have been recommended for federal wilderness designation, and the management plan was to guide protection of these lands until Congress could authorize full wilderness protection. However, the motorized concessioner industry claims that it will lose money if it has to switch to oar-powered boat trips. Arnberger's actions delay an environmental impact study to determine the effects of motorized use on wildlife, water quality, and noise pollution.

TAKE ACTION: Write to the superintendent asking him to continue with the wilderness management plan and to eliminate motorized use on the Colorado River to protect the Grand Canyon from increasing noise and water pollution. Address: Supt. Robert Arnberger, Grand Canyon N.P., Attn: Linda Jalbert, Recreation Planner, P.O. Box 129, Grand Canyon National Park, AZ 86023 or e-mail: Grea_public_comment@nps.gov.



Indian paintbrush in Grand Canyon.

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TOM TILL

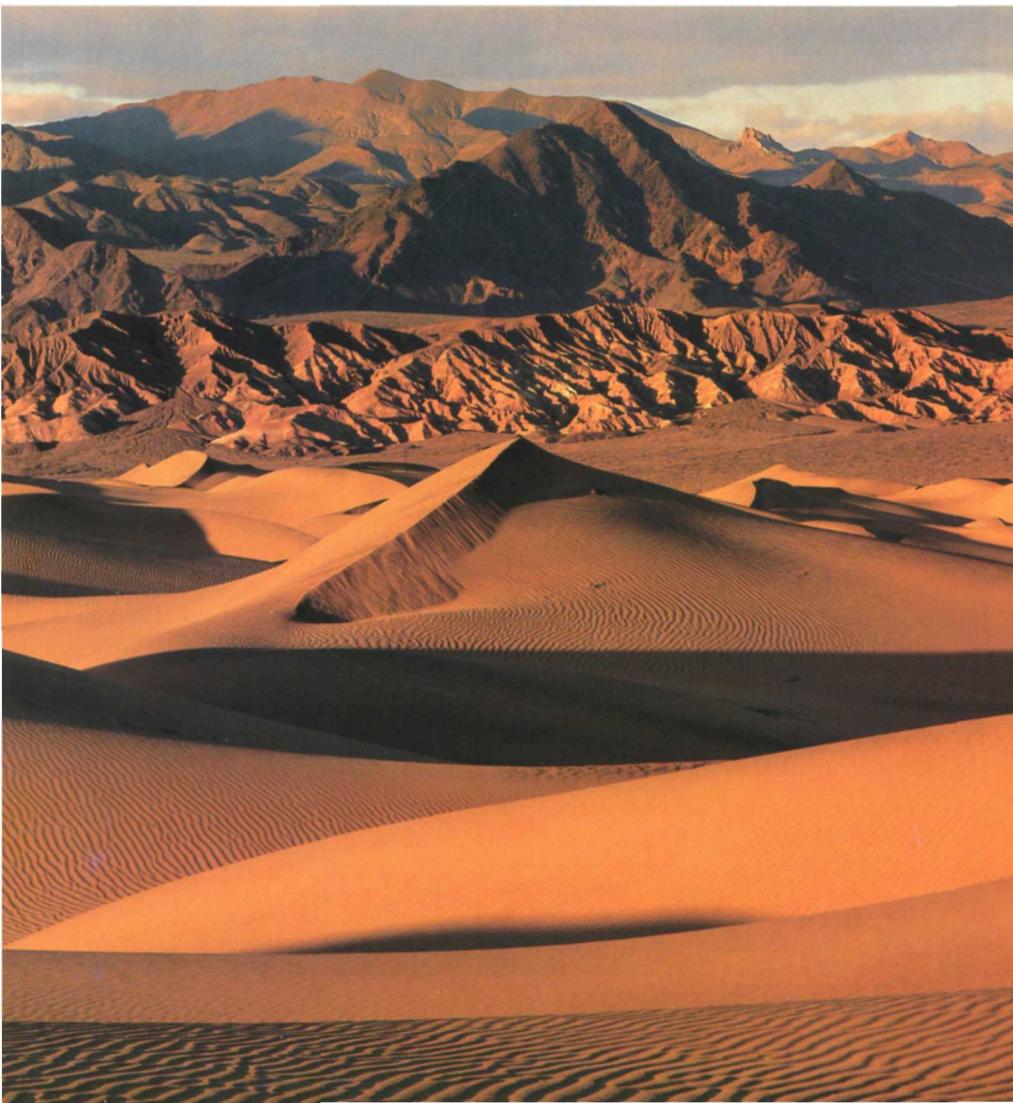


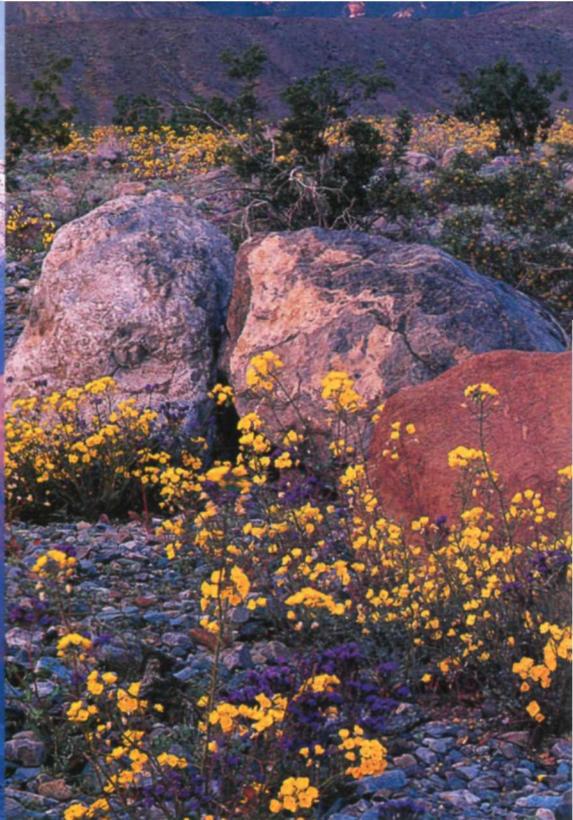
Death Valley National Park

Photos and text by David Muench

SCREAMING SILENCE, HOSTILE, desolate, and unmerciful. Is this the Valley of Death? The name Death Valley alone is a foreboding one and conjures up an image that shimmers in the heat of a summer day. With a little patience, though, during the late fall, winter, and especially spring, spectacular wildflowers may grace the alluvial fans and desert slopes along the Amargosa and Panamint ranges. Snow lines ridges from 9,000 to 11,000 feet directly above a place called Badwater, which lies 282 feet below sea level.

The Mojave and Great Basin desert regions collide in sublime beauty where salt beds, caked dry flats, and a cracked earth provide a stark bare-boned environment.





From opposite page left to right: sandy mounds in the Mesquite Flat dunes; the cascading Darwin Falls; Badwater, which at -282 feet is the lowest elevation in the United States; wildflowers springing up at Echo Canyon.

I began making pilgrimages to Death Valley, probably in the early 1950s, traveling with my family, watching my father and uncle photographing in the dunes or at Zabriskie Point, Dantes View, or the salt pools of Badwater. I enjoy photographing Death Valley because of its variety and diversity of terrain. The geologic mix rivals the Grand Canyon, and the rock offers up its color along with brightly colored wildflowers.

I particularly enjoy photographing a dawn reflection of Telescope Peak in the salt pools at Badwater. Very early morning or late afternoon light is a great treat. The recent additions of Eureka and Panamint valleys offer their visually exciting sand dunes. The patterns found in these dunes mingle with primrose-verbena, or goldfield displays.

Recently, I hiked out across to Badwater salt pools and photographed the meeting of sky and salt pan. The temperature was in the 80s, but the visual impression was that of a simmering summer day. This past July we drove out through Death Valley, just to experience its hostile, oven-like qualities—a 118 degrees in the shade.

One winter in the 1970s, we decided to make the seven-mile trip along the Panamint top ridge to Telescope Peak to photograph the ancient bristlecone pines. These ancients were flagging dra-



Fields of wildflowers bloom in the springtime in Eureka Valley.

matically as winds brought in a fast-moving storm at 50 miles per hour, making prospects perilous for photographing the pines, with their great desert surroundings far below. The impression was indelibly sublime; the photographs were distinctly primal and powerfully beautiful.

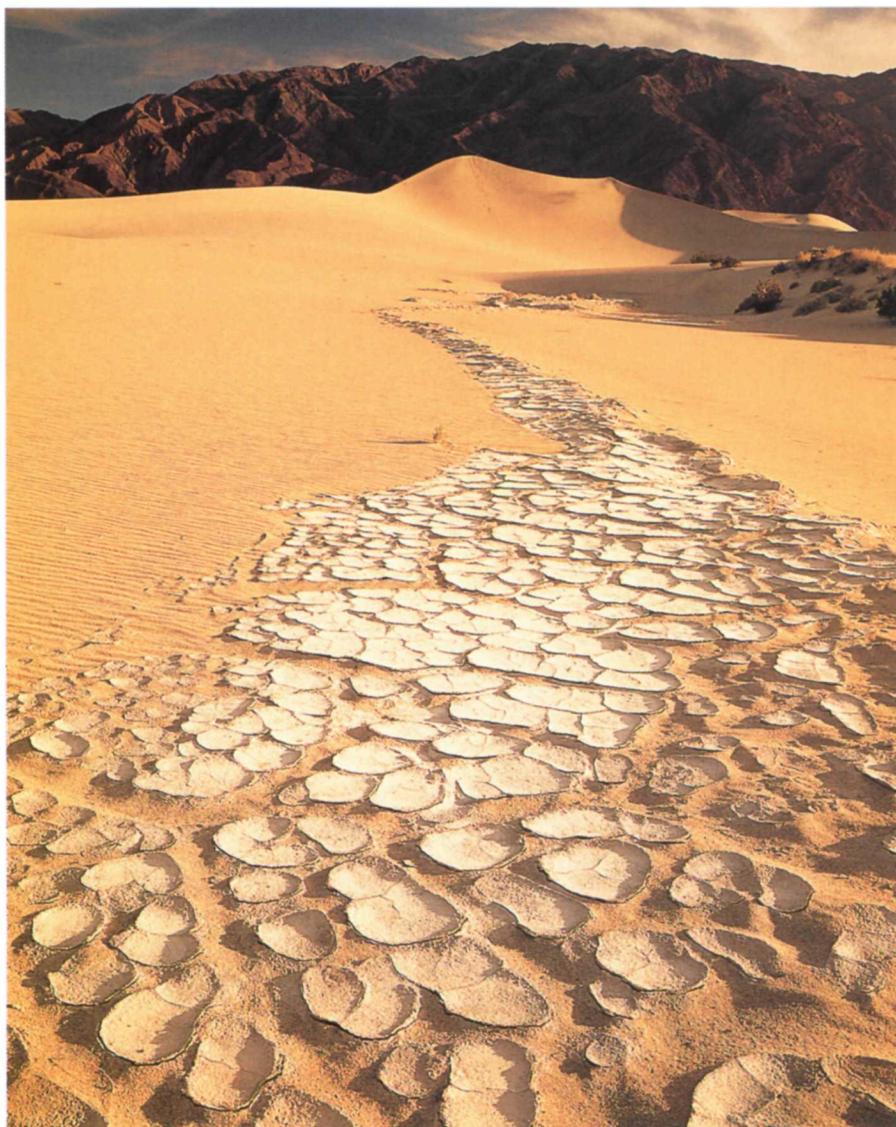
Death Valley National Park is a landscape in transition, delicate and sensitive to changes brought on by both nature and humanity. The scenery, with its spectrum of rock colors, is spectacular, but this landscape needs more protection, mainly from ourselves. Stewardship and planned protection are imperative, so all children, and my grandchildren, Trevor, Skyler, and Connor, can enjoy the great desert, its space and solace.

The national parks and our creation of the national park ideal, as an American icon, are, I feel, our greatest heritage and legacy, bar none! 

About the Author:

DAVID MUENCH lives in Santa Barbara, California. He has been a freelance photographer for 35 years, has been the primary photographer for 40 books, and participated in a number of one-man exhibits.

In recognition of David Muench's contribution to the understanding and appreciation of the National Park System, he is NPCA's second recipient of the Robin W. Winks Award for Enhancing Public Understanding of the National Parks.



Salt patties trail off into the distance in the Mesquite Flat dunes.

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Ten Most Endangered

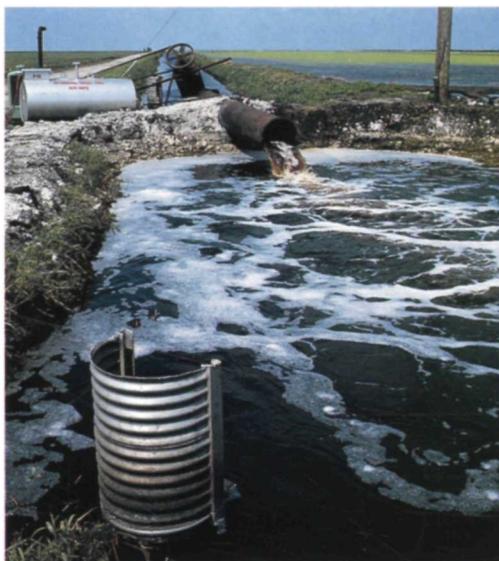
NPCA is focusing on ten of the 379 park units suffering threats that face the entire system.

THE NATIONAL PARK SYSTEM—created in 1916—was one of the last century's greatest gifts to the American people. The 379 sites that today constitute the system represent some of our nation's most spectacular landscapes as well as some of American history's greatest achievements and sorrows.

Even though the parks are cherished and revered, threats abound. Not one of the 379 park units is untouched by development, pollution, or questionable uses. Every one of the parks has a need of some kind, whether it is additional funding, scientific research, more staff, or repairs to existing structures.

To draw attention to some of these problems, NPCA last year launched the Ten Most Endangered Parks campaign. But how do we select parks for a list like this? After much debate, Dave Simon, NPCA's Southwest regional director, summed it up. "Triage. Imagine an emergency room filled with national parks rather than people. We just have to pick the ones that have the most life-threatening problems." All of the parks need help, but the following ten need immediate treatment.

Air pollution hangs over Great Smoky Mountains National Park in Tennessee and North Carolina during the summer months, clouding what were once clear views. This chronic condition reached critical proportions last summer, when the noxious mix of air pollutants from power-generating plants and motor vehicles caused one of the worst pollution days in the park's history. Elsewhere



Nutrient-laden water back pumped from cane fields into Everglades National Park.

in Tennessee, Stones River National Battlefield faces imminent danger from proposals to widen a two-lane roadway and develop adjacent property that was part of the original battle site but not yet part of the park.

A massive landfill threatens the integrity of Joshua Tree National Park in California. While NPCA has filed suit to stop the project, the County of Los Angeles may buy the landfill, which would accommodate up to 20,000 tons of garbage per day, degrading the sensitive desert ecosystem, spoiling views, and shattering the natural quiet.

During the winter months at the nation's oldest park—Yellowstone National Park in Wyoming and Montana—nearly 1,000 snowmobiles a day roar up to Old Faithful Lodge, shatter-

ing the wintry quiet and disrupting the experience of other visitors. About 50 years ago, only a handful of snowmobiles used the trails at Yellowstone National Park. Now every winter, tens of thousands of snowmachines roar through the park. The noise generated by the machines pervades the park, drowning out the sounds of bubbling geysers and barking coyotes. Snowmobiles and other motorized uses are a problem in a variety of parks, including Denali National Park and Preserve in Alaska, where congressional representatives are trying to change legislation to allow recreational snowmachines into the park's wilderness core. The surrounding 4 million acres already are open to snowmobiling. Additional access will intrude on bear, moose, and wolf habitat.

The Underground Railroad Network to Freedom, authorized by Congress in 1998, allows the Park Service to link hundreds of sites that interpret the humanitarian movement that aided slaves escaping bondage. Legislation provides \$500,000 per fiscal year for education and interpretive efforts, but does not provide money to preserve structures, many of which are being lost because of age or development.

At Petrified Forest National Park in Arizona, visitors are pocketing the mineralized remains of trees that died in the era of the dawn of the dinosaurs. The Park Service estimates that 12 tons of fossilized wood vanish from the park each year. In addition, the park does not include a large portion of the paleont-

CONNIE TOOPS

ological resources for which the park is known or the landscape viewed by visitors at major overlooks. Potential development on these lands would be detrimental to the visitor's experience.

In Missouri, Ozark National Scenic Riverways, including one of the first national scenic rivers, is threatened with lead mining, one of the most polluting forms of resource extraction. The surrounding watershed recently faced five federal prospecting permit applications and more may follow unless congressional or administrative action exempts the area from further mining activities. Large-scale mining would destroy habitat and pollute the waterway.

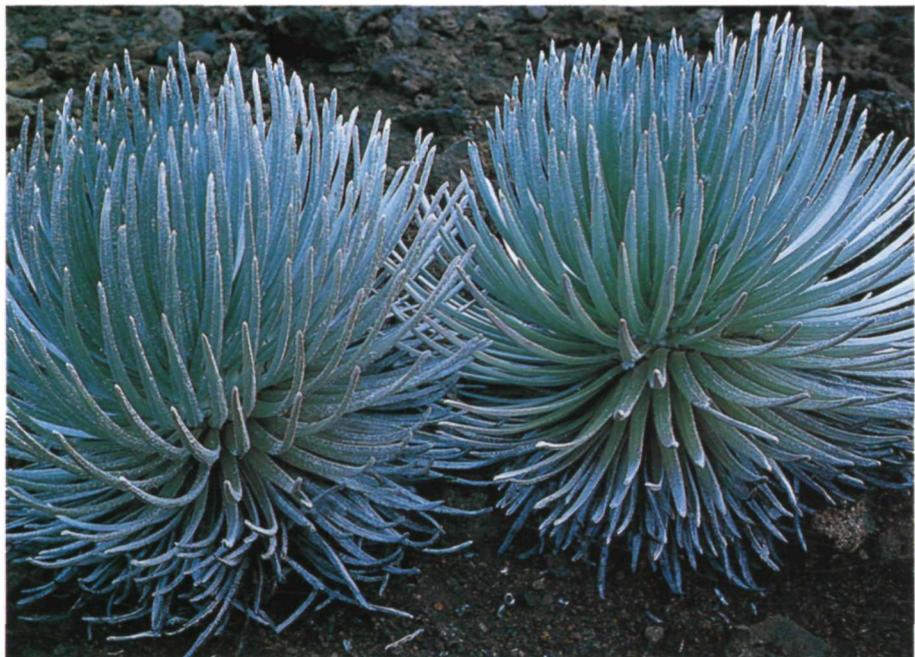
Haleakala National Park in Hawaii may be irrevocably altered by a proposed internationalization of the Kahului Airport. An increase in international flights may bring more nonnative plants, insects, and viruses, which will further jeopardize the biodiversity of the Hawaiian Islands. More native species have been driven to extinction on Hawaii than any other state.

Everglades National Park and Big Cypress National Preserve have been degraded as a result of disrupted water flow, invasion of nonnative species, and dramatically reduced habitat. Big Cypress has the added threat of off-road vehicles (ORVs).

Throughout the Everglades ecosystem, habitat degradation since 1900 has led to a 90-percent reduction in populations of wading birds. Half the ecosystem could be restored through a massive restoration project administered by the South Florida Water Management District and the U.S. Army Corps of Engineers. However, a proposed redevelopment plan of the Homestead Air Reserve Base into a major commercial airport, located next to Biscayne National Park and not far from Everglades National Park, could undermine the restoration strategy.

Five parks that appeared on the 1999 list were removed this year: Chaco Culture National Historical Park in New Mexico, Gettysburg National Military Park in Pennsylvania, Grand Canyon National Park in Arizona, Mojave National Preserve in California, and Voyageurs National Park in Minnesota.

At Chaco, irreplaceable Anasazi build-



FRED HIRSCHMANN

Feral animals trample the silversword's shallow root system and invasive ants are killing the plant's pollinating insects at Haleakala National Park, Hawaii.

ings and sites were deteriorating faster than the Park Service could preserve them. The entire New Mexico delegation successfully lobbied to increase the amount of funding earmarked for the park through the Vanishing Treasures Initiative. At Gettysburg, which has an extensive collection of uniforms, guns, swords, and saddles, an appropriate new visitor center and display site will be built for these artifacts, because efforts to thwart the plan were defeated. The park also will be able to enhance its interpretation of the battle that took place there.

At Grand Canyon, work is continuing on a light rail system that is expected to ease automobile congestion. A lawsuit, filed by NPCA and others, has succeeded in forcing the Mohave Generating Station to install pollution controls. The plant's sulfur dioxide emissions have been obscuring Grand Canyon's vistas.

At Mojave, the Cima Cinder mine—formerly one of the largest active mines within the park system—has been closed and the Park Service has received some money to better protect lands within the park's borders. Outside development continues to plague the park, as well as internal uses such as grazing and mining.

And at Voyageurs, the Park Service agreed to a moratorium on personal

watercraft until a systemwide policy could be issued. A federal district court also ruled in favor of the Park Service in a case that sought to challenge the agency's jurisdiction over Voyageur's waterways.

"Protecting national parks for present and future generations is NPCA's central mission," says NPCA President Thomas C. Kiernan. "We must respond to the needs of these wild lands. Their decline is a warning that the integrity of the environment that supports us is at risk. If we cannot keep our national parks off of a list of endangered lands, then we can scarcely hope to protect the soil, air, water, plants, and wildlife that sustain us elsewhere." 

The Ten Parks

1. Denali National Park and Preserve
2. Everglades National Park/Big Cypress National Preserve
3. Great Smoky Mountains National Park
4. Haleakala National Park
5. Joshua Tree National Park
6. Ozark National Scenic Riverways
7. Petrified Forest National Park
8. Stones River National Battlefield
9. Underground Railroad Network to Freedom
10. Yellowstone National Park

GUARDIANS of the PARKS

The contributions of thousands of people help the Park Service to do its job. Their dedication benefits all of us. Here are four examples.

BY BESS ZARAFONITIS STROH

EVERY NATIONAL PARK needs its heroes, those individuals—or groups of individuals—whose experience in the parks is more than just a once-a-summer or once-in-a-lifetime visit.

These are the folks who involve themselves in the country's greatest natural, cultural, and historical locations and, through their commitments, these places and their treasures are better cared for and preserved.

Their contributions help the National Park Service (NPS) do its job during an era of ever-increasing needs and limited financial resources. They devote their time—and, in some cases, much of their lives—to raise funds, provide

volunteer staff, or advocate for the parks. Whether they are rolling up their sleeves for hands-on service or lobbying a position with political power brokers, their dedication benefits everyone in the nation.

These individuals come from all backgrounds and interests. But they are bonded by the love and enthusiasm they feel for their parks and the excitement they are able to generate.

Charles Maynard at Great Smoky Mountains National Park

Charles Maynard was alone in the Tennessee outdoors the day he realized his calling to be a Methodist minister.

At the time, he was a high school junior who could look back on a childhood spent atop Signal Mountain, where the Prentice Cooper State Forest,

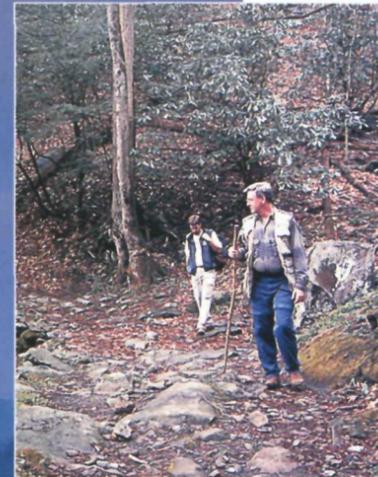
with its striking overlooks of the Tennessee River Gorge, was his backyard.

Maynard's love for nature and astronomy played into a destiny of doing God's work. "That calling has always been, for me at least, tied to Creation," he explains.

Today, Maynard, 45, views his role with Friends of the Great Smoky Mountains National Park as an extension of his calling.

On leave from the church, Maynard helped organize the friends group and since 1994 has served as its first executive director. Park administrators say his extraordinary talents combined with a dedicated board of directors to create an extremely valuable partner for Great Smoky Mountains.

Since organizing, the friends group's fundraising has helped the park pre-



DON HOGAN

serve historic structures, study natural resources, protect wildlife, and educate visitors. Its initiatives range from a \$5,000-a-room weekend retreat to drive-up donation "mailboxes" at scenic stops in the park. Last year alone, the efforts produced \$1.3 million.

Mist blankets the Great Smoky Mountains, the park Charles Maynard (inset) has helped to protect.

But behind the dollar figure is a broader story about heightened public awareness of the park's importance. Volunteerism is up, along with an understanding that citizens have a part to play in preserving the resource. With that has come a greater tendency by politicians to act on behalf of Great Smokies.

Maynard has been a natural when it comes to this kind of park "fundraising," the administrators say. "He has the most extraordinary ability to bring people together for a good cause," says Karen Wade, Smokies' former superintendent. Adds Phil Francis, Smokies' acting superintendent: "He

takes his oratorical skills ...and he's able to talk about the park in a way that causes people to recognize its value."

Besides the success of his community outreach, Wade credits Maynard with initiating a relationship between the park and the National Park Foundation, opening a way for national grants to match local fundraising.

In doing so, Maynard tapped into a program by Aurora Foods, Inc., the makers of Log Cabin Syrup, which last year led to restoration of four historic log dwellings in the park. Aurora's \$250,000 donation also targeted interpretive materials and future preservation of Great Smokies' cabins.

The project would have been smaller if not for Maynard's courting of Aurora Foods, says Wade, now NPS intermountain region director. "It's the relationship-building that he's good at. He has a great way of helping the potential partner look at the bigger picture."

Integral to Maynard's effectiveness, the administrators say, is his obvious deep love and knowledge of Great Smokies. Maynard has hiked about 750 of its 900 trail miles and leads hiking excursions there. With two fellow park explorers, he's written guidebooks on off-the-beaten-path hikes and waterfalls in Great Smokies and, as a professional storyteller, he relates folk tales of the Appalachian settlers of the region.

Maynard's influence on the national parks extends beyond the Smokies as well. To his credit are guidebooks on the waterfalls of Yellowstone and Grand Teton national parks. And when NPS looked for designees for the National Parks Overflights Working Group—the committee to hash out management of scenic air tours over parks—Maynard was selected.

Maynard says he has more to do as a friend to the national parks, and Great Smokies in particular, as he carries out a ministry to help care for Creation.

League of Women Voters at Rocky Mountain National Park

From the living room of her mountain-side home in Colorado, Helen Taddonio looks out onto the white caps of Rocky Mountain National Park. The scene and the emotions tied to it inspired the former grammar school principal and her husband to retire outside of Estes Park, "Rocky's" eastern gateway community. So it isn't surprising that Taddonio's mission with the Estes Park League of Women Voters to ban sightseeing overflights in the park was deeply felt.

"We wanted to protect the wildlife and the beauty and the natural quiet," says Taddonio, league president for much of the "Ban the Buzz" campaign.

In October 1998, after nearly three years of educating, lobbying, letter-writing, and hoping, Taddonio and other Estes Park leaguers savored victory: "Rocky" became the only national park with a congressionally approved ban on scenic helicopter and airplane overflights.

Taddonio and current league president Jacqueline Oldham agree that overwhelming, bipartisan support from the Estes Park community and county, state, and congressional leaders was crucial to winning the ban.

Also significant was the absence of an entrenched local air tour industry that undoubtedly would have opposed the flightseeing ban.

But Ken Czarnowski, Ph.D., the park's physical sciences coordinator and an overflights advisor for NPS, gives mounds of credit to the league, which framed the ban argument locally and helped elevate it to the White House. "They did the work. As a group, they were incredible."

The Ban the Buzz campaign began in early 1995, as news spread about air tours near Black Canyon of the Gunnison National Park in western Colorado and an operator flying out of Granby, a town to the west of Rocky Mountain National Park.

With approvals of the state and national Leagues of Women Voters, Estes Park leaguers went into action, lobbying former Transportation Secretary Federico Peña and state and congressional officials. Close to home, they rallied grassroots support, hanging posters

GUARDIANS *Continued*

in store windows and meeting with media and community organizations.

They highlighted potential problems of overflights: noise and visual intrusions in the park's wilderness, impacts on wildlife, and threats of fire and loss of life in the event of crashes caused by unpredictable winds and downdrafts.

Before long, the message was gaining

Washington, D.C., 99 percent favoring the ban.

The outcome in January 1997 was a temporary ban, but the Estes Park league and Rocky Mountain officials celebrated the precedent before recommitting to their goal.

As it waited for congressional action, the league was bolstered by a local initiative to deter air tour operators from setting up shop. The move by Larimer County commissioners called for commercial sightseeing aircraft to use federally approved airports, meaning tours would have to originate more than an hour away.

Interestingly enough, leaguers were caught off guard when the ban they had worked so hard for became reality.

In fall 1998, their hopes were pinned to overflights legislation pending in Congress that included Col-

She had ventured into the southeastern New Mexico underground with a boyfriend on her first off-trail caving expedition. It was the relationship with the cave, not the boyfriend, that was meant to last.

"When you're in a cave, you are so close to God, Mother Nature, or whatever you want to call it," Barker describes the feeling that overcame her. "There is definitely a spirituality and a force that is there, and you can feel it."

She returned to Carlsbad Caverns 13 times that year, and ten years later, the eight-hour road trip from her home outside of Dallas, Texas, to her "home cave" in Carlsbad Caverns National Park is most familiar.

First as a member and then as southwest area manager of the Cave Research Foundation (CRF), a group for cave scientists, conservationists, and explorers, Barker has joined or led multiple expeditions at Carlsbad Caverns National Park each year.

Under her leadership, the CRF has expanded restoration activities in Carlsbad Caverns with the goal of returning original splendor to its chambers and passageways and, in some cases, restoring potential for natural processes to begin anew.

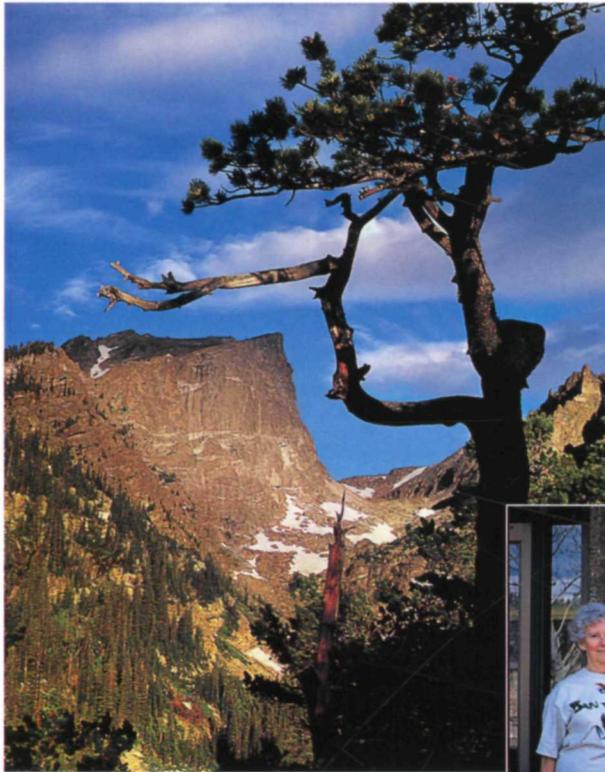
Restoration work—often painstaking cleaning of cave surfaces and delicate features done on hands and knees for days at a time—is now a regular part of CRF weekend expeditions and is required of all new members.

The approach gives cavers, traditionally more focused on exploring and documenting caves, a new appreciation of how humankind has left its mark on the nonrenewable resources, Barker says. The hope is that the awareness will lead to practices to limit future effects.

Teams associated with CRF undertake cleaning projects with toothbrushes and dental instruments and the implements of Barker's innovative thinking: turkey basters and surgical syringes and tweezers. Their mission is to remove dirt and debris without altering the natural environment.

Dale Pate, Carlsbad's cave specialist, says the CRF operates as an extension of park staff, and without such volunteer efforts, the work could not get done.

He credits Barker not only with pro-



PAT O'HARA

Quiet over Hallet Peak, in Rocky Mountain National Park, was ensured by the "Ban the Buzz" campaign.

national attention and support.

Former Colorado Congressman David Skaggs (D) helped, says Taddonio, with his early, unsuccessful bill to require NPS permission for all sightseeing flights at national parks.

In his Earth Day message of April 1996, President Clinton called on Secretary Peña to address the overflights issue at Rocky Mountain National Park. Peña's response shortly thereafter was several proposed alternatives to prohibit or limit commercial air tours within park boundaries.

Immediately the league began plying all of its personal and group contacts in a massive, national letter-writing campaign. About 4,000 letters poured into



NPS/ROCKY MOUNTAIN NATIONAL PARK

orado Sen. Wayne Allard's (R) bid for a ban at the park. When that proposal failed, the league expected to have to wait for action.

In an 11th-hour move, however, Rep. Skaggs and Colorado Sen. Benighthorse Campbell (R) slipped the overflights ban into the 1998 Omnibus Appropriations Act.

It was approved.

The campaign was over. The Estes Park League of Women Voters—and the park—had won.

Barbe Barker at Carlsbad Caverns National Park

Appropriately enough, it was Valentine's Day a decade ago that Barbe Barker began her love affair with Carlsbad Caverns.

moting restoration at Carlsbad Caverns but also with developing a highly cooperative relationship between the CRF and park administrators. She manages to satisfy the park's need to complete projects and CRF members' needs for exploration, he says.

Add to that, says assistant cave specialist Jason Richards, Barker's meticulous enforcement of park rules to protect the caves—addressing matters like appropriate gear and actions for off-trail cavers—and of guidelines to ensure standard cave documentation.

"She's an amazing woman," says Richards. "Very bubbly. Her enthusiasm is contagious and that's good. That's what we need."

For Barker, 48, a retired trauma care administrator, her role at Carlsbad Caverns expresses what she says is God-given passion for caving and profound respect for a resource that took millions of years to create.

Ironically, she was raised in Lovington, New Mexico, and was no stranger to Carlsbad Caverns as a child. She never dreamed in those early years that wild caving would become her avocation.

When she returned as an adult, the

mother of two teenagers with a successful career, she knew at once she'd be caving for the rest of her life.

"It was like my soul had come to rest. There was no feeling like it," she says, remembering that Valentine's Day. "Some people find it at the top of a mountain; some people find it in the ocean. And some people find it 1,000 feet underground."

Joan Beaubian and other partners at New Bedford Whaling Historical Park

It is one of life's ironies that illness led Joan Henderson Beaubian to act on her desire to preserve the history of African Americans in her hometown of New Bedford, Massachusetts.

Out of work because of her illness, she was able to help organize the New Bedford Historical Society, dedicated since 1996 to documenting the role of people of color in the city's past.

Another unexpected step took Beaubian into the New Bedford Whaling National Historical Park, where she's worked vigilantly to ensure that the untold stories of people of color become recorded history. In the process, she became an advocate

for inclusiveness at the park and one of many players shaping the park's future.

Designated in late 1996, New Bedford's national park relies on an ever-growing list of partners to preserve and interpret America's 19th-century whaling history.

"This kind of partnership doesn't work if people don't believe in it locally," says park superintendent John Piltzecker. "Joan not only believes in it; she makes other people proud of what's happening here."

With her organization, Beaubian has collaborated on projects involving whaling history and the Underground Railroad. As an individual, she represents the volunteer spirit in New Bedford and can be counted on to draw the community in, Piltzecker says.

In a city like New Bedford, that commitment is valuable.

The port is textured with a multi-ethnic population largely tied to its



Barbe Barker (inset) explores and helps to restore, along with members of the Cave Research Foundation, the original splendor of cave decorations, such as those in the photograph above, at Carlsbad Caverns National Park.

SCOTT T. SMITH

GUARDIANS *Continued*

whaling and textile histories. Roughly 60 percent of its citizens have roots in Portugal and the Portuguese island of Madeira, the Azores, and Cape Verde. But the city also has populations with ancestral ties to Africa, Canada, Europe, Russia, the West Indies, and the Middle East. In addition, New Bedford is defined by social and economic differences that are typical of old New England industrial cities.

In the midst of this diversity, the national historical park depends on a unity of purpose among its partners, volunteers, and the community to reach its potential.

The park does not own the resources that reflect New Bedford's reign as whaling capital of the world. And though it encompasses 33 acres in the downtown water-

Pride Crew" to tend park streets and set up a courtesy shuttle for visitors to downtown.

New Bedford's park probably never would have come about if it hadn't been for another of its partners, the Wa-

ings of importance to the park and New Bedford. It also leads outreach activities, such as bringing area children into the city to learn about its heritage.

The focal point of the national park is another partner, the Whaling Museum.

It is the largest museum devoted to the history of American whaling and holds collections of whaling tools and gear, ship models, a whaleboat, and other artifacts.

Besides its key role in preserving the resource, the museum, under Brengle's leadership, has pooled financial resources with the Park Service for collaborative educational programs.

Other "Partners in the Park" include the New Bedford Preservation Society, the Schooner *Ernestina*, the historic Rotch-Jones-Duff House & Garden Museum, and New Bedford's working waterfront and Port Society.

As the partnership process continues to evolve, new groups and individuals are joining in, says Piltzecker.

Driving that, in part, are the monthly "Partners in the Park" meetings, at which everyone from established partners to community representatives and park residents to curious neighbors gather around the theme of the park.

The sessions allow for sharing information, concerns, and ideas and open the way for the collaboration that will continue to expand the park.

"It was a hard road to establish the park, but it is a harder road to figure out what it all means," Piltzecker says. "Now the work really begins, because we have to build it together, and we have to make it relevant to the people who live here."

The value of Joan Beaubian's efforts at New Bedford—like Charles Maynard's at Great Smokies, Helen Taddonio's at Rocky Mountain, and Barbe Barker's at Carlsbad Caverns—cannot be overstated. The hope is that their numbers will grow.

BESS ZARAFONITIS STROH lives in Connecticut and last wrote for National Parks about the challenge of preserving the park system's paintings.



CHRISTIAN HEBBIGNASS PHOTO IMAGES

Beaubian (far right) and other community leaders work to incorporate stories of all people in New Bedford.



SCOTT KINGSLEY

front district, it operates with a paid staff of only five. Among the 70 buildings in the district are private residences, taverns, retail businesses, galleries, and museums. Its streets and sidewalks fall under city care.

The list of the individuals and organizations that converged to create the park, and continue to shape it, is extensive, Piltzecker says.

It includes Jean and Arthur Bennett, who were part of the grassroots effort to establish the park and now are park volunteers, and John Robinson, who kept the city's former visitor center staff together when the Park Service arrived in 1997 and still plays a leadership role with the volunteers.

Mayor Frederick M. Kalisz, Jr., also can be counted for his special attention to the park district. After taking office in 1998, the mayor dispatched a "Take

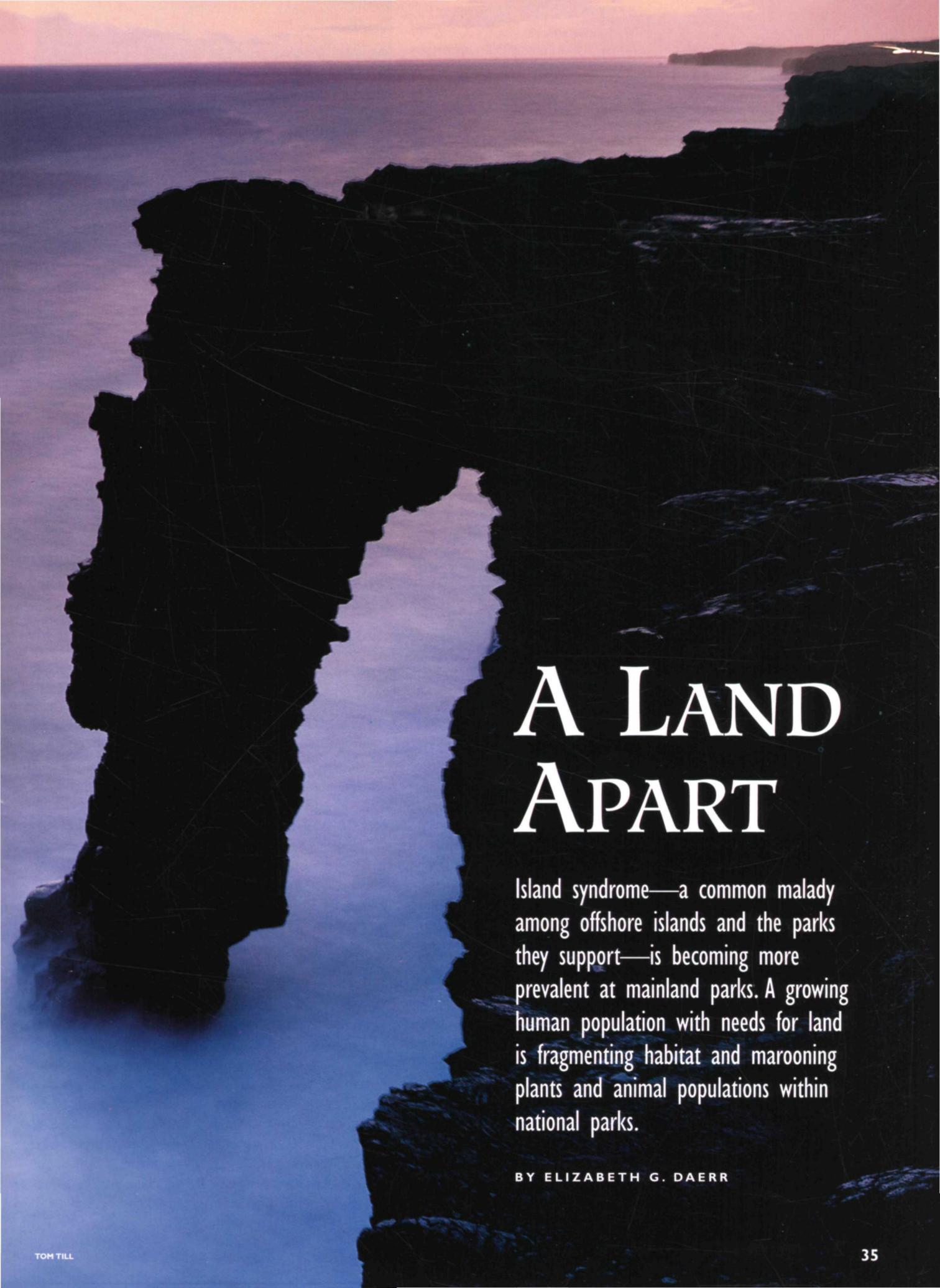
terfront Historic Area League (WHALE).

Beginning in the 1960s, the non-profit citizens' group led the preservation of more than 30 buildings in a 13-city block National Historic Landmark District that was the commercial core of the whaling industry. Later WHALE focused on winning the national park designation for the area, says Tony Souza, WHALE executive director.

While developing support at home and in Washington, D.C., Souza and Anne Brengle, now executive director of the New Bedford Whaling Museum, forged a relationship with Barrow, Alaska, where New Bedford whalers once traveled to hunt spring whales.

The result was a broader base of political support for the whaling national park, which subsequently won congressional approval with Barrow as an affiliate location.

WHALE continues to preserve build-



A LAND APART

Island syndrome—a common malady among offshore islands and the parks they support—is becoming more prevalent at mainland parks. A growing human population with needs for land is fragmenting habitat and marooning plants and animal populations within national parks.

BY ELIZABETH G. DAERR

ONCE A MONTH a work crew from the resource management division of Hawaii Volcanoes National Park packs up chainsaws, wire cutters, anchor pegs, hammers, and a large supply of herbicides. It's time to mend fences. Many kinds are involved: hogwire fences, cattle fences, electric fences, and the new, six-foot-high fences being tested for the first time in this park. Fifteen workers can spend three days walking, repairing, and spraying around the 100 miles of artificial barriers that enclose more than 60,000 acres of Hawaii Volcanoes from the surrounding world. These fences are designed as much to keep native species safe as they are to keep nonnatives out.

The parks on the Hawaiian islands are among several parts of the National Park System suffering from the malady known as "island syndrome." This syndrome asserts that smaller populations have a lower threshold for collective disaster. Under natural conditions, species populations normally fluctuate through boom and bust cycles. However, smaller populations, such as those associated historically with islands, do not have the ability to withstand catastrophes like disease. So when a new element is introduced, the results can be devastating.

On Guam, another Pacific island, for example, the accidentally introduced brown tree snake was responsible for the extinction of six of the island's 11 native forest-dwelling birds in fewer than 30 years. With its ability to climb trees to raid nests and a population of birds that had never encountered such a predator, the snake has had an endless buffet.

As human populations and needs for land and housing expand across the United States, island ecosystems are being created everywhere. For instance, scientists note that the boundaries of Yellowstone National Park do not in any way reflect the natural boundaries of the Greater Yellowstone Ecosystem, which encompasses nearly 12 million acres of federal lands that provide habitat for grizzly bears, bison, wolves, and myriad other creatures that rely on vast,

uninterrupted tracts of land to live. The plight of bison—protected within the park but often shot by state wildlife managers when they leave the park in search of winter forage—is a telling example of how a national park "island" offers limited protection for its species.

But no where is the island syndrome more graphically presented than on the island parks themselves. Channel Islands National Park off the coast of California is suffering its own ruin as the result of nearly two centuries of ranching and commercial hunting. Even so,



To protect native species, park officials at Hawaii Volcanoes maintain pig enclosures.

the syndrome is rapidly spreading to mainland parks. Tallgrass Prairie National Preserve in east central Kansas represents less than 4 percent of what remains of the expansive tallgrass prairies that once covered 400,000 square miles from Canada to Texas and from Illinois to Kansas. In fact, it has been argued that the 266 natural resource parks within the National Park System are simply a collection of individual ecological islands and that they may well be destined for the same fate as a geographic island.

"Island biogeography is no longer an offshore enterprise," writes David Quammen in his book *The Song of the*

Dodo. Island Biogeography in an Age of Extinctions. "It has come to the mainlands...The problem of habitat fragmentation, and of the animal and plant populations left marooned within the various fragments under circumstances that are untenable for the long-term, has begun showing up all over the land surface of the planet."

The extinctions and threats occurring on many of these biological islands are indications of what can be expected for inland ecosystems. To prevent this, the National Park Service (NPS) is beginning to take some important steps. At Hawaii Volcanoes and Channel Islands, NPS administers ecosystem restoration programs that fight alien species and protect and reestablish natives, and at Tallgrass Prairie, the agency is developing a plan to address the unique management issues at this park established in 1996. These programs, along with a growing national interest in preserving complete ecosystems that often extend well beyond park boundaries, may help in the struggle to save habitats and the diminishing plant and animal life within them. For a sense of the importance of such programs, consider that 14 percent of the entire world's bird extinctions have occurred in the Hawaiian islands, according to Quammen.

"The problem is more ubiquitous than carbon monoxide," Quammen writes. "It exists wherever *Homo sapiens* have colonized and partitioned a landscape. Although it's an old trend, it has recently become acute. Critical thresholds are being reached and passed."

The Hawaiian Islands' millions of years of isolation from other land masses allowed a variety of birds, insects, and plants to evolve without the need for protection from large predators or aggressive competitors. Some nettles there have no sting, and some mint plants have no aromatic chemicals to ward off browsers. Indeed, many Hawaiian species have evolved to a point at which they lack the defenses found in species elsewhere. In part because of a lack of defenses, they can be easy prey to an overwhelming invasion of nonnative species that began 1,500

PAT TOOPS/TOOPS STOCK PHOTOS



Island species, such as hawksbill turtles (above left), 'ōhi'a (below left), and nēnē, are especially vulnerable to changes in the ecosystem at Hawaii Volcanoes National Park.

years ago when the Polynesians first arrived with their food plants and domestic animals.

Hawaii Volcanoes National Park is under siege from a variety of introduced species. Feral goats, mouflon sheep, and pigs overgraze and uproot native vegetation. Mongooses, an Asian species, and the rats they were introduced to control, exact a similar toll on vegetation, as well as preying on the island's many ground-nesting birds.

Two of the park's most popular species have been severely affected. The number of nēnē, also known as the Hawaiian goose, is down to only about 200. These geese have suffered from poor foraging conditions, which scientists believe causes a low nesting rate, and high infant mortality because of predation and poor nutrition.

The hawksbill turtle has also suffered because mongooses eat the eggs. Only about a dozen of the turtles' nesting sites remain on the islands because beachcombers, campers, and wildlife often disturb the animals and crush their nests underfoot. Most poignantly, the hatchlings, which evolved to find the ocean by following starlight reflecting off the water, are now drawn instead by the light of new development projects toward land—where they die.

To help protect both the geese and the turtles, the Park Service and park volunteers are now monitoring nesting activities, protecting forage sites, and capturing predators.

Though difficult, controlling animals is easier than handling the mass of unwanted vegetation taking over at Hawaii Volcanoes. The 217,000-acre park ranges in elevation from sea level to nearly 14,000 feet and supports eight distinct ecosystems. 'Ōhi'a dominates all wet and dry forests below 4,000 feet. The most altered is the dry 'ōhi'a forests. In these areas, African and tropical South American grasses were introduced over the last two centuries for cattle and sheep. Unfortunately, those grasses burn easily, and increasing numbers of wildfires are wiping out natural grasses.

One strategy has been to create new plant communities. Native plants found at higher elevations, such as the aalii and the mamane, have a greater tolerance for fire and are being introduced to stabilize the 'ōhi'a forests. And NPS also uses herbicides as part of its restoration efforts. Despite some objections, Tim Tunison, chief of resource protection, says that "herbicides are a necessary tool to maintain or restore native ecosystems."

The native plants and animals of the five islands that make up Channel Islands National Park in California have also endured disruptions to their habitat because of pollution, the influx of domestic animals for ranching and game animals for commercial hunting, and the plants imported to support them. Nearly all the livestock has been removed, but feral pigs, rats, rabbits, deer, and elk remain distributed across the islands, overgrazing vegetation and competing with and preying on the park's 91 rare, threatened, or endangered plant and animal species.

The animal species hardest hit has been the endangered island fox. Because bald eagles, historically the largest birds on the islands, are not large enough to attack the island fox, the species evolved without either danger from or the ability to shield itself from aerial attack. But poison from the world's largest DDT dump—located in the channel between the mainland and the islands—along with hunting and other human disturbances killed off the islands' bald eagle population. The absence of bald eagles and the presence of a plentiful food supply of feral pigs then attracted mainland golden eagles that had never previously come to the islands; and these eagles are large enough

LAND APART *Continued*

to prey on the foxes, which are about the size of domestic cats.

The combination of golden eagle predation, the disappearance of vegetation that provides cover, and low birth rates in the species has caused a 90-percent decline in the island fox population over just the last four years. Its plight exemplifies the inability of specialized species to adapt with the speed and magnitude that is necessary when subjected to an onslaught of changing environmental factors.



RICH REID

On a hopeful note and in contrast to Hawaii Volcanoes, however, Channel Islands is set off from the mainland of California and not easy to get to. Once the park has been rid of its nonnative animals, Tim Coonan, the park's wildlife biologist, believes that the natural balance of predator and prey can be reestablished.

More difficult to control is the ongoing disruption caused by humans. Nearby commercial fishing targets large fish, diminishing populations, altering reproductive capacities, and depleting food supplies for such island residents as the sea otter. Airplane noise, from both small private planes flying illegally over the park and military over-



GEORGE H. HUEY

flights that sometimes cause sonic booms, disrupt nesting sites of seabirds, seals, and sea lions. As the principal breeding area for pinnipeds south of Alaska and the site of the highest density of seabirds in Southern California, these islands have become a refuge for shrinking populations, making their protection critical.

Instead of restoring predator-prey relationships, staff at Tallgrass Prairie National Preserve are working to balance the relationship between traditional ranching practices and the needs of a naturally functioning prairie. Possibly the only reason any of this large area of tallgrass prairie remains is because chert, a rock resembling flint found be-

neath the Flint Hills of Kansas, created rocky soil, unsuitable for most agricultural purposes except ranching.

Historically, bison, mule deer, pronghorn, and elk migrated across hundreds of thousands of acres, grazing the grasses and allowing vegetation to rejuvenate. Cattle and bison graze the area today and can be used as a tool for vegetation management. Eventually, John Donaldson, chief of resource management at Tallgrass Prairie, says he would like to see an initial herd of 20 to 30 young bison reintroduced to the preserve in an enclosed 1,000-acre section.

The preserve protects historic buildings and more than 10,000 acres of the old Z Bar/Spring Hill Ranch, but because local residents were opposed to federal land ownership, Tallgrass Prairie was acquired and will be managed through a public/private partnership. The Park Service, along with the National Park Trust, administers the site despite the fact that only up to 180 acres can be federally owned and the vast majority of the property is leased for cattle grazing until 2030. The National Park Trust has the option to buy out all or part of the lease at any time.

The new park is facing some challenges created by culture and traditions. In the past, for instance, *Lespedeza cuneata* was a popular plant with quail hunters because it provid-



STEVE JUNAK

The influx of domestic and game animals have had an adverse effect on Channel Islands' endemic species, such as the island fox and silverlace.

ed food and cover for the birds. The grass is not yet found in the preserve, but because the plant is aggressive and covers 60 to 80 percent of an area once it is established, it now poses a potential threat. Once it becomes established, it replaces native vegetation. In addition, for optimum grass production, ranchers have traditionally burned fields each spring when the plants germinate more easily. Fire is an integral element of the natural cycles of a prairie ecosystem, but before the arrival of European settlers those fires probably occurred only every three to seven years. Burning each year has changed the landscape.

"No one alive today has ever really seen the prairie the way it was before pre-European settlement," laments Donaldson. He says a longer burn cycle would allow the prairie to "really express itself; you'll see flowers like you've never seen."

In addition to the physical invasions at Tallgrass Prairie, the Park Service must work within the confines of the public/private partnership and a local culture that is not completely receptive to changes necessary for proper park resource management. Local landowners have expressed concerns that having bison brought to the preserve may spread brucellosis—a disease that can cause cattle to abort fetuses. And while some local residents believe that the preserve's interpretation should focus solely on the tradition of ranching, preserve management struggles to restore the natural and historic appearance and function of a tallgrass prairie.

One problem that each of these parks faces is finding adequate funding to continue and expand these activities. A systemwide user-fee program was initiated in 1998 on a trial basis, and money will run out by 2001 if it is not reinstated. Hawaii Volcanoes has been using 80 percent of its \$4 million in fees



The colorful butterfly milkweed grows in Tallgrass Prairie National Preserve in the Flint Hills region of Kansas.

STEVE MULLIGAN

gathered through this new initiative toward ecosystem restoration. The Park Service estimates that the captive breeding program for the island fox at Channel Islands will cost \$2 million over the next three years. And that total does not include removing the feral pigs, a project that cost \$10 million on just one of the park's islands, Santa Cruz.

As with the programs to restore native ecosystems, new funding opportunities are receiving renewed consideration. In Congress, Senators Bob Graham (D-Fla.) and Harry Reid (D-Nev.) have introduced legislation that would provide \$500 million annually to park conservation projects from offshore oil and gas-drilling royalties. And NPS has introduced its Natural Resources Challenge that aims to focus more agency spending on the types of projects going on at these parks. The funding goal for the Challenge program is \$100 million

over the next five years.

Given that half of the nation's plant and animal life are represented in the National Park System, the parks have a vital "core conservation area" function. Recognizing this, last year NPCA initiated a new program that will focus on protecting biodiversity in the national parks. The primary goals of this program include protecting and restoring parks to preserve a distribution and abundance of species and eliminating or reducing threats to park plant and animal communities.

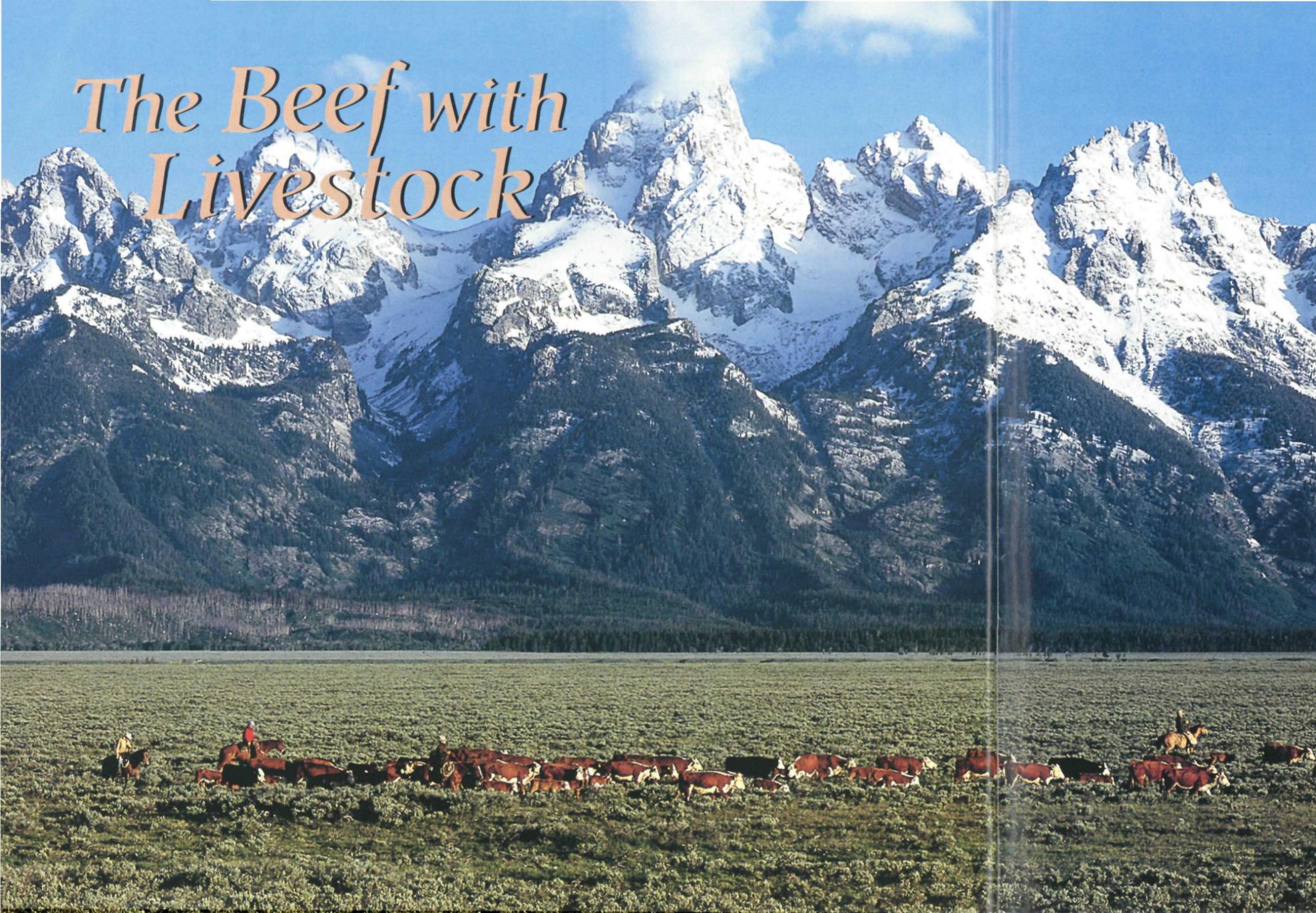
"National parks can be the heart and soul of protecting biodiversity at the ecoregion scale. Everglades, Great Smoky Mountains, Olympic, and Redwoods are just a few national parks that preserve biodiversity within ecoregions considered by many biologists and ecologists, as well as organizations such as the World Wildlife Fund, to have world-class importance," says Ron Tipton, NPCA's vice president for park resource

protection programs. Indeed, both Hawaii Volcanoes and Channel Islands have been designated International Biosphere Reserves because of the rich diversity of life that they harbor.

The daily battles that park staff face to protect these diminishing ecosystems have created outlooks that vary from cautious optimism to considerable hope. "When you're dealing with nature, you have to take your best shot and hope it works," Donaldson says. In Hawaii, where fences have become part of the natural landscape and the invasions are most acute, one might expect an expressed frustration. But Tunison says confidently that, based on his 17 years at this park, the battle is being won—and he's enjoying seeing it happen: "I want to see how it turns out."

ELIZABETH G. DAERR is news editor of National Parks magazine.

The Beef with Livestock



HENRY H. HOLDSWORTH

Grazing is allowed at about three dozen parks and preserves. Although the practice is legislatively mandated, it frequently causes conflicts with wildlife and natural resource policies. The clash is most apparent at Grand Teton National Park.

BY TODD WILKINSON

LAST AUTUMN, a traveler from Tuscany came to America with hopes of catching a glimpse of the "Wild West." His imagination whetted by the classic outlaw movie, *Shane*, Daniele Tiezzi decided to hike in Grand Teton National Park not far from where the motion picture had been made half a century earlier.

Yet as the young Italian walked through the park and posed for a photograph in front of the spectacular mountains, he was rudely awakened by

the clashing values of the Old and New Wests. Confronted by an angry Jackson Hole cowboy working for a local rancher, Tiezzi was ordered to leave because his presence, he was told, might frighten cattle grazing inside the national park boundary.

For wildlife biologist Franz Camenzind, who accompanied Tiezzi on the hike and who oversees the Jackson Hole Conservation Alliance in Wyoming, the incident provides proof that livestock still are treated as sacred cows in some parks—even when the domestic animals clash with native wildlife, the National Park Service's mission of land-

grazing inside their borders, and at least another four sites allow grazing through agreements with the Bureau of Land Management.

Even as the National Park Service works to change the policy—a tedious and expensive process—Congress sometimes works to continue it. Led by Sen. Pete Domenici (R-N. Mex.) and Rep. James Hansen (R-Utah), some members of Congress have tried to stall grazing reforms, in some cases authoring legislation that would solidify the grip of livestock grazing on public lands in the West.

But a growing chorus of prominent ecologists posits that no single human activity has negatively affected the arid West more than livestock grazing.

In addition to land, grazing has a tremendous impact on riparian areas and their inhabitants. Of the 12 Western states that have a state fish, eight are considered endangered mainly because of grazing.

A 1994 study by the National Wildlife Federation titled *Grazing to Extinction* found that grazing contributed directly or indirectly to a minimum of 340 species listed or becoming candidates for listing under the Endangered Species Act. In the arid West, the federally protected desert tortoise has been especially hard hit by grazing. Beginning this year, NPCA has made examination of the real costs of grazing in parks a primary component of its State of the Parks program, established to identify threats to biological diversity as well as the health of natural systems and the condition of historical parks.

Cattle grazing (above) conflicts with wildlife, including grizzly bears (right), at Grand Teton National Park.

scape preservation, and enjoyment for park visitors.

Although the National Park Service (NPS) is working to phase out grazing in some parks—notably Mojave National Preserve, Death Valley National Park, and Channel Islands National Park—others continue the practice and may in fact be extending it at parks such as Grand Teton. Some three dozen different parks and preserves began the 21st century with nonnative livestock

tle persist in these parks, the longer there is going to be conflict."

Jewett notes that some units of the system, such as Grant-Kohrs Ranch National Historic Site in Montana, were set aside specifically to celebrate the history of frontier-era farming and ranching, but they are exceptions.

The National Park Service is being forced to confront a prickly and politically volatile question: What legitimate presence, if any, should livestock have in parks?

Debra Donahue, a law professor at the University of Wyoming, is the author of a scathing critique of livestock grazing titled *The Western Range Revisited* (University of Oklahoma Press). Donahue is also an academically trained biologist.

"One of the only reasons that cattle remain in many national parks and many Forest Service wilderness areas is the incredible political clout that the livestock industry wields in Congress," she says. "There is little or no scientific justification that can be made for livestock grazing in parks."

In all cases where grazing persists, it is legislated by Congress. Compromises were struck to ease tensions over fears that new national parklands would be

"locked up" and unavailable for traditional local uses. Grand Teton provides a vivid example. The park was carved out of the picturesque valley of Jackson Hole when livestock still ruled the range. Over the years, many cattle allotments in Grand Teton have been phased out, and those that remain are



KEVIN D. DOBLER

supposed to end upon the death of the beneficiaries named.

Camenzind puts the Grand Teton impact in perspective. The park, he says, spends more than \$40,000 annually to maintain these allotments, and it receives about \$8,500 a year in grazing fees. The cost to graze the same cattle on private land in Jackson Hole would be about \$81,900, meaning that the ranchers enjoy more than \$70,000 in subsidies each year.

LIVESTOCK Continued

"And what does the public get?" Camenzind asks. "We get unnecessary conflicts between cattle and federally protected grizzly bears, which resulted in a grizzly being killed inside the national park. We got a very intensive and expensive surveillance of a wolf den in the national park because it was near the cattle. We get thousands of acres of national parkland infested with alien weed species and a corresponding depletion of biodiversity. We also get over 100 miles of fences in our national park, much of it crisscrossing major wildlife habitat and migration routes. In all, the arrangement results in an almost complete loss of winter forage on about 2,700 acres and a severe depletion of forage on another 5,600 acres. This is forage that should be available for buffalo, elk, pronghorn, and other wildlife."

Park spokeswoman Joan Anzelmo says the park has not ignored Camenzind's concerns.

"Grand Teton was born of extraordinary political compromise and one of the compromises involved the continuation of livestock grazing. Sometimes short-term compromise is necessary to accomplish long-term objectives."

George Helfrich, a management assistant in the superintendent's office who is working on an environmental review of grazing, says that grazing was established as a legitimate use in the park by Congress, which means the park itself cannot unilaterally act to end it. Scientists, he says, have differing views on whether cattle cause all of the problems asserted by Camenzind, but one thing is certain. As wolves and grizzlies continue to recolonize, conflicts with cattle are likely to increase.

Recently, park officials have made overtures about extending the leases for grazing in Grand Teton, arguing that helping to keep large ranches in the valley is important to protecting open space and wildlife habitat. If ranchers

lose access to grasslands inside the park, they say, the agrarians may have no other choice but to subdivide their pastures and pave them over with development. Currently, the park is in the midst of a congressionally funded study to determine the relationship between cattle grazing and the protection of open space and wildlife habitat surrounding it. Congress also is considering an ap-



JEFF FOOTIT



JOHN DITTLU

To protect threatened species like the desert tortoise (above), park officials at Mojave National Preserve are beginning to phase out grazing (top).

propriation to buy conservation easements on adjacent ranches that would benefit Grand Teton's bison, elk, and pronghorn.

"I say there are alternative ranching operations that could be adopted that would free up the parkland and give it back to wildlife," Camenzind says. "We could take the dollars currently used to subsidize the permittees [ranchers] and buy winter hay or pellets for the cattle."

"Instead we give the park forage to the cattle," Camenzind continues, "and buy winter feed for our elk and buffalo

on the National Elk Refuge. And throughout all of this, the permittees have made no guarantee that they would keep their ranches operating and in open space. I think protecting open space is as important as phasing cattle out of the park. I just do not accept that the two are inextricably linked."

Every park that has livestock grazing inherited it as part of the arrangement for the park's creation. Conservationists understand that deals were cut to assuage local citizens who opposed park designation; however, continuing the practice has merely extended a protracted struggle.

In desert parks such as Mojave National Preserve and Death Valley National Park, where precipitation is minimal, it might take hundreds of acres of land to sustain a single cow, where in other, moist parts of the country, a few cows can subsist on a single acre of green pasture. It means that in the desert, the limited forage that cows consume and the patterns of their movements can cause severe stress for other plants and animals.

In these two parks, as well as Great Basin National Park in Nevada, the Park Service is having success at eliminating what were once extensive grazing allotments, but the process is far from complete.

At Mojave National Preserve, which supports prime desert tortoise habitat, the preserve had been encumbered with livestock grazing leases on

1.25 million of its 1.6 million acres. Within the last year, according to John Reynolds, the western regional director of NPS, the Park Service has been working on a project that could allow NPS to buy out the first set of grazing rights and has received a significant commitment in private pledges to buy out the remaining rights.

At Death Valley National Park, the largest park in the lower 48, the situation is just as positive. According to NPCA's *Defending the Desert*, a report released last fall on the anniversary of

the California Desert Protection Act, the Park Service had eliminated two-thirds of the grazing in the park. Last year, the Park Service canceled the Last Chance grazing permit because of the rancher's lack of compliance with existing regulations. Additionally, the park is canceling grazing on parcels that connect to larger allotments on neighboring BLM lands. This would leave the park with only one area open to grazing.

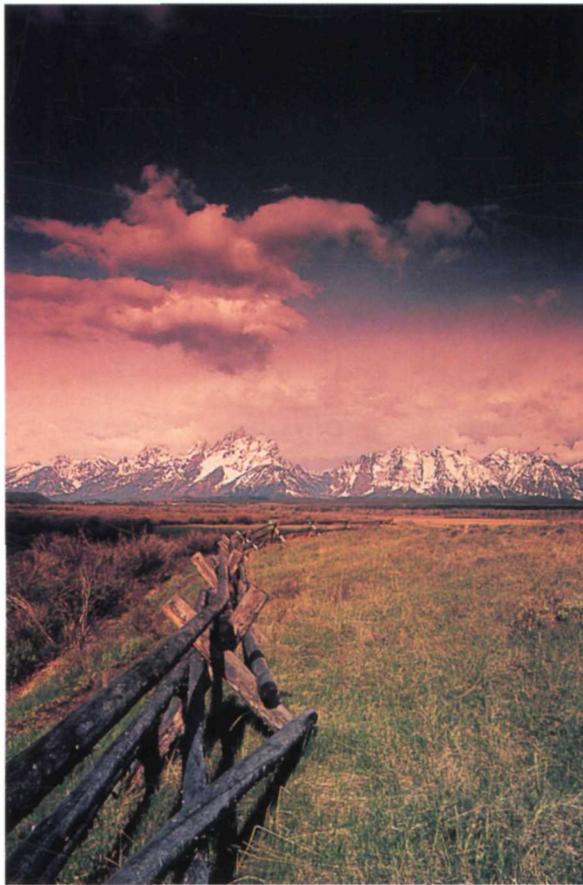
Studies collected on lands analogous to Mojave and Death Valley show a clear correlation between cattle and environmental destruction. The Park Service's own resource guidelines recognize "the pervasive quality of grazing impacts on park resources" and cite a long list of resource concerns, including vegetation changes, water quality degradation, and degradation of cultural resources.

Johanna Wald, an attorney with the Natural Resources Defense Council, says, "It is well established that livestock grazing can have significant adverse effects in arid environments like the Mojave National Preserve."

Unfortunately, individual park superintendents do not have the power to take action, says Reynolds. Title 36 of the Code of Federal Regulations, section 2.60, prohibits "the pasturing or grazing of livestock in a park area, except as specifically authorized by statute, as required under a reserved right, or as conducted as an integral part of a program to maintain an historic scene. In all the parks where we have cattle, it is authorized by Congress."

Although the hands of NPS personnel may be tied to some degree by Congress, Helen Wagenvoord, NPCA's associate director of the Pacific region, says the agency has an impressive arsenal of laws at its disposal to counter some of the worst effects of grazing. These include the Organic Act, the Endangered Species Act, and the National Environmental Policy Act.

Over the past few years, the Park Service has made some impressive gains in



KEVIN D. DOBLER

Some park officials at Grand Teton argue that supporting grazing in and near the park keeps ranchers from selling their property to developers.

eliminating grazing from some parks where it had been most entrenched.

"Where we have been working pretty diligently is trying to arrange situations where it is beneficial for the ranchers with grazing arrangements to phase out over time," says Reynolds. "Where we have had financial partners to help facilitate the transition, the success rate has been pretty high."

Reynolds cites the recent withdrawal of cattle from 46,000 acres in Great Basin in Nevada—although sheep grazing continues—after ranchers were compensated for their allotments. In January 2000, grazing also was phased out of the Cades Cove meadows in Great Smoky Mountains National Park in North Carolina and Tennessee after 70 years. These actions, in the East and West, are considered potential models for remedying the ongoing conflict with cattle.

NPCA's Southwest Regional Director David Simon says the land use history of Bandelier National Monument in

New Mexico demonstrates why intensive livestock grazing is incompatible with parks in the parched West. In arid environments, cattle have especially insidious effects because they reduce native grasses and their hooves break open the thin cryptogamic crust that anchors native plants and serves as a protective layer against wind and water erosion.

In 1879, 140 cattle were grazed in the entire state of New Mexico. Four years later, aided by the arrival of the railroad, which could ship animals to market, there were 1 million head, and a decade after that, millions more swarmed public lands including the landscapes of future parks.

"In Bandelier, the scars caused by cattle, sheep, and burro hooves are written deep into the land," Simon says. "Many believe the park is in intensive care, suffering from a combination of grazing, climate change, and fire suppression. The last burros were pulled out of Bandelier in the 1970s, and 20 years later the

park is beginning to figure out how to grapple with all the problems," says Simon. "Overcoming the wounds is going to cost a lot of money, but who should be responsible for fixing it? It's like a Superfund site where nobody wants to pay the bill."

In response to public pressure, the Park Service has assigned Kathy Davis, a resource specialist based in southern Arizona, to draft a report on park grazing issues that could form the basis of a national management policy.

For tourists like Daniele Tiezzi, any reforms will not occur soon enough. He now realizes that the frontier mentality that shaped cowboy classics is not a fiction. In the "Wild West," including some of America's finest national parks, the jingle rings true: Cattle is king.

TODD WILKINSON lives in Bozeman, Montana, and is a frequent contributor to National Parks. He last wrote about the decline of the California sea otter population.



A San Francisco Treat

Known for its rich history, the city offers a variety of museums as well as national parks.

BY WILLIAM A. UPDIKE

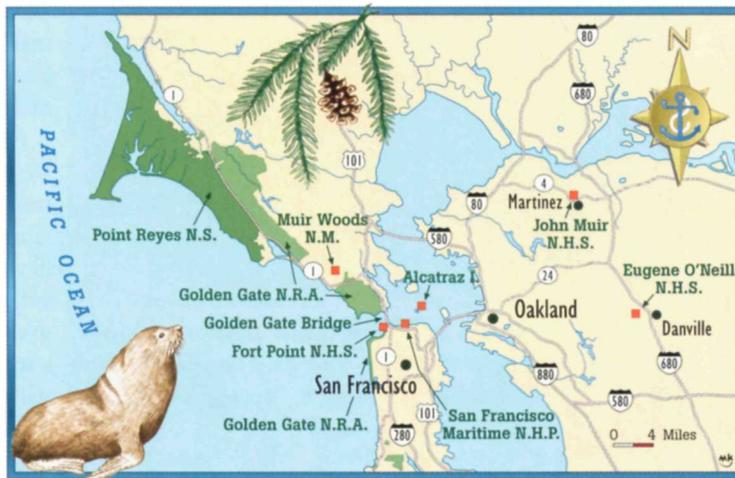
ALTHOUGH Tony Bennett never crooned that he left his heart in the national parks in and near San Francisco, he might as well have. The national parks are intrinsic to the history and culture of the bay area and greatly contribute to the aura of the beautiful Northern California city.

Primarily known for its cultural and political contributions in the 20th century—labor movements, jazz, Beat literature, and the Hippie movement—San Francisco also boasts a long historic heritage of habitation by native peoples, colonization by the Spanish, sea trading, and the famous gold rush.

The people of San Francisco have survived numerous hardships, including the ruinous earthquake of 1906, and built one of the most beautiful and interesting cities in the world. The famous streetcars clang up and down the city's hilly streets. Cars descend past gardens abounding in flowers on the curvilinear Lombard Street, often called the "crookedest street in the world."

The city supports many world-class art and science museums as well as one of the few photography museums in the country, the Ansel Adams Center for Photography. In addition, the bay area

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



has a variety of national parks within easy driving range that make real the natural, cultural, and historical heritage of the city in which many have left their hearts.

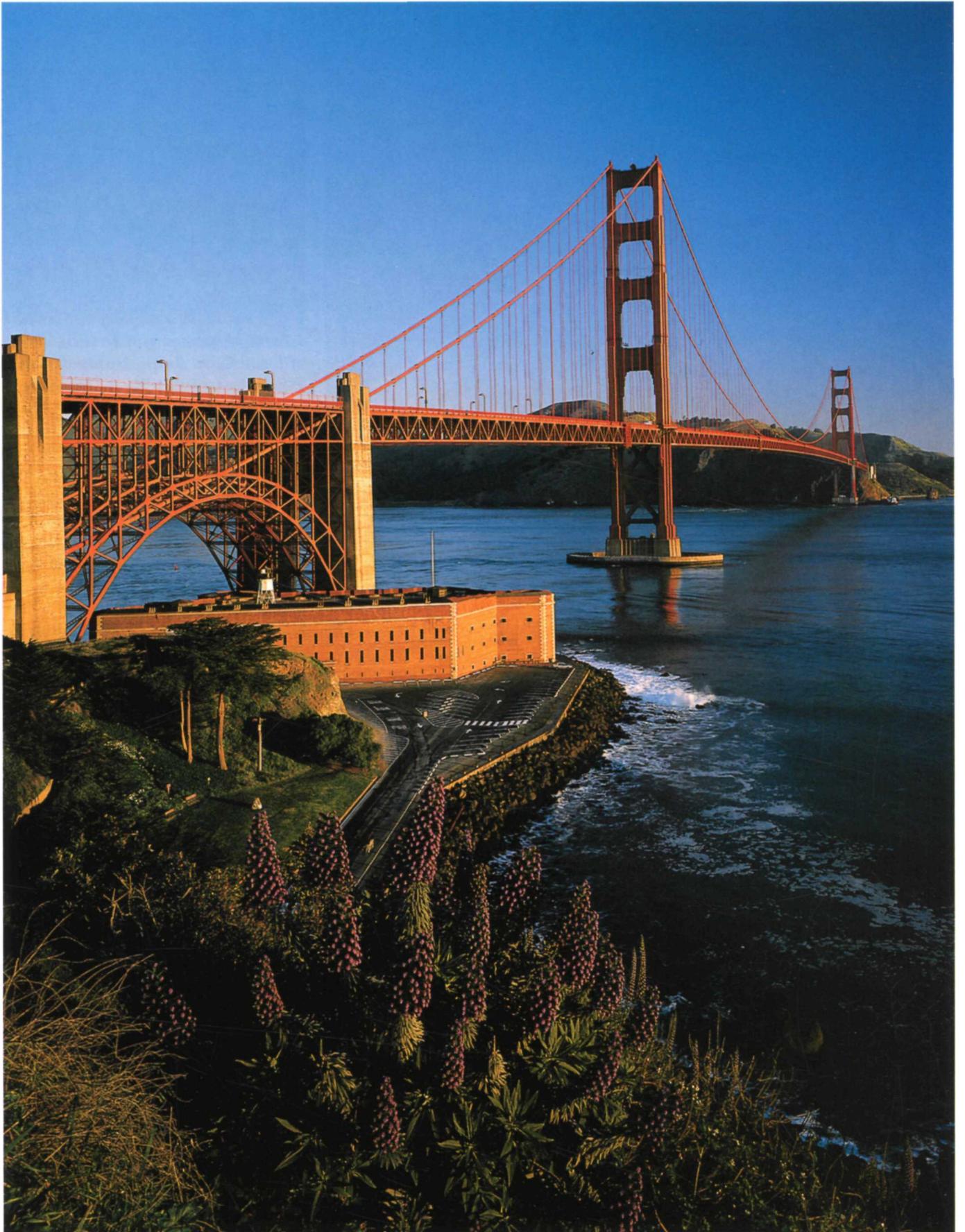
Golden Gate National Recreation Area

One of the largest urban national parks in the world, Golden Gate National Recreation Area (GGNRA) is nearly two and one-half times the size of San Francisco and boasts 74,000 acres of land and water and approximately 59 miles of coastline. Within its boundaries, park explorers discover a wealth of ecological marvels and historical information, including approximately 1,250 historic buildings. The park is exceptionally diverse. Majestic old-growth coastal redwoods, second-growth forests, and grasslands provide the setting for archaeological sites, ranch houses, and military fortifications.

Mondays through Fridays visitors can begin a tour at park headquarters in Fort Mason. The land on which Fort Mason rests was originally known to Spanish settlers as Punta Medanos (Point Sand Dunes), which described the dune landscape of that time. Throughout its history, various military batteries were constructed at the site, including five bronze guns erected by the Spanish in 1797 that were never fired, and a 12-gun force placed by the Union Army in 1863 during the Civil War.

Following martial law after the 1906 earthquake, which lasted nearly 75 seconds and registered an 8.2 on the Richter scale, a refugee camp sprang up at Fort Mason. After the Japanese attack on Pearl Harbor, Fort Mason served as the headquarters for the San Francisco Port of Embarkation, which channeled supplies—nearly 23 million ship tons of cargo—and troops—more than one and a half million passengers—to the Pacific during World War II. Headquarters' hours are 9 a.m. to 5 p.m. weekdays. For more information, call 415-556-0560.

Going east from Fort Mason and the Aquatic Park, where many of the ships managed by San Francisco Maritime National Historical Park (see sidebar) are docked, visitors stroll along San Francisco's famous Fisherman's Wharf



Fort Point rests in the shadow of the towering stone pilings and metal beams of the Golden Gate Bridge. The Marin Headlands loom in the distance.

GREG PROBST



WILLARD CLAY; JOHN ELK

A “sea” of lupines grows on the cliffs of Point Reyes (left). Visitors descend 300 steps to Point Reyes Lighthouse.

to arrive at the ferries that travel to Alcatraz Island. A round-trip visit to Alcatraz takes about two hours, dock to dock. Guided tours that explain the island’s history as a pelican roost, a military fort, and a prison are available. For ticket reservations, call 415-705-5555.

West of Fort Mason, follow the 3.5-mile walking/biking trail that runs along the bay to Fort Point National Historic Site (see sidebar).

South of Fort Point, visitors can explore some of the city’s finest beaches and natural landscape. Swimming is not recommended because of strong currents. For the most natural experience, follow the Coastal Trail, which

provides views of various military fortifications and stunning vistas of the Pacific Ocean.

Near Lands End sits the famous Cliff House and the Sutro Baths. Cliff House has offered refreshments and views of the Pacific Ocean, the Marin coast, and Point Reyes (on clear days) since 1863. It is an excellent place to view marine birds and mammals, including the seals that frequent Seal Rock. The nearby Sutro Baths are ruins of an elaborate 24,000-person swimming facility that burned down in the 1960s.

Outside of the city, north of Golden Gate Bridge, the Marin Headlands offer military batteries, windy ridges, pro-

tected valleys, rocky coastal cliffs, and excellent beaches. Many miles of hiking trails meander through the headlands and provide visitors with an escape from the bustle of the city. For the nocturnal, locals recommend hiking the Tennessee Valley trail on a moonlit night to Tennessee Beach. Nearby Muir, Rodeo, and Stinson beaches, one of the few recommended for swimming, are also excellent destinations.

Point Reyes National Seashore

Farther north on Highway 1, visitors can explore Point Reyes National Seashore—an excellent place for whale watching, wildflower viewing, beach lounging, hiking, and picnicking.

Visitors can learn firsthand about the

San Francisco Maritime National Historical Park charts the history of West Coast seafaring. Various examples of historic ships can be seen, including three steamers, the 1890 *Eureka*, the 1907 *Hercules*, and the 1914 *Eppleton Hall*, and three sailing ships, the 1891 *Alma*, the 1886 *Balclutha*, and the 1895 *C.A. Thayer*. Admission is free to the museum, which is open 10 a.m. to 5 p.m. daily. For more information, call 415-556-3002.

Fort Point National Historic Site stands in the shadow of the Golden Gate Bridge as an example of a mid-19th-century U.S. Army fort. Built between 1853 and 1861, the fort rests on land that was the site of an earlier Spanish fort, Castillo

de San Joaquin, built in 1794 to protect the Presidio. The site is open daily from 10 a.m. to 4:30 p.m. For more information, call 415-556-1693.

Eugene O’Neill National Historic Site commemorates the home where one of the country’s greatest playwrights wrote many of his plays. From 1937 to 1944, the four-time Pulitzer Prize winner wrote some of his most meaningful autobiographical plays—*The Iceman Cometh* (1940), *Long Day’s Journey Into Night* (1941), and *A Moon for the Misbegotten* (1943). Visitors can learn about the literary and personal life of the legendary author at the park. The park is open Wednesday through Sunday. Reservations

are required for tours, which are at 10 a.m. and 12:30 p.m. For more information, call 925-838-0249.

John Muir National Historic Site celebrates the life and times of the famous conservationist. With his wife, Louie Strentzel, and their two children, Muir lived in the Alhambra Valley, where the park is now located. In the family home, Muir did much of his writing and scientific research. He returned to this house following his many travels into natural settings, learning and thinking about nature in what he called the “university of the wilderness.” Visiting hours are 10 a.m. to 4:30 p.m. Wednesday through Sunday. For more information, call 925-228-8860.

NPCA Bookshelf

effects of plate tectonics at the entrance to Point Reyes, which rests along the San Andreas Fault. Displays at the Bear Valley Visitor Center explain the sea-shore's geologic and historic heritage. Those interested in backcountry camping at one of the four campgrounds must obtain permits at the center that are good for four nights. Reservations can be made up to three months in advance by calling 415-663-8054, Monday through Friday, 9 a.m. to 2 p.m.

Those travelling by automobile can explore the various park roads that run through or near pastures, chaparral ridges, forests, and meadowlands. Pierce Point Road, which can be reached from Bear Valley Road, ends at a range that is home to about 500 tule elk. The animals roamed freely on the island before 1860, and more recently, the park released about 25 free-ranging elk near Coast Camp.

The Sir Francis Drake Highway provides access to Point Reyes Beach and the famous Point Reyes Lighthouse. The lighthouse, which is open 10 a.m. to 4:30 p.m. Thursday through Monday, can be reached by descending 300 steps. From January through April, on weekends and holidays, the road to the lighthouse is closed to auto travel, weather permitting. However, a shuttle bus is provided that costs \$3.50 to ride. Children 12 and younger ride for free.

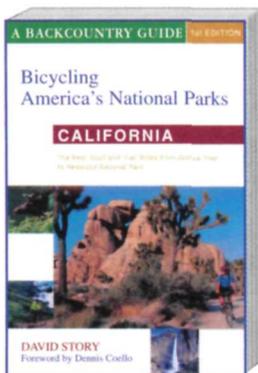
Near the lighthouse, Sea Lion Overlook is an excellent place to view harbor seals and sea lions. During the winter, elephant seals, which often migrate as far as the Aleutian Islands, can be seen mating at Chimney Rock. The elephant seals also return to molt during the summer months.

Weather at Point Reyes is extremely variable, and visitors should bring a variety of clothing. For more information, call 415-663-1092 or visit www.nps.gov/pore.

Muir Woods National Monument

Muir Woods National Monument is north of the city on scenic Highway 1. Named for conservationist John Muir, the monument contains excellent ex-

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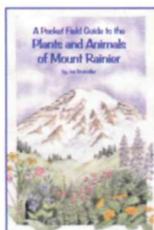
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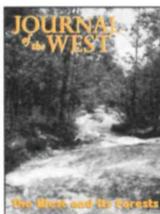


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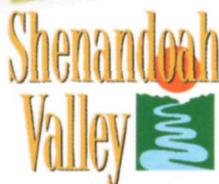
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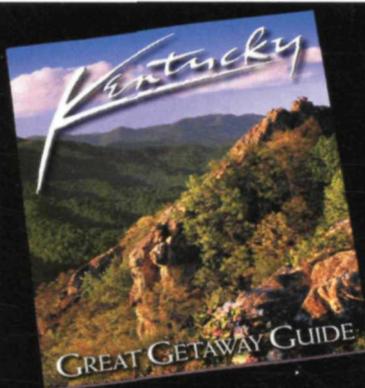
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amples of towering coastal redwoods—some reaching higher than 250 feet, the thickest being nearly 14 feet across, and the oldest, at least 1,000 years. Because of its inaccessibility, the old-growth forest was spared in the 1800s from the logging that occurred in that century.

In 1905, William Kent, who later became a congressman and co-authored the bill that established the National Park System in 1916, and his wife, Elizabeth Thacher Kent, bought 295 acres of land for \$45,000 and donated it to the federal government.

President Theodore Roosevelt declared it a national monument in 1908. Roosevelt suggested naming the monument after Kent, but Kent preferred that it be named after Muir (see sidebar), who called it the “best tree lover’s monument that could be found in all the forests of all the world.”

Visitors can follow a gentle loop trail through the redwoods in the Bohemian and Cathedral Groves to see the natural monoliths, or follow longer trails that run from the Marin Headlands through Mount Tamalpais (Mount Tam to locals) State Park.

Although wildlife is fairly scarce in the area because of the meager undergrowth found beneath the redwoods, visitors may find blacktail deer, Steller’s jays, warblers, kinglets, Sonoma chipmunks, or various reptiles and amphibians. Muir Woods also provides refuge for five endangered species: the northern spotted owl, silver salmon, steelhead trout, western pond turtle, and the red-legged frog.

To avoid crowds, the best time to visit the park and view wildlife is from October to March, but be sure to dress for rain and windy weather. Park hours are 8 a.m. to sunset daily. For more information, call 415-388-2595.

Accommodations

Reservations are recommended in San Francisco. For general information on hotel reservations, call the San Francisco Convention and Visitors Bureau, 415-391-2000. The city also offers a variety of hostels, listed at www.hostels.com/us.ca.sf.html, and bed & breakfasts, www.ptreyes.com.

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Petrified Pilfering

More than 24,000 pounds of petrified wood have been removed every year from Petrified Forest.

BY WILLIAM A. UPDIKE

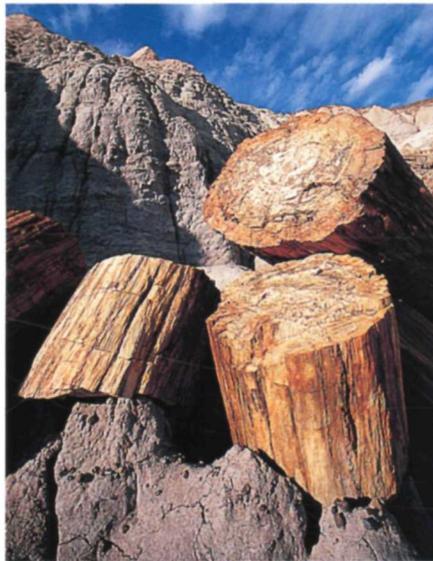
GUILT IS A POWERFUL motivating force. Historically, it is responsible for wars, social transformations, political upheavals, lost loves. The great Chinese father of Taoism, Lao-tzu, said: "There is no calamity greater than lavish desires. There is no greater guilt than discontentment. And there is no greater disaster than greed."

The lavish desires of which Lao-tzu spoke often inspire people to act unethically, such as removing petrified wood from national parks. Estimates say that 12 tons of petrified wood is pilfered per year from Petrified Forest National Park in Arizona, a statistic that has motivated NPCA to place the park on its Ten Most Endangered list this year (see page 28).

The remorse that follows the removal of wood has motivated some of the guilty ones to return approximately 600 pounds per year. Much of the returned wood is accompanied by anonymous, apologetic letters.

One letter from a young person explains: "My sister and I took this wood with permission from my father the summer of 1995. I went back this summer and learned how much that one piece hurts, so I know that all of these would really be missed in the future. I learned that even if your parents say it's all right doesn't mean it is." Still another reads, prophetically, "Like everyone who visits the park, I saw the film and heard the lectures about taking pieces of the park. And, in 1986, like a bonehead, I did it anyway. Sorry."

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



Massive logs of petrified wood rest at Blue Mesa in Petrified Forest.

Other letters refer to what could be called, as in an Agatha Christie novel, "The Curse of the Petrified Forest." A letter signed "Italy" explains: "Ever since our holidays in the States a few years ago, our family has been suffering all sorts of sad events and misfortunes. Then it suddenly occurred to me that, in spite of the Federal Law Warning, we had been tempted to collect a small fragment of petrified wood... Now we are sending it back to the national park, so that it can return to the only place it belongs. We also hope this will help us find the serenity and happiness that lately we seem to have lost."

Unfortunately, the returned wood cannot be repositioned. Park rangers have no way of knowing exactly where the wood came from, and do not want

to inhibit scientific research by displacing a piece. Still, some visitors fail to resist the urge to abscond with a piece of the approximately 225-million-year-old petrified wood.

The wood weighs about 168 pounds per cubic foot and has a hardness of about seven on a one-to-ten scale. It was formed during the end of the Triassic Period, when coniferous trees of that time, which soared up to 200 feet high, fell into the swamp, and became waterlogged with sediments rich in silicon. The silicon combined with oxygen to replace the organic wood with quartz. Other elements, such as iron, cobalt, chromium, carbon, and manganese, provided the rich multi-colored aspect of the crystallization.

Petrified wood was used for thousands of years by native peoples who resided in the area. The indigenous Navajo believed the logs were bones of the monster Yietso, the "great giant" their ancestors killed when they arrived in the Southwest. To them, the removal of wood by tourists to place on a mantel somewhere may have seemed like an odd phenomenon. In fact, Lieutenant John F. C. Hegewald, who was sent in 1879 to collect petrified logs for the Smithsonian Institution, said the Navajo "thought it strange the 'Great Father in Washington' should want some of the bones of the 'great giant' their forefathers had killed when taking possession of the country."

Park employees hope that, whether motivated by guilt or fear of the "curse," visitors will think twice before removing the irreplaceable wood. 🐾



A Fish Running Out of Water

Diminished waterflows through several national parks are impeding the recovery of the humpback chub.

BY ELIZABETH G. DAERR

IN THE EARLY 1900s, some residents along the Upper Colorado River Basin relied on the river's abundant supply of native fish to feed them through hard times. Today, many of those same fish are endangered. Four of the Upper Colorado River's 14 native fish—the Colorado pikeminnow, the razorback sucker, the bonytail chub, and the humpback chub—are listed as federally endangered species. And two others are under consideration for the federal list. The plight of the humpback chub is just one example of the nationwide dilemma many native fish face.

The humpback chub, named for the large hump above its head, was federally listed as endangered in 1967 because of a combination of factors: altered river habitats caused by dams throughout the West, changes in stream temperature, diminished food availability because of altered water, and competition from introduced nonnative fish.

Scientists believe that the fish evolved 10,000 years ago to adapt to the fast-moving, large rivers that carved deep canyons through the West. Its hump was an evolutionary result and creates resistance in heavily flowing water, pushing the fish down to the calmer waters at the bottom of the river where they can move more easily. It uses its large fins to glide through slow-moving areas to feed on insects that become trapped in water pockets. Olive green and silver in

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



The humpback chub is one of four endangered fish in the Upper Colorado River.

color, the humpback may grow to 20 inches long and live up to 30 years.

Because of scarce records and the humpback's similar appearance to the more historically prevalent bonytail chub, scientists are not sure how many humpbacks once swam the 1,700-mile river basin from Wyoming to the Pacific. Today, three of the seven remaining populations inhabit waters of the National Park System. The largest population is found in and around Grand Canyon National Park in Arizona, where the U.S. Fish and Wildlife Service (USFWS) estimates there may be as many as 10,000 fish. Two smaller populations are hanging on in Dinosaur National Monument, Colorado, and Canyonlands National Park, Utah. The Fish and Wildlife Service does not have estimates for the humpback chub's total population.

National park protection does not ensure the species' survival. Waterflows through those parks are regulated by the hundreds of dams, diversions, and

barriers that supply water for human populations in Wyoming, Colorado, Utah, Arizona, Nevada, New Mexico, and California.

Chubs also need relatively warm water, but some of their nonnative competitors, such as brown trout, thrive in the cold water that is released from dams. Deep reservoirs decrease the amount of surface area that collects solar energy, which heats the water.

As part of the species' recovery plan, effects of diminished waterflow are being addressed in areas such as the Flaming Gorge Dam, on the Green River in Wyoming—one of the Colorado River's tributaries. USFWS is expected to release a Biological Opinion this year for recommended waterflow and temperatures to protect the endangered fish. But Mark Peterson, NPCA's Central Rockies regional director, says that the draft plan indicates that the agency does not outline the necessary steps to protect the endangered fishes of the Colorado River.

"Recent recommendations are seriously inadequate to restore the riparian habitat of this stretch of the river and the endangered fish species found here, mostly because of power industry influence," Peterson said.

Bob Muth, a Fish and Wildlife Service fishery biologist for the Recovery Implementation Program, says that restoring fish habitat is vital.

"It's really the canary in the coal mine theory," he says. "These endangered fish are an overall indicator of the environmental health of the ecosystem."

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BY WILLIAM A. UPDIKE



Letters Call for Snowmachine Ban in Denali

►Denali National Park received more than 6,100 responses to a request for comments on the park's proposal to ban snowmachines in the original 2-million-acre "core" of the park. Nine out of every ten comments supported the ban.

Before the passage in 1980 of the Alaska National Interest Lands Conservation Act (ANILCA), snowmachine use was highly restricted, and winter ranger patrols were conducted by dogsled. Following enactment, which added another 4 million acres to Denali, the Park Service continued to manage the area within the original park boundaries for nonmotorized use. Snowmachines were allowed on the land that was added in 1980.

Snowmachine enthusiasts have argued that ANILCA opened the "old" park to snowmachine use and challenged the Park Service in court. The judge recognized the National Park Service's authority to regulate motorized uses in Denali, but ruled against its closure of the 2-million-acre core of the park based on procedural grounds. The Park Service has since addressed the procedural concerns and issued a formal regulation to permanently close Denali wilderness to snowmachines.

Supporters of the ban, including NPCA, point out that 95 percent of all public lands in southcentral Alaska are open to snowmachine use. They argue that Denali's wilderness is the only place in Alaska's interior where wildlife populations have been allowed to evolve free from the environmental degradation and noise pollution caused by recreational snowmachines.

LWCF Rally Held in the Shadow of the Capitol

►Democracy lives. Those who mourned its demise would have been heartened to see a rally that took place March 1 on the steps of the Capitol.

The rally, which was intended to show support for legislation that would permanently fund the Land and Water Conservation Fund (LWCF) as well as other land and historic conservation initiatives, was attended by hundreds of cheering supporters, including NPCA staff and board members. Numerous senators and representatives spoke in support of the bill that would provide \$2.8 billion annually to fund parks, wildlife, and a variety of other conservation programs—with \$900 million going to LWCF.

Since its enactment in 1964, LWCF has been responsible for the acquisition of more than 5 million acres of land and water resources and has made more than \$3.2 billion in matching grants to the states. LWCF is responsible for preserving lands in many national parks, including Denali and Everglades.

The current bill, the Conservation and Reinvestment Act, was crafted by Rep. Don Young (R-Alaska) and Rep. George Miller (D-Calif.), and is cosponsored by more than 300 other representatives. Senate Energy and Natural Resources Committee Chairman Frank Murkowski (R-Alaska) and Sen. Mary

Landrieu (D-La.) have introduced parallel legislation in the Senate.

Many of the members of Congress who spoke at the rally focused on the importance of protecting lands for present and future generations. "As my grandfather used to say, we don't inherit the Earth from our parents, we borrow it from our children," said Rep. Mark Udall (D-Colo.).



Dillon Receives Mather Award

►On March 14, NPCA presented Constantine J. Dillon, superintendent of Fire Island National Seashore, with the 2000 Stephen Tyng Mather Award for his work on the preservation of natural resources at the seashore.

Dillon labored to keep the U.S. Army Corps of Engineers from implementing a shoreline stabilization project that would have cost taxpayers about \$50 million

and inhibited the formation of naturally shifting sand dunes. Dillon's actions in regards to the shoreline restoration plan caused his job to be threatened.

"Constantine Dillon exemplifies the type of persistence a Mather award winner must have," said NPCA President Thomas C. Kiernan. "He placed the welfare of the park above his own and fought for what was best for the resource against strong opposition."

The \$2,500 award, named after the first director of the National Park Service, recognizes individuals who have demonstrated initiative and resourcefulness in promoting environmental principles and protecting the natural resources of a park in the face of adversity. The award is given out yearly.

A Million NPCA Clothing Items Sold in Japan

▶Japanese textile manufacturer Sumikin Bussan recently announced its 1-millionth sale of clothing that bears the NPCA logo and trademark.

NPCA clothing is sold in more than 150 stores in Japan. Many types of outdoor clothing are sold, including backpacks, hats, scarves, Polartec jackets, and heavy outdoor jackets.

Sumikin has been selling merchandise with a United States national parks theme and the NPCA logo for five years. Sales generate licensing royalties for NPCA's park protection programs.

"Sumikin and our loyal customers in Japan are

proud to support NPCA and participate in the conservation of parks in the United States," said Dick Yamauchi, Sumikin's manager of textile project development. "They are an important heritage of the Earth."

Zion Trip Called A Success

▶NPCA members and Central Rocky Mountain Regional Director Mark Peterson recently met with Zion National Park officials to discuss the park's proposed management plan.

The one-day tour of Zion, which was attended by 38 people, was intended to inspire public debate about the draft of the plan that will affect park officials' decisions for the next 20 years. The tour, which was

the first of its kind sponsored by NPCA and coordinated with the Park Service, was filled to capacity.

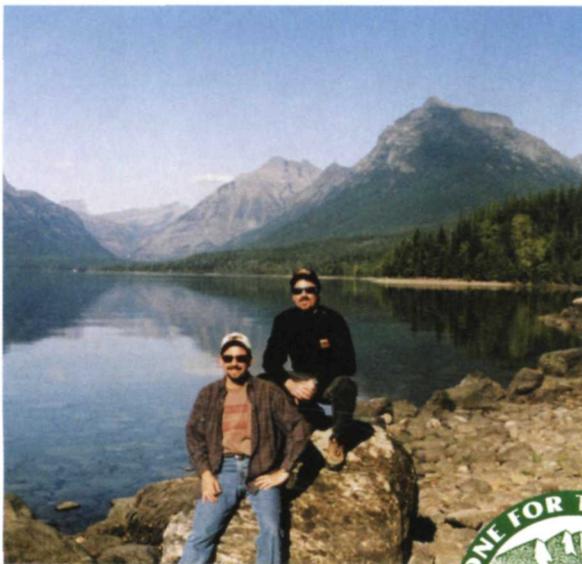
Peterson commented on the trip's success. "The trip made the plan more understandable, more alive, and more real for the public," he said. "NPCA is concerned about some of the alternatives in the plan. It is vital that the public respond to some of these problems," he added.

The release of the final management plan is expected sometime later this year.



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40	\$ 133	\$ 175	\$ 213	\$ 253	\$ 298
45	\$ 190	\$ 243	\$ 290	\$ 348	\$ 418
50	\$ 255	\$ 320	\$ 428	\$ 495	\$ 643
55	\$ 360	\$ 418	\$ 585	\$ 1,280	\$ 2,618
60	\$ 503	\$ 608	\$ 880	\$ 4,313	\$ 4,313
65	\$ 818	\$ 983	\$ 1,970	\$ 5,400	\$ 5,400
70	\$1,363	\$2,010	\$ 3,820	\$ 7,055	\$ 7,055
75	\$2,613	\$ 5,158	\$ 6,840	\$ 9,500	\$14,613

Male Premiums

Age	10 YEAR	15 YEAR	20 YEAR	25 YEAR	30 YEAR
35	\$ 115	\$ 143	\$ 183	\$ 243	\$ 290
40	\$ 145	\$ 193	\$ 258	\$ 340	\$ 410
45	\$ 210	\$ 305	\$ 385	\$ 480	\$ 578
50	\$ 330	\$ 495	\$ 600	\$ 730	\$ 1,193
55	\$ 500	\$ 695	\$ 825	\$ 1,910	\$ 3,333
60	\$ 783	\$ 1,123	\$ 1,265	\$ 5,023	\$ 5,023
65	\$1,330	\$ 1,790	\$ 3,130	\$ 6,470	\$ 6,470
70	\$2,435	\$ 3,658	\$ 5,370	\$ 8,518	\$ 8,518
75	\$4,105	\$ 8,100	\$ 8,100	\$11,323	\$20,488

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