

National parks

The Magazine of
The National Parks
Conservation
Association

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Restoring Coral Reefs
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National parks

Vol. 75, No. 9-10
September/October 2001

The Magazine of the National Parks
Conservation Association

FEATURES

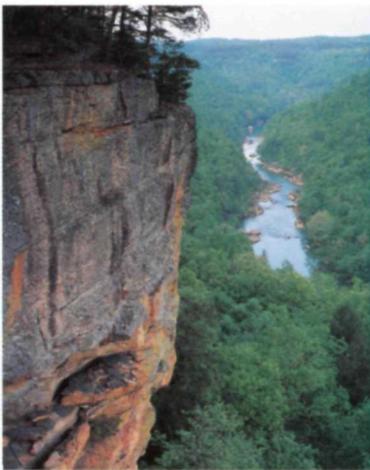
18 Bringing Up Coral
Coral reefs are among the most diverse and endangered ecosystems in the world. From ships running aground to global climate change, the number of problems facing them is staggering. Two national park sites have begun creative efforts to save and even reconstruct reefs.
By Steve Hymon

23 The Corps of Conservation
The Civilian Conservation Corps planted more than a billion trees, helped curb erosion in parks and forests, and built hundreds of log cabins in a variety of state and national parks, including Shenandoah. The program, launched by President Roosevelt during the Great Depression, provided much-needed jobs to millions of young men.
By Phyllis McIntosh

28 Nanuq of the North
Throughout their range, including Alaska, polar bear populations are healthy and stable. Yet these animals require vast, undeveloped landscapes to thrive. That need, plus a low reproduction rate and relatively small numbers, makes polar bears vulnerable to human intrusion and industrial development—challenges that could affect the bears' future.
By Bill Sherwonit



COVER: One scientific document predicts that, if present conditions continue, 70 percent of the world's coral reefs will disappear by the year 2050. Awareness is building. Photo by Steve Simonsen.



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OUTLOOK

Making the Grade

The advisory board encourages the Park Service to embrace its role as educator and conservator.

RECENTLY NPCA graded the Bush Administration on its early performance regarding the national parks. The president received a "D" in large part because of his administration's initial policies that may lead to worsened air quality, drilling adjacent to parks, expanded snowmobile use, fewer dollars for endangered species, and a funding package directed primarily toward building and road construction. Even though some of those buildings are sorely needed to house nationally significant artifacts, a construction and maintenance fund should not be the sole focus of additional Park Service money.

For decades, the National Park Service has lacked the funds needed to protect adequately the wildlife, landscapes, and historic and cultural landscapes within the park system. President Bush has proposed to correct this problem by providing \$4.9 billion for park maintenance. This commitment could solve many of the threats to the natural and historical resources that have plagued the parks, but only if more money is directed to programs designed to enhance resource protection and visitor education. These views are borne out by the findings of the National Park Service Advisory Board, which recently released



its 20-year vision for the national parks.

Why do we value national parks? What do we find meaningful and memorable about a trip to a park? Education and understanding the nation's history in a meaningful way are among the answers provided by the advisory board in its *Rethinking the National Parks for the 21st Century*.

The advisory board encourages the Park Service to "embrace its mission, as educator," and conservator of the rich diversity of species found in the parks. The report also encourages the study of America's past and suggests that the Park Service actively acknowledge the connections between native cultures and the parks.

To satisfy this goal, the Park Service needs significant funding increases for education and resource protection, not for a road and building network. Although there are clear needs in this category, such as better facilities for some of our historic collections, not all of President Bush's increases should go to infrastructure. We strongly encourage the president to embrace and fund the vision outlined by the advisory board. Vigorously pursuing this vision will move the president's grade from a "D" to an "A."

**Thomas C. Kiernan
President**

National Parks

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ABOUT NPCA

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

WHAT WE DO: NPCA protects national parks by identifying problems and generating support to resolve them.

WHAT WE STAND FOR:

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

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

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

inspires individuals to help 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.

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

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



EDITOR'S NOTE

Restoring Reefs

TRUNK BAY OFF VIRGIN Islands National Park in St. John has the idyllic look of a vacation paradise. The turquoise water laps up to a nearly white sand beach, providing a soothing contrast to the lush green foliage on shore. But the picture beneath the surface is not so soothing. Don a snorkel and fins and dip below the surface and brightly colored sergeant majors, clown, trigger, and parrot fish can be seen swimming around a reef that supports a variety of coral. But a closer look from a practiced eye might reveal that something is missing. Not all of the fish that once swam the reefs can be found in as great numbers as they once enjoyed.

Over the past 20 years, reefs, including those found in ten national parks, have suffered from a variety of problems. Ships and boats run aground or drop anchors on coral. Hurricanes—increasing in number because of climate change—tear them apart. Chemical spills, soil eroding from bad land practices, disappearing habitats that provide nurseries for reef fish, and overfishing all play a role in the destruction of the reefs, among the most diverse habitats in the world.

Coral reefs in particular and marine fisheries in general are suffering from years of overuse. But there is some good news. Our cover story (see page 18) explores two programs in national parks that are working to restore reefs. Fortunately, scientists such as Ginger Garrison, with the U.S. Geological Survey, and Richard Curry, with the Park Service, have initiated innovative ways to restore and repair coral. Their efforts are welcome, and at some point in the future, perhaps, these efforts could be expanded or even more important, would no longer be needed.

Linda M. Rancourt
Editor-in-Chief



Electricity, Gasoline, Oil Drilling

Electricity Use at Parks

If turning lights off is a way to reduce the amount of coal-fired electricity use [Editor's Note, May/June 2001], why not lobby to eliminate electricity use in campgrounds at national parks?

All you have to do is pay \$20 a night, and you can use all the electricity you want. The national parks should set an example for all.

Jan M. Mider
Lakewood, CO

Gasoline Consumption

I read with interest your article ["Push to Drill in Alaska Growing," May/June 2001], as I have all the other magazine, newspaper, and media releases on the subject.

The one thing that has been conspicuously absent is a discussion about why we consume so much oil. What are all the factors involved in consumption? I

have never seen a discussion by anyone about conservation dealing with oil consumption.

Here in California, people are driving faster than ever on the freeways. The speed limits were increased several years ago to what they were when gasoline was cheaper. But we're not slowing down, even with gasoline prices at record highs. People here in San Diego are averaging about 80 mph on the freeways—some are going 90 mph and even 100 mph.

Needless to say, it's bad enough that the speed limits are excessive, but it seems most aren't even heeding them. Without a doubt, we could cut our oil consumption if we faced the situation honestly and learned to slow down. It's practical, painless, and cost effective.

Let's start with this simple, but tremendously effective, approach to conserving fuel. The need for talking about

drilling in the Arctic National Wildlife Refuge is the natural outcome of failing to do everything we can on our end of the equation.

You could help an apparently information-deficient or uncaring public to accept the responsibility to do their part so that our leaders may not have to take the more severe approaching of drilling in the Arctic refuge.

William J. McCausland
San Diego, CA

Oil Drilling in Alaska

I joined the National Parks Association more than 50 years ago when you were fighting a dam on the Yampa in Dinosaur National Monument. You have done much good over the years. But I am saddened to come to the conclusion that you have become more and more just another doctrinaire environmental extremist organization that just wants

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more money and fights every change, no matter how reasonable.

Your article ["Bad Air Days," May/June 2001] was an intelligent exposition of a serious problem for the Great Smokies and the Shenandoah. We need action by our federal government to help that. But your opposition to oil exploration in the Arctic National Wildlife Refuge leaves me disheartened.

You continue a blind opposition with no evidence that controlled exploration and production will have any impact on the 130,000 Porcupine caribou, polar bears, or migratory birds.

I urge you to keep up your thoughtful pressures for real preservation and abandon your opposition to all things good for our economy.

William L. Lehmann, Ph.D., P.E.
Port Aransas, TX

With all due respect to your constructive efforts on behalf of the preserved areas of our nation, and for the benefit of us all now and in the future, I disagree with your position regarding oil and gas exploration and exploitation in the Arctic National Wildlife Refuge. Such exploration and use are mandato-

ry at present time for our country.

Whatever mistakes we have made in the past—and there have been many—we must not make another regarding fossil fuels in Alaska or in any other region in the country.

It would be good if we had all the fuels we needed to make us independent of other nations; it would be good if we could recover with an enhancement of the environment rather than some degradation. However, we do not. It would be good if the automobile industry and the fuel industry had worked to produce 100-plus-miles-per-gallon cars and trucks and buses, not to mention more fuel-efficient aircraft. However, they did not.

Perhaps they will now; I hope so and I urge all to press Congress to demand such development.

John C. Morris, M.D.
Orinda, CA

Augustus Saint-Gaudens

I read with interest your article about Augustus Saint-Gaudens, the great sculptor ["American Renaissance Man," May/June 2001].

I would like to note what many

believe to be his most famous work: the gold double eagle—a \$20 gold piece—considered by coin enthusiasts as the most beautiful American coin minted.

Joseph A. Ontko
Tallahassee, FL

WRITE TO US

Send mail to: Letters, National Parks, 1300 19th St., N.W., Suite 300, Washington, DC 20036. Letters can be sent via e-mail to npmaq@npsa.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.

"YOU ARE HERE"

Aboriginal peoples explored at least ten miles of this park's cave system more than 4,000 years ago. Exploration of the park ceased about 2,000 years ago and did not resume until rediscovery of the park in 1798. The full size of the park remains a mystery.

Answer: Mammoth Cave National
Park, Kentucky



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Park News

BY ELIZABETH G. DAERR

PARK LEADERSHIP

Mainella Named Parks' Director

First woman to run agency is former head of Florida parks.

WASHINGTON, D. C. —When Fran Mainella breezed through Senate confirmation hearings this past summer to become the new director of the National Park Service (NPS), she assumed a historic role at a defining moment. She is not only the first woman selected to become chief caretaker of the 384-unit system, but also by reputation she is one of the most qualified and assertive directors to assume the helm.

Involved in parks and park management for more than 30 years, Mainella served as director of the Division of Recreation and Parks for the Florida Department of Environmental Protection for 12 of those years. During her tenure, the National Sporting Goods Association awarded Florida's park system the State Parks Gold Medal for 1999-2001, recognizing it as the best state park system in the country.

"The nation is fortunate that the administration has hired a true parks person," said former Yellowstone Superintendent Mike Finley, who retired in 2001 after a three-decade career with the Park Service. "She understands the importance of accommodating enjoyment of landscapes but balancing it against the

need to preserve the natural world from being inundated and destroyed. Given Fran Mainella's instincts, she will make the right decisions. My fear is that the administration will use her as window dressing but take actions that run counter to some of the real gains in park protection that have been made."

As director, Mainella will have policy and administrative responsibility for the 384 units and 83 million acres within the National Park System. With an annual budget of \$2.4 billion, the National Park System is managed by 20,000 permanent and seasonal employees and enjoyed by more than 285 million visitors each year.

She assumes these responsibilities at a time when the Bush Administration is working to overturn some key protections, including a ban on snowmobiles in Yellowstone and a regulation prohibiting personal watercraft in up to 87 park units. The agency also passed a management plan to restrict off-road vehicles in Florida's Big Cypress National Preserve, where more than 20,000 miles of illegal trails were

carved into the sensitive wetland, disrupting wildlife and creating scars that will take decades to heal.

"She faces an incredible learning curve in terms of the diversity of the National Park System and all that it encompasses—everything from sunken warships in the Pacific to subsistence issues in Alaska, from stewarding the crown jewel parks like Yellowstone and Yosemite to setting policy for park concessioners and, of course, settling lawsuits," noted Finley. "The decisions she makes could reverberate for decades."

Mainella, 53, received generally high marks from environmentalists for her stands on resource protection and maintaining esprit de corps of her employees in tough budgetary times.

One asset Mainella has that many of her predecessors did not is widespread, bipartisan respect. A long-time Democrat, she was on President Clinton's short list for Park Service directors, contending for a post that eventually went to Robert Stanton, the first African American to oversee the agency. In 1999, Mainella switched parties, putting her on the radar screen of George W. Bush but not diminishing the respect she commanded from Florida environmentalists.

"We are eager to work with Fran Mainella," said NPCA President Thomas C. Kiernan. "She has a strong and proven track record and will be a great Park Service director."

Mainella has been enthusiastically involved with Florida's landmark Preservation 2000 campaign, the most ambitious state-funded land acquisition program in the United States. The intent of the \$3-billion



Passed over by Clinton for NPS director, Mainella switched to the Republican Party. She remains respected in both, however.

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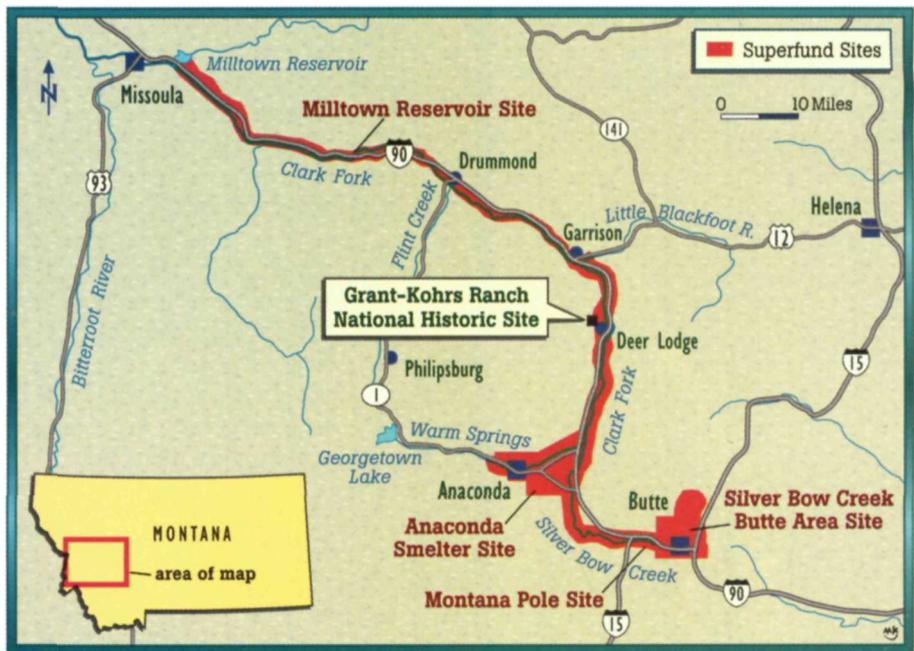
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fund is to buy lands as buffers against development, to protect the state's freshwater supplies, ecosystems, open space, and to ensure the survival of some 548 species of imperiled animals and plants.

"Fran Mainella is an extraordinarily talented public servant with a unique blend of skills and experience that will serve her and the administration well as director of the National Park Service," said Interior Secretary Gale Norton. "She becomes part of the leadership team at Interior that will listen to local concerns, make responsible decisions that are committed to good stewardship and the protection of America's special places for the sake of our children."

—Todd Wilkinson



PARK CLEANUP

Grant-Kohrs Ranch in Superfund Site

Historic Montana ranch in the midst of toxic mine waste.

DEER LODGE, MONT.—Greg Nottingham, environmental protection specialist at Grant-Kohrs Ranch National Historic Site, Montana, mends fences today just as his predecessors might have when they ran this 19th-century cattle ranch. But today some of those fences keep the livestock from entering an area so toxic that no plants grow there and dead vegetation cannot decompose. This national park site, which preserves 125 years of ranching heritage, sits within the nation's largest Superfund site.

For 120 miles from Butte to Missoula, the Clark Fork River drainage is laden with mine tailings—a byproduct of processing ore—washed down from the Butte copper mines that operated for nearly 100 years until the last mine closed in 1983. As cleanup plans begin, the Park Service is working with the

Environmental Protection Agency (EPA) to ensure that the land will be restored to its historic condition.

Gold was first discovered near Butte in 1864, and by 1900, Butte's network of mines was producing approximately 1,100 tons of tailings per day that in turn were dumped into tributaries of the Clark Fork River. In 1908, a 300-year flood washed tailings and processing wastes downstream, leaving deposits one to three feet thick along the riparian zone all the way to Missoula. Today, the four miles of the river flowing through the ranch are surrounded by earth laced with copper, arsenic, cadmium, lead, and zinc.

Although the river is relatively clean because it is constantly replenished by snowmelt, each spring flood erodes the banks, releasing more tailings, acid, and sediment into the water killing fish. In a vicious cycle, the banks continue to erode at five to six times the normal rate because the soil cannot support the vegetation that would hold them in place. The problem is exacerbated by farmers drawing the river down for irrigation.

How did such a site become part of the National Park System? Around the time the mines were booming in Butte, Grant-Kohrs Ranch was becoming the base of a legendary ranching empire

that covered more than 10 million acres in four states and Canada. Established by Canadian fur trader John Grant in 1859, the ranch was one of the first in the West. Grant made his money by trading cattle to settlers passing through on the Oregon Trail. Partly because of the increasing bigotry toward his children and Bannock Indian wife, Grant sold the ranch in 1866 to German-born miner and butcher Conrad Kohrs.

By the 1890s, the ranch shipped 8,000 to 10,000 cattle to Chicago's market each year. The ranch remained in the Kohrs family until Congress bought it in 1972, and today it includes 1,600 acres.

Recently EPA directed ARCO, which bought the mine in 1972 and is responsible for the cleanup, to revise its feasibility study for remediation. EPA will release its final alternatives soon and take public comments before making a final decision on how to proceed. One likely alternative, said Park Superintendent Darlene Koontz, is to neutralize the contaminants by tilling lime into the soil and then replanting trees and shrubs to stop the erosion. Treatment of this kind would leave arsenic and other contaminants in place. "ARCO is charged with remediation, and we want it to be effective remediation so we don't have to negotiate for more



DAVID MUEENCH

In the late 1880s, Grant-Kohrs Ranch National Historic Site was the base of a 10-million-acre cattle empire.

cleanup down the road,” Koontz said.

Tony Jewett, NPCA’s Northern Rockies regional director agrees. “To meet the EPA standard, we believe the most stringent and lasting cleanup remedies must be imposed. Anything less will rob future Americans of this historic inheritance,” he said.

“We’re quite anxious to get this thing along,” Stash said. Some have accused the company of dragging its feet on cleanup, but Stash said that it has more to do with EPA standards. “To their credit, the EPA is being very inclusive with all groups, and that is what has held up the process.”

Sandy Stash, vice president for environmental management for ARCO, said that the company is working to get the plan under way. The delays are costing the company millions, she said, and the total cost of cleanup for a 40-mile stretch of river could be hundreds of millions of dollars.

Indeed, the agency has had a hard time moving ahead, said Scott Brown, EPA remedial project manager. “It’s such a complex, emotionally charged issue that the public isn’t ready for us to make a decision,” he said. Among the numerous landowners along the river, some want the land and water actively cleaned up and others want the natural healing process to continue. Some farmers and ranchers are concerned with the amount of time their land would be out of production during remediation. Others, such as the park, want action soon.

“Nature has a miraculous way of healing,” Koontz admitted. “But it will take more than natural healing to restore this land. It’s going to take a combination of treatment, removal, and revegetation.”

To learn more about the cleanup, visit EPA’s web site at www.epa.gov or contact NPCA at 800-628-7275 x 527.



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B I O D I V E R S I T Y

Parks Attract Ginseng Poachers

Shenandoah painting plant roots to discourage thieves.

SHENANDOAH N.P., VA.—When park botanist Wendy Cass was called out on a search and rescue for a man who had not returned from picking ginseng in the park, she found it ironic. Not only is taking the plant from the park illegal, but it is Cass' job to help monitor and protect what little remains. Eventually, the man wandered outside the park where the Park Service was unable to prosecute him.

The agency, however, intends to improve the odds of catching ginseng poachers with a new technique they began using this year.

The park has hired a technician who spends each day locating and marking any remaining ginseng roots with colored chalk. Although the coloring is not toxic if ingested, it is permanent and meant to steer reputable dealers from purchasing the park's plants. Even if an alleged poacher is caught outside the park, Cass said, the park would have a better chance of prosecuting a person holding colored ginseng roots.

The National Park Service has already adopted the practice along the Blue Ridge Parkway and at Great Smoky



A pound of wild ginseng can fetch up to \$400, luring poachers to national parks.

Mountains National Park with limited success.

The agency does not know how much ginseng once grew at Shenandoah, but Cass said that park records from the 1970s show areas that contained hundreds of plants. "Now we have none in those areas," she said.

Ginseng grows in moist soils from South Dakota and Minnesota to Oklahoma, Louisiana, and Georgia. And as far back as the 1700s, China has been importing ginseng from the United States even though another species, considered less potent, is grown widely in China, Japan, and Korea.

The root is collected for its medicinal value as a mood and energy booster, and in Asia it is considered an aphrodisiac. A pound of wild ginseng can run from \$250 to \$400, according to Chris Robbins, senior program officer for the World Wildlife Fund's department that tracks illegal trade of rare and endangered plants and animals. Ginseng is not federally listed as threatened or endangered, Robbins said, but state classifications vary.

In 1996, the last available numbers, the U.S. Fish and Wildlife Service reported that more than 140,000 pounds of wild ginseng were harvested from two dozen states.

The plant is also grown commercially, and the U.S. Department of Agriculture's 1997 census reports that more than 2.3 million pounds were harvested. Although about 6 million people use ginseng regularly in the United States, its therapeutic value is subject to doubt. A report released in the June *Journal of the American Dietetic Association* concluded, "no psychological benefits were observed after eight weeks of chronic ginseng supplementation—at either the clinically recommended level, or at twice that level."

In the meantime, the park continues to lose roots at an alarming rate and is trying to replant any it recovers, Cass said. "If roots are not too old when we recover them, we try to replant. But we've only been having about a 20 percent survival rate."

Energy and Environment

The League of Conservation Voters released a nationwide poll taken in May on energy, the environment, and the economy. One thousand likely voters were polled by one Democratic and one Republican polling firm. Following are some highlights.

▲ Only 19 percent of those surveyed believe we are in an energy crisis; 52 percent see it as a serious problem.

▲ Thirty-three percent of respondents rated Bush's job performance on the environment excellent/good; 60 percent rate him fair/poor.

▲ Thirty-two percent rated President Bush's energy policy excellent/good; 61 percent rated it fair/poor.

▲ Forty-nine percent of respondents oppose the concept that environmental regulations should be streamlined in order to maintain a strong economy.

▲ When the Bush energy plan is explained to voters, opposition grows more than support, and the public opposes his plan by a 44 to 48 percent margin.

▲ Fifty-three percent of respondents believe we need to focus on renewable, clean energy sources and move away from reliance on oil and coal. Thirty-four percent said we must rely on those current energy sources.

▲ The majority of respondents, 55 to 62 percent, oppose drilling in pristine areas such as the Arctic National Wildlife Refuge, the Great Lakes, and the Rocky Mountains. However, 68 percent are in favor of drilling in Oklahoma and Texas.

▲ The majority of respondents, 69 percent, supports tougher laws or stricter enforcement of existing environmental laws.

▲ On the question of global warming and the nation's responsibility to cut carbon dioxide emissions, 57 percent of respondents favor reducing carbon dioxide emissions.

HISTORIC PRESERVATION

Military Cemetery Proposed Inside Valley Forge NHP

Veterans, park, and Congress hold mixed views of proposal.

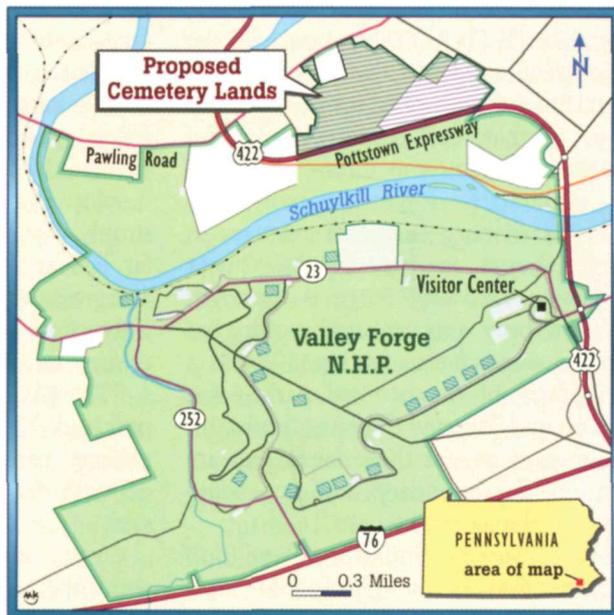
VALLEY FORGE, PA.—Two Pennsylvania Congressmen have proposed legislation to create a 200-acre veterans' cemetery within Valley Forge National Historical Park, in advance of an ongoing study by the Department of Veterans Affairs (VA) to determine where new cemeteries are needed.

While most of the state's congressional delegation backs the proposal, the park and some environmental

groups oppose it, and state veterans are split on the measure.

"I was very upset that [Sen. Arlen] Specter (R-Pa.), went ahead and did this thing and then came down later to try to get us on board," said George W. Mullen, executive officer of the Pennsylvania chapter of the Veterans of Foreign Wars. "My own personal feeling is that if the park doesn't want it there, then we don't want it there. There are other places." Officially, his organization has not taken a position on the matter.

VA is studying veterans' populations nationwide to create six new cemeteries in the next five years, according to spokesperson Jo Schuda. One of those

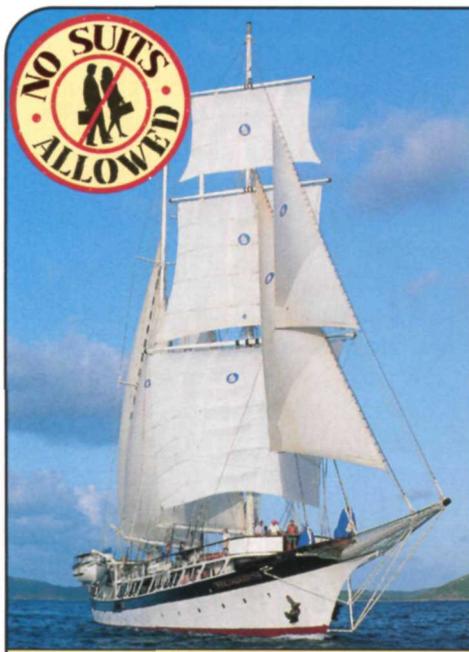


MATT KANIA

has already been approved for Pittsburgh, and nothing indicates a need in Philadelphia, she said. Pennsylvania has the fifth highest population of veterans in the country.

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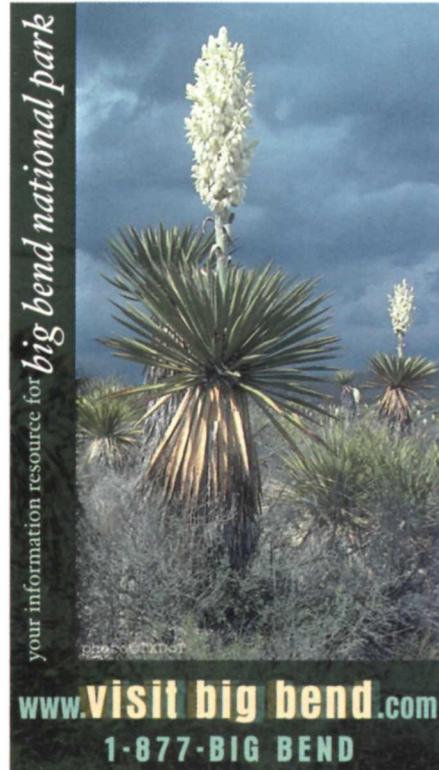
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Frank Custer, press secretary for Rep. Joe Hoeffel (D-Pa.) who sponsored the House bill, said that the congressman's constituents have asked for a new cemetery in that area because the closest national cemetery open for casket burials in the state—at Fort Indiantown Gap near Harrisburg—requires relatives to drive hours to visit graves. Custer believes that Valley Forge is the right place to bury veterans, and his office has not pursued alternative sites. "Joe is a supporter of the national parks—this isn't a raid," he said. "He just thinks this is a good use of these lands that are within the boundary and not being used and may not be used."

Park Deputy Superintendent Bob Krumenaker said the proposed cemetery land was used for crops and livestock to feed the Colonial army. Indeed, it is not developed for public use, Krumenaker said, because it is leased out for agricultural use in keeping with its historic role. The entire army camped on these lands for about ten days as they were preparing to leave Valley Forge, which means many archaeological artifacts may be found.

Valley Forge commemorates Gen. George Washington's winter encampment, from December 1777 to June 1778, under such severe conditions that about 2,000 of the more than 30,000 Continental Army soldiers who entered the camp died from starvation, disease, and exposure. The ill-equipped soldiers had retreated there after the British Army occupied Philadelphia, the Colonial capital. Under the leadership of Washington and the discipline of Baron Frederic Von Steuben, a Prussian drillmaster, the poorly organized soldiers transformed into a dependable, well-trained military force that not only survived unbearable conditions, but also eventually defeated the British.

The area targeted by Specter and Hoeffel for a cemetery includes about 230 acres within the park boundary north of the Schuylkill River, 70 acres of which is a privately owned inholding now proposed for a 63-home subdivision. "I think a national cemetery would

be a lot less harmful to the park than that development," Custer said.

Krumenaker agrees that development is not acceptable, but questions why the federal government would spend the estimated \$20 million to \$25 million to develop a national cemetery instead of simply purchasing the private land for far less and adding it to the park as Congress originally intended. Moreover, if the cemetery legislation passes, it will create a national precedent.

"There is no instance where national parkland has been taken to make a national cemetery that has nothing to do with the purpose of the park," he said.

Conservationists are also concerned about the lack of analysis of alternative sites for a new cemetery.

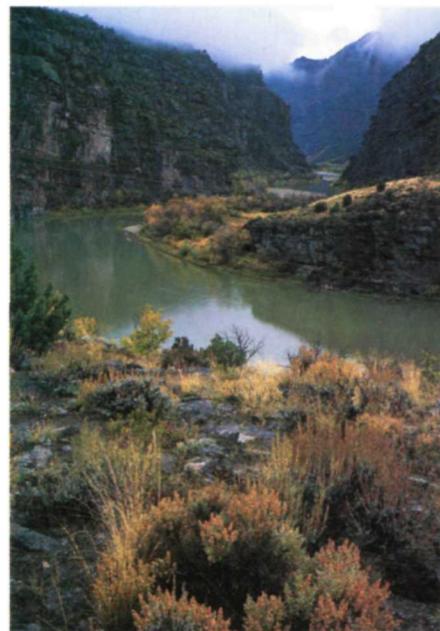
"The bottom line is that the commonwealth of Pennsylvania has other land near Valley Forge with significant potential and a history of transferring state land for public purposes at below market rates or even a negligible charge," said Joy Oakes, NPCA's Mid-Atlantic regional director. "There have been no congressional inquiries into that possibility."

INHOLDINGS

Inholder's Cattle Destroy Wetland Area in Dinosaur

Incident latest in a history of strife between park and family.

DINOSAUR, COLO.—As a result of an inholder allowing cattle to roam along the river at Dinosaur National Monument, willows and other wetland vegetation have been stripped bare, rare alcove bog orchids have been lost, and microbiotic crusts that prevent erosion



SCOTT T. SMITH

An inholder's cattle destroyed wetlands similar to these in Dinosaur.

have been crushed. According to a park employee, "one side canyon is trampled to the point that it may take 200 years to return it to its pristine state."

The cattle belong to a rancher who has grazing rights inside the monument but has been at odds with the Park Service over what actions are acceptable to maintain the herd.

"Though probably both parties are at fault, the situation at Dinosaur exemplifies the need for the Park Service to adopt an aggressive land acquisition policy," said Laura Loomis, NPCA's director of visitor experience.

The National Park Service (NPS) estimates that nearly 5.5 million acres of private land and leases are held within the park system. In order to preserve important lands, Congress often allows these special-use agreements. Another tactic to gain important lands is to create long-term leases that allow the Park Service to purchase properties but gives owners 25 or more years until the property must be turned over. But in case after case, Loomis said, the lease comes back to haunt the agency. "Suddenly the deal that the people struck 25 or 50 years ago, now doesn't look so good, so they go to their con-

gressmen and ask for relief." Often they get it.

When Dinosaur expanded in 1938 and incorporated more than 200,000 acres of Bureau of Land Management (BLM) lands, the Mantle family received permanent grazing rights, managed by BLM, on about 32,000 acres, even though grazing is not usually allowed on parkland. The Park Service took over management of the allotments in the early 1960s, and although guidelines and restrictions were set up for having cattle inside the monument, the park was at times unable to protect that park's wetland areas.

After decades of discord between the parties about trespassing on each other's properties, a lawsuit settlement mandated that NPS create an allotment management plan (AMP) that would clarify how many and where cattle could be grazed in the monument without harming the park's resources. The settlement also forbids the Mantles from doing new construction or conducting maintenance on established watering

holes without prior approval from the Park Service. The park did not meet the January 2000 deadline for the AMP, and the Mantles took steps to protect their cattle during a drought by cleaning out ponds that had filled with sediment. In one case, the family drove a bulldozer through a proposed wilderness area to enlarge a reservoir.

Tim Mantle, who owns the cattle operation with his brother and sister, said he was doing what was necessary.

"Six years ago, we were told that that they (NPS) would clean that pond, but they never did, and we had to get the cattle to water," he said. Mantle said that he has tried to cooperate with the Park Service, but the agency has taken too long to make the improvements that were agreed upon in the settlement.

Former park superintendent Dennis Ditmanson said that NPS did not intentionally stall the projects but lacked the staff and money to complete them. Additionally, he said, the AMP was held up because of problems with Colorado State University, which was to do a

range survey that would have recommended the appropriate number of cattle that could be grazed given the soil and vegetation conditions.

Both parties concede that the best long-term solution is to have the Park Service purchase the land and grazing rights, but neither can agree on a price. The Mantles, who have threatened to develop a small resort area on their land, have offered the property for nearly \$6 million. But an NPS appraisal of the land, which has not been made public, is far less, and the government cannot pay more than fair market value without congressional approval.

Current NPS policy is to acquire in-holdings from willing sellers or to create special agreements to entice others. Despite the battle at Dinosaur and many other parks, NPS has no plans to change the policies, said Bill Shaddox, chief of the land resources division.

"It's the deals that are cut at the beginning—they become the thorn in the side that festers for years to come," Loomis said.

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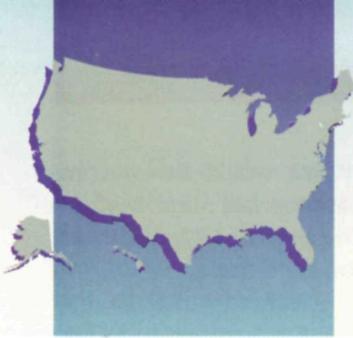
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REGIONAL REPORT

ON NPCA'S WORK IN THE PARKS

Text by Elizabeth G. Daerr

ALASKA

In July, a pregnant humpback whale was found dead near the entrance to Glacier Bay National Park at Point Gustavus. A marine biologist determined that the death was the result of a crushed skull, probably from being hit by a cruise ship or other large vessel. No ships reported hitting an animal, which is required, but investigators are checking ships' logs and questioning captains. The humpback is an endangered species and protected under federal law. The park has records of seeing the whale, cataloged as number 68, since 1979.

In related news, Sen. Ted Stevens (R-Alaska) has attached a rider to the 2002 Interior Appropriations bill that would force the Park Service to maintain the number of cruise ships allowed in Glacier Bay National Park at 139 instead of 107. The lower number was set by a unanimous ruling of a federal appeals court earlier this year as the result of a lawsuit filed by NPCA. According to NPCA Counsel Elizabeth Fayad, the rider will not overturn NPCA's victory.

NORTHERN ROCKIES

The Bush Administration, along with Sen. Conrad Burns (R-Mont.), is challenging President Clinton's designation of the Upper Missouri River Breaks National Monument, which includes segments of the Lewis and Clark and the Nez Perce national historic trails. In response, NPCA is working with the Friends of the Missouri Breaks Monument and other conservation groups to protect this remote 149-mile long segment of the Missouri River in north-central Montana. Because of its isolation, the area remains almost as it did when Lewis and Clark traveled through

the region nearly 200 years ago. For more information, visit the Friends of the Missouri Breaks' web site at www.missouribreaks.org or to send a letter to your members of Congress in support of the monument, go to www.npca.org/take_action.

PACIFIC

After two years of work by an advisory group, scientific input, and more than 10,000 public comments, the creation of several marine reserves is now moving ahead at Channel Islands National Park off the coast of California. The area's submarine canyons and rocky reefs support an array of marine life, and despite being designated a national marine sanctuary in 1980, many species continue to disappear. The reserves would close the areas to all extractive activities, including fishing, and would improve reproduction and increase marine populations. In June, the Sanctuary Advisory Council forwarded its recommendation for the areas, which now must be approved by the California Fish and Game Commission and the Pacific

Fishery Management Council, which have jurisdiction over the waters.

TAKE ACTION: Write to support the Channel Islands marine reserve. Mr. Robert Treanor, Executive Director, California Fish and Game Commission, 1416 9th Street, Sacramento, CA 95814.

SOUTHEAST

The Park Service has designated 42 percent of the Dry Tortugas National Park's waters a Research Natural Area, which prohibits fishing and limits public access. This is the first time such an action has been taken to protect marine habitat in a national park, and the plan received overwhelming support from the public, various stakeholders, and the scientific community. The plan is intended to protect coral reefs, fish, and sea grasses while allowing a large portion of the park to remain open to recreational fishing and other uses. Dry Tortugas National Park and the Tortugas Ecological Reserve is now the third-largest protected marine area in the world.

NEWS UPDATE

Padre Island N.S.—After overwhelming public opposition, the Navy has decided not to use the Padre Island National Seashore region as its new military training site. The Navy was looking for an alternative to its bombing site at Puerto Rico's Vieques Island and is expected to expand its search to a previously used military operations site.

Parks in Transit—Sen. Paul Sarbanes (D-Md.) has introduced legislation that asks for \$65 million each year until 2007 to develop and expand public transportation in and around national parks and other federal lands. Projects include rail lines, clean-fuel buses, and pedestrian and bike paths. The Department of Transportation recently completed a study that found a significant need for alternative transportation to relieve traffic congestion and prevent lasting damage to national parks and other public lands.

TAKE ACTION: Write to your senators asking them to support this bill. To find your senator, go to www.senate.gov.

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BRINGING UP CORAL

Coral reefs are among the most diverse—and endangered—ecosystems in the world. From ships running aground to global climate change, the number of problems facing them is staggering. Two national park sites have begun creative efforts to save and even reconstruct reefs.

BY STEVE HYMON

ONE BY ONE, the tourists rise from their beach towels and wade into the turquoise sea of Virgin Islands National Park. Many are escapees from winter. Armed with cheap underwater cameras and rental fins, the tourists—myself included—plop into the water without a shred of grace.

Later, one by one, we emerge from the waters of Trunk Bay, on the isle of St. John, wearing ear-to-ear grins. Snorkeling amid the many colorful and curious fish on a coral reef has that effect. It's like taking a plunge into biodiversity soup. At one point, it occurs to me that I never have been and likely never will be so close to so much wildlife in a national park on land.

Throughout the day, I make repeated visits to the water, reminding myself of something else: This fairly healthy reef at Trunk Bay is something of an anom-

Visitors to Trunk Bay, above, can see coral reefs and their inhabitants, such as the queen angelfish, left.



STEVE SIMONSEN (2)

aly. Back in my hotel room is a pile of scientific papers, all saying that coral reefs around the world are in trouble. One document, from the National Oceanic and Atmospheric Administration, predicts that if present conditions continue, 70 percent of the world's coral reefs will disappear by the

year 2050. Yet, as awareness of the precarious state of these fragile areas is building, so are creative efforts to save and even reconstruct them.

Coral reefs are found in ten U.S. national parks—six in the East, including Biscayne National Park near Miami and Virgin Islands National Park, two in Hawaii, and two in the South Pacific. Few of these corals have escaped the problems that plague reefs worldwide.

“There are not as many reef fish as there used to be; there's more algae, more coral diseases, and more reefs that...are now simply gone,” says Ginger Garrison, a marine ecologist with the United States Geological Survey (USGS).

Richard Curry, Biscayne National Park's science coordinator, tells much the same story. “When I first began working for the park in 1977, the coral cover was something like 15 percent,” he says. “Now it's something like 1 percent. Is that a sick reef? I think so.”

Found in the tropics and subtropics, coral reefs are among the world's oldest and most diverse ecosystems. At their

CORAL REEFS *Continued*

most basic level, corals are a marriage between tiny coral animals and a plant living inside them called zooxanthellae. The zooxanthellae provide the corals with oxygen and food, and the corals secrete a skeleton that is the foundation of a reef. The reefs offer habitat to hundreds of thousands of species, including more than one-quarter of all marine life and 40 percent of the world's fish species.

But the real kicker is this: Scientists have yet to identify most of these species or even begin to untangle, much less understand, the tens of thousands of ecological relationships that sustain reefs. Nor can anyone readily explain why reefs, covering well under 1 percent of the Earth's surface, attract so many forms of life.

This much is known: Despite the beauty of many reefs, the number of problems facing them is staggering. Ships and boats run aground or drop anchors on reefs, often causing irreparable harm. Increasing numbers of hurricanes tear reefs apart, a rise that some researchers attribute to global climate change. Corals are killed by pollution or smothered by erosion from bad land practices. Overfishing and the destruction of adjacent habitats—such as mangroves and seagrass, which serve as nurseries for many reef fish—change myriad critical ecological balances that exist in and around reef communities.

Perhaps the most troubling problem is coral disease. Beginning in the early 1980s, at least three suspected diseases have swept through Caribbean waters, killing or drastically weakening corals. The source of these diseases is a mystery, but a small group of researchers suspects that African dust blown across the Atlantic by trade winds in summer is carrying pathogens that may cause some outbreaks.

"People say the dust has been coming over for centuries and so what's the big deal," says Ginger Garrison. "But there has been a drought in Africa for 30 years, and the Sahara Desert is moving south. Land-use practices are changing. Maybe there are things like pesticides or plasticizers in the dust. The point is that we need to find out if it's happening and, if so, then it's up to the policymak-

and charcoal, but may be linked to gold mining in the Sahara.

In both Biscayne and Virgin Islands national parks, large ships and recreational boats have also demonstrated the uncanny ability to plow into reefs. At Biscayne, located directly south of Miami and adjacent to a major shipping lane, Curry, the park's science coordinator, says, "in some cases, the reefs have been absolutely flattened."

In the early 1990s, alarmed by the destruction of so many reefs, Curry built a small coral nursery. The idea is simple: Perhaps coral grown in a semi-controlled setting could later be used to restore damaged reefs.

The nursery is hardly a high-tech venture, consisting as it does of several concrete blocks stacked in a protected underwater hole. Five different types of corals, all of which had been knocked off reefs, were glued to the concrete. Over time, all the corals have grown; the problem Curry must now solve is how to reconstruct damaged reefs using natural processes and products. Using visually

intrusive bolts or toxic glues, he says, is not an option.

Curry recently received \$50,000 from the Park Service, money he intends to use to establish three more nurseries, with two in locations with easy access for visitors. He also plans to begin a volunteer monitoring program and pursue research to encourage the growth of nursery corals.

A similar study wrapped up this past May in Virgin Islands National Park. In 1988, with a single drop of its anchor, the cruise ship *Windspirit* destroyed nearly 300 square meters of one park reef. After seeking a way to repair the reef for years, in 1999 Ginger Garrison began a coral transplant program with \$48,000 in funds garnered from several non-public sources. The first step involved harvesting coral fragments that had been broken off from reefs by storm



STEVE BIRNSEN

Boats dropping anchor or running aground can cause significant damage to coral reefs.

ers to do something about it." The USGS has identified more than 60 types of living microbes from dust events in the Virgin Islands, including the species of fungus known to cause disease in Caribbean sea fans. The traces of arsenic and mercury found in the dust most likely are due to the burning of garbage

U.S. National Parks with Coral Reefs

Biscayne, Florida
Dry Tortugas, Florida
Buck Island Reef, St. Croix
Salt River Bay, St. Croix
Virgin Islands, St. John
U.S.V.I. Coral Reef National Monument
War in the Pacific, Guam
National Park of American Samoa
Kalaupapa National Historic Park, Hawaii
Kaloko-Honokohau Park, Hawaii

swells and landed in places on the ocean floor where they were unlikely to survive. Then, using plastic cable ties, Garrison and her team secured the fragments to healthy reefs.

Two of the three corals she tried barely survived, but elkhorn corals often grew over the cables and fused to the reef.

“Elkhorn is like the big trees in a rainforest,” says Garrison. “It gives the reefs spatial complexity, and it’s one of the species that builds the reef.”

Equally important were the 140 volunteer monitors, including a class from a local school, who snorkeled to check the progress of the transplants. The volunteers were, in the words of one, “a living, walking, breathing outreach program” for a park that had pre-



STEVE SIMONSEN



BRIAN PARKER/TOH STACK & ASSOC.

Ginger Garrison, above, inspects cable ties on a transplanted coral. A volunteer makes notes on his underwater observations, and a Nassau grouper, whose populations are harmed by overfishing, hunts the reef.

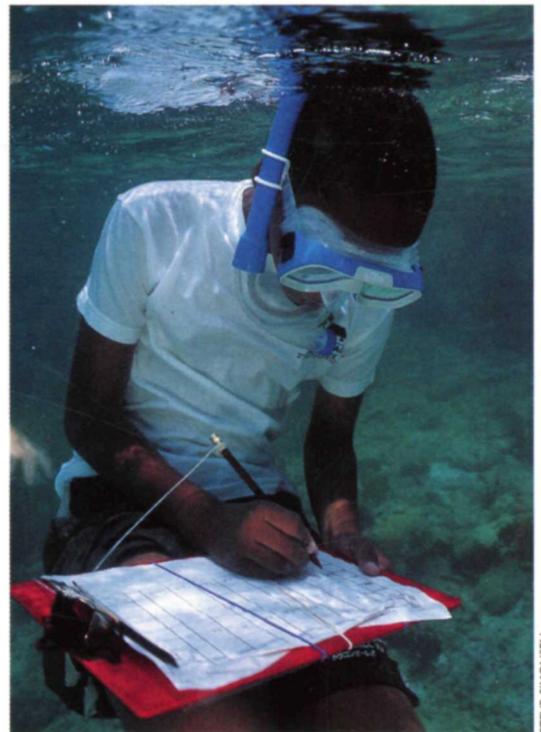
viously had no relationship with the local community.

Garrison has since moved to another post in Florida but would like to see the park build a coral nursery—although she, like Curry, is quick to caution that nurseries are not a panacea for problems besetting many coral reefs. The reason is simple: The most troublesome impacts are coming from outside national park boundaries from unknown sources, and often there’s little

park officials can do about it.

One chronic problem facing coral reefs is overfishing. As the old saying goes, big fish eat little fish. But in recent years, large and easily targeted top-level predators such as the Nassau grouper have been virtually wiped out.

“So instead of having a lot of fish eating other fish on many of the reefs in the Caribbean, you have a lot more herbivores,” says Garrison. “That’s going to



STEVE SIMONSEN

mean something to the reef; we just don’t know exactly what.”

For example, some researchers believe having too many damsels, an herbivore, may result in loss of coral cover. Elsewhere, overfishing and disease reduced the number of sea urchins (typically caught when fishermen targeted triggerfish), eliminating a species

CORAL REEFS *Continued*

that grazes on the algae that can smother corals.

Although overfishing is widely recognized as a problem, national parks have traditionally had little say in how a park's waters or adjacent areas are fished, because jurisdiction over these areas typically falls to a state or another authority. Six of ten national parks with corals, in fact, allow commercial fishing.

An attempt to control fishing was one reason President Bill Clinton on January 17, 2001, in his last days in office, used the Antiquities Act to create a 13,000-acre national monument next to Virgin Islands National Park and add 18,000 acres to Buck Island Reef National Monument. In the new Virgin Islands Coral National Monument, fishing will be off-limits in all but two locations, the hope being that this "no-take zone" will replenish the area's fisheries and protect adjacent ecosystems upon which coral reefs depend.

The plan, predictably, created a political firestorm. With St. John's economy almost wholly dependent on tourism, some argued that prohibiting fishing in this area is an affront to traditional rights and culture. Park officials maintained that the no-take zones would actually help fishing in the long run by improving fish populations throughout the Virgin Islands. In a column that appeared in the November/December 1998 issue of *National Parks*, Gary E. Davis, marine ecologist and fisheries scientist, wrote that studies conducted in a variety of countries, including the United States, Kenya, Australia, and New Zealand, show that some species of fish, crustaceans, and mollusks were two to 25 times more abundant in no-take zones than in surrounding areas.

In March, Interior Secretary Gale Norton asked local officials to propose changes to boundaries and rules for all the monuments created by President

Clinton in January. As of this writing in early May, she had not issued any decisions. But at the same time Norton was considering changing the new protections, Florida Gov. Jeb Bush—President Bush's brother—was approving strict no-take rules for the 185-square-mile Tortugas Ecological Reserve. No fishing of any kind will be allowed in the reserve. In addition, neighboring Dry Tortugas National Park designated 42 percent of its surrounding waterways as a Research Natural Area, which effectively means a no-take zone.



An increase in fish such as the yellowtail damsels, which rely on reefs for food, points to a larger imbalance.

Another problem is that of the ten parks with corals, seven are operating under general management plans (documents that spell out how a park manages visitors and protects its resources) written in 1983 or earlier, before the demise of many of the world's reefs. According to the Park Service, not one of the ten parks provides for complete protection of corals, although Dry Tortugas, which is in the final stages of implementing a new plan, and American Samoa come closest.

"Biscayne is really interesting because so much activity is both tolerated and allowed in the park and it's adjacent to an urban area," says Mary Munson, NPCA's director of South Florida and marine programs. "They're writing a

new management plan this year and we're arguing for management zones that establish boundaries around specific areas with different rules governing those areas. For example, they could set aside no-take zones or no-anchor zones. This kind of management is becoming accepted as enforceable and scientifically sound."

Other positive changes are taking place. In 1998, President Clinton signed an executive order creating the U.S. Coral Reef Task Force, which directed federal agencies to take a number of steps to further our knowledge of reef ecosystems. In the next year's budget, Clinton also included a request to fund these efforts, at the time an unprecedented action.

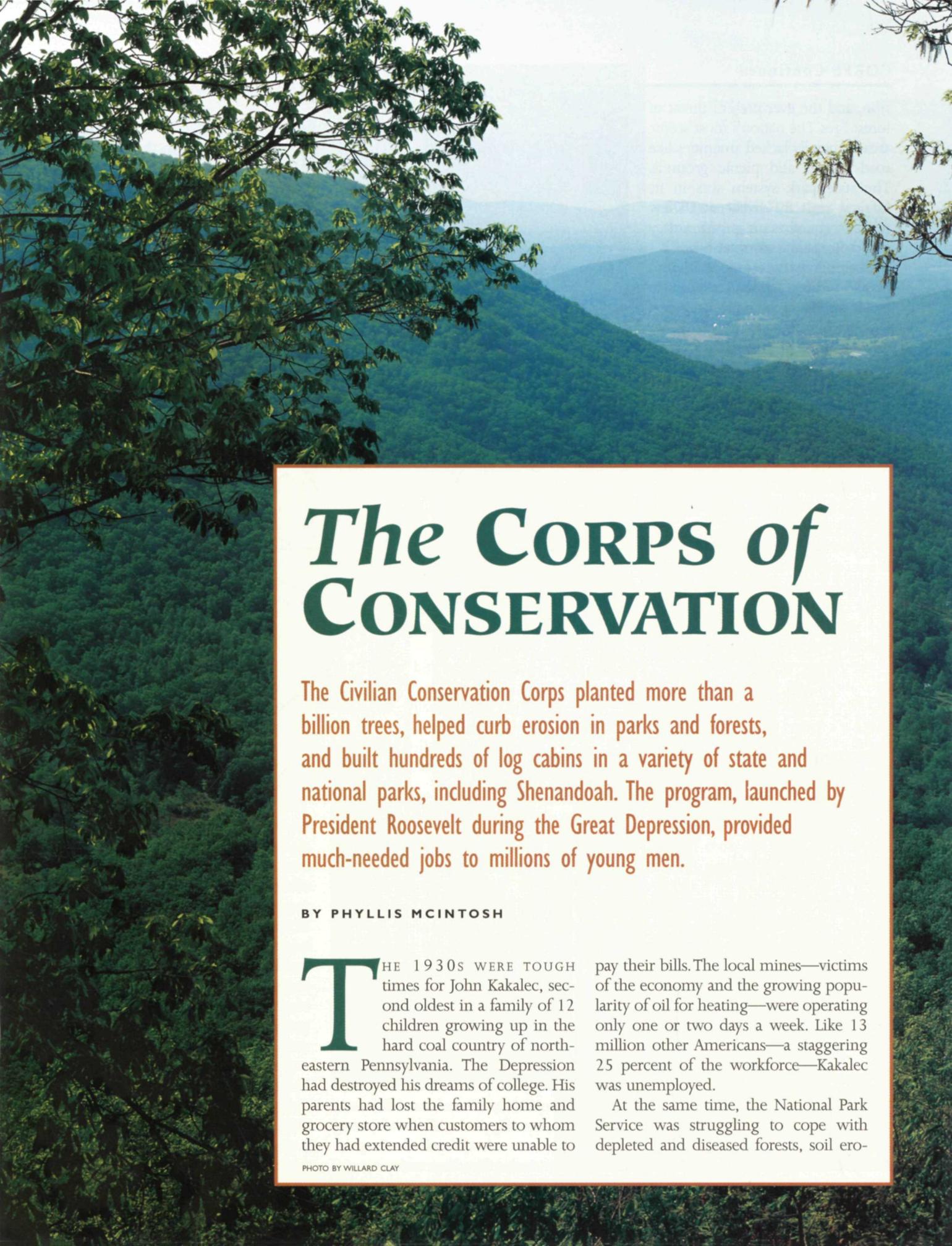
"This was a pitifully poor park until two years ago," says John King, superintendent of Virgin Islands National Park. "Now the budget is such that we can provide minimal services. I don't know how they operated before this. We now have a 14-person resource management division; for years we operated with only one person."

On my final day on St. John, Ginger Garrison drove me across the island to Haulover Bay. At one point as we snorkeled around the reefs in the remote bay, I was surrounded by more than 100 blue damsels. It was a lovely, giddy moment that didn't last long, because even the number of damsels points to a larger problem.

"This used to be one of the best two reefs on the island," says Garrison. "In the last few years, many of the corals here died. The number of fish has fallen, and there are more damsels and no groupers."

"Something here is amiss," she concludes, "and no one is sure exactly what it is or why."

STEVE HYMON writes frequently about the environment from his home in Santa Monica, California.



The CORPS of CONSERVATION

The Civilian Conservation Corps planted more than a billion trees, helped curb erosion in parks and forests, and built hundreds of log cabins in a variety of state and national parks, including Shenandoah. The program, launched by President Roosevelt during the Great Depression, provided much-needed jobs to millions of young men.

BY PHYLLIS MCINTOSH

THE 1930S WERE TOUGH times for John Kakalec, second oldest in a family of 12 children growing up in the hard coal country of north-eastern Pennsylvania. The Depression had destroyed his dreams of college. His parents had lost the family home and grocery store when customers to whom they had extended credit were unable to

pay their bills. The local mines—victims of the economy and the growing popularity of oil for heating—were operating only one or two days a week. Like 13 million other Americans—a staggering 25 percent of the workforce—Kakalec was unemployed.

At the same time, the National Park Service was struggling to cope with depleted and diseased forests, soil ero-

sion, and the ever-present threat of forest fires. The nation's most scenic areas generally lacked amenities like roads, trails, and picnic grounds. The state park system was in its infancy, and city dwellers had few nearby recreation areas where they could escape the summer heat.

But newly elected President Franklin Roosevelt had a plan to tackle both problems at once. During the same month of Roosevelt's inauguration in 1933, Congress passed legislation that created the Emergency Conservation Work, which was later to become the Civilian Conservation Corps. The program was to prove astonishingly successful at rescuing both jobless young men like John Kakalec and the nation's valuable natural resources.

The concept was simple: recruit unmarried men ages 18-25 from families on relief and send them to work camps where they would be paid \$30 a month to improve federal and state lands and parks. The government would provide room and board, clothing, and tools, and the men would send all but \$5 of their monthly pay back home to help their families.



A Civilian Conservation Corps recruitment poster promises work and health.

Initially, enrollment would be for six-month stints, although enrollment and renewal periods eventually were expanded to two years.

Roosevelt called on four existing agencies to put his

plan into action. The Department of Labor would recruit the men, the Army was to run the camps, and the departments of Interior and Agriculture (home to the National Park Service and the U.S. Forest Service, respectively) would supervise the work projects. In what was likely the greatest peacetime mobilization in the nation's history, the government achieved the president's goal of enrolling a quarter of a million men by July 1933. The first CCC "boy" was inducted at Camp Roosevelt near Luray, Virginia, on April 7, 1933, just 37 days after Roosevelt took office.

Each camp was designed for about 200 men. Army tents used in the beginning soon gave way to more substantial wooden barracks. Eventually, the typical camp contained more than 20 buildings, including recreation halls, a hospital, mess hall, and administrative building. The structures were arranged in a U shape around an open area used for assemblies, sports, and other leisure-time activities.

The norm at most camps was an eight-hour work day and 40-hour work week, which left ample time for a range of activities, including athletics, plays and music shows, spelling bees and singing contests, even dances with local women. Each camp had a library, and most published their own newspapers.

By 1934, the CCC also offered the men a chance to further their education—more than 40,000 enrollees learned to read and write in the camps—and acquire such skills as typing. John Kakalec recalls hitchhiking from a camp in Virginia to the Washington, D.C., area with a large typewriter under his arm to take the civil service typing exam. Doing well on this exam landed him a job with the federal government and led to a 33-year career with the Federal Reserve Board.

The typical CCC enrollee was in his late teens from a modest background, with an eighth-grade education and little or no work experience. Since most were from urban areas, being transported to an isolated work camp was a bit of



Whitey Groves, now 83, was among the millions of young men who joined the Corps during the Depression.

PHOTOS COURTESY OF WHITEY GROVES



BOTTOM LEFT: FDR signs legislation during a ceremony at Shenandoah that made the Civilian Conservation Corps possible. Enrollees performed a variety of tasks, including building roads, left, and felling trees, bottom. The Corps also built many of the cabins, roadways, bridges, and walls found in Shenandoah National Park.



culture shock. "I'll never forget when I got off that train and into the back of an Army truck and started up that mountain," says "Whitey" Groves, a Norfolk, Virginia, native who was at a camp in Shenandoah National Park from 1937 to 1939. "I thought to myself, this man's taking us out of this world. It began to snow, and the snow whipped in the back of that truck. But when we got to camp, I met two fellas—they chose me, you might say—and they made me feel welcome. We went into the mess hall and had beans and hot dogs." Now 83, Groves proudly says, "I can close my eyes and still see that CCC camp just as clear. It was the greatest thing that ever happened to me."

In mid-1933, President Roosevelt issued an executive order opening the CCC to American Indians, residents of U.S. territories, veterans of World War I, and older "locally experienced men" needed as foremen and skilled workers. American Indians, for the most part, were not placed in camps but performed work that permitted them to return home every night. More than 300,000 black men also served in the CCC, mostly in segregated camps initially supervised by whites. Gettysburg National Military Park in Pennsylvania hosted at least three black camps. At the insistence of First Lady Eleanor Roosevelt, several camps for women reportedly were created near Elmira, New York,

but little is known about them.

The first camps within the National Park System opened in May 1933 in what would become Virginia's Shenandoah National Park. Eventually, upwards of 10,000 young men toiled at ten camps within or adjacent to the park, which has become one of the greatest enduring legacies of the CCC. The men's earliest project was to regrade severely eroded banks along the 100-foot-wide right-of-way of Skyline Drive, which had been started in 1931. First, they cut back steep slopes to more gentle inclines to stop erosion and provide a base for landscaping. Later, they built some 70 overlooks, installed guardrails and stone walls to improve



CORPS Continued

safety, and constructed stone gutters for drainage.

Remarkably, the CCC was responsible not just for human-made improvements in this park but also for the “natural” vistas that visitors today enjoy along Skyline Drive. The men removed thousands of chestnut trees killed by a blight a decade earlier, recycling the wood for use in construction of buildings and signs throughout the park. They thinned the understory and planted up to 500,000 trees and shrubs rescued from construction sites in the park or grown from seed in three separate nurseries. As a result of this painstaking effort, “there is virtually nothing in the entire 105-mile length of the Skyline Drive that was not manipulated in some way by the CCC,” says Reed Engle, cultural resource specialist at Shenandoah.

After the park was officially established in 1935, it was the somewhat controversial job of the CCC workers to erase all evidence that people had lived and labored within its boundaries. The CCC dismantled homes and farm buildings, often helping the sometimes reluctant owners move to resettlement areas; removed fences, gardens, orchards, and roads; and replanted all disturbed areas. For the benefit of park visitors, they constructed campgrounds and picnic areas, put in utility systems, and carved out 500 miles of trails. In short, says Engle, “they created this park.”

Along with expanding the National Park System, the CCC was instrumental in helping the Park Service carry out a new directive from President Roosevelt: develop recreation areas near urban centers where low- and middle-income people who could not afford to travel to distant parks could enjoy the outdoors. Many of these areas would become state, county, or city parks. A few, such as Prince William Forest Park in Virginia,

32 miles south of Washington, D.C., and Maryland’s Catoctin Mountain Park, 50 miles north of the nation’s capital, have remained in federal hands.

Prince William Forest, created in 1933 as the Chopawamsic Recreational Demonstration Area (RDA), was the first of 46 RDAs established on overfarmed and exhausted lands purchased by the federal government in 25 states. The CCC built trails, roads, stone walls, stone amphitheaters, a wooden truss vehicle bridge, and a large concrete dam that created an artificial lake.

But the crown jewels of the park are five cabin camps, also built by the CCC, that have been in continuous use by local groups since they were completed. Four are on the National Register of Historic Places. “These chestnut cabins are a tremendous resource that could



Virtually everything along the 105-mile Skyline Drive in Shenandoah was manipulated by the Corps.

never be built today because of the blight’s impact in the United States,” says Joy Oakes, Mid-Atlantic regional director for the NPCA, who was married in a CCC-built amphitheater at a California state park.

The federal government decided to retain Chopawamsic, renamed Prince William Forest Park in 1948, as a unit of the National Park System because it was the first RDA opened for public use, and its proximity to Washington made it a

convenient model for officials to visit and show off. Today, the park is the largest natural area in the Washington, D.C., metropolitan area and one of the few remaining Piedmont forest ecosystems on the East Coast.

Perhaps the most famous of the recreational demonstration areas is Catoctin Mountain Park, where a cabin camp built by the CCC in 1939 for federal employees and their families has evolved into one of the best known getaways in the world—the presidential retreat, Camp David. President Roosevelt—who called the camp Shangrila—began using it as an escape from Washington’s hot, muggy summers during World War II, when a mountain hideaway was thought to be safer than a cruise on the Potomac in the presidential yacht. Citing FDR’s wishes and the camp’s importance in national and international events, including the planning of D-day, President Truman directed that all of Catoctin Mountain Park remain within the National Park System. In 1953, President Eisenhower renamed the retreat Camp David in honor of his grandson.

But Camp David is only one part of the CCC’s legacy at Catoctin. The Corps reforested the mountain, which had been denuded by farming and a logging operation that produced charcoal for a nearby iron furnace. CCC workers also stabilized banks along a creek destined to become one of Maryland’s premier trout streams, broke up and covered old roads, replanted shrubs and grains to attract wildlife, and retrieved 19th century fences that another CCC crew used to restore nearby Gettysburg National Military Park in Pennsylvania. Gettysburg also received more than 20,000 chestnut rails from CCC crews at Shenandoah National Park.

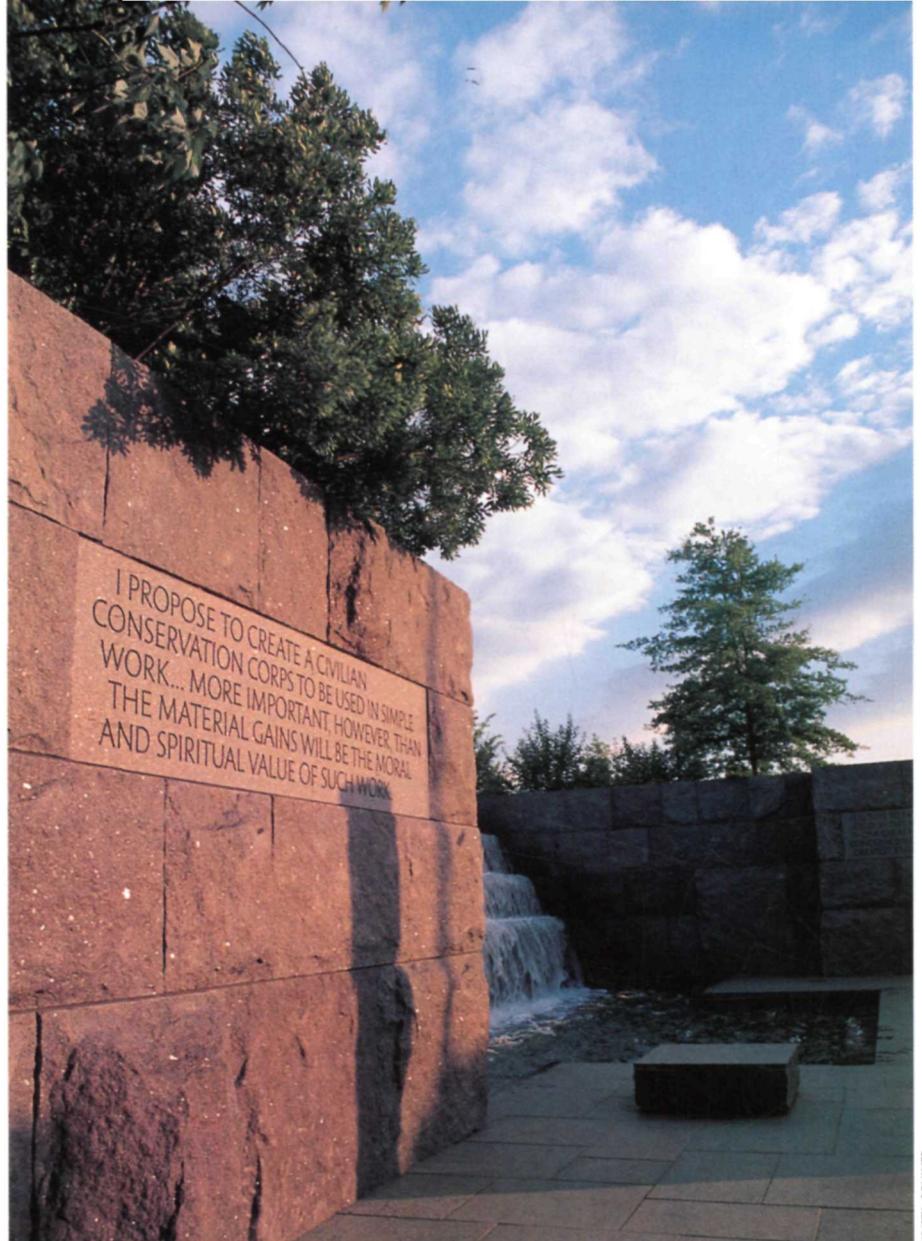
Two other camps at Catoctin—completed by the Works Progress Administration (WPA) before the CCC came on

site—are still used by local organizations. In 1965, a third camp became the nation's first training center for Lyndon Johnson's Job Corps, a program patterned after the CCC that taught job skills to disadvantaged young men. Like the CCC before them, early Job Corps enrollees repaired trails and constructed picnic areas for the camps. After President Nixon abolished the original Job Corps in 1969, Catoctin continued to host its successor, a residential work camp known as the Young Adult Conservation Corps. Today, the park remains a training site for the latest version of a conservation work camp, a nonresidential summer program known as the Youth Conservation Corps (YCC).

"The CCC is an idea that transcends party lines and keeps coming back in a lot of different ways and places," says Catoctin Superintendent Mel Poole.

Ironically, despite its popularity during the 1930s, FDR was never able to convince Congress to declare the CCC a permanent program. Neither was it ever officially abolished. Its role diminished dramatically after war broke out in Europe and defense jobs became plentiful here at home. As the war progressed, more CCC projects were diverted for national defense projects. Following the Japanese attack on Pearl Harbor, the Park Service terminated all CCC projects not directly related to the war effort, leaving many parks wanting for fire protection and maintenance staff. Finally, in 1942 Congress provided money to cover the cost of terminating the program.

Though it existed for only nine years, the Corps had an immeasurable impact on both the country's park system and on the young men whose lives it changed. More than three million men had served in 5,000 camps in every state and in Alaska, Hawaii, Puerto Rico, and the Virgin Islands. Later dubbed "Roosevelt's Tree Army," CCC workers planted more than three billion trees, halted soil erosion on 20 million acres, stocked more than one billion fish, built nearly 47,000 bridges, blazed 28,000 miles of trails, and erected 405,000 signs, markers, and monuments. They worked in 94 national parks and monuments and developed as many as 800



KRISTA SCHUYER

As part of a national reunion in September, some of the CCC Alumni's 6,500 members will travel to Washington, D.C., to lay a wreath at FDR's memorial.

state parks. Just two years after the program began, the National Park Service estimated that the CCC had already advanced forestry and park development by ten to 20 years.

It is testimony to the importance of the CCC in young men's lives that many of them, now in their 80s, still get together to reminisce about their days in the camps. The St. Louis-based National Association of CCC Alumni counts 6,500 members in about 120 chapters nationwide. The oldest continuously meeting group has been convening at Shenandoah National Park for the past 67 years. It is fitting that Shenandoah will be the site in September of

a much-awaited national reunion. A highlight of the four-day event will be a bus trip to Washington, D.C., where the workers plan to lay a wreath at the FDR memorial, where are inscribed the president's words: "I propose to create a Civilian Conservation Corps to be used in simple work. More important, however, than the material gains will be the moral and spiritual value of such work." The CCC was clearly successful on both these fronts.

PHYLLIS MCINTOSH, who lives in Washington, D.C., last wrote for National Parks about Minuteman Missile National Historic Site.

NANUUQ of the North



Polar bear cubs weigh only 1.5 pounds at birth but quickly gain weight on mom's fat-rich milk.

became shorter, sharper, and strongly curved, to permit a better grip on ice and prey. Most noticeably, their fur became a creamy white, to better blend with ice and snow. Now North America's largest land carnivore, adult males average around 1,000 pounds but may weigh up to 1,700 pounds and, standing on hind legs, reach more than 11 feet tall. Adult females, though considerably smaller, may reach 700 pounds.

Throughout the species' range, including U.S. habitat in Alaska, polar bear populations are considered to be healthy and stable. Yet these symbols of wilderness and raw animal power require vast, undeveloped landscapes to thrive. That need, plus the species' low reproduction rate and relatively small numbers, makes polar bears vulnerable to human intrusion and industrial development—challenges that could have tremendous impact on these giant creatures' future.

Today, an estimated 22,000 to 28,000 polar bears are scattered throughout the Northern Hemisphere's region of ice-covered seas, occupying lands and waters of Canada, Greenland, Norway, Russia, and the United States.

Until the 1960s, scientists believed that polar bears were circumpolar nomads that wandered randomly through the Arctic. Close monitoring in recent decades has radically altered that view. Polar bears, it turns out, have a seasonal fidelity to certain regions: At any given season, an individual bear is likely to be found in the same area, from one year to the next. Thus, instead of one huge population, scientists now divide polar bears into 16 subpopulations.

Polar bears in all these subpopulations prefer to remain on sea ice because that's where they find their primary prey: seals. Ringed seals are a special favorite, hunted in snow-covered lairs or while basking on ice beside breathing holes.

Occasionally, though, polar bears will move onto land in search of food, but primarily to den. Unlike grizzly and

black bears, most polar bears do not spend their winters in hibernation, because ringed seals provide a reliable year-round supply of food. While any polar bear may build a temporary den to escape extreme cold or Arctic storms, scientists say that only pregnant females normally den for extended periods.

Polar bears in U.S. territory are in subpopulations that live off Alaska's shores and occasionally come aground in two of that state's most remote and least-known parklands: Bering Land Bridge National Preserve and Cape Krusenstern National Monument.

Intended to commemorate the "peopling of the Americas" from Asia more than 12,000 years ago, Bering Land Bridge is located along the Seward Peninsula's northern edge, within 70 miles of Nome—and only 55 miles from Siberia. Within its borders are 2.7 million acres of lowland tundras, wetlands, sand dunes, volcanic lakes, and extensive lava flows.

Across Kotzebue Sound from Bering Land Bridge and less than ten miles from the Inupiat Eskimo village of Kotzebue, 560,000-acre Cape Krusenstern National Monument is a starkly beautiful, treeless coastal plain that is dotted with lagoons and backed by rolling limestone hills. Along the plain's sea edge is a series of more than 100 beach ridges; built up by centuries of storms, their sediments contain artifacts from more than 4,000 years of human use.

Both park units are important nesting grounds for huge numbers of birds, and their lands and adjacent coastal waters are seasonally inhabited by a variety of terrestrial and marine mammals, including grizzlies, caribou, wolves, walrus, seals, and whales. Though neither park is considered critical polar bear habitat, the bears may be drawn ashore by the beached carcasses of other marine mammals, particularly walrus and whales. Although their eyesight and hearing are roughly the same as humans', polar bears have an extraordinary sense of smell. They can detect a seal's snow-covered lair from as much as a mile away and, some say, can smell rotting carcasses 100 miles distant.

The bears that enter Bering Land

Throughout their range, including Alaska, polar bear populations are healthy and stable. Yet these animals require vast, undeveloped landscapes to thrive. That need, plus a low reproduction rate and relatively small numbers, makes polar bears vulnerable to human intrusion and industrial development—challenges that could affect the bears' future.

BY BILL SHERWONIT

TO MOST ANIMALS, including humans, a description of life on the Arctic's frozen seas sounds pretty grim. Not only is it dark for much of the year, but icy winds, subzero temperatures, and fierce blizzards are the rule. For the polar bear, however, that environment is a happy home. In fact, of all the Earth's bears, only the polar bear lives exclusively in the Arctic region, earning such nicknames as the sea bear, the ice bear, and lord of the Arctic.

Because its life is so intimately connected to oceanic environments, scientists consider *Ursus maritimus* a marine mammal and place it in a group that includes whales, sea otters, and walrus-

es. Exactly how the polar bear adapted to the sea ice is something of a mystery, though in scientific circles it's generally accepted that it evolved from the grizzly bear line. This might have happened during the Pleistocene ice age, when a population of grizzly bears became isolated by an advancing ice sheet. Secluded in an environment filled with seals and no other predatory competitors, these opportunistic feeders discovered a wide-open niche and evolved into the modern polar bear.

As generations of sea bears adapted to their new environment and life as pure carnivores, their bodies went through dramatic change. Teeth became sharper for shearing of hide and flesh; claws

STEVEN KAZLOWSKI/ALASKA STOCK IMAGES

POLAR BEARS *Continued*

Bridge and Cape Krusenstern belong to the Chukchi and Bering seas sub-population, which numbers between 1,000 and 3,000 animals; about two-thirds of their range is in Russian territory. Using radio collars and satellite telemetry to track the seasonal movements of this subpopulation, researchers have found they may travel 1,800 to 3,000 miles in a year's time. The same radio-tracking data indicated these bears have immense home ranges, averaging 96,000 square miles.

A second group of Alaskan polar bears inhabits the Beaufort Sea. Researcher Steven C. Amstrup, polar bear project leader for the federal government, says this subpopulation has apparently increased more than 2 percent annually for the past three decades and may now exceed 2,500. Villagers who live in the region also have noticed more bears, but no one is certain what's causing the increase.

In the mid-1990s, the U.S. Fish and Wildlife Service interviewed 61 Inupiat Eskimo hunters in 12 Arctic villages, to learn more about the denning, feeding, and travel behaviors of Alaska's polar bears (the findings appeared in a 1997 report, "Collection of Local Knowledge Regarding Polar Bear Habitat Use in Alaska"). Hunters in the villages of Wales and Shishmaref reported that polar bears use coastal areas within, and near, the Bering Land Bridge National Preserve between November and May. Sometimes bears are seen as they travel overland. Over the years they have also been observed feeding on the beached carcasses of walrus, gray whales, and spotted, bearded, and ringed seals. On a couple of occasions, hunters have found "maternity" dens near Lopp Lagoon, just west of the preserve, but polar bear land denning appears to be rare in this region.

In a similar manner, hunters from Kivalina have seen polar bears scavenge walrus, bearded seal, and ringed seal carcasses along Cape Krusenstern's coastal lands.

Charlie Johnson, executive director of



FRED HIRSCHMANN

Polar bears spend most of their time roaming the pack ice searching for prey, such as the ringed seal.

the Alaska Nanuq (polar bear) Commission, says that nowadays polar bears sometimes make temporary dens alongside a carcass or to get out of a storm, but no on-land maternal dens have been reported for many years. He speculates that areas along Kotzebue Sound once used for maternal denning were abandoned because of disruptions from snow machines and other motorized traffic.

Aside from the effects of such vehicles, habitat protection for polar bears is a growing concern as the Arctic becomes more industrial, presenting dangers such as oil spills, increased human traffic, and disturbance of critical feeding and denning areas. One case in point is the current push for oil and gas development within the Arctic National Wildlife Refuge.

The 1.5-million-acre coastal refuge is an important calving area for caribou and provides habitat for a variety of nesting birds. In addition, radiotelemetry data collected by Steven Amstrup suggest that about 33 percent of the polar bear females that come ashore will den in the coastal plain region of the Arctic refuge.

Pregnant polar bears leave the sea ice

in the autumn or early winter and search for denning sites in the bank and bluff habitats of the North Slope. When they find a suitable snowbank, they excavate a snow cave and settle in for the winter. Subsequent winter storms cover them and provide the substrate that allows them to expand their space as needed. Settled in their dens, hibernating females give birth in December or January, usually to a pair of cubs. The newborns weigh only 1 to 1.5 pounds at birth, have such fine hair they appear naked, and can't see. Protected from winter's severity and nursing on milk that is 46 percent fat, the cubs grow quickly and weigh 25 to 30 pounds when they emerge in spring. But months will pass before they're developed enough to survive the rigors of an Arctic winter on their own.

Conservationists and some scientists fear that if the coastal plain were opened to oil and gas exploration, seismic testing would endanger the Arctic refuge's denning families. Past seismic work on Alaska's wildlife refuges has caused hibernating grizzly bears to abandon dens. Given what's known about denning bears, if a mother and cubs were chased from their den in mid-winter, the cubs would almost certainly die, although Amstrup points out that testing could be planned to avoid denning times.

Jack Lentfer, a long-time polar bear researcher, suggests that other industrial dangers to Alaska's bears include ingestion of contaminants associated with oil development, as well as oil spills that could directly harm either polar bears or the marine food web on which they depend. Based on his many years of polar bear research, Lentfer believes "the hoped-for benefits of drilling for oil on the Arctic National Wildlife Refuge do not justify the risk to polar bears. Their [coastal plain] habitat deserves permanent protection."

A second, though still largely undefined, threat to polar bear populations is pollutants—many of them transported through the atmosphere.

Only in recent years have researchers in Alaska begun to study the presence of

pollutants in polar bears and other Arctic mammals (particularly seals, walrus, and whales). No significant build-ups have been identified so far except, perhaps, for HCH or hexachlorocyclohexane, a toxin used in the pesticide Lindane. "Alaska's polar bears have some of the highest HCH concentrations in the Arctic," says Tom Evans, a federal biologist with the Marine Mammals Management office in Anchorage. "But what that means, we really don't know."

From a circumpolar perspective, chemical contaminants in polar bears generally increase from west to east, from the Chukchi and Bering seas across Alaska and Canada and then to Greenland and Norway. The pattern makes sense if one considers prevailing

mals' hormonal and immune systems. They've also found polar bears with hermaphroditic characteristics. In one case, twin cubs were found to have both male and female genitalia. It's possible that high organochlorine concentrations in pregnant females have affected hormones involved in fetal development. But that's only speculation, Norstrom stresses. "No one had ever seen anything like it before," he says, "but no one had looked for it, either. It may just be a development stage, a 'bear thing.'"

"Right now," he says, "the biggest danger that humans pose to bears is still hunting." In Alaska, only Native residents are allowed to hunt polar bears. In recent years the subsistence harvest has averaged 80 to 100 bears, and the trend is downward.

have risen nearly 1.5 degrees since 1950—and the bay is now ice-free much earlier than 20 years ago. All of these changes are consistent with global warming models.

As a consequence of the climatic shifts, Churchill's polar bears are eating less, thus building up less fat reserves. Studies done by Stirling and other researchers show the bears are 10 percent thinner and have 10 to 15 percent fewer cubs than two decades ago. Not only are fewer cubs being born; their survival rate is dropping because they don't have enough fat.

If global warming models are correct, the changes in Hudson Bay may be a harbinger of what's to come throughout the circumpolar region as the Earth's climate continues to heat up.



OAKLEY COCHRAN/ALASKA STOCK IMAGES

Polar bears have an extraordinary sense of smell and can detect animal carcasses as much as 100 miles away.

wind directions, says Ross Norstrom, a Canadian Wildlife Service research scientist who has studied contaminants in polar bears for more than two decades. Greenland and Norway are hammered by industrial pollutants borne on winds from both North America and Europe: a sort of "double-barreled effect," says Norstrom. Russia, he adds, remains a big unknown.

Among the more curious and disconcerting discoveries, biologists studying Norway's polar bears have found in them high concentrations of PCBs and organochlorines, known to affect ani-

One other long-term threat to polar bears is global climate change. The world's southernmost group of polar bears lives in Canada's Hudson Bay near Churchill, Manitoba.

Because of the way the ice pack melts in Western Hudson Bay, bears are stranded each summer. Separated from their principal prey of ringed seals, the bears endure a summer-long fast until the ice returns in November. In recent decades, that fasting period has been extended ten to 14 days, says Canadian scientist Ian Stirling. The reason: Annual temperatures in western Hudson Bay

Long-term temperature increases will mean a diminished ice pack; that, in turn, will affect the survival of ringed seals, polar bears, and other northern species in unknown ways.

It may not happen in our lifetimes, but there may come a day when polar bears no longer walk the shores of Alaska's northwest parklands. As always, that future depends on actions taken in the present.

BILL SHERWONIT, a nature writer, is the author of *Alaska's Bears*. He lives in Anchorage, Alaska.



MOUNTAINS OF COLOR

Fall's cooler temperatures gild East Tennessee's forested mountains. The display spans at least five national park units that offer some of the best places to view the show.

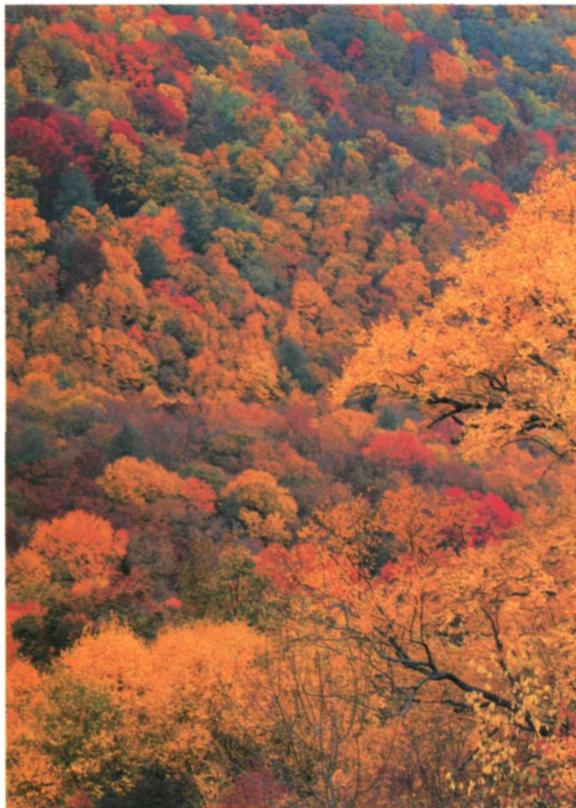
BY RUSS MANNING

FOR MOST FOLKS across the country, the most vivid sign of the fall season is the changing color of leaves. And ever since people gathered into valley communities to live, clearing trees for farms and parking lots, fall excursions to view changing colors in mountain forests have been a national tradition.

A favorite destination for visitors from throughout the country is the mountain region of East Tennessee. Scenic byways follow mountain streams through hardwood forests where red-orange maples and scarlet sourwoods hang over the water. Yellow poplars and birches provide softer color, and dark-red oaks and dogwoods form a backdrop. Along hiking trails, colored leaves litter the path like confetti from a parade, and the bright canopy of sheltering branches glitters with early morning and late afternoon sun.

This autumn display presents itself in East Tennessee from mid- to late October in five national park units in this

RUSS MANNING is the author of *100 Hikes of the Great Smoky Mountains* and *100 Trails of the Big South Fork*, both from The Mountaineers Books, as well as *The Historic Cumberland Plateau*, published by the University of Tennessee Press. His *Scenic Driving Tennessee* will be published by Globe Pequot Press in 2002.



Red maples at Newfound Gap Road, Great Smoky Mountains National Park, North Carolina.

corner of the state. The gateway to the region is Knoxville, where visitors can stop in the Gateway Regional Visitor Center to view photographic displays of the five sites, use an interactive computer program, and acquire all the books and information needed for planning a visit. The visitor center is open from 9 a.m. to 5 p.m. Monday through Saturday and 1 to 5 p.m. on Sunday. It is located on Volunteer Landing Lane and can be reached at 800-727-8045 and at www.knoxville.org. Highlights of the five sites follow.

Great Smoky Mountains National Park

The show begins at the higher elevations of Great Smoky Mountains National Park where the brisk mornings of early fall first arrive. The evergreen spruce-fir forests of the highest peaks become spattered with the yellow of birch and mountain ash. The reddish browns of oak forests along dry exposed ridges are harbingers of what is to come.

Fall color then flows down the mountains as cooler temperatures reach the coves and valleys. Northern hardwood forests, found more commonly in the New England and Great Lakes states, grow in the Smokies on slopes above 4,500 feet. They sport a mosaic of yellow birch and beech and scattered red maples, pin cherries, and oaks. At the lowest elevations, cove hardwood forests contribute most to fall color with the reds and oranges of maples, the yellows of

basswood, buckeye, tulip poplar, hickory, and silverbell, and the reddish browns and dark reds of oak trees.

This park offers 803 miles of trails through the forest communities, ranging from short nature trails to long overnight backpacks. For cove hardwood forests, try the Cove Hardwood Nature Trail out of the Chimney Tops picnic area on Newfound Gap Road, or the Laurel Falls and Little River trails off Little River Road. Out of the Greenbrier area, hike the Porters Creek and Brushy Mountain trails. For northern hardwood

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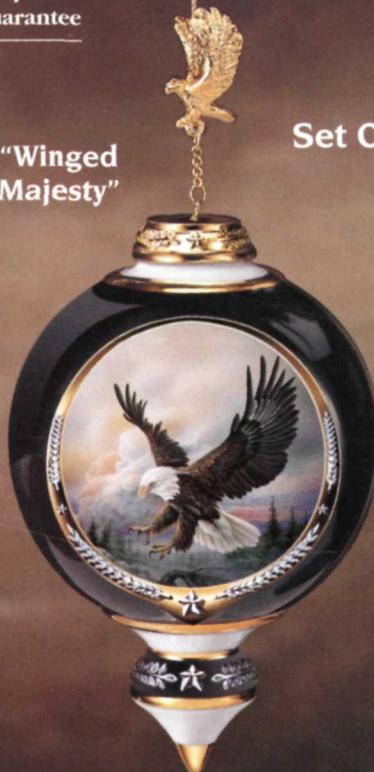
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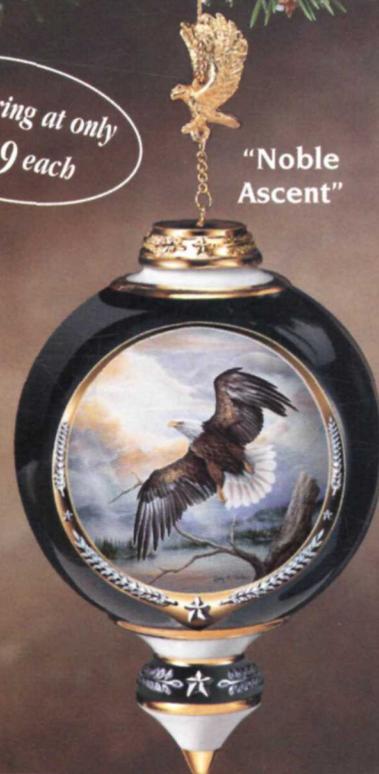
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LARRY ULRICH

Henry Whitehead Cabin in Cades Cove, Great Smoky Mountains National Park, Tennessee.

forests, sample the Thomas Divide Trail off Newfound Gap Road and the Fork Ridge Trail off Clingman's Dome Road.

The road from the Sugarlands Visitor Center along Little River Road to the Townsend Wye and then Laurel Creek Road on to Cades Cove offers a spectacular fall drive. But be aware that it is the most heavily traveled route during the fall season in this most visited national park in the country, so take the drive during the week to avoid crowds or head to the less-visited Greenbrier and Cosby Cove areas in the park's northeast corner.

A minimum of two to three days is needed to visit the Smokies. Reservations are recommended for the Cades Cove and Elkmont campgrounds; contact 800-365-CAMP or <http://reservations.nps.gov>. The Cosby Campground is first come, first served but almost always has openings. Accommodations are available in Gatlinburg (800-568-4748) and Townsend (800-525-6834). For park information, call 865-436-1200 or visit www.nps.gov/grsm.

Andrew Johnson National Historic Site

In the early 1800s, Andrew Johnson settled in the small town of Greeneville, which lies in the Great Valley of East Tennessee between the Great Smokies on the east and the Cumberland Plateau on the west. Here Johnson with his wife, Eliza, operated a tailor shop where prominent citizens stopped by to talk politics. In 1829, he was elected alderman for the town of Greeneville and began a political career that would lead to the U.S. Senate and the White House.

During the Civil War, Johnson opposed the South's secession from the union and because of his pro-Union stand was appointed military governor of Tennessee. Abraham Lincoln then selected Johnson as his running mate for the 1864 presidential election. When Lincoln was

assassinated in 1865, Johnson became president. He was soon in conflict with Congress about how to conduct the reconstruction of the South, which eventually led to his impeachment, the first of a president in U.S. history. He was, however, acquitted by the Senate, went on to complete his term, and was later re-elected to the Senate.

Not only is this area significant as the home of a president, but the drive up US 321 to Greeneville passes through some of the most beautiful farmland in the nation. In fall, color drapes scattered woodlands, and solitary trees of brilliant red or gold stand amidst grazing cattle. At the historic site in Greeneville, visitors can see the Johnsons' original tailor shop and visit their first home and the later homestead. The couple are buried in the national cemetery on a hill in the historic town.

Most of a day is needed to explore Greeneville. The national historic site is open 9 a.m. to 5 p.m., seven days a week; guided tours at the homestead are \$2 each, but free for visitors older than 61 and younger than 18. The park is closed Thanksgiving, Christmas, and New Year's. For accommodations, contact the Greeneville-Greene County Chamber of Commerce at 423-638-4111 or visit its web site at www.greeneville.com/lodging. For historic site information, contact its visitor center at 423-638-3551 or visit www.nps.gov/anjo/index/htm.



RUSS HANNING

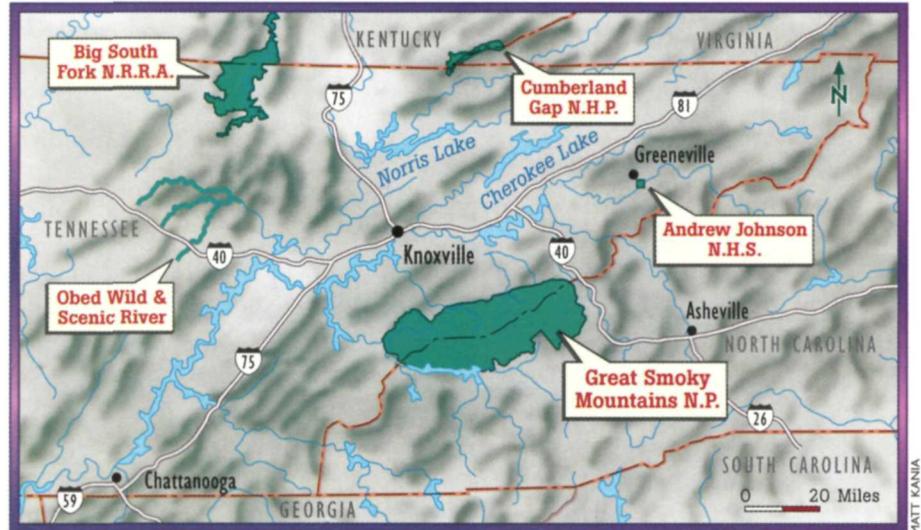
President Andrew Johnson's homestead. He succeeded Abraham Lincoln after the assassination.

Cumberland Gap National Historical Park

The Cumberland Plateau to the west in East Tennessee rises 1,000 feet above surrounding valleys and so posed a formidable barrier to westward migration during early settlement of the country. Today this historic area is the home of several national park units.

Cumberland Gap National Historical Park, one of these units, commemorates the historical significance of a primary gap in the Cumberland Mountains that stand atop the plateau. After Daniel Boone blazed a trail through the gap that became the Wilderness Road, thousands of settlers seeking new beginnings traveled westward through Cumberland Gap to the fabled bluegrass region of Kentucky and the fertile valley of the Cumberland River in Middle Tennessee.

Later, during the Civil War, Confederate and Union troops alternately held this strategic gap. Several sites within the national historic park still show evidence of the earthen fortifica-



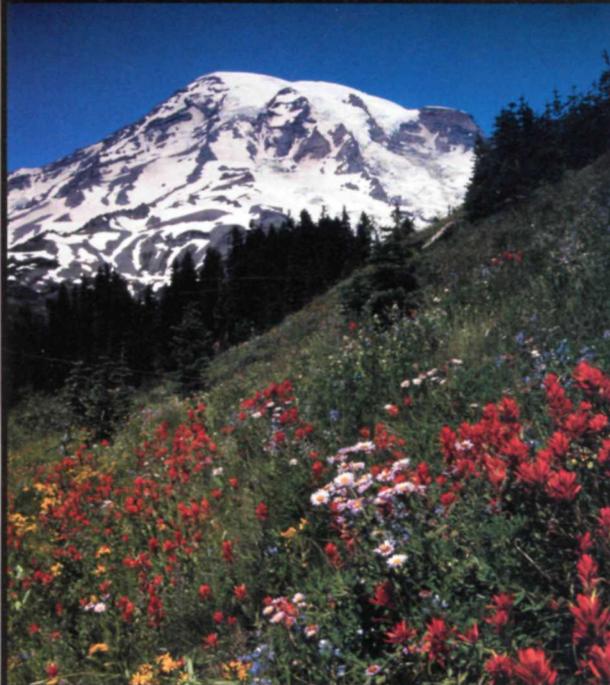
tions and camps used by the troops.

Today, the national historical park, which overlaps the three states of Tennessee, Kentucky, and Virginia, contains 65 miles of trails that wander along the main ridge of the Cumberland Mountains. An uplands forest of oaks with occasional maples, basswood, buckeye, yellow poplar, and beech lend colors of dark red and yellow in fall. The Ridge

Trail winds through this high-elevation forest. A scenic drive follows the Pinnacle Road from the visitor center on the Kentucky side of the park to the Pinnacle, a rock promontory that overlooks Cumberland Gap.

At least a full day is needed to experience the park. For accommodations in the nearby town of Cumberland Gap, contact the Claiborne County Chamber

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of Commerce at 423-626-4149 or visit the web site at www.claibornecounty.com. Camping is available at the park's Wilderness Road Campground on a first-come, first-served basis; for park information, contact the visitor center at 606-248-2817 or visit www.nps.gov/cuga.

Big South Fork National River and Recreation Area

To the west on the Cumberland Plateau, Big South Fork National River and Recreation Area surrounds a deep sandstone gorge that walls in the Big

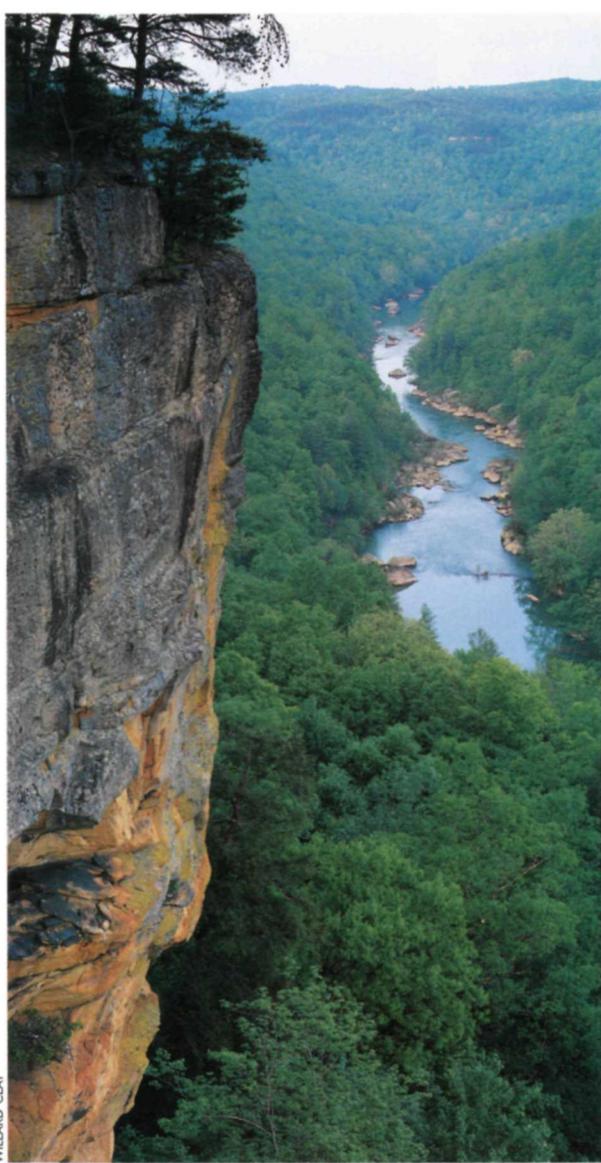
South Fork of the Cumberland River where it flows north into Kentucky. This park unit is a unique combination of national river, including the gorge, managed as virtual wilderness and national recreation area on the adjacent rim, where visitor centers and campgrounds are located.

The area is a mecca for outdoor recreation, from hiking and horseback riding to mountain biking and whitewater paddling. More than 300 miles of trails penetrate a dramatic landscape of vertical rock walls, natural sandstone arches, waterfalls, and rock shelters.

During autumn, the ravine forest below the rim of the gorge possesses some of the best fall color in the state. Red maple, beech, yellow poplar, basswood, buckeye, yellow birch, black cherry, white ash, hickory, sycamore, sweet gum, and more make up the forest communities that result in a multicolored tapestry.

Highway TN 297 crosses the park east to west, dipping into the river gorge and passing the visitor center. The John Muir Trail follows the river north, offering panoramic views of the river gorge and fall color.

A minimum of two days is needed to explore the Big South Fork. For accommodations in the nearby town of Oneida, contact the Scott County Chamber of Commerce at 800-645-6905. Re-



WILLARD CLAY

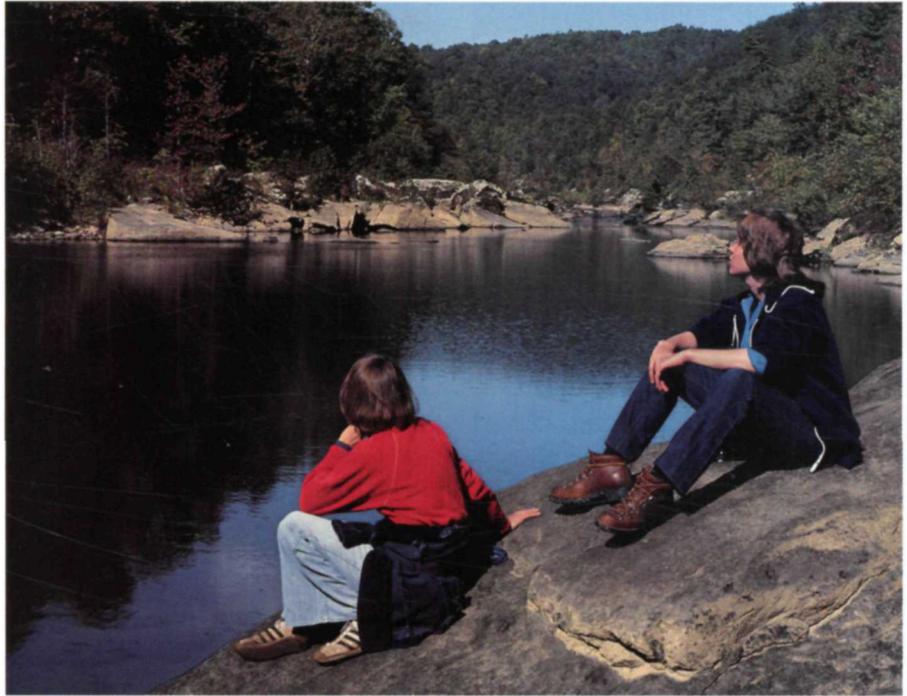
Big South Fork River from Grand Gap Loop, Big South Fork National River and Recreation Area, Tennessee.

ervations are recommended for the park's Bandy Creek or Blue Heron campgrounds; contact 800-365-2267 or <http://reservations.nps.gov>. For more information, including a list of outfitters for paddling and horseback riding, contact the park visitor center at 931-879-4890 or visit the park web site at www.nps.gov/biso.

Obed Wild and Scenic River

To the south on the Cumberland Plateau, the Obed River gorge has topography and forest communities similar to the Big South Fork's. Sheer cliffs towering over some of the best whitewater in the country offer a remote location for viewing the fall color of the plateau's ravine forest.

Paddling the national wild and scenic river and rock climbing are popular activities. Roads from the visitor center in Wartburg penetrate the region. The park has just completed a short nature trail and another trail. A portion of the Cumberland Trail will eventually pass 280 miles through the state along the plateau, from Cumberland Gap National



RUSS MANNING

Hikers rest to contemplate the rugged beauty of Obed Wild and Scenic River.

Historical Park south to Signal Mountain above Chattanooga.

Allow at least a full day to hike in Obed River country. For more informa-

tion about the park and for accommodations in Wartburg, call the park visitor center at 423-346-6294 or visit its web site at www.nps.gov/obed.

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Reaching Out

Study finds national parks employ innovative strategies to reach ethnically diverse communities.

BY NINA S. ROBERTS & DONALD A. RODRIGUEZ

ESTABLISHED 85 YEARS AGO, the National Park System encompasses 384 units and more than 83 million acres of land that represent our highest peaks, tallest trees, and many of our most significant historic events. This system was created for all people, yet not everyone is represented in the stories the parks tell or by the people who tell them. Fulfilling these commitments has not been easy.

The parks relay the nation's history and preserve what the country perceives to be its most valuable natural and cultural treasures, yet how people from different cultures perceive and experience the history, wildlife, and stories of the parks may vary. Reaching these diverse groups is imperative because the demographics of the country are changing. As the 2000 Census demonstrates, formerly "minority" populations are now larger than the "majority" in some locations across the country.

The Park Service is using a variety of techniques to address the system's relevance for a changing population and to encourage people who do not have a tradition of traveling to the national parks to value these places. Several years ago, the National Park Foundation explored for the National Park Service how the agency and the places it protects were perceived by various groups of Americans. What they found convinced the Park Service to do more out-

reach, especially among diverse audiences. NPCA has also encouraged the Park Service to broaden the parks' stories and to expand its outreach efforts.

To better understand these efforts, we launched a study to identify Park Service programs that have made successful connections with ethnic communities. Funded by the Cooperative Park Studies Unit at the University of Idaho, this

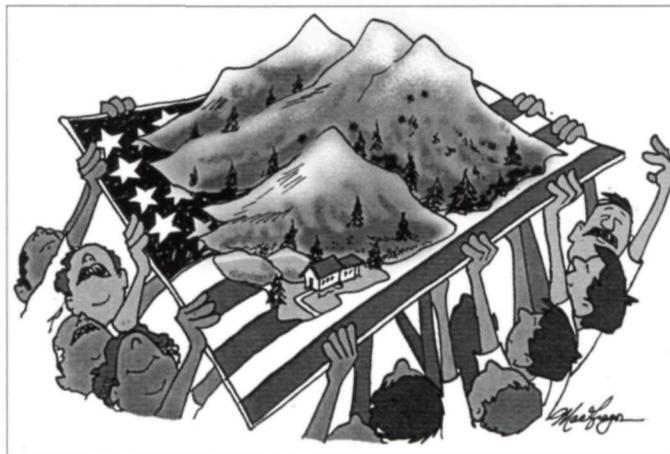
Muir National Historic Site, and Point Reyes National Seashore in California; Cape Cod National Seashore, Boston National Historical Park, and African American National Historic Site in Massachusetts; Curecanti National Recreation Area and Rocky Mountain National Park in Colorado; and Petroglyph National Monument in New Mexico.

A primary goal was to identify outreach programs developed by these parks to reach underrepresented audiences and to pinpoint any gaps. The study showed that although a variety of strategies are used, including collaborative planning efforts and community liaisons, the parks must cast their nets more broadly to interest diverse communities.

Park professionals need to better understand why the parks do not appeal to ethnic minorities as much as they

do to the traditional white user: What are participation patterns and trends? What perceptions exist? What barriers continue to impede visitation and enjoyment? Why do national parks appeal to internationally diverse people, yet have a seemingly limited appeal among ethnically diverse domestic audiences? This is also a question of relevance in some cases. How much interest, for example, is there for John Muir among diverse American audiences?

In some communities, the national parks have a reputation of being places



DOUGLAS MACGREGOR

study highlights lessons learned that may be applied to other park areas.

Two key questions provided the project's driving force: What is the breadth and depth of Park Service programs aimed at school communities and youth groups that may not have the same opportunity as traditional park users? What factors might play a role in the lack of participation and visibility of ethnic minorities?

Our case study focused on nine parks contained in three primary areas: Golden Gate National Recreation Area, John

“for white people.” This is a perception and a myth that the Park Service is working hard to dispel. Through this study, we learned that there are many successful programs across the country helping to create an inclusive environment and are, indeed, providing opportunities to people of all backgrounds.

Nearly all Park Service sites offer some type of interpretive or educational program. Through oral histories and scientific displays, each program conveys the park’s national significance and how it fits into the nationwide system. A great example is the Boston-based “People and Places.” This is a cooperative venture of the local national historic sites, Boston public schools, and the Freedom Trail Foundation. Free educational experiences introduce Boston students to the city’s history through hands-on activities and field trips.

Education programs offer a multitude of opportunities for school groups and youth organizations. Curriculum materials, videos, accredited teacher training, and teacher and student resource packets are available to nearly anyone. At Golden Gate, the staff has actively involved diverse communities in resource stewardship programs and through the development of the Chrissy Field Environmental Education Center.

All sites studied have embarked on a valuable journey of discovering and telling the “untold stories” as part of their interpretive design, such as African American involvement in westward expansion that historically has been overlooked. Additionally, the sites provide materials to assist schoolteachers in accomplishing their educational goals and objectives. The successful Wonders in Nature, Wonders in Parks program at Rocky Mountain National Park supple-

ments the Denver public schools’ curriculum based on the schools’ standards and needs with special efforts to reach ethnically diverse students.

Despite significant progress, the Park Service faces a variety of challenges that make satisfying these demands harder. Central among them is a lack of funding and staff. Without these, the ability of parks to provide additional programming to underrepresented communities is debatable. Additional challenges include diversifying park staff and educating them about the populations being served, as well as providing a way for diverse populations to get to the parks to either enjoy or work in them.

Although the Park Service has done a good job of establishing outreach programs, in most cases, the agency has not followed through to determine whether its efforts are having the desired effect. Formal evaluation occurred at only a few of the study sites. Even so, the importance of these efforts lies in the intent to be inclusive. The efforts we learned about are a collective statement about the level of interest being generated by certain units within the system. They provide insight into how seriously the Park Service considers its mandate to reflect the interests of “all Americans.” The effective park units in our case study have taken an aggressive approach, hiring community liaison staff, actively seeking input from ethnic minority communities through advisory boards, community partnerships, such as the one begun by NPCA, or informal networks. Reaching out to church groups, schools, and recreational community centers may provide parks with unusual opportunities to serve the needs of local people and potential supporters of these parks.

Parks must continue to become part of the community fabric. Parks across the country must be proactive in efforts to engage diverse audiences and local communities. Our parks will be celebrating a centennial before we know it. Perhaps by then they will be regarded as an integral part of the larger landscape that touches the lives of all citizens in a variety of ways, and are as distinctive as the communities who visit them. 🐾

NINA S. ROBERTS is a research associate with the Student Conservation Association and a doctoral student in recreation resource management at Colorado State University. DONALD A. RODRIGUEZ, Ph.D., is an assistant professor in the Department of Natural Resource Recreation and Tourism at Colorado State University. The authors would like to thank all the NPS division chiefs, interpretive rangers, and related staff interviewed for their time and contributions in supporting the success of this project.

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Fishing for Answers

Glacier Bay provides new birthing ground for Steller sea lions, whose overall numbers are down.

BY ELIZABETH G. DAERR

ALTHOUGH THE western population of the Steller sea lion has declined as much as 75 percent during the last 20 years, the eastern population, from Southeast Alaska through California, appears healthy. (The populations divide along the 144th parallel.) Evidence of the change can be seen at one place that has become a haven for the species—Glacier Bay National Park in Alaska. Graves Rocks, historically just a resting area for the marine mammals, has recently transformed into a rookery; it's one of only five in Southeast Alaska.

"It's quite exciting and an opportunity for the park to play a role in monitoring what happens at a rookery," said Beth Mathews, a biologist with the University of Alaska Southeast who studies sea lions at Glacier Bay.

As many as 700 to 900 Steller sea lions use the site located on the outer region of the park, and at another haul-out located inside Glacier Bay proper—South Marble Island—numbers have increased from about 50 sea lions in the 1980s to 300 to 500 today, Mathews added.

The population of Steller sea lions in Southeast Alaska is growing at nearly 2 percent each year, but the annual rate at South Marble Island is more than 30 percent.

"What's most likely happening is a shift in distribution, with more sea lions using Glacier Bay now than a



ERWIN & PEGGY BAUER

While the western population of Steller sea lions plummets, those in Southeast Alaska have found a haven at Glacier Bay.

decade ago," Mathews said. This may be attributed to a shift in food supply, she added.

Shifting and dwindling food supplies are most likely to blame for the sea lion's rapid decline, from hundreds of thousands to about 30,000, within the western population, said Tom Loughlin, a biologist with the National Marine Fisheries Service (NMFS). His team is researching, among many factors, how environmental changes in the water may be affecting the distribution and abundance of fish that the species eats. Another factor being researched and for which there is generous funding over the next two years is the influence of the commercial fishing industry on the species and its food supply.

Suspecting that commercial fishing has depleted some of the animal's food supplies, the fisheries service enacted emergency regulations in January to protect stocks of pollock and cod in the

Bering Sea and the Gulf of Alaska.

Loughlin theorizes that poor nutrition is taking the greatest toll on the juveniles, but his research indicates that the number of nursing pups is rising.

Pups are born on coastal islands between mid-May and mid-July, weighing 35 to 50 pounds, and continue nursing for up to a year or longer. Dominant males establish territories and breed with 15 to 30 females within two weeks after they have given birth. Reaching 11 feet long and weighing up to 2,500 pounds, males lose weight during the breeding season because they do not leave the island to feed. They spend all their time defending their territory.

The males' prominent, thick neck sometimes resembles a lion's mane and is in part where the animal got its name. German naturalist George Wilhelm Steller, who accompanied Russian explorer Vitas Bering to Alaska in 1741, was the first person to study and classify the animals.

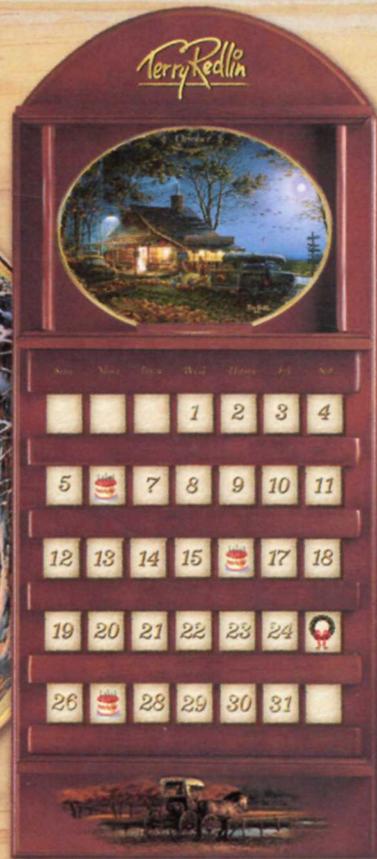
Though there are far fewer Steller sea lions today than in 1741, Loughlin professes to be an "eternal optimist" about the species' ability to survive. In the short term, he expects a significant drop in the western population because "the causes for mortality are so sophisticated that we won't be able to resolve them." But after studying them since 1979, he says, "They're smart animals, and they are distributed over such a wide range, no doubt they will find their own refuges without help from us." 

ELIZABETH G. DAERR is news editor.

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For free product information, fill out the reader service card between pages 32 and 33, or contact the company at the phone number or web site listed below.

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www.buckknives.com

Cabela's
1-800-857-8007
www.cabelas.com

Camping World
1-800-845-7875 Code DB
www.campingworld.com

Campmor
1-800-226-7667
www.campmor.com

Coleman
1-800-835-3278
www.coleman.com

Eagle Optics
1-800-289-1132
www.eagleoptics.com

Leatherman
1-800-762-3611
www.leatherman.com

Paha Qué Tents
1-888-700-TENT (8368)
www.pahaque.com

Sierra Trading Post
1-800-713-4534 Key Code NPGG01
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Call it the return of a classic ... back by popular demand. For 40 years, Coleman manufactured a steel cooler but ceased production in 1994. These steel coolers were so popular that some people resorted to looking for them at yard sales and flea markets. The company is featuring the new 54-quart Coleman® Steel™ Cooler as a marquee product in its special centennial collection for 2001. The new Steel Cooler has been redesigned. The traditional look has been blended with contemporary styling—smoother lines with rounded corners and edges.

Coleman
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On A Mission

Juan Bautista de Anza blazed the first overland trail from Mexico to northern California.

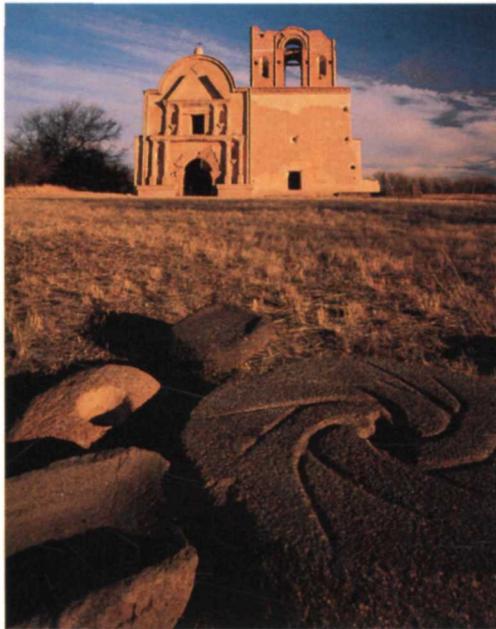
BY WILLIAM A. UPDIKE

WHILE A RAGTAG band of revolutionaries was fomenting a rebellion in the East to create one of the world's first constitutional democracies, a Spaniard was leading an expedition that would provide the foundation of one of the world's great cities—San Francisco.

During the mid-1770s, Juan Bautista de Anza gathered soldier-recruits and their families at the Presidio of San Miguel de Horcasitas, the provincial capital of the Mexican state of Sonora. Their goal was to blaze the first overland trail from Sonora into Alta (now northern California) to boost the Spanish settlements in that region. His efforts are remembered at federal and state sites along the 1,200-mile Juan Bautista de Anza National Historic Trail.

The Spanish, whose empire included much of the present-day western United States, Florida, and the Philippines, intended to gain control of the Pacific Coast of today's United States while the British and American settlers were fighting in the East.

In 1774, Anza, then captain of the Royal Presidio at Tubac, Sonora, financed his own exploratory trip of the overland route and proved the journey possible. The following year, the Viceroy of New Spain authorized Anza to lead the expedition to the bay of San Francisco. Anza began to enlist volunteers in



JACK W. DYKINGA

Visitors to Tumacacori National Historical Park can walk in Anza's footsteps.

Culiacán, and the group of more than 240 gathered at Tubac. Despite the hardships on the approximately 2,000-mile journey, the group suffered only one loss—a woman who died the first night of complications during childbirth.

On October 23, 1775, the expedition left Tubac and followed the Santa Cruz River to the Gila River. From the camp, Anza and others visited Casa Grande, an ancient Indian ruin that is now a national historic monument between the modern-day cities of Tucson and Phoenix. They then followed the Gila to a point where they could cross the Colorado River.

After the crossing, the travelers en-

tered the desert of southern California, and the journey became more difficult. They struggled for food and water in one of the coldest winters on record in that part of the country. Anza decided to split up the group to better their chances. Each group traveled a day apart to allow water holes to refill. They eventually regrouped near what is now Anza Borrego Desert State Park, in northern San Diego County, California. On January 4, 1776, they reached the settlement Mission San Gabriel Arcángel, and from there they followed established trails through Indian villages along the California coastline. They passed through other missions, including San Luís Obispo de Toloso and San Antonio de Padúa, and arrived at Monterey and the nearby mission San Carlos Borromeo de Carmelo on March 10.

From Monterey, Anza took a small group to map the land around San Francisco Bay on which the Spaniards would build the Presidio, and other missions including San Francisco de Asís (Mission Dolores) and Santa Clara de Asís.

The expedition's importance lies not only in its settlement of San Francisco Bay, but in the diversity of the explorers. The group consisted of people with mixed European, African, and American Indian parentage, reflecting a breakdown of traditional racial boundaries in New Spain. Although the Yuma Indians closed the route after a revolt from Spanish rule in 1781, its legacy survived that period and continues into our own. 🐾

WILLIAM A. UPDIKE is a freelance writer and photographer based in Michigan.



BY RYAN DOUGHERTY

Workshop on South Florida's "Other" History

►NPCA's Miami Community Partners Program co-hosted a three-day workshop, "The Other South Florida History," at the Historical Museum of Southern Florida.

The workshop offered south Florida teachers, Park Service interpreters, and the public a comprehensive lesson in African-American history, particularly as it relates to south Florida's

national parklands.

The objective of the workshop, held in mid-June, was to raise the visibility of African and Native American history, in both the social studies curriculums of Miami's public schools and the interpretive materials and installations of the Park Service.

Dr. Gene Tinnie organized the workshop, which featured presentations by Black Seminole descendants.

The Miami Partners group is one of NPCA's six partners groups throughout the country.

Volunteers to Participate in Lands Day

►Tens of thousands of people across America will join the National Environmental Education & Training Foundation (NEETF) on Sept. 29, 2001, for National Public Lands Day.

This year's event will focus on "Keeping the Promise," by asking people to join together to improve the nation's public lands and to honor the work and sacrifice of the members of the

Civilian Conservation Corps, who built more than 800 of America's national and state parks (see story on page 23).

NPCA is one of several partners for the event, which is sponsored by Toyota.

Organizers described Public Land Day as "one of the largest one-day volunteer" public land events ever held.

Those interested in volunteering can find more information by visiting <http://www.npld.com>, or by calling 1-800-VOLTEER.



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YOU ARE HERE

Cavernous Wonder

This park was established in 1941 to preserve its maze of passages, domes and pits, underground rivers and lakes, and rugged topography.



LAURENCE PARENT

NAMED A WORLD HERITAGE site in 1981, the park features an underlying ecosystem that—with 336 miles explored and mapped—is more than three times larger than any known cave system. Approximately 130 forms of life can be found here, including the deer and wild turkeys often seen feeding at nearby roadsides. Among the rare creatures that roam the park's passageways are eyeless fish, white spiders, and blind beetles. The park is known for its sinkhole-ridden, karst topography. Have you visited this park? Do you know which one it is? [ANSWER ON PAGE 7.]

Revolutionary Soft Hearing Aid—Free Information

Tiny Hearing Aid with Remarkable Sound!

The Exciting New EarMate-63 Hearing Aid

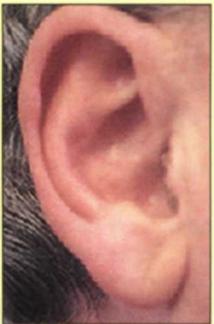
If you miss some words, the EarMate-63 may be your solution.

Are you one of the millions of Americans suffering from gradual hearing loss? You say "What?" more often because it sounds to you like people are mumbling. Family members complain that you play the TV too loudly. You avoid conversations because you don't hear the higher tones in speech. It happens to almost everyone—you hear but don't understand.

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Scientific Breakthrough!



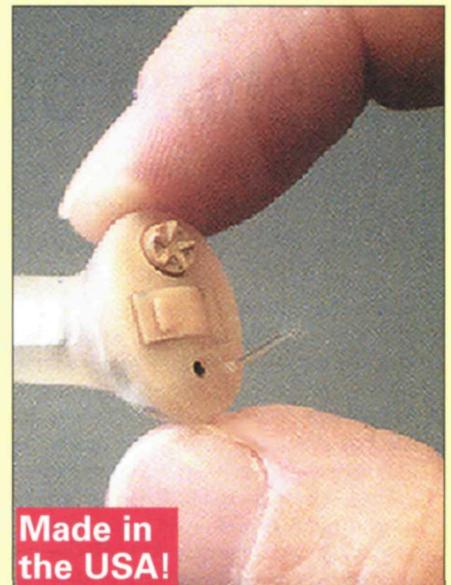
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Now you may dramatically improve your hearing with the new EarMate-63. The outer casing is made of a soft material that conforms to the shape of your ear canal. Its revolutionary soft casing remains soft and pliable. You are assured a secure and comfortable fit which minimizes the chance of squealing or whistling. You can have the best fit possible from a ready-to-wear hearing aid.

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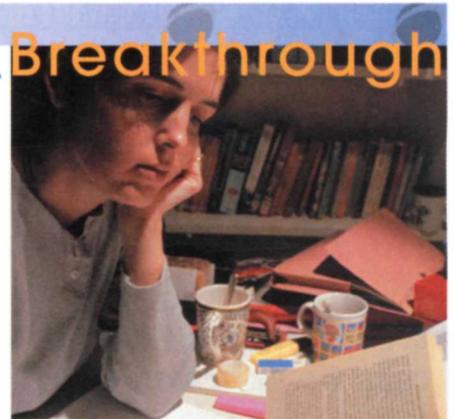
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Lighting Technology Breakthrough

A floor lamp that spreads sunshine all over a room

The HappyEyes™ Floor Lamp brings the benefits of natural daylight indoors for glare-free lighting that's perfect for a variety of indoor activities.



The HappyEyes™ Floor Lamp will change the way you see and feel about your living or work spaces.

Ever since the first human went into a dark cave and built a fire, people have realized the importance of proper indoor lighting. Unfortunately, since Edison invented the light bulb, lighting technology has remained relatively prehistoric. Modern light fixtures do little to combat many symptoms of improper lighting, such as eye strain, dryness or burning. As more and more of us spend longer hours in front of a computer monitor, the results are compounded. And the effects of indoor lighting are not necessarily limited to physical well being. Many people believe that the quantity and quality of light can play a part in one's mood and work performance. Now Verilux®, a leader in healthy

Use the HappyEyes™ Floor Lamp...



...for hobbies...



...for reading...



...for working...



...and when you need a good source of light for close-up tasks.

lighting since 1956 has developed a better way to bring the positive benefits of natural sunlight indoors. The HappyEyes™ Floor Lamp will change the way you see and feel about your living or work spaces. Studies show that sunshine can lift your mood and your energy levels, but as we all know the sun, unfortunately, does not always shine. So to bring the benefits of natural daylight indoors, Verilux, The Healthy Lighting Company™, created the HappyEyes Floor Lamp that simulates the balanced spectrum of daylight. You will see with more comfort and ease as this lamp provides sharp visibility for close tasks and reduces eyestrain. Its 27-Watt compact fluorescent bulb is the equivalent to a 150-Watt ordinary light bulb. This makes it perfect for activities such as reading,

You don't need the Sun to get the natural benefits of daylight

- Replicates the balanced spectrum of natural sunlight
- See with comfort and ease
- Creates natural, glare-free light
- Provides sharp visibility
- Uplifting, cheerful and bright
- Flexible gooseneck design
- Instant-on, flicker-free light

Technology revolutionizes the light bulb



- 5,000 hours bulb life
- Energy efficient
- Shows true colors
- Two light levels

writing, sewing and needlepoint, and especially for aging eyes. For artists, the HappyEyes Floor Lamp can bring a source of natural light into a studio, and show the true colors of a work. This lamp has a flexible gooseneck design for maximum efficiency and two levels of light, with an "Instant On" switch that is flicker-free. The high fidelity electronics, ergonomically correct design, and bulb that lasts five times longer than an ordinary bulb makes this product a must-see.



This light can change the way you live and work

I love it! Reading is so much easier on my eyes. It's also great for doing crafts. The lamp's light weight allows me to bring it anywhere.—Karen R. CA

It really brightens up my office, Thank you.—Jan L. GA

I use my computer all the time and WOW what a difference. I just put it up and I can see!—Kathy N. CA

It is really nice and eliminates the glare!—Nita P. CA

It is a nice sunny product for a windowless office.—Edit L. NJ

Dozens of testimonials on file
Results not typical

Try this risk-free, manufacturer direct special offer. The HappyEyes Floor Lamp comes with a one-year manufacturer's limited warranty and TechnoScout's exclusive risk-free home trial. If you're not fully satisfied, return it within 30 days for a complete "No Questions Asked" refund.

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