

National parks

The Magazine of
The National Parks
Conservation
Association

NOVEMBER/DECEMBER 2001 \$2.50

USS Arizona Memorial
Species in the Balance
Yellowstone in Winter
St. Augustine, Florida
A Walk with Ed Abbey



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National parks

Vol. 75, No. 11-12
November/December 2001

The Magazine of the National Parks
Conservation Association

FEATURES

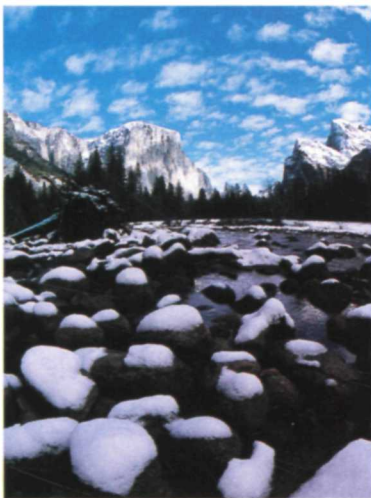
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By Kim A. O'Connell

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By Benjamin Long



COVER: The USS Arizona Memorial marks the site where 60 years ago on December 7, the ship came to rest after the attack on Pearl Harbor.
Photo by Douglas Peebles.



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OUTLOOK

Symbols of America

Terrorists cannot unravel the fabric of our society, which is represented by our parks and monuments.

MY DAILY commute from my home in Virginia to the NPCA offices in Washington, D.C., sometimes takes me across the Arlington Memorial Bridge, a span that connects the Lincoln Memorial to Arlington House, Robert E. Lee's former estate. The bridge symbolizes the reunification of our country following the devastation of the war between the states.

On September 12, the day after the events that rocked our nation, my commute was anything but usual. Smoke continued to billow from the Pentagon, where a commercial airliner had become a weapon of destruction. Smoke rose more than 200 miles to the north as well, marking what remained of the World Trade Center and the deaths of as many as 5,200 people—surpassing the number of Americans killed in the War of Independence.

Although these terrorist attacks wounded us in profound ways, they have not brought us to our knees. The war and healing symbolized by the linkage of the Lincoln Memorial and the Arlington House—both units of the National Park System—offer evidence that our nation can survive egregious hurts, heal, and become stronger.

In the heart of the most recent disasters, we find many national treasures that help define us as a country. In Washington, D.C., stand the Franklin



Delano Roosevelt Memorial, the Vietnam Veterans Memorial, the Jefferson Memorial, the Lincoln Memorial, Frederick Douglass Historic Site, and more than a dozen others.

In New York City, the Statue of Liberty and Ellis Island embody our immigrant origins and symbolize the freedoms

and opportunities that drew many refugees to our shores.

The billowing ash of our destroyed buildings may obscure the physical view for a time, but no act of terror will dismantle what all of the park system's monuments and memorials represent: the fabric of American society, our open, democratic processes. While we prepare for war and funnel our limited federal dollars toward supporting it, we must also keep our national parks strong, safe, and fully staffed. If we are to win this war, we will do it not just through military might. Ultimately, we will win it by maintaining and communicating the values that define us as Americans. It is just those values that are protected, commemorated, and interpreted in our national parks.

The terrorists may have altered our sense of security, but they have not taken our spirit. Lady Liberty still stands, her torch held high, a proud symbol of America.

Thomas C. Kiernan
President



A thousand words.

If a picture's worth a thousand words, what's a national park worth?

Do you remember the last time you visited a national park, monument, or historic site? Do you remember that quiet moment you spent just "being there"... when the words stopped coming because nothing more needed to be said?

Well, you're not alone. Since 1990, visits to our National Parks System have risen substantially while funding to preserve and protect these national treasures has consistently fallen short of need. As a result, in parks around the country, plant and wildlife species are disappearing. Important artifacts are not being exhibited. Irreplaceable historic sites are crumbling without repair. Simply put, unless funding increases, things will get worse.

But you can help.

The National Parks Conservation Association is working to win strong funding for our national parks. As dedicated advocates, we invite you to join us in this important work. To find out what you can do, visit our website at:

www.npca.org/parkfunding



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EDITOR'S NOTE

Healing Places

WITHIN MINUTES after the September 11th attack, news commentators were likening the assaults to the dawn raid 60 years ago at Pearl Harbor—a story commemorated in this issue of the magazine. Our story was intended to alert our readers to some important new developments at the USS Arizona Memorial and was planned and assigned six months ago. It was scheduled for this issue because of the December anniversary.

With the World Trade Center demolished and one of the Pentagon's walls a pile of rubble, it became clear that it would be impossible to read about the USS Arizona and Pearl Harbor without thinking of the more recent attacks on our soil. We added a sidebar that links the two events in a historical context.

Our national parks contain a variety of sites that recognize the triumphs, tragedies, sacrifices, and values of America and Americans. From the Statue of Liberty in New York City to the Lincoln Memorial in Washington, D.C., to Gettysburg National Military Park in Pennsylvania, the National Park System contains symbols of defining moments in the history of our relatively young country. These sites help us to put historical events into context, remember lessons from the past, and teach us valuable lessons for the future.

They also provide places to reflect, to heal, and to rejuvenate. As we move forward in this uncertain time, we should remember that the national parks, memorials, and monuments are among the 20th century's greatest gifts to the planet—a century during which the world saw a lot of strife and sorrow. Despite that, we can take heart in knowing that the parks, their meaning, and their messages prevail.

Linda M. Rancourt
Editor-in-Chief

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.

HOW TO DONATE: For more information on Partners for the Parks, contact our Membership

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

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



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—Chris M., California

Results not typical

Just because you are asleep, you shouldn't assume that you are getting the proper amount of rest. Tossing and turning in bed can diminish the value of your sleep. What's more, most mattresses fail to support your spine properly, which can result in increased pressure on certain parts of your body. Now, one of the world's leading manufacturers of foam products has developed a revolutionary new material that can actually change the way you sleep. The material is a new visco-elastic foam, and it is the key to the Structure™ Memory Foam Mattress Topper.

Space age sleep technology. Originally developed by the Space program researchers to increase the comfort of astronauts during flight, visco-elastic foam represents a quantum leap in bedding technology. The open-celled construction of Structure™ Memory Foam creates a mattress with a memory. It automatically senses your body weight and temperature, and then it responds by molding to your body's exact shape and position. This means that whether you sleep on your back, stomach or side, your weight is evenly distributed and your spine remains in a neutral position.

Does your mattress have "body memory?"



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and reduces stress on your body's pressure points: the shoulders, hips and legs. This can revitalize your old mattress and make sleeping comfortable again.

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Park Shuttles, ACLU Lawsuit, Preserving Battlefields



Park Shuttles

Your article on new parking systems at national parks ["The National Park or Parking System?" July/August 2001] was timely, and hopefully influential.

This spring I visited Zion and Grand Canyon, both for the first time, and was struck by the differences in accessibility. Zion was as pleasant an experience as Grand Canyon was unpleasant.

Two years ago, I also encountered annoying amounts of traffic in Yellowstone. Both Grand Canyon and Yellowstone need as smooth and friendly a system as Zion's. I wish Sen. Paul Sarbanes (D-Md.) the best of luck with his proposed bill.

Ezio Moscatelli
Columbia, MO

ACLU's Cross Lawsuit

I was very disturbed to learn that the ACLU has filed a lawsuit to remove a cross from the Mojave National Preserve [News, July/August 2001]

I support the efforts of Rep. Jerry Lewis (R-Calif.) to protect the Mojave Cross, as it was erected before the land it occupies became a national preserve. Those who speak out against the cross should remember a simple truth: millions fought and will fight for a country where the cross and other religious symbols can exist.

That symbol and countless others dot the landscape on federal lands both here and overseas that guard graves holding citizens and soldiers now turn-

ing to dust. What remains is but a memory represented only by those crosses and other religious symbols that mark their lives. Does the ACLU propose that even these symbols should be removed from sight?

Steven D. Owen
Manassas, VA

Preserving Battlefields

Your article on preserving battlefields ["The Long Campaign," July/August 2001] brought necessary attention to an important issue. I would also mention the plight of battlefields around Richmond, Virginia.

From the 1936 federal authorization of the Richmond National Battlefield Park through the year 2000, preservation of Richmond's battlefields was possible only through private dollars.

In November of 2000, however, President Clinton signed landmark legislation for Richmond Battlefield Park that should ease the protection of Richmond's Civil War battlefield lands. And, recently, the private sector has worked to donate almost 1,300 acres to the park. We are very appreciative.

Cynthia MacLeod
Superintendent, Richmond National
Battlefield Park

The Healing Power of Parks

At this time in our nation's history, when we have seen human-made objects destroyed by our own human-made airplanes, most Americans seek solace wherever they can find it.

As my husband and I recently watched the sun go down from the peaks of Shenandoah National Park, we mourned the terrible loss of lives at the World Trade Center and the Pentagon. We also stared out at the beautiful mountains before us and realized that the mountains in Shenandoah stand taller than the World Trade Center. They have been there for millions of years.

The existence of Shenandoah and all national parks proves the human desire to preserve our planet.

And yet they are much more than that. They are a haven in time of crisis, a place of solace in time of doubt. They are testimony to our desire to persevere, to preserve. For when humanity's creations are destroyed, the beauty of the parks is there to strengthen and encourage us. John Muir expressed it well: "Everybody needs beauty as well as bread; places to play in and pray in where nature may heal and cheer and give strength to body and soul alike."

I applaud NPCA's efforts to obtain funding increases for education and resource protection. We must do all we can to educate Americans in the preservation of our national parks, for their very existence encourages us to remain positive about our future.

Mary K. Foster
McGaheysville, VA

CORRECTION

Populations of Steller sea lions (Rare and Endangered, September/October 2001) split along the 144th meridian.

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 npmag@npsa.org. Letters may be edited for length and clarity.

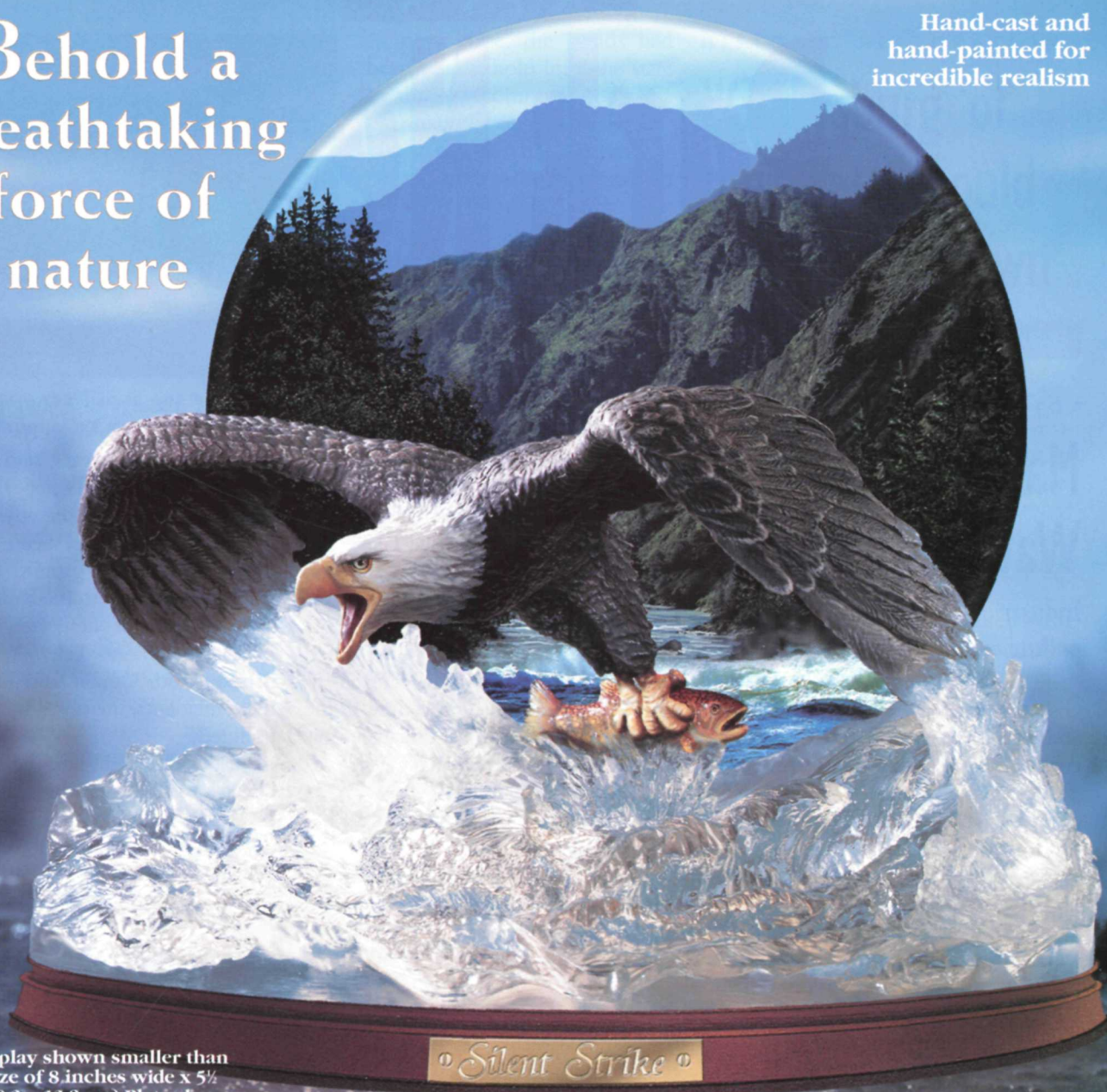
"YOU ARE HERE"

Christopher Columbus discovered uninhabited portions of this park in 1493, on his second voyage. Sugar cane and cotton plantations occupied much of the park until about 1850.

Answer: Virgin Islands National Park, St. John, U.S. Virgin Islands

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Park News

BY ELIZABETH G. DAERR

ADJACENT LANDS

Mammoth Cave Waters at Risk

Industrial park threatens to pollute world's longest cave.

OAKLAND, KY.—Farmers, cavers, and the Park Service are questioning the environmental soundness of a proposed 4,000-acre industrial park, shipping complex, and airport about six miles southwest of Mammoth Cave.

Business and local government proponents expect the Kentucky TriModal Transpark to add 7,000 to 10,000 jobs and help move the community from a manufacturing-based economy toward the emerging high-tech industry. However, not everyone is convinced that the development is a good idea. Some land-owners, scientists, and environmentalists argue that the project is too costly and could pose serious risks to the world's longest cave system.

Environmentalists say that the project is not compatible with the region's unique karst geology. Because the ground is predominantly soluble limestone, water and any other liquid substances immediately drain into the underground water system that runs for hundreds of square miles. That system supports an array of aquatic wildlife in the cave, and the Park Service and cave enthusiasts fear that airport runoff, deicing solution, or a possible fuel spill will contaminate the cave's waters.

In September, a truck overturned on

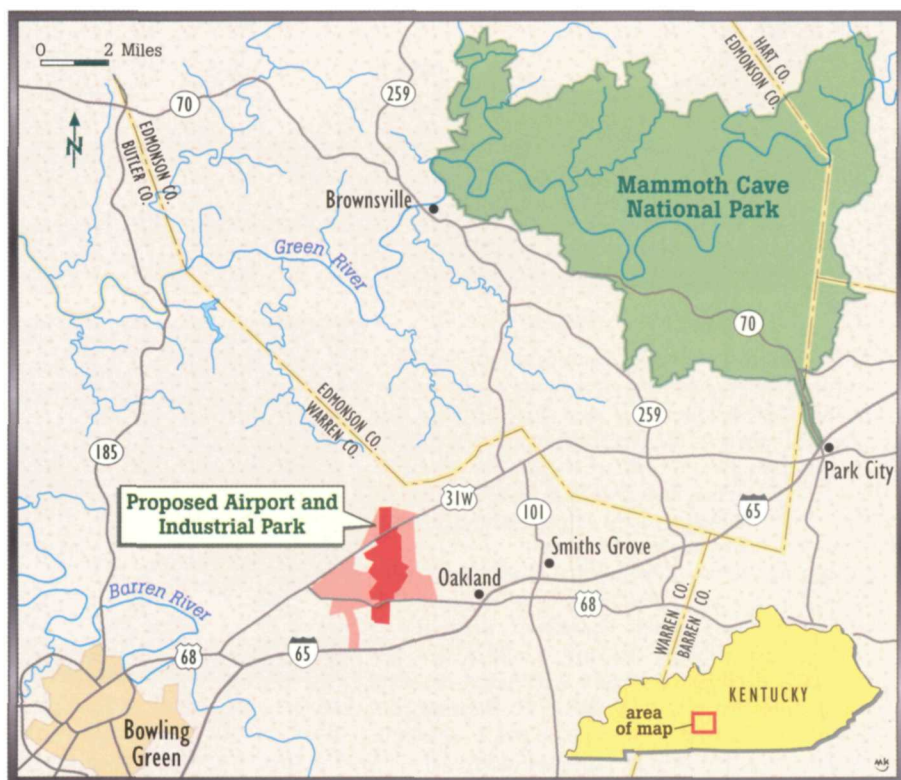
I-65, spilling more than 3,800 gallons of diesel fuel near the headwaters of the cave. Park spokeswoman Vickie Carson said that no fuel has been detected in the cave yet, but it is inevitable given the geology of the area. "It will take a big rain; we just haven't had it yet," she said.

Dan Cherry, president of the Inter-Modal Transportation Authority (ITA) that is developing the project, explained that the agency is taking precautions to have a quick-response procedure in the unlikely event of a spill and plans to follow all federal, state, and local regulations for water quality.

But author Roger Brucker, who has explored many of Mammoth Cave's 365

miles of passageways and has taught speleology for Western Kentucky University for 21 years, said that nothing could stop a spill once it occurs. He added that most of the fuel from the overturned truck had been channeled into cracks in the ground before the response team got to the scene. "It's not a probability that these things will happen, it's a certainty. They already have," Brucker said. Carson said that despite these incidents, the cave's waters are not polluted.

Just as damaging are the cumulative effects of small spills that drain into the cave. Toxins accumulate as they move up the food chain, causing reproductive



MATT KANIA



CHIP CLARK

The blind cave crayfish is one of 130 species found at Mammoth Cave.

problems, mutations, and death to the cave's wildlife. More than 130 species use the cave, including the blindfish, the cave cricket, and the endangered Kentucky Cave shrimp.

Other environmental concerns include increased air pollution. The region currently does not meet federal requirements for air quality under the Clean Air Act, and the agency fears the haze will worsen with increased aircraft, truck, and train traffic. Cherry said that one step his agency has taken to curb noise and air pollution is to configure the runway so that no flights pass over the park. The Park Service, however, said that it has not had a chance to review the data ITA provided on the effects of increased noise.

Opponents also said that the industrial park threatens an established and lucrative tourism industry. Nearly 2 million annual visitors come to Mammoth Cave, which has been designated both a World Heritage Site and an International Biosphere Reserve. A 1994 survey by the Kentucky Department of Travel estimated that Mammoth Cave filters more than \$115 million into the state's economy annually. In addition to touring the cave, visitors hike, canoe, and fish throughout the park's 52,000-acre hardwood forest.

Furthermore, opponents say that of the estimated \$100 million cost of the project, only \$6 million has been paid by the state so far to plan the development. The site is planned for Warren County, where officials passed a resolution to issue bonds worth \$25 million.

At press time, the bonds had been put on hold until the state local debt commission had a chance to act on an appeal.

Meanwhile, the project received a major endorsement in September from Kentucky Sen. Mitch McConnell (R), who added language to the Senate transportation appropriations bill that granted funding to the project.

"If we leave development up to the private developer—and it's going to occur—it will create sprawl," Cherry said. "We have

the opportunity to centralize the development in a financially and environmentally sensitive way."

Brucker believes that the development is counter to what Congress intended when it created the National Park System. "Congress set up a whole system of parks to preserve the best that nature has to offer, to study it, and to enjoy it." If the airport and industrial site go forward, Brucker said, "the cave will be nothing but a sewer of whatever people dump in there."

HISTORIC RESTORATION

"Gettysburg of the West" Could Help Small Town

Rural economy could gain millions from restored battlefield.

PECOS, N. MEX.—A new economic study shows that improvements to Glorieta National Battlefield, a little-known Civil War battle site in New Mexico, could bring an estimated \$3.1 million in tourism and 182 jobs to two rural counties.

Glorieta Battlefield, called the "Gettysburg of the West" by some historians, is part of Pecos National Historical Park, but only a handful of the park's annual 40,000 visitors ever see it.

In March 1862, approximately 1,300 Texas volunteer cavalry fought against an equal number of Union volunteers

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and army regulars from Colorado and New Mexico. The Confederate objective was to gain supplies from Union forts and divert gold and silver shipments from the North to the South. A Confederate victory may have altered the course of the Civil War.

The Glorieta battle site is located some distance from the historic pueblo at Pecos, and the Park Service has no visitor facilities or interpretive signs marking it. New Mexico 50 intersects the site, making it hazardous for visitors to stop and tour. Truck traffic is also shaking the foundation of the last remaining building from that period—the historic Pigeon's Ranch, which served as a field hospital during the fighting and is just three feet from the road.

In the early 1990s, the state proposed widening the narrow two-lane road to improve safety, which would have resulted in the removal of the remaining Pigeon's Ranch building.

The economic study was commissioned by NPCA and done by a professor of economics at New Mexico State

University. It provides evidence on the benefits of restoring Glorieta Battlefield in the event that New Mexico 50 was rerouted around Pigeon's Ranch and the battlefield were made accessible to the general public.

The plan would draw 23,900 additional visitors to the site, add \$1.4 million of income into San Miguel and Santa Fe counties, and create 84 new jobs in the first year.

After ten years, the study estimates that services such as restaurants, grocery stores, hotels, and gas stations would generate up to \$3.1 million annually and accommodate 51,600 additional visitors.

"A restored Glorieta battlefield would serve as a positive, stabilizing force in the rural economy and the broader tourist economy of New Mexico," said Randy Rasmussen, NPCA's program manager for the Southwest regional office.

"Glorieta Battlefield is hallowed ground, and restoring it is the right thing to do."

RESOURCE THREATS

Study Finds Park Rangers Facing Increased Violence

Fugitives are drawn to isolation of parks, putting rangers at risk.

WASHINGTON, D.C.—A 12-hour manhunt in Yellowstone National Park leads to the arrest of two fugitives wanted for a crime spree in Wisconsin and Minnesota; three anti-government drifters stage a stand-off in Death Valley National Park that includes bringing down a police helicopter with gunfire; a park ranger is shot dead after responding to a call about loose dogs in Kaloka-Honokohau Historical Park. These are just a few examples of the growing violence that endangers national park rangers.



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gers and diverts them from protecting the parks' natural, cultural, and historical property.

A study released in August by Public Employees for Environmental Responsibility, a national alliance of federal, state, and local employees, showed that violence against federal land management employees rose significantly in 2000. The incidents range from threats and vandalism to assaults and shootings. The Park Service recorded the highest number of incidents in a five-year period, including 65 against park rangers and 34 against park police. The Bureau of Land Management, the U.S. Fish and Wildlife Service, and the Forest Service all recorded increases of 22 to 50 percent over last year.

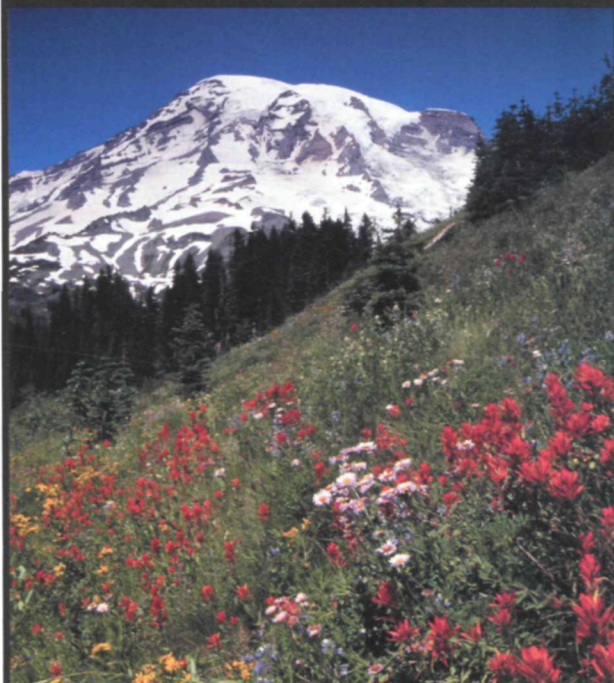
Approximately 1,550 park rangers work throughout the system, and an independent study done last year by the International Association of Chiefs of Police suggested that more than 600 new rangers who work in law enforcement are needed. A separate study commissioned by Sen. Craig Thomas (R-



The first tornado in 75 years touched down in the Washington, D.C., area September 24 but missed all seven memorials on the National Mall, including the Washington Monument.

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Wyo.) as part of the 1998 National Parks Omnibus Management Act indicated that more than 1,200 new rangers are needed to address the problem.

Border parks such as those in Texas and Arizona are particularly at risk because of a rise in drug trafficking. At Organ Pipe Cactus National Park, Chief Ranger Dale Thompson said that he needs two or three times the six to eight rangers he has throughout the year to fend off a constant stream of illegal immigrants and drug smugglers.

"Every one of my rangers has been assaulted by a vehicle at least once, some of them twice," Thompson said. Rangers are sometimes chased by speeding cars whose occupants are trying to return to Mexico after illegally crossing into the United States. Thompson's officers patrol 330,000 acres, and usually only one officer is on duty at a time. Last year he estimated that the park needed to hire six rangers, a resource manager, and a maintenance worker—at a cost of \$800,000—to protect personnel, visitors, and natural resources.

Cheto Olias, chief ranger at Zion National Park, said that some of the violence arises because of the parks' remote locations. "Parks tend to be places where people hide out because the places are isolated. Many of these people are extremists who have survivalist skills and are used to living off the land," he said. In the wake of the terrorist attacks on the World Trade Center and the Pentagon, Olias said that, as national icons, parks are always possible targets. "We have international terrorists, but we also have domestic terrorists."

In 1991, Olias initiated the Special Operations program to provide additional training to rangers who are most likely to encounter violence in their parks. The program is funded by the Department of the Interior but is offered only once a year to fewer than 30 rangers. So far, about 250 rangers have completed the program. "Obviously, we have a lot more to do," Olias said. Although only a fraction of rangers have completed the two-week program,

he said that those rangers report increased confidence and success when dealing with dangerous situations.

While rangers are handling these difficult situations, the parks' property is simply disappearing. "The resources are just walking out of the park because we don't have the people to protect them," said Dennis Burnett, who oversees law enforcement for the Park Service. Along the Appalachian Trail, poachers are killing black bears and digging up ginseng to be sold in Asia and for alternative medicinal purposes. At Organ Pipe, drug smugglers created 30 miles of new roads through the desert this year, crushing rare desert vegetation.

Even though rangers are dealing with more dangers, the parks are still a safe place to visit. Burnett said that his law officers are stretched thin, but visitors should not worry about coming to the national parks. "The parks are very safe places, but people need to be aware of the dangers and take precautions just as they would in a city."

HISTORIC PRESERVATION

Minute Man Tests Sheep Grazing

Nature's own lawn mower clears invasive plants, fertilizes soil.

CONCORD, MASS.—A different kind of army swept the fields of Minute Man National Historical Park this summer, and in its wake left behind a landscape that appeared much as it had before the Revolutionary War began there on April 19, 1775. This army consisted of one shepherd, approximately 330 sheep, two border collies, and Gordo, the Maremma guard dog.

The experimental sheep project was started this year to rid the park of invasive plants that damage park structures and mar the historic landscape of this



Sheep clear overgrown vegetation in front of Minute Man's Hartwell Tavern, a typical country inn from 1733.

226-year-old battle site. The sheep grazed more than 25 acres in the park and rotated to other nearby conservation lands this summer, devouring poison ivy, honeysuckle, and bittersweet, while leaving behind natural fertilizer to enrich the soil. The project is part of the park's landscape management plan that calls for finding biologically sound alternatives to vegetation management.

"What better way to control unwanted plant growth than using nature's own lawn mower," said Superintendent Nancy Nelson.

Thirty-five percent of the park's 1,000 acres is infested with well-established populations of invasive plant species, and "virtually anywhere you go in the park there is more," said Chris Davis, the park resource specialist heading up the project. Fire and agricultural practices would have historically controlled vegetation, but as suburbia surrounded the park, fires were suppressed and agricultural activities diminished. Over time, the site has become more wooded, and historic stone fences have been lost under a blanket of green.

After only a few weeks, the sheep, with their ability to climb walls and reach crevices, have cleared 16 sites in the park.

"They are a self-propelled mower that can get into all the places that con-

ventional mowers and herbicides can't get to," said Dick Henry, president of Bellwether Solutions, which owns the sheep.

Henry developed the project, and when asked how he came up with the idea, he jokes, "I thought it up—a 10,000-year-old idea."

Since 1998, he has been working with the Public Service Company of New Hampshire to control unwanted vegetation under transmission lines. Sheep eat plants such as cherry, oak, and birch trees that could interfere with lines and leave wildlife-friendly plants such as blueberry and huckleberry.

The University of New Hampshire is monitoring the effects of sheep grazing along the power lines to determine whether the activity can permanently eliminate some species. Scientists theorize that continual grazing exhausts the plants because the energy they expend to grow each time is never rejuvenated without the leaves and shoots needed for photosynthesis. The university plans to release its findings in two years.

NEWS UPDATE

Buffalo National River—The U.S. Army Corps of Engineers has granted the Searcy County Water District a permit to construct a reservoir on Bear Creek, a major tributary of the Buffalo National River. The permit was denied twice by the Little Rock District Office (See January/February, 2000), and a dam along the watershed directly defies the 1972 legislation that established the Buffalo, the country's first national river. NPS opposes the action.

Using sheep is more ecologically sound but not necessarily less expensive than conventional methods, Henry said. His costs include trucking the animals, keeping them healthy through the winter, paying vet bills, and hiring shepherds from as far away as Canada and New Zealand because there are few qualified ones in the United States. The animals are sheared each May to keep them cool through the summer, but the price of wool has dropped so low that Henry loses money on the process.

This year's pilot project at the park was funded by the Minute Man National Park Association, a nonprofit

friends group, and other participating conservation organizations: the Concord Natural Resources Commission, the Concord Land Conservation Trust, the Carlisle Conservation Fund, and the Carlisle Conservation Commission. The groups hope to fund the program for three years.

As for what visitors think, park spokeswoman Melissa Saalfeld said that the sheep are "a real crowd-pleaser, and people really get a sense of what it looked like here at that time."

She adds that she hopes this is the beginning of a long relationship. "They're real hard workers."

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RESOURCE THREATS

Bacteria Closes Cape Cod Beach

NPS facilities overwhelmed by visitors and rainfall.

EASTHAM, MASS.—High counts of bacteria found in the water forced Cape Cod National Seashore to close one beach this summer, compelling the National Park Service to replace outdated facilities and reevaluate the need to reduce visitation.

This year's closure, which lasted four days, was blamed on heavy precipitation that caused runoff from adjacent areas and on waste dumped south of the beach that may have drifted in. Mandatory testing of public beaches by the Commonwealth of Massachusetts found high levels of enterococcus bacteria, which is not harmful to healthy people but is an indication of other organisms found in fecal matter that could be harmful.

Though the exceptional rainfall may have caused water contamination this year, the closure highlights the need for the park to address long-term plans to replace septic systems. Heavy visitor use is straining the park's visitor facility capacity and could potentially cause similar incidents.

The Park Service plans to replace the septic tanks with containers that would be pumped out regularly. The estimated cost is \$300,000 to install them and \$1,000 to maintain them monthly—funds the park currently does not have. In the short-term, Nancy Finley, chief of park planning for the seashore, said that the park has been promised money to rehabilitate a few facilities beginning in 2005.

Although the park eventually plans to replace all the facilities as money is available, the Park Service and environmentalists say that the greater issue is the number of people using the beach-



A. BLAKE GARDNER

Bacteria found in the water along Coast Guard Beach, "the quintessential Cape Cod beach experience," closed the area for several days.

es and the park's limited facilities. Seashore visitation has risen steadily, and nearly 5 million people used the seashore last year. One example is at Little Creek, a drop-off spot for Coast Guard Beach. In 1980, the Park Service built the lot to accommodate 350 cars, carrying an average of 1,500 people. Last year, actual counts recorded twice that many people using the beach.

"Many people access the beach by being dropped off at a turnaround or walking up the bike paths," Finley said. With that in mind, "it will be hard to figure out how to stop that flow."

The park does not plan to build addi-

tional parking lots and aims to stop all drop-off traffic at the entrance to Coast Guard Beach, which NPCA Northeast Regional Director Eileen Woodford describes as the "quintessential Cape Cod beach experience, with beautiful dune cliffs and a vast expanse of shoreline."

Woodford believes that the Park Service is taking the right approach to addressing visitor capacity. "The park is acknowledging that they have this problem. We laud them for their willingness to be proactive when looking at carrying capacity," she said. "It's the best way to protect the resources and provide a fun beach experience."

America's Newest Park

In September, Congress established the nation's 385th unit of the National Park System—Minidoka Internment National Monument. Located in south central Idaho, the monument protects the historic site that, at its peak, held more than 9,000 Japanese Americans from Washington, Oregon, and Alaska during World War II.

The site was built in 1942 by the War Relocation Authority under the authorization of President Franklin D. Roosevelt. It was originally 33,000 acres, and internees farmed, raised livestock, and made clothing. The Park Service is currently developing a plan for interpreting the 72-acre monument.



REGIONAL REPORT

ON NPCA'S WORK IN THE PARKS

Text by Elizabeth G. Daerr

■ ALASKA

In August, the U.S. District Court in Alaska rejected claims by native corporations to lands in Lake Clark National Park and Preserve. The villages claimed that the Department of the Interior must approve and convey land selections along the Cook Inlet coast under the Native Claims Settlement Act. The lands include nearly 30,000 acres within the boundaries of Lake Clark National Park and Preserve.

In response to the court's decision, NPCA's Alaska Regional Director Chip Dennerlein said, "the lands on the Lake Clark coast were always intended to be the very last resort—only in the event that entitlements could not be fulfilled from other specified lands."

■ NORTHERN ROCKIES

An NPS official at Yellowstone National Park said that the snowmobile industry has not submitted hard data on new technology that is supposed to reduce snowmobile noise and air pollution. The Bush administration is considering whether the new technology will be adequate to overturn the planned phase-out of snowmobiles at the park. The phase-out was issued last year and would replace snowmobiles with snowcoaches beginning in 2003. After filing a lawsuit against the government, the snowmobile industry said it would introduce new machines that were less polluting and noisy; however, NPS said that instead of providing independent, peer-reviewed studies, the industry has

offered broad generalizations with little scientific evidence.

■ SOUTHEAST

The Martin Luther King, Jr., National Historic Site will host an exhibit of photos depicting dozens of lynchings, including images of African-American men hanging from branches, telephone poles, and a bridge. The collection, *Without Sanctuary*, was collected by Georgia-based antique dealer James Allen and has been shown in New York City for the last two years. Many of the photos were taken by amateur photographers and show spectators smiling and posing next to the dangling victims. The display will run from May 1 to December 1, 2002.

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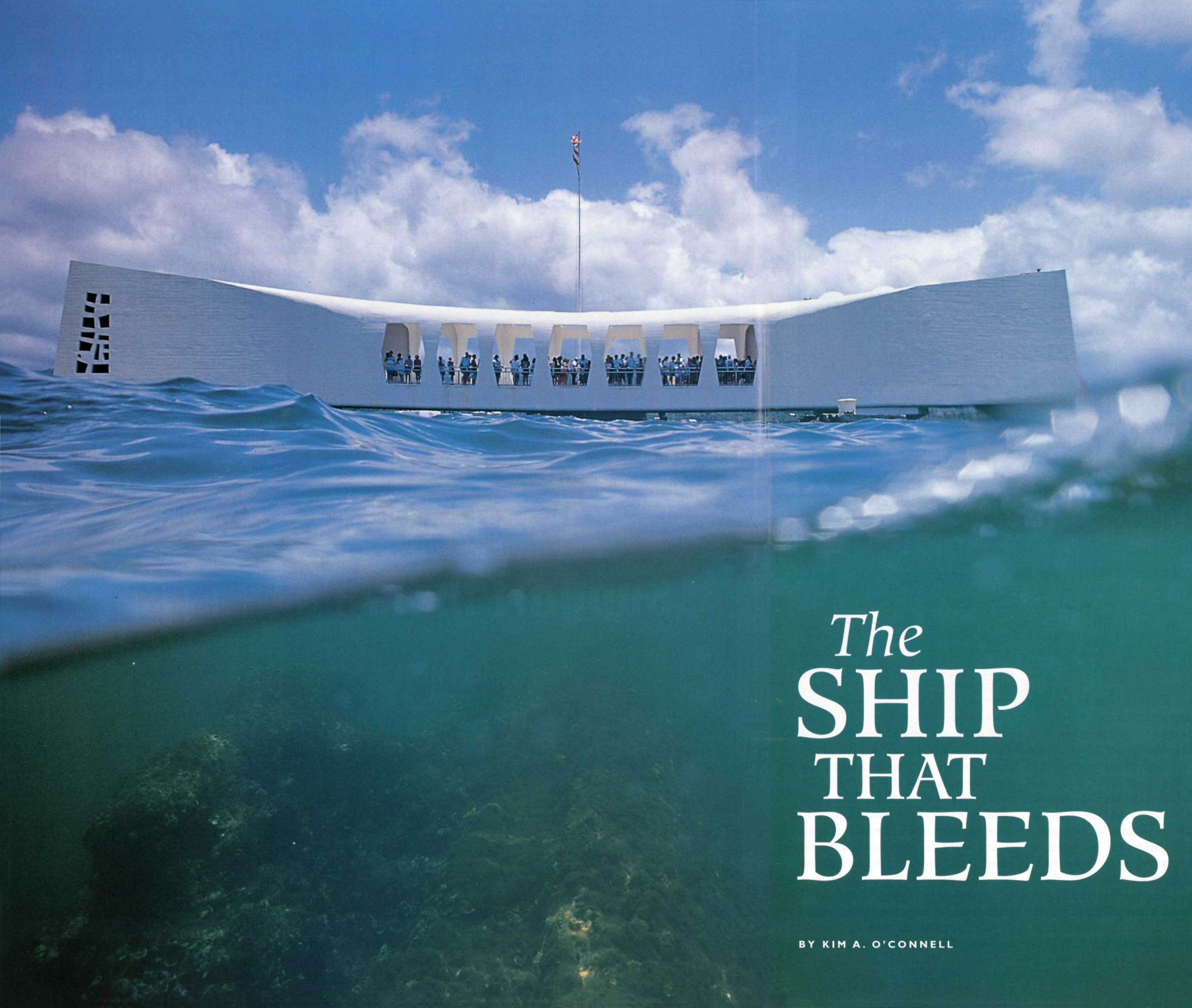
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The SHIP THAT BLEEDS

BY KIM A. O'CONNELL

Even as oil seeps from deep within and its walls corrode, the *USS Arizona* remains the keystone in our collective memory of the attack on Pearl Harbor.

IN THE QUIET HOUR just after dawn on Sunday, December 7, 1941, while many of his shipmates slept in, Seaman 1st Class Don Stratton was finishing breakfast on the *USS Arizona*, a battleship moored in the still waters of Pearl Harbor. Spying loose oranges on the table, Stratton quickly scooped them into his white hat to take to a friend in sick bay. But as he walked on to the forecastle, he saw men yelling and pointing toward Ford Island, the Naval Air Station at the harbor's center. There, Japanese bombs were falling like rain. Spilling the oranges, Stratton quickly manned an anti-aircraft station. Then, without warning, the *Arizona* took a bomb near its Number 2 gun turret, detonating a massive explosion of the ammunition and gasoline stored in the ship's hull. Stratton and a few others shimmied down a line to the *Vestal*, a repair ship tied to the *Arizona*. Although burned over 60 percent of his body, Stratton had escaped the dying ship with his life.

More than 1,100 other souls—three-quarters of *Arizona*'s crew—were not so lucky. Japan had launched a surprise attack that would draw the United States firmly into World War II, and the *Arizona* was the hardest hit: its casualties represented nearly half the 2,400 total casualties of the day that would, as President Franklin Roosevelt said, “live in infamy.” Along with many other naval and aircraft losses, eight battleships were damaged, but only the *Arizona* (which was hit by eight bombs and sunk) and the *USS Oklahoma* (for which attempts at repair failed) were never returned to service. Although 229 bodies and some salvageable parts were removed just after the attack, the *Arizona* has remained lodged in the silt where it came to rest 60 years ago.

Today, the ship serves as both a tomb and a shrine. After private funds were raised for its construction—including an Elvis Presley benefit

The *USS Arizona* Memorial draws about 4,500 visitors each day. An estimated one in five is from Japan.

ED ROBINSON/TOM STACK & ASSOC.

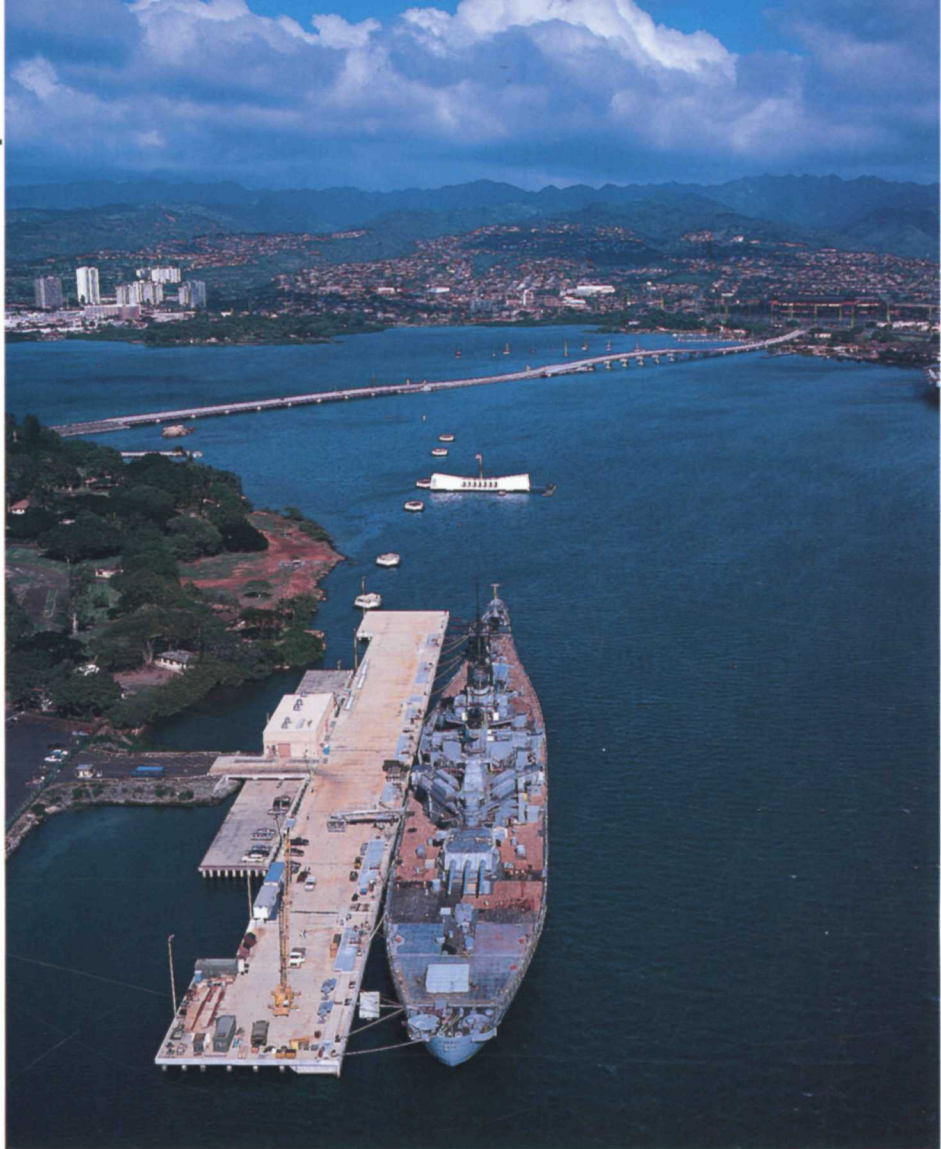
USS ARIZONA Continued

concert—the USS *Arizona* Memorial was dedicated in 1962 and has been a national park unit since 1980. Located at the southern end of Honolulu, on the Hawaiian island of Oahu, the memorial is one of the National Park Service's (NPS) most visited historic sites—hosting 1.5 million visitors a year, or about 4,500 people each day. One in five visitors comes from Japan.

After receiving a ticket at the visitor center, going through the museum, and watching a short documentary film, visitors board a U.S. Navy boat to be shuttled to the memorial, whose white form straddles the *Arizona* like a ship's bridge. Once there, visitors can see the rusty rim of the Number 3 gun turret and other smaller features penetrating the water's surface. They also can see oil seeping away from the site in iridescent streams. Although some have called the oil the ship's tears and others liken it to the ship bleeding, the oil is often the only clue visitors have that something may be wrong with the *Arizona*.

The Park Service estimates that about a quart of oil has leaked from the ship every day for six decades—and that a half million gallons of oil may still be trapped inside. This could be an environmental nightmare waiting to happen, but the agency lacks information and funding necessary to determine a proper course of action. In the search for answers, the *Arizona* has become the subject of one of the agency's most ambitious underwater mapping projects.

In 1980, when Gary Cummins became the memorial's first superintendent, he was charged with managing a major American shrine—one that he could not see and whose condition he could only guess at. Cummins initiated a partnership with the Park Service's Submerged Resources Center (SRC) out of Santa Fe, New Mexico, to map and photo-document the ship's remains. To do so, NPS needed permission from the Navy, which controls the waters of Pearl



During the Japanese attack, Pearl Harbor was filled with Navy vessels. Today, the USS *Missouri*, foreground, can be seen along with the USS *Arizona* Memorial.

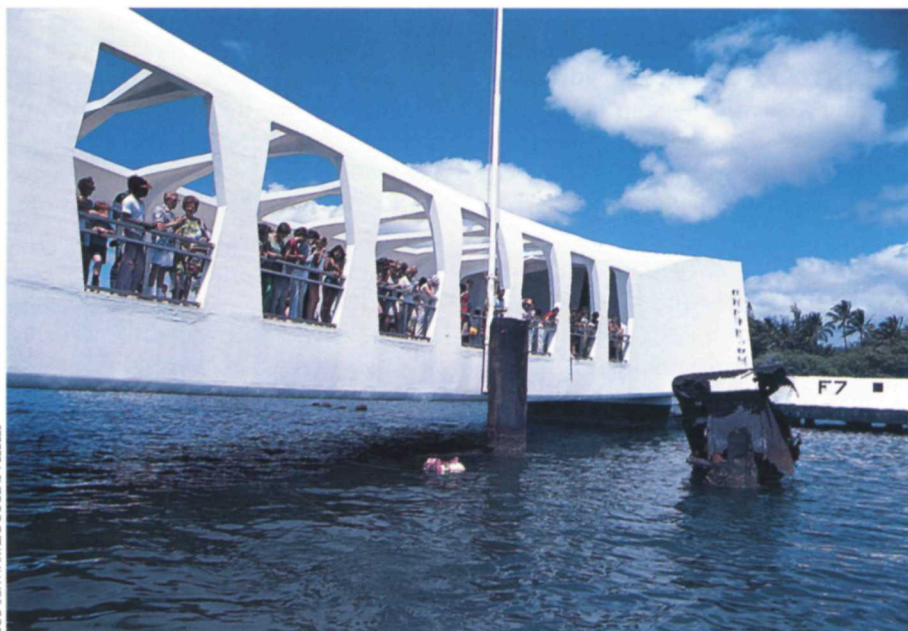
Harbor. In another partnership that continues to this day, the Navy agreed and donated a dive boat, divers, and other resources to the project.

In 1983, NPS divers and archaeologists, working with park staff, the *Arizona* Memorial Museum Association, and the Navy's Mobile Diving and Salvage Unit, conducted a groundbreaking ten-day assessment that graphically illustrated how little was known about the *Arizona*'s condition. For one, the ship's entire Number 1 turret, with its 14-inch guns, was unexpectedly intact. In addition, directly below the memorial structure, divers found live five-inch shells, which had to be removed by a Navy explosive ordnance disposal team. The team later made sonar contact with what may be the Japanese midget submarine famous-

ly sunk by the USS *Ward*. Three weeks of intensive diving in 1984 provided enough information to create accurate drawings of the *Arizona* in its final resting place—the first such images ever seen.

After the diving team determined what was there, the park staff had to figure out what was happening to those resources. When Bill Dickinson was superintendent from 1985 to 1988, the team began the next step. "We had a good indication of the baseline conditions, but we needed a process of monitoring over time," says Dickinson, now superintendent of Lake Mead National Recreation Area.

The survey expanded to include a study of the chemical environment of the ship, including the layer of biofouling—marine organisms mixed with



Kathy Billings joined the park in 1995, the underwater mapping project had fallen dormant. Yet, she noticed that the amount of seeping oil was increasing. "In 1983, oil was simply not coming out in as many places or in as much volume," Lenihan says. "It's happening because there is definitely corrosion and collapse of the upper decks. But we don't know if the bunkers, the real source of the oil, are collapsing."

In an attempt to prevent a major oil spill, Billings jump-started the submerged resources study. For this latest phase, the National Park Service made the difficult decision to enter the ship to gather more information. Previously, dives were limited to the site's exterior, partly to protect the sanctity of the ship as a tomb and partly because the



From the memorial, which straddles the *Arizona*, visitors can see small portions of the ship, above, along with underwater footage. A memorial wall honors the 1,100 crew members who died.

products of corrosion—that covers it “like a thick scab,” according to Dan Lenihan, an archaeologist and veteran SRC diver who has worked on the project since its inception. The *Arizona*, Lenihan says, has become an artificial reef—a substrate for a dense natural community. Although this may contribute somewhat to the surrounding natural environment, the biofouling is advancing corrosion of the ship’s hull as

well. On Dickinson’s watch, the project also grew to include a similarly detailed study of the USS *Utah*, originally commissioned as a battleship but in 1941 undergoing renovations to become a target vessel owned and managed by the Navy. The *Utah* never saw active service after being sunk at Pearl Harbor and is the only other vessel still submerged from the attack.

By the time current superintendent

advanced state of corrosion makes it susceptible to collapse.

As a result, NPS has opted to use remote-operated vehicles (ROVs) to maneuver inside and document the ship’s interior. But the agency is careful to balance its scientific goals with its vow to protect the site’s sanctity. If human remains were found, Lenihan says, they would be left alone and the images never seen by the public.

The park now includes the sub-merged resources study in its interpretation. The highlight of the museum is a model of the *Arizona* created from the underwater photographs and drawings; a video shows underwater footage as well. NPS also strives to be culturally sensitive in its interpretive materials. An earlier version of the documentary film that implied Japanese Americans were responsible for sabotage at Pearl Harbor has now been changed. And throughout the site and in the management plan, the American survivors' concerns and sensitivities are taken into account.

In fact, the park employs Pearl Harbor survivors as interpreters—often introducing the film or speaking to visitors at the memorial. “You can’t do that at Gettysburg,” says Cummins, who is now manager of the Harpers Ferry Center, the NPS interpretive hub, “but here you could have someone who saw bombs rain down, who saw the carnage, the human side of the attack.”

Dickinson notes that opinions differ

widely about the best management plan. “A lot of people would argue that the best course of action would be to do nothing—even if the ship itself would completely deteriorate..., would it change the significance of the site? Many people would argue ‘no,’” he says. “Others would argue that the ship...is a hugely significant resource in itself and we should do everything in our power to protect and preserve it, and that would mean we would need to take positive action. Still others,” he continues, “would argue that the point of historical significance is December 7, 1941, and that any changes that have occurred since need to be reversed.” Clearly, challenging questions remain.

The National Park Service is also keeping an eye on development of Ford Island. The Navy’s plan to build housing there, along with commercial ventures, has drawn criticism. Groups such as the National Trust for Historic Preservation have called for protection of the island’s historic structures, some of which show evidence of Japanese bombing and strafing. Kathy Billings is concerned

that, with Ford Island more populated and accessible than ever before—the first-ever bridge to the island was completed in 1998—the *Arizona* will become a target for illegal divers or trophy hunters. Last fall, the diving team tagged all the items on the ship’s deck so officials can take note if anything disappears. Another option may be to install an underwater camera system, Billings says. But maintaining a visible presence around the *Arizona*, Lenihan argues, may be the best deterrent.

In the meantime, the park is seeking private funds to continue the sub-merged resources study, develop a long-term management plan, and expand the visitor center and museum complex. Although the park’s needs are great, those involved say it is not difficult to convince potential donors of the site’s significance.

“I’ve never seen a place that draws the generations together as well as the *Arizona*,” Lenihan says. “That blast on that ship probably, at least symbolically, was the pivotal moment in the last century of how America responded to the whole geopolitical world around it. There’s no way that, if you’re alive now, you’re not affected by Pearl Harbor. And if Pearl Harbor is important, then the *Arizona* is the heart of it.”

Today, the USS *Arizona* Memorial offers visitors a chance to make their peace with the past and with their prejudices. Gary Cummins vividly recalls one occasion when the memorial was hosting members of a Japanese civic association, including five veterans who had flown in the attack. In a quiet ceremony, they placed a wreath at the memorial. An elderly man from the United States approached Cummins to ask what was going on.

“My roommate at Annapolis is in this ship,” he told Cummins. Seeing the Japanese salute his fallen friend and others like him made his whole trip worthwhile, the man said, before walking over to welcome the visitors.

KIM A. O’CONNELL lives in Arlington, Virginia, and last wrote for National Parks about ongoing efforts to preserve Civil War battlefields.

A New Day of Infamy

Sixty years ago, on December 7, 1941, Japan attacked the United States at Pearl Harbor, killing as many as 2,400 people. The sunken battleship *Arizona* has become both a symbol of the dawn raid and a memorial to those who died that day. It also has come to symbolize the nation’s involvement in World War II, a war that pitted democratic ideals against totalitarian beliefs. The bombing and the United States’ response to it symbolized a pivotal moment in the nation’s history as America moved from national adolescence to become a major actor on the world’s political stage.

Just a few months ago, terrorists executed a horrendous attack on two of America’s most recognizable symbols, the twin towers of the World Trade Center in Manhattan and the Pentagon in Arlington, Virginia.

A mind-numbing number of people

died in these assaults, a number so high that New York City Mayor Rudy Giuliani said it would be “more than we could possibly bear.”

Four commercial jetliners, three of them hitting their intended targets, changed our view of the world on September 11, 2001, just as surely as did the bombs falling from Japanese planes on December 7, 1941.

Today, the ship serves as a tomb and a shrine. A tomb for those who died that day and a shrine to democracy and its ideals. When the smoke cleared 60 years ago, the country stood united in its resolve to rid the world of tyranny. The effect of the assaults on September 11, 2001, has been no different. In President Bush’s words: “Terrorist attacks can shake the foundations of our biggest building, but cannot touch the foundation of America.”

—The Editors

BALANCING ACT



When one endangered species threatens another, what, if anything, should be done? Across the National Park System, park managers are confronting challenges that reinforce the role of parks as refuges but highlight their limitations.

BY TODD WILKINSON

PHOTO BY RICH REID

Elephant seals come ashore at Point Reyes in California, where the endangered western snowy plover nests.

IN THE BLOCKBUSTER Disney film *The Lion King*, nature is presented as a “circle of life” in which animals coexist blissfully. Everybody gets along. *Hakuna matata*.

In the real world of America’s national parks, however, cohabitation is proving to be far more harrowing. At California’s Channel Islands National Park, federally protected golden eagles have driven endemic island foxes down to dangerously low numbers, prompt-

ing managers to capture eagles and ship them elsewhere. And just off the shore of Alaska’s Kenai Fjords, orcas (killer whales) are feasting on thousands of endangered sea otters after switching over from Steller sea lions, which have been in a downward spiral. Across the National Park System, resource managers are confronting epic challenges that reinforce the role of parks as refuges but highlight their limitations, thus posing the question: what should

parks do, if anything, to manage the clash between species?

With national parks increasingly taking on a Noah’s ark role, managers are having to embrace aggressive intervention in saving species, both in holding the line with habitat that is threatened by internal and external forces and in trying to restore the function of wild ecosystems that have been compromised. No one is as aware of these problems as Loyal Mehrhoff, who oversees the Park Service’s rare and endangered species office in Fort Collins, Colorado.

“When you get into preserving rare species”—and the Park Service deals with hundreds—“you can’t leave their fate to chance,” Mehrhoff says. “If we had an unaltered North American continent and chain of Hawaiian islands, we could just sit back and let things take their ‘natural’ course in parks. But humans have altered landscapes and the systems that function inside of them. We have no choice but to intervene.”

Before the arrival of European settlers and the fragmentation of habitat that accelerated during the 20th century, North America had “metapopulations” of native animal and plant species that were found over huge areas on land and sea. If a certain species was temporarily extirpated from one area, there were enough source populations of the same species in lands around it to rebuild depleted numbers. But human settlement has changed ecosystems in ways that scientists do not yet fully comprehend. The prevailing view emerging from prominent conservation biologists is that nature probably never existed in perfect balance, but instead was a product of dynamic fluctuation between species ebbs and flows. When humans upset that dynamic by killing off predators, damming rivers, unleashing exotic species, extracting coal, gold, oil, and other resources, building highways and asphalt parking lots, things got seriously out of whack.

“Normally, we don’t have to choose the survival of one species



GEORGE H.H. HUEY

Island foxes, such as the one being examined by NPS biologist Heidi David, have been driven down to dangerously low numbers by swooping golden eagles.



MICHAEL S. NOLAN/TOM STACK & ASSOC.

over another,” says the Park Service’s Mehrhoff. “It’s a matter of applying common sense. If you have two species that are interacting and you have to choose, you just figure out which one is most at risk and respond accordingly. But you make sure you’re not doing something that would drive the other one to extinction.”

Yet sometimes the rapid pace of habitat destruction around parks and the fact that these sanctuaries are absorbing more responsibility—but not necessarily getting the financial resources they need—compels managers to make tough calls, says Mark Peterson, NPCA’s State of the Parks program director. “In effect, they have to play God, and often where there are gaps in available knowledge, they are making informed guesses in the dark,” Peterson

MARK CONLIN/LARRY ULRICH STOCK



Orcas, top, have been feasting on thousands of endangered sea otters, above. Orcas had previously fed on Steller sea lions, whose numbers are on the decline.

BALANCING ACT Continued

says. "Some of those decisions will ultimately decide the fate of a species."

Consider the view from Point Reyes National Seashore in California. On a typical afternoon, biologist Sarah Allen has a front-row seat to study the fascinating mortal relationship between predators and prey, land and ocean, life and death, and in her laboratory the needs of one imperiled species may run head-long into those of another.

Ponderous elephant seals, for instance, come lurching ashore to breed and molt on park beaches—a critical period in the health of individual animals and the larger population. The seals' arrival coincides with that of the endangered western snowy plovers, whose habitat along the heavily developed West Coast has been steadily shrinking. The seals haul out on the same small spits of land that the plovers use for nesting. Even though the seals have not yet caused a problem for the sand-colored shorebird, the elephant seal colony at Point Reyes has been growing exponentially over the past two decades and is spilling onto adjacent plover nesting habitat.

Among the tactics biologists could

employ to improve the odds of successful plover nesting is gently hazing elephant seals away from the beaches where birds are concentrated and closing down beach sections. But Allen notes that even this won't solve all the problems, because predatory ravens and peregrine falcons also threaten plover survival by scavenging eggs and vulnerable young. Consequently, plovers have suffered: only 2,000 individual birds are thought to occur in the West.

"It's a tangled web we weave," says Allen. As Point Reyes' science advisor, she can recite a half-dozen other examples of intra-species clashes. "Nothing is simple. The modern world has made management of certain plants and animals far more complicated than it probably used to be."

Many ecologists believe that the more an ecosystem is able to support its original complement of predators and prey, the more resilient it is to natural and human-made threats. One of the best-known models is Yellowstone National Park, where scientists are able to track the dynamics of predator and prey on a true landscape level.

Today, the Yellowstone ecosystem has the full array of large mammals that existed during the Pleistocene era, but

until the mid-1990s, the 2.2-million-acre park was missing a crucial predator that had been absent for 60 years: the gray wolf. Before the introduction of three dozen Canadian wolves, Yellowstone underwent a number of changes that have been linked to the lobo's human-caused extirpation: populations of elk (one of the wolf's major prey species) swelled, as did numbers of the lobo's competitor, the coyote. Higher numbers of elk have been linked by some to "overgrazing" of aspen trees and certain wild shrub species. Higher numbers of coyotes, similarly, have resulted in greater pressure on Yellowstone's population of pronghorn (antelope), which in recent years has fallen to fewer than 200 individuals.

A few conservationists have even discussed the possibility of pushing for special management of the pronghorn herd, and because Yellowstone's decline in aspen mirrors trends occurring across the West, petitioning to put that tree on the federal list of protected species. But scientists like John Varley, director of the Yellowstone Center for Resources, says a better strategy might be to wait and see what ecological effect the return of wolves has. Already, the 140-plus wolves have reduced coyote numbers by 50 percent, thus affecting pronghorn numbers in ways not yet understood. Likewise, wolves appear to be affecting elk movements and numbers ever so slightly, which, in turn, could affect how heavily aspen are browsed.

"Even though we humans love to see direct causal relationships, these cases are like everything else in ecology," Varley says. "The reasons behind the pronghorn and aspen declines probably aren't as simple to answer as they appear."

Even when wildlife officials do their best to reassemble the natural jigsaw puzzle that's been scrambled, the pieces don't always come together in ways they'd hoped. Call it the tale of unintended consequences.

Once upon a time, for example, before the flood of gold miners to the West in the mid-19th century, the Sierra-Nevada Range had a plenitude



ARTHUR MORRIS

The nesting habitat of the endangered western snowy plovers, along the West Coast, has been steadily shrinking.

of prey species, which supported grizzlies, wolves, and mountain lions. Then, through predator control campaigns, two of those three were driven to regional annihilation. Only cougars hung on through the 20th century.

In the 1990s, California voters approved a ban on mountain lion hunting, and in many areas of the state, the cat population has roared back. But now the carnivorous felines and diseases transmitted by domestic sheep flocks are threatening the survival of endangered California bighorn sheep, whose range overlaps with the boundaries of Yosemite and Sequoia-Kings Canyon. In 2000, the U.S. Fish and Wildlife Service, whose primary responsibility is caretaking imperiled species on public land, pushed through emergency action to have the bighorn population declared endangered. Federal wildlife agents now have authority to kill or trap any lions that pose danger to the sheep, which now number fewer than 100.

Juggling species' needs to encourage an appropriate balance means that park managers need information that goes uncollected when budgets are tight. Back in 1993, the Park Service spent \$3.3 million on 100 federally listed

species, which was 33 percent of the total operations budget. In that year alone, there were more than 430 unfunded projects pertaining to inventory and monitoring of threatened and endangered species on Park Service lands. In 2000, the Park Service spent \$13.8 million on federally listed species. In 1998, Congress passed the National Parks Omnibus Management Act, which called for a "broad program of the highest quality science and information" to enhance management of the National Park System. The following

State of the Parks

The national parks face a steady series of threats—from insufficient funding and skyrocketing visitation to pollution and development of adjacent lands. These threats and others jeopardize the long-term health of the park system.

Currently, a park-by-park resource assessment does not exist. Without this information, it has been difficult to develop conservation strategies and solutions.

Responding to this need for information, NPCA has launched "State of the Parks" in cooperation with the National Park Service (NPS), National Trust for Historic Preservation, Yale University, and Colorado State University.

The program will assess the condition of a park's wildlife, plants, and historic objects and provide a forecast for the future. The goal of this independent, comprehensive assessment of the National Park System is to provide information to policy makers and NPS so they can improve park conditions and ensure the parks' legacy for future generations. Specifically, the project addresses four critical needs by:

- Providing an early warning signal for areas where park resources are in poor condition.
- Comparing parks through a common set of indicators.
- Encouraging citizens and decision makers to help correct any existing park problems.
- Tracking changes in park resources to identify potential problems and determine whether management actions to address those problems are effective.

Once park resources have been assessed, the project findings will be relayed to the public, park managers, and Congress. NPCA plans to issue reports on about 50 national parks and will eventually issue a "State of the Parks" report representing the entire 385-unit system.

For more information on the program and how you can help, please visit our web site at www.npca.org, or call 970-493-2545.

—Ryan Dougherty

place at Great Smoky Mountains National Park, where government scientists have joined forces with the private sector to identify every species-level organism in the park.

The larger goal of the Natural Resource Challenge is a systemwide assessment that could take as long as a decade to complete, though its effectiveness is contingent on adequate funding. The funding goal of the program is \$100 million over five years. In the third year of the program, only \$38 million has been appropriated. This sum needs to more than double in the next two years to meet the goal. The Bush administration has publicly expressed its commitment to getting the money allocated. However, NPCA president Tom Kiernan warned in testimony before Congress that investment must be ongoing; he encouraged lawmakers to dedicate \$50 million to the program.

When former Park Service director Robert Stanton helped Mount Rainier National Park celebrate its centennial in 1999, he used the bully pulpit to highlight the precarious status of parks and the inherent difficulty of managing resources in words that have meaning for the species-balancing act. "Draw-

ing a line on a map will not make nature whole within those boundaries," he said. "Nature won't conform to our nice, tidy lines and well-planned management strategies." Rather, we should also value parks as "the last storehouses of another richness—the rich store of information about thousands of species and the processes by which they live together."

TODD WILKINSON, a regular contributor to National Parks, lives near Yellowstone in Bozeman, Montana.

Desperately Seeking **SILENCE**

Noisy, polluting snowmobiles were to be phased out of Yellowstone, a decision that is now under review by the Bush administration.

BY BENJAMIN LONG

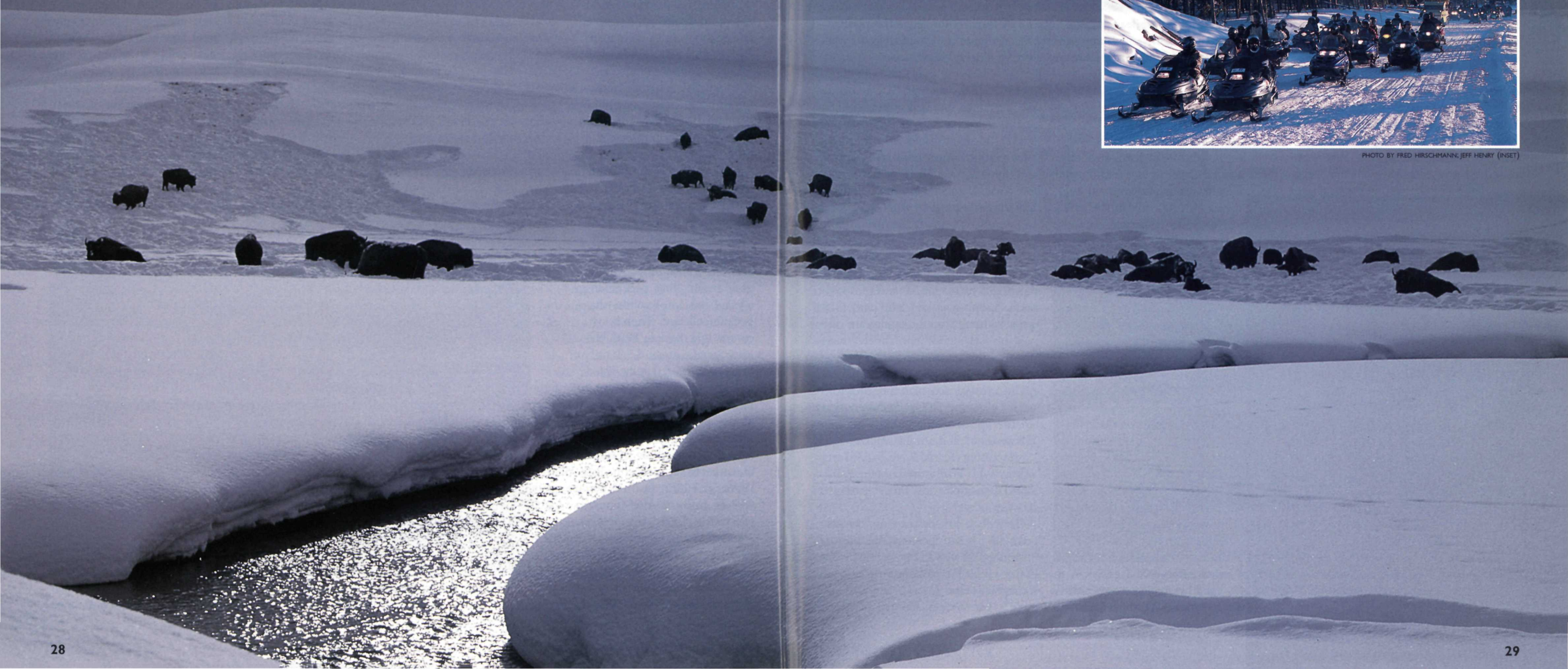


PHOTO BY FRED HIRSCHMANN; JEFF HENRY (INSET)

THE WOLVES—members of the Nez Perce pack—had dashed through the thermal basin overnight. I skied along the Firehole River the next morning, watching bison sweep snow off the grass with their massive heads. Two trumpeter swans floated on the steaming river, snowflakes swirling around their ghostly white forms.

As I pointed my skis after the wolf tracks, eager to catch a glimpse of them or perhaps hear their howl, I realized this land is habitat to three species that had nearly been driven to extinction: bison, trumpeter swan, and gray wolf. A reminder of how special a place Yellowstone National Park is.

I followed a tributary more than a mile from the road, then paused for a sip of water as vibrations pricked my ears. I turned my head toward the sound. Wolves?

It was a howl, of sorts. A pack, all right—but a pack of snowmobiles, their engines snarling in the distance. The racket shattered my reverie, like a brick through a stained-glass window.

I was disappointed, but not surprised. This was Yellowstone, in early



JEFF HENRY

A long line of snowmobilers prepare to ride through Yellowstone National Park, above. Some contend that snowmobiles are loud and polluting, disrupting the park's tranquility and beauty craved by skiers, below.

2001. But will it be the Yellowstone of tomorrow?

I VISITED YELLOWSTONE at the end of the Clinton administration, soon after the National Park Service announced plans to phase snowmobiles out of the park. On the park's 180 miles of groomed roads, snowmobiles would be replaced by tracked buses called snowcoaches. This change was to be complete by 2003/4.

At the time, I didn't know about the backlash that was to come. I just wanted to see what the ban was about and what a difference it could make.

I started at West Yellowstone, Montana—"Snowmobile Capital of the World." Businesses include the Yellowstone Motorhed curio shop selling Harley-Davidson trinkets and an Imax theater featuring a film about Michael Jordan. But snowmobiles are the big draw. Here, outfitters rent fleets of the machines, which are legal on city streets.

Yellowstone first opened its gates to snowmobiles in 1971.

In 1972, parks such as Glacier banned the machines, but Yellowstone continued to welcome them as park managers greatly underestimated how snowmobiles would boom, both in popularity and in raw power. Then, winter visits to the park doubled between 1983 and 1993, mostly because of snowmobilers, and complaints about the machines increased in tandem.

Thus, Yellowstone became the hot-spot of a national dispute between motorized recreationists and those who prefer keeping public land and water quiet. Although such disputes are often portrayed as environmentalists vs. recreationists, they are in fact a clash between very different forms of recreation, with environmental issues on the side.

This clash is politicized all the way up to the presidential level. At West Yellowstone, a bumper sticker reads "Snowmobilers for Bush." Ed Farnsworth, who owns the motel where I stayed, was one of those frustrated snowmobilers.

"It will be just devastating," he said, predicting a 30 percent drop in his business. "We would have to shut down in the winter. We would have to get jobs someplace else just to support this place." Farnsworth also claimed the



SPENCER SWANGER/TOM STACK & ASSOC.

complaints of degradation of Yellowstone were overblown.

I got a different perspective from Melissa Buller, owner of a ski and bike shop. "The community is not going to shrivel up and blow away if snowmobiles are banned in the park," she said, noting that there are 500 miles of snowmobile trails on nearby national forests that would be unaffected by the ban.

Although you would never know it from their political rhetoric, Yellowstone Park is secondary for local snowmobile outfitters. I found a brochure that states: "Although its proximity to the world's first national park helps, it's West Yellowstone's other hundreds and hundreds of miles of snowmobile trails that give it its claim to fame." Most serious riders I met said they preferred to ride on the more challenging terrain outside Yellowstone.

MORNING IN WEST YELLOWSTONE broke around 30 below zero. When I opened my motel room door, a blue plume of exhaust from snowmobiles drifted in. Because of gas-guzzling, oil-burning, "two-stroke" engines, snowmobiles produce exponentially more pollution than cars. As hundreds of snowmobilers warmed their engines, exhaust hung over the town like a petrochemical fog.

Kitty Enboe knows that fog well. Bundled in her National Park Service uniform, Enboe staffs an entrance booth at West Yellowstone, where about half of the park's winter visitors enter. On a busy Saturday, 1,300 riders idle in line, waiting to show an entry pass and zip through the gate. The resulting smog often gives Enboe a sore throat, throbbing head, dizziness, and nausea—early signs of carbon monoxide poisoning.

"On busy days, all of us get the symptoms," she said. "You just can't avoid it."

Although the station has a system that theoretically pumps fresh air into the booth from several yards outside, it is only a small improvement, if any at all, since that air source is also full of exhaust. The booth contains small elec-



Park officials monitor the impact of snowmobiles on air quality. Their engines create more pollution than cars.

tric fans that circulate the air, but because cold winter temperatures hold the exhaust at ground level, there's no place to vent it.

Enboe's boss, District Ranger Bob Seibert, says his concerns include both his staff and park visitors. "It's not just the people at the gate. It's everyone in the travel corridor," he said. Between

West Yellowstone and Old Faithful Lodge, the noise and exhaust are essentially inescapable. Tests at Old Faithful show snowmobiles are audible 95 percent of the day. "For most visitors, that's all you get. That's your Yellowstone experience," Seibert said. "Motorized recreation is a noisy, smelly, contrived type of experience. I believe we can do better."

The snowmobile ban was designed to provide the opportunity to do better in Yellowstone. But now, the National Park Service may not be given the chance.

I'LL ADMIT MY BIAS: Having cross-country skiers share a forest with snowmobilers is a bit like scheduling a chamber music quartet alongside a monster-truck pull.

Still, although I hadn't snowmobiled in years, I decided to try it again before making a final judgment. I rented a gleaming, \$15,000 Arctic Cat "Yellowstone Special," a prototypical machine with a four-stroke engine, somewhat less noisy and polluting than conventional two-stroke engines. Two days' rental cost more than purchasing my new cross-country skis.

The next morning I donned a helmet, flicked my pass at Kitty Enboe, and



As many as 1,300 riders enter Yellowstone on a busy Saturday, resulting in a visible blue smog that hangs over the park. The smog can cause sore throats and nausea, early signs of carbon monoxide poisoning.

JEFF HENRY (2)

roared into the park.

I found the traffic unnerving and the ride jarring. Seibert had warned me the ride is a "spine-altering experience." Officially, though, the roads were in "good" condition. I cringed to imagine worse when I watched one rider flip his snowmobile as he tried to slow down.

Later, I saw a flock of goldeneye ducks in the Madison River. I pulled over to see if they were of the common or Barrow's species, but trying to cross this road was like trying to cross on a city street against the light.

A lone skier approached amid this chaotic din, his head bowed against the traffic. I asked if he was having fun.

"It rather sucks, actually," he said. "The whole point of this is to try to gain some sense of solitude. I hate to be a killjoy and criticize other peoples' fun, but there seem to be more appropriate places for this than a national park."

That's the essential question: Is this what national parks are for?

ASIDE FROM the clash between skiers and snowmobilers, there are environmental and social conflicts. The effects of snowmobiles and groomed trails on wildlife are complex and not entirely understood, but experts agree that winter is a crucial time for the survival of bison, elk, and bighorn sheep. Seibert tells of "bison ping-pong," where bison are herded between groups of snowmobiles, wasting precious energy. To be fair, skiers may also frighten wildlife—but they can cover only about one-tenth the distance of a snowmobiler.

Safety is another problem. Snowmobilers run into trees, each other, even elk and bison. More Yellowstone visitors have been killed aboard snowmobiles than have been killed by the park's grizzly bears. Yellowstone Park saw four fatal snowmobile wrecks in the winter of 1994. In 1998, snowmobile riders represented only 2 percent of yearly visi-

tors in Yellowstone, yet they racked up 9 percent of wrecks. That's not surprising, considering many visitors have never ridden one before.

Then there are the exhaust and noise—the things people visit national parks to escape. The Environmental Protection Agency ranks Yellowstone as a Class I airshed, to be managed for the purest air quality. But at congested areas like West Yellowstone, the winter air can be as filthy as America's most polluted cities. As for noise, a passing snowmobile is 16 times louder than the ambient sound of a forest, and a group of four snowmobiles can be heard a mile and a



Snowcoaches will continue to be a preferred mode of park transportation if the snowmobile ban is upheld.

half across an open meadow.

When faced with being locked out of Yellowstone, snowmobile manufacturers introduced two "cleaner and quieter" models for this specialty market. But the Park Service found these machines failed standards set for Yellowstone. After a few hours aboard one, my ears were ringing and my clothes smelled of exhaust. My arms and back ached. I couldn't wait to get back on my skis.

MIKE FINLEY served as Yellowstone's superintendent from 1994 to 2001. During that period, the National Park Service officially declared that snowmobiles were "impairing" Yellowstone—a simple fact but a legal milestone. The decision came after more than three years of public debate, during which

46,000 people registered opinions on the subject. During the final comment period, 83 percent agreed snowmobiles had no place in Yellowstone. With that declaration, Finley shepherded through the snowmobile ban. People would be free to enjoy Yellowstone in winter—but by ski, snowshoe, and snowcoach only. The park would return to people and nature, not machines.

Then, the snowmobile industry sued, and the new Bush administration indicated it would not defend the ban. In a deal with the industry, Interior Secretary Gale Norton said she will "balance" motorized use in Yellowstone. Many

predict that this is political shorthand for weaving around the ban, perhaps allowing four-stroke snowmobiles or even standard snowmobiles in guided groups.

Finley bluntly called the Bush deal a "sellout." He has since retired after 30 years with the agency.

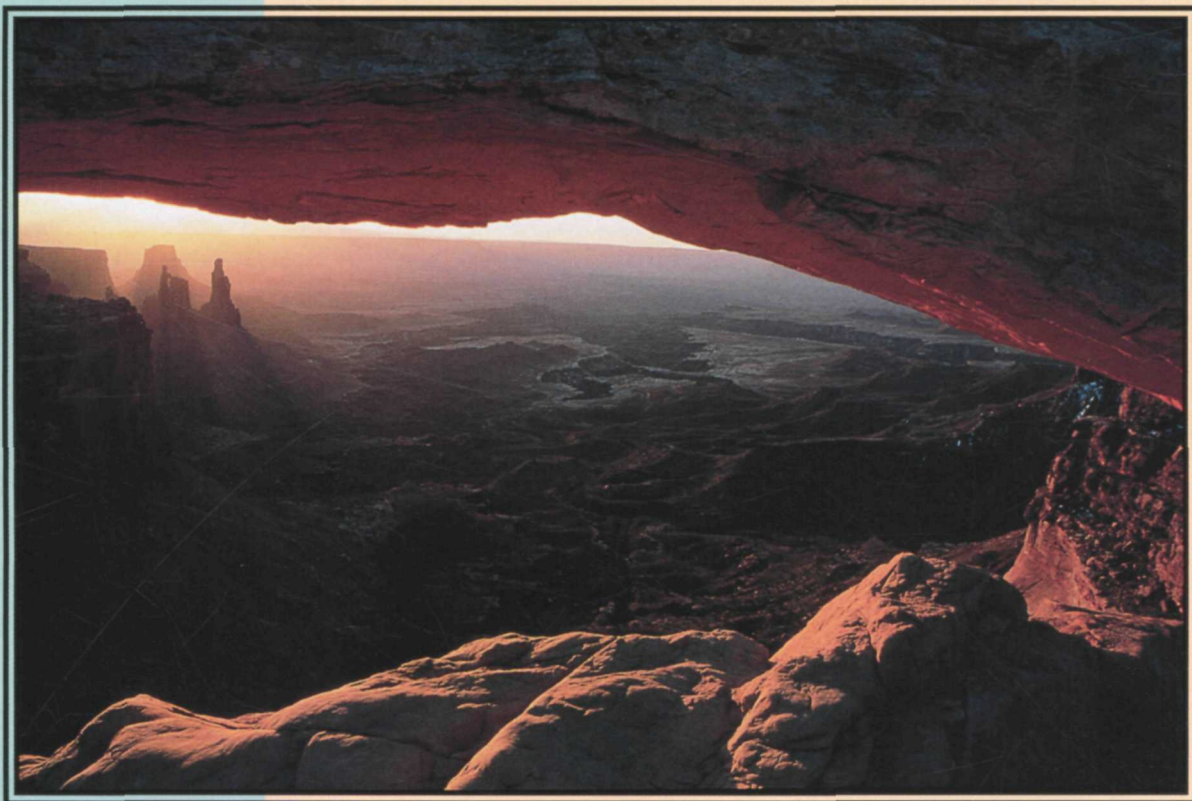
THERE IS NO SILENCE quite so profound as the silence of wilderness in winter. The soundscape of Yellowstone National Park is—or rather should be—the quiet of a thousand small sounds: The gurgle of a mud pot. The hiss

of a geyser. The whisper of falling snowflakes. But all of these hushed and vulnerable sounds are drowned out by a single, mechanized roar.

Over Yellowstone's history, the park has been a refuge for threatened species such as bison, trumpeter swans, and gray wolves. Today, Yellowstone should also be a precious reservoir of another endangered resource: natural quiet. It seems to me that national parks were designed not only to protect what nature looks like, but how it sounds. To trade that for a thrill ride is to squander our birthright.

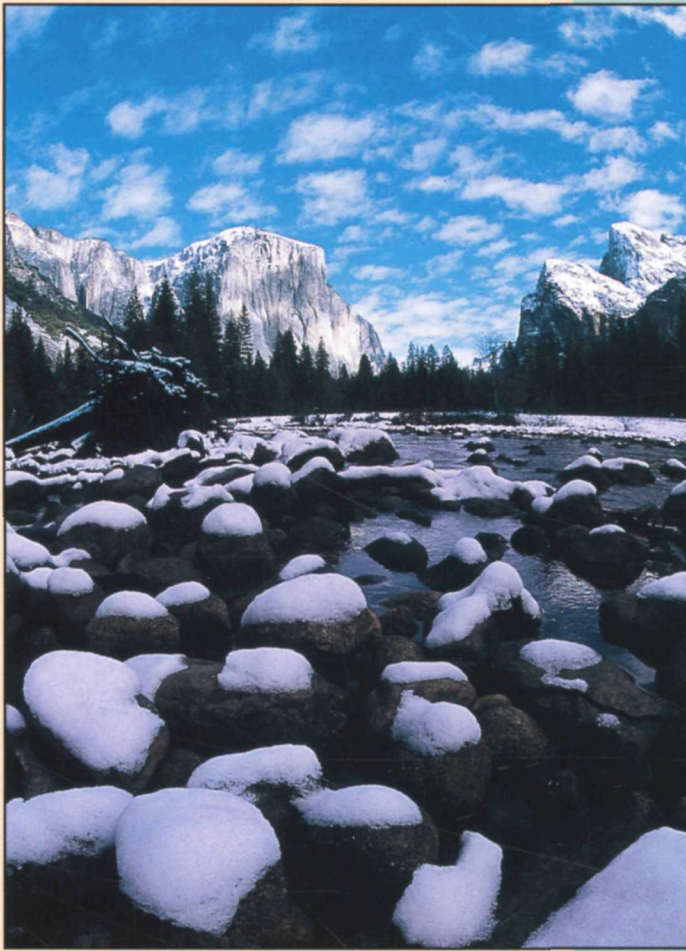
BENJAMIN LONG is a freelance writer who lives in Kalispell, Montana. He is author of *Backtracking*, a book about the wildlife discoveries of the Lewis and Clark Expedition.

National Parks
2001
Photo Contest
Winners



Maureen Szuniewicz of DePew, New York,
occupational therapist.

**Canyonlands National Park,
Mesa, Arizona, at sunrise.**



Wendell DeLano of Alameda,
California, certified public accountant.
**Winter snow in Yosemite Valley,
Yosemite National Park,
Merced River in foreground,
El Capitan in background.**



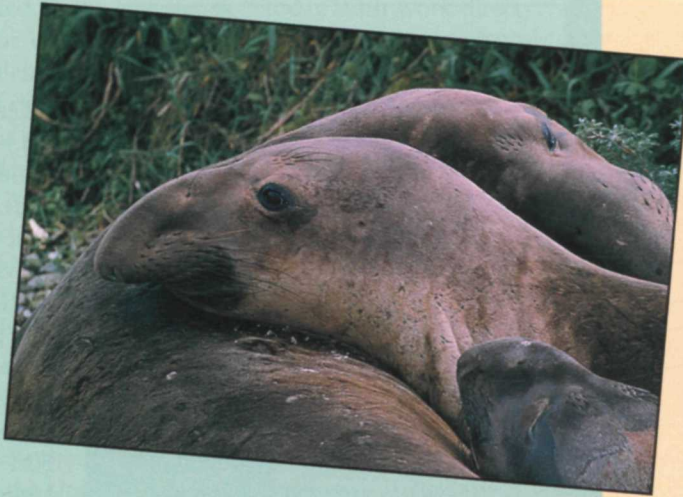
Alan Mills of Berea, Kentucky,
college professor.
**Great Smoky Mountains
National Park.**



ARTISTS AND AMATEURS alike have used photography for more than a century to mark historic events, capture nature's awe-inspiring landscapes, or catch a memorable sunset on a family vacation.

What better place to practice this relatively new art form than in the national parks, themselves products of the 20th century? The stunning land forms and sacred grounds that compose the National Park System have inspired music, paintings, and poetry since humankind has been able to visit them. Photographers have lugged their equipment through foul weather, frigid temperatures, and searing heat to get the perfect panoramic shot. Perhaps one of the greatest gifts a photographer can possess is the ability to see an everyday scene, but to see it differently than the rest of us. Waiting until the light is just right, looking for the right mix of shadow and snow, picking out the angle that portrays not only the landscape but the meaning of it.

In this issue, our readers have supplied some stunning images for the *National Parks* 2001 Photo Contest. The Western parks again make up the greatest number of winning entries, although images from Great Smoky Mountains National Park and Gettysburg



HONORABLE
MENTION (1)



HONORABLE
MENTION (2)

National Military Park made it to the top six. The winning entries were selected from more than 2,000 images submitted by more than 400 entrants. Winners were chosen by two judges, Steve Freligh, the publisher of a national wildlife magazine, and Michael Madrid, the front-page photo editor of a national newspaper.

Our winning entry is from Maureen Szuniewicz, an occupational therapist from DePew, New York, who captured a panorama of a mesa at Canyonlands National Park as seen through an archway at sunrise (page 33).



HONORABLE MENTION (1)

Susan Van Der Wal of Inverness, California,
part-time photographer.

**Northern elephant seals resting, Chimney Rock
at Point Reyes National Seashore.**

HONORABLE MENTION (2)

Chris Heisey of Grantham, Pennsylvania,
journalist.

**Ice storm / Friend to Friend Monument,
Cemetery Hill, Gettysburg National
Military Park.**

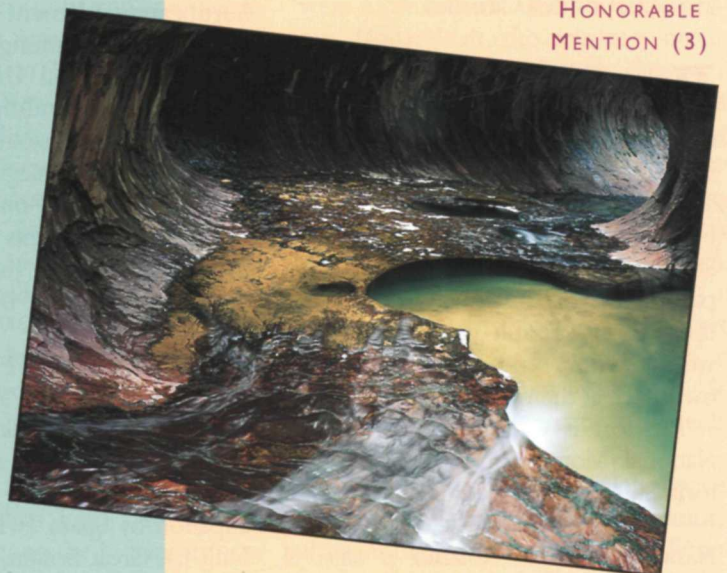
HONORABLE MENTION (3)

Thomas Cooper of Waukegan, Iowa,
estate manager.

The Subway at Zion National Park, Utah.



HONORABLE
MENTION (3)





SILVER IMAGE

St. Augustine's skyline at sunset. The city is the oldest European settlement in the country.

St. Augustine's Live Action Forts

One of the oldest cities in the country, St. Augustine, Florida, offers the chance to relive history.

BY NATALIA DE CUBA ROMERO

Bam! A FLASH OF LIGHT and a resounding boom crackle through the evening air as men scurry, shouting, through the acrid smoke. Boom! Again, cannons fire, men bark orders, the atmosphere is tense. Shadowy figures dash across the ramparts of the fort, its stone walls resisting the furious assault while men and women within send cannon fire of their own back at the marauders.

The fort is Castillo de San Marcos National Monument in Florida's historic St. Augustine, the first permanent

NATALIA DE CUBA ROMERO is editor of American Eagle's Latitudes.

European settlement in the United States and thus among the oldest cities in the continental United States. The battle raging around the fort's formidable walls is a reenactment of a 1702 English siege on the Spanish town—one of frequent reenactments that make the fort not just a page out of history, but a living book.

Built from 1672 to 1695 on 20 grassy acres fronting the Atlantic Ocean, the fort has a rich history encompassing occupation by Spain (which built it), Great Britain, the United States, the Con-

federate States of America, and back to the United States. But the different flags flown over it were raised and lowered as a result of political negotiations; the proud old fort has never been taken by force. Today, Castillo de San Marcos and its sister, Fort Matanzas National Monument, stand under the National Park Service flag, and its visitors—numbering up to 800,000 per year—carry cameras rather than muskets.

Those visitors find days at the fort to be lively. Each room or casemate focuses on a different theme in the site's history: not only has the fort served to protect the primary trade route to Europe and defend the townspeople from attack, but it has been a prison for American Indians as well as a school. Guides in period costume are a fervent bunch, many of them local volunteers. The people of St. Augustine are extraordinarily proud of their small city's long history. This is a town where some of the city's 12,000 people go to work in tri-corned hats and capes, blacksmiths still bang iron into nails by hand, and the municipal hobby is shooting off cannons. The oldest wooden school-



SILVER IMAGE

Historical reenactment at Fort Castillo de San Marcos.

house in the United States still stands here, and a popular evening activity is strolling by candlelight through the pedestrian lanes of downtown.

St. Augustine was established by Don Pedro Menéndez de Avilés in 1565, although some say Juan Ponce de Leon landed there as early as 1513 in search of the Fountain of Youth. In 1564, the French had constructed Fort Caroline nearby (see sidebar, page 38), and Menéndez set about successfully forcing them out of the region.

The Spanish erected nine wooden forts, one after the other, before construction began in the late 17th century on the stone structure, which still stands

today. With work directed by masons from Cuba and labor provided by Indians and convicts, the wall is truly a local product. The material for its walls, coquina, is calcified sand and shells mined from Anastasia Island across Matanzas Bay, and the mortar is lime from oyster shells.

The 1702 siege was the stone fort's first test, as the British tried for two months to conquer the townspeople sheltered within its walls. The fort held successfully, but the British burned the city to the ground when they made their exit, defeated and vengeful. Afterwards, the Spanish community made improvements to the fort and built walls around the city to protect it. Today's visitors can cross the street from the fort and walk through remnants of the old city gates.

In the century or so following that first siege, the fort changed hands several times. St. Augustine remained Spain's anchor in Florida until England defeated Spain in the Seven Years War. When that war ended in 1763, this strategic location in the New World was handed over to the English, and all but three of the Spanish residents left St. Augustine for Cuba. The descendants of two of them, Manuel Solana and Francisco Xavier Sanchez, are still thriving St. Augustine families today. After the American Revolutionary War, Spain got Florida and the fort back from the defeated English in reward for aiding the American colonies, only to cede both to the United States in 1821.

During the Seminole Wars in the mid-1800s, Indian hero Osceola (Asi Yaholo) was among the Indians imprisoned in the fort, then renamed Fort



The Lightner Museum, formerly the Alcazar Hotel built in 1888, offers visitors an eclectic collection.

Marion. Later, Cheyenne, Kiowa, Comanche, and Caddo warriors were incarcerated there, but thanks to U.S. Cavalry Officer Richard Pratt, conditions were more tolerable than in other prisons. Under Pratt, the prisoners monitored themselves and took classes in Western-style education, taught by local women and visiting teachers, including Harriet Beecher Stowe. Pratt went on to found a school for the more promising students after they were freed. During the time when Florida was British, Greeks and Spaniards from the island of Minorca and the Mediterranean were brought to the St. Augustine area as plantation workers. As a result, today St. Augustine is an international Greek-Orthodox center.

In 1900, after 205 years of service, the fort was retired. It became a national monument in 1924, was transferred to the National Park Service in 1933,





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TOM TIL

**Fort Matanzas National Monument near
St. Augustine, Florida.**

and was renamed Castillo de San Marcos in 1942 in honor of its Spanish heritage.

Today, physical restoration is a priority for the fort. The roof has sprung a serious leak, necessitating a \$3.6 million reconstruction now under way. Old concrete was lifted from the floor, new concrete installed, and a waterproof membrane applied. New coquina is being used to replace the old now-leaky material.

Before choosing that measure, the fort's personnel studied the problem carefully. "We don't want to jump in and do a lot of treatment," says Superintendent Gordie Wilson. "We want to stabilize it."

During renovations, the upper gundeck has been closed; it is scheduled to reopen in early 2002. The rest of the park, including occasional cannon and musket firings and other historical reenactments, remains open to the public, generally on a regular schedule of 8:45 a.m. to 4:45 p.m. daily, except for December 25, although visitors should call

ahead to confirm opening times. The usual fee of \$4 for adults has been reduced to \$2 during the construction. Call the fort at 904-829-6506, ext. 234 or visit www.nps.gov/casa for reenactment schedules and news of the reconstruction's progress.

Fourteen miles and a half-hour drive south on the A1A from St. Augustine is Fort Matanzas, a smaller fort offering a different sideline attraction: a mile of delightful beach, where St. Augustine's warm climate permits swimming much of the year. A small coquina watchtower first constructed in 1740, this fort started out as a remote outpost designed to protect St. Augustine's back

Fort Caroline

France's first attempt to stake a permanent claim in North America was at Fort de la Caroline, a settlement near the mouth of the St. Johns River that is north of St. Augustine and 13 miles east of what is now Jacksonville. These first French attempts at colonization began in 1562, but living conditions were brutal and the colonists were vulnerable to starvation because of a lack of timely supply ships. As a result of a conflict with the Spanish, the colony was finished by 1565 despite the assistance of the Timucuan Indians.

Today, Fort Caroline National Memorial is a unit of the Timucuan Ecological and Historic Preserve. The original settlement no longer exists, but the two-thirds scale fort exhibit is based on a 16th-century sketch by the colony's artist and mapmaker. Both the fort and a nature trail are self-guided. For more information, call 904-641-7155 or visit www.nps.gov/foca.



St. Augustine's streets, including St. George, invite pedestrians to stroll.

door. Now visitors to the park can take the ferry, which leaves hourly from the visitor center, to tour the small fort—only 50 feet on a side, with a 30-foot tower—or walk on the nature trail, fish, or have a picnic on the visitor center side, or go swimming or shelling on the ocean beach. This pleasant scene is far removed from the area's bloody history: Matanzas means "slaughters" in Spanish, and the inlet got its name from the many Frenchmen slain there. Like Castillo de San Marcos, Fort Matanzas is open to the public from 8:30 a.m. to 5:30 p.m. every day of the year except December 25. It is most crowded during the summer months, the December holidays, and during March and April. September through December is low season. For more information, call Fort Matanzas at 904-471-0116 or visit the web site at www.nps.gov/foma.

Transportation to and in St. Augustine offers a number of options. The city is served by Jacksonville and Daytona's international airports. Interstate 95 is the major roadway running past St. Augustine, making it easily accessible by car. The city does not have public transportation, but tour trains that allow visitors to get on and off at all the major attractions make it easy to get around. Horse and carriage rides are also available along the bay. The ground floor of the fort is completely wheelchair accessible; the upper gundeck is not.

St. Augustine is known for its charming bed and breakfast inns in historic

buildings. The major hotel within the city is the 135-room Casa Monica, a fully restored luxurious 1888 hotel, located in the center of town (800-648-1888). Although the well-preserved Spanish and colonial town itself is exciting to stroll, St. Augustine also offers a multitude of attractions including golf, a wax museum, the wild and eclectic collections of the Lightner Museum, a winery, a stunning lighthouse, and more. St. Augustine is not large, and visitors will find it easy to orient themselves. For more information, call the St. Johns County Visitors and Convention Bureau at 800-418-7529.



Castillo de San Marcos National Monument in St. Augustine, Florida.

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Walking With A Ghost

Edward Abbey urged us to leave our cars behind and experience the national parks on foot.

BY JAMES M. CAHALAN

LAST JANUARY IN Big Bend National Park, I floated down the Rio Grande through Santa Elena Canyon and hiked in the Chisos Mountains. Then I went walking in Guadalupe Mountains National Park, enjoying its shifts from desert to riparian streambed and forested upland. I felt that I had Big Bend and Guadalupe largely to myself—unlike Yosemite, where in June I drove past the crowded valley into busy Tuolumne Meadows.

Like most of my fellow citizens, I've spent far more weeks driving to, in, and around our national parks than I've devoted days or hours to hiking and rafting them. I'd driven Skyline Drive in Shenandoah National Park several times, sticking to the scenic overlooks, until I finally got out of my car in 1997, hiked all day on two trails—and saw nine bears, including a mother trailed by her four cubs. I remember those few hours of hiking and rafting much more vividly than I do all the driving.

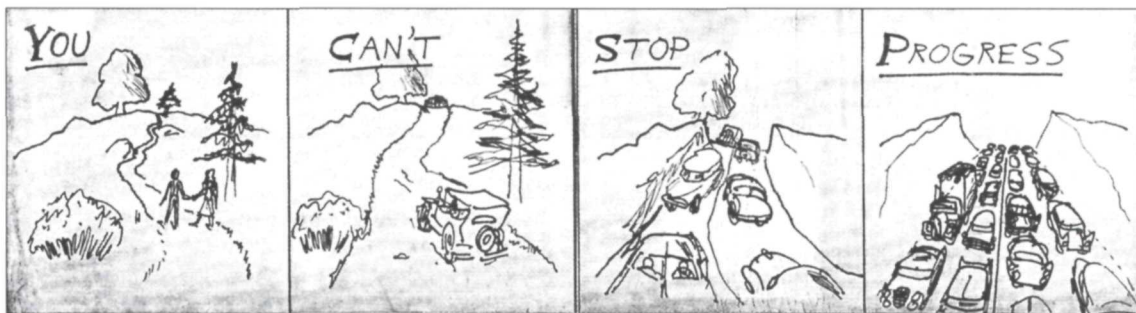
Try this litmus test on yourself: Bring up whatever mental images you have of your own drives through national parks. Perhaps pleasant, but slightly vague, aren't they? Now think about your hikes (or campouts or river or bike trips). Are you able once again to hear those birds and sounds of rushing water? See just how bright the grass or

how brown that desert mountain was? Remember how thirsty you got and how your joints ached a bit? I can—and I'll bet you can, too.

In my own expeditions, I've been haunted by a ghost, because I've been tracking Ed Abbey. I've followed him not only in national parks, but also right here at home in Indiana County, Pennsylvania, Abbey's native county. I live in

a tunnel because the road there is so narrow and winding that the trees on either side interlace their branches overhead, forming a canopy."

When Ed Abbey hitchhiked to the Grand Canyon for the first time in 1944 at age 17, he asked to be dropped off a mile away, because even as an adolescent he had an instinct that it was better to walk to the South Rim. He remem-



EDWARD ABBEY, EL CREPUSCULO DE LA LIBERTAD, 14 JANUARY 1960, P.2, COURTESY OF THE UNIVERSITY OF ARIZONA LIBRARY, SPECIAL COLLECTIONS, EDWARD ABBEY PAPERS, BOX 28

woods beside the old site of a mine where his firebrand father, Paul Revere Abbey, worked 80 years ago. Every time I ride my bike beside our nearby creek, I hear Ed's voice, from *Appalachian Wilderness*: "That's Crooked Creek, glowing with golden acids from the mines upstream." Often I bike to the old Abbey family home and sidehill farm, the "Old Lonesome Briar Patch" near the village of Home. Everywhere I'm surrounded by trees, trees, and more trees: pines and an endless deciduous array. As I point my bike "up a red-dog road under a railroad trestle through a tunnel in the woods"—where the Abbeyes' house used to be, with its adjacent springhouse still guarded by a faithful horse—I hear him speak again: "I call it

bered in his essay, "My 40 Years as a Grand Canyoneer," that he had "belonged to the Grand Canyon ever since, possessing and possessed by the spirit of the place." Because of *Desert Solitaire*, most readers associate him with Arches and Canyonlands. Between 1953 and 1979 Abbey worked in 16 different national parks and forests, from Glacier to Everglades. He was interested in the parks not as a career, but as a series of sites for exploration and writing. He began as a laborer in New Mexico's Carson National Forest for \$10.40 per day and ended as a fire lookout at Arizona's Aztec Peak for a seasonal wage of less than \$3,000. He knew that in the underfunded park and forest services, he would never make much money. But

he liked the job: "All you have to do is get up every 15 minutes or so and take a look around." And he loved the beauty and solitude. As he declared in *Cactus Country*, "A man or woman could hardly ask for a better way to make a living than as a seasonal ranger or naturalist for the National Park Service."

When he died in March 1989, Abbey was buried in Arizona's Cabeza Prieta wilderness, in the beautiful desert within the newly declared Sonoran Desert National Monument. Here rangers tacitly accept his technically illegal grave. Ed Abbey was a ranger's ranger.

He was also an incorrigible troublemaker—whose most radical warnings and advice continue to haunt us. After my visit to Yosemite, I remembered Abbey's admonition, in the "Industrial Tourism and the National Parks" chapter of *Desert Solitaire*, that we should all get out of our cars and walk upon this blessed land, since we have already agreed not to drive into cathedrals and other sacred places.

Thirty-four years ago this January, when this now classic book appeared, Abbey outraged many by asserting acidly that "loop drives are extremely popular with the petroleum industry—they bring the motorist right back to the same gas station from which he started." His argument fell on deaf ears in 1968 and for years thereafter, but now we urge the Park Service to implement plans allowing light rail to transport much of Grand Canyon's deluge of visitors to the South Rim and buses to shuttle visitors at Yosemite and elsewhere. Similarly, in "The Cowboy and His Cow," Abbey offended many in 1985 by attacking cattle grazing on public lands, but now proposals to limit such practices are virtually mainstream.

In January 1960, ten years before the first Earth Day and subsequent new talk of "environmentalism," Abbey published an article called "God Bless America—Let's Save Some of It" in *El*

Crepusculo de la Libertad (the dawn or twilight of liberty), a newspaper that he edited for a short time in Taos, New Mexico. He also drew the prophetic cartoon "You Can't Stop Progress."

Part of the ironic difficulty is that when we celebrate a wilderness place, we risk sending the public there and making it into something else. Arches was wilderness when Abbey worked there in the late 1950s, but now one can sit in crowded Moab, watch trucks thunder past, and observe visitors clutching copies of *Desert Solitaire*. That mountain-biking capital is so overrun as to threaten Arches and Canyonlands. For this reason, when Abbey later described his 110-mile "Walk in the Desert Hills" across the Cabeza Prieta, he deliberately misled readers by claiming that he had started out from Bagdad (a town near Prescott, hundreds of miles away). Yet he welcomed as many visitors as were willing to walk or bike through our national parks.

Emerson once observed that Thoreau's thoughts were as long as his walks. As we walk through our national parks, we can generate our best thoughts about how to protect them. I'm not the only one who hears Ed Abbey's ghost as I wander and think about these sacred places. Four years ago in *The New York Times*, Lesley Hazleton, considering possible compromises at Yosemite, heard Abbey urging her to "go the whole hog" and ban cars in Yosemite Valley. And just a few months ago in the *Idaho State Journal*, Penelope Reedy recounted how Abbey had offended her, then a rancher's wife, with his critique of cattlemen, and so she had attacked him in print, receiving a letter from Abbey telling him that he had "loved your letter; give that bastard hell." Having now become critical herself of grazing on public lands, she understands that Abbey wanted to provoke people to raise hell.

Let's take that ghostly advice. As we think about our overpopulated, overdeveloped, underfunded national parks, let's go for a walk, run a river—and raise a bit of hell. Let's encourage our public officials, as Abbey put it, to "keep it like it was."

JAMES M. CAHALAN is Professor of English at Indiana University of Pennsylvania, where he teaches a course on the national parks. His biography, *Edward Abbey: A Life*, was published in 2001 by the University of Arizona Press.

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Splendor Is a Grass

Johnson's seagrass, found in Florida, was the first marine plant to be listed as endangered.

BY ELIZABETH G. DAERR

GRASS HAS INSPIRED poets, poetry, and proverbs, and Johnson's seagrass, a green nomad that provides habitat and food for marine creatures such as juvenile fish, crabs, shrimp, and endangered green sea turtles and manatees, should inspire some sympathy.

The National Marine Fisheries Service (NMFS) petitioned to list the seagrass federally as endangered in 1998, and it became the first marine plant to be given such protection. Although scientists aren't clear whether the grass was originally native to Florida, it has established itself in a 145-mile-long territory between Biscayne Bay and Sebastian Inlet. It has been growing for more than a century along the Florida coastline, and the seagrass, which is most genetically similar to a Pacific species, has become part of the ecosystem's fabric.

"Rather than displace another organism, it simply filled in a niche that wasn't being filled," said Jud Kenworthy, a research biologist with the National Ocean Services, a division of the National Oceanic and Atmospheric Administration.

A large patch of Johnson's seagrass lies just north of Biscayne National Park at Virginia Key. Recently, two of Florida's congressional members introduced legislation seeking a special resources study of the island for possible inclusion in the park. The site is being recommended for its national significance as a



Johnson's seagrass provides habitat and food for a variety of marine creatures.

recreation area for African Americans when public beaches were segregated.

Although the Park Service would welcome the discovery of Johnson's seagrass inside the park's boundaries, said park ecologist Matt Patterson, it's never been documented there. With limited staff and resources and 85,000 acres of underwater territory to manage, "it's like trying to find the needle in the haystack," he said. The agency hopes to increase funds for research by aggressively fining boaters who run aground, damaging grasses and coral.

Averaging one to two inches tall, the grass grows in varying salinity and depths and in turbid waters where other grasses don't receive enough light. Researchers have observed it occasionally in waters so shallow that its flowers rise above water—something not tolerated by most seagrasses.

Those flowers, which indicate the grass reproduces sexually as well as asexually, have generated the largest

question for scientists. Not one male flower has been found, and scientists wonder whether the lack of genetic diversity offered by asexual reproduction may doom the plant. In the meantime, the plant appears to be increasing slightly by branching and generating new tissues.

Monitoring the population is not easy. The seagrass' small size and affinity for shallow water make it vulnerable to being uprooted, and patches of grass often disappear as a result of storms. But dredging, anchor mooring, and boat propellers are a greater threat, said Layne Bolen, a fisheries biologist formerly with NMFS. Being listed under the Endangered Species Act was meant to protect the seagrass from the effects of development and recreation, but the act falls short of protecting it and many other plant species. As the law is written, if a single action is not likely to cause the overall decline of a species, it must be allowed.

Bolen concedes the law gives NMFS the ability to track the long-term effects of development on the whole population. "One project is small. But when you have many of them over a period of time, and you have a species with such a restricted habitat, it's necessary to monitor these cumulative effects," Bolen said. Demand for more private docks, larger marinas, and deeper channels continues to put pressure on the seagrass' limited habitat, she said. "The greatest risk for this species is development in the water and on the water," Bolen added.

ELIZABETH G. DAERR is news editor.



A Final Harbor

Eugene O'Neill National Historic Site tells the unusual story of "America's Playwright."

BY RYAN DOUGHERTY

THE MAN WHO came to be known as the architect of modern American theater began his life a troubled wanderer. But it was Eugene O'Neill's travels—and his travails—that introduced the young man to life's realities, lighting the fire within him that would later captivate the theater world like few had before.

"I will always be a stranger who never feels at home...who must always be a little in love with death," O'Neill once said.

Born in 1888 in New York City, Eugene O'Neill was the son of James O'Neill, one of America's most successful actors.

O'Neill spent his first seven years traveling the country with his father, who had given up his career as a Shakespearean actor to tour in a less stimulating but more profitable play called *Monte Cristo*. O'Neill grew disenchanted with the turnabout.

Years later, after attending Princeton University, O'Neill discovered that his mother was addicted to the morphine she had been prescribed after complications with Eugene's birth. Stung by this news and by his father's new path, O'Neill ran from them.

He spent two years traveling to Honduras, South America, and England. O'Neill began drinking and once attempted suicide. At age 24, he fell ill



O'Neill penned his most acclaimed plays at Tao House in Danville, California.

LEFT: JOHN ELK III; BELOW: CORBIS



The home's thick walls offered O'Neill the solitude he craved for writing. "This is a final home and harbor for me," O'Neill said.

During his early days in Tao House, O'Neill worked tirelessly on a planned cycle of 11 plays about a family in America. Then, health problems began to plague him.

Instead, O'Neill briskly penned the autobiographical plays that rank among the highest achievements of American theater, such

with tuberculosis. Though the illness was brief, it gave O'Neill time to reflect on his life.

After his illness, O'Neill began writing plays. He drew inspiration from the experimental stylings of European playwrights—a far cry from the American theater that he considered mostly trite and melodramatic.

In 1916, a group of amateur actors in Massachusetts staged one of his plays about life on the sea, *Bound East for Cardiff*. Four years later, he earned the first of four Pulitzer Prizes for *Beyond the Horizon*.

O'Neill's star ascended rapidly. When he came to California in 1936, he had written nearly 60 plays and received the Nobel Prize for literature.


O'Neill and his wife, Carlotta, built the Danville, California, house that they hoped would be their final home. The couple's interest in eastern, Taoist ideas and decor inspired them to name it "Tao House."

as *The Iceman Cometh* and *Long Day's Journey into Night*.

Hampered by a hand tremor and the effects of a rare degenerative disease, O'Neill left Tao House in 1944 and never finished another play.

In a Boston hotel room, he tore up several drafts of unfinished plays—an act Carlotta likened to "tearing up children" for him. He died there in 1953.

O'Neill's innovations to theater were many: actor use of masks, the casting of black actors, taboo subject matter such as alcoholism and interracial marriage, and honest portrayals of the poor and powerless, to name a few.

In 1930, social critic and fellow playwright Sinclair Lewis defined O'Neill's impact on American theater: "O'Neill has done nothing much in American drama save to transform it utterly in the last ten or 12 years from a false world of neat and competent trickery to a world of splendor, fear, and greatness." 

RYAN DOUGHERTY is publications coordinator.

BY RYAN DOUGHERTY

NPCA Initiates Parks Funding Campaign

►NPCA has launched its Americans for National Parks campaign, in which the organization seeks to energize the public, opinion leaders, and civic leaders to support increased funding for operating America's 385 national park units.

In preparing for the campaign, NPCA officials said the next 18 months represent the best opportunity in the nation's history to fund and protect the park system, citing the pledge of President George W. Bush's administration to allocate \$5 billion for national parks over the next five years.

The campaign will redirect the Bush pledge to more appropriately solve the underlying operations funding problem in the National Park System, while retaining a focus on addressing critical backlog projects.

The campaign aims to educate the public and key decision makers of the importance of allocating at least \$2.7 billion of the \$5 billion in new park funding to support park conservation, resource protection, and visitor interpretation—including \$600 million of annual, recurring funding.

The Pew Charitable Trusts recently approved a

\$900,000 grant to NPCA (its largest ever received), supporting the education and outreach effort.

"Pew's support provides a great boost for this critical project, and it will help us make the case for better protection of the national parks," said Thomas C. Kiernan, NPCA president.

Based in Philadelphia, the Pew Charitable Trusts makes strategic investments that support nonprofit activities in the areas of culture, education, health and human services, public policy, religion, and the environment.

Gettysburg Gets Battle Artifacts

►Friends of the National Parks at Gettysburg, the Gettysburg National Battlefield Museum Foundation, and Eastern National have joined together to purchase the Fisher collection—a significant, poignant collection of artifacts related to the battle of Gettysburg.

The Fisher collection contains letters and personal artifacts related to the life and service of Lt. William J. Fisher, 10th U.S. Regular Army, of Sussex County, Delaware, a Union officer killed in the wheatfield during the battle of Gettysburg on July 2, 1863.

The collection exhibits Fisher's sacrifice on the bat-

tlefield, through accounts from his fellow officers who witnessed his wounding and death, as well as Fisher's father, who wrote his wife after seeing his son's body buried on a Gettysburg farm.

In addition to explicitly recording battle action, a rarity in Civil War correspondence, the letters describe the battlefield landscape, which has changed since the battle.

These descriptions will play an important role in the park's ongoing effort to restore the battlefield to its 1863 appearance and preserve its historic integrity.

"It's impossible to read these letters and look at these items and not have a sense of what it meant to fight at Gettysburg and the severe price these men and their families paid for their sacrifice," said John Latschar, park superintendent.

"The Fisher collection brings education about Gettysburg and the Civil War off the pages of textbooks and makes it far more personal, and, as a result, far more compelling," Latschar said.

"We're grateful for partners who recognize such a collection's value to history education and who are as committed to do what it takes to make our heritage available to as many people as possible."

NPCA Receives Service Award

►NPCA received an award from Eureka Communities this summer in recognition of its exemplary services to children and families.

In particular, Eureka Communities cited Iantha Gantt-Wright, NPCA's director of cultural diversity programs, for mentoring a Eureka fellow in early August.

"[NPCA's] dedication reaches out not only to your community, but also nationwide as you demonstrate and share your valuable knowledge and experiences in the field with your peers," said Leah C. Trahan, Eureka's program officer.

The award also recognized NPCA's diversity and community partners programs.

The Eureka Communities fellowship is a two-year, on-the-job leadership development and training program.

Eureka fellow Barbara Sims, executive director of the Metropolitan Community Center in Detroit, Michigan, visited NPCA.

Sims said that the five days she spent with NPCA staff provided her insight into the workings of a nonprofit organization and reinforced the importance of making diversity a priority within the parks and conservation movement.

Artists Sought for Isle Royale Residency

►Applications are being accepted for Isle Royale National Park's 2002 "Artist-in-Residence Program."

The program is open to professional artists whose work can be inspired by the park's unique character. The program offers writers, composers, and all visual and performing artists the opportunity to capture the moods of Isle Royale.

"This program provides artists the opportunity to become part of a long-established tradition of interpreting the parks through works of art," said Betsy Rossini, acting superintendent of Isle Royale.

The program is co-sponsored by Isle Royale National Park, the Isle

Royale Natural History Association, and the Copper Country Community Arts Council.

Artists will be enrolled in the National Park Service's "Volunteer in the Parks" program.

The program runs from mid-June through early September. Each residency is scheduled for two to three weeks. The selected artists will be given the use of a canoe and rustic cabin while on the island.

Applications for the program must be postmarked by February 16 for consideration. Notifications will be made by April 15.

For further information or to receive an application package, write to The Artist-in-Residence Program, Isle Royale National Park, 800 E. Lakeshore Drive, Houghton, MI 49931, or call 906-482-0984.

Gullah/Geechee Coalition Seeks Support

►The Gullah/Geechee Sea Island Coalition will soon celebrate its fifth year of existence under the leadership of Marquetta L. Goodwine and is seeking further support for its efforts to promote and preserve Gullah/Geechee culture.

From colonial times to present day, the coastal islands off South Carolina and Georgia have harbored the Gullah/Geechee culture, which was originated by enslaved people primarily from West Africa.

From its music and crafts to religion and social customs, the Gullah/Geechee culture reflects important aspects of the African homeland. The culture is celebrated through artistic means

and through grassroots learning.

In April 2000, the National Park Service announced a series of meetings as part of a congressionally authorized study of ways to preserve the Gullah/Geechee heritage, a plan endorsed by NPCA.

The coalition is also working to reacquire and maintain Sea Island land.

The coalition consists of about 1,000 paid members. Membership is open to anyone interested in preserving this unique culture.

For more information, call 843-838-1171, or e-mail GullGeeCo@aol.com.

The coalition is also seeking donations of books, photos, audio and video tapes, news clippings, artifacts, stamps, and other items that relate to the Sea Islands, Gullah/Geechee culture and history.

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STEVE SIMONSEN

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...for working...



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

Now Verilux®, a leader in healthy 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

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

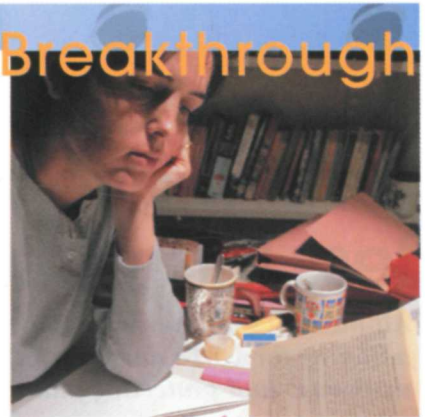
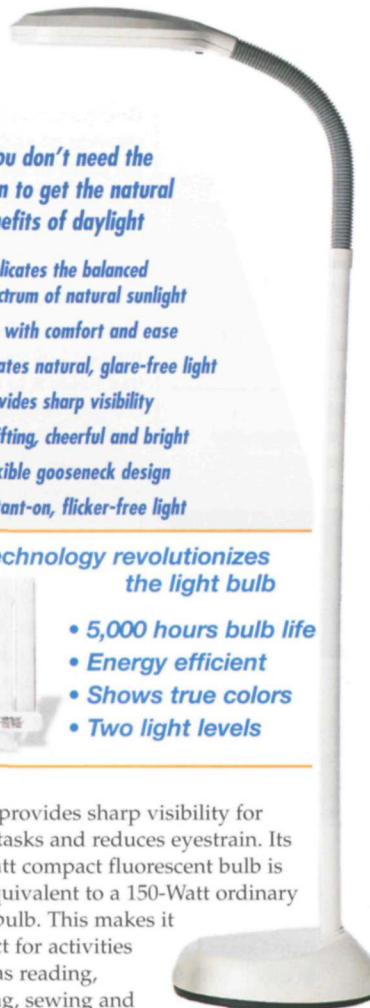
- Replicates the balanced spectrum of natural sunlight
- See with comfort and ease
- Creates natural, glare-free light
- Provides sharp visibility
- Uplifting, cheerful and bright
- Flexible gooseneck design
- Instant-on, flicker-free light

Technology revolutionizes the light bulb



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

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, 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.



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

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.

—Edith 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.

HappyEyes™ Floor Lamp

ZZ-1777 \$129.95 \$15.95 S&H

Please mention product code 21609.

For fastest service, call toll-free 24 hours a day

800-399-7853    

To order by mail, send check or money order for the total amount including S&H. To charge it to your credit card, enclose your account number and expiration date.

Virginia residents only—please include 4.5% sales tax.

TECHNOSCOUT[®].com
1998 Ruffin Mill Road
Colonial Heights, Va 23834

Natural de-icer means you'll have to shovel less this winter

All-natural grain juices dissolve away snow, prevent snow from adhering for 10-14 days! Perfect for clearing driveways, walkways and protecting plants.

by William Hazelgrove

Snowy nights will never keep me awake again! Now I sleep through the storm like a baby. Next morning all the other guys on the block are up wrestling with shovels, ice choppers, bags of salt—but my driveway and sidewalk are easier to clear! I'm dreaming? No sir, this stuff is real. Put it on the ground before a storm and it can reduce the amount of snow that accumulates. Yeah, I didn't believe it either at first, but Bare Ground works!

State highway departments stay up all night breaking through drifts, plowing, fighting hazardous road ice. Bare Ground Anti Snow/De-Icer helps these dedicated crews. It is a liquid you spray or stream on a road or sidewalk. It not only eats up snow and ice but prevents future deposits from sticking for 10 to 14 days! It's not expensive either, because a little goes a long, long way.

On March 6, 2001, Victoria from New Jersey wrote:

“It really works. Applied on Monday, it made it easier to shovel the snow. However, on Tuesday, it snowed again and my driveway (pavers), walkway, steps and sidewalks were clear!! My neighbors were out shoveling snow again, but I didn't have to because this stuff did its magic!”

Results may vary.

Bare Ground Solution...

- About as corrosive as distilled water
- Results in less equipment corrosion
- Doesn't eat up cement

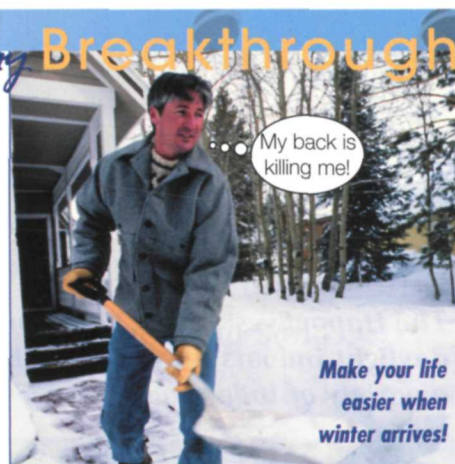


melts, you can use Bare Ground on any surface including rubber, roof shingles, slates, wood, brick or new concrete. In fact, Bare Ground is so safe, you may even wish to mix it with water and apply to trees and

One gallon equals 50 pounds of salt. Already got snow or ice on your sidewalk or driveway? No problem. Just spray on some Bare Ground liquid. Instead of staying on top it sinks down to the bare pavement and dissolves the bond of snow or ice that holds it to the surface. No long waiting either—it starts working in about 20 minutes. Another reason the dollar-conscious pros use it: one gallon of Bare Ground is the equivalent of 50 lbs. of salts or pellets!

Safe for pets, kids, shrubs and carpets.

Bare Ground is environmentally safe, biodegradable and non-toxic. Harmless to plants and grass, Bare Ground won't eat up the hall carpet like salt. Unlike other snow



Apply Bare Ground before a snow or ice storm. Bare Ground will begin to work about 20 minutes after its application to existing snow or ice.

shrubs to prevent excessive ice buildup. Bare Ground is a patented formula made from all natural byproducts. Apply Bare Ground before a snow or ice storm and be the first person on your street to put away your snow shovel!

One gallon protects a 20' x 50' driveway.

Think of it also as protection against a strained back, even heart strain. If a storm is due, pre-coat your driveway and sidewalk and let it snow. It not only can reduce the amount of snow which accumulates, but applies a non-stick coating that keeps ice and falling snow from sticking. You can also forget about tickets for unshoveled sidewalks.

Beat the snow. Stock up now on our no-risk guarantee. Bare Ground comes in neat, easy-to-stow plastic jugs. Mist or apply with any garden-type sprayer—or order a Bare Ground System that includes a built-in sprayer. You've got one month to try it out. If you are not completely satisfied, simply return it within 30 days for a full "No Questions Asked" refund. Hey—this winter while others are shoveling, why not relax and watch the ball game!

Bare Ground Applicator

ZZ-2553 \$19.95 + S&H

Gallon Bare Ground Solution

ZZ-2551 \$19.95 + S&H

Please mention promotional code 21580.

For fastest service, call toll-free 24 hours a day

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To order by mail with check or money order, or by credit card, ask for the total amount including S&H. To charge it to your credit card, enclose your account number and expiration date. Virginia residents only—please include 4.5% sales tax.

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How does Bare Ground Work?



Unlike rock salt or pellets that lie on the surface and melt from the top down, Bare Ground sinks to the surface level, melting as it goes down, and spreads out breaking the bond of the snow or ice to the surface for a quick, easy and complete cleanup.

