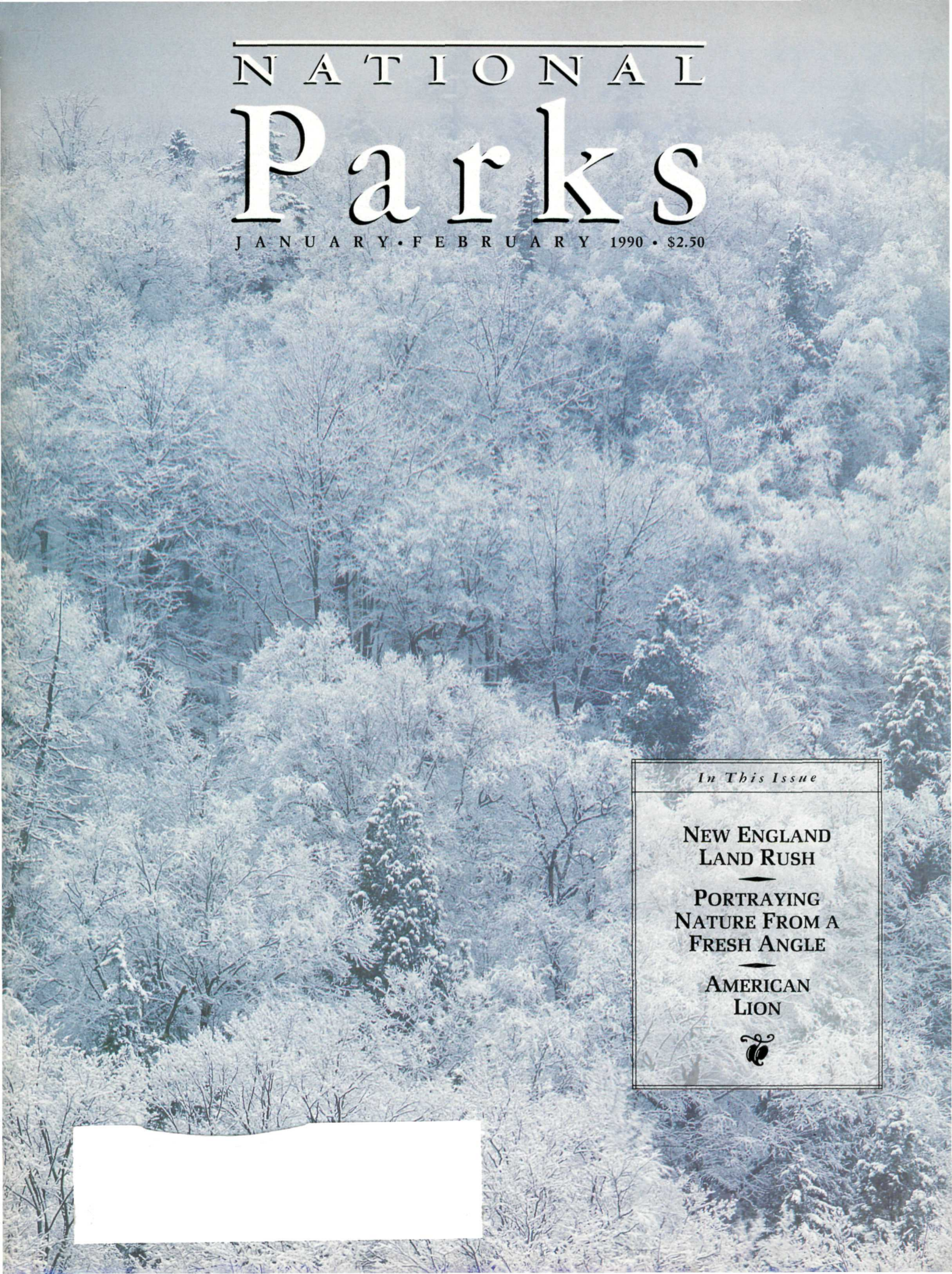


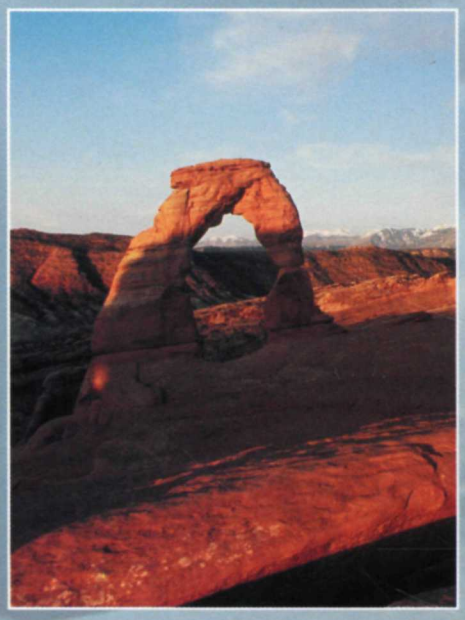
NATIONAL Parks

JANUARY • FEBRUARY 1990 • $2.50

In This Issue

VIDEO WORKS OF ART

With every viewing of these remarkable Video-Albums™ you will feel as if you are traveling through the most spectacular scenery in the U.S.A.

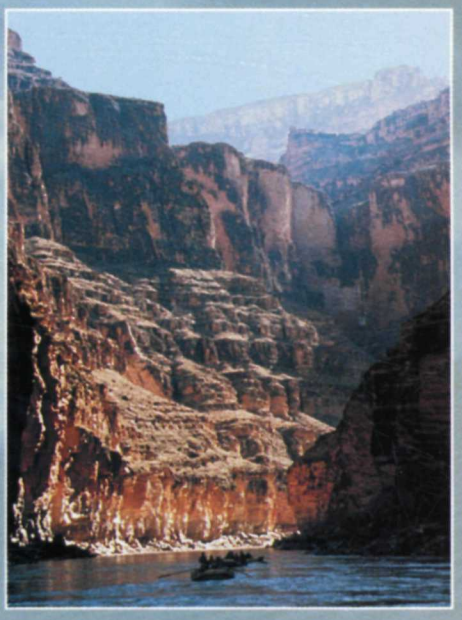


Desert Vision

The magical Southwest
Directed by Jan Nickman
Original music by
David Lanz and Paul Speer

Natural States

The lush Pacific Northwest
Directed by Jan Nickman
Original music by
David Lanz and Paul Speer



Canyon Dreams

The majestic Grand Canyon
Produced by Nickman/Warriner
Original Music by
Tangerine Dream

Miramar Productions' Video-Albums represent the most beautiful blend of scenic cinematography and music you may ever experience. Emmy award winning director Jan Nickman has captured our most magnificent natural areas with rare perception and sensitivity.

Since the introduction of their first Video-Album, Natural States, Miramar Productions has been recognized as the premier producer of videos recreating the natural experience in sight and sound.

"Expertly crafted mix of music and visuals"
Kristin McMurran - People Magazine

"A combination of 'steadicam' technique, fantastic aerial shots, and original music created for each video make these three videos works of art." *Popular Photography*

"Top of its class"
Ira Robbins - Video Magazine

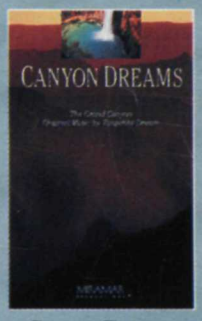
You will want each of these superb presentations of the best natural environments our country has to offer. In fact, there is special $10 savings when you order all three.

You can place your order today by calling toll-free

1-800-NAT-PARK 1-800-628-7275

Or send $29.95 + $3 shipping for each video or $79.95 + $3 shipping for the gift-boxed set of all three, to National Parks and Conservation Association, 1015 Thirty-first Street, NW, Washington D.C. 20007.

Natural States



Canyon Dreams

Desert Vision

Your purchase contributes to the protection and preservation of your national parks.

ERWIN & PEGGY BAUER

Cougars, page 18

EDITOR'S NOTE

When we think of wild lands we tend to think of the sparsely peopled public lands of the West. The "wilds" of eastern private property seems a misnomer. Yet, the forests of the Northeast—where New Englanders hike, fish, hunt, and camp—are privately owned holdings of timber companies. These forests are an integral part of northeastern life and lore. They are a key to the staunch, self-sufficient character of the place.

All of that is probably going to change within the next decade. With profits falling, timber companies have been selling off their lands to subdividers and other developers. Soon, stands of second homes may replace stands of maple, birch, and spruce. Without swift action to protect New England's last, vast open spaces, the wilds and maybe even the character of the Northeast will be irrevocably changed.

NATIONAL PARKS

Editor: Michele Strutin
Associate Editor: Judith Freeman
News Editor: John Kenney
Editorial Assistant: Elizabeth Hedstrom
Design Consultant: Impress

National Advertising Office
Anne Kubek, Advertising Manager
1015 Thirty-first St., NW, Washington, D.C. 20007
(202) 944-8549

National Parks is published bimonthly by NPCA. Single copies are $2.50. Contributed manuscripts and photographs should be addressed to the Editor and should be accompanied by a stamped, self-addressed envelope. No responsibility can be assumed for unsolicited material. Articles are published for educational purposes and do not necessarily reflect the views of this Association. Title registered U.S. Pat. and TM Office, © 1990 by National Parks and Conservation Association. Printed in the United States. Second-class postage paid at Washington, D.C., and at additional offices.

NATIONAL Parks

THE MAGAZINE OF THE NATIONAL PARKS AND CONSERVATION ASSOCIATION

Vol. 64, No. 1–2
January/February 1990

OUTLOOK

FEATURES

DEPARTMENTS

Cover: *Adirondack State Park, by David Muench*
Founded in 1892 and still the largest protected area in New England, Adirondack is increasingly threatened by development.

Established in 1919, the National Parks and Conservation Association is the only national, nonprofit, membership organization that focuses on defending, promoting, and improving our country's National Park System while educating the public about the parks.

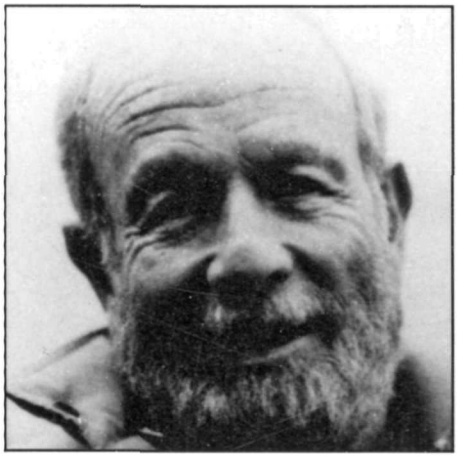
Life memberships are $1,000. Annual memberships: $250 Guarantor, $100 Supporter, $50 Defender, $35 Contributor, $25 Active, $22 Library, and $18 Student. Of membership dues, $7 covers a one-year subscription to *National Parks*. Dues and donations are deductible from federal taxable incomes; gifts and bequests are deductible for federal gift and estate tax purposes. Mail membership dues, contributions, and correspondence to address below. When changing address, please allow six weeks' advance notice and send address label from your latest issue plus new address. POSTMASTER: Send address changes and circulation inquiries to **National Parks, 1015 Thirty-first St., NW, Washington, D.C. 20007 / (202) 944-8530**

ISSN 0027-9870

TRIBUTE TO EXCELLENCE

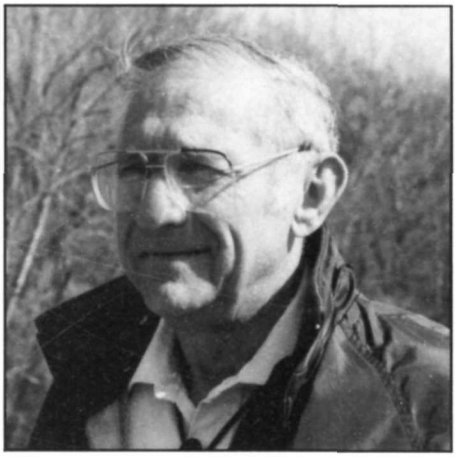
Marjory Stoneman Douglas Award

The Marjory Stoneman Douglas Award is presented by the National Parks and Conservation Association and the Bon Ami Co. to recognize an individual for an outstanding effort that results in protection of a unit or a proposed unit of the National Park System. The award is named in honor of Marjory Stoneman Douglas for her many years of dedication to preserving the fragile ecosystem of the Florida Everglades.



1987 RECIPIENT

DR. EDGAR WAYBURN. For forty years, Dr. Wayburn has been a leading environmentalist. He was the principal conservation architect for the establishment of Redwood National Park and Golden Gate National Recreation Area, and for the 1980 Alaska National Interest Lands Conservation Act.



1988 RECIPIENT

ROBERT CAHN. A Pulitzer Prize winner for his Christian Science Monitor series on the state of the national parks, Mr. Cahn has also served on seminal environmental councils and, through numerous books and articles, furthered the cause of conservation.

1989 RECIPIENT

POLLY DYER. For decades, Mrs. Dyer has led the fight to protect and preserve Olympic National Park. Her activism at Olympic began in the 1950s, when she headed the effort to block logging and a coast road slated for the park. Mrs. Dyer continues her work as president of the Olympic Park Associates.

The Faultless Starch/Bon Ami Co. wishes to congratulate the recipient of this award and thank them for the excellent contribution they have made to the protection of our environment.

The Bon Ami Co. has actively supported the efforts of organizations such as National Parks and Conservation Association for over 100 years and will continue to work toward the goal of preserving our natural resources for future generations.

Parkland Trust

WHEN I THINK back to my childhood, the fun times for me were in the parks. Ritter Park in Huntington, West Virginia, Swope Park in Kansas City, Rocky Mountain National Park in Colorado—mention any of these and it starts a movie of memories.

Those experiences were a gift, and I did not understand their value when I was a child. I assumed that every child lived next to a park, walked with his mother through the rose garden she and her garden club helped maintain, helped his father chase down their first kite, or panted up a trail in the high mountains of Colorado.

Children all over America have been able to enjoy the same gift through a special fund—the Land and Water Conservation Fund—that helps towns, states, and even the National Park Service purchase parkland. Since its inception 25 years ago, LWCF has funded more than 30,000 parks all across the country.

Now Congress has to decide how to continue that tradition. Will LWCF be a token, manipulated fund, or will it provide a consistent level of funding that allows for good planning and a true legacy of parklands?

The administration has promised to provide stable annual monies for the fund, a plan we believe is a solid start. Again the president has taken the initiative on the environment, as he did with clean air legislation.

Unfortunately, we hear at this time that the administration wants to use LWCF money to *maintain* rather than acquire parkland. This idea would face strong opposition in Congress and would reverse a 25-year tradition of using these meager dollars to keep up with the demand for new parkland.

There is another effort being made on behalf of LWCF. The American Heritage Trust is a joint effort by NPCA, the Nature Conservancy, the Garden Club of America, and more than 40 other organizations to create a consistent LWCF funding level for acquiring natural areas, historic places, and other open spaces.

In 1978, LWCF consisted of more than $750 million. By 1989, that fund was reduced to $220 million. Worse, state and local park directors never know if they will receive their share of funds for parkland purchases. These parks—from large state areas to small local parks—are as critical to America's character as any other element of our heritage.

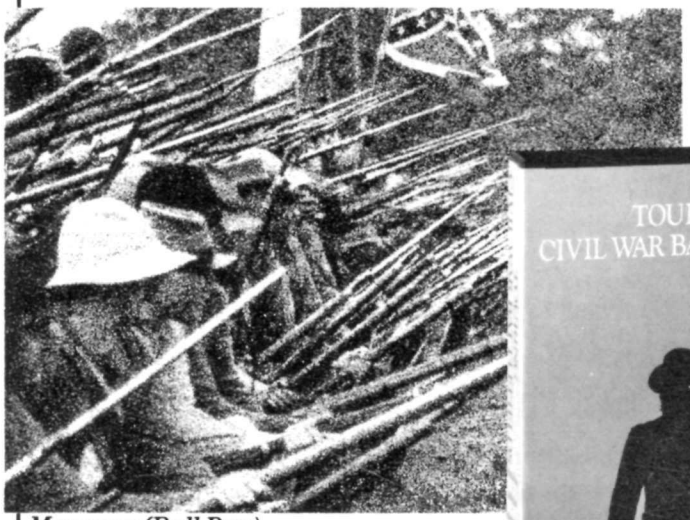
The American Heritage Trust Act provides an opportunity for both Congress and the administration to live up to its commitment. Help us push it through.

One way that you can actively help your local parks—and your national parks—is by supporting NPCA's March for Parks on March 24-25. This January marks the start of the Decade of the Environment. We begin by rededicating Earth Day in April, and March for Parks is a kick-off event for that 20-year anniversary.

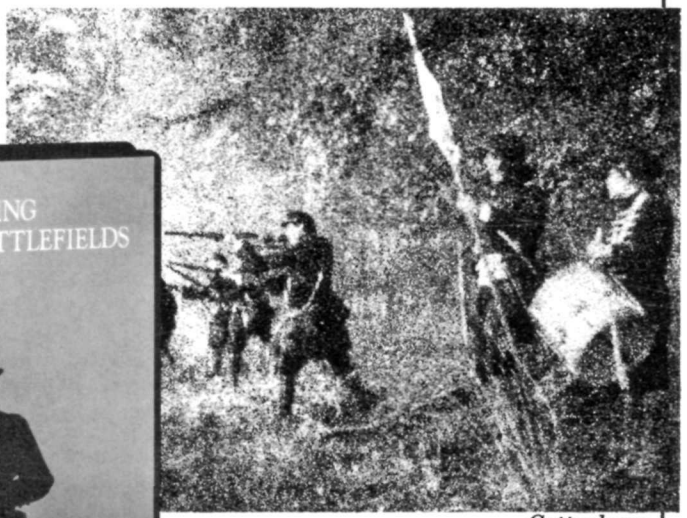
Create a legacy of citizen concern. Join this noble effort.

With March for Parks as a vehicle, we will work toward making these gifts to America's parklands—national, state, and local—a legacy for the future.

Award-winning video remembers the Blue and the Gray

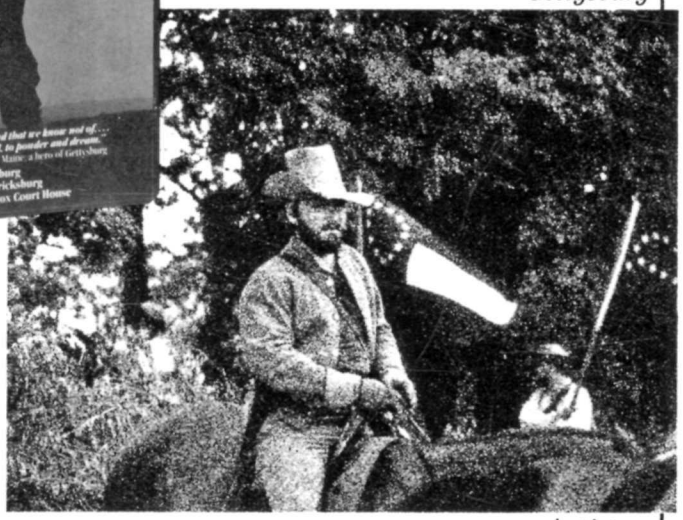


Manassas (Bull Run)



Gettysburg

Fredericksburg



Antietam

TOURING CIVIL WAR BATTLEFIELDS

In honor of the 125th Anniversary of the Civil War, this award-winning video is an accurate portrayal of the heroic soldiers who fought for the Blue and the Gray. No battlefields have greater appeal than the meticulously preserved meadows and forests where four heroic encounters of the Civil War were decided: Manassas, Antietam, Fredericksburg and Gettysburg. Relive the story of each conflict as thousands recreate these battles. Visit the small village of Appomattox Court House, where the solemn surrender took place. Battlefield historians were consulted throughout for content and accuracy. This emotionally charged video combines action, information and insights. Most of all, this portrayal humanizes and brings to life names that appear in Civil War history, character weaknesses in military leaders, the plight of the lowly foot soldier, and bravery that every viewer will admire.

$2.50 From each video will be donated to battlefield preservation. *First Place, 1987 American Video Awards

Please send me the following:

Complete order form and mail. Allow 3-4 weeks for delivery.

TITLE	QTY.	VHS/ BETA	PRICE	TOTAL
TOURING CIVIL WAR BATTLEFIELDS			$29.95	$
			DC Residents Add 6% Sales Tax	
			Shipping & Handling: $2.75 per video, $4.50 for 2 or more	
			TOTAL	$

Mail to:
Member Services
National Parks and Conservation Assn.
1015 31st Street, N.W.
Washington, D.C. 20007

Please bill videos to my ☐ MasterCard ☐ VISA ☐ Check enclosed, payable to NPCA

Card No. ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Expiration Date Month_____ Year_____

Signature_____
(Valid only with full signature of cardholder)

Ship to:

Name_____

Address_____

City_____ State_____ Zip_____

LETTERS

Help Wanted

As a former National Park Service ranger, I was relieved to see you give some overdue attention to the dire straits NPS rangers face today ["News," September/October 1989]. Disgracefully low pay, poor or nonexistent benefit and retirement packages, and a dearth of advancement opportunities are driving dedicated rangers out of NPS in droves nationwide.

The flight of dedicated, conservation-minded rangers leaves a void that NPS is filling, in desperation, with young college students and former police officers who have little or no environmental background and who will be as unable as their predecessors to make a career out of NPS work. I have seen the quality of the NPS ranger slide as the turnover has accelerated over the last decade.

The results are serious for the national parks themselves when the public becomes disillusioned with NPS, and the parks stop receiving the insightful interpretation and protection that they need.

Tom Ribe
Eugene, Oregon

The Right Stuff

The following comments are in support of "Interior Sub Rosa" [September/October 1989].

A career professional with many years in the National Park Service has the accumulated knowledge and experience to prevent the wheel from being reinvented or redesigned with political motivations with each change in the administration.

These career professionals are deserving and capable of leading the agency they have served faithfully—and often with hardship—through their careers. In addition, they are continually judged by their peers. This character assessment is more valid than that of any political appointee.

Jean Tobin
Redmond, Washington

Trash Heap

On our vacation this summer we learned the following information on the decomposition time for typical camping litter. It is startling and sobering.

Paper: 2-5 months; orange peel: 6 months; milk carton: 5 years; plastic container: 50-80 years; aluminum: 80-100 years: plastic foam: *Never.*

Bud Diamond
Elizabeth, Pennsylvania

Route 66 Revisited

"Open Roads" [November/December 1989] reminded me of an Ogden Nash poem called "Song of the Open Road":

I think that I shall never see
A billboard lovely as a tree.
Indeed, unless the billboards fall
I'll never see a tree at all.

We recently hosted a meeting about designating Route 66 a special scenic and historic highway. It was enjoyable to see old photographs displayed showing how the rural landscape looked before our interstate highway system, as efficient as it is, homogenized the American landscape into a franchised wasteland.

Don Cavallini
Lexington, Illinois

Digging Up Funds

We appreciate your article about the excavations at Custer Battlefield National Monument ["NPCA News," November/December 1989]. What it does not state is the financial contribution from the cooperating association that has allowed NPS to continue its archeological work at the battlefield.

The Custer Battlefield Historical and Museum Association donated $40,000 for the 1989 dig, and thousands more for the 1984 and 1985 digs. This important work was possible through our commitment.

Our association now has total revenues substantially exceeding NPS-appropriated dollars to run this park, and has for the past few years.

So do not forget or underestimate the work of the cooperating associations.

LeAnn Simpson, executive director
Custer Battlefield Historical and Museum Association
Crow Agency, Montana

Pardon Our French

Your article on Thomas Cole ["The American Canvas," September/October 1989] was very interesting. But when the author says that Cole, "in the tradition of the French romantic philosopher Henri Rousseau, added a Native American" to a painting, surely she wishes to refer to Jean Jacques Rousseau, French philosopher, and not to Henri Rousseau, French painter of a later date, who did not, as far as I know, share Jean Jacques' enthusiasm for the American Indian.

Violetta Muller
Arlington, Virginia

We stand corrected. At the time Cole painted "The Falls of the Kaaterskill," Henri Rousseau was not yet born.

—the Editors

On the Lookout

I recently read "Pushy Wildlife" [September/October 1989] by James Lazell, Jr. The note on the author stated, "He is presently collaborating with the National Park Service on wildlife inventorying and monitoring studies at Cape Hatteras and Cape Lookout national seashores."

The park staff is not aware of any studies that he conducted at Cape Lookout during the summer of 1989 and no one that I talked to at this park recognized his name. I talked to one person at Cape Hatteras that knew of him, but was not aware of any studies that he was conducting at that park.

Dr. Michael Rikard
Cape Lookout National Seashore
Beaufort, North Carolina

Dr. Lazell is an official collaborator at Cape Hatteras and Cape Cod national seashores, but not at Cape Lookout.

Write "Letters," National Parks, *1015 Thirty-first St., NW, Washington, D.C. 20007. Letters may be edited for space.*

NEWS
NPCA

Spill Lingers At Alaskan Parks

Despite exceptional efforts by National Park Service personnel in Alaska, the summer-long spread of oil from the Prince William Sound spill—the largest ever in American waters—left three Alaskan park areas tainted by oil, one of them severely so.

The oil surfaced, to varying degrees, on about 393 miles of shoreline at Kenai Fjords and Katmai national parks, and at Aniakchak National Monument. Some beaches are left with only a light oily sheen, while a few areas, even after being cleaned, are steeped in thick crude. Coastal animal populations were decimated.

Long-term effects of the oil on park ecosystems remain unclear. For example, impacts on animals at the top of the food chain, such as foxes and grizzly bears, may not be known for some time.

NPS rangers, researchers, and officials spent long hours last spring and summer assessing resources, shielding vital areas from oil, and investigating damage. The Park Service spent a total of $7 million on the spill, and 500 workers labored on spill-related projects in the parks. (During a normal season, only about 100 employees work in the affected park areas.)

Though currents continue to move patches of oil southwest through the Gulf of Alaska toward the parks, a great deal of the spill has dispersed or broken down, and only minor oiling incidents persist.

Approximately 11 million gallons of North Slope crude oil gushed from the ruptured hull of the oil tanker *Exxon Valdez* after it ran aground on Bligh Reef in Prince William Sound last March. Swept out of the sound and into the Gulf of Alaska, currents spread the oil slick over a thousand-square-mile area off the coast of south-central Alaska.

NPS officials say they will continue monitoring damage to resources during the winter, when inclement weather precludes further cleanup. In the spring, the Park Service will present Exxon with a list of areas needing further oil removal. Exxon, the company responsible for the spill, ceased cleanup efforts during mid-September.

KAREN JETTMAR

An NPS ecologist collects samples at Kenai Fjords' Black Bay.

Meanwhile, in October, environmental groups, including NPCA, criticized as inadequate a government plan to assess the spill's damage to natural resources throughout southern Alaska. Critics faulted the document, which was prepared by several state and federal agencies, on a number of points:

- The assessment plan mandates only a year of study. Limiting the assessment to a year will result in seriously underestimated damages.
- The draft plan is extremely vague. It provides insufficient detail on damage assessment methods.
- Exxon may be allowed to participate in damage assessment even though, as the party liable for the spill, the oil firm has ample incentive to bias its judgment.

Though the Park Service will participate in some studies outlined in the plan, NPS projects are not limited by the document. John Quinley, spokesman for the region, said the NPS will likely go much further in assessing damage to parks than is called for in the plan.

Funds for Park Service programs associated with the spill have come from a variety of sources. The bulk of the $7 million spent came from a special congressional appropriation, and the rest came from construction accounts throughout the National Park Service.

The NPS plans to file for reimbursement from responsible parties for funds diverted from these accounts. Officials concede, however, that it may be years before repayment occurs. Moreover, funding for damage assessment projects not covered in the government plan may come from future NPS budgets.

Of Park System areas, Katmai was the hardest hit by the slick. About 303 miles

of Katmai's coast received some measure of contamination.

Exxon cleanup crews, under NPS ranger supervision, worked the beaches all summer, and removed about 99,000 bags of oiled debris. In total, workers treated 70 miles of Katmai's worst, and most treatable, areas.

"Some of those areas have been reoiled, though," said Janis Meldrum, a resource management specialist at Katmai. "You would hardly know they'd been cleaned."

Aniakchak and Kenai Fjords received oil on 50 and 40 miles of shoreline, respectively. Exxon crews cleaned beaches in these parks as well.

"Cleanup crews at least got the gross contaminant up—the thick and heavy stuff," said Anna Castellina, superintendent at Kenai Fjords. "It's better than nothing, but it still doesn't get under the rocks."

The oil has devastated park wildlife. As of early November, some 11,000 seabirds and 150 sea otters were reported dead in or near park areas. Actual mortality for these animals is probably much higher, though, since oiled birds and otters often drown and sink, or are consumed by predators.

Park officials are concerned about the effects of the oil on these predators. A recent U. S. Fish and Wildlife Service (FWS) survey found virtually no live bald eagle young in the entire Prince William Sound area. Oiled birds sitting on eggs, it is thought, may transmit the toxic substance through delicate shells to unhatched chicks.

While similar surveys have not been conducted in park areas, FWS results are thought to be valid for park areas as well.

NPS officials are virtually certain that bears and other scavengers are eating oil-tainted carrion. While long-term effects of ingestion are largely unknown, biologists predict kidney disease and reduced reproductivity may result.

Similarly, the spill's effect on park cultural resources is unknown. The NPS plans to participate in studies on the oil's impacts on archeological resources. Cultural sites within the spill-affected area number in the hundreds, Alaskan park officials said.

Developer Drills at Crater Lake Border

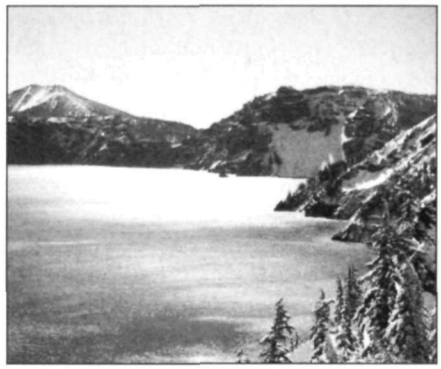
California Energy Company, of San Francisco, has sunk two exploratory wells adjacent to Crater Lake National Park, in southern Oregon. The developer plans to assess the region's potential for geothermal development.

The two wells are located a quarter of a mile from the park's eastern boundary, in the adjacent Winema National Forest. Work on another well is on hold for the winter, but will resume in the spring. The company holds a permit for one other site near the park.

"Development of this kind simply does not belong on the border of a national park," said Libby Fayad, NPCA's park threats coordinator.

Geothermal facilities produce electricity by tapping steam trapped deep within the earth to drive generator turbines. Whether and how full-scale geothermal development may affect the lake is uncertain.

"No one knows for sure what the ramifications of geothermal development might be," said Bob Benton, superintendent of Crater Lake. "We would ask for a full environmental impact statement (EIS)."



NATIONAL PARK SERVICE

Probes of Crater Lake found mats of microbes—signs of geothermal activity.

NPCA opposes the project as inappropriate. Adverse impacts that full development might bring include intrusions on the quiet and solitude of the region, disruptions of underwater thermal features, air quality degradation, foul odors, and visual intrusions.

Last spring, in an attempt to halt the drilling, NPCA and other environmental groups filed suit with the Interior Department's Board of Land Appeals, an administrative panel.

NPCA charged that Interior's Bureau

NEWSUPDATE

▲ **Yellowstone Trucking.** National Park Service Director James Ridenour refused logging companies permission to haul timber through Yellowstone National Park. Park officials had considered allowing logging trucks to haul fire-damaged timber through Yellowstone over the next two years.

The timber, harvested in nearby national forests, was destined for a mill on the opposite side of the park. Trucking in the park would have increased noise and traffic hazards, deteriorated roads and bridges, and displaced wildlife.

▲ **Bandelier Win.** The U.S. Forest Service, responding to criticism from NPCA, has ceased logging in the sensitive Dome area of Santa Fe National Forest, adjacent to Bandelier National Monument, in northern New Mexico. Irresponsible logging practices on last summer's Los Utes timber sale, also in the Dome area, threatened to increase erosion to Bandelier, choking streams and creeks with silt.

▲ **Everglades Expansion.** In November, Congress passed S. 724, a bill to expand Everglades National Park by 110,000 acres. At this writing, the legislation awaits President Bush's consideration.

The area to be added, known as the East Everglades, is essential to restoring natural water flow to the park. The acreage also contains habitat critical to the survival of the highly endangered Florida panther.

of Land Management (BLM) filed an inadequate environmental analysis when the developer applied for permits to deepen two shallow, existing wells. (The BLM has jurisdiction over mining on national forest lands.)

The Board of Land Appeals ruled the assessment adequate.

Results of an independent study, however, may preclude development near the park. Researchers conducting a three-year study have probed the lake bottom each of the past three summers to determine whether or not geothermal features exist there.

Final results of the study, which is headed by two Oregon State University oceanographers, are expected by the end of next summer.

If research shows conclusively that Crater Lake—the nation's deepest, at 1,932 feet—contains significant geothermal features, then the park will retain special status afforded such national parks, and further development, if permitted at all, will be subject to stringent regulation.

The park's classification did not preclude drilling of test wells, however. Exploratory wells are less harmful than full development, and authorities permitted test wells despite the park's status.

Research conducted on the lake bottom this past summer provided the strongest evidence yet that significant geothermal features exist there. Several indicators of geothermal activity, such as mats of bacteria and lake-bottom hot spots, were discovered.

Interior Orders Study On Glen Canyon Dam

The Department of the Interior has ordered that an environmental impact statement be prepared to study the effects of Glen Canyon Dam on the Grand Canyon. Grand Canyon National Park is located just south of the Arizona-Utah border, 15 miles downstream from the dam on the Colorado River.

NPCA and other conservation groups praised the decision. Environmentalists, river enthusiasts, and Arizona lawmakers have been calling for a thorough study of the dam's effect on the Grand Canyon for many years.

NATIONAL PARK SERVICE

The level of the Colorado River can change by as much as 13 feet in a day.

"Studies are long overdue," said Russ Butcher, NPCA's Southwest and California regional representative. "Impacts from the dam's power program are impairing this park every day."

A less comprehensive study than the one planned was published last year by an interagency group headed by the Bureau of Reclamation. It revealed that fluctuations in water-flow through the dam "have substantial adverse effects on downstream environmental and recreational resources."

The study cited changes in the river's temperature and chemistry, erosion of beaches and sandbars, and destruction of shoreline plants resulting from flow fluctuations. At particular risk are the endangered humpbacked chub, whose natural river habitat is affected by the dam. Biologists believe the chub have declined because the dam has blocked nutrient-rich silt from reaching the canyon.

Also, fluctuations are eroding beaches used for camping by park boaters. The dam now traps the river's sediment load, which once replenished the beaches.

Conservation groups have long charged that present operational patterns at Glen Canyon Dam—a hydroelectric generating facility—harm the park below. In order to meet fluctuations in demand for electricity, the Western Area Power Administration, which operates the dam, routinely cuts or increases water flow to the park by great volumes. The level of the Colorado below the dam can change by as much as 13 feet in a single day.

The Bureau of Reclamation, which is charged with conducting the study, has scheduled January hearings to determine the scope of the report and the options it should examine.

Mammoth Cave Faces Water Threats

Water pollution and lack of natural water flow are causing problems at Mammoth Cave National Park, threatening wildlife, the dynamism of the park's cave system, and possibly visitor safety.

According to National Park Service (NPS) officials, groundwater at the central Kentucky park has become contaminated by raw sewage. Park researchers have conducted simple tests on samples of the cave's underground rivers and discovered large concentrations of human fecal matter.

NPS officials emphasized that the tests were not extensive, but were meant to give researchers a "snapshot" of the park's water quality. The tests have given park officials an idea of what to look for when they undertake a three-year study in February, in conjunction with the NPS water-quality division. Test results indicate that the amount of sewage in Mammoth Cave's groundwater exceeds state water quality standards 25 to 30 percent of the time.

Groundwater contamination has been suspected at the park for some time. Many residents of the rural area surrounding Mammoth Cave discharge household sewage directly into the soil, or into septic tanks that can leach into the ground.

Several years ago, local authorities, in conjunction with the NPS, planned a regional water-treatment system to protect the park and surrounding rural communities from contamination. To date, though, only segments of the system servicing the three chief communities in the area have been constructed.

Systems treating water that affects the

park have been put on hold because of insufficient funding. Total cost of the entire project, park protection systems included, is expected to be $14 million. To date, only $10 million have been raised. The NPS has contributed $2 million to the effort.

Officials of the NPS Water Quality Division are now embarking on a three-year study to determine more precisely the levels of contamination at Mammoth Cave. The study will also examine the effects of contamination on the park's animal species, on the cave passages themselves, and possible effects on visitor safety.

Mammoth Cave is habitat for several rare species of underground plants and animals, including the blind Kentucky Cave shrimp. At present, possible effects on these species are unknown.

In a related development at Mammoth Cave, officials are pressing the Army Corps of Engineers to remove Lock and Dam Number Six, part of an outdated chain of locks and dams that has altered the park's natural water flow, all but halting the cave system's process of evolution.

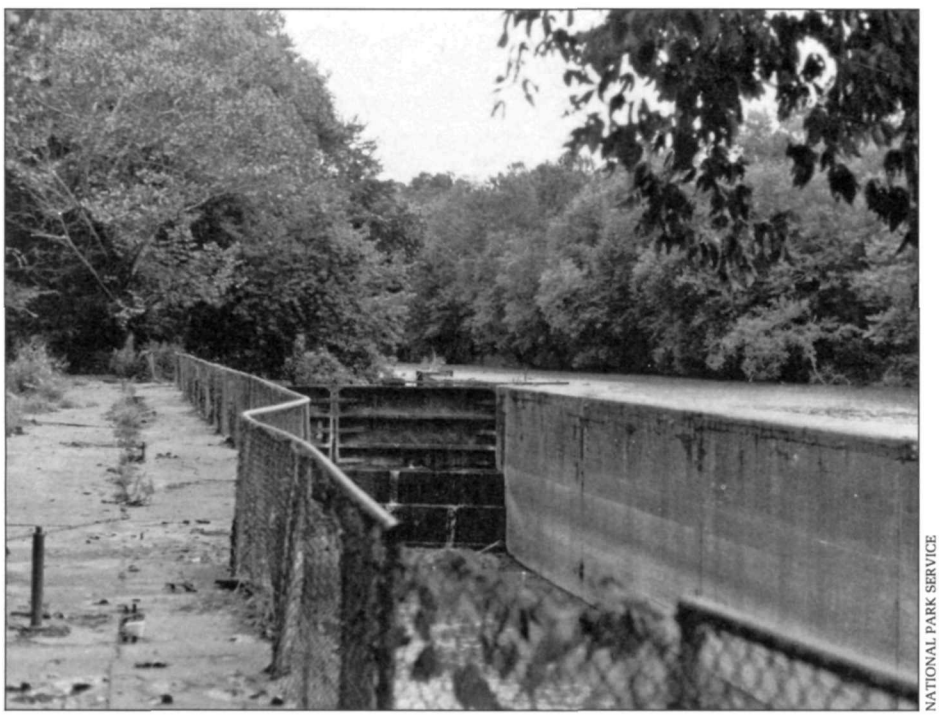
The NPS has asked the Army Corps to dismantle the dam, located less than one-quarter mile from the park boundary. The dam creates a 16-mile backup on the Green River, and raises the level of Mammoth's underground rivers by four to six feet.

The Corps built the dam in the early 1900s as part of a lock system to allow navigation on the Green. The system was deactivated in 1951, however, when commercial shipping on that segment of the river declined. The dam was never removed. NPS officials have asked the Corps to dismantle the structure, but the Corps has balked. The agency has offered to transfer the dam to the NPS, though, to dispose of as it pleases.

With its tight budget, the park cannot easily afford the cost of the demolition. Park officials consider this the responsibility of the Army Corps.

Mammoth's cave systems were created over millennia by water flowing through the area, carving out passages and chambers as it cut farther into the underlying layer of limestone. Since the system's underground rivers have been backed up and greatly slowed for most of this century, Mammoth's further development has been almost halted.

Green River's lock and dam #6 raises Mammoth Cave's underground rivers by four to six feet and arrests further cave development.



NATIONAL PARK SERVICE

Congress Approves NPS Budget Hikes

Congress has approved sizeable increases in the National Park Service's 1990 budget. Legislators increased total funding for the NPS to $1.1 billion, well above the $900 million recommended by the administration. Last year's NPS budget was approximately $1 billion.

The NPS construction account will see the largest increase, jumping from $159 million in Fiscal Year (FY) 1989 to $199 million in FY 1990. The administration requested only $44 million for construction in 1990. There were smaller increases for resource management and land acquisition. Congress also mandated that each park receive at least a five-percent increase in operating funds.

NPS funds will be subject to across-the-board cuts mandated by the Gramm/Rudman/Hollings Act, however. For the first four months of FY 1990, about 1.5 percent of the monthly budget of each Park Service account will be withheld.

Sect Entrenched at Yellowstone Border

The Church Universal and Triumphant (CUT)—a controversial religious group headquartered on the northern edge of Yellowstone National Park—is back in environmental news.

A Montana court ruling will allow the church to continue developing its 33,000-acre property, halting a legal challenge brought by conservationists. In 1989, NPCA and other environmental groups had filed a lawsuit questioning water-quality permits being issued to CUT by the Montana Department of Health and Environmental Sciences. Permits enabled the church to continue development.

NPCA held that a 1988 environmental impact statement (EIS) was inadequate to meet requirements imposed by the Montana Environmental Policy Act. For example, environmentalists contended the EIS did not adequately address possible effects of the development on wildlife.

The court's ruling, however, will allow the church to continue development as outlined in the approved EIS. Plans for the CUT settlement include trailer homes, a meat-processing plant, and a university. Members have also neared completion of subterranean fallout shelters to accommodate approximately 750 people.

Environmentalists are particularly concerned about a geothermal well on CUT property at LaDuke Hot Springs, seven miles from the park's border. Critics fear that, if tapped, the well might disturb or destroy Yellowstone park geothermal features.

The well now stands capped and has not been used since it was drilled. The church has agreed to await the results of an NPS/U. S. Geological Survey study on the well's possible effects on the park's geothermal features.

Environmentalists also fear that the church's development will impede natural wildlife migration. Animals may avoid the fenced and heavily populated area during their winter movements out of the park in search of food.

In other developments, on October 13, CUT's vice-president, Edward Francis, pled guilty to a charge of conspiring to provide false information to purchase firearms.

By pleading guilty, Francis admitted to helping Vernon Hamilton, a CUT security official, purchase firearms under a false identity. Had Hamilton provided proper identification, the purchases would have been legal.

Francis said he helped Hamilton "in an effort to protect the church's image and to avoid upsetting local residents."

Hamilton was arrested driving a vehicle in Spokane on July 25. Authorities confiscated 15 firearms, including seven 50-caliber semiautomatic weapons, and $26,000 in cash and gold coins.

According to Francis, the arms he helped Hamilton acquire "were to be used only for defensive purposes in the event of a war on American soil, which Vernon [Hamilton] and I saw as a significant risk both in the framework of our religious beliefs and in the current status of our nation's strategic defense."

—Annie Brittin, NPCA intern

Condo Complex Plan For Voyageurs

The county of Koochiching, Minnesota, has given the go-ahead to a private landowner who plans to build a condominium complex in Voyageurs National Park. The tract slated for development is privately owned property that lies within park boundaries.

In an attempt to halt the project, a local environmental group, the Voyageurs Region National Park Association, sued the county for granting the developer permits without first completing an environmental impact statement (EIS). In June, the district court ruled against granting an injunction to halt the project. The court held that the county devoted reasonable time to its analysis, and acted without being arbitrary or capricious. Environmentalists have appealed that decision.

Instead of a full EIS, the county completed a four-page environmental assessment worksheet (EAW). Critics called the assessment inadequate for a host of reasons, and claimed that failure to order a full EIS violated the Minnesota Environmental Policy Act.

"Koochiching County has failed to prepare an objective and comprehensive analysis of the consequences of this project," said Russell Berry, former superintendent of Voyageurs National Park, in a letter to county commissioners.

The federal government is now negotiating with the owner of the property, Victor Davis, in an effort to buy the tract and incorporate it into the park.

The developer, Wilderness Properties, which is headed by Davis, plans to construct 12 three-story condominiums on this 12.5-acre tract on the western side of Voyageurs National Park, in northern Minnesota. The project will also include accessory buildings, docks, roads, a septic system, and a well.

Davis owns a total of 120 acres in that area of the park. Davis' properties were not sold to the Park Service after Voyageurs was established in 1975.

Critics of the county's environmental assessment worksheet cited a number of shortcomings:

- The EAW does not address effects the project may have on park wildlife. The development site lies in wolf, bald eagle, and moose habitat.
- The document dismisses impairment to park recreation and scenic views. The project is sited directly across a scenic bay from an NPS visitor center.
- The EAW does not evaluate the impacts of a wastewater treatment facility on local water quality.
- The analysis does not address the inappropriateness of such a project inside a national park. The project would violate the county's own zoning criteria requiring that proposed development be compatible with surrounding land uses.

A brief assessment of impacts got developers the go-ahead in Voyageurs.

JACK BOUCHER, NATIONAL PARK SERVICE

NPCA Hosts Park Advisory Panel

NPCA hosted a one-day symposium on the future of the National Park System Advisory Board in Washington, D.C., on October 20. Participants examined the past and present roles of the board, and assessed its strengths and weaknesses.

"The symposium was very productive, and will help NPCA formulate its position when the Board's reauthorization comes to Congressional hearing," said Bruce Craig, NPCA's cultural resources coordinator.

The symposium attracted a distinguished crowd of National Park System experts. Attendees included past and present Advisory Board members; NPCA trustees and NPCA President Paul Pritchard; National Park Service officials, including Director James Ridenour; Interior Department officials; and representatives of other conservation groups.

Congress established the Advisory Board in 1935 to provide the Interior Secretary with expert advice on matters relating to the National Park System. Since that time, board members have traveled across the country, unpaid and on their own time, investigating potential new parks and emerging threats to established parks.

The board's statutory authorization was scheduled to expire on January 1, 1990, but former Interior Secretary Donald Hodel granted the board an extension until the end of that year. In 1989, Congressman Bruce Vento (D-Minn.) introduced legislation to reauthorize the board through the beginning of 1995.

Though the objective of the forum was simply to air ideas, not to offer recommendations, participants reached consensus on a few issues. Participants agreed that:

- The board should continue to advise the Interior Secretary directly.
- Rather than become limited to technical experts, the board should continue to include competent lay representatives who are qualified, active, and interested in national park matters.
- The Secretary should reinvigorate the Advisory Council, which was composed of past board members wishing to contribute to the dialogue on national park issues. (The council provided invaluable expertise on the parks for many years until it was disbanded in the early 1980s.)

Published proceedings of the session will be distributed to members of Congress and the Interior Secretary.

The symposium was funded in part by a grant from the National Trust for Historic Preservation, made posssible by the national accounting firm of Peat, Marwick, Main, and Company. Funding was also provided by the Arizona/New Mexico Parks and Conservation Council, and the Mid-Atlantic Council.

Yellowstone Wolf Projects Censored

In response to protests from several western congressmen, the Interior Department has ordered the National Park Service to cease disseminating most public-education materials concerning the grey wolf's return to Yellowstone National Park.

Critics of the Park Service, including senators Malcolm Wallop (R-Wyo.) and Conrad Burns (R-Mont.), charge that the NPS interpretive materials are biased toward reintroducing wolves to the park, and so constitute inappropriate lobbying by the federal government.

"Educating the public on wolves is entirely appropriate," said Bill Lienesch, NPCA's director of federal activities. "When it created the National Park Service, Congress directed the agency to be an advocate for the preservation of native wildlife. NPS management policies specifically call for the agency to identify and promote endangered species such as the wolf."

The question of whether to reintroduce wolves to Yellowstone is a highly charged issue, especially in the West, where local farmers and ranchers fear livestock depredations.

In early September, in response to protest letters sent by Wallop, Burns, and others, Interior officials ordered the NPS to discontinue distribution of the "Wolf Pac," a package of articles and pamphlets on wolves and their reintroduction to their former range. Interior also instructed the NPS to refrain from mentioning the subject in Yellowstone's newsletter, *Yellowstone Today.*

Shortly thereafter, Yellowstone officials curtailed showings of a well-known, traveling slide presentation on wolves in the park that had been presented at various locations by a park interpreter. While Interior's decision does not bar Yellowstone rangers from discussing the issue entirely, the action essentially ends all active public education on wolf reintroduction.

The materials in question were produced by the Park Service's Wolf Education Task Force, a group established by former NPS Director William Penn Mott, Jr. Mott was an outspoken advocate of wolf reintroduction generally, and specifically at Yellowstone.

Critics claim that NPS materials fail to adequately address possible adverse effects of wolf reintroduction, such as local livestock losses and effects on public recreation, should the wolf return to Yellowstone. While portions of the material addressed the reintroduction issue, the bulk of the matter simply described the natural history of the wolf in the Yellowstone area, and its ecological role.

The NPS, in cooperation with the U. S. Fish and Wildlife Service, is now conducting various studies on the impacts of wolf reintroduction. Some NPS officials have indicated that an active educational campaign on the wolf may no longer be necessary, having already captured the public's attention.

Wolves, which once roamed the entire West, have been severely reduced in range and number over the past century and a half by human encroachment. In the United States, sizeable populations remain only in Alaska and Minnesota.

Wolves were removed from Yellowstone in the early part of this century, when park management policies called for the eradication of predators. Recent park managers, recognizing the vital role of predators in ecosystems, have pushed for the return of the grey wolf to Yellowstone and other national parks that originally hosted the animal.

SPECIAL REPORT

Parkland Hope Chest

RESHAPING THE LAND AND WATER CONSERVATION FUND

BY WILLIAM LIENESCH

THE APPALACHIAN National Scenic Trail rides the back of the Appalachian Mountains 2,000 miles from Maine to Georgia through dense, leaf-strewn forests, across windswept outcroppings, past historic towns and rivers.

The Appalachian Trail, which is used by approximately four million visitors a year, is probably the most popular hiking trail in North America—and most of the trail's acreage was purchased with money from LWCF.

Across the country, out in the Pacific Ocean, lies Channel Islands National Park, a chain of austere islands, some small and humpbacked like gnomes, others like large, dark sailing ships whose edges and overhangs are battered by ocean spray.

The islands and their flower-filled meadows lie just across from Santa Barbara, California, and are made available to national park visitors by boats and, in part, by land purchases made through LWCF.

Children tumble down 180-foot-high dunes toward the summer-warmed waters of Lake Michigan. Indiana Dunes National Lakeshore, a national park area with the second-highest dunes in the country, is a recreation highpoint of the Great Lakes region.

Congress set aside these vast dunes, plus beaches, marsh, and prairie, with monies from LWCF.

Two of the most important battles of the Civil War were played out among the rolling hills and fields of Manassas, Virginia. The cannons are still aligned across the ridgetops, and, with just a little effort, picnicking national park visitors can imagine the bloody clashes that rocked—and changed forever—our nation's history.

LWCF works according to a neat 'If you take resources out you must give resources back' rationale.

Manassas National Battlefield Park was bought, in part, with funds from LWCF.

LWCF has contributed more than five million acres to approximately 10,000 areas, including parks, historic sites, and recreation areas across the country at the national, state, and local levels. A brief glimpse of the long list of state and local areas helped by LWCF includes:

Willamette River Greenway in Eugene, Oregon.
Black Rock Mountain State Park, Georgia.
Derryfield Ski Slope in Manchester, New Hampshire.
Fort Missoula in Montana.
Cottonwood Park and Playground, Arizona.
Buchanan State Forest in Pennsylvania.
Elephant Rocks Braille Trail in Iron County, Missouri.
Trinity River Greenbelt, in Dallas.

Yet, LWCF has almost no name recognition. This year, the Land and Water Conservation Fund marks its silver anniversary with 25 years of a very low public profile.

The act that took effect in 1965, creating the Land and Water Conservation Fund, was innovative and, from first appearances, a model for conscientious funding of public lands. The fund collects money from three sources:

▲ sales of federal real estate.
▲ part of the federal tax collected on motorboat fuel.
▲ off-shore gas and oil leases—by far the biggest share of LWCF monies. Companies such as Texaco, Exxon, and ARCO lease public-owned lands on the Outer Continental Shelf. A portion of those leases—nearly $900 million per year—is made available for the Land and Water Conservation Fund. The system has a neat "If you take resources out, you must give resources back" rationale.

Park and recreation areas are chosen for land acquisition with LWCF funds in the following way: At least 40 percent of annual LWCF funds must be used to purchase land in national parks, wildlife refuges, national forests, and other federal areas. Each of the four eligible federal agencies—National Park Service, Forest Service, Fish and Wildlife Service, and Bureau of Land Management—recommends its national priorities to the Congress.

Congress apportions state funds primarily according to a population-base

formula. Each state selects its own state and local park projects, with money divided roughly between the two. In addition, the states and local communities must put up matching funds for each area.

The system sounds exemplary, but over the past 25 years some nasty problems have surfaced. By far, the most critical is the level of funding. Putting $900 million a year into LWCF sounds more than sufficient. The real numbers are vastly different.

The money may be allocated to the Land and Water Conservation Fund, but getting the money out is another matter.

To use LWCF monies for land purchases, the administration must recommend a funding level each year. Then Congress must appropriate an amount of money based on the administration's funding recommendation.

Here procedure becomes extremely political.

The Reagan administration, for example, requested less than $50 million annually for LWCF parkland purchases. During its last three years, the annual Reagan administration request was less than $20 million. Although Congress increased the requested amount to $200 million, the funding has still been a far cry from the authorized level.

Even when funds are appropriated, they are often spent too slowly. The longer parkland takes to purchase, the more expensive the land becomes. And near urban areas, such as Los Angeles, San Francisco, and Washington, D.C., the price of land has skyrocketed.

Because of LWCF's limitations, green space is being lost faster than we can protect it—green space not only for national parks but for the open areas that make each of our towns and cities more liveable. More than a million acres of wetlands, shoreline, and agricultural land are lost each year.

As fine a piece of legislation as LWCF is, lawmakers and conservationists want to update the act. The legislation that would do this is called the American Heritage Trust Act.

In February the American Heritage Trust Act was introduced in the House of Representatives as H.R. 876 by Representative Morris Udall and in the Senate as S. 370 by Senator John Chafee. The act now has 221 cosponsors in the House—a majority of representatives—and 40 in the Senate.

"LWCF ALTERNATIVES" ILLUSTRATION BY PERMISSION OF WILDERNESS SOCIETY AND ERIC C. WESTBROOK

The American Heritage Trust Act would:

▲ Act as a permanent trust account that could be used to purchase natural, historic, and recreational resource lands. LWCF would approximate a trust fund in that the principal would be invested and the interest would be used to purchase parklands.

Thus, a stable source of funding would always be available, although the appropriations committees of Congress would still be able to set limits when the federal budget is tight.

▲ Provide a trust account for the Historic Preservation Fund, which complements LWCF by preserving historic areas and properties.

▲ Give a greater share of land acquisition funds to local and state areas, which have received virtually no LWCF money during recent years. As with the present LWCF structure, state and local jurisdictions would put up matching funds for both park acquisition and recreational development.

▲ Fulfill a major recommendation presented in the findings of President Reagan's Commission on Americans Outdoors.

The complications of trusts and appropriations are very often tedious and hard going. But the results of our hammering out a truly effective American Heritage Trust Act will be fishing holes and greenways, playing fields and parks that every American can enjoy.

William Lienesch is the Director of Federal Activities for NPCA.

For more information, or to get involved in the pivotal effort to save America's fast-disappearing open spaces, write National Parks and Conservation Association, American Heritage Trust, 1015 Thirty-first Street NW, Washington, D.C. 20007.

Compromise at Antietam

A Community Tries to Preserve The Civil War's Bloodiest Battlefield

By Richard Rambur

The Battle of Antietam, fought September 17, 1862, became known as the bloodiest single day of the Civil War. By nightfall, more than 23,000 soldiers were killed, wounded, or missing.

The battle at Sharpsburg, Maryland, however, was about more than casualty counts. Historians consider Antietam a turning point of the Civil War. It was the first of General Robert E. Lee's two great efforts to push the war into the North, and gain recognition for the South from England and France.

Up to that point of the war, the South had been successful on the western and eastern theaters, making Europe take notice. Recognition and aid from England and France could have changed the course of the war.

Although the battle ended in a tactical draw, the Confederate Army retreated to Virginia. Within a week, President Lincoln issued—at Antietam—the preliminary Emancipation Proclamation, which became effective January 1, 1863. Thus, the Union achieved a moral, political, and diplomatic victory.

Today, as then, Antietam National Battlefield lies in a beautiful little valley in the western part of Maryland. The battlefields, the woods, and the farmhouses look virtually the same as they did in 1862. Antietam is, perhaps, the finest example of a Civil War battlefield left in this nation.

I laugh when I stop and remember how easy I thought being the superintendent of this sleepy little battlefield would be. I arrived August of 1987 and two things struck me immediately. First was the pristine setting of Antietam. You could stand anywhere in the battlefield and view that 1862 landscape.

Even so, signs of change were apparent. Thirty-three percent of the working population of south Washington County were commuting to Washington, D.C., or Baltimore, each some 75 miles from Sharpsburg, Maryland. This sleepy rural community was coming alive. No longer was it necessary to imagine what overdevelopment might do. One could see fast and dramatic change in the small communities to the east of Sharpsburg.

The second thing I noticed when I arrived was the interest in preservation. The governor of Maryland, the state's congressional delegation, and county commissioners—all were interested in preserving Antietam. By comparison to some battlefields, this was a bit unusual. Even the local community seemed to be happy with the status of the park.

Clearly, Antietam was in the middle of a coming clash between preservation and development.

No one wants to see the places of their country's great historical events wedged between a used car lot and a McDonald's. But that is the sort of problem faced by most of our historical parks.

Right now, Antietam, like Manassas National Battlefield Park in Virginia, is at the forefront of this problem. As urban areas spread—hemming in historical parks—townhouses, shoppings malls and highways will change forever the look of the historic landscape.

Ultimately, the Manassas situation was solved by Congress, which voted to include within the park the area that developers wanted for a shopping mall. The problem at Antietam may be solved at the local level and, therefore, serves as a test case.

When faced with potential overdevelopment, the first thing you do is review the area's zoning. I was comforted, briefly, by the fact that all of the land around Antietam Battlefield is zoned "agricultural."

A closer review shows, however, that zoning allows for one house per acre, as well as gas stations and other stores.

Thoughts that the new regional sewer system would control growth gave way to the realization that large developers could easily expand that system. In fact, a new sewer system might actually encourage development.

Antietam's integrity will not depend on Uncle Sam's buying everything.

Concerned, Washington County established a commission to look at ways of protecting the rural Sharpsburg area. The 23-person commission included state and county representatives, farmers, realtors, historical groups, residents, and the battlefield superintendent.

It was clear from the start that it would be difficult determining what to protect, not to mention how we would go about protecting it. The two-year endeavor proved to be educational, and in June 1989 the Washington County Commissioners approved the finished product, a plan called the Antietam Overlay (AO).

The overlay has three sections: AO-1 requires a historic district commission to review all new residential construction in the 2,900 acres surrounding the 815-acre battlefield. New construction must be consistent with the present structures.

AO-2 requires that all commercial and nonresidential buildings on the approach roads to the battlefield be compatible with the historic character of the area. AO-3 requires an approved forestry plan for timber clear-cutting on Red Hill, a ridge overlooking the battlefield.

Although this overlay was a compromise and does not change current zoning, it was a gutsy statement on the part of the county commissioners who voted for it. Many people feel the commissioners didn't go far enough, while others feel they went much too far.

This overlay stirred some strong emotions. Residents picketed the battlefield; others took legal action against the commissioners; activist groups were formed to fight the overlay.

Some pointed the finger at Antietam National Battlefield. What were we doing to support battlefield preservation?

They criticized a historic lease we issued that allows a private individual to restore one of the historic structures as a bed-and-breakfast. This individual used his money for restoration in exchange for a long-term lease. Although we saved a historic structure, we were castigated for encouraging commercial development within our own boundary.

In contrast, others said that the surrounding community was maintaining historic structures better than the National Park Service was. They pointed to three abandoned houses within the battlefield as examples.

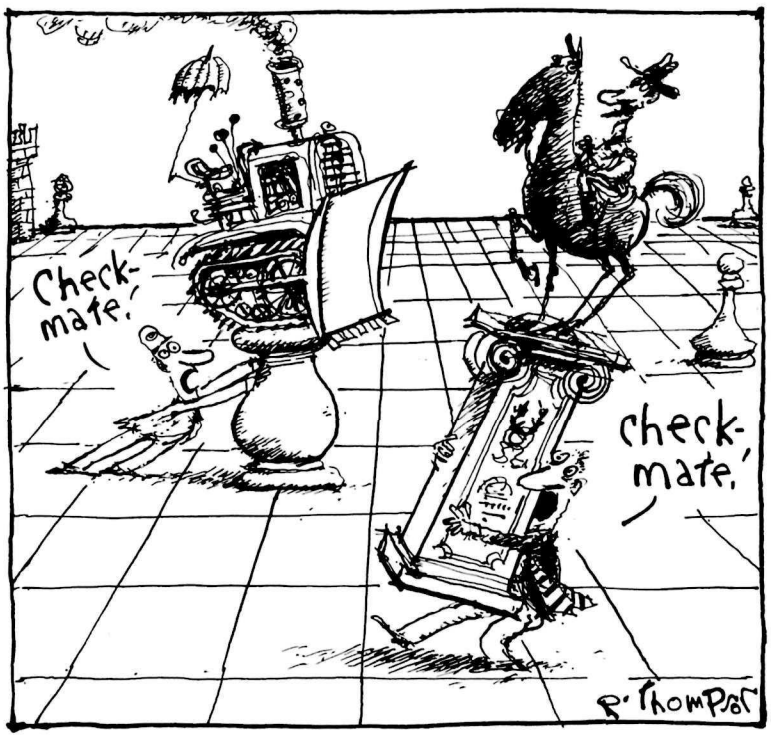
One last controversy concerns monuments on the battlefield. Antietam has 102 monuments, and all but a handful were placed there at the turn of the century by veterans of that battle.

Antietam has been asked to allow placement of eight additional monuments, one honoring the Irish Brigade at Bloody Lane. At issue is not whether groups like the Irish Brigade are worthy of monuments. At issue is whether this battlefield was set aside as a memorial rather than the preserved historic setting that Congress mandated.

The appropriateness of adding monuments is only part of my concern; the other is maintenance of these monuments. In 1989 the battlefield spent more than $40,000 to restore monuments and next year plans to spend $60,000. Additional monuments will increase the need to split limited funds between maintenance of monuments and maintenance of other historic structures.

Like the issue of encroaching development, this issue has touched off emotions. And it, too, could set a precedent for other NPS battlefields. If Antietam National Battlefield is to continue as one of the finest examples of a Civil War battlefield, then we have to stop taking pieces out of it.

We must work closely with state and county to ensure that farmland remains farmland, and not at the expense of the farmer. We must ensure that residential and commercial development is planned and does not reflect urban sprawl. We must understand that saying "it won't happen for 20 or 30 years" or "what's one more monument?" are not the right comments or questions.



We must weigh every decision on its immediate effect as well as its long-term effect and we must build a strong local constituency to support these decisions. It seems that we spend a great deal of time converting the converted when we should be working more with school groups, civic organizations, and those who can help effect change.

We must help our neighbors understand our problems and buy into the solutions. I am convinced that success in keeping Antietam's visual integrity intact will depend entirely on Washington County's approach to a comprehensive plan—not on Uncle Sam's ability to buy everything the eye can see.

People talk about the third battle of Manassas or the second battle of Antietam when referring to park struggles. In fact, these struggles never end.

Each generation will have its opportunity to alter the future, so we had better commit ourselves for the duration. Otherwise, we cannot be assured that future generations will sense the history here. We cannot be assured that there will still be a resource to protect.

Richard Rambur is superintendent of Antietam National Battlefield.

ILLUSTRATION BY RICHARD THOMPSON

The Hidden Lion

Park Researchers Tell Us What Little We Know About Cougars

BORN IN THE RUGGED reaches of New Mexico's Carlsbad Caverns National Park, the cat known as M11 lingered with his mother through the snowy winter of 1984. Roaming through Walnut Canyon, Bat Cave Draw, and up across the park's desert steppes, the tawny pair of mountain lions stuck to a territory of roughly 15 square miles.

That moderate range encompassed the park's main road, a residential area, and the gaping main cavern itself, an attraction frequented by thousands of visitors each year. Yet the cats' furtive ways kept them virtually invisible. If not for the innocuous battery-powered radio collar fastened around the cub's neck, no one might ever have known of his existence—until he was killed by a hunter just north of the 73-square-mile park the following January.

M11 had involuntarily donned his collar the previous October as one subject of a three-year study in and around Carlsbad Caverns and nearby Guadalupe Mountains National Park, just across the state line in Texas. The project was launched in 1982 to determine whether, as area ranchers claimed, cougars were creeping down from their lairs in the parks like bandits to kill sheep on neighboring grazing lands.

The completed study showed that, yes, area cougars did sometimes attack sheep, but no, they did not intentionally take refuge in the parks to elude the ranchers' wrath. Until then, neither ranchers nor rangers had any real knowledge of local lions or how they lived.

"All we knew about the lions in the park," recalls Jim Walters, resource management specialist at Carlsbad Caverns and Guadalupe Mountains national parks when the study began, "was that we didn't know much of anything about them."

For while *Felis concolor*, the "cat of one color" is among the most abundant and voracious large predators in America's national parks, it is also one of the most elusive, solitary, and secretive animals anywhere. Best known as a cougar, mountain lion, panther, or puma, it is a creature that commands human myth and imagination, but reveals few clues to the mysteries of its reticent life.

Slowly, though, research is casting new light on the powerful cat's hidden ways. In several national parks, recent and ongoing studies are probing the simple dynamics of lion populations, as well as their relationships to humans, who may be much nearer than they realize to this romantic symbol of the untamed wild.

While most national park visitors would be lucky to see a fleeting glimpse of fur, these projects—some spurred by growing conflicts between humans and the cats—are opening a window on the lions' lives, proving them to be both keenly adaptable and resilient. Perhaps as much as the cats' inherent secrecy, those qualities have been vital keys to their surviving a much-maligned past.

Just a few centuries ago, the cougar was the most widespread mammal in the Western Hemisphere besides *Homo sapiens*. Its 27 subspecies resided in as many different environments as exist in the Americas, making its home as easily in the jungles of Central or South America as the deserts of the North American Southwest, the swamps of the southeastern United

By Michael Milstein

FLORIDA PANTHER: MICHAEL HAVELIN/HAVELIN COMMUNICATIONS

States, or the icy expanses of Canada's northern territories.

A stealthy cougar then could depend on a reliable living: deer, elk, and other native prey were plentiful, while adversaries, limited mostly to disease, hunger, and old age, were few.

With the expansion of western civilization, though, that all changed. Like most predators, cougars soon had a new competitor for food and space, and a fierce new enemy—man. Fearing the mysterious, it was easy for people to declare war against an unknown menace that threatened livestock and, in rare cases, humans themselves.

In the 1600s, Spanish missionaries began trading native Californians a live bull for each dead mountain lion turned in. Throughout the 1700s, many eastern states paid bounties for cougars, a practice that ceased around the end of the 1800s when there was no longer a viable population to hunt.

Many western states later employed—and still employ—professional hunters to kill what even President Theodore Roosevelt, a dedicated conservationist, once called the "big horse-killing cat, destroyer of the deer and lord of stealthy murder with a heart craven and cruel."

In Yellowstone National Park, early management practices put a priority on tourist-pleasing wildlife such as elk, deer, and bison. Government trappers set out to eliminate those creatures—cougars, along with wolves, coyotes, and wolverines—that had long preyed on such animals. From 1904 to 1925, at least 121 cougars are known to have been killed in the park, practically destroying any resident population that had existed there.

Like the owner of a mansion who is restricted to just a few rooms, the cat that once called this entire country its home is now found in viable populations in just 11 western states. Three subspecies—two in the United States (the eastern cougar and the Florida panther), the other in Costa Rica—are now regarded as endangered.

The eastern cougar, however, is probably already extinct. Once, this subspecies ranged up and down the Atlantic seaboard. Though rare reports of sightings still surface, a recent thorough search by the U.S. Fish and Wildlife Service failed to turn up any sign of the animal. And only an intensively studied, highly endangered, population of about 35 Florida panthers remain.

Starting in the late 1960s, mountain lions began to receive some statutory protection. All states except Texas have now reclassified the cougar from a freely hunted varmint to a game animal subject to some hunting restrictions. California, with possibly the healthiest lion population of all, has banned cougar hunting for nearly 20 years, except in cases of specific livestock-killing cats.

ALTHOUGH THE COUGAR has emerged from its years of persecution with some irreparable battle scars, it fared far better than other predators, such as the wolf and grizzly bear, which were almost exterminated in the continental United States.

The cougar's more solitary habits and remote haunts certainly helped protect it from further destruction. But biologists are now also learning how cougars effectively mold their lives to their environments, responding and adjusting to natural or even human-caused changes.

"This animal is right at the pinnacle of the food chain," says Maurice Hornocker, a mountain lion expert who pioneered lion research in the rugged Idaho wilderness during the 1960s. "By knowing the lion, we not only can grasp its abilities and function, but we get to know the entire ecosystem, how it works and how it's evolving."

Any base changes in the environment are likely to show up in cougar behavior. For example, if the cougar's prey base is altered in some areas, the animal's range and distribution can be affected. Also, the size of cougar litters can indicate the health and availability of prey species' populations.

From 1960 through 1973, there were 92 reliable reports of cougars in and adjacent to Yellowstone National Park. Over the next 12 years, the number of reports grew to 204. Though perhaps partially reflecting the presence of more visitors and more accurate wildlife monitoring, these figures also show that cougars were reclaiming their native habitat after many decades of predator-control programs.

Still, some biologists doubted any lions actually resided in the park until, during the winter of 1985, Hornocker conducted a thorough survey of the park's northern range. He found enough tracks, signs, and lion kills to indicate that cougars were indeed living in Yellowstone once again.

Then, in the fall of 1987, the University of Idaho's Wildlife Research Institute, aided by funding from the National Geographic Society and the National Park Service, began a five-year study of the distribution, dynamics, and ecological role of mountain lions in the Yellowstone ecosystem. Using dogs to track and tree the cats, biologists tranquilized 14 lions living in and near the park and fitted them with radio collars.

By finding those cats over and over and charting their movements, the scientists have already discovered significant differences in the lions' seasonal habits. While the cats range over most of the immense park searching for prey in the summer, during the winter they confine their territory to lower elevations where deep snow does not inhibit hunting.

An efficient hunting technique is the cougar's prime talent, and the lithe cat has evolved into one of the most finely tuned predators in the world.

Its pointed claws, normally retracted for silent stalking, can be quickly extended for a rapid attack. Sensitive whiskers detect obstacles, averting a noisy collision that would alert prey.

A short, compact jaw maximizes the crushing power of the cat's 30 teeth, while a rough tongue allows the lion to clean the last bit of meat from bones. And a lean, six-foot-long body atop muscular hind legs is well suited to swift, though short, sprints. It also has the

JESS LEE

The sinewy, six-foot-long mountain lion can bound more than 45 feet along the ground and up to 20 feet vertically, and can overcome prey three times its size.

strength to leap more than 45 feet on the ground and spring almost 20 vertical feet up the side of a cliff.

In action, a cougar embodies deadly grace, strength, and cunning. Researchers at Guadalupe Mountains found a 300-pound cow elk that had been killed and dragged away by a 90-pound female lion.

The cats are not invincible, though, and one wrong move can make the difference between dinner and death. In 1988, an 11-year-old cougar was found dead in Olympic National Park in Washington, his skull smashed by the kick of an elk he had attacked.

Very private and highly territorial, cougars socialize with others of their kind only to mate—usually in late winter—during their 15-year lifetime. Mothers normally give birth to three or four furry, spotted kittens in the spring. The young lose their spots after about six months, but stay with their mothers for nearly a year, learning the ways of the wild before setting off, like rambunctious teenagers, to find an uninhabited territory to call their own.

Lions mark these well-respected territories with "scrapes," small mounds of pine needles and duff piled along their boundaries and topped with urine or feces. Because a 175-pound male lion requires access to more food than a 100-pound female, males are usually more mobile and occupy large, exclusive ranges of up to 100 square miles. Female ranges tend to be smaller and more defined, but often overlap with each other and with the territories of nearby males.

Of 22 radio-collared cats monitored as part of the Carlsbad and Guadalupe Mountains study, for example, males had an average home range of 80 square miles, while the average female covered just 23 square miles of sparse desert. Areas like Olympic National Park, lush and rife with elk and deer, may have denser lion populations with territories as small as 10 square miles, since cats there have no need to travel so far to hunt.

To satisfy their hefty appetites, cougars rely on large prey, primarily deer. They may occasionally kill smaller mammals such as rabbits or porcupines, and have been known even to munch grasshoppers when famished, but such tidbits cannot satisfy them for long. Not willing to waste any energy, lions will sometimes hunt only one deer a week and then, in keeping with their conservative ways, cache the carcass under piles of brush so they can return to feed day after day until all the meat is gone.

Yet when sheep, the wild carnivore's fast food, are available, lions will often go for the easy feast, much to the chagrin of sheep ranchers. Such strife escalated a decade ago around Carlsbad Caverns and Guadalupe Mountains national parks. In 1981, New Mexico trappers received permission from the Interior Department, then headed by James Watt, to pursue lions suspected of preying on sheep into the parks to kill them.

The plan was halted by growing public opposition, a lawsuit filed by conservation groups, and the need to complete an environmental assessment. This provided an opportunity for NPS to gather basic information on lions that could be used in future wildlife management decisions.

While some findings were vexing, others were more reassuring. Due to sport hunting and state, federal, and private predator control efforts, the death rate of cougars during the three-year project was among the highest ever recorded in a mountain lion population.

Sixty-five lions were snared, trapped or shot outside the parks but within the 400-square-mile study area, and more than half of the 22 radio-collared cats were killed, some less than a month after they had been collared in the parks.

Even with area lions suffering such high mortality, the numbers killed remained consistent each year, showing that young cats from the parks, the nearby Lincoln National Forest, and private land nearby were steadily repopulating vacant territories.

"Despite the carnage we witnessed, it didn't appear that the lions were really being wiped out," says Thomas Smith, the study's principal investigator. "The killing we saw was probably not unlike selective logging, as opposed to clear-cutting of an entire forest. And it became clear that killing the four or five lions that resided in these national parks wouldn't solve the ranchers' problem—new lions would bounce back from other directions."

In Big Bend National Park in south Texas, a large wooden sign warns arriving visitors they are in "Mountain Lion Country," and lions are occasionally seen pursuing deer through campgrounds. Research in Big Bend is focusing on more direct interactions between humans and lions.

Begun in 1984 as a basic ecological study of park cougars, the project changed course after two people were injured, one seriously, when attacked by lions in a heavily used section of the park. Researchers then began watching how lions responded to visitor use patterns in the park and found that, just as lions have adjusted to varying terrains and food sources, they can learn to take people in stride.

"The lions had become so accustomed to people they seemed to have lost their usual fear of humans," explains Raymond Skiles, a Big Bend resource management ranger. "We found cats in their day rest areas right near busy trails where people were carrying on all the time, and they didn't seem to be disturbed at all."

Because young cats have been the culprits in most of the few recorded attacks on humans, biologists there suspect that unabashed juvenile cougars, not yet used to foraging for themselves, present the most risk. The third phase of the park's research is now focusing on such young cats. Researchers have attached radio collars to three females and one male lion, hoping to learn how cubs are taught to relate to people.

Rangers already advise park visitors not to allow small children to wander on their own, not to run when they encounter a lion, and to avoid other actions a

Continued on page 44

Cougar young are born spotted, but fade to a tawny yellow after about six months. Young cats stay with their mothers for a year, and then stake out their own territory.

ERWIN & PEGGY BAUER

FATE *of the* NORTHEAST KINGDOM

Corporate Raiders and Speculators Stake Out

The New England Woods  ***By Page Stegner***

WE'LL CALL THIS New England land speculation package "New England Estates." The sales brochure speaks of "prime" acreage for immediate investment, of "choice" building sites, surrounded by "breathtaking wilderness," of lots with brook frontage or river frontage, or, bordering on a common area beaver pond. Lot sizes vary, but the price of paradise (during this Summer Special) is $15,600—down from $26,800. A significant discount, one notes; but still, a bit steep for an area where most land goes for $500 to $3,000 an acre.

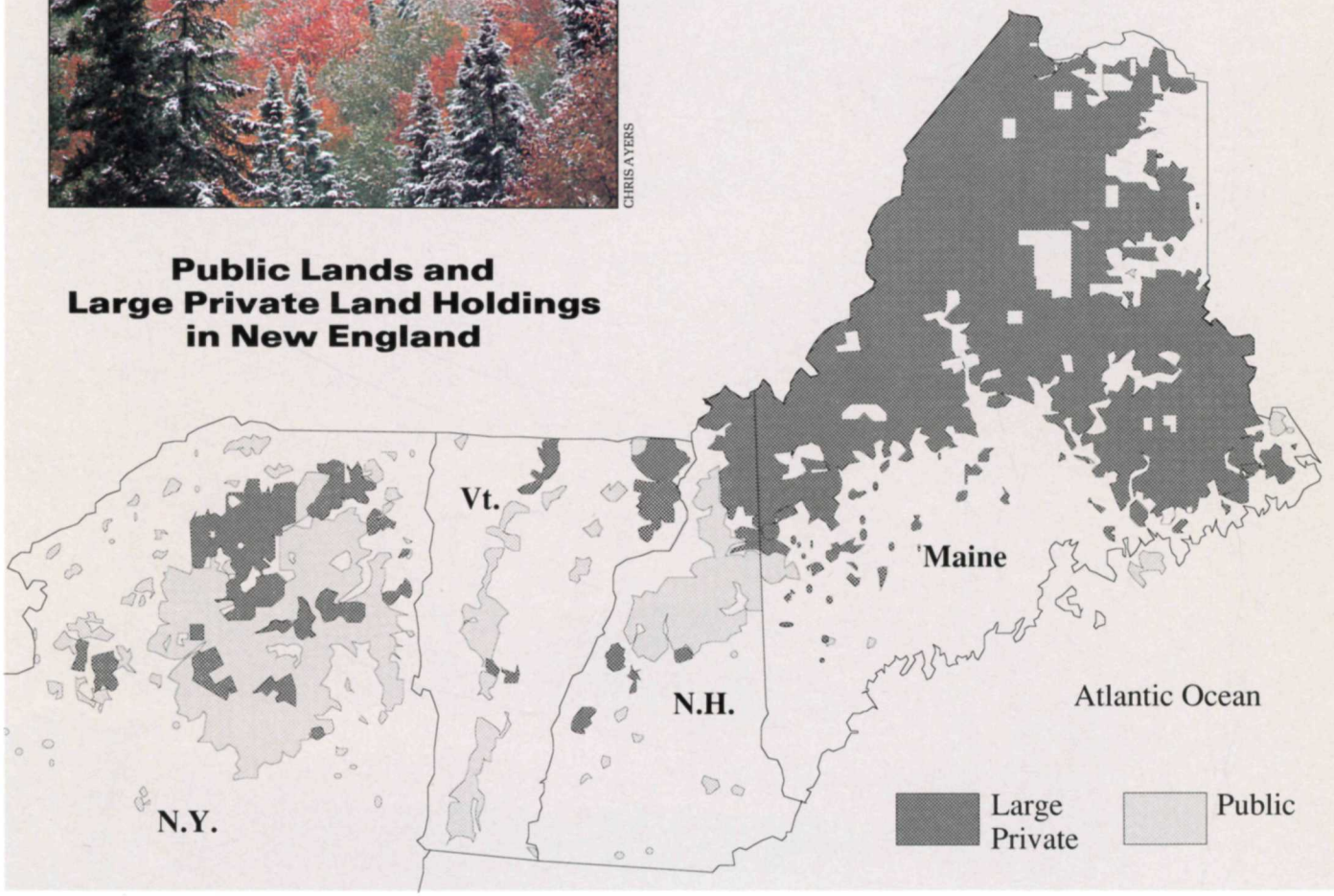
KATHY SFERRA

Prospective buyers, one also notes, are protected by deed restrictions and covenants prohibiting the placement of trailers, abandoned cars, and junk vehicles. A class act. All buildings must conform to state and local building codes. No tar-paper siding will be allowed.

Our brochure speaks of "recreational amenities" at our back door, of hunting, fishing, boating, skiing, snowmobiling. It promises "golf courses, shops, and

BAY OF FUNDY, MAINE: DAVID MUENCH

CHRIS AYERS



OTRACY NEWS GRAPHICS

Top: Lumber companies no longer need to own the land they harvest. Map: area designated as private land represents tracts of at least 5,000 acres.

nightlife" within a 15-minute drive. In the quaint little village of Boom-n-Bust Common, we'll find facilities that include a general store, a gas station, a church, a motel, and a post office. All of this, a mere four hours from Boston.

It's easy to quibble with sales pitch hyperbole. The beaver pond is, in fact, a eutrophic swamp ringed by dead spruce, the brook is the size of a hay field drainage ditch, the river is more like a minor tributary of a minor stream. There is nothing "breathtaking" about the wilderness surrounding New England Estates; indeed, the property is just another 680 acres of dense, immature softwoods, through which a graveled access road has been cut, and stakes indicating lot numbers have been driven. But brochure ballyhoo is not our real concern. Our *real* concern is the partitioning of this land (and thousands of acres like it) into building sites of any size or description at all, the protection of this undeveloped land for its own sake.

THE SUBDIVISON of forest lands in northern New England began in 1982 with the leveraged buy-out of the giant lumber company, Diamond International, Incorporated—the folks who brought us, among other things, the wooden safety match.

Diamond's holdings were estimated to be worth $315 million. The corporation owned approximately 1.5 million acres of forest land, including 801,000 acres in Maine, 89,000 acres in Vermont and New Hampshire, and 96,000 acres in New York's Adirondack Park—a tasty empire that attracted the notorious British financier, Sir James Goldsmith. Goldsmith took over Diamond in a $240 million corporate raid.

Then, to pay the debt incurred by his purchase, Sir James dismembered the company, selling its corporate headquarters and paper mills, and transferring its vast timber lands to a Cayman Island holding company.

In 1987, a French water utility, General Occidentale, bought all the Cayman Island, neé Diamond, "holdings," and immediately put them up for resale... whereupon a New Hampshire mobile home and condo developer, Claude Rancourt, bought the 89,000 acres in Vermont and New Hampshire for $19 million. And a Georgia-based land speculation company, Lassiter Proper-

ties, bought the 96,000 acres in the Adirondacks for $17 million. Both Lassiter and Rancourt planned to develop and subdivide this land, and sell it once again.

All parties involved in this succession of transactions made (or would make) enormous profits—all parties, that is, except the taxpayers of New Hampshire and New York, whose legislators, prompted by public outrage over this land grab, came stumbling in after the fact and at very inflated prices bought 45,000 and 15,000 acres respectively from the very speculators who had outmaneuvered and outbid them in the first place. The other big losers, of course, were most of the citizens of northern New England whose lives are very much tied up in the issue of who controls their immediate environment.

The problem with the Diamond takeover—as concerned people had tried to point out—was that it was the kind of transaction that could eventually cause a wholesale change of land ownership in northern New England. New England timberlands are open to the public and serve the region as de facto parklands. Yet, as many as ten million acres of privately owned wilderness could be put on the block, conservationists warned.

IN FACT, it was not long before the *Maine Times*, a local weekly newspaper, reported that 223,000 acres owned by the Boise-Cascade and Georgia-Pacific companies and the Penobscot Indian Nation were for sale, that International Paper had put 237,000 acres on the market, that Champion International Timber had inventoried its most valuable acres in Maine (although not actively "at this time" peddling real estate). J. M. Huber Company, a large timber company, also indicated receptivity to an offer on 45,000 of its acres.

It was soon clear that the Diamond International sale had *not* been an isolated phenomenon; that it had been indeed symptomatic of a changing economic reality that might well alter the physical and social identity of northern New England for all time.

The danger, however, of thousands of second homes, condos, ski lodges, hunting camps, resorts, sports clubs, and "No Trespassing" signs was a hard concept to sell in 1982. It took the Claude Rancourt purchase in 1987 to inspire widespread fear and loathing.

When New Englanders awoke to the fact that speculators could so easily trade in vast hunks of turf that they had heretofore considered wilderness-in-perpetuity, many residents felt—with some heat—that the issue of who was going to own northern New England's wildlands should not be decided by British financiers, Cayman Island holding corporations, French utility companies, or out-of-state realtors; it should be decided by people whose daily health, wealth, and happiness were affected. It took a while, but when they did wake up, the saving of the northeastern woods was not only the biggest conservation issue in New England, it had become national news.

One economic reality revealed by the Diamond sale was that, by the 1980s, ownership of vast timberlands had become an increasingly low-yield investment in a long-term commodity. Years of abusive logging practices, along with the spruce budworm epidemic of the 1970s, had reduced the agricultural value of much northern New England forest land. Also, the wood-products industry had generally increased its dependence on competitive markets rather than its own woodlot. Serious questions were raised whether timber companies needed to *own* the tracts they harvested.

During the 1980s, corporate raiders began to slice up New England.

At the same time, the northern woods became increasingly attractive to developers as land became more accessible to vacationers. Thousands of miles of new logging roads (built after the 1974 ban on river drives) and several recently completed interstates made the most remote country (as our brochure says) "a mere four-hour drive from Boston."

And, during the fast-paced economy of the 1980s, corporate raiders began slicing up the region's land base. New Englanders could no longer count on lumber companies to provide them with 15,000 square miles of wildlands for their hiking, fishing, hunting, boating, skiing, snow-mobiling, and camping pleasure. Any financier with junk bond salesmen at his back could cancel all bets with the stroke of a pen.

The concept of public land (as in state- or federal-owned, taxpayer-supported land) has never been a popular idea with citizens of the northeast, for reasons that have something to do with distrust of government agencies and self-perpetuating myths about Yankee individualism, but more to do with a lack of perceived need. Timber companies in northern New England have traditionally allowed open recreational use of their property. Why look to public institutions with their rules, restrictions, and fees, when those nice folks at Great Northern Paper offer a free ride?

Maine, for example, has less public land than any other state in the country. When Governor Percival Baxter wanted a public park in central Maine in the 1930s, he had to buy the land himself and give it to the state.

But, as surprised politicians in New Hampshire and New York discovered with the outpouring of public outrage over the Diamond/General Occidentale/Rancourt/Lassiter transactions, even in some of the most notorious enclaves of stubborn isolationism attitudes are changing.

A 1988 poll, conducted by Sterling College student James Cole in the Vermont towns of Island Pond, Norton, Canaan, Bloomfield, Guildhass, Lunenburg, and Victory, showed that 72 percent of respondents believed there was a need for improved land management in the New England Estates. Surprisingly, 67 percent were also in favor of a Northeast Kingdom National Park.

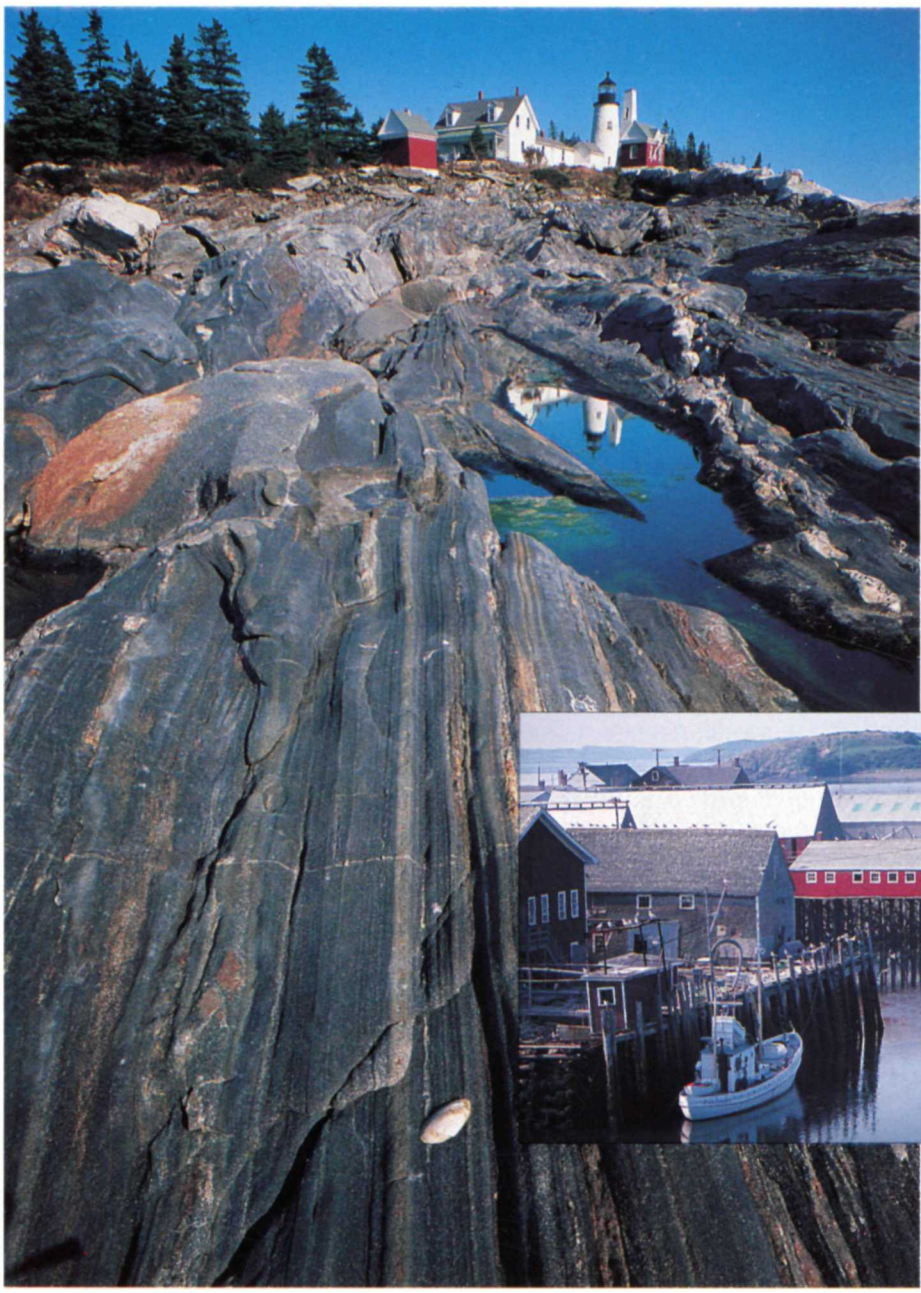
It is generally conceded that the era of

private stewardship by huge timber companies is about to end. If northern New England is going to retain its special character, other institutions will have to take over.

Which institutions will they be: private? . . . state? . . . federal? . . . international (Canada borders much of the territory in question)? And how will new acquisitions to the public domain be paid for: bond issues? . . . taxes? . . . private and public trusts? . . . the Land and Water Conservation Fund [see page 14] Will they be outright deeds of possession or easements protecting values and resources?

It is too early for definitive answers, though most feel that it will take a combination of responses if any meaningful preservation is to take place. Only the federal government has the power and financial reserves to tackle the problem alone, and nobody seems confident that it is likely to do so.

The Pemaquid Point lighthouse and herring-smoking shacks in Lubec, Maine are vestiges of New England's more traditional maritime economy.



DAVID MUENCH

BRIEN CULHANE

AND WHERE DO WE stand right now? There are many players and many actions in progress:

▲ The Vermont Land Trust (among its 125 projects) buys the 772-acre Brassknocker Farm in East Craftsbury, Vermont, but, then, must lease it for cash to support it.

▲ The Maine Coast Heritage Trust acquires a one-acre island on the eastern Maine coast near Quoddy.

▲ The Nature Conservancy loans the State of Vermont $1.9 million to buy 7,600 acres of ecologically unparalleled bog near the state's northern border—lands that contain a wide diversity of flora and fauna not found elsewhere in New England.

Important as these individual actions are, they are only sutures and Band-Aids when one contemplates the total acreage in question and the consequences of its development. And, it is not clear how much undeveloped land can be saved, in what order, or by whom.

Conservation groups have put forth a number of proposals. National Parks and Conservation Association has offered a suggestion for establishing a new park along the watershed of the Machias River in Maine.

Other proposals include the Wilderness Society's ambitious call for the creation of a 2.7-million-acre Maine Woods Reserve in central Maine around Baxter State Park. This undeveloped acreage would both protect the land and allow multiple uses, such as timbering, recreation, and hunting.

Earth First! modestly argues for a ten-million-acre biological preserve that would include northern and western Maine, New Hampshire north of Route 110, the Northeast Kingdom of Vermont, unspecified areas of southern and central New Hampshire and Vermont, an expanded Adirondack Park, and restoration of the Allagash, St. John, Penobscot, Androscoggin, and Connecticut rivers watersheds, some of which are now

Northern Forest Lands Study

IT HAD BEEN HOPED that the release of the draft Northern Forest Lands Study in November would be a catalyst for bold conservation actions. Instead, its recommendations rely heavily on tax breaks to promote forest conservation. NPCA believes that tax incentives alone will not stem the rising tide of land conversions.

Nor will it guarantee the existence of large, unbroken tracts of open land that could form the core of a new generation of parks or protected areas. Tax incentives also do not assure sound forest management practices or help preserve biological diversity throughout the region.

Private land trusts and state and local governments can work together to preserve working forests as well as protect rivers, mountains, and coasts. NPCA believes, however, that land protection, regardless of state or local efforts, will require some federal involvement. For instance, NPS's National Natural Landmark Program recognizes the value of distinctive ecological sites, regardless of their ownership. This designation, therefore, could play a key role in encouraging private landowners to preserve natural features on their land.

The National Park Service has identified 46 sites in New York, Vermont, Connecticut, Rhode Island, New Hampshire, and Maine as possible natural landmarks. There are also more than 5,100 river miles eligible to be in the Wild and Scenic Rivers System.

Greenlining and easements managed cooperatively by national and local agencies can be effective tools for land protection. In addition, if the Land and Water Conservation Fund is properly funded, state monies can be matched with LWCF monies in order to purchase available land (see *Parkland Hope Chest*, page 14).

At this time no one knows which strategies will be most useful. If there are congressional hearings on the Northern Forest Lands Study, new ideas are sure to surface.

Last year, in its National Park System Plan, NPCA proposed the Machias River, Maine, as a potential park area. The river rises in a string of freshwater lakes, flowing southeast to the Atlantic. Its course is essentially wild and undisturbed, except in its lower reaches.

Cobscook Bay, in northern Maine, is south of Roosevelt-Campobello International Park. Cobscook, a large bay that twists in and out of beautiful coves and headlands, could become a first-class marine park.

In addition, there are other areas of national park caliber that warrant further study. Baxter State Park in Maine, including the 5,268-foot Mt. Katahdin, is so prized that visitors camp out in cold January in order to be first in line for backcountry permits. This area includes miles of candidate rivers for the Wild and Scenic Rivers System. A national park here would incorporate mileage along the Appalachian Trail.

Northeast Kingdom, Vermont, with its recovering second-growth forests, would add the under-represented northeastern hardwood-boreal ecosystem to the National Park System. And St. Johns River in Maine, a wild route from the Atlantic Ocean into Quebec Province, could also be a strong candidate for the national Wild and Scenic Rivers System.

—David Simon
NPCA Natural Resources Coordinator

dammed. In short, everything. Well, why not? You're going to get a lot less than you ask for, so you might as well insist on the whole taco.

LAST YEAR, CONGRESS appropriated $250,000 for a U.S. Forest Service study of the forest resources in New York, Vermont, New Hampshire, and Maine. A draft was completed in October 1989.

Investigators were charged with the job of identifying forest resources (plants, wildlife, and recreation, as well as timber), studying historical and projected land ownership patterns and, most importantly, proposing strategies "to protect the long-term integrity and traditional uses of the lands."

This comprehensive and critical report (titled the *Northern Forest Lands Study* and due in final form in January 1990) acknowledged that the northern forest was in jeopardy; its major suggestions, however, disappointed many conservationists.

For example, the study recommends the use of tax incentives and other financial favors to entice lumber companies to hold on to their forest lands—an approach conservationists believe is both limited and unrealistic. With today's high-flying economy, tax incentives alone will not protect adequate amounts of land or the biological integrity of New England and New York forests.

Yet, it should be remembered that the *Northern Forest Lands Study* is an information resource only. It can project a vision for the future and suggest alternatives for achieving that vision, but it is still up to Congress and the affected state governments to act, to find the resolve to implement the "strategies," to pass legislation that will enable them to execute public policy in a timely fashion (as they were unable to do in the Diamond International sale).

If they do not act/implement/pass, if they receive their requested report, file it, and absquatulate, then I recommmend Lot 19 at New England Estates, the triple whammy lollapaloozer—frontage on the eutrophic swamp *and* the drainage ditch *and* the minor tributary of the minor stream.

Page Stegner is the director of creative writing at University of California at Santa Cruz. He spends his summers in Vermont.

Uncommon Vision

Someone once said, "The banquet is laid though nobody comes." Time and again nature brings together light and line in striking and unexpected ways. And, alone with a sunset, the morning light on a rushing stream, or falling autumn leaves, I find myself saying, "This would all happen whether or not I was here to see it."

The banquet is spread constantly and, if I were receptive enough, perhaps I would be fortunate enough to see it all. But I'm not, so I use photography as a tool to help me concentrate, to block out all that is extraneous and help me see deeply.

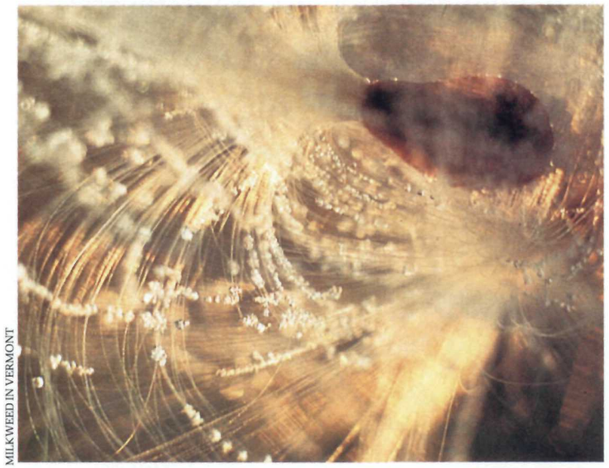
When my vision and the subject become one, then my photography is at its best and it takes me outside of my human-centered world. It takes me beyond clock time, to a place where the lines between me and the rest of nature are not so rigid, where the boundaries and definitions of everyday existence begin to dissolve.

From there it's evident that, regardless of what we think, we are one small part of this planet. It wasn't created for us, and we are lucky to be given a chance to see it. The magic I experience at moments like that is the real reason I go out to photograph again and again.

COAST OF SCOTLAND; OPPOSITE PAGE: MERCED CANYON, WEST OF YOSEMITE

Photographs by Dewitt Jones

SIDE CANYON OF THE GRAND CANYON



MILKWEED IN VERMONT

Although I have spent 18 years with the National Geographic Society, published eight books, and fought many conservation battles—some alongside National Parks and Conservation Association—a major part of my work now is teaching classes on photography and the philosophy behind the images.

People expect to see certain things in certain ways. I try to help them change that. Seeing things—a tree, a sunset—in only expected ways can remove you from them and, maybe, remove you from feeling something for them.

BOB MARSHALL WILDERNESS, MONTANA

YELLOWSTONE NATIONAL PARK

REDBUD

I believe that if you don't love something, you don't take care of it. If I can make you love the land, then maybe you'll take care of it. I teach the techniques of photography. But, even more importantly, I try to teach people to see. Then, everything else will follow.

Island Allure

PARKS THAT NURTURE SINGULAR SPECIES

BY ANNE-MARIE PRAETZEL

ISLANDS INSPIRE visions of escape; their mystique lies in their isolation. The vast, empty water, surrounding all sides, presents perhaps the most remote wilderness there is. The silence can be deadening, and the nights so dense and enveloping, it seems dawn will never come.

To lose oneself in the ocean's void, some say, is a route to self-discovery. And, like solitude and self-discovery, an island visit can be an uncomfortable, if rejuvenating, experience.

Charles Darwin showed the world a different side of islands. His work in the Galapagos, off the coast of South America, proved that islands were invaluable living laboratories. The small, isolated wildlife communities found on islands represent textbook models of evolution and species interaction.

Whether you seek solitude or a lesson in ecology, the park system offers many pristine islands to explore. Most of the islands can be reached only by boat. Contact the parks' visitor centers for more information.

Apostle Islands

The best way to visit Apostle Islands National Park is by sailboat. As you leave the northern tip of Wisconsin, the islands stretch ahead like mossy green stepping-stones across Lake Superior.

Visitors sail between the 20 islands, past rocky banks, contrasting forests of dark spruce and pale birch, and flat grassy beaches. The undeveloped islands range in size from three-acre Gull Island to 10,000-acre Stockton Island.

Native Chippewa legend tells of a spirit, or *manitou,* who was hunting a stag. When the deer reached Lake Superior it plunged in. The *manitou* angrily threw rocks after his escaping prey, creating the islands.

The park's geology tells a different story. Ice age glaciers carved deep channels in the bedrock and overlying sandstone to create the islands. The retreating glaciers left a mantle of sandstone beaches. Once the weight of the glaciers was lifted, the sandstone rose to become cliffs high above the islands' present shore.

The islands attract a great variety of birds. Every spring migrating birds drop to the islands before attempting to fly across Lake Superior, the world's largest body of fresh water.

Apostle Islands offers excellent summer boating, fishing, and camping opportunities. Winter provides a beautiful setting for camping, snowshoeing, and crosscountry skiing. Lake Superior can be temperamental; sudden storms often surprise the unprepared. So, caution is advised for all seasons. For more in-

Wind and water have carved sea caves into the sandstone cliffs of Apostle Islands.

GILBERT STUCKER

formation, contact Apostle Islands National Lakeshore, Route 1, Box 4, Bayfield, WI 54814.

Hawaii Volcanoes

Far, far west, Pacific fog brushes the mammoth grey shoulders of Hawaii's still-active Kilauea and Mauna Loa volcanoes in Hawaii Volcanoes National Park. Here, 4,000-foot Kilauea and the nearly 14,000-foot Mauna Loa sit on "hot spots," underground areas of active molten lava. Steam seeps from tiny crevices in the rock and red-hot lava emerges from the earth to stream into the sea.

The volcanoes share this island park with lush tropical forests, shimmering black-sand beaches, and cascading waterfalls.

The island of Hawaii, the youngest of the state's volcanic islands, was a barren pile of volcanic rock ten million years ago. Plants and wildlife gradually began to arrive by wind, ocean, and the feathers and craws of migrating birds. Because the islands were so isolated, though, the plants and animals evolved into species that are endemic, or unique, to the Hawaiian Islands.

Since there was little competition for food and territory in Hawaii, many species lost their aggressive and competitive traits. For instance, Hawaiian raspberries have no thorns, and the islands' giant, three-foot-tall owl cannot fly. Other species evolved to fill unoccupied biological niches, such as the Hawaiian predacious caterpillar, which captures and eats fruit flies.

Island wildlife and plants are particularly vulnerable to more aggressive exotic species that invade islands. In response, the Hawaii Volcanoes staff provides 12 sanctuaries for native animal and plant species.

These sanctuaries are kept free from invasive species, such as rapid-growing banana poka vines and feral pigs. The national park hopes to restore the original ecosystem in these areas. The most accessible sanctuary is the hundred-acre Kipuka Puaulu, located on Kilauea, just off Highway 11.

Crater Rim Drive provides an excellent orientation to the park. The 11-mile road passes lush rain forests, stark craters, and lava flows. For more information, contact Hawaii Volcanoes National Park, Hawaii National Park, HI 96718.

Channel Islands

Channel Islands National Park, on the coast of southern California, is America's Galapagos. Few places can boast such wonderfully diverse wildlife. Thousands of seals swim here to breed every spring, and many birds will roost nowhere else.

As visitors approach the park by boat, they can watch the islands fade in and out of a restless fog. The sun occasionally breaks through to reveal steep mountains, sculpted canyons, and windblown grasslands. It is a beautifully harsh land—tall cliffs lean over the Pacific, and, on some islands, wind and ocean have hollowed deep shoreline caves.

Underwater, the islands are surrounded by thick, swaying forests of kelp, the fastest-growing plant in the world. The kelp beds are feeding grounds for the islands' extensive marine wildlife, which includes dolphins, seals, and sharks.

Scuba divers may spot octopuses, barracudas, or ten-foot-long purple medusa jellyfish. In winter, whales spout and dive as they pass between the mainland and the islands on their annual migration from Alaska to the warm waters of Baja California.

There is biological diversity even within the Channel Islands archipelago. Some islands have their own endemic species, such as the Santa Cruz Island scrub jay found on the island of the same name. Other species, such as the island kit fox, are commonly endemic to the entire archipelago, although they might vary slightly from island to island.

San Miguel, the westernmost island, resembles a moonscape. Rising from its dunes is a pale forest of caliche, grainy calcium carbonate "trees" which were formed by wind and sand. The carbonate accumulated around ancient trees, which, when they decayed, left behind these tall sandy shells.

San Miguel's beaches also attract most of the park's seals, including the peculiar elephant seal. Elephant seal colonies are divided into harems, each guarded by a strong male. Males, which can weigh three tons and measure 20 feet, battle for hours to maintain their position.

R. WENKAM

Under the tranquil surface of Hawaii Volcanoes, molten lava still flows.

Nearby interpretive centers are well worth visiting. The Sea Center in Santa Barbara offers outstanding exhibits and programs on Channel Islands' marine life. The park's own visitor center in Ventura provides videos on the natural history and Indian artifacts of the islands, and an observation tower for whale-watching. Contact Channel Islands NP, 1901 Spinnaker Drive, Ventura, CA 93001.

Padre Island

Long expanses of sun, surf, and sand greet visitors at Padre Island National Seashore. The nation's largest barrier reef, Padre Island stretches for 80 miles between the Gulf of Mexico and Texas.

This island is typical of the many Atlantic barrier reefs between Maine and Texas. A young island, it was formed when drifting sand joined a group of smaller islands just 3,000 years ago. Today, hurricanes, storms, and tides continue to resculpt the island.

The gulf side, on the east of the park, offers miles of wide, flat beaches. A spine of low, windshaved dunes bisects the island's center. Mud flats on the park's west side merge with Laguna Madre, a long shallow lagoon that separates the island from the mainland.

More than 350 bird species reside on the island, including blue herons, marsh hawks, and sandhill cranes. The park's South Bird Island is also a sanctuary for a variety of birds and a nesting rookery for white pelicans. In addition, the park works with the Mexican and Texas governments to protect nesting sites on that island for the highly endangered Kemp's Ridley sea turtle.

The park offers boating and a limited number of campsites. Temperatures are mild year-round. For information, contact Padre Island National Seashore, 9405 South Padre Island Dr., Corpus Christi, TX 78418.

Virgin Islands

In 1493, on his second trip to the New World, Christopher Columbus led a fleet of 19 ships across the Atlantic. After many months at sea, the weary sailors came upon a seemingly endless string of tropical islands.

One of the beautiful archipelagos stood out from the others. Turquoise water fanned white sand beaches. Steep ridges unfolded in a tangle of tropical flowers. Beneath the sea, amber-hued corals fringed the shorelines.

One story says that Columbus called the archipelago *Las Once Mil Virgines* (the 11,000 virgins) after the legendary companions of St. Ursula, who were martyred with her in the fourth century. The park's Reef Bay Trail tells the island's rich cultural and natural history.

The trail begins at Mamey Peak, an area lush with flowering plants and vines. Here, purple bougainvillea and red seagrape thrive under a canopy of palm trees, mahogany, and wild orange trees.

Reef Bay Trail passes centuries-old plantation walls, now overgrown with vines and flowers. The tropical forest has been making a strong comeback since eighteenth-century Danish colonists cleared vegetation to plant sugar cane and cotton. Hikers may see an occasional hermit crab or the green iguana-like anole lizard crawling in the understory. Like chameleons, anoles change the color of their skin to camouflage themselves. Six bat species, the only native mammals, also live on the island.

Heading south, the trail dries to near desert, displaying prickly-pear and Turk's-head cactus. The trail ends at Reef Bay, where hikers can glimpse migrating humpback whales or dolphins splashing in the surf.

With nearly a third of this 15,000- acre park underwater, the day's adventure need not end at the shore. Virgin Islands features the park system's first underwater self-guided nature trail. Swimmers follow information signs through swaying purple sea fans and schools of fluorescent yellow and blue fish.

The clear waters showcase a seemingly endless reef garden of colorful sea creatures. Intense red, yellow, and blue sponges nestle between brightly colored coral spires.

Corals are the foundation of the underwater world. Each miniscule coral polyp may house thousands of algae plants. Algae give corals their vibrant colors. In addition, they absorb carbon dioxide, which they transform through photosynthesis into oxygen and other nutrients vital to both organisms.

Virgin Islands boasts pleasant temperatures year-round. Accordingly, campgrounds ranging from backcountry sites to furnished tent cabins are open all year. For details, contact Virgin Islands National Park, P.O. Box 7789, Charlotte Amalie, St. Thomas, VI 00801.

Anne-Marie Praetzel was editorial assistant for National Parks *magazine. She last wrote on wildflowers in the national parks.*

National Parks
and Conservation Association

Annual Report

Fiscal Year 1989

DURING Fiscal Year 1988-89, membership in NPCA topped 100,000; our programs included numerous new parks; and public education found a growing audience. We would like to thank members, contributors, volunteers, and friends for helping to make this growth possible. Our annual report highlights some of NPCA's achievements.

Natural Resources

NPCA helped pass more beneficial parks legislation than in any other recent congressional session. Achievements include:

New Parks. Now in the system are Poverty Point, Louisiana; Gauley River, West Virginia; and our 50th park, American Samoa.

Independent Park Service. NPCA fought efforts to politicize NPS and helped pass a House bill to reorganize the Park Service as an autonomous agency.

Science Commission. In March 1989, NPCA released the report of its independent science commission. *National Parks: From Vignettes to a Global View* was the focus of a successful national conference and has been hailed as a prescription for park research and resource management.

Fire Education. During the most tumultuous park fire season, NPCA was a leader in informing the public about NPS fire policy and the role of fire in parks. NPCA mustered support for sound fire policy at Yellowstone.

Oil Spill. In the wake of the *Exxon Valdez* oil spill, NPCA petitioned the Interior Secretary to address spill impacts at Katmai and Kenai Fjords. We also worked to assure that Exxon fulfills its cleanup responsibilities.

Boundaries, Air, and Wolves. NPCA led support for boundary expansions at Congaree Swamp, Big Cypress, and Everglades. We pressed Congress to strengthen the Clean Air Act and establish the American Heritage Trust to fund parkland acquisition. NPCA fought successfully on wilderness recommendations for Alaska parks and the Alaska National Wildlife Refuge; helped defeat plans to mine in parks; and pushed for grey wolf reintroduction in Yellowstone.

Cultural Resources

Manassas. The arduous and successful battle to save Manassas focused unprecedented national attention on the need for battlefield preservation. One result was that Congress added 600 acres to the park. The Natural Resources Council of America presented NPCA its "Policy Activities" award for our role in saving Manassas from a proposed shopping mall and other impacts.

Thomas Cole House. NPCA was instrumental in introducing legislation to protect the property where the founder of the Hudson River School of American art lived and worked. Once designated, Thomas Cole House will be the first park area devoted to the legacy of an American painter.

New Parks, Boundaries. NPCA helped to incorporate San Francisco Maritime; Charles Pinckney; Natchez; and Zuni-Cibola historical areas in the system. NPCA also pressed for boundary expansions for Harpers Ferry, Fredricksburg/Spotsylvania, Antietam, and Salem Maritime. In addition, NPCA focused attention on vandalism, artifact looting and urban encroachment.

War and Peace Conference. For the 125th anniversary of the Battle of Gettysburg, NPCA and NPS coordinated a conference on battlefield preservation and interpretation.

Urban Parks & Recreation

With Friends of Gateway, we blocked a theme park and other inappropriate development at Gateway National Recreation Area near New York City. We worked with southern California conservationists on land funding for Santa Monica Mountains.

NPCA is organizing March for Parks, the first conservation walk event. March for Parks, a March 24-25 lead-off event for Earth Day 1990 and National Celebration of the Outdoors, will benefit national, state, and local parks nationwide.

Grassroots

NPCA's park-watcher network, through which citizens alert NPCA to park threats in their vicinity, has increased to 210 parks. NPCA's bimonthly "Exchange" newsletter provides assistance to park watchers and others. NPCA and local groups worked to lessen threats from off-road vehicles at Cape Cod, condo development at Voyageurs, and highway expansion outside Bandelier.

Budget & Land Acquisition

NPCA worked with Congress to substantially increase the administration's funding request for NPS. In particular, land acquisition, maintenance, and construction received increases: $40 million, $25 million, and $145 million, respectively. NPCA persuaded Congress to fund studies for Colorado National Monument and the proposed Anasazi National Monument.

Carrying Capacity

NPCA has developed an analysis of visitor impacts and how to manage those impacts in cooperation with scientists from University of Maryland and Penn State. The resulting three documents will be made available to land managers and other interested parties.

Field Programs:

SOUTHWEST/CALIFORNIA

▲ NPCA worked to mitigate logging problems adjacent to Bandelier in New Mexico and urged proper logging in the future;

▲ worked, at Grand Canyon, to solve South Rim transportation overload; impacts on Colorado River habitat and recreation; air quality degradation; and North Rim development plans. We also monitored the aircraft overflight plan;

▲ supported California Desert Protection legislation to expand Death Valley and Joshua Tree and establish Mojave National Park plus wilderness areas.

ROCKY MOUNTAINS

▲ NPCA led a successful campaign to convince the state of Colorado to adopt better protections for Colorado's park and wilderness vistas;

▲ defended parks from adjacent threats by reviewing BLM plans and urging protective management of wildlife, watersheds, and vistas next to parks;

▲ advocated establishing Anasazi National Park and expanding Colorado and Black Canyon national monuments; defended Hovenweep from oil/gas development; and fought a proposed airport at Glen Canyon.

ALASKA

▲ NPCA worked to mitigate all-terrain-vehicle problems at Gates of the Arctic;

▲ supported NPS prohibitions regarding wolf hunting in Alaskan national parks;

▲ opposed a U.S. Geological Survey study on vulcanism at Katmai that could lead to drilling and other impacts.

NEW YORK

▲ New York Parks and Conservation Association organized the first statewide greenway conference;

▲ organized and chaired the Greenline Roundtable, a statewide network of conservationists and government officials;

▲ led the effort to protect New York's D & H Canal and established a committee to oversee canal preservation.

National Park Trust

This year, NPCA succeeded in establishing a $1-million revolving fund. We also continued work on land acquisition projects such as the Big Cypress effort where, with the Underhill Foundation, we donated a 20-acre parcel to NPS.

Public Education

National Parks magazine's educational features included Yellowstone fires, park poaching, park damage from the Alaska oil spill, and a U.S.-Soviet international park. In addition, the magazine was completely redesigned. Associated Features began syndicating *National Parks* stories in local papers across the country.

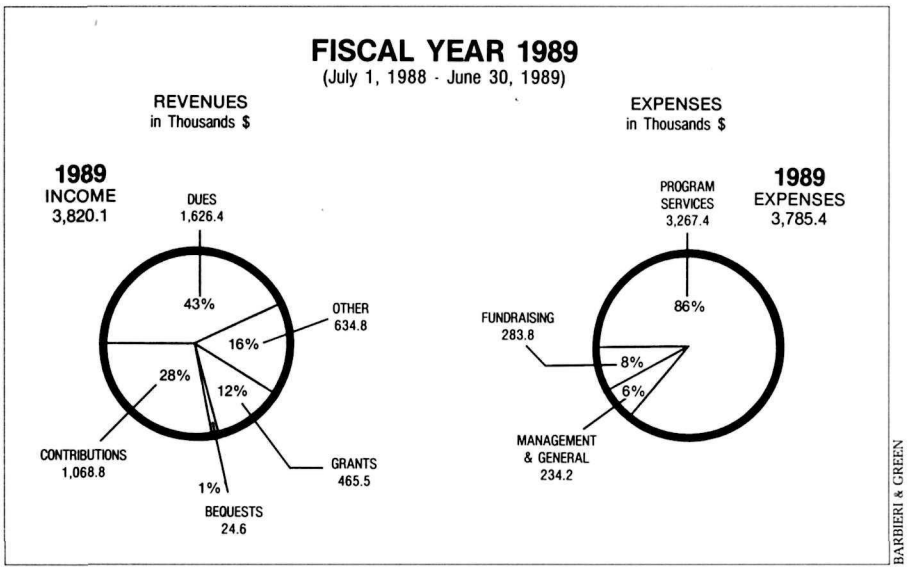
Public relations efforts focused on the battle for Manassas, the new administration, and NPCA's science commission report. NPCA was featured on national radio and TV broadcasts, and our Public Service Announcements appeared nationwide.

Our Common Lands: Defending the National Parks, essays by experts on complex environmental questions, received acclaim.

NPCA's Park Education Center offered the finest park books, videos, and guides. The first stand-alone catalogue featured park cooperating association publications.

NPCA has also helped to develop a curriculum to educate fourth- through sixth-graders on biodiversity and the role of parks in preserving endangered species habitat.

NPCA award-winners were representatives Robert Mrazek (D-N.Y.), Frank Wolf (R-Va.), and Michael Andrews (D-Texas) for Conservationists of the Year; Robert Cahn for the 1988 Marjory Stoneman Douglas citizen's award; Sylvia Flowers for the Freeman Tilden interpreter's award; and Norman Bishop for the Mather Award for putting environment before NPS career concerns.



Balance Sheet

As of June 30, 1989 (With Comparative Totals for 1988)

	Operating Fund	Land Acquisition Revolving Fund	National Park Trust Properties	Endowment Fund	Total 1989	Total 1988
CURRENT ASSETS:						
Cash, Short term investments	$ 325,573	$ 506,808	$ —	$ 89,777	$ 922,158	$ 608,810
Note receivables	5,000	—	—	—	5,000	10,000
Other receivables	3,474	—	—	—	3,474	23,636
Accrued interest receivable	9,696	—	—	—	9,696	10,380
Inventory	65,828	—	—	—	65,828	27,848
Prepaid expenses	96,137	—	—	—	96,137	86,535
Total Current Assets	505,708	506,808	—	89,777	1,102,293	767,209
INVESTMENTS:						
Partnership, Corporate Stocks/Bonds	529,500	74,486	—	52,403	656,389	716,978
PROPERTY/EQUIPMENT, at costs						
Automobiles	10,000	—	—	—	10,000	10,000
Office furniture	98,420	—	—	—	98,420	98,006
Equipment	287,721	—	—	—	287,721	265,121
Leasehold improvements	61,243	—	—	—	61,243	61,243
Capitalized leased equipment	17,190	—	—	—	17,190	—
Land	—	—	17,000	—	17,000	17,000
	474,574	—	17,000	—	491,574	451,370
Accumulated depreciation	(257,579)	—	—	—	(257,579)	(191,349)
Net property and equipment	216,995	—	17,000	—	233,995	260,021
OTHER ASSETS:						
Notes receivable, longterm	25,000	—	—	—	25,000	25,000
Accrued distribution: Partnership investment	75,648	—	—	—	75,648	9,936
Total other assets	100,648	—	—	—	100,648	34,936
TOTAL ASSETS:	$ 1,352,851	$ 581,294	$ 17,000	$ 142,180	$ 2,093,325	$ 1,779,144
CURRENT LIABILITIES:						
Accounts payable	$ 248,037	$ —	$ —	$ —	$ 248,037	$ 182,193
Payroll taxes withheld, accrued	12,944	—	—	—	12,944	11,577
Security deposits	3,833	—	—	—	3,833	346
Accrued expenses	95,238	—	—	—	95,238	126,621
Current maturities of capitalized lease obligation	9,745	—	—	—	9,745	—
Total Current Liabilities	369,797	—	—	—	369,797	320,737
DEFERRED INCOME:						
Restricted	3,108	—	—	—	3,108	207,290
Unrestricted	106,825	—	—	—	106,825	—
Total Deferred Income	109,933	—	—	—	109,933	207,290
LONG-TERM DEBT:						
Obligations: capitalized leases	62,075	—	—	—	62,075	—
Less current maturities	(9,745)	—	—	—	(9,745)	—
Total Long-term Debt	52,330	—	—	—	52,330	—
FUND BALANCES:						
Unrestricted	820,791	—	—	—	820,791	812,636
Restricted - nonexpendable	—	581,294	17,000	142,180	740,474	438,481
Total Fund Balances	820,791	581,294	17,000	142,180	1,561,265	1,251,117
TOTAL LIABILITIES AND FUND BALANCES	$ 1,352,851	$ 581,294	$ 17,000	$ 142,180	$ 2,093,325	$ 1,779,144

March For Parks

Nationwide, Citizens Take A Walk for Open Space

By Elizabeth Hedstrom

The drive across Custer County, South Dakota, takes about an hour. The weathered mountains of Black Hills National Forest rise up on all sides, hiding the crystal-lined caverns of Wind Cave National Park and Jewel Cave National Monument. In the southern Black Hills' Custer State Park, rock formations point like needles toward the sky, and buffalo roam the prairie and the pine forests. From Custer County, it is another 20 minutes to Mount Rushmore National Memorial.

"Everyone who lives here is very conscious of the role the parks play in our daily life and in tourism in our area," said Linde Manlove, executive director of the Custer County Chamber of Commerce. This month, Manlove will be bringing NPCA's March for Parks to Custer County.

Along with the Custer County Chamber of Commerce, local groups and individuals across the country are organizing March for Parks events in their communities. March for Parks will take place on Saturday, March 24, and Sunday, March 25, 1990.

On those two days, marchers will follow short, scenic walk routes in thousands of cities and towns. Along with showing their support for parks and environmental issues, they will be raising and collecting contributions for local, state, and national parks and open spaces.

One half of the funds raised will be used for local projects of the March organizers' choosing. Examples are educational programs, land acquisition, and tree planting. The other half will be used for NPCA activities that benefit all communities, such as the Save Park Wildlife Now! campaign and the Conservation Education Program for school children.

March for Parks will also be a way for participants to demonstrate the importance of parks in their lives. For the 6,000 residents of Custer County, Linde Manlove explained, public lands are a central part of life.

"Ninety percent of the county is within Black Hills National Forest," Manlove said. Tourists attracted to the Black Hills, Wind Cave, Jewel Cave, and Custer State Park provide "for much of the year, most" of the county's income.

March for Parks will promote Custer County's natural beauties. It will also be part of a series of environmental events the Custer County Chamber of Commerce has been sponsoring. "We know we want to do something spectacular for Earth Day, and we thought this would be a good lead-in," Manlove said.

Marnie Herrmann, the Chamber's special events coordinator, explained their goal. "We're doing environmental education for adults. We want to help people become more aware of their environment and create lifestyle habits that will help preserve it."

"This is not a realm that most Chambers get into," Herrmann said. "The main reason is that our economy depends heavily upon tourism. Also, the current drought and water shortages have caused the city to cease issuing building permits."

This limits economic growth, Herrmann explained, and so water conservation and environmental awareness now make good business sense.

"What we sell is where we live—the mountains, the lakes—so we want to keep it in as good shape as we can."

Custer County is organizing a March for Parks event because of the place parks have in the daily life of every Custer resident. Leslie Beebe is planning one in order to extend her own experience with parks to her students.

Beebe, an earth science and chemistry teacher at Christopher Columbus Middle School in Clifton, New Jersey, is a summer ranger. For the last two summers, she has been an interpreter at Cape Cod National Seashore visitor center.

"I bring a lot of my experience as a ranger back to the classroom," Beebe said. "I take a lot of pictures, and talk about my experiences."

A school-wide March for Parks would give her a chance to interest all the school's students in parks. Beebe also described March for Parks as an educational opportunity.

"I thought we could incorporate it into all the different subjects," she said. "The math students could help plan out the route. They could work with geography on the maps. The foreign language classes could learn about the history of national parks in the countries they're studying. History classes could research the idea and the history of national parks, and find out about the history of nearby national parks."

For her own classes, Beebe said, "I can teach ecology, and how rangers protect the environment from people and people from the environment. We can take some field trips to local parks."

Beebe plans to set up a committee of elected student representatives to plan the school's participation in the March. "I want to get as many kids as possible involved," she said. She hopes to bring the entire school district into the March, along with her school's 800 students.

A variety of conservation and outdoors groups are getting involved in March for Parks as well. Richard White-Smith, director of the New York Parks and Conservation Association, says that he is talking with Earth Day coalitions, the New York state parks agency, friends of the parks organizations, and other such groups to "get the word out."

White-Smith said that March for Parks "will provide greatly increased visibility for state, local, and national parks. People need to become more aware of the environmentally sensitive nature of our parks, and the central role they play in providing recreational opportunities."

Susan Henley, executive director of the American Hiking Society, said that AHS endorses March for Parks. In urging its club and trail affiliates to join in the March, Henley said, they will benefit too, since the March "will highlight hiking and walking in natural areas."

Along with marching, other ways to get involved include teaming up with coworkers and asking your employer to sponsor the team or to match donations, and volunteering to help organize the event in your town.

March for Parks is a kick-off event for Earth Day 1990, which will take place on April 22. The National Celebration of the Outdoors (April 22-29) recognizes March for Parks as a premier event to raise public funds for environmental issues.

Woody Woodpecker® is the national March for Parks mascot. His parent company, Walter Lantz Productions, is one of the March's corporate sponsors. Other sponsors include Fuji Photo Film U.S.A., Tension Envelope, KC Publications, Bon Ami Company, Jansport, and Vasque boots.

Local groups and individuals are organizing March for Parks events across the country. Call the toll-free March hotline, 1-800-225-WALK, for more information about participating in March for Parks in your community.

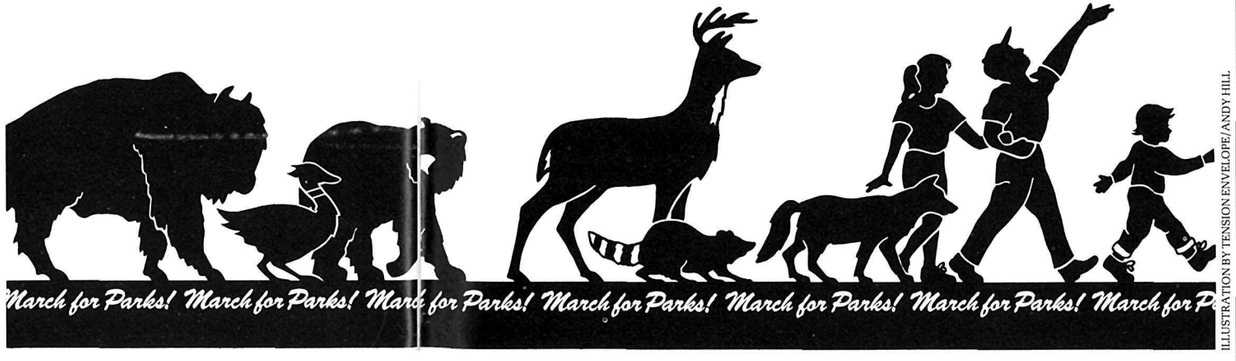


ILLUSTRATION BY TENSION ENVELOPE/ANDY HILL

Honor Roll

NPCA held its tenth annual members reception and dinner Thursday, November 16, at the Grand Hyatt Hotel in Washington, D.C. More than 350 of NPCA's supporters, guests, and members were there to enjoy the reception and dinner, and the awards ceremony that followed.

Senator Dale Bumpers (D-Ark.) received NPCA's Conservationist of the Year Award. The award recognizes Bumpers' leadership on environmental and parks issues.

He is chairman of the Senate subcommittee that oversees the national parks. In recent years he has played a key role in protecting Manassas National Battlefield Park from commercial development, creating several new parks, and adding 146,000 acres to Big Cypress National Preserve.

The Stephen Tyng Mather Award was presented to Yellowstone Superintendent Robert D. Barbee for his leadership during the Yellowstone fires of 1988. At the time, Barbee, a 31-year veteran of the National Park Service, came under intense media scrutiny and criticism for upholding existing NPS fire policy. "Now it's hard to find someone who doubts . . . that the park is a better place because of Barbee's courageous stand," NPCA President Paul Pritchard said.

The National Park Service and NPCA presented the 1989 National Freeman Tilden Award on Wednesday, November 8, at the Science Museum of Minnesota. The award is presented each year to an outstanding NPS interpreter.

The 1989 winner is Ranger James E. Small II of Andersonville National Historic Site in Andersonville, Georgia. Andersonville NHS preserves an infamous Confederate prisoner-of-war camp, in which close to 13,000 soldiers and 115 guards died between February 1864 and April 1865. For the camp's 125th anniversary, Small reconstructed the camp's stockade wall and shebangs (makeshift shelters), wrote and directed a drama based on the camp's history, and developed an active volunteer program.

Volunteers Wanted

NPCA's Washington, D.C., office needs volunteers to assist the Development department with public relations, fundraising, and coordinating events and trips. In addition, NPCA's Federal Activities department offers six- to eight-week internships for college students and graduates interested in parks and the legislative process.

For more information, contact Elliot Gruber (Development), or the internship coordinator (Federal Activities), at (202) 944-8530.

NPCA Intern Positions Available

who: college students and graduates with an interest in environmental issues to volunteer in the following areas: public relations, advertising, federal activities, and *National Parks* magazine.

where: NPCA's national headquarters in Washington, D.C.

when: this summer or any three-month period during the year.

what: attend congressional hearings • write articles for *National Parks* magazine • conduct research • examine and evaluate park management plans • work with media relations

why: work directly with NPCA's professional staff • gain valuable experience dealing with Congress and the National Park Service • develop possible career choices • learn how a conservation organization develops its positions and how it influences environmental policy-making • make valuable contributions to NPCA's environmental work.

Send cover letter, resume, and writing sample to NPCA, 1015 31st St, NW, Washington, D.C. 20007. Deadline for summer positions is April 30. For more information, write the Intern Program Coordinator at NPCA.

Elementary Fire

COVERAGE OF THE Yellowstone fires in the summer of 1988 touched most Americans. The intense discussion of fire management policy that followed, however, was confusing to most people.

Although fire is one of the most constant of natural events, its role is just beginning to be understood.

The Book of Fire by William H. Cottrell, Jr., presents the chemistry of fire from its most basic elements (the construction of an electron cloud) to subtle explanations about how to tell whether or not a tree was dead when it burned.

Each concept in the complex inner workings of fire is presented through words and colorful drawings. Probably, this book will teach you more about fire than you thought there was to know.

The Book of Fire, by William H. Cottrell, Jr., Mountain Press Publishing Company; paperback, 70 pages; $12.95.

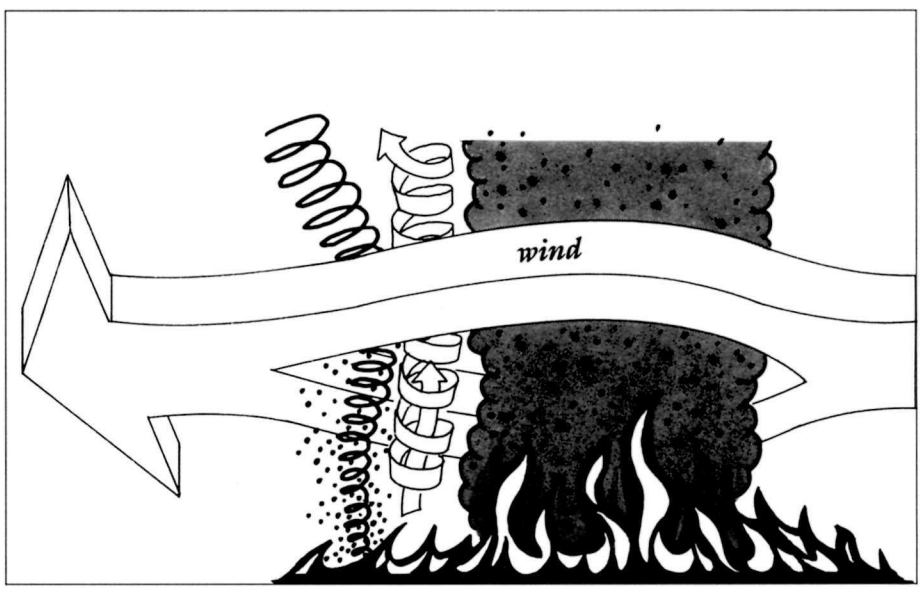
New Look at Trails

The National Park Service has begun a new—and long-awaited—national series of trail guides, beginning with *Trails of the Mid-Atlantic Region.* This book is supposed to offer something for everyone. Unlike most trail books, which are dedicated to one type of trail user, the NPS guide successfully directs casual and serious crosscountry skiers, horseback riders, hikers, off-road-vehicle riders, and bikers.

It has a large, 11-by-16-inch format, with atlas-sized maps, specific descriptions of different trails, and charts detailing the uses of each trail. This comprehensive guide gives readers a rich feeling for the region's natural history, as well as a comprehensive guide to the region's trail opportunities.

Of course, there have been some complaints: the book is too big to carry around; the introduction is not clear

Large fires may produce turbulent whirlwinds that seem to originate in the downwind side of the smoke column. Whirlwinds are rare but dangerous.



enough to help readers find their way through the complex maps and their symbols. The cost is a little high for the average user, and the format is confusing. While not suitable for sticking in a backpack or hanging from a handle bar, it is an effective pretrip planning guide.

Trails of the Mid-Atlantic Region (paperback, 70 pages, full-color photographs and maps) is available through U. S. Government Printing Office, Washington, D.C. 20402. Send check or money order for $17, plus $2.40 for postage and handling.

—Jennifer Seher

Video Mart

The Video Project was established to "distribute films and videos for a safe and sustainable world." This year's catalogue includes environmental films that can be rented or bought. For your copy call (415) 655-9050 or write the Video Project, 5332 College Ave., Suite 101, Oakland, CA 94618.

Easy & Effective

Conservationists hope that Maryland is just the first of many states to inaugurate an environmental checkoff on state income tax returns. The funds that people allotted for Chesapeake Bay and endangered species on Maryland's state tax forms surpassed all expectations: $960,000 in donations. The money will be used for research on nongame species and Chesapeake Bay education.

Greentapping for Nature

Working Assets Funding Service, a small California firm, has developed a concept they call "greentapping." The firm sponsors projects that enable people to contribute to nonprofit groups in the course of their daily activities.

Each year Working Assets members vote on which groups get the donations. Last year their programs raised over $300,000 for environmental, human rights, peace, and economic justice organizations.

One of their programs, Working Assets Long Distance, done in cooperation with U. S. Sprint, dedicates one percent of U. S. Sprint telephone calls to social action groups with no cost to the caller. Call 1-800-522-7759 to sign up. There is also a Working Assets travel service that offers free booking, lower fares, 24-hour emergency hotline, and socially responsible tours.

Two percent of travel-service charges are donated to nonprofit action groups. For information, call 1-800-332-3637.

National Geo Specials

Beginning its 25th season, National Geographic's first television nature special will be *Amazon: Land of the Flooded Forest* on Wednesday, January 10, at 8 p.m. (check local listings for PBS times). The program looks at the Brazilian Amazonia ecosystem and the people who depend on it. Other programs include *Bali, Masterpiece of the Gods,* on February 7; *Journey to the Forgotten River,* the ebb and flow of life along the floodplain of the Linyanti River in Botswana on March 7; *Voices of Leningrad,* the significance of *perestroika* to citizens of one of the Soviet Union's most historic cities on April 4.

As always, nonprofit educational institutions are urged to tape these specials for educational use. A "Resource Guide for Teachers" is also available. Write National Geographic Specials, c/o Chevron, 724 Bancroft Way, Berkeley, CA 94710.

Final Notes: Currently, 45,000 people volunteer to work in the national parks. If you have been tempted to volunteer, the NPS is making it a little bit simpler for you. They have just published a glossy brochure explaining how to become a VIP (Volunteer in the Parks), which includes a map of all NPS areas. It is available at national park areas.... The annual American Hiking Society Volunteer Vacation program has many new trips available this year. Write AHS Volunteer Vacation, P.O. Box 86, North Situate, MA 02060.... Entries for the 1990 North American Outdoor Film/Video Awards, sponsored by the Outdoor Writers Association of America, are due on January 22, 1990. For an entry form, write Lorna Domke, Committee Chairman, c/o Missouri Department of Conservation, 2901 W. Truman Blvd., Jefferson City, M0 65102.

MOUNTAIN LION

Continued from page 23

cougar might associate with prey. In addition, through current studies, they may find ways to move problem lions or close or reroute trails to prevent attacks. But with recovering mountain lion populations facing burgeoning numbers of people, it may be impossible to avoid clashes between the two species.

In south Florida the Florida panther has adapted to humid swamps with fur that is a darker red but not as thick as its western counterpart. The few panthers that survived bounty hunting in decades past have found most of their habitat destroyed by urbanization.

As part of an extensive federal and state recovery effort, scientists fly over the Everglades every day to pinpoint and monitor the three panthers wearing radio collars (two other collared cats died recently, and one was struck by a truck and injured). Researchers monitor, as closely as possible, the three or four uncollared panthers that reside in the park. Biologists are also examining the prey base and how it affects the cat population.

As part of a cooperative effort involving state agencies and NPS, other biologists are planning a captive breeding program. They hope to maximize the panthers' genetic stock and prevent them from becoming weakened through inbreeding. Besides functioning as a kind of savings account of panthers, ensuring the species' survival even if its numbers continue to decline, the program will aim to raise cats that can then be released into the wild.

"Hopefully, we're not seeing the tail end of the panther's attempt to survive," says Sonny Bass, a biologist heading the National Park Service's role in the recovery effort. "But because these animals are so territorial, they need the space and habitat they're used to."

With research unveiling some of their unique needs and habits, cougars are far better understood and appreciated than a decade ago, but the stately cat still has its secrets. Nobody is sure just how much human interference cougars can stand, nor how much unfettered room they need to survive.

And since they behave so differently in varying environments, a rule accurate for cougars in California, for instance, may or may not hold true for cats in Nevada. Thus, except for the few that have done research, most national parks with seemingly sizeable cougar populations—Glacier, Olympic, and Yosemite, for example—lack even the most basic information about resident lions, including how many there are.

"The attitude seems to be, if it's not broken, don't fix it," Hornocker says. "They are a difficult animal to study because they're so elusive. But because of tight-fisted funding, unless animals are in trouble, they don't get any attention."

Larry Hays, a resource management specialist at Zion National Park in Utah, can recall climbing around a slab of sandstone and looking up to see a large female cougar watching him from a ledge about ten feet away. That was as close as he has come to knowing the creature.

Rangers suspect that Zion's cougars may be suffering from poaching and hunting on all sides, but the park no longer employs a full-time biologist, so no one knows for sure. Requests for funding to examine the status of park cougars have been rejected.

"All we've got are growing concerns and no answers," Hays sighs. "By its very nature, the cougar is a hard animal to know. Without some decent research, we could have a population in trouble here and not even realize it."

Michael Milstein, a former NPS ranger, is now a reporter for the Billings Gazette. *He last wrote on poaching for* National Parks.

In October, NPCA received the 1989 June Norcross Webster grant from the Norcross Wildlife Foundation, Inc., of New York. The $50,000 grant will help protect the highly endangered Florida panther.

Funds from the donation will be used to acquire and protect critical panther habitat outside the boundaries of Big Cypress National Preserve. NPCA urgently needs more funds, however, in order to acquire other critical acreage in the area.

CLASSIFIEDS

$1.25 per word—minimum $20.00. Send copy with check to
Classified Advertising Manager, National Parks, 1015 Thirty-first St., N.W., Wash. D.C. 20007.
Any ad not accompanied by check cannot be printed.

Travel/Tours

SUWANNEE RIVER HOUSEBOAT CRUISE. Professional Naturalist guides. Five days. Nights in motels. Side trips-snorkel, hike, canoe. Excellent birding, fishing, incredible scenery. Manatees, eagles, alligators. Wilderness setting. Bixler-Naturalist Tours, Box 37, Hiram, Ohio 44234 (216)-569-3222.

AUSTRALIA/NEW ZEALAND WALKABOUTS: Custom designed our itineraries featuring nature and outdoor activities. Enjoy hiking and camping safaris, lodge stays, and island resourts in New Zealand's scenic National Parks and Milford Track; Australia's Outback, Tropical North, and Great Barrier Reef. PACIFIC EXPLORATION CO., Box 3042-P, Santa Barbara, CA 93130. (805) 687-7282.

Resorts/Ranches

LOS PINOS RANCH. Cowles, New Mexico, near Santa Fe, Pecos Wilderness. Accommodates 16 in relaxed atmosphere. June to October. No poisonous snakes, scorpions, mosquitoes. Magnificent riding, trips, trout, excellent food. Address: P.O. Box 24, Gloncta, NM 87535. (505) 757-6213/6679.

St. John, U.S.V.I. — National Park surrounds luxury North Shore home. Walk to beach, shuttles, trails. Rent main or guest quarters. Also, oceanfront home on acre. Many extras. Rent or sale $475,000. 713-358-6827/1-800-284-4566

FREE TRAVEL ACCOMMODATIONS made possible by the World Home Exchange Network. First computerized exchange service. For more information call 1 (800) SAY-WHEN or write WHEN, 878 30th Avenue, San Francisco, CA 94121.

Miscellaneous

Camper or Van Needed to Help Our Efforts to Save the Arctic National Wildlife Refuge. We need someone wonderful and crazy enough to lend us their van for six months! The Northern Alaska Environmental Center is organizing a traveling slide presentation to show Americans the spectacular values of the Arctic National Wildlife Refuge, the impacts of oil development at Prudhoe Bay, and the urgent need to protect the Refuge coastal plain. Our funds are very tight. A van or similar vehicle in good condition would save a major expense and greatly facilitate our ability to get this show on the road. Contact Larry Landry at the Northern Alaska Environmental Center (NAEC), 218 Driveway, Fairbanks, Alaska 99701, 907-452-5021 ir 907-451-6479.

LET THE GOVERNMENT FINANCE your small business. Grants/loans to $500,000. Free recorded message: 707-449-8600. (KL8)

Videos

DOWN HOME NATURE DOCUMENTARIES. 2 hours, color, sound. 1. Trnp, ND 2. Baxter, Maine 3. Atlantic Shorelands 4. Eastern Skylands 5. NYC 6. Washington, D.C. 7. Moon 8. Fireworks. $12.45 ppd, each, as is. Michael McGrath, POB 129 Hewitt, NJ 07421

Publications

THE INDIAN GUIDE TO THE COLUMBIA RIVER GORGE with the Legend of Fire Mountain. Send $2.00 for Guide, PO Box 541, Mosier, Oregon 97040.

Jobs Opportunities

JOB SCAN! National, monthly listing of natural resource/environmental jobs (32+ pages @ mo). Executive-entry level, internships and articles. $4/Single, $22/6mo, $39/1yr. Write: JOB SCAN, PO Box 550, Charlestown, NH 03603

ALASKA SUMMER JOBS: Work in the majestic splendor of Denali Nat'l Park. 250+ jobs in all aspects of hotel/resort operations. Send self addressed stamped envelope to: ARA Outdoor world, 825 W. 8th Ave. #101, Anchorage, AK 99501.

Workshops

NATIONAL PARKS PHOTOGRAPHY WORKSHOPS. Weeklong workshop experiences held during 1990 at Hawaii, Yosemite, Grand Canyon, Yellowstone, Zion, Acadia and others. THE IMAGE EXPERIENCE, 302 Astor Court, Delmar, New York 12054. (518) 439-8347times and nature. G.H. PO Box 82804 Kenmore WA 98028

Merchandise

WILDLIFE SCULPTURES. Miniature to Monument. Commissions & limited editions. Birds, mammals, reptiles, canine, equine. Write: RALPH MASSEY, 26 Shallow Wood Court, Foristell, MO. 63348

Dinosaur Monument

THE FIRST impression on entering the quarry at Dinosaur National Monument in northeastern Utah may be confusion. The cliff face is a jumble of fossil bones that looks like the leavings of an enormous turkey dinner. Nowhere do we see the entire, assembled dinosaur skeleton—the usual museum exhibit—that was expected.

Instead, the quarry exhibits only the bones, placed as nature scattered them in the environment that existed here 140 million years ago. True, at one time large loads of fossils from this area were removed and shipped to museums around the country, where they were painstakingly assembled into skeletons.

But, now, fossil bones are not removed. Only their surfaces are exposed. There they will remain, embedded in a tilted 12-foot-thick layer that lies between other rock strata.

These dinosaurs died from unknown but quite ordinary causes on or near an ancient river. Over time the river carried some of the dead animals downstream. Where the current became slower—in this case, on a sandbar near the inside of a river bend—the bloated bodies came to rest. As they lay there, the decaying carcasses were mauled and devoured by scavengers. The bones were then scattered by the river currents, which deposited them here and there in mixed piles.

Above: skull of Allosaurus. Above right: Like a shark, Allosaurus could replace lost teeth. Right: Dinochelys, new-found species of fossil turtle. Far right: fossilized dinosaur bone, magnified 100-fold. Silicate minerals make the bones look iridescent. Opposite page: lab technicians working at Dinosaur.

It is even possible to determine the direction of the river current by noting the position of some of the flexible body parts—the long tails and necks—that trailed downstream toward the east, where they came to lie and where they are to this day.

Only those bones that were completely covered by sand became fossilized. The soft parts, such as marrow, decayed and silica filled the hollow spaces.

As a result, the fossils are part rock and part actual dinosaur bone. The results were so perfect that even the microscopic structure of the bone can now be seen.

Tons of river sand, volcanic ash, and marine muds compressed and covered the fossils, [often] to a depth of a mile. Then, upheaval and erosion over millions of years exhumed the ancient sandbar and its bountiful treasure.

Excerpted from Dinosaur: The Story Behind the Scenery, *text and photographs by Allen Hagood; KC Publications. Available from NPCA Park Education Center, 1015 Thirty-first St., NW, Washington, D.C. 20007; 32 pp, PB, $5.50 (includes postage/handling).*

We'd like to clean up more than a few bathrooms.

For over 100 years Bon Ami has been demonstrating that you don't have to be tough on the environment to be tough on dirt.

But assuring our children a worthwhile future requires more from each of us than merely doing no harm.

That's why we actively support organizations such as the National Parks and Conservation Association.

And why we ask you to join us.

Thank you.

Faultless Starch/Bon Ami Company, Kansas City, Missouri 64101.