National Parks

Jan/Feb 86

Commentary

Canary in the Mine

Invariably, in any philosophical discussion of societal issues and the value of national parks, someone will ask, "Do we really need parks, or are we just lucky that we, as Americans, can afford parks?" There is the implication that parks are the expression of an extravagant nation with a great deal of wealth and a great deal of land, and that these areas should be used better to enhance the economy by mining, timbering, or other nonpark economic uses.

In response, it is easy to argue economic *return* to the nation from national parks. More than 300,000,000 people visit the parks every year, spending tens of dollars per person per day. Parks are a principal source of income for some states. And the benefits are like a never-ending mother lode if we don't overuse them.

On the other side is the justification for parks that the great landscape designer Frederick Law Olmsted called the "contemplative faculty," the ability of the human species to be inspired just by watching and enjoying a natural scene. It's hard to measure, but the value is very real for someone who has stood in awe at the south rim of the Grand Canyon or watched the rocky surf at Acadia.

But the first and foremost reason for parks, for National Park Service Director Bill Mott and for me, is the biological diversity and the historical diversity that the national parks represent. It is crucial that we maintain in our parks the healthy "gene pools"—unique ecological diversity—that was present when our nation was founded. These gene pools have intrinsic value, a right to exist by the very fact that they do exist.

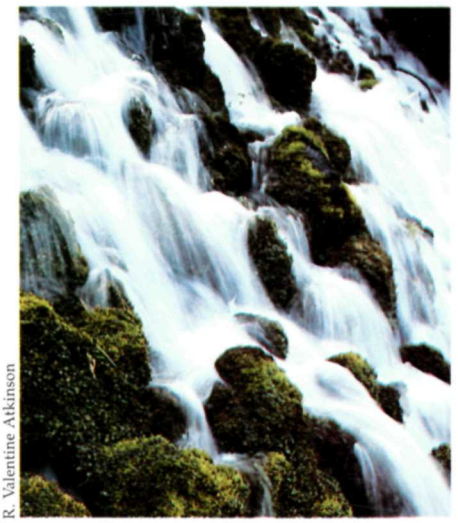
They also represent awesome combinations of genetic diversity that have scientific value for this and for all future generations of scientists. Thoreau said it best: "wilderness is the preservation of the earth," including both the genetic diversity and the contemplative faculty.

Unfortunately, the National Park Service has never completed an inventory of the biological, geological, and cultural diversity represented within the park system. Inventories exist within individual parks, but these have never been coordinated in a fashion that shows which plant and animal species have healthy populations and which species may be headed toward decline.

The Park Service goal of genetic representation, however, is now the philosophical backbone of the world's conservation community. The International Union for the Conservation of Nature has said that healthy gene pools are a major priority for preserving the world's diverse plants and animals. NPS Director Mott, a trustee of the National Parks and Conservation Association, recently described the important role of genetic diversity in the *Courier,* the magazine for NPS employees:

"The genetic materials of tropical plants in Latin American national parks may lead to advances in dealing with famine and disease. Sustaining biological diversity is indeed a growing international concern for all of us."

A scientist once pointed out that the diversity issue is similar to the idea of a coal miner taking a caged canary into the mine. The miner could not smell the traces of deadly gases, but he knew he was in danger if the bird died. So it is with diversity in the parks. Unlike the miner, if the world loses its unique plants and animals, we as a species cannot run out of the cave.



R. Valentine Atkinson

Wild River, page 26

Editor's Note: As our world becomes more economically knit—with everything from strategic metals and agricultural produce to high fashion and high tech causing intricate and dependent webs—maintaining healthy gene pools becomes increasingly important. As strains of wheat or rice become more hybridized and less resistant, scientists try to reinject vigor into crops with the addition of genes from wild species.

Right now a gene war is simmering. Almost all wild sources come from Third World countries. All countries have access to the gene "banks" that house these seeds, cuttings, and roots. But development and dissemination of resistant, high-yield strains takes place in technological countries. Third World countries, who accuse the other side of "genetic imperialism," want to share in that scientific control. Unfortunately, but typically, the staff of life has become the center of a political struggle.

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National Parks

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The magazine of the National Parks and Conservation Association

Commentary

Features

Departments

Cover: **Ocelots, by Jeff Foott**
The last substantial U.S. population of the endangered ocelot ranges in the lower Rio Grande Valley of Texas. NPCA is investigating the possibility of NPS protection for their habitat.

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.

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Feedback

We're interested in what you have to say. Write Feedback, 1701 18th Street, NW, Washington, D.C. 20009. (Letters may be edited for space considerations.)

Yosemite Was First

It becomes increasingly difficult to watch, without objecting, as "authoritative" publications such as *National Parks* continue to print articles stating that Yellowstone was the beginning of the national park concept.

Bob Anderson's "Yellowstone Unbound," [Nov./Dec. 1985] states flatly, "The Yellowstone legislation began one of America's finest traditions—protection of unique natural and cultural resources." On the contrary, congressional legislation set aside "that certain cleft or gorge . . ." known as Yosemite Valley, and ". . . the grove of big trees . . ." eight years before establishing Yellowstone.

In June of 1864, President Lincoln signed the bill establishing these wonders for all the people. Yellowstone may have been our first *designated* national park, but the concept of a national park and the legislation to accomplish this began eight years earlier at Yosemite.

Ed Hathaway
Tucson, Arizona

A Job Well Done

National Parks improves with every issue. The photos are spectacular and the writing professional. Thank you for a beautiful magazine.

Claire Francis
Grosse Point, Michigan

Silence Is Golden

I was greatly relieved to read Steve Whitney's article "Winter Playgrounds" [Nov./Dec. 1985] and to discover that there are steps being taken to limit the use of snowmobiles. My husband and I head for the mountains with our crosscountry skis whenever our schedules permit.

Last winter, our only weekend in Mount Rainier was badly marred by 15 snowmobiles, which periodically intruded upon our wilderness experience. The obnoxious, piercing noise and the unsightly gashes they leave in the snow are inexcusable.

If I had my way, snowmobiles would be entirely outlawed in the national parks.

Margaret Sheldon
Seattle, Washington

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Archeological Vandalism and Looting Get Senate's Attention at Hearing

Senator Jeff Bingaman (D-N.M.) organized a recent oversight hearing to discuss the problems of preserving NPS archeological resources. The Senate Energy subcommittee, chaired by Senator Pete Domenici (R-N.M.), heard testimony relating to vandalism and looting of artifacts, especially in the Southwest.

Pots and other artifacts from Anasazi sites are in demand and bring high prices. In the East, thieves have looted Civil War ordnance and other military relics from parks such as Manassas and Richmond Battlefield.

Laura Beaty, NPCA cultural resources coordinator, made six recommendations for solving some of the problems. She pointed out that NPCA's recommendations are based on information contained in the NPS 1982 "Threats to Cultural Resources Report."

The threats report is the only document that fully assesses the state of NPS cultural resources. Followup reports are needed, said Beaty, in order to identify the progress made in solving these threats.

She also said, "The Fiscal Year 1986 budget document states that the Service does not know the number of archeological sites that it manages. Yet, it reduces the funding source that would provide for archeological surveys."

The biggest problems in protecting archeological sites are the lack of NPS staff—especially trained staff—to protect such areas and the lack of cooperation from other federal agencies.

NPCA recommends:
1. taking inventories of cultural resources;
2. training park staff to recognize and protect resources;
3. setting up a system for reporting incidents of archeological vandalism and looting;
4. educating the public about these problems;
5. strengthening and enforcing legal protections;
6. preparing periodic "State of the Parks" reports.

Senate Bill Allows NPS to Purchase Land for Acadia

On December 3, the full Senate passed legislation that settles Acadia National Park's boundaries. A crucial part of the bill allows the NPS to *acquire* land for the park.

The House is expected to take up the issue early this year, and no major changes are anticipated.

Related to the passage of the boundary legislation, NPCA's National Park Trust has been working on a project to save 78 acres adjacent to the park from imminent development. NPCA and others recognize 32 of these acres as a natural extension of the park.

The Senate agreed, and included the acreage in the new legislation.

NPCA Calls for Mather Award Nominations

Each year, NPCA honors those natural resource managers who have gone out of their way to protect the natural environment even if it meant risking their careers. NPCA is now seeking nominations for its third annual Stephen T. Mather Award.

Eligible is any seasonal or full-time public employee working in the field of natural resource management. State and local public servants are eligible as well as those employed by the NPS, BLM, and other federal agencies.

Nominees will have demonstrated initiative and resourcefulness in promoting environmental protection. And they may have "put their job on the line in their commitment to principles ahead of personal gain in their work."

The Mather Award winner will receive a cash prize of $1,000 and a framed certificate. Regional finalists will receive certificates of recognition. Nominating letters—due by March 1—should be sent to: NPCA Mather Award, 1701 18th St. NW, Washington, D.C. 20009.

DOE Pushes Back The Deadline for Nuke Dump Sites

The Department of Energy has been changing the methodology for choosing which potential nuclear dump sites to test. The new methodology may include Canyonlands in the top three choices.

Final recommendations for the test sites and final environmental assessments were due out in mid-December. The DOE has pushed back that deadline to mid-February.

San Rafael Swell Considered for National Park

Officials of Emory County have spearheaded a proposal to make the San Rafael Swell—informally known as Utah's sixth national park—an official national park. The idea has the backing of NPCA and Representative Howard Nielson (R-Utah), whose district includes the San Rafael Swell.

Emory County officials have been holding public meetings on the

idea, and their proposal would leave the area relatively untouched. Their idea includes a couple of roads and perhaps a visitor center at the Wedge Overlook, but little more.

The bluffs of the Swell and the rugged canyons of the adjoining San Rafael Reef have both been proposed as wilderness areas by the Bureau of Land Management, which administers the areas. If the park proposal goes forward, NPCA would like to see the Reef wedded to the park as a wilderness area.

Potential entanglements include grazing and air-quality issues.

NPS Has Solution For Park Highway At Chattanooga

For years, the Interior Department and the National Park Service have been countering requests to widen the highway that runs through Chickamauga and Chattanooga National Military Park. The road forms a bottleneck for Chattanooga commuters who travel from the city to their suburban homes south of the park.

The NPS knows that widening the road would destroy park resources and the integrity of these Civil War battlefields. NPS directors and interior secretaries have said no to the proposal; but, until now, no one has come up with an alternative.

NPS Director William Penn Mott, Jr., has suggested building a road that would circumvent the park: a bypass for both the park and a nagging issue. To completely resolve the highway question, the Georgia state highway department must now agree to the plan and get the road built.

Apply by March As Volunteer In the Parks

Each year the Student Conservation Association (SCA) matches up thousands of high-school and college volunteers with summer jobs in the national parks and forests. This year SCA expects to place 1,500 students. In order to be considered, you must apply by March 1.

Some of the jobs include trail or campground maintenance, trail patrols, wildlife research, and visitor assistance and education. Of course, the settings are highly desirable. And some students can arrange to receive academic credit for their work.

High-school students, 16-18 years old, live and work in backcountry areas in groups of up to a dozen for 3-5 weeks per session. Volunteers are only responsible for personal gear and transportation to and from the area. Limited financial assistance is available for those who demonstrate need.

Adult sessions usually last 12 weeks and duties parallel those of the professional resource staff. Basic living needs and round-trip transportation are provided. The SCA also has a volunteer program for the hearing-impaired.

To receive an application, contact: Student Conservation Association, P.O. Box 550, Charlestown, N.H. 03603, (603) 826-5206.

Shopping Center Threatens History At Antietam

Antietam Battlefield is a name that reverberates with Civil War history. More Americans died in that battle than in any other in our history. And many consider the battle a turning point in the effort to stop General Lee's march on Washington.

Of all the Civil War sites, it is the most perfectly preserved. Washington County, however, has rezoned nearby agricultural lands in order to allow the construction of a shopping center.

"Where there's shopping centers, there's new houses; where there's new houses, there's new roads ... and more new houses and shopping centers," said a past president of the Hagerstown/Harpers Ferry Civil War Round Table.

Antietam and the historic town of Sharpsburg, Maryland, have changed very little since 1862, when Lincoln and General McClellan met to discuss strategy at Grove Farm. The farm is part of the rezoned area. A solution would be to site the proposed shopping center elsewhere in the vicinity.

NPCA Opposes Gravel Mining In Grand Tetons

Plans to mine gravel within Grand Teton National Park to repair Jackson Lake Dam have recently surfaced.

In an effort to protect the park from inappropriate use, NPCA attorneys have sent a letter to Assistant Secretary of Interior William Horne. The letter outlines legal conclusions regarding mining at Pilgrim Creek in order to collect gravel for repairing the dam.

NPCA believes that mining in national parks is inconsistant with the original purposes for which the parks were established.

Only Congress can authorize mining in parks. Because Congress has not authorized this mining project, NPCA believes that any mining activity on park land within Grand Teton would be illegal.

Pursuing a Park Job In Summer or Winter

Ways to Match Your Skills With Seasonal Employment

The National Parks are most popular during the summer and winter months. To meet the need for increased services required by these semi-annual concentrations of visitors, the National Park Service hires seasonal employees to augment its permanent staff. Getting a job as a seasonal is an ideal way for college students, teachers, retired individuals, or skilled craftspeople such as electricians, potters, or bricklayers to enjoy and contribute to the parks. If you know about history, biology, or archeology, you can put your knowledge to challenging and rewarding use.

You could lead a marsh walk at Assateague Island National Seashore, work at the information desk at Yellowstone National Park, dig for Civil War relics at Manassas National Battlefield, or participate in a re-enactment of Custer's Last Stand at Custer Battlefield National Monument. Competition for seasonal positions is keen, but if you want to do valuable work in a beautiful setting, you are a candidate for seasonal employment.

—Kirsten Bevinetto

Park Concessioner Employee

Wages: Usually beginning at minimum wage.

Duties: Concessioners are private companies that provide visitor services in national parks. Many jobs are available in restaurants, lodging, and transportation. An employee at the Old Faithful Inn in Yellowstone may be serving a fine wine while, just in view, Old Faithful puts on its punctual display. On their days off, employees at Kilauea Volcano House, Ltd., can explore the slopes and rain forest of Hawaii Volcanoes National Park.

Applicants generally must be able to work an entire season and be at least 18 years of age.

How to Apply: Write to the concessioners for forms and procedures. The names and addresses of many national park concessioners are listed in the back of the booklet "Seasonal Employment," published by the National Park Service/USDI (GPO: 1984-449-405). This booklet is included in the seasonal employment package.

Seasonal Park Aide

Grades: GS-2 and GS-3

Duties: Basic support duties similar to those of a seasonal park technician, but more closely supervised.

A seasonal park aide might answer visitors' questions about wildflowers at the information desk at Rocky Mountain National Park; handle campground reservations at Grand Canyon National Park; or greet patrons who have come to see a live performance at Wolf Trap Farm Park for the Performing Arts.

Like other seasonals, park aides must find their own housing. Some parks provide government housing within park boundaries, and deduct modest rents from a seasonal's paycheck. In most cases, however, the parks provide lists of rooms and houses for rent in the nearby communities. Often, seasonals will room with permanent NPS employees.

How to Apply: Submit application form 10-139, which is included in the seasonal employment packet, to the Seasonal Employment Unit.

Seasonal Park Technician

Grades: GS-4 and GS-5

Duties: Fee collection, dispatcher, information desk, interpretation, fire fighting, conservation, law enforcement, and public safety.

As a seasonal park technician you may lead a guided tour of ancient Indian ruins at Chaco Culture National Historical Park; work as a lifeguard at Point Reyes, Pictured Rocks, or Cape Cod national seashores; or help restore historic artifacts at Harpers Ferry National Historical Park.

How to Apply: Same as for a seasonal park aide.

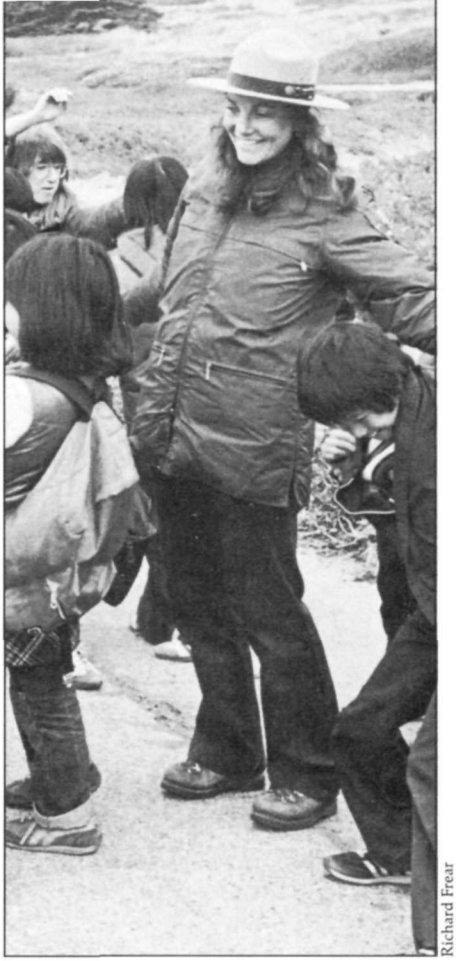
Information

•Applicants must be 18 years of age by May 13; in good physical condition; and have vision correctable to 20/30 in each eye.

•Applications for summer seasonal positions are accepted from September 1 to January 15. Applications for winter seasonal positions are accepted from June 1 to July 15. Letters must be postmarked by deadlines.

•The standard work week is 40 hours; and wages range from GS-2 ($5.03/hour) to GS-5 ($6.90/hour). Prevailing local wages govern maintenance and crafts positions.

•Most positions require an official uniform, which the National Park Service provides.



Richard Frear

Seasonal Laborer

Grades: WG-2 and WG-3
Duties: Unskilled outdoor work such as clearing trails in North Cascade National Park, forestry programs such as planting sequoia seedlings in Sequoia National Park, rebuilding bridges at Yellowstone, various maintenance activities, and other duties involving physical labor. Seasonal laborers garden and prune shrubs at Saint-Gaudens, repair NPS vehicles at Shenandoah, and care for the horses at Point Reyes.

How to Apply: Contact the regional National Park Service office in the geographic area that interests you, and ask for an application SF-171 and filing procedures.

Seasonal Park Ranger

Grade: Initially GS-4
Duties: Visitor services duties include interpreting natural, historic, or archeological features, such as preparing a museum exhibit on pioneer fur-trapping in Grand Teton National Park.

A seasonal ranger may also be asked to help plan and implement the management of a park's resources. For instance, a seasonal may work with the resource manager at Morristown National Historical Park on a comprehensive management plan that takes into account not only this park's historical features, but its natural areas as well.

Fire control; search-and-rescue activities such as saving climbers stranded on Half Dome in Yosemite National Park; law enforcement; and providing for the visitors' safety are all part of a seasonal ranger's duties.

How to Apply: Same as for a seasonal park aide.

Application Procedures

•Applications for summer employment are available from: Seasonal Employment Unit; National Park Service; P.O. Box 37127, Washington, DC 20013-7127, (202) 343-4885.

•For information regarding winter seasonal employment, contact the NPS regional office in the area where you want to work.

•You may photocopy the application, but all forms must be typed and bear an original signature.

•List all addresses and phone numbers with dates when you will be at each; and indicate your earliest reporting and latest departure date.

•Highlight all your areas of specialization and training.

Seasonal SkilledTrades/Crafts

Grades: WG-4 and above
Duties: Skilled and semi-skilled trades, including sawyer, trail maintenance personnel, boat operator at Isle Royale National Park, driver, mechanic, and carpenter to help restore historic buildings at Valley Forge National Historical Park.

How to Apply: Same as for seasonal laborer. Regional offices can be contacted at the following addresses: **Alaska,** 2525 Gambell St., Anchorage, AK 99503; **Pacific Northwest,** 2001 6th Ave., Seattle, WA 98121; **West,** 450 Golden Gate Ave., San Francisco, CA 94102; **Rocky Mountain,** P.O. Box 25287, Denver, CO 80225; **Southwest,** P.O. Box 728, Santa Fe, NM 87501; **Midwest,** 1709 Jackson St., Omaha, NE 68102; **Southeast,** Richard B. Russell Federal Bldg., 75 Spring St., SW, Atlanta, GA 30303; **National Capital,** 1100 Ohio Dr., SW, Washington, DC 20242; **Mid-Atlantic,** 143 S. 3rd St., Philadelphia, PA 19106; **North Atlantic,** 15 State St., Boston, MA 02109.

Library of the Wild

The National Parks: A Fragile Treasure of Species That Can Keep the Planet Alive and Well

by William Penn Mott, Jr.

Man's knowledge of the basic structures of plants and animals, of the world around us, is advancing more rapidly than ever before. Most of us are ignorant of the number of foods, medicines, and economic products that have been derived from the genes of wild resources originating all over the world.

The ability to synthesize vital materials—or even parts for the human body—is so new that we have trouble grasping the implications for the future. A number of recent events help to define where we are and where we appear to be heading.

University of Illinois scientists have discovered that bacteria found to be causing plant tumors are genetically linked to strains of bacteria that caused World War I "trench fever." These bacteria are also linked to a type of rickettsia similar to typhus, Rocky Mountain spotted fever, and an infectious disease known as Q fever. According to reports published in October, the evidence strongly suggests that all of these bacteria had a common genetic ancestor centuries ago.

Also, in October, the National Council on Gene Resources proposed a nationwide inventory of wild genetic resources of economic importance. Our genetic resources are a library of information ready to be unlocked through scientific inquiry and used to improve the well-being of society.

It is safe to say that most people fail to appreciate the immense importance of national parks and other protected areas as genetic information centers. Here the natural legacies of evolution are protected and maintained as free as possible from human interference.

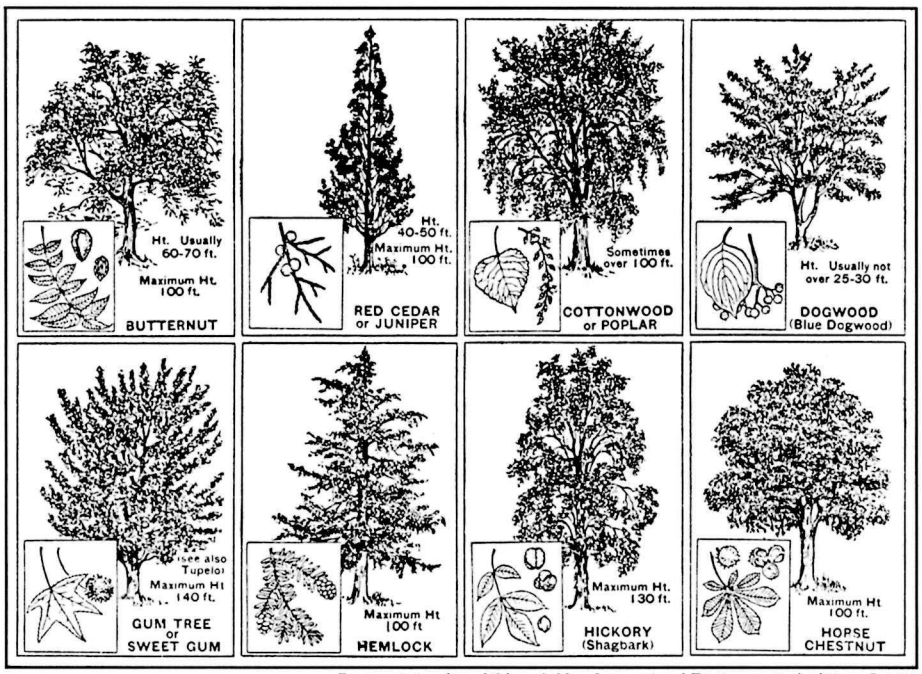
Within the United States, federal programs for conserving natural diversity are found in the National Park System, National Wildlife Refuge System, National Wilderness Preservation System, Wild and Scenic Rivers System, Marine Sanctuaries Program, and the wild and primitive areas within the national forests.

In the parks, the natural legacies of evolution are protected and maintained as free as possible from human interference.

Private organizations are engaged in programs to protect genetic diversity. Many states support gene conservation activities in state parks and forests and through natural heritage programs. And, internationally, the U.N.'s Man and the Biosphere program seeks to preserve ecosystems, habitats, and gene pools on a worldwide scale.

The National Park Service (NPS) historically has supported projects to conserve genetic resources. Examples include:

- Margery Oldfield's basic reference, *The Value of Conserving Genetic Resources* (published by the NPS in 1984);
- a 1982 conference, sponsored by the NPS and the Man and the Biosphere Program, on the Application of Genetics to the Management of Wild Populations of Genetic Resources;
- *Genetics and Conservation,* the first volume of a reference series based on this conference and edited by NPS scientist Christine Schonewald-Cox;
- an ethnobiology study now underway at Great Smoky Mountains National Park, which will produce the first computerized data base on cultural uses of the flora and fauna of a U.S. Biosphere Reserve;
- chosen as one of the world's representative biospheres, the Great Smokies also display a Man and the Biosphere exhibit;
- the NPS—in cooperation with Man and the Biosphere, Florida State University, the University of Colorado, and Yale University—is preparing an inventory and geographic information system of large protected natural areas of the United States.



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Margery Oldfield stated in her book: "I now believe that without an immediate and dramatic change in our attitudes about conservation of our genetic heritage by the turn of the century or shortly thereafter, nothing will forestall significant reductions in economic productivity due to the progressive deterioration of essential biotic support systems. Thus, the fate and survival of nations, and possibly the welfare of the entire human species, will probably be decided by the present generation."

Conserving the gene pools of wild crops is not merely an exercise prompted by an interest in history, she wrote. Wild species are important sources of genes for agricultural and medicinal purposes.

As Oldfield points out, three species of plants—corn, wheat, and rice—account for about two-thirds of the world's grain crop. Because most of the world's population is sustained by plant rather than animal foods, we must not lose the ability to go back to original gene resources to revitalize and improve crops.

We are learning continuously about how genetic material from the wild can be used for insect and disease control and many other purposes, including the following examples:

- planting a certain species of wild New Jersey blueberry among domestic blueberries will help the crop resist canker;
- Irish potato blight has been controlled in the United States with genes from wild species imported from other countries;
- tomatoes, melons, cucumbers, sugar cane, oats, wheat, rice, and corn all have been improved by introducing genetic materials from varied sources.

Today, about half of the medicines in use are derived from plants. These "natural" drug products also serve as blueprints for synthetic drugs.

Fungi that have been adapted to human medicinal use include "smut-of-rye," which is used to stop blood hemorrhaging and migraine headaches, and derivatives of penicillin molds, which are used for hundreds of beneficial purposes. Among the higher plants, gum arabic trees produce a gum used to treat dysentery, coughs, and fever; aloe plant extracts aid in healing skin irritations; and other plants produce familiar medicines such as quinine, castor oil, and the menthols.

In addition, animals provide us with hormones, thyroid extracts, estrogens, and the basis for many other medicines. In Japan, tetrodotoxin, a toxic extract from puffer fish, porcupine fish, and ocean sunfish, is used to numb the pains of patients with terminal cancer and leprosy. From other sea life, teams of scientists have uncovered a wealth of antimicrobial and antiviral compounds.

Because of their importance to our lives, the demise of plants and animals that produce natural medical ingredients has stirred worldwide concern. Flora such as quinine-producing plants and American ginseng have been overexploited. Hunted for real or imagined medicinal benefits, rhino, bear, and antelope are just a few of the animal species threatened with extinction.

The sense of urgency for preserving gene pools is not new. "The Preservation of Natural Diversity," a 1975 Nature Conservancy report done for the NPS, called for a nationwide system of ecological preserves to protect the full array of extant ecosystems, biological communities, endangered species habitats, and endangered physiochemical features.

The report showed that federal, state, and local governments as well as the private sector already protect natural areas through numerous programs. The survey also said, however, that these programs lack coordination, and substantial gaps exist. We must close these gaps.

As our capability to manipulate genes continues to accelerate, we will move rapidly into areas far removed from the historical natural diversity of plant and animal life. By preserving natural gene pools in carefully chosen parks around the world, we can provide stabilizers, reference points, and "benchmarks," which will become increasingly valuable as these futuristic changes occur.

William Penn Mott, Jr., director of the National Park Service, has been developing innovative ideas in his 12-point plan for protecting the national parks.

By the year 2,000, 20 percent of extant species may be extinct. The parks may save us.

The Parks as Genetic Islands

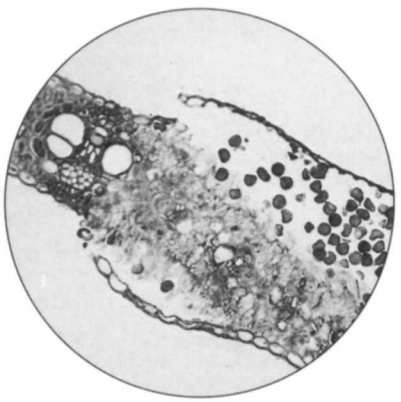
by Judith Freeman

Each day, as you brush your teeth and slice tomatoes for salad, more species of plants and animals may be disappearing than have ever been identified. Until recently each extinct species was mourned for its own sake: we regret the loss of the dodo bird and, therefore, try to protect the California condor. Now, scientists are looking at the most pervasive and curious genetic dieoff in history, one that threatens the collapse of the climatic, biological, and chemical systems of our planet.

Periods like this, when there are great losses of species, are called a "dieoff." There's evidence that these mass extinctions occur approximately every 26 million years, and none has occurred abruptly. More than 90 percent of the species that have ever lived have disappeared during dieoffs, which are a natural process of evolution. Dinosaurs are a dramatic example, and their demise was spread over two million years.

Usually biological dieoffs are followed by a strong spurt in evolution, a flowering of diverse species. Currently, according to the history of biological cycles, we should be in such a period of diversification. Instead, extant species are disappearing more quickly than new ones are being discovered.

Scientists have begun to watch extinctions for their global effects. They may try to save the Florida panther; but, increasingly, their real worry is the loss of global genetic variety and the effect this might have on the health of our crops and livestock, as well as on the future of medicine and scientific research.



Robert & Linda Mitchell

Corn rust, a typical fungal parasite, is dangerous to inbred crops.

The species extinctions that are occurring are particularly worrisome because most of them are caused by humans—they are the result of deforestation, pollution, water projects, disruption of animal migration routes, and the loss of natural areas to development.

Current scientific thinking sees the best solution in the creation of "genetic islands," or *in situ* gene reserves. These would be natural areas where healthy and diverse species populations could be maintained—areas such as national parks.

National Park Service Director William Penn Mott, Jr., shares this thinking. He wants the parks to become even more effective gene reserves, places where threatened and endangered plant and animal populations—and their habitats—would be protected.

Potentially, parks are open-air laboratories where scientists can track and monitor animals and plants, and possibly create facilities for gene banks and captive-breeding programs. Many people see national parks as the saving grace for biological diversity in the future: if they did not already exist, we would have to invent them.

As early as 1972, the progress report of the International Union for Conservation of Nature and Natural Resources (IUCN), a scientific organization created to protect wild, living resources, stated that "National parks and nature reserves can halt or delay changes in habitats and ecosystems." When those words were written they concerned the survival of endangered species alone, not entire ecosystems.

Yet, even in the National Park System, all is not well. Protected areas, including Everglades National Park, have been identified as endangered habitats; Hawaii parklands contain a number of that state's 822 endangered plants, the highest concentration of endangered plants in the world; and development that encroaches upon parks is threatening

Forest floor community; photo by J. M. Rowland (Mitchell)

populations of grizzlies, wolves, woodland caribou, and other animals. If the national parks are to become the genetic islands that will save our wild, living resources, these habitat problems need to be tackled immediately and with vigor. Many scientists think we are running out of time.

The most common rate of loss used by IUCN is one species of vertebrate each year, and they predict that by the year 2000—a mere 14 years away—20 percent of all extant species may be extinct. In addition, we may be losing countless species that are as yet unknown and unnamed.

Using computer modeling and extrapolations of natural surveys, scientists estimate that three million to ten million species of plants and animals exist on earth. Yet, only approximately 1.5 million have been identified.

Dr. Norman Meyers, an authority on international biological diversity, says that there are so many unidentified species being lost that it is possible that one species a day is disappearing from the tropical rain forests alone. In the less fecund terrain of the northern temperate zones, we may lose large numbers of invertebrates and unicellular organisms, which are the building blocks of entire ecosystems.

According to the Species Survival Commission, IUCN's task force on endangered species, in 14 years we may see the loss of more than 10,000 vertebrates and approximately 10 percent of the planet's quarter-of-a-million flowering plants. The Interior Department's Office of Endangered Species has compiled a list of possible U.S. threatened invertebrates of more than 1,100 species. But, according to Endangered Species botanist John Fay, "We are just too ignorant to know how many invertebrates are threatened worldwide." The extinction of one plant species can cause the loss of 10 to 30 other species that depend on that species.

This dramatic dieoff is occurring just as we are learning to use genetic resources, to manipulate genes. Between computer modeling and newly created techniques for splitting and reassembling genes,

Robert & Linda Mitchell

Ron Sanford

Above: the threatened Trans-Pecos rat snake, found in Big Bend National Park, has a very limited habitat.

Right: the migratory monarch butterfly passes through Yosemite National Park during its seasonal travels.

Opposite: even nonendangered animals, such as bobcats, are dependent on the National Park System for territory and safety.

species are becoming open books. Scientists talk about life forms as a library of information that we have only begun to explore.

Gene manipulation is not new. All domesticated crops and livestock were created by selective breeding, which was practiced intuitively for millennia before Gregor Mendel set forth his genetic principles in the nineteenth century.

These breeding techniques have been so pervasive and successful that now most of the crops in this country are "inbred line" strains that are genetically identical, according to Dr. Christine M. Schonewald-Cox, conservation biologist for the National Park Service. Because the genetic scope of our crops is so narrow, a singularly persistent blight or fungus could threaten the entire national crop.

We are more vulnerable than we realize. In fact, only 15 to 40 different plant species make up our entire food base. Ninety-five percent of the world diet is based on 30 species, with 75 percent coming from only eight crops: wheat, rice, maize, potato, barley, sweet potato, cassava, and grapes.

Agricultural botanists routinely search the world over to find wild species of grains and vegetables with which to revitalize enervated cultivated strains, making them more pest- and disease-resistant without poisons or dangerous chemicals. The sad testament of the Irish potato famine of 1845 showed that an entire society could be destroyed if it is dependent on one inbred crop. In fact, the Irish potato blight was finally controlled in the United States by crossbreeding vulnerable tubers with wild potatoes.

Genetic engineering, the art of isolating and manipulating genetic material, has opened up a vast storehouse of biological possibilities of incalculable economic and social value. According to Meyers, the human species uses less than 2 percent of the genetic resources available. Actually, says Schonewald-Cox, the figure is less than 1 percent if you include micro-organisms.

What we do use often depends on undomesticated species:

- 40 percent of prescription drugs sold in this country contain chemicals derived from the wild;
- the mayapple, a common forest flower used by the Cherokees to treat deafness and kill parasitic worms, is an ingredient in VePesid, a new drug that has been successful in treating testicular cancer;
- the threatened Florida manatee's blood contains a chemical that has been helpful to hemophiliacs;
- two decades ago, any child diagnosed with leukemia died within a year; now, English doctors are using a drug made from the rosy periwinkle to save three-fourths of their young patients.

Ironically, we are causing the demise of vast numbers of species just as we are learning to tap the resources of others. Life itself has become our richest unexplored natural resource; protecting and tapping it will require international cooperation. Even maintaining stable populations of gene pools for research is difficult because plants and animals know no national boundaries. Animals often cross continents on their yearly migrations. Plant seeds are carried on the winds, in the sea, in the craws of birds, the clothes and ships of man. If we destroy, say, the southern habitats of the monarch butterfly, its existence in northern zones may be affected also.

Ron Sanford

The most dramatic loss of genetic resources is taking place in the tropical rain forests, an ecological area that covers 8 percent of the world and supports at least 40 percent of life's species. This hothouse of life forms is located in some of the world's poorest countries, many of which—such as Bolivia, Brazil, and Kenya—are deeply indebted to the International Monetary Fund and similar aid organizations.

As these nations struggle to compete economically and support rapidly growing populations with very little, their rich rain forests are cut down, burned, and hampered by development. Besides the loss of genetic information and a wide range of natural resources, this destruction may irrevocably change global support systems, such as climate controls and water-table levels.

Developed countries are worried. In fact, senators William Roth (R-Del.), Claiborne Pell (D-R.I.), John Chafee (R-R.I.), and Alan Cranston (D-Calif.) recently introduced a bill in Congress that would find ways to protect tropical rain forests and biological diversity in developing countries under the Foreign Assistance Act of 1961; and other legislation is being considered.

The United Nations has set up special programs, the foremost being the Man and the Biosphere program, an international network of protected reserves where resource management techniques can be developed and demonstrated.

France, the United States, and other developed nations have urged less-developed nations to set aside parcels of land—parks—to be used as international gene reserves where species can be maintained and studied. Third World countries have become increasingly dependent on the monoculture crops used by western nations. Droughts, blights, and expensive agricultural technology have made them realize the importance of protecting their seeds and other natural resources. Countries such as the Philippines and Ethiopia have designated parklands and also have created some gene banks. Unfortunately, because underdeveloped countries often do not have the funds to manage their parklands, poaching and pillage occur.

Although the United States may offer funds, we have something equally valuable to offer: more than a century of expertise in habitat, animal, and plant management. NPS and other federal programs have repopulated parks and wildlife refuges with threatened and endangered species such as pronghorn antelope and bison from other areas.

Jonathan Ballou, population manager for the National Zoo, says that species have been successfully brought back from the edge of extinction. He cites a captive-breeding program that bred a very small group of endangered golden lion tamarins. The population eventually increased enough to reintroduce a number of the tamarins into the wilds of Brazil.

"Everywhere there has been a serious effort [to save a species] in zoos, the program has been successful. The genetic situation is not the end-all," he says. "You can adapt a species to inbreeding so they can do well."

Although we know a great deal about managing captive and controlled populations, far less is known about how species survive in the wild and how to help populations that are in trouble.

As biological conservationist for

the National Park Service, Schonewald-Cox has set up many of the research programs to study biological diversity in the national parks. Although the program now faces radical budget cuts, Schonewald-Cox outlines ways to make the study of biological diversity effective:

1. The NPS should create scientific principles and practices that would work for the entire park system and in cooperative efforts with state and local agencies. These standards could also be adapted for park systems throughout the world. National priorities are needed, and NPS science and management programs should not be worked out on an ad hoc basis;

2. There are not enough intermediary steps between the scientist and resource manager to allow a sophisticated delivery of conservation techniques and information. Schonewald-Cox would like to see the NPS create a system for studying the natural world similar to the National Institutes of Health's (NIH) role in the medical system:

"The NPS has a magnificent opportunity to develop a body of information that could be shared with the rest of the world—like the medical system does when it creates a vaccine. It wouldn't cost much money."

NIH funds pure medical research; this laboratory research is complemented by field work; and both are augmented by specialists working on individual cases. The knowledge and tested techniques developed by this system are then distributed to general practitioners.

Schonewald-Cox finds the NIH model an appropriate one for developing new techniques in the field of conservation biology. At present, she says, NPS scientists don't have time to develop workable techniques; and resource managers do not have the general principles needed to effectively tackle day-to-day projects. Both scientists and resource managers find themselves working on a crisis-by-crisis basis.

Darrell Gulin

Bull caribou thrive in the vast expanses of Denali National Park.

The lack of tested information makes the most basic management question difficult to answer. How large should a park—or a protected ecosystem—be in order to sustain a healthy elk herd? How large must the breeding population be? These are crucial questions.

The first priority, according to Schonewald-Cox, is to accumulate a common body of information on all national parks. "We don't even know what we have or how it works," she says. Bighorn sheep used to have healthy, self-sustaining populations in the parks. Now they require constant veterinary attention, and no one knows why.

We are more vulnerable than we realize. In fact, only 15 to 40 different plant species make up our entire food base.

In 1983, resource managers gave up a nine-year attempt to reintroduce bighorn to Lava Beds National Monument because they could not figure out how to keep the sheep from dying. Only 250 grizzlies are left in Yellowstone because the park is not large enough to sustain a healthy population.

Parks in the Lower 48 are often too small to have self-sustaining populations of large mammals such as grizzlies and elk. But interagency cooperation could solve many management problems.

Many biologists think that resource managers would be able to develop healthy populations of threatened mammals if habitat protections were extended to include adjacent public lands, such as those controlled by the Forest Service and the Fish and Wildlife Service. Currently action is being taken to protect the grizzly in the Yellowstone ecosystem by creating cooperative programs between agencies.

Habitat management is another productive arena for cooperative action. Territory for large, threatened mammals has been lost as parkland has matured, moving into what botanists call a climax successional stage. Forests, filled with large trees of even growth, take over the open meadows required by caribou, elk, and many birds. Historically, these open areas were created by forest fires, but now fires are controlled.

These kinds of areas can be protected with cooperative interagency management. Logging, allowed by the Forest Service, could create the same kinds of open meadows that support diverse communities of plants and animals.

So, it becomes good management practice for the Park Service to manage lands cooperatively with the Forest Service. Management practices will also be augmented by "tools" and techniques created by conservation biologists.

It now is possible to create simple charts about genetic complexity and population density that NPS resource managers could use without having to become specialists. Results from captive-breeding research could be distributed and tested in the parks. Reintroduction programs could be designed so that the genes of one dominant male does not monopolize the new, growing population. These are all programs that would benefit the park system and individual parks.

Bill Gregg, the NPS liaison to the U.N.'s Man and the Biosphere program, sees this kind of thinking as putting the park system in "a whole new ball game. We have come to realize that [the parks] are the only repository of certain economically important seeds, like those of timber trees.

"Perhaps now our priority will be saving types of soil rather than only spectacular plants," says Gregg. "However the program develops, it now is necessary to factor in the economic uses of biological resources whenever decisions are made about management."

Judith Freeman is associate editor of National Parks *magazine.*

Stephen Mather knew what rangers should be: men of courage and character, who could gab with kings and potentates over a cookfire.

Building the Ranger Mystique

by Horace Albright as told to Robert Cahn

Born in Bishop, California, in 1890, Horace M. Albright went to Washington, D.C., in 1913 as assistant to Interior Secretary Franklin Lane. He helped create the National Park Service with Stephen Mather; and, from 1919 to 1929, he was superintendent of Yellowstone. He served as the second director of the NPS from 1929 to 1933, when he entered private business. Throughout the years, however, Albright has actively championed the cause of conservation; and former President Carter awarded him the Medal of Freedom in 1980.

Journalist Robert Cahn's articles have appeared in numerous publications. And his series for the Christian Science Monitor, *"Will Success Spoil the National Parks?" won him the 1969 Pulitzer Prize for National Reporting. Cahn was appointed by President Nixon to be one of the original members of the President's Council on Environmental Quality.*

Historic photographs courtesy of the National Park Service

BY 1923, THE NATIONAL PARK Service was firmly established. With rapidly increasing numbers of visitors coming to the national parks, we concentrated on building a strong internal structure for the Service. Dr. Hubert Work, the Secretary of the Interior who took over after Albert Fall resigned in 1923, was supportive, and left Stephen Mather alone in running the parks.

From 1923 to 1928 I continued my multiple duties, spending most of the time at Yellowstone, but also getting into the field a great deal in the winters and spending a few weeks [each year] in Washington, especially around budget time. Improving Yellowstone and its services to visitors as the flagship of the National Park Service and securing protection for the Tetons and the Jackson Hole country, however, were the projects on which I placed my highest priority.

The most important achievement during those years was the progress we made on building a National Park System. When we had organized the Park Service in 1917, each of the 15 existing national parks was an independent entity. Gradually, we had hired new superintendents, enunciated our policies for managing the parks, added to the field staffs, and begun to make them feel they were part of a National Park Service rather than just employees at an individual park.

In 1923 the parks had almost ten times the 356,000 visitors they had had in 1916. As the crowds in-

Left: in 1925, NPS Director Mather (seated on ladder) held the annual superintendents' conference at Mesa Verde National Park and asked those coming to form motor caravans so they could see parks along the way. Above: Mather (left) and Albright.

creased, Mather came to realize that his idea of looking to other agencies to supply the expertise for specialized work was impractical.

So we were beginning to build up within the Park Service the capability to provide services and maintenance and to improve the quality of the experience a visitor could have in a park. A key element in the latter was the national park ranger.

Mather had a special vision of what the rangers should be. He felt they must bring to the Service not only knowledge and skill, but an ability to relate to the public and a considerable measure of dedication.

IT IS SAID that the first park ranger was one Harry Yount, who was appointed "gamekeeper" of Yellowstone in 1880, even before the army was sent in to protect the park. He had been in the Union Army during the Civil War and had worked as a bull whacker and buffalo hunter in the Yellowstone area before the park was established.

The superintendent of Yellowstone at the time was Philetus W. Norris, the park's second superintendent. Yount's job was to see that hunting limits were observed (hunting was not prohibited in those days) and to keep the geological features from being vandalized. The $1,000-a-year salary he received represented a substantial part of the $15,000 appropriated by Congress for Yellowstone in 1880.

Yount resigned at the end of 1881, telling Superintendent Norris that the large area covered by the park made it impossible for a gamekeeper to protect the game properly. He recommended that "the game and natural curiosities of the park be protected by officers stationed at different points of the park with authority to enforce observance of laws of the park."

When army cavalry troops were sent to Yellowstone in 1886 to protect and administer the park, regulations allowed the hiring of a few civilian scouts. These scouts were picked for their skill in woodsmanship and wilderness survival, and their lore and ways of life rubbed off on some of the soldiers.

In another branch of the rangers' "ancestry" were the old forest rangers hired temporarily by national parks in California in 1898. Army troops were then administering and protecting Yosemite, Sequoia, and General Grant national parks; but in that year the troops were withdrawn for a few months to fight in the Philippines.

The Department of the Interior's General Land Office (which was then in charge of national forest reserves) hired these "forest rangers" to take the place of the troops. They were to prevent poaching, remove sheep that were grazing in the park, fight fires, and even plant fish.

A RATHER LOOSE national park ranger service had been formed in 1914 during the brief time Mark Daniels had served in San Francisco as general superintendent of the national parks. We had rangers in nine national parks at that time, and Daniels was supposed to bring uniformity to the ranger activity.

It is said that the first ranger was one Harry Yount, who had worked as a bull whacker and buffalo hunter in Yellowstone.

He was not able to do much along those lines, however, because each park pretty much set up its own procedures for its rangers. Daniels did manage to draft a set of regulations governing rangers in the national parks. They were signed by [Interior] Secretary Lane in January 1915, just before Mather took over administration of the parks as Lane's assistant.

Mather liked the regulations and had them distributed to all the parks. They provided for a standard uniform (which Daniels had designed) and for rangers to write monthly reports showing the duties they performed each day, their travels, conditions of the game animals, any unlawful trespass, and other activities.

Applicants for ranger positions had to be between 21 and 40 years of age, of good character, sound physique, and tactful in handling people. They were required to possess a common-school education, be able to ride and care for horses, have experience in outdoor life, be a good shot with rifle and pistol, and have some knowledge of trail construction and fighting forest fires.

Mather had a number of ideas for the national park ranger mystique that he wanted to create. For one thing, he wanted to be able to transfer rangers from park to park. He thought higher educational standards should be required.

He also wanted rangers to take entrance examinations and meet qualifications similar to those required by the Civil Service (at that time Park Service field employees were not technically under the Civil Service). He was thinking in terms of careers for Park Service personnel. In his 1916 annual report, Mather wrote:

> The longer a man is in the Service, the more valuable he is; and, therefore, I think a ranger should enter the Service with the desire of making it his life's work. After the Service is once fully organized, promotion to higher positions should be made in the corps, so that each man would have the fullest incentive to give his best service, knowing that advancement would be based solely on character and general efficiency.

It was a long time before these aspirations could be realized, however, and Mather had to exercise patience while putting through the bureaucratic changes that would make them possible. Meantime, he was attracting good people to the service by building an esprit de corps.

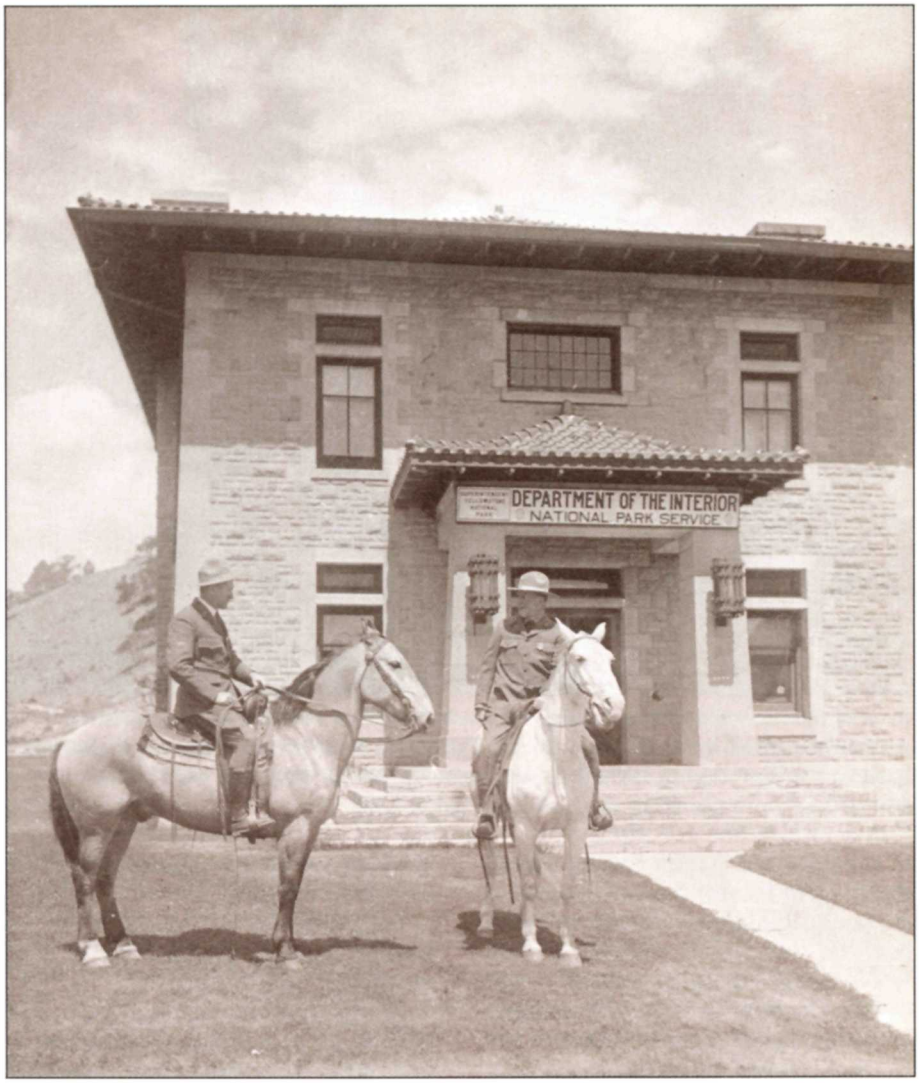
One of his earliest tools was *National Park Service News*, a six-to-eight-page monthly newsletter that he started in 1919. In launching it,

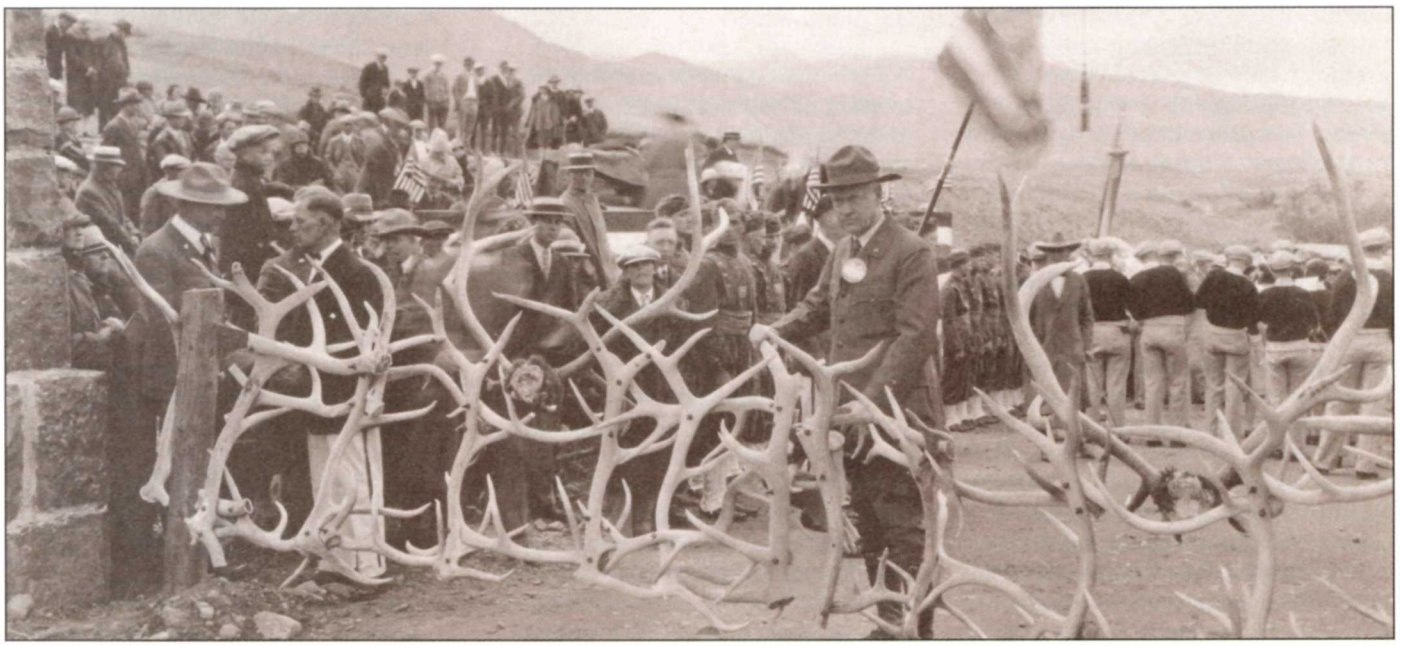
Mather wrote that it was important for the personnel in the individual parks to be brought into closer contact with each other and also to know what was going on in the Washington office, "and to realize some of the broad purposes which we are trying to carry out."

EACH YEAR MATHER visited as many parks as humanly possible, spreading his Park Service gospel, that those entrusted with the care of our nation's great national parks are members of an elite corps. And he believed it sincerely. He proudly made it a point to wear a ranger uniform when he was in the parks and monuments.

One day at Yellowstone in the summer of 1923, I got word that visitors were upset with a ranger directing traffic at Tower Falls. It seems he was throwing his weight around, lecturing people about little infractions of the rules and generally making the visitors very unhappy.

I couldn't imagine which ranger might be doing that, so I went out to see what was going on. Mather was





Right: Superintendent Albright and Nevada Senator Oddie at Yellowstone headquarters (1924); below: Director Mather at elk antler gate opening the north entrance to Yellowstone; Albright at left (1926).

In 1928, Horace and Grace Albright attended the Bracebridge Dinner at the Ahwanhee Hotel in Yosemite National Park. The Bracebridge costume pageant is based on a Washington Irving Christmas story, and it has been held at the Ahwanhee annually since the hotel opened in 1927.

in the park at the time, taking a few days rest at Camp Roosevelt, and I particularly didn't want him to find out.

When I got to Tower Falls, I couldn't believe my eyes when I saw who the "ranger" was. It was Mather in his park uniform, directing the bus drivers how to park their vehicles, shouting at the drivers because he didn't like what they were doing, and forcing them to repark. When I told him about the complaints he said he didn't see what the people were so upset about.

"I'm just enforcing the rules," he insisted.

"Mr. Mather, the visitors think you're splitting hairs and making a fuss about things that don't matter that much."

"Nonsense," he said. "The trouble is you're too soft. You don't enforce the rules strictly enough."

When I said firmly that he must stop it, he got quite huffy and said I had no right to tell the Director what he could and could not do.

"Maybe not, Mr. Mather. But I do have authority over my rangers, and if you're going to play ranger here at Yellowstone, you're going to have to do what I tell you."

Well, that did it. "All right," Mather replied. "I'll be Director and quit being your ranger."

He got over his pique quickly, and we had many a laugh over the incident later. But it said a lot about the intensity of his regard for the job of the national park ranger.

AS FIELD ASSISTANT and superintendent of Yellowstone, I was able to do a great deal to help Mather spread this Park Service spirit. I took a special interest in helping build the ranger force into the competent and dedicated unit that it was to become. Spending time in the various parks as [the NPS] field assistant gave me wide contact with the park rangers.

Even at Yellowstone I was constantly on the road, averaging ten thousand miles a year, mostly by car. I visited the ranger stations, consulted with the men about their various problems and ideas, and kept in close touch with the other staff. I also made yearly pack trips deep into the backcountry. The rangers seemed to appreciate having a superintendent who wanted to know every part of the vast wilderness area within park boundaries.

One of my priorities was to raise the standards for the recruiting and training of rangers. The practice of employing well-educated seasonal rangers had started in 1914 at Yosemite, where ten University of California people, mostly senior students, had been hired.

At Yellowstone I continued the practice, hiring college people as seasonals. We called them "ninety-day wonders" because that was about the length of the summer season. As some of the older rangers retired, or as new positions opened up, we were able to draw from the college-trained seasonals as permanent replacements. They handled much of the educational work, giving programs for the visitors and guiding them on nature walks.

There was a natural resistance on the part of the traditional rangers to the college-trained people; but the old-timers soon learned that a college education didn't make this "new breed" so different after all. They got the same starting salaries as other rangers, and "put their pants on one leg at a time," just like the others.

The starting pay for rangers in 1923 was only $1,000 a year, and they could eventually work their way up to $1,320. Out of their small salary they had to buy their own uniforms and pay for their own food. Despite the low pay, I was swamped with applications every year at Yellowstone, especially for seasonal ranger jobs.

Thousands of college youths wrote in wanting to be rangers. So, in 1923, I developed a form letter to answer them. Designed to discourage the casual applicant, it laid out the unvarnished facts about what a ranger's job was like at that time. It said:

> It has been our experience that young men often apply for a place on the park ranger force with the impression or understanding that the ranger is a sort of sinecure with nothing resembling hard work to perform, and that a rang-

er's position offers an opportunity to pass a pleasant vacation amid the beauties and wonders of Yellowstone Park, and with very frequent trips about the park and innumerable dances and other diversions to occupy one's leisure hours.

Again, young men very often apply for ranger positions with the feeling that the duties of the place require no special training or experience and that any man with a reasonably good education can perform these duties regardless of whether he has a good or bad personality or whether he has or has not had experience in outdoor activities.

Also, many young men apply for ranger positions in the hope of making and saving considerable money to aid them in continuing their college work.

The conceptions of the duties of the ranger as just mentioned are just as untrue as it is possible for them to be, and unfortunately the pay is so small that boys earning their way through college, and who live at a distance from the Park cannot afford to become a ranger if tendered a place.

The letter went on to outline the pay as being $100 a month, with the applicant having to pay his own expenses to and from the park, furnish his own subsistence and clothes, including a uniform costing about $45, bring his own bedding, and do his own cooking. No transportation around the national park would be provided, except possibly at the end of the season if the facilities were available.

The minimum age in the application was 21 but, the letter said, men 25 to 30 years of age were preferred. Big men were preferred to small men inasmuch as the ranger functioned primarily as a policeman.

The ranger was required to rise at 6:00 a.m., retire by 11:00 p.m., and be subject to duty for more than eight hours a day, with no overtime pay. He could be called from his bed for emergency service, would have to obey every order of the station chief, and would be expected to observe semimilitary discipline. The letter concluded:

Even in the 1920s, when cars were still a relatively rare commodity, Yellowstone National Park drew visitors from all across the country. The beginnings of overcrowding in the national parks can be seen here, at the north entrance arch, on a cool day in June.

The duties are exacting and require the utmost patience and tact at all times. A ranger's job is no place for a nervous, quick-tempered man, nor for the laggard, nor for one who is unaccustomed to hard work. If you cannot work hard 10 or 12 hours a day, and always with patience and a smile on your face, don't fill out the attached blank.

You have perhaps believed government jobs to be "soft" and "easy." Most of them are not, and certainly there are no such jobs in the National Park Service. The ranger's job is especially hard. There will not be more than 20 vacancies in next year's force of rangers, and there is really very little chance of your being considered unless you possess *all* of the qualifications mentioned herein.

If you want to come for pleasure you will be disappointed. If you want a summer in the Park as an experience in outdoor activity amid forests and a fine invigorating atmosphere, apply if you are qualified. Otherwise, please plan to visit the Yellowstone National Park as a tourist.

WHILE THE SEASONAL rangers played an increasingly important role, the permanent rangers remained the core of park management. Some were great characters, real men of the mountains. One of the finest was Ranger Billy Nelson at Yosemite National Park.

In 1919, King Albert of Belgium, his queen, and the crown prince visited Yosemite. Nelson was selected to guide them on a horseback trip along a four-mile trail to Glacier Point. Billy had been coached by the superintendent on how to address the king and queen as "Your Majesty," and he thought he had it down pat. He was a very intelligent fellow, but he felt stampeded by the responsibility of guiding a king and a queen.

As they were riding along, Nelson saw something he wanted to call King Albert's attention to, so he rode up to him, but he couldn't remember how to address him. So he looked up at the king and said, "I forgot what to call you, but I want to show you something. Suppose I just call you King and you call me Billy."

During his tour of the United States in 1919, King Albert of Belgium (left) stopped to visit Yosemite and the Mariposa Grove. . .

"All right," said the king, "I'll call you Billy. And you can call me King."

They became fast friends during the king's stay in Yosemite. Nelson was one of the best camp cooks in the whole ranger service, and the king made him "Camp Cook by Special Appointment of His Majesty." One night while he was preparing dinner, the members of the royal party were horrified to hear Billy call out, "Say, King, shoot me that side of bacon, will you?"

IN 1926, PRESIDENT COOLIDGE issued an executive order revoking the practice of appointing national park rangers without examination and directed the Civil Service Commission to prepare qualifications and a written entrance examination for rangers. With salaries that now started at $1,680 a year, the ranger positions required one year's experience in outdoor vocations, and the jobs were open to men and women age 21 to 45.

From the beginning, of course, the individual superintendents had set the tone for their parks, for better or worse. The annual conferences of superintendents were the forums for spreading the best ideas and tackling the biggest problems throughout the system.

Mather continually urged superintendents to expand their horizons, so he tried something a little different in the way of transportation to the 1925 conference, which was held at Mesa Verde National Park. Instead of taking the train, the superintendents were to form motor caravans and visit various national parks along the way and get a good look at the country.

I led a caravan for those in my part of the country, and Mather joined the caravan that Dusty Lewis led from Yosemite. It was a huge success, and everybody not only learned a lot from seeing the other parks, but enjoyed getting better acquainted with each other.

It was announced at the conference that a superintendents' manual was near completion. It wouldn't be a perfect document, but we hoped it would help to standardize many practices.

Mather interjected that while the manual would be helpful in many ways, he didn't want it to rob the national parks of the individuality he thought each one should maintain.

"We don't want to get down to a common, routine manner of handling our work. We don't have to feel that we have to have the same sort of trail sign in each park. I think people will enjoy the parks more if

they feel each has a certain individuality."

Mather emphasized the basic element of service to the public. "What we have tried to inculcate into the Park Service," he said, "is that we are merely serving the public as a whole. We are not owners of the areas, but are merely custodians."

In May, I held a conference at Yellowstone for all of the Yellowstone ranger force. That early in the season the park was still snowbound, so for many of the 33 people who attended, it was quite a trek.

Park Ranger Lee Cotrell, stationed at Snake River Station, made his way on foot and on snowshoes by way of Thumb Station to Old Faithful, where a car picked him up. Roby Roy Wisdom, stationed at the East Entrance, had to walk and snowshoe through Sylvan Pass to Lake Station where we picked him up by car.

. . . at Yosemite, Ranger Billy Nelson showed the King of Belgium something of our easy-going and egalitarian ways and they became fast friends.

The evening before the formal beginning of the conference, I showed our new lantern slides and motion pictures and explained how they were being used to create a national park education program. In opening the conference the next morning, I emphasized the keen interest Mather had in the park and its rangers and the high value he put on the ranger force.

And I told them never to forget that as the people who had the most contact with the public, they were the key to the success of the National Park Service.

Excerpted from The Birth of the National Park Service, *by Horace M. Albright as told to Robert Cahn. Copyright 1985 by Horace M. Albright and Robert Cahn. Published by Howe Brothers, Box 6394, Salt Lake City, UT 84106; $19.95 (hardback) plus postage.*

Ranger Museum to Open at Yellowstone

National Park Service

NPS Director Mott and Maureen Finnerty, president of the Association of National Park Rangers (ANPR), recently signed an agreement to establish a ranger museum. Although the museum will be NPS owned and operated, the ANPR and the National Park Foundation will raise funds for exhibit planning and construction.

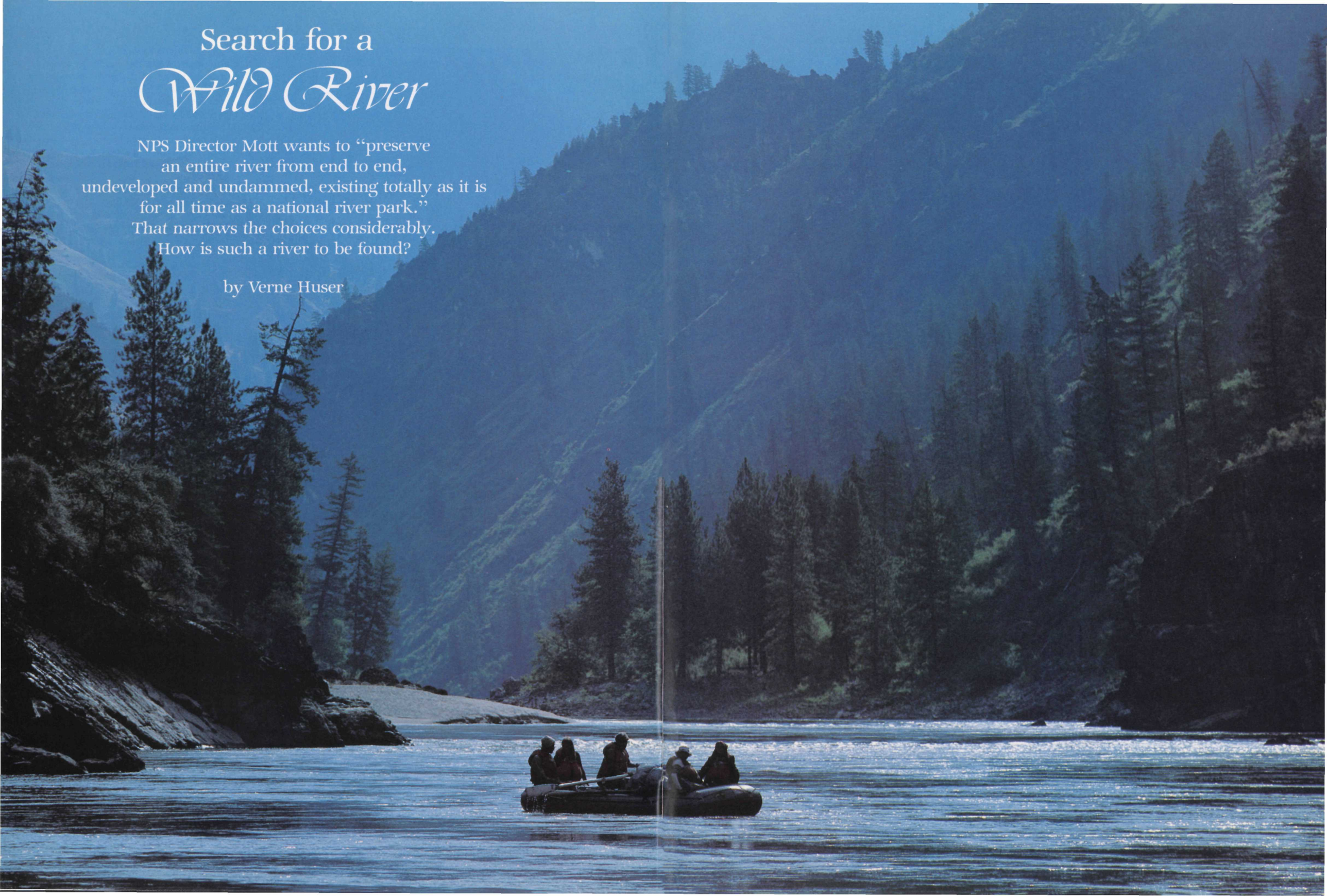
The museum will be housed in the old Norris Soldier Station at Yellowstone (above), which was built in 1908. Exhibits will include rooms restored to the early days of Mather and Albright as well as contemporary displays.

With successful fund-raising, the museum could be open by the summer of 1987. Donations may be sent to: "ANPR-Ranger Museum," Association of National Park Rangers, Box 222, Yellowstone National Park, Wyo. 82190.

Search for a *Wild River*

NPS Director Mott wants to "preserve an entire river from end to end, undeveloped and undammed, existing totally as it is for all time as a national river park." That narrows the choices considerably. How is such a river to be found?

by Verne Huser

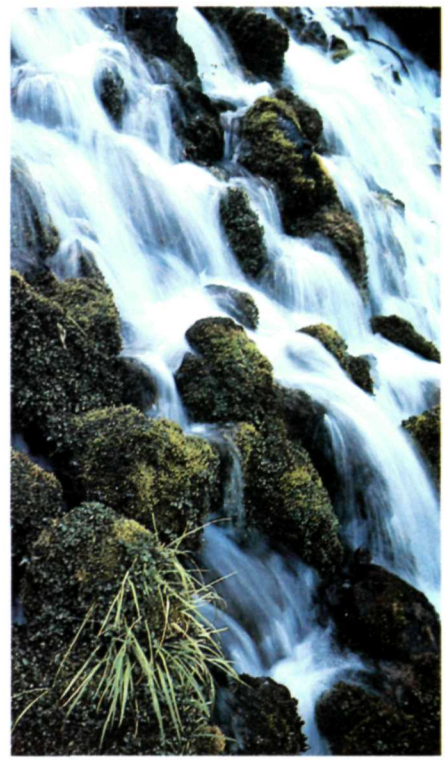


Truly wild rivers—undammed and undeveloped—are hard to find. Yet, National Park Service Director William Penn Mott, Jr., is determined to find such a river to designate as a national river park.

"I would like to see somewhere in the United States a total river system preserved in its natural condition so that everybody would be able to see what rivers looked like before man came here," he said. "[It] doesn't have to be a big river, but one in its natural condition from its source to where it goes into the ocean or a lake.

"We don't have that, and 50 years from now people won't realize what a wild natural river looks like. Of course, I'm interested in the Wild and Scenic Rivers program, but that doesn't cover the total river."

Mott expressed his desire to protect a wild river in his inaugural speech; and it led to a flurry of activity within the NPS. A memo went from the director's office to regional NPS offices asking each region to search for such a river. "One goal, which is of personal interest to this office," it said in part, "is to preserve an entire river from end to end, undeveloped and undammed, existing totally as it is for all time, as a national river park."



R. Valentine Atkinson

Undeveloped, undammed, existing as it always had—that narrowed the choices considerably. How is such a river to be found? The NPS started with the National Rivers Inventory, which had been compiled during the past 12 years, and selected a list of 1,500 river segments covering 61,000 miles.

From this, a shorter list of 312 river segments was selected and sent to each NPS regional office. By November, the regions reviewed the recommendations and added other possibilities. The new list will now be pared down to a more manageable number.

Rob Lesser

Overleaf: the Salmon River; photo by Verne Huser

Most of the river drainages in the eastern half of the United States were settled and developed long ago, and most eastern rivers run through private lands. Wild rivers in the West are often bounded by public land and, thus, would be easier to protect. As a result, people are guessing that Mott's national river park will be found in the West. Top: California's Smith River runs through Redwood National Park; above: the Payette River in Idaho.

I thought immediately of my favorite, the Skykomish. The Sky, as it is affectionately called by those who know it, heads in the Cascade Range in Washington, joins the Snoqualmie to form the Snohomish, and—under that name—flows to Puget Sound: mountain snowmelt to tidewater in less than a hundred miles.

The Sky is Washington's premier whitewater river, used by kayakers, rafters, canoeists, and dory drifters. It offers miles of placid flow as well as the state's best rapids. It is also one of the state's finest steelhead streams, clear and cool green, a product of snow along the Cascade Crest in a remarkably well-protected watershed, much of it national forest.

Its banks are lined with western red cedar, Douglas fir, maple, and hemlock. Hiking trails, which connect to the Pacific Crest Trail and two adjacent wilderness areas, crisscross the watershed. And the waters of the Skykomish nourish bear, deer, elk, beaver, osprey, eagles, and other wildlife.

There is logging, but much of the terrain is too steep for timber harvesting. A major highway, U.S. 2, and the Burlington Northern Railroad parallel the river. It is not totally pristine by any means, but the Skykomish is my version of what Mott may have in mind.

I know that the Allagash in Maine would get many peoples' votes. A chain of lakes connected by streams and managed for canoeing, the Allagash flows through wild, heavily timbered country, has numerous Class I and II rapids, supports moose, deer, bear, eagles, osprey, loons, herons, ducks, and geese—every bird you can imagine, says one canoe guide.

Along its banks are picnic tables and a primitive dam reminiscent of the logging dams built in the last century. It is historical and natural, but a certain amount of development exists and the watershed has been logged.

Others on the list include the slow, flat coastal waters of North Carolina's Big Swamp and Little Marsh. But channelization and diking and draining of coastal wetlands in the south make undeveloped waters hard to find.

Northeastern Oregon offers an interesting trio: the Minam, which flows out of the Eagle Cap Wilderness into the Wallowa; the Wallowa, which also heads in the Eagle Cap; and the Grande Ronde, a largely undeveloped river below the mouth of the Wallowa. Where the Minam meets the Wallowa, boaters put in and float all the way down into Hell's Canyon of the Snake River. All three streams have anadromous fish runs and abound in wildlife. And this whole territory is the ancestral home of Chief Joseph and his tribe of the Nez Perce.

The most vital aspect of this search for a wild river may be to inspire more river conservation on the local level.

The process to create a national river park is in its early stages and public input regarding candidate rivers is needed and sought. Suggested criteria include lack of development, resource values, natural diversity, and conservation feasibility. But the guidelines for interpreting the criteria are somewhat cloudy, and this may cause problems for people who want to become involved in the selection process.

Lack of Development

A dam is development, as is a dike, and riprap (artificial reinforcement of the riverbank to prevent erosion). In fact, a number of rivers in the Wild and Scenic Rivers System are riprapped; but such development could keep most rivers from being considered as a national river park.

The headwaters of the upper Snake River in Wyoming are protected in Yellowstone and Grand Teton national parks, but the river was dammed for irrigation purposes within the boundary of Grand Teton. This dam may preclude the upper Snake from consideration.

Resource Values

Rivers have many uses: as transportation corridors, for hydroelectric power, recreation, irrigation, and, regrettably, as dumping areas for pollutants. The richness of a river's resources may actually keep it off the list. Because of their wealth of fish, Gulf Coast rivers support large commercial fisheries. If plans for river preservation limited that industry, there would surely be strong local opposition.

Natural Diversity

It would be appropriate to choose a river that flows to the sea, in which anadromous fish, such as salmon, live out their life cycles. The Queets and the Hoh on Washington's Olympic Peninsula are good examples. Ecological zones, fauna, flora, geology, and history are all important factors in a river's natural diversity.

Conservation Feasibility

Some rivers may be impossible to consider because they are too costly to purchase with public funds. It would not be politically or economically practical to consider a river if purchase requires the buying out of a timber company or a fishing industry or displacing a group of people or a chemical plant.

Given the present budget situation, acquiring an entire river park may be a political and economic impossibility in any case. A parkway or greenline concept employing conservation easements and local and state protections may be more realistic.

Mott's memo said, "We are excited about this effort and hope that one of the benefits of this search process will be to stimulate conservation actions on many of these rivers by states, local governments, other agencies, and the private sector."

Actually, the most vital aspect of

Richard Cooke

R. Valentine Atkinson

this search for a wild river may be to inspire more river conservation on the local level. The single largest section of river system preserved in the United States is not part of the Wild and Scenic Rivers System; it is the upper Mississippi in Minnesota. The river is protected by complex ordinances and zoning regulations developed by local jurisdictions. Given today's attitudes toward federal involvement, such an approach may be the wave of the future.

What river does Mott's proposal bring to your mind? The Yellowstone in Montana has been suggested, as have several rivers in Arkansas, including the Buffalo-Little Buffalo-East Fork and the Saline with its north, middle, and south forks. California candidates include the Big Sur, the Mattole, and the Smith. Others include the Kisatchie Bayou in Louisiana; the White and the east and west forks of the San Juan in Colorado; the Swift Diamond in New Hampshire; the Gauley in West Virginia; and West Clear Creek in Arizona.

Send the name of your candidate to the National Park Service, Recreation Resources, Assistance Division, B. Collins, Box 37127, Washington, D.C. 20013-7127.

A teacher, river guide, and former NPS ranger, Verne Huser last wrote for National Parks *on wild and scenic rivers. His anthology,* River Reflections, *was recently published by Fast and McMillan.*

Although only one river will be chosen as a national river park, the search for this river has already sparked an interest in river conservation around the country. Concern on state and local levels is one of the goals of this National Park Service effort because federal funds for river protection are limited. Above: West Clear Creek in Arizona is one of the few desert rivers to be nominated. Because most rivers have agricultural or industrial development somewhere along their lengths, many of those nominated are segments or branches of a larger river system; California's Big Sur (above right) is one of the few listed whose outlet is the ocean. Opposite: high in the mountain meadows of the Sierra Nevada, springs feed tributaries of the Kings River in California.

R. Valentine Atkinson

Images

Linda & Robert Mitchell

by Marjorie Corbett

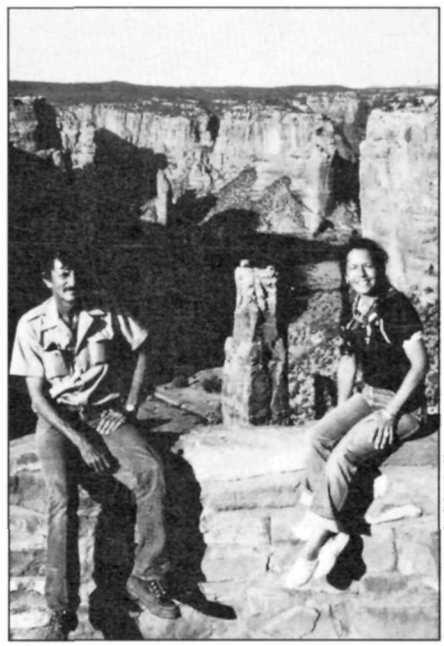
Traveling the Southwest and Central America in a four-wheel-drive trailer that doubles as a scientific laboratory, Robert and Linda Mitchell zero in on animals and plants at close range. Their cameras uncover the details of small life forms and occasionally discover new ones.

What are your backgrounds and how did you team up?
RM: I was working on an undergraduate degree in biology and I shot a 16mm film about golden eagles. Later, I went on to get a degree in zoology and used 35mm slides to document research. Now I teach zoology at Texas Tech in Lubbock.
LM: In 1975 I took one of Robert's courses and went on a field trip. I was so fascinated that I changed my career focus to biology. After we got married, we decided to go into business together.

I tote the equipment, make contacts, and scout the areas before we shoot. Being a team, we really enjoy our trips and have lots of fun.

You've been published in many magazines. What kind of an audience are you trying to reach?
RM: We are trying to appeal to a broad audience, but what we do is more scientific than most. We focus on smaller, more unusual species—everything from cave species to insects and lizards. One thing that makes us different from others is that we are absolutely accurate in our scientific identification of species.

What kind of equipment do you use?
RM: Our work requires macro and micrography equipment. For the macro subjects we use lenses that magnify up to 50:1. For smaller subjects we use a setup in the lab with a macro stand and bellows. We have used various brands of cameras and



Robert and Linda Mitchell

"We focus on smaller, more unusual species, —from cave creatures to insects and lizards."

are now using Olympus equipment —the OM 2N and OM 4.

Olympus has a good range of lenses: 20mm, 38mm, 50mm and the telephoto lenses 80mm, 135mm and 300mm to 500mm. Over 500mm we stay away from because the smallest vibration can easily affect the shot. Besides, I like to get as close to a subject as possible.
LM: We carry more equipment than most photographers. We've got our lab with us—Robert can use his microscope in the field—and we usually carry an umbrella to act as a wind and sun shield, a mist bottle, clippers, rocks, insect-collecting kits, tripods, and backdrops to use on small subjects.

You go to a lot of trouble to get a shot.
LM: We do. We've traveled some rough roads. In fact, we overturned our truck in Belize trying to get to some burrowing toads. We have been attacked by vampire bats and, once, we let a poisonous spider loose in a motel room.

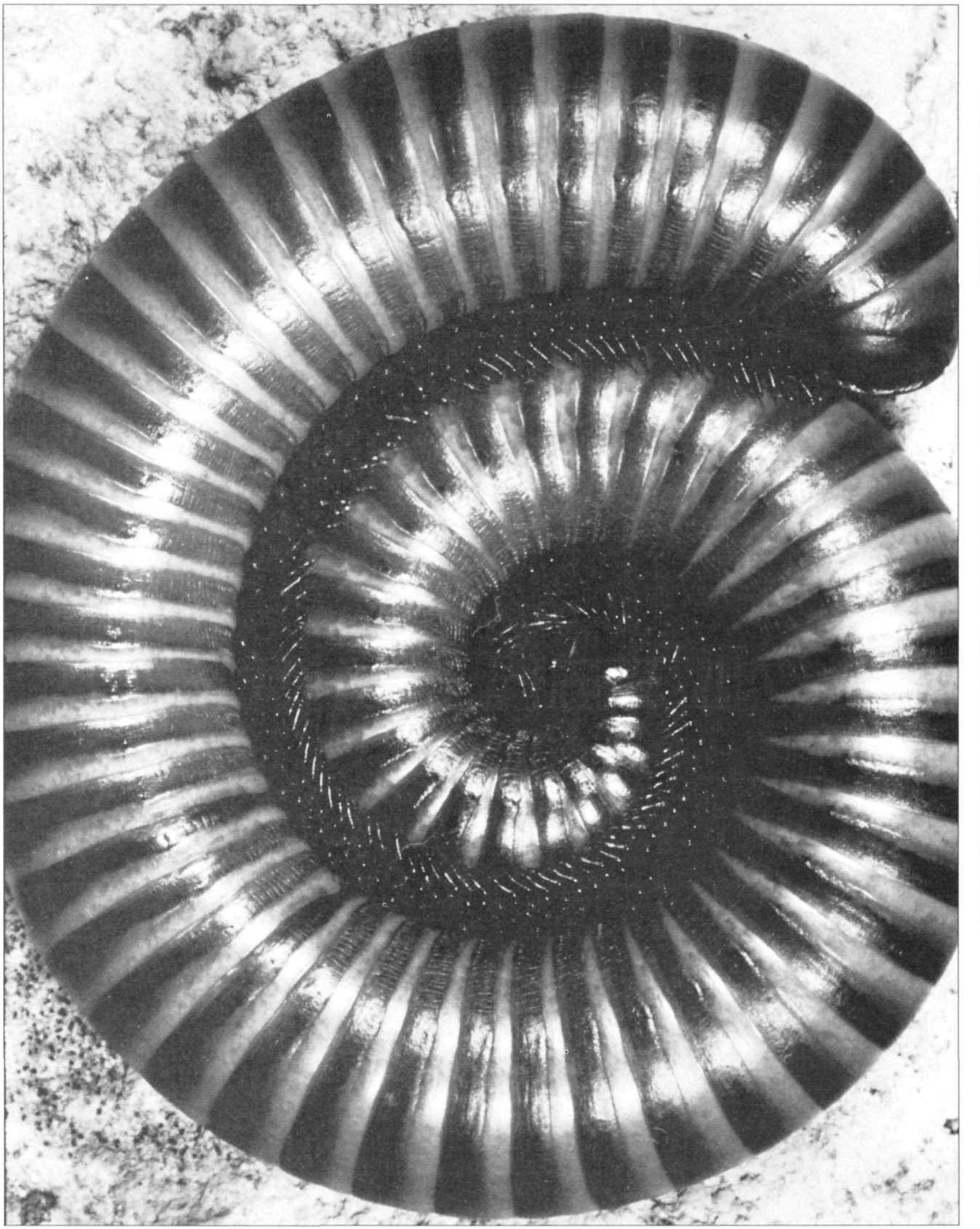
In the United States you focus on national parks. Which ones have you covered?
LM: Our favorite national park is Big Bend in Texas, and we had a rare opportunity last time we were there. While in an arroyo, we saw a flash flood coming. Robert grabbed the camera and began clicking as the wall of water came toward us. Later, talking to some rangers, they said in all their years there they had never seen a flash flood, much less photographed one.

We've been to most of the parks in Arizona, New Mexico, and Texas.

How do you deal with the problem of identifying unusual subspecies?
LM: We maintain a large reference library that we use to check our slide identification. Sometimes it is difficult.
RM: The fact is, in certain genera there are many unidentified species. This is especially true with cave animals, where the highly isolated environment makes for many endemic subspecies. We have actually identified a number of new subspecies; one was a cave spider. It looks like a long-legged tarantula, and it is poisonous; it ended up being named after us—*Centenus mitchelli.*

What are your plans for the future?
LM: Every summer we develop a new interest by taking an extended trip. Next summer we plan to go up through northern California to the Olympic Peninsula.
RM: We also plan to go to the Badlands in South Dakota. We like to photograph unusual rock formations, and document their geological history. We enjoyed photographing the pictographs in Canyonlands and would like to do more of that. We are broadening our coverage all the time and would like to cover more of the larger endangered or rare mammals.
LM: We always joke that from where we live in Lubbock, we have to drive 300 miles to get anywhere anyway, so we might as well make it 1,000.

Marjorie Corbett is a regular contributor to National Parks.



Desert Millipede; photo by Robert and Linda Mitchell

Members Corner

Park Watchers

For more than three years, NPCA has been developing a park activist network known as the National Park Action Program (NPAP).

This "park-watchers" network is comprised of individuals and groups near national parks who serve as NPCA's eyes and ears. NPCA's Washington staff, in turn, briefs the network via a monthly newsletter on the doings of the federal government in Washington, D.C., that could affect particular parks.

Currently, nearly 200 parks have park-watchers in the NPAP network. But we still need folks to help at more than 100 other parks, including Whiskeytown National Recreation Area, California; Great Sand Dunes National Monument, Colorado; Gulf Islands National Seashore, Florida; Kalaupapa National Historical Park, Hawaii; Saint Croix Island National Monument, Maine; Longfellow National Historic Site, Massachusetts; Pipestone National Monument, Minnesota; Scotts Bluff National Monument, Nebraska; Wright Brothers National Monument, North Carolina; Mount Rushmore National Memorial, South Dakota; and Fossil Butte National Monument, Wyoming.

If you live near one of our National Park System units and would like to join the NPAP park-watchers network, please write to Laura Loomis, Director of Grassroots, NPCA, 1701 18th St., N.W., Washington, D.C. 20009.

NPCA Slide Show

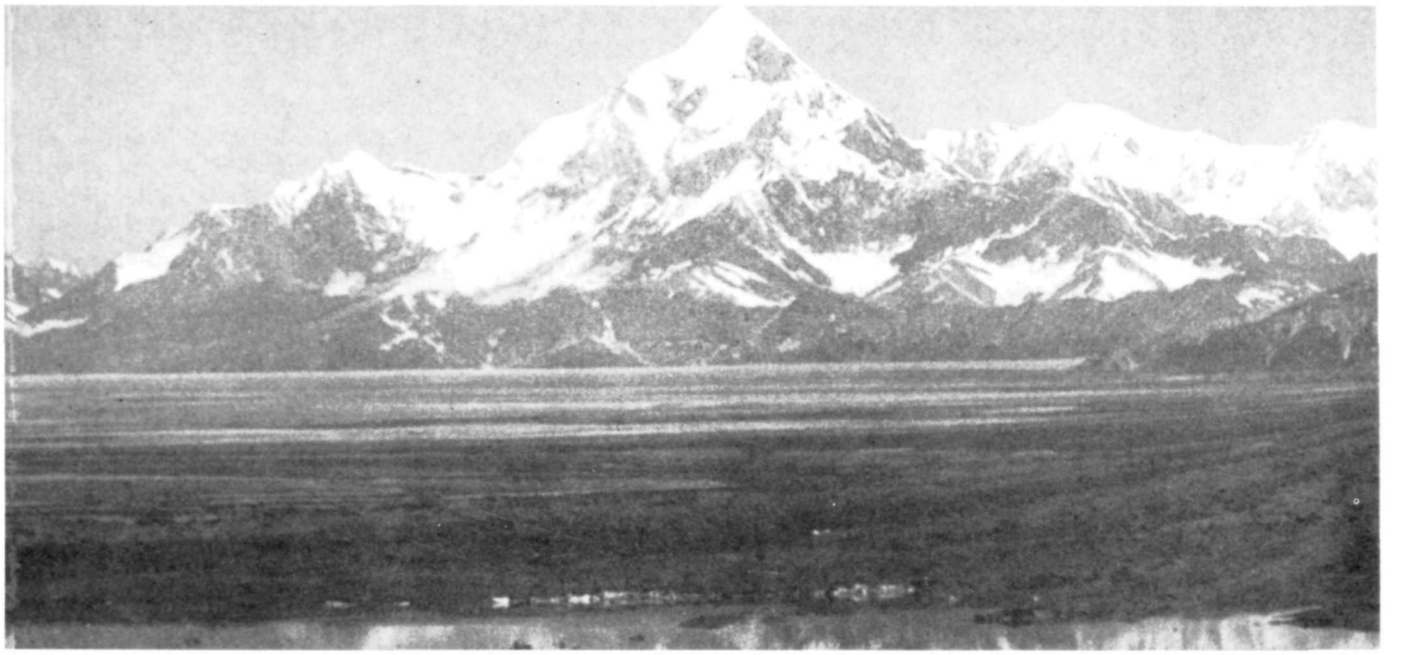
"National Parks: Their Peril and Promise" is an informative and inspirational slide show that looks at the value and meaning of our national parks and examines some of the threats to the park system. National Geographic photographer Dewitt Jones provided the photography for the show, and NPCA's Rocky Mountain Representative Terri Martin wrote the script.

This show is the centerpiece of an NPCA educational effort to inform citizens about park problems and park threats, and to involve them in finding solutions. NPCA's plan is to present this narrated slide show to a wide diversity of public audiences including schools, businesses, citizen organizations, and government agencies. We urge members and friends to recommend or suggest such organizations for the program.

1985 Annual Dinner

William Penn Mott, Jr., Director of the National Park Service, was the honored guest at NPCA's sixth annual dinner, which included approximately 400 members and guests. The evening, a sparkling success, also featured a silent auction.

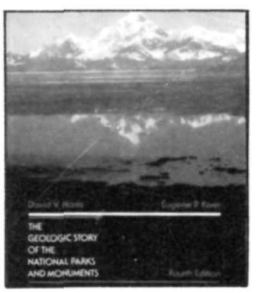
NPCA's annual dinner is a great way to meet the staff, other members, and our Board of Trustees. If you were not able to make it to this year's dinner, we hope we'll see you in Washington, D.C., for next year's gala event.



Learn what lies behind the breathtaking scenery of our national parks . . .

THE GEOLOGIC STORY OF THE NATIONAL PARKS AND MONUMENTS, 4th Edition

David V. Harris, Colorado State University
Eugene P. Kiver, Eastern Washington University



The landscape of our world-famous national parks has been molded by millions of years of geologic changes. This text provides a superb history of the earth as it is written in the rocks and geologic features of our national parks, monuments and seashores. Maps, line-drawings and both color and black-and-white photographs, including thirty-two pages of four-color plates, clarify significant geological processes and enhance the text's readability.

A unique geomorphic province organization prevents students from becoming lost and allows the instructor to explore many different topics and concepts. New information on plate tectonics has been added while the Cascades Province chapter has been completely rewritten to include details on the Mt. St. Helens volcanic eruption.

To further stimulate the learning process, color slides are available in sets or individually from a collection of more than one thousand. For information, write to the author, David V. Harris, 721 Gregory Road, Fort Collins, Colorado 80524, or call 303-482-9475.

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For a complimentary copy of the text contact your Wiley representative or write to Bob McConnin, John Wiley & Sons, Inc., 605 Third Avenue, Dept. 6-0242, New York, New York 10158. Please include course name, enrollment, and title of present text.

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NPCA Report

Capital's Walter McDowney Wins Freeman Tilden Award

The NPS National Capital Region encompasses parks throughout the Washington, D.C., metropolitan area, including the Washington Monument, Great Falls on the Potomac River, and Kenilworth Aquatic Gardens where Walter McDowney, NPCA's fourth annual Freeman Tilden Award winner, is an interpreter. McDowney was presented the award, which is named after Freeman Tilden, the "father of park interpretation," by NPS Director William Penn Mott, Jr., at the annual Ranger Rendezvous held in October at Lake Geneva, Wisconsin.

Kenilworth Gardens, where McDowney leads every manner of tour, contains acres of indigenous plants and lush plots of water lilies, lotuses, and floral wonders from all over the world. His nature walks go well beyond merely telling visitors what they are seeing. He can make the interpretation of a simple plant rich with history, explaining how a certain bush was used by early settlers for medicinal purposes or how the giant, four-foot-wide pads of Victoria lilies developed rims to protect them from being drowned by rushing waters.

A quiet pond comes to life as McDowney points out the wildlife that most visitors' eyes would miss: the shy snake hiding among the reeds, the mounded entrances to crayfish homes, the seemingly invisible frog whose protective coloration allows it to blend into the surrounding greenery. One of McDowney's most successful innovations is his Junior Ranger program in which he teaches local youths about the gardens so that they can conduct tours and introduce visitors to the natural history of the park.

McDowney himself grew up in the public housing projects that lie next to Kenilworth and, from the time he was a teenager, he nourished his interest in natural history at the gardens, volunteering to lead tours, studying, and becoming ever more knowledgeable about the park's wealth of flora and fauna. His interpretation also includes bird walks, reptile walks, greenhouse and pond life tours.

As the NPCA/NPS award winner for 1985, McDowney received a bust of Freeman Tilden and a check for $2,500, donated by KC Publications. His name will be added to those of previous winners on a plaque at the Stephen T. Mather Training Center in Harpers Ferry, West Virginia.

Regional winners include: Nicholas Bleser, Tumacacori National Monument (West); Nancy Jones, Edison National Historic Site (North Atlantic); Robert Holden, George Rogers Clark National Historical Park (Midwest); William Gwaltney, Fort Davis National Historic Site (Southwest); Russell Smith, Independence National Historical Park (Mid-Atlantic); Rosemary Wagy, Sitka National Historical Park (Alaska); Phillip Evans, Fort Raleigh National Historic Site (Southeast); Fred Armstrong, Rocky Mountain National Park (Rocky Mountain); and Daniel Dattilio, Fort Clatsop National Memorial (Pacific Northwest).

Walter McDowney (second from right) teaches his Junior Rangers about pond life at Kenilworth Aquatic Gardens.

National Park Service

Nevada Great Basin Park Discussed at Hearings

In a surprise move, Representative Bruce Vento (D-Minn.) added an amendment to the House Nevada wilderness bill that would create a 174,000-acre national park in the Great Basin.

In the beginning of November, the House Subcommittee on Public Lands was marking up the Nevada wilderness bill when Vento, chairman of the House Subcommittee on National Parks and Recreation, proposed the amendment, which was approved. The Public Lands Subcommittee, chaired by Representative John Seiberling (D-Ohio), quickly scheduled November 25 hearings in Ely, Nevada, the town nearest the South Snake Range and Wheeler Peak, which would be part of the proposed national park.

The Great Basin, with its succession of spiny mountain ranges and dry desert basins, is one of the last, large geographic areas not represented in the National Park System. Its beauty is austere, and the area supports the gnarled forms of the world's oldest living things—bristlecone pines.

As Russ Butcher, NPCA's Southwest/California representative, said at the Nevada hearings, "The National Park System boasts the tallest living things [coastal redwoods] and the largest living things [giant sequoias]. It is time to give the bristlecone pine, the world's oldest living tree species, the same high honor within the system. The South Snake Range offers the finest opportunity to do so."

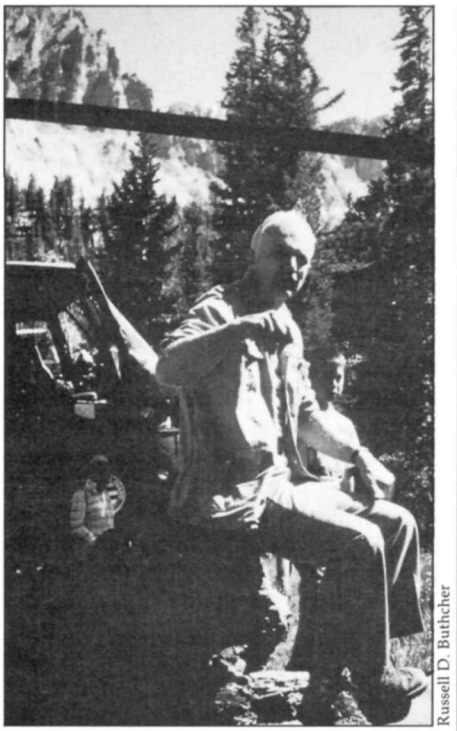
Representatives Vento, Barbara Vucanovich (R-Nev.), in whose district the park would lie, Harry Reid (D-Nev.), James Hansen (R-Utah), Robert Lagomarsino (R-Calif.), Richard Lehman (D-Calif.), George Miller (D-Calif.), and Austin Murphy (D-Penn.) heard more than 70 witnesses. Citizens of White Pine County, which encompasses the Wheeler Peak area, were evenly divided on the issue.

Local business people in this economically depressed area strongly support the idea of a Great Basin National Park. But hunters and mining and grazing interests oppose any such move.

The strength of their opposition, however, does not match their numbers. Only 5 percent of White Pine County's deer take came from the proposed park area; only ten small-to-midsized mine claims are owned in the 174,000 acres; and less than 600 cattle are grazed there.

Editorials in local newspapers as well as in the *Los Angeles Times* support the park plan. Members of the House are generally supportive, but the bill has not yet been introduced in the Senate.

Senate hearings are planned for February. A representative for Senator Paul Laxalt (R-Nev.) attended the Ely hearing and said the senator has indicated that a national park is a good idea, but questions the boundaries and is concerned about impacts on hunting, grazing, and mining.



Russell D. Buthcher

Rep. John Seiberling and others flew into the Wheeler Peak area of Nevada to discuss protections. Now the plan is to make the area a national park, a move NPCA has long supported.

Congress Studies Issues On International Parks

Little-known to most people, the NPS International Affairs Office provides planning assistance and training to national park managers in countries as diverse as Costa Rica and Saudi Arabia. Yet, the International Office subsisted on only $409,000 in Fiscal Year 1985.

This problem and other international concerns were addressed at an October 8 hearing on international assistance programs. Before the House Subcommittee on Public Lands, NPCA President Paul Pritchard testified:

"Some of our best exports have been our ideas—not the least of which is the national park idea, first conceptualized 115 years ago around a crackling fire in the Yellowstone wilderness. But we should not be too quick to applaud ourselves. Our per capita consumption of the world's resources exceeds nearly every other nation on earth."

NPCA suggested that the United States take a stronger stand on the international problem of acid rain; assume a leadership role in protecting Antarctica; and study the effects that U.S. industries are having by relocating plants to countries that require few pollution controls. NPCA also recommended increasing funds for NPS International Affairs.

Because of inadequate funding, *Parks* journal, which covers the spectrum of international park issues, was discontinued. In addition, the United States–China cultural accord of 1984 requires the NPS to assist China with park planning. So far, nothing has happened because of the lack of NPS money.

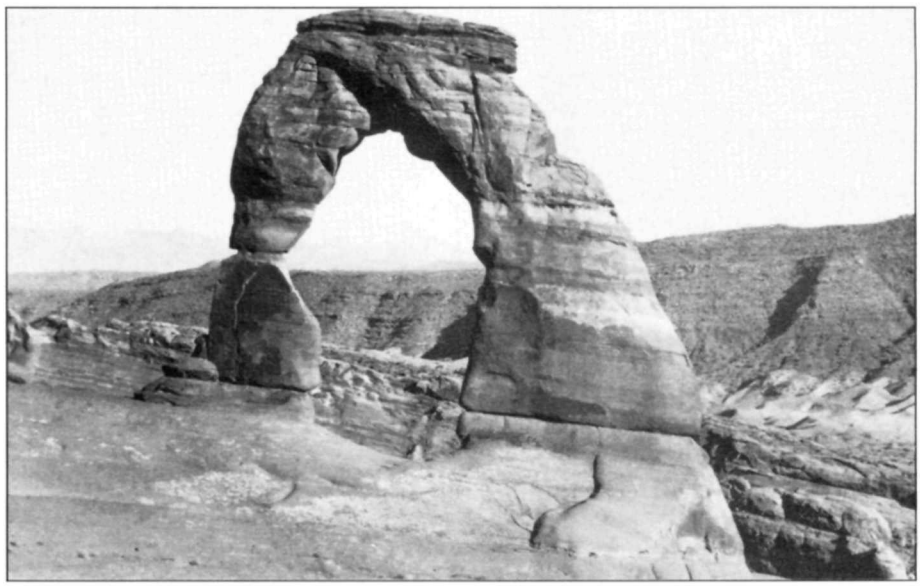
In 1992, we will celebrate the 500th anniversary of Columbus' discovery of America. NPCA would like to see the NPS get involved in an historical celebration involving its 32 units that focus on the Spanish colonial period. The association would also like to see protections for the U.N.'s Man and the Biosphere program improved and the program expanded to include more reserves.

Interior Decides Against Listing Integral Vistas

On October 25, Interior Secretary Donald Hodel announced his decision not to list integral vistas under the Clean Air Act. T. Destry Jarvis, NPCA Vice President for Conservation Policy, responded by saying, "The Secretary's announcement of no action on integral vistas is a disappointment and an abrogation of the Administration's responsibilities."

In accordance with the 1977 Amendments to the Clean Air Act, which express concern for protecting air quality affecting our nation's parks, the National Park Service had delineated a number of spectacular views that could be seen from various national parks. Conservationists wanted to see these "integral vistas" protected from air pollution so they could be enjoyed in perpetuity.

Hodel, in explaining his decision, said that to single out certain integral vistas would lessen the importance of other park resource values, and could create a hierarchy among parks. He said, further, that the Interior Department would study protections for each integral vista on a case-by-case basis.



National Park Service

The view of Colorado's La Sal Mountains through Delicate Arch at Arches National Park is one of the views that should be protected as an integral vista.

Susan Buffone, NPCA's clean air coordinator, responded, "To argue that listing vistas would somehow raise these park resources in importance above others is outrageous. Does listing one species under the Endangered Species Act diminish the importance of other park resources? Of course not."

Some of the outstanding vistas listed by the NPS include:

- the views from Shenandoah National Park, which—on clear days—used to include the top of the Washington Monument many miles away in Washington, D.C.;
- the areas seen from the Chisos Mountains in Big Bend National Park, including the mountains of northern Mexico;
- the vast seascapes seen from Acadia National Park.

Recreation Commission Starts Year's Work

Faced with a December 1986 reporting deadline, the President's Commission on Americans Outdoors (PCAO) is hard at work reviewing outdoor recreation policies, programs, and opportunities.

The commission has divided into three task forces: recreational supply, recreational demand, and new ideas and approaches. The demand subcommittee, chaired by National Geographic Society President Gilbert Grosvenor, met on November 5 in Washington, D.C., to hear public testimony.

At the hearing, NPCA President Paul Pritchard commented on the growth in national park visitation, which now amounts to approximately 350 million visits per year. "If total visits to the National Park System only increase by 3 percent annually," said Pritchard, "total visitation will double to 700 million in 24 years." Pritchard also recommended adding the tallgrass prairie to the park system and using greenline approaches to protect landscapes.

The supply task force, which is chaired by Wilbur LaPage, New Hampshire state parks director, heard testimony from federal, state, and local government representatives at public hearings on October 27 in Dallas and November 21 in Washington, D.C.

Patrick Noonan, president of the Conservation Resources Group, chairs the new ideas subcommittee, which heard NPS Director William Penn Mott, Jr., and others testify at its November 4 hearing. Witnesses discussed the need to protect national parks from external threats; strategies for acquiring the backlog of parklands that have been authorized but not purchased; and ways to increase park interpretation.

The commission plans to assign study teams, organize workshops, conduct a public-opinion poll, and continue to hold public hearings in cities around the country. The next hearings are scheduled for January 6-7 in San Francisco and January 30-31 in Orlando.

Full commission meetings will take place April 25-26 in the Great Smoky Mountains of Tennessee; August 14-16 in Jackson Hole, Wyoming; and November 13-15 and December 11-13 in Washington, D.C. NPCA will testify and make recommendations to the commission throughout the year. For more information on the President's Commission on Americans Outdoors, contact Kathy Sferra, 1701 18th St. NW, Washington, D.C. 20009.

News Update

DOT Gives Go-Ahead on Panther Protection. I-75, the highway upgrading proposal that will cut through panther habitat in South Florida, was designed with underpasses to protect the panther from being killed while crossing this major route (now called Alligator Alley). The Department of Transportation held up the project by requiring an environmental assessment before construction could begin. The DOT has dropped that request, thus forwarding panther protection in this endangered animal's last habitats: Big Cypress, the Everglades, and the Fakahatchee Strand.

•

Audubon Wildlife Update Due Out. In its 600-plus pages, the *Audubon Wildlife Report 1985* covers the breadth of wildlife issues, including subjects such as the National Park System, the National Wildlife Refuge System as well as detailed accounts on the state of threatened and endangered species such as the California condor, the grizzly, and the woodland caribou. The 1986 report is expected out in May.

•

Parks Now Up to 337. Three new areas were recently added to NPS management and one NPS area was transferred to the Bureau of Land Management, bringing the total number of units to 337. Added were the Potomac Heritage and the Natchez Trace national scenic trails and the Missouri National Recreational River. Fort Benton is now under BLM management.

•

C & O Canal Devastated by Flooding. November rains that washed away farmlands and towns in West Virginia also caused much damage to national park units. Many of the historic buildings at Harpers Ferry were inundated; and the NPS figures it will cost approximately $9.3 million to repair the damage to the Chesapeake & Ohio Canal National Historical Park caused by raging Potomac River waters.

•

Blast Project Near Bandelier Dropped. The Department of Energy had proposed a program to test military blasting less than a quarter-mile from Bandelier National Monument. DOE has decided to drop this project; but its plan for a firing range to test the noise of M-60 automatic rifles—next to Bandelier's Tsankawi Unit—is still in the works.

•

Lake Chelan Development Suit Thrown Out. A U.S. district court in Spokane, Washington, has dismissed a suit by a prodevelopment group who wanted to get rid of NPS land-use restrictions in Lake Chelan National Recreation Area. NPCA's National Park Action Program (NPAP) representative, the North Cascades Conservation Council, intervened in the suit on the side of the National Park Service.

"Agenda for the Future" Paves Environmental Path

Environmentalists can get so caught up in immediate issues that there seems to be little time to organize effective, long-term strategies. *An Environmental Agenda for the Future*, a book written by representatives of the country's major conservation groups, was designed to remedy this situation.

Each organization was responsible for researching and writing one or more chapters. Although the book does not represent an official consensus, it does set forth some of the best thinking about the most basic environmental questions.

An Environmental Agenda for the Future explores nuclear issues, human population growth, private and public lands, urbanization, toxics, natural resources, and international responsibilities. The chapter on private lands and agriculture was written by a task force headed by NPCA President Paul Pritchard.

Each year large amounts of prime farmlands are lost to urbanization and development. Runoff from tilled lands, containing pesticides and valuable soil nutrients, contaminates our rivers, lakes, and reservoirs. (Wind and water annually remove a staggering three billion tons of topsoil from U.S. cropland.)

The issues here are touchy because they raise questions about whether government has a say in how private lands are managed. Recommendations include:

- a federal swamp-buster policy that would deny Department of Agriculture benefits to farmers who convert wetlands to croplands, and a sod-buster policy for those who plow highly erodible land without taking precautions to prevent soil erosion;
- strengthening laws that would reduce diffuse water pollution—such as agricultural runoff—from private lands, currently a $6-billion-a-year problem;
- government support of research that explores alternative farming techniques to conserve soil and water and lessen farmers' dependence on chemicals.
- a change in the capital gains section of the tax code to encourage reforestation of private forest lands;
- the protection of natural resources and important landscapes by the creation of greenline parks in areas that are being threatened by development.

The book raises strong concerns about protecting critical natural areas before they disappear. Recommendations for protecting land systems include the creation of proposed parks, finding money to buy private inholdings in the parks, and expanding wildlife refuges and wilderness areas.

Management policies come under some scrutiny. *An Environmental Agenda for the Future* proposes that Congress enact legislation that would require federal agencies to work cooperatively in managing whole ecosystems. Taking inventories of resources and involving the public more in land protection are two other recommendations.

Finding Ways to Settle Acadia's Boundaries

At the end of September, the House Subcommittee on National Parks and Recreation met to consider establishing boundaries for Acadia National Park in Maine. It is not the first time Acadia's boundaries have been the subject of discussion. Since it was established in 1929, park boundaries have changed at least 15 times.

"Unlike most parks, where the Park Service is given a boundary with authority to purchase within it, Acadia has evolved in a helter-skelter fashion," said T. Destry Jarvis, NPCA vice president for conservation policy. Jarvis has been a key figure in the ten-year effort to gain sound park boundaries.

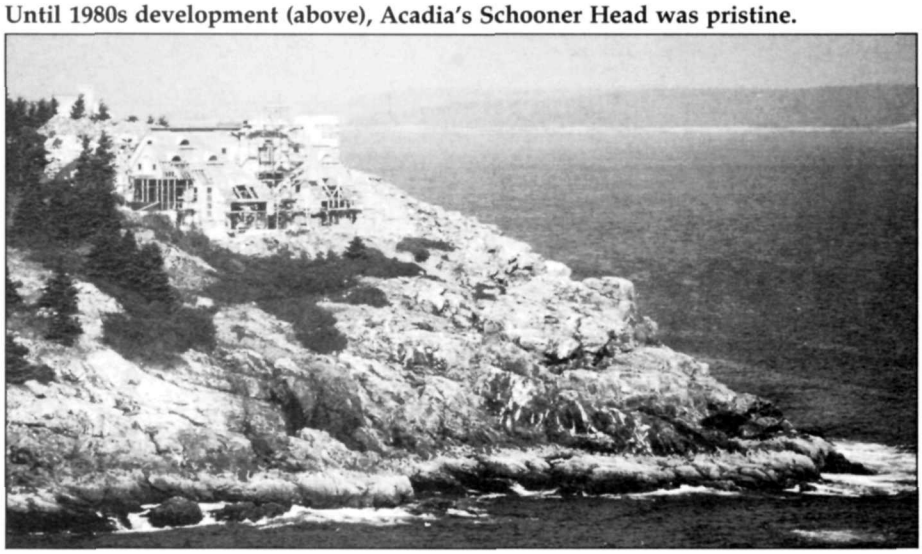
The reason for all this boundary juggling can be found in Acadia's enabling legislation, which states that Acadia can only gain acreage through donation, not through acquisition by the National Park Service.

"Relying solely on the good will of local landowners to make donations to the park," Jarvis said at the hearing, "Acadia has suffered from the inability to adequately protect scenic vistas, watersheds, and wildlife habitat."

NPCA's recommendations concerning the Acadia bill (H.R. 1685) include:

- giving the NPS the authority to purchase property within authorized boundaries if said property, such as Schooner Head, is threatened by development;
- making the Schoodic Peninsula part of the designated parkland available for acquisition through conservation easements.

Until 1980s development (above), Acadia's Schooner Head was pristine.



T. Destry Jarvis

Mott Discusses Burr Trail At Round Table Luncheon

NPCA has hosted this year's series of Conservation Round Table luncheons, where conservation leaders get together to discuss strategies and issues and hear keynote speakers such as Interior Secretary Donald Hodel, Florida Governor Bob Graham, and, most recently, NPS Director William Penn Mott, Jr. At the November luncheon, Mott announced some new park policies.

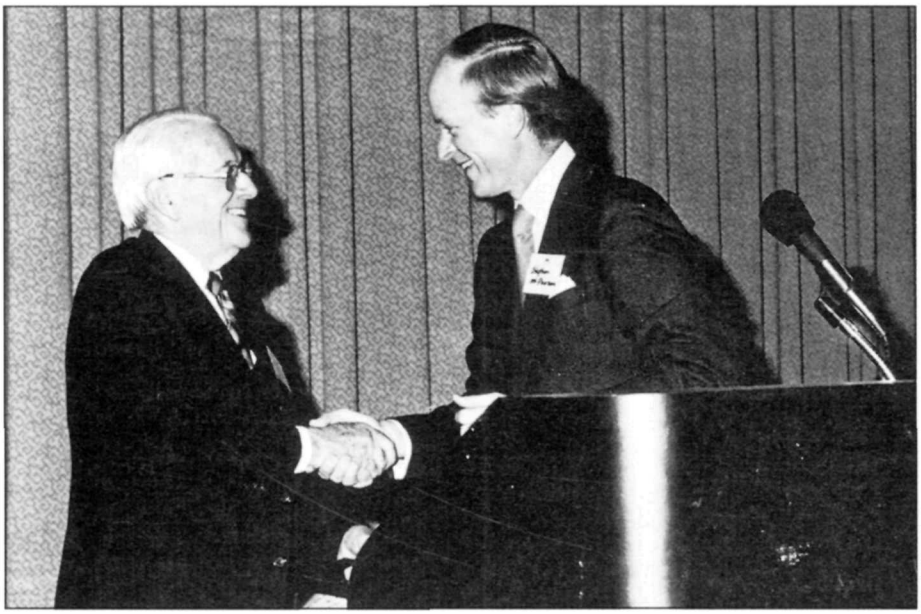
Mott said that, too often, the National Park Service has been "hesitant to make decisions about tough problems, so I decided it was time to make some decisions."

He announced that the Burr Trail—a source of concern to conservationists—will remain unpaved except for some switchbacks, which would be paved with inobtrusive, sandstone-colored concrete. Conservationists were disappointed, however, when they found out later that the road would be graveled and approximately 15 miles would be paved, including a fragile canyon area. The paved route would constitute almost one-quarter of the 66-mile road, which runs through Glen Canyon National Recreation Area, Capitol Reef National Park, and other public lands.

He envisions an interpretive center at the Boulder end of the route and said that the Burr Trail would be a "scenic, rural parkway under the jurisdiction of the National Park Service."

Mott also said that NPS road construction would be geared to leisurely, rather than high-speed travel so that visitors "will slow down and enjoy the area."

In addressing some of the particulars of his 12-point plan, Mott said that the NPS would be raising concessioner fees; training rangers to be more adept at solving people problems now that overcrowding is a concern; and considering additions to the National Park System, such as the Tallgrass and Great Basin park proposals. In fact, he said of the recent Great Basin bill, "We are in support of this. We just think it ought to be expanded."



Mark Kaminsky

Director Mott Chosen as Conservationist of the Year At NPCA's Sixth Annual Members Dinner

On November 21, NPCA held its sixth annual dinner at the Shoreham Hotel in Washington, D.C., where NPCA Board Chairman Stephen McPherson (right) presented William Penn Mott, Jr., (left) with its Conservationist of the Year Award. Also honored was former board chairman Gilbert Stucker, who was made an NPCA Trustee Emeritus. The 400 members and guests saw NPCA's new slide presentation, *National Parks: Their Peril and Promise,* which dramatizes both beauty and threats.

NPCA Dedicates Its Savoy Wildlife Preserve To Protect 20 Acres of Florida Panther Habitat

On September 24, NPCA dedicated a 20-acre parcel in Florida as the Savoy Wildlife Preserve. The land, which borders on Big Cypress National Preserve, was purchased from a private owner with funds donated to NPCA's National Park Trust. The cypress swamp preserve protects habitat of the endangered Florida panther. Until the parcel is turned over to the NPS, it will be managed as a nature preserve. Below: Robert Pierce, Trust coordinator (left), and Steven Whitney, NPCA natural resources coordinator.

Robert Pierce

Yellowstone Hearing Explores Protections

"The Greater Yellowstone ecosystem is a complex, yet delicate, web of landscape and life," said NPCA President Paul Pritchard at House oversight hearings on October 24. "Adverse impacts in any one section will affect all other sections."

Because of the concern of Congress, the departments of Interior and Agriculture, and conservation groups, House subcommittees on National Parks and Recreation and on Public Lands held a joint oversight hearing on the problems of the Yellowstone ecosystem.

Chaired by representatives Bruce Vento (D-Minn.) and John Seiberling (D-Ohio), the hearing explored ways of protecting the ecosystem. Oil, gas, and geothermal development; ski area proposals; grazing; and timber sales are among the most obvious threats to the integrity of the area.

Much of the land is managed by the Forest Service, the National Park Service, and other federal agencies. Administration officials testified that they have all the powers they need to protect Greater Yellowstone. NPS Director William Penn Mott, Jr., agreed; but he also said cooperative management was the key.

NPCA was especially concerned about the effects of development on Yellowstone and Grand Teton national parks and on the grizzly. Pritchard said that one way of ensuring the future of this six-million-acre area is under the U.N.'s Man and the Biosphere program.

Biosphere Reserves are chosen as unique representations of the world's ecosystems. The science-oriented program encourages protection of any area chosen as a Biosphere Reserve; and, at present, 19 of the world's 243 reserves are administered by the NPS.

Pritchard suggested expanding the Yellowstone Biosphere Reserve to include the whole ecosystem, not merely the park. "The expansion," he said, "would bolster the image of leadership and vision the international community has come to expect from the United States."

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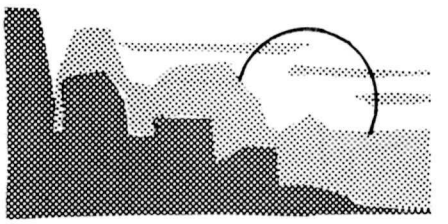

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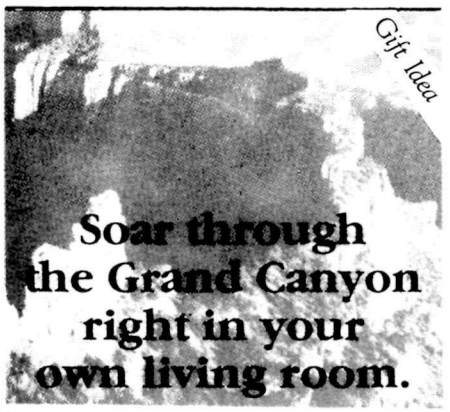

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Interior Says No More To Hetch Hetchy Expansion

In 1901, Congress gave the Secretary of Interior the sole right to govern power and water projects in or affecting the national parks. What followed was a period of elaborate water and power projects that continue to affect parks such as Yosemite and Sequoia in California.

During that period, John Muir and others fought, and lost, one of the first and greatest environmental battles—to keep San Francisco's Hetch Hetchy Water and Power project out of Yosemite National Park. When San Francisco recently proposed expanding Hetch Hetchy, NPCA and Representative Richard Lehman (D-Calif.), whose district includes Yosemite, said no more.

In a letter to Interior Assistant Secretary William Horn, NPCA President Paul Pritchard said Hetch Hetchy was a "truly tragic chapter in U.S. resource management history, rendered all the more distasteful in light of the regular and continuing proposals to modify, upgrade, and expand the project."

Apparently, Interior, too, is dissatisfied with San Francisco's plans to draw off more power from Yosemite's waters. In November, it announced a cap on any Hetch Hetchy expansion within the park.

"This is the end of an era," said Lehman, in a letter praising Interior's move. Although Interior's position is laudable, Congress may have to provide the legal backup to end Hetch Hetchy expansion.

San Francisco sells 75 percent of the power it receives from Hetch Hetchy while paying only $300,000 per year to operate the project. And the city wants to expand a powerhouse just outside national park boundaries.

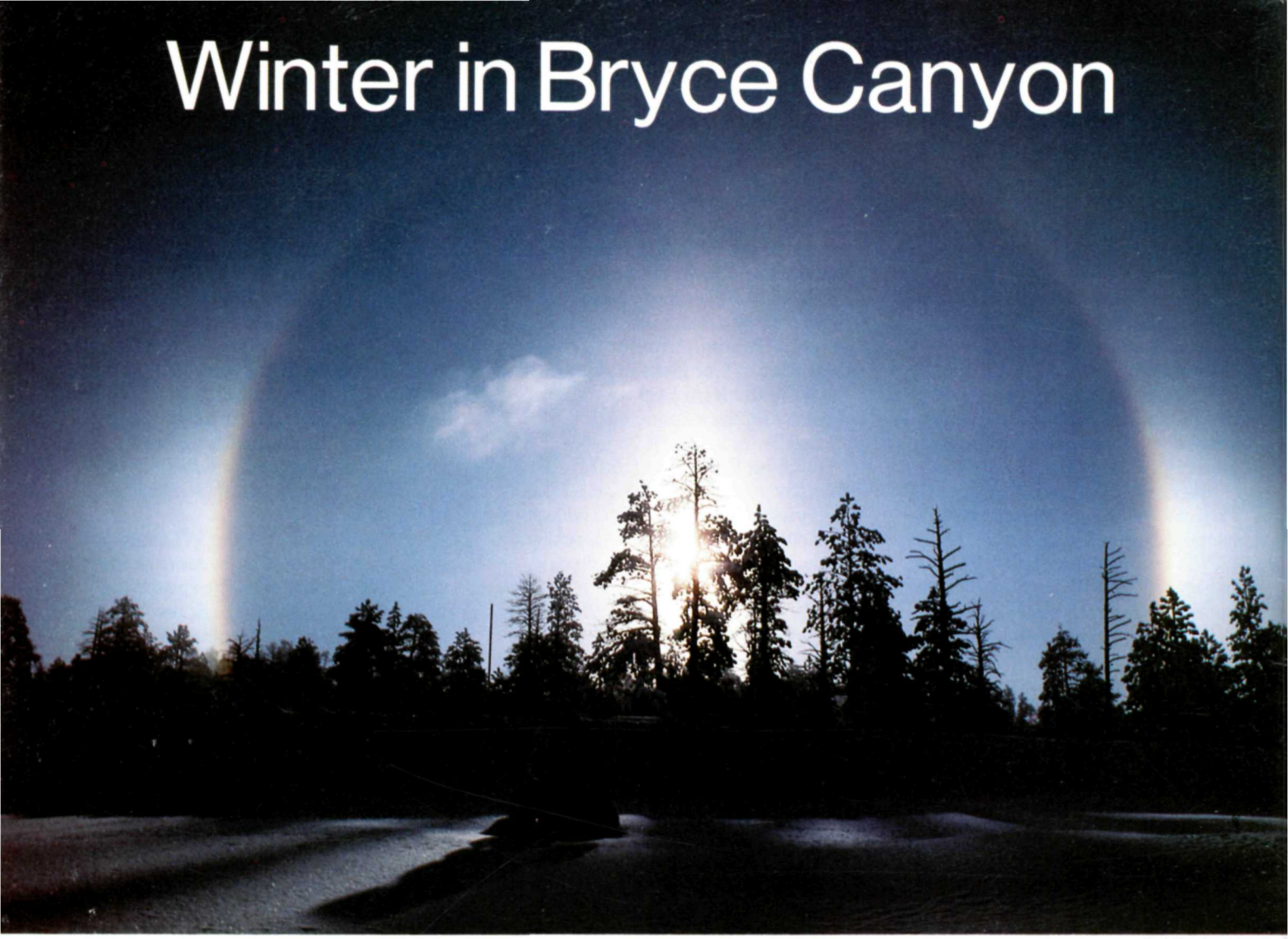
This plan would still allow San Francisco to draw off more Tuolumne River water from the park. The plan deserves careful scrutiny because, if the plan proceeds, the city would draw off more water from a wild and scenic river in designated wilderness.

Another early hydroproject—this one at Sequoia National Park—is the subject of controversy. Since 1913, when the Kaweah No. 3 generator was put into production, the California Edison Company has been drawing water from Sequoia.

The license for Kaweah No. 3 is up for renewal, and the House Subcommittee on National Parks and Recreation held hearings to reconsider the value of the Kaweah project. The NPS has documented the adverse impacts. Its report cites degradation to the park's aquatic flora, fishery resources, wildlife, recreation, and the aesthetic quality of Sequoia.

At the hearing, Steven Whitney, NPCA natural resources coordinator, said, "NPCA believes the continued utilization of national park resources for production of hydroelectric power is not appropriate. To do so would be inconsistent with Sequoia's authorizing legislation and the NPS Organic Act, and with recent positions taken by the NPS on other hydroelectric projects."

Winter in Bryce Canyon



Fred Hirschmann

Park Portfolio

It is ironic that, in a land as deficient in moisture as this, water should be the principal sculptor of the terrain. During summer, storms sweep over the plateau, delivering intense showers. There is little vegetation to protect steep slopes from such downpours, and most water escapes in rivulets that cut the land with gullies. These torrents scour canyon floors, gouging them deeper and deeper.

Winter brings no relief. Frontal storms regularly blanket the plateau with deep snows. On south-facing slopes, where the sun heats rock surfaces, water from snowmelt percolates deep into joints and cracks. Nighttime temperatures freeze the water in these fractures, and the resulting expansion exerts tremendous pressure on the surrounding walls.

Since the water in the cracks freezes from top down, the full force of expansion is directed against the adjacent rock, prying and splitting it into angular fragments. The repetition of this process—over 200 times each year at Bryce Canyon—is an extremely important factor in the shattering and disintegration of solid rock.

Weathering is an important prelude to erosion, since it breaks down the bedrock and thus prepares it for removal by running water. The chemical weathering of rock is a more subtle process, yet its effects are beautifully expressed in form and color.

Winter frost-wedging and summer rains tirelessly carry on their work of sculpting the formations into an endless procession of enchanting forms—monuments, actually, to the power of erosion.

Excerpted from Bryce Canyon: The Story behind the Scenery, *written by John Bezy; KC Publications, Box 14883, Las Vegas, NV 89114, $3.95 postpaid.*

Jeff Gnass

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Opposite page: on rare occasions, light and the icy atmosphere create a "sundog," a halo around the rising sun.

Fred Hirschmann

Backcountry in Denali National Park.

Alaska's braided rivers. Million-year-old ice water warmed to 34 degrees.

PanAm pilot Bill Cooley, who usually flies over Denali at 35,000 feet, about to have "the true Alaskan experience."

Thawing since the Pleistocene Epoch, the glacial outflow in Denali National Park sends an icy necklace of braided rivers a thousand miles to the Bering Sea.

Ralph Tingey, Denali National Park Service, points out that climbers scaling the 20,000 foot slopes of Mt. Denali consider crossing the braided rivers just as tricky as climbing the mountain. "The water is 34 degrees, often waist deep, moving at 10 to 12 miles per hour—and the river bottoms are dangerously slippery."

Tingey calls the Denali braided rivers "the diamond necklace on the bosom of the north"—and considering the rare beauty of the region, Pet Incorporated appeals to visitors to pack out all containers for minimum impact on our National Parks. Pet makes good, nutritious foods to restore your energy—like Heartland Cereal, Orleans Shrimp, Underwood Meat Spreads, Old El Paso, and Pet Evaporated Milk.

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