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The magazine of the National Parks and Conservation Association

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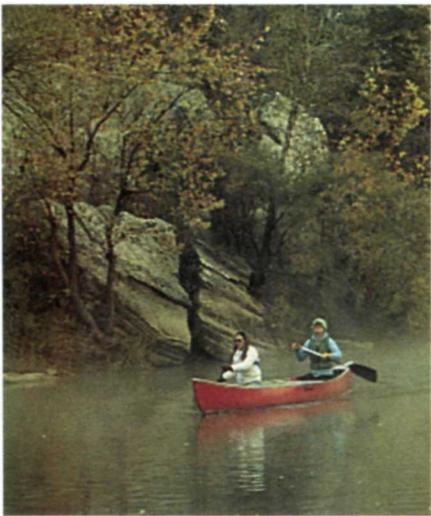
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Cover: Broadloom arm at Watkins Mill State Historic Site, by Jet Lowe/HABS
This woolen mill in Missouri contains the finest collection of mid-19th-century textile machinery *in situ*. It is an example of a historical resource not adequately represented in the National Park System.

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Connie Toops

NPCA's Park Plan, page 18

Editor's Note: With Contra aid scandals and influence peddling, some of our federal offices and institutions have become a little tarnished in recent years. Yet, many of us still assume that agencies such as the National Park Service are more organized, have a better "life" plan than we as individuals do. Not necessarily.

In fact, it may be a shock to learn that the NPS has no comprehensive plan for the future: no systemwide priorities for boundary expansions, no systemwide inventory of endangered species, no systemwide plan or priorities for including new parks.

Three years ago, NPCA decided that such a plan was an absolute necessity for the association in its role as a watchdog of the parks—as well as for the NPS itself. The plan is now complete, and this issue of *National Parks* includes a condensed version of the executive summary of NPCA's National Park System plan.

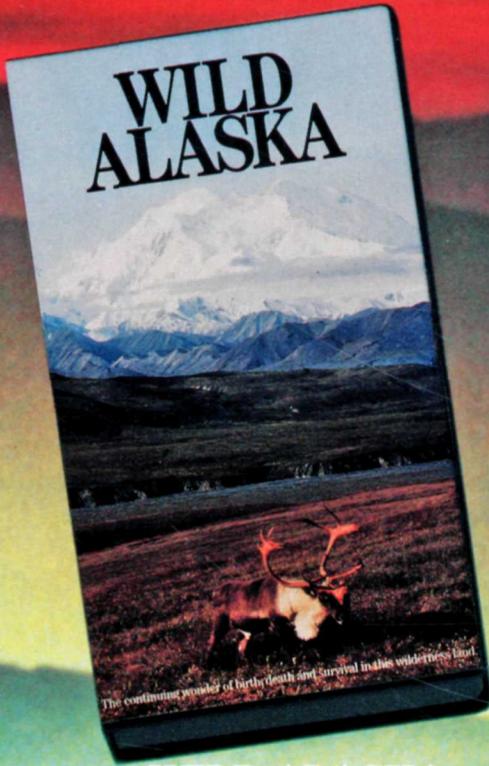
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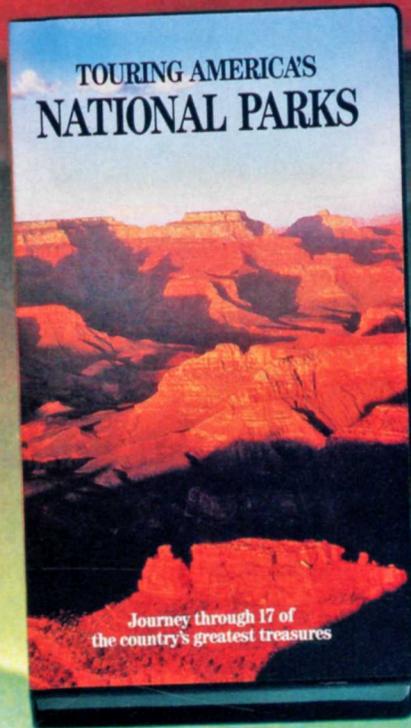


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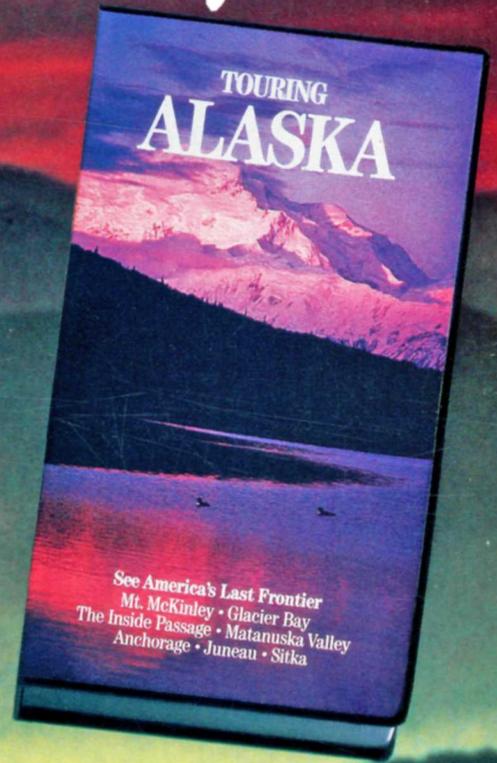
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The Runt of the Park Service

By any standards, the least visible program in the National Park Service is the science program. This is not a recent occurrence. Science and research programs have never received the nourishment they need in order to play an essential role in informing and guiding the NPS.

In the early days of the Service, the emphasis was on getting the American tourist out into the parks. Interpretation was important, and the image of the ranger speaking to visitors around a campfire was the symbol largely created in the Thirties and Forties.

The plan to encourage park tourism worked well. As the number of park visits grew, the role of maintenance and operations grew. Today, the NPS budget for these two functions outweighs all else. In the Seventies, with people flocking to the parks in unprecedented numbers, the emphasis on law enforcement and people management received high priority. And as each of these other functions grew, the long-term role—and, thus, the benefits—of scientific research was pushed to the background.

Our recently completed National Park System Plan looked at all aspects of the system in great depth. The plan revealed that one of the most obvious and urgent NPS needs is more scientific data and baseline information. Yet, by any measure—number of scientists, size of budget, growth of budget compared to other programs—the science program is the neglected child of the NPS family. And this situation will not change if the National Park Service follows its present course.

NPCA will address this problem by beginning a major review of the NPS science program, including natural, cultural, and social sciences. NPS Director William Penn Mott, Jr., wanted to do this study within the Service. But political forces, which feared constructive assessment and meaningful criticism, kept him from tackling the problems of an inadequate science program.

Thus, NPCA will take on the challenge and use the talents of sister conservation organizations. The Association will appoint a 15-member commission to conduct the first review of NPS research programs in more than 20 years. We are honored that John Gordon, dean of the Yale School of Forestry and Environmental Studies, will chair this commission. The other members will be chosen for their expertise in the fields of ecology, forestry, air quality, history, archeology, and social science.

During the next 12 months, the Commission on Science and Resource Management Policy will examine the breadth of current NPS research programs and assess the Service's needs for the future. The commission will use NPCA's park plan as a starting point, but will collect information, conduct on-site field reviews, and work with NPS professionals and the public to reach its own conclusions. NPCA hopes this distinguished panel will offer both philosophical and technical guidance to the National Park Service and the scientific community in general.



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Feedback

We're interested in what you have to say. Write NPCA Feedback, 1015 Thirty-first St., NW, Washington, D.C. 20007. (Letters may be edited for space considerations.)

Riding the Rails

I received the Jan/Feb 1988 issue of *National Parks* this cold winter morning. Immediately, I went to page 28 and read the grand article about trains and Glacier. Seven years ago, while on our way home from a crosscountry Amtrak trip, we traveled though Glacier on the *Empire Builder* in the early morning and I vowed to return and stop and visit. It has not yet happened, but I hope to make it one day—via the train.

Francis W. Warren
Stow, Massachusetts

As a new subscriber to *National Parks*, I would like to express my appreciation for articles such as

"Sentimental Journey," which not only give a history of a park, but are also great vacation suggestions.

I would only ask, as one living in the eastern United States, that you not forget the national parks on this half of the continent.

Steve Christensen
Miami, Florida

Park Service Independence

I believe that your "State of the Parks" excerpt from Howard Chapman's speech [Jan/Feb 1988] warrants a response. In no way do I excuse the shabby treatment shown Chapman by the Interior Department; nonetheless, I take issue with his recommendation of separate agency status for the NPS.

Over the long run, the NPS would fare worse as an independent agency than as part of the Interior Department. Today's problem lies not with organizational structure but with *people*—the Reagan Administration. Tomorrow's problem might be Congress. One should not ignore the ebb and flow in Washington.

Suppose the NPS were cut loose from Interior. Selection as director of an independent agency would be a political plum. Expect a political deputy director with a corridor full of political associate directors.

The solution to today's woes lies within the political process, not in a bureaucratic face-lift.

L. Boyd Finch
Tucson, Arizona

The directorship would not become a political plum if the criteria set forth in NPCA's park system plan were followed [see page 18].

—T. Destry Jarvis
NPCA VP/Conservation Policy

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Roger F. Carter
Clay, New York

The Park Beat Goes On

I was disappointed to read the exaggerated figures and inaccurate statements presented in "Patrolling the Park Beat" [Nov/Dec 1987]. Law enforcement has always been an integral duty of the national park ranger. A 1920s-era letter by Horace M. Albright to potential Yellowstone seasonals stated "the ranger is primarily a policeman. . . ." Law enforcement is a proper function for rangers in that it protects persons, property, and resources; insulates the visitor from becoming the victim of theft, assault, and other crimes; and generally maintains the quality of the visitor experience.

And law enforcement duties have not caused rangers "to neglect their

traditional roles." Only between 3 and 6 percent of all contacts result in law enforcement action.

Hugh Dougher, park ranger
Yosemite, California

The facts in this article were obtained from and checked by the NPS.

—the Editors

Being a conservationist, a park visitor, and a park ranger, I'm aware of current trends in park visitation and law enforcement. I'm glad to see agencies are training their park rangers to become more involved in law enforcement. Without law enforcement, many visitors would not have an enjoyable park visit. The vast majority of law enforcement encounters are not negative.

Brian House
Garden City, Utah

Hot Film

I read James Carman's fine article "On Location" [Nov/Dec 1987] with interest. I was surprised, however, that Death Valley was not men-

tioned. A lot of movies have been filmed here including Zane Grey's epic *Yellow Sky*, *Star Wars* (1977), and many more.

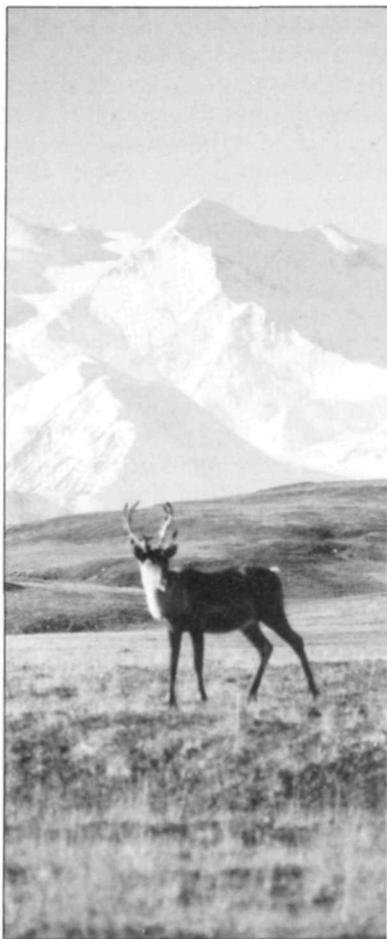
This reminded me of Eric Van Stroheim's classic *Greed*, filmed in Death Valley in 1923 and heralded as the first feature film ever shot entirely on location. Van Stroheim, to draw real emotions from his actors, filmed on the floor of Death Valley in August. Temperatures of 132 degrees were recorded under the shade of the cameraman's umbrella.

As for the thesis—is filming good for the parks?—we *should* be able to charge a fee that covers more than just overtime and damage costs.

Edwin L. Rothfuss
Death Valley NM, California

Correction

An image of such splendor should not go uncredited. Jeff Gnass was the photographer of the opening spread (pp. 28-29) in our Jan/Feb Glacier story.



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NPCA Report

Utah County Determined To Pave Burr Trail

Conservationists' efforts to preserve the Burr Trail as a scenic dirt road suffered a setback in November when Judge Aldon Anderson of the U.S. district court for Utah handed down his decision saying that Garfield County can develop the road. The 66-mile road extends from Boulder to Bullfrog, Utah, traversing Capitol Reef National Park and other federal lands.

The judge ruled that Garfield County, in which most of the trail is located, can develop the road in any manner it desires as long as the Bureau of Land Management (BLM) approves the work as "reasonable and necessary." The decision nullified an injunction on roadwork that had been in effect since March 1987.

The judge also stipulated that Garfield County conduct botanical and archeological studies before it moves ahead. Within three days of the ruling, however, Garfield County mustered a team of bulldozers and proceeded with its plan to realign and widen sections of the road. Ten miles of the Burr Trail were bulldozed before conservationists learned of the work and alerted the judge. He ordered the work to stop.

The judge scolded county officials for their actions. He pointed out that the county, knowing full well that an appeal of the decision would be forthcoming, might have been held in contempt of court had there been a motion before him. The county had ignored the environmental studies required by the judge.

The four conservation groups involved in the case—NPCA, the Wilderness Society, Sierra Club, and the Southern Utah Wilderness Alliance—asked that the judge restore a full injunction prohibiting work on the trail while the groups appeal his decision. The judge issued a ten-day stay on December 11, but declined to grant an injunction.



Mike Medberry

Immediately after the court decision to allow paving of Burr Trail, Garfield County sent bulldozers to clear the road. Although environmental studies are required, ten miles were cleared before the judge ordered the work to stop.

The four groups took their case to the U.S. Tenth Circuit Court of Appeals in Denver. On December 21, that court restored the injunction on any roadwork pending review of the case. Environmentalists are encouraged because one criterion for granting an injunction is the likelihood of the appeal's success. An oral hearing is scheduled for March 4, 1988.

In a related development, on January 20, NPCA requested that the Utah State Supreme Court review the decision by the Board of State Lands to approve a land exchange that gave Garfield County a tract of land within Capitol Reef National Park. Utah Governor Norm Bangarter signed the exchange on Christmas Eve last year.

The State of Utah traded its 640-acre inholding for three properties: 320 acres near Bryce Canyon airport, 60 acres near Widtsoe Junction, and three acres at an industrial park. The Garfield County lands were appraised at a much higher value than the park section. Paving the Burr Trail is apparently worth the financial sacrifice to the county.

Garfield County officials have publicly stated that their interest in

the land is to use it as leverage to force Congress to authorize funds for paving the Burr Trail. As explained by Garfield County Commission Chairman Tom Hatch, if Congress frees up the \$7.5 million that has been appropriated but not yet authorized for the paving, Congress can have the deed to the national park lands. NPCA believes that Congress should reject this sort of political arm-twisting.

NPCA has challenged Garfield County's acquisition of the tract because it invites development that could seriously impair the pristine scenic and natural values of Capitol Reef National Park. The square-mile tract of land includes some of the most scenic portions of Burr Trail as the road switchbacks down a spectacular rock formation known as Waterpocket Fold, which lies within Capitol Reef.

According to Terri Martin, NPCA's Rocky Mountain representative, "We believe the state has a legal obligation to manage state lands in a manner which does not harm the resources and values of Utah's national parks. Such lands should not be managed for purposes of revenue only."

New NPCA Commission To Assess Park Science

When National Park Service Director William Penn Mott, Jr., released his "12-point plan" to revitalize park management, one of his goals was to involve citizens in management philosophy. His idea was to convene a panel to assess the role of research in the parks. This proposal has met resistance from Interior Secretary Donald Hodel.

NPCA recently received a grant to set up a commission to study the role of research in the parks. The panel will issue a conclusive report at the beginning of next year, to coincide with the arrival of a new administration.

The NPCA Commission on Re-

Coalition Outlines Plan To Halt Everglades Decline

The third annual Everglades Coalition Conference took place this past January in Key Largo, Florida. The gathering was widely attended by conservationists, ornithologists, and wetlands specialists. The keynote speakers included Florida Governor Bob Martinez, U.S. Senator Bob Graham (D-Fla.), U.S. Representative Dante Fascell (D-Fla.), and National Park Service Director William Penn Mott, Jr.

The tone of the meeting was urgent. The Everglades ecosystem faces a multitude of problems stemming from human-induced pressures on land, wildlife, and water resources.

One signal of the deterioration of the Everglades ecosystem is the alarming decline in wading bird populations, including the roseate spoonbill, the great white heron, and the already endangered wood stork. Wading bird populations are down 90 percent from their 1930s levels, and current populations are diminishing rapidly.

The coalition outlined a list of priorities to remedy the decline of the Everglades:

- **Habitat protection.** The coalition urges the addition of 140,000 acres of the east Everglades to the national park, and final enactment of legisla-

search and Resource Management and Policy in the National Park System would be comprised of nationally known scientists in relevant disciplines—from biology to ethnography. Some would be familiar with national park resource management and some would not, in order to present a variety of perspectives.

NPCA is now in the process of selecting the eminent scientists who will work under the chairmanship of John C. Gordon, the dean of the Yale School of Forestry and Environmental Studies. NPCA anticipates a 15-member group that will convene in meetings, at conferences, and at field research seminars. The NPS will form a group from its staff to work with the panel.

One issue the commission will

tion to add 136,000 acres to Big Cypress Preserve.

- **Water quality.** Pesticide and nutrient runoff from agricultural areas near Everglades has significantly degraded water quality. Farming operations could be changed to reduce contaminants entering the wetlands system.
- **Kissimee River Restoration.** If Florida continues with the Kissimee River restoration project, the natural flow of the river will re-

evaluate is the NPS policy of "natural regulation." By not interfering with natural processes, the NPS allows natural ecosystems to regulate themselves. Whether the Park Service should continue this approach, or amend it to reflect changes in the environment and human-induced stresses is a crucial question.

Similar commissions have advised the National Park Service in the past. In 1963, a commission on wildlife research was led by Starker Leopold (son of Aldo Leopold), and later that same year, a commission on park research was led by Dr. William Robbins of the National Academy of Science. NPCA believes that an updated evaluation is necessary, and it is pleased to embark on such an exciting challenge.

establish wetlands habitat on the river floodplain.

- **Water consumption.** A campaign by municipalities in south Florida to cut per capita water consumption—currently among the highest in the nation—would also help.
- **Florida panther.** The severely endangered status of the panther might be improved by a 50-percent reduction in the hunting of deer and other wildlife in Big Cypress. This measure has been proposed by the NPS.

The Everglades' wading bird populations, including egrets, spoonbills, and herons, are in serious decline due to human-caused water shortages and contamination of the hydrological system. Efforts to reverse these conditions are under way.



Courtesy of London Natural History Museum; by Stan Osolinski

El Malpais Designated New National Monument

President Reagan recently signed into law the bill establishing the El Malpais National Monument, including provisions for the Grants National Conservation Area and the Masau Trail. NPCA has been urging Congress to approve this national park area for more than five years.

The 114,000-acre El Malpais National Monument will be like the hole of a doughnut, surrounded by the 263,000 acres of the former Grants National Conservation Area, now renamed the El Malpais Conservation Area. The conservation area is currently administered by the Bureau of Land Management, and contains 100,000 acres of designated wilderness.

The Masau Trail is named after the great god-man Masau who wel-

comed Indian people to the earth as they emerged from the underworld through the *sipapu*, or "place of emergence from the ground." The trail is actually an auto tour on existing highways that connects El Malpais, El Morro, Pecos, Canyon de Chelly, Gila Cliff Dwellings, and Aztec Ruins national monuments and Chaco Culture National Historical Park.

Provisions relating to Native Americans held up the bill for quite some time in Congress. The result is legislation that accommodates Native American religious beliefs and practices, particularly of the Acoma Pueblo Tribe, which lives in the area. The tribe will be guaranteed access to all parts of the national monument for traditional uses such as harvesting pine nuts. Small portions of the national monument or the conservation area may be

closed—for limited periods of time—in order for the native peoples to conduct cultural activities or religious rites.

Access and closure policies will be carefully monitored by an advisory committee comprised of representatives of both the Acoma and Zuni tribes as well as other interested citizens and groups.

In addition, the bill stipulates that the NPS will acquire all land within the national monument (including that owned by Native Americans), but only through land exchanges.

Russ Butcher, NPCA Southwest and California representative, said, "El Malpais is a proposal long advocated by NPCA. We are thrilled to see it come to fruition. El Malpais offers a particularly good opportunity for the NPS and BLM to work cooperatively on protective land management."

Seismic Blasting Project Approved for Death Valley

The National Park Service has given permission to the Department of Energy (DOE) to conduct a Seismic Refraction Survey of Death Valley National Monument.

The testing will involve detonating a number of explosives at Death

Valley and monitoring the sound waves as they travel through the earth's crust. The purpose of the survey is to determine the structure of the substrata rock and make sure that radioactive wastes dumped at Yucca Mountain, Nevada, would not filter through the ground to other locations or contaminate underground aquifers. Yucca Mountain

is approximately 50 miles from Death Valley.

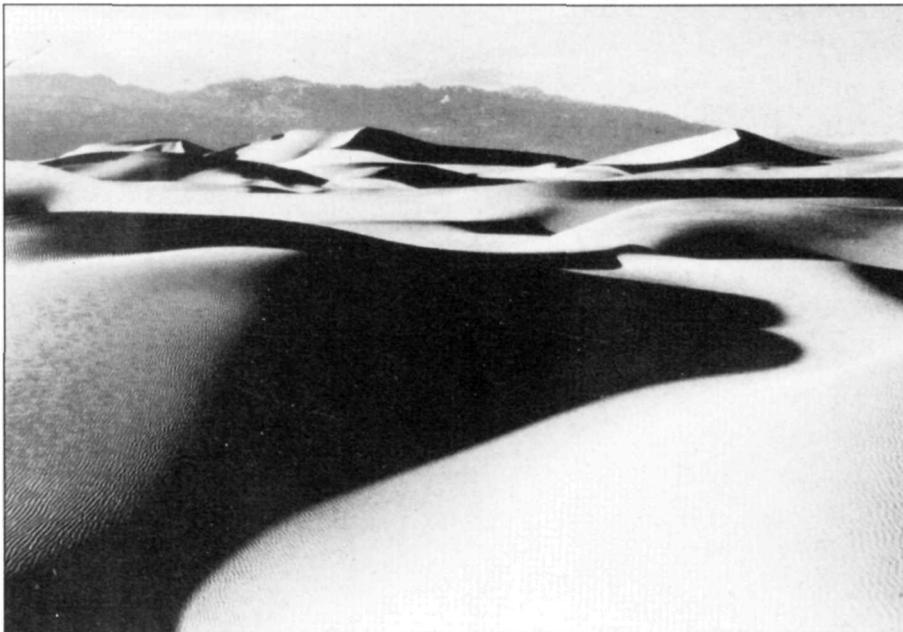
DOE has contracted with the United States Geological Survey (USGS) to conduct similar tests in several other areas surrounding Yucca Mountain.

USGS plans to use ammonium nitrate explosives at nine areas within Death Valley National Monument. The agency listed soil compaction, destruction of vegetation, and "possible" subsidence as the major repercussions of the project.

NPCA wrote to the NPS criticizing the use of Death Valley National Monument for purposes inconsistent with its designation. Russ Butcher, NPCA's Southwest and California representative, stated that "NPCA opposes use of *any* NPS unit for purposes unrelated to visitor enjoyment and protection of its natural and cultural resources. Any project that may jeopardize the overall environmental integrity of a park, such as this, should not be permitted."

The NPS, however, issued its decision in late November stating that it found that no significant impact to the monument would result from the USGS testing. The timetable for detonating the explosives has yet to be determined.

The Geological Survey has recognized soil compaction and subsidence as "possible" repercussions of seismic blasting near Death Valley National Monument.



National Park Service

News Update

LWCF Reauthorized.

The Land and Water Conservation Fund (LWCF) was recently reauthorized by Congress for another 25-year period. Congress also determined the amount of money to be appropriated for 1988. States will receive \$20 million; federal agencies will receive \$150 million. Once again, that figure is far more than the administration requested. NPCA hopes, however, that Congress will be able to increase the figures next year (see page 46).

Parks Up to 341. The total number of units in the National Park System has now reached 341. President Reagan recently signed legislation establishing Jimmy Carter National Historic Site, Georgia, and El Malpais National Monument, New Mexico.

Relocate, Don't Widen. The President also signed legislation to relocate rather than widen the congested highway that takes commuters through Chickamauga and Chattanooga National Military Park. The NPS and NPCA argued that a widened, commercial highway has no place in a national park, and thankfully, Congress agreed. Sufficient funding to move the road has been authorized.

Future of the Parks Conference. NPCA's spring conference, "Protecting and Planning for Parks of the Future," will be held March 14-16, 1988, at the Hotel Washington in Washington, D.C. The conference will focus on new and innovative approaches to supporting and protecting our parks in the years to come. NPCA will also present for discussion its three-year study, the National Park System plan. Keynote speakers include congressional leaders, National Park Service officials, noted conservationists, and others. For more information, contact Ellen Barclay at NPCA, 1015 Thirty-first St., NW, Washington, D.C. 20007, (202) 944-8550.

Womens' Rights Park. The design for a new monument at Womens' Rights National Historical Park in Seneca Falls, New York, was recently chosen from a group of 217 entries. The competition winners are two female architectural students at Harvard University.

Undam Rocky Mountain. The NPS recently purchased three dams in Rocky Mountain National Park that were owned by the city of Longmont. The dams were built in the early 1900s and supplied the town with water until the mid-1970s. A 1976 master plan for the park recommended acquiring the dams and dismantling them, but the National Park Service did not have the money until now. These areas of the national park will be restored to their natural state.

No Nuclear Waste Dump Near Utah's Canyonlands

Congress recently passed a bill to amend the Nuclear Waste Policy Act of 1982. If passed into law, the amended legislation would rule out the possibility of a nuclear waste dump near Canyonlands National Park in Utah.

The Reagan administration had designated the three most likely sites for the dump: Yucca Mountain, Nevada; Hanford, Washington; and Deaf Smith County, Texas. The Lavender and Davis canyon sites, near Canyonlands National Park, were among the top ten runners-up.

The 1987 legislation, initiated by Senator Bennett Johnston (D-La.), states that only Nevada should be considered for a dump site. If tests go well, it would be accepted as the official site. Yucca Mountain is in remote desert 100 miles northwest of Las Vegas. There would be no second site in the eastern United States, as originally proposed.

Although limiting site selection to Yucca Mountain would save the

federal government billions of dollars in testing costs, most see the single-site proposal as a matter of politics. Both Texas and Washington brought pressure to bear to eliminate their states from site selection.

Utah Representative Wayne Owens shares NPCA's concerns that under the new bill Utah will still suffer, since the nuclear waste must be transported through the state on its way to Nevada. Transportation is viewed as one of the most dangerous stages in the process of disposing of nuclear waste.

NPCA has been involved in the nuclear repository issue for the past five years. Terri Martin, NPCA's Rocky Mountain Regional representative, said, "While we are obviously pleased that Canyonlands National Park is finally safe from the threat of nuclear waste disposal, we are disturbed by these amendments.

"A nuclear waste dump site should be selected on the basis of careful scientific study. But Congress has targeted Nevada on the basis of raw politics."

Excavation of Privies Tells Much Fort History

At Fort Union Trading Post National Historic Site, which straddles the Montana-North Dakota border, archeologists have been excavating the sites of privies dating back to the fort's early days. They have come up with a surprising wealth of 19th-century artifacts.

After finishing their second season exploring the outhouses, archeologists report finding bottles, shoes, clothing, pipes, and even imported wine bottles. Park Superintendent Paul Hedren explained that the outhouses were "a convenient disposal for contraband, and for innocently lost things that fall out of pockets." Privies have a short use span, which makes it easy to date the items found.

The excavations are part of the process of rebuilding the fort in time for the Montana-North Dakota centennial celebrations in 1989. The archeologists have discovered much about the original buildings to help in the reconstruction.



The Atchison, Topeka & Santa Fe Railway

Interior Releases Plan For Grand Canyon Flights

The Interior Department has released its long-awaited Grand Canyon aircraft management plan, which was required by the overflight legislation signed into law last August. The plan must still win the approval of the Federal Aviation Administration (FAA). Hearings are expected to take place this spring.

Under the plan, helicopters and fixed-wing flights will be banned from flying below the rim of the canyon, defined as approximately 7,500 feet above mean sea level. They will also be banned from flying below 14,500 feet above mean sea level within four flight-free zones over the canyon.

These zones cover some 53,000 acres, or 44 percent, of Grand Canyon National Park, and were designated to maintain a sense of solitude

over key trails in the park. Some of these trails include Bright Angel, North and South Kaibab, North and South Bass, Hermit, Grandview, Point Sublime, and two long stretches of Tonto.

In the words of Russ Butcher, NPCA's Southwest and California representative, "The plan, while not perfect in every detail, is nevertheless a very commendable and long-overdue beginning toward restoring the natural quiet to noise-sensitive areas of the canyon."

A key element of the plan is a congressionally mandated two-year study of aircraft sound impacts. In NPCA's opinion, these studies should be conducted much more thoroughly than in the past. For example, all aircraft sound frequencies and their characteristics should be carefully monitored against a background of natural quiet.

The noise of airplanes and helicopters has been corrupting the beauty and solitude of the Grand Canyon for years. New regulations—if FAA-approved—will end that.

These studies could help the government devise incentives to encourage all air-tour operators to invest in quieter technology. Two major companies have already made this effort.

Butcher pointed out that "Quieter aircraft incentives, which are virtually absent from the present plan, are a vital ingredient to effective long-term management not only over Grand Canyon, but over all national parks."

The plan also urges that the FAA no longer allow high-altitude commercial passenger aircraft to deviate from normal flight paths to show off the Grand Canyon; and that unnecessary military overflights be curtailed. NPCA has long warned that military joy-riding flights, with jets roaring through sections of the Grand Canyon, are a disaster waiting to happen.

Congress Appropriates NPS Budget for 1988

During the final hours before adjourning for the holiday recess, Congress completed action on the Fiscal Year 1988 appropriations for the National Park Service. Congress appropriated considerably more than had been requested by the Reagan administration.

Congress authorized \$931 million for the National Park Service budget, compared to the \$774 million recommended by the administration. The largest increases were for construction and land acquisition. Resource management and technical assistance for rivers and trails received smaller increases during this fiscal year.

This year's appropriation is only a fractional increase over last year's amount. (In fact, it is no increase at all, if one considers inflation.) With constant pressure on Congress to reduce the federal budget deficit, sizable increases in the National Park Service budget will only get more difficult.

NPS To Restrict Trucking On Yellowstone Highway

Local citizens and conservation groups have voiced concern over the impact of commercial traffic on U.S. Highway 191 in Yellowstone National Park. The highway crosses through 22 miles of the park's northwestern corner, on a direct route to Bozeman, Montana.

Concerns over the highway's effects on the Yellowstone environment are well founded. Federal law prohibits commercial hauling on national park roads; yet, hazardous materials are sometimes transported on this highway through Yellowstone. Also, high-speed roads such as this can be a danger to visitors and to wildlife.

Yellowstone Superintendent Robert Barbee recently announced the Park Service's proposed plan of action. These decisions are the result of several public hearings and the leadership of Senator Max Baucus (D-Mont.). The park has proposed new regulations which will:

- continue to permit commercial trucking on Highway 191 by exempting the roadway from federal regulations that prohibit hauling through parks;
- issue specific restrictions on trans-

porting hazardous materials through the park;

- reduce the speed limit on the highway from 55 mph to 45 mph;
- strictly enforce the new regulations with increased staff and monitoring stations;
- implement cooperative law enforcement measures between the State of Montana and Yellowstone National Park to improve enforcement both in and out of the park;
- continue cooperative efforts to monitor the highway and address future safety problems.

Overall, NPCA and other environmental groups view these proposed actions—reducing the speed limit, prohibiting hazardous waste transportation, and stepping up ranger patrols to enforce the new restrictions—as necessary and positive measures.

NPCA urges the State of Montana, however, to be more active in resolving this issue. For instance, the state could exercise its authority in denying trucking permits to overlength vehicles during adverse weather conditions on U.S. 191.

Concerned citizens should write to Yellowstone urging strict enforcement of safety measures. Write: Superintendent Robert Barbee, Yellowstone National Park, WY 82190.

Wilderness Proposed For Arctic Refuge

Senator William Roth (R-Del.) has introduced a bill (S. 1804) in the Senate that would designate 1.5 million acres of Alaska's Arctic National Wildlife Refuge as a wilderness area. His interest in preserving the area and his leadership in the Senate have proved a crucial counter to the strong pro-development lobby.

In early December, Roth testified before the Senate Environment and Public Works Committee. Excerpts of his speech follow:

"As this committee addresses the issues that surround this legislation, it will embark upon a significant challenge. I call it significant because the lines of distinction between what is good, better, and best for the American people are blurred by deep convictions and strong emotions from all parties concerned. . . .

"There are few things of real value that we can leave our posterity with the confidence that they will endure beyond our lifetime and throughout theirs. Undisturbed land is one of these. . . . As one of the world's most extraordinary natural frontiers we must take pride that the coastal plain is ours. And with that pride, we must assume the responsibility for its care and management. If we take this duty seriously, we will in no way be able to justify the stripping and mining and drilling that has been proposed for a temporary supply of oil. . . .

"Instead of the majestic beauty of the wilderness plain and a natural habitat for wildlife, we will have a land laced with 380 miles of roads for heavy equipment, crisscrossed with 100 miles of main pipeline and collector lines. We will have a land where seven large production facilities, four smaller ones, two ports with marine and salt-water treatment facilities, and four airfields scar the forest and tundra. We would have a land littered with boom communities, a land where concerns abound about adequate water supplies and drilling—concerns about the thousands of tons of gravel that would have to be mined and transported on muddy roads

Late-Breaking Newsbriefs

• Senator Strom Thurmond (R-S.C.) introduced a bill on February 1 to further protect the Congaree Swamp National Monument in Columbia, South Carolina. Senator Hollings (D-S.C.) is a cosponsor.

The bill would expand Congaree Swamp National Monument by 7,000 acres and designate a portion within as wilderness.

• The Shell-Western Corporation is pursuing a federal permit to conduct seismic tests to locate natural gas in Big Cypress National Preserve, Florida. Assistant Secretary of Interior William P. Horn is apparently considering the proposal. Conservationists will respond with a lawsuit if sufficient environmental studies are not carried out.

• A bill has been introduced to upgrade Fort Jefferson National Monument to a national park and to designate a portion as a national marine sanctuary. The fort was built in 1856 and served as a federal military prison before and during the Civil War. It is an island near Everglades National Park and is considered crucial bird habitat.

• This year's Marjorie Stoneman Douglas Award will be presented on March 14, 1988, as part of the opening dinner for NPCA's conference, "Protecting and Planning for the Parks of the Future." The award honors citizen activists who have been instrumental in protecting areas of the National Park System. Senator Timothy Wirth (D-Colo.) is the featured speaker.

that will cut across this virgin territory—and concerns about the crystal clear streams that will be polluted—all to get at that small black pool beneath the North Slope?

“I believe that the 80-percent chance of not finding oil, and the added fact that if oil is found it would not be enough to last more than a few months, demonstrate that we must leave the beauty and the natural resources of the frontier to the wildlife and to future generations.”

Glen Canyon Dam: Problems of 20 Years

When Glen Canyon Dam was being built in the 1960s, ecologists, river runners, and groups such as NPCA recognized that the dam would forever change the complex ecology and recreational use of the Colorado River downstream in Grand Canyon National Park.

Just how significant some of these changes have been is revealed in a recently published Interior Department document, the Glen Canyon Environmental Studies Draft Technical Report. The document details serious impacts to sedimentation, water temperature and turbidity, nutrients, fish and other aquatic life, riparian habitat, wildlife, and whitewater recreation.

Among the more serious of these problems:

- Peak-power flow releases are steadily eroding irreplaceable beaches—irreplaceable because the enormous quantity of sediments formerly carried by the free-flowing river are now trapped behind Glen Canyon Dam.

Eventually much, if not most, of the vital beach will end up at the bottom of Lake Mead. Because beaches will be too few and too small, river trips as we know them today will almost surely become a thing of the past.

- Sharp daily fluctuations of the river, caused by peak-power flow releases, frequently pose problems for river trips. Unexpected fluctuations can surprise beach campers and make it very difficult to safely navigate rapids.

- The huge pre-dam spring floods periodically flush out some of the ever-accumulating giant boulders that create the many rapids. Without these floods, rapids are becoming higher and more densely packed barriers that are increasingly hazardous to river trips.

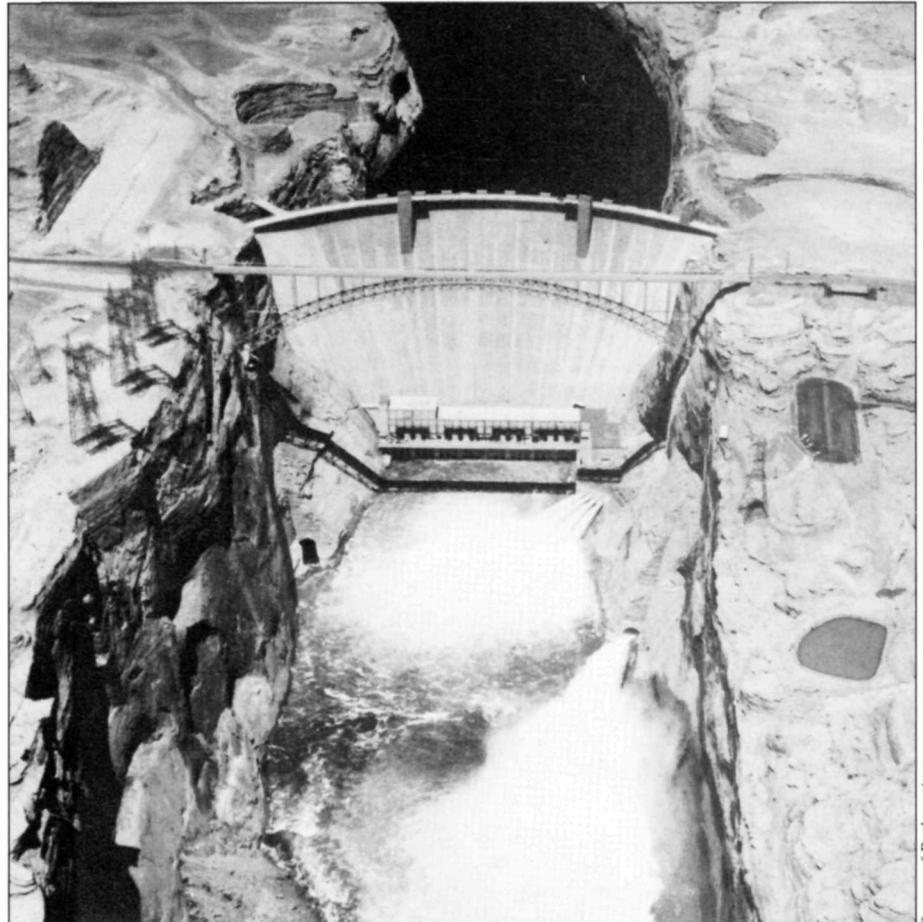
- The range of the federally listed endangered humpback chub is now confined to a fraction of its former habitat because of dramatic changes in water temperature, turbidity, and nutrients. Some native warm-water fishes have already been wiped out.
- A new “high-water zone” vegetative community, including mesquite, willows, tamarisk, and acacia, has vastly increased the extent and density of riparian habitat. This artificially induced abundance, caused by the dam’s flow releases, has in turn increased the quantity and diversity of some bird species and other wild-

life. But this new vegetative community is not the natural ecosystem that parks are intended to protect.

The National Park Service, Fish & Wildlife Service, Geological Survey, Bureau of Reclamation, and other federal agencies have the ongoing task of studying the effects of Glen Canyon Dam in and around the Grand Canyon. Their mandate is to find a plan that balances environmental and recreational needs and sets priorities for mitigating problems caused by the dam.

The Glen Canyon dam was intended as a baseload facility, not a peak-power source. To be least environmentally detrimental, the Glen Canyon facility could return to its original function. Or, a compromise solution might be to spread the peak-power load among a number of dams at different points along the Colorado River.

A new draft study on Glen Canyon Dam, located north of Grand Canyon on the Colorado River, shows that sedimentation build-up behind the dam causes erosion below. The Interior study also acknowledges hazards to river runners.



Bureau of Reclamation

Utah Stalks Parkland On Shore of Lake Powell

Utah Governor Norm Bangerter has proposed exchanging some of Utah's park inholdings for other tracts along the shore of Lake Powell in Glen Canyon National Recreation Area. The state would like to build marinas on five parcels of parkland along the lake in an effort to help the state's economy.

Governor Bangerter has complained that although six out of seven marinas and most of Lake Powell lie within Utah, Arizona collects far more tourist dollars. The Arizona marina is located near urban areas such as Flagstaff and Phoenix, and is close to a major highway.

Utah State officials claim that the existing seven marinas are not adequate to handle the number of visitors to the park. They expect that new, expanded tourist centers—made easily accessible—could compete with the Arizona complex.

Park managers say that more marinas would only invite more visitors than park staff and resources can handle. They cite a recent NPS study stating that once the seven authorized marinas are complete, the park will have reached carrying capacity.

In the proposed deal, Utah would trade some of its park inholdings—parcels totaling 60,000 acres within Capitol Reef National Park and Glen Canyon—for 60,000 acres of parkland on Lake Powell.

Trail of Tears Included As NPS Affiliate

The Trail of Tears National Historic Trail was recently established as a unit of the National Trails System and an affiliated unit of the National Park System. The trail includes the water and overland routes through nine eastern states traveled by Native American tribes as they were removed from their ancestral lands to Oklahoma in the late 1830s.

The Cherokee, Choctaw, Chickasaw, Seminole, and Creek nations were removed from areas of Georgia, Tennessee, and North Carolina during the years 1838-39. The federal government reasoned that the



National Park Service

Lake Powell, in Glen Canyon National Recreation Area, gets as many boaters and visitors as it can handle, says the NPS. Garfield County, Utah, wants to acquire shoreline property in order to build five additional marina/hotel complexes.

Such an exchange is inconsistent with the mandate of the National Park Service because the plan exchanges in-park lands for in-park lands. The National Park Service generally approves exchanges of federal land only for land located outside park boundaries.

Nonetheless, Interior Secretary

Donald Hodel has not ruled out the possibility of the exchange even though the proposal goes directly against a memorandum of understanding signed last year between Bangerter and Hodel. In that proposal, Utah and Interior agreed to work toward trading state inholdings *out* of national parks.

removal would protect the Native Americans from damaging contact with whites.

The Cherokee Nation suffered severely during the removal. More than 16,000 Cherokees were marched across the states of Georgia, North Carolina, Alabama, Tennessee, Kentucky, Illinois, Missouri, Arkansas, and Oklahoma. During the 500-mile trek, approximately 4,000 people—or a quarter of the entire nation—died due to harsh weather conditions, disease, and lack of food, clothing, and medical care.

The Trail of Tears will be managed as an affiliate because the National Park Service cannot possibly

acquire a majority of the land traversed by the trail. Interpretive facilities will be constructed in Hopkinsville, Kentucky.

Missing Magazines

Due to a mailing error, some members of NPCA may not have received the January/February 1988 issue of *National Parks* magazine.

If you are among this group, please write or call to request your copy. Contact National Parks and Conservation Association, Membership Services Department J/F, 1015 Thirty-first Street, NW, Washington, D.C., 20007; 1-800-NAT-PARK.

Crying Wolf At Yellowstone

**Ranchers fear wolf reintroduction.
Their resistance forces Congress
to intervene.**

by Representative Wayne Owens

As our society becomes increasingly urbanized, it is important to know that there are areas in the United States where natural forces still predominate, where bison graze freely and grizzly bears roam unrestrained.

For myself, and for many Americans, the tangible symbol of wild America is Yellowstone National Park, the world's first national park. Yellowstone remains a touchstone.

As a young man, I visited Yellowstone many times and witnessed firsthand the workings of nature. I was fascinated to see the delicate balance that existed in that ecosystem; I owe much of my understanding and love of the environment to that great park.

Through the years I have continued to visit Yellowstone with my children. I believe that I have been able to instill in my family an admiration and respect for the environment by taking advantage of the educational opportunities and other resources of the park, and by simply exposing my children to an ecosystem that is nearly complete.

I say *nearly* complete because even Yellowstone, the "crown jewel" of the National Park System, is no longer whole. Recently, I participated in a few of the courses offered by the Yellowstone Institute. I took the field seminars on elk and on grizzly bears, and I will attend the course on wolves this summer.

The wolf has been eradicated not



Congressman Owens (right) in Utah

Salt Lake Tribune

only from Yellowstone Park, but from the entire western United States as well. In the first half of this century, our federal government systematically eliminated the Rocky Mountain wolf, the region's most significant predator. Wolves were considered a menace to the herds of ungulates in the Yellowstone area, and to livestock owners.

Although the West was virtually rid of its wolf population by the 1930s, it wasn't until the Endangered Species Act was passed in 1973 that three subspecies of the gray wolf were first recognized as endangered and put on the federal list. By 1978, the entire species was listed as

endangered in the lower 48 states, except in Minnesota where it is "threatened."

Now, more than 60 years after this unfortunate extermination, our country is finally starting to view the wolf less as a competitor and more as an integral part of a natural ecosystem.

In 1975, the Northern Rocky Mountain Wolf Recovery Team was set up to study various approaches to bringing the wolf back to the northern Rocky Mountain region. The group is comprised of representatives from the U.S. Fish and Wildlife Service (FWS), the National Park Service (NPS), and from other state and federal authorities.

The group issued a comprehensive recovery plan in 1987 that was initially supported by the NPS and later approved by the FWS. Implementation, however, has been halted due to local opposition.

Over the last several decades, Yellowstone managers have been criticized for allowing an overabundance of elk and bison in the park. Some claim these large herbivores are overgrazing their range. But modern ecologists view this issue and the absence of the wolf as pieces of the same puzzle. Nature has a way of striking a balance between animals and their food sources; but, without wolves in Yellowstone, that balance has been disturbed.

In response to this missing link in the food chain, the Park Service has



Grey wolf in Montana; photo by Jess Lee

announced its desire to restore wolves to Yellowstone. This summer, NPS Director William Penn Mott, Jr., went so far as to suggest the time was right to initiate public discussion of the issue. This would be the first step toward an environmental impact statement, the document required before wolves can be reintroduced.

A Yellowstone Park visitor survey found three-to-one support for reintroduction. Although Mott was supported by many, his plans were heatedly opposed by the livestock industry and the Wyoming congressional delegation. (The area's livestock farmers/owners are nervous that wolves would prey on their herds. In Minnesota, however, cases of wolves stalking livestock have been rare.)

Despite strong feelings on both sides, a thorough public discussion of the wolf issue has yet to occur. By introducing H.R. 3378, my aim is to bring the issue to a debate in

Congress. The bill calls for the restoration of wolves to Yellowstone within the next three years, which would accomplish just a portion of the Northern Rocky Mountain Wolf Recovery Plan.

While we must listen to the local people and make sure the livestock industry remains viable, we must also listen with equal concern to the millions of people all over the country who want a whole Yellowstone, without missing pieces.

But I do not want to portray this issue as a case of national interests versus local interests. In fact, it is notable that statewide polls in both Montana and Wyoming have found that a majority of citizens in both states support wolf reintroduction.

The point that I do want to make resoundingly is that Yellowstone is a *national* park, managed for people all over the country. Important management issues should not be avoided just because of political concerns. These disputes can be re-

solved, and we elected officials serve no one by turning our back on difficult issues. The time is right—now—to address the challenge of reintroducing the wolf to Yellowstone.

Utah Representative Wayne Owens began his congressional term in January of 1987. He serves on the Interior Committee, with subcommittee assignments on Energy and Environment, Water and Power Resources, and Mining and Natural Resources. Recently, he was instrumental in getting appropriations for the NPS to study a proposed coal mine near Bryce Canyon.

If you want to see wolves returned to Yellowstone, write to your Senators and Representatives. Letters should be addressed to U.S. House of Representatives, Washington, D.C. 20505; or U.S. Senate, Washington, D.C. 21510.

Parks in the Next century

NPCA's National
Park System plan
sets the course

During its more than 70 years of existence, the National Park System has operated without a comprehensive plan. In the early years that was possible. But the National Park System has grown enormously, and with that growth have come complex management issues and threats to resources.

NPCA saw a vital need for a park system plan. This spring, after three years of work, NPCA will present *The National Park System Plan: a Blueprint for Tomorrow*.

Because of our mandate to protect the parks, our strong citizen base, and our knowledge of the National Park Service, NPCA was able to maintain an independent point of view while analyzing strengths, needs, and flaws in the park system.

To create this plan we conducted interviews, meetings, and workshops with NPS employees, scholars, and citizen advocates. The resulting analysis bases its recommendations on methods proven successful by the NPS.

Our goal is nothing short of providing a comprehensive guide to

maintaining and enhancing the national park dream into the 21st century. We believe NPCA's park plan—and the help of our members—can accomplish that goal.

RESOURCE MANAGEMENT

Questions of resource management have always been at the heart of the park system's history. Now, with increasing threats to the integrity of the parks, skilled management of natural and cultural resources is a key to the system's future.

There is a paradox here. Preserving naturalness within a park or preserving fragments of a historic scene now requires active management rather than benign neglect. NPS

Presented here is an abbreviated version of the executive summary of NPCA's National Park System Plan. To receive a copy of the 50-page executive summary—a condensation of the full, nine-volume national park plan—see page 42.



Bryce Canyon National Park, UT; by Jeff Gnass

managers must now pay attention to a bewildering array of forces and factors.

Resource management as practiced by the traditional "jack-of-all-trades" ranger often meant casual wildlife sightings and patching holes in deteriorating structures. Today, the guesstimate approach to resource management is not enough. Resource management demands expert scientific knowledge and technical support. In this regard, the NPS is still playing catch up.

Compared to other items in the NPS budget, resource management still lags. For example, from 1982 through 1985, when the administration requested nearly \$1 billion to repair and upgrade park roads, buildings, and other facilities, only 0.6 percent of that amount was available for the parks' critical resource problems. Yet, a recent Government Accounting Office report concluded that as many as 80 percent of the threats to the parks reported in 1980 are still problems.

An NPCA survey of 256 resource management plans—of 277 plans available—identified 3,979 projects totaling more than \$522 million worth of needs, split 60-40 percent between natural and cultural projects. NPCA's study showed that the top five categories of affected resources are 1. historic structures, 2. wildlife, 3. vegetation, 4. visitor aesthetics, 5. archeological resources.

Unfortunately, crisis-oriented projects often receive higher priority than funding requests for programs that will provide basic, long-term ecological data. Without such data, it is difficult for a park manager to make informed decisions and *anticipate* resource problems.

NPS surveys show that park managers report only marginally adequate baseline data at best.

***Recommendations:**

- The NPS should seek an increase in funding—an additional \$50 million per year—for an aggressive, ac-

**The recommendations listed at the end of each section of NPCA's National Park System plan represent only a small fraction of the total number of recommendations in each section.*



Great grey owl and owlet; by Michael S. Quinton

countable resource management program.

- Congress should pass a Park Protection Act similar to the one approved by the House of Representatives in 1983.
- The NPS should prepare an annual report on the status of park resources.

SCIENCE AND RESEARCH

Seventy-one years after the founding of the NPS, the NPS research program is underfunded, understaffed, and struggling for an identity. The NPS employs approximately 285 natural, cultural, and social science researchers, about 2.3 percent of its 12,475 permanent employees. In contrast, the U.S. Forest Service employs 767 scientists out of 30,700 employees, and the U.S. Fish and Wildlife Service employs 509 out of 5,471.

Low staffing prevents the NPS research program from doing long-term planning because of the need to respond to immediate, "brush-fire" problems. Also, opportunities for career advancement are limited for NPS researchers. There is a lack of NPS-sponsored training for research personnel, and their opportunities to attend professional science meetings are restricted.

In addition, NPS research programs lack coordination. Parks and regions that have similar environments often have little if any coordination in dealing with exotic species, visitor impacts, historic preservation, and other concerns.

The NPS social science program also needs more funding and staffing. The NPS does not have adequate information to support most of its visitor-use decisions.

A computerized data base could help solve a number of resource and research questions. But present data on the quantity and quality of national park flora and fauna are grossly incomplete.

As we approach the 21st century, scientific management of the national parks is critical. The NPS research program must receive adequate funding and staffing in order to provide for the wise management of our resources.

Recommendations:

- Congress should enact a specific legislative mandate for NPS research.
- The NPS should establish an independent research arm.
- The NPS should implement a threefold increase in natural, cultural, and social science research staff.

PARKS AND PEOPLE

In the early days, encouraging people to visit the national parks was a way of building widespread public support. Today, national parks are firmly established as popular vacation destinations. NPS statistics show that recreation visits to national park areas increased by 27 percent between 1979 and 1986.

Not only are parks experiencing an increase in sheer numbers of visitors, but these visitors are seeking a wider range of recreational activities, such as kayaking, bicycling, and crosscountry skiing. Some park areas have become so crowded that the qualities for which they were established are threatened. And visitor-use conflicts have intensified.

Typical examples of these conflicts include the clash between mountain bicyclists and hikers at Point Reyes National Seashore and



John Oliver Cabin, Great Smoky Mountains NP, TN; by Jeff Gnass

INTERPRETATION

Interpretation helps visitors to understand and appreciate park resources, and it encourages visitor uses that do not harm those resources. But Congress did not provide a legislative mandate for interpretation; so it is often the first activity to be reduced when managers are faced with tight budgets.

Not only can interpreters tell visitors more about the wildlife, history, and geology of a park, they can also target threats to the parks and help foster park protection. NPS interpretation is largely provided by seasonal employees and volunteers, however; and the vagaries of seasonal work make it difficult to ensure consistent and substantive interpretation.

The situation has not always been this way. For instance, in the 1970s the NPS focused on the role of environmental education. An Office of Environmental Education was established to create a curriculum that would educate students and, thus, help ensure the future of the parks.

Although policy for this effort has faded, some healthy models still exist. Everglades, for example, has maintained a program with schools in south Florida, and Yellowstone has developed a new curriculum to be used with area schools.

Lately, with staff constraints, even pure interpretation has faded. Park interpreters are doing less educating and more managing of volunteers, fundraising for programs, and the like. These duties are important; but, often, interpreters' real strength—that is, talking to visitors—is sacrificed to supervisory duties, in which they may have no training. Often, too, visitor needs, visitor-use patterns, and visitor impacts on resources—information crucial to interpretation—is lacking.

Recommendations:

- Congress should enact legislation to mandate NPS interpretation.
- The NPS should hold park superintendents and regional directors accountable for supporting quality interpretive services.
- The NPS should reaffirm the role of parks in fostering environmental education.

the controversy over scenic aircraft tours at Grand Canyon. Despite these problems, the NPS is generally unwilling to make value judgments about which uses provide a "high quality" visitor experience, compatible with park resources.

The NPS is required by law to set visitor capacities for all units of the park system. To do this, the NPS must have good baseline information about park visitors. Yet, present information about park visitor levels, attitudes, and needs is wholly inadequate.

NPCA recently developed a scientific procedure for assessing and managing NPS visitor impacts. This process could greatly assist in park planning decisions.

The procedure suggests alternatives that could help the NPS manage the impact of visitors. Alternatives include visitor education on how to best use a park; promoting lesser-known parks; and establishing in-park public transportation.

Another concern is visitor services. Roads and trails, restrooms, groceries, gas stations, and gift shops are provided by a combination of public and private sectors. These providers include the NPS, concessioners, and nonprofit cooperating associations.

But the NPS should not continue to strive for maximum accommodation of visitors—by widening roads or enlarging parking lots—when such use exceeds park carrying capacities or impairs park resources. High-priced restaurants, tacky gift shops, and entertainment-oriented facilities, such as downhill ski areas, can all undermine park visitor appreciation.

Because parks are magnets, the NPS plays a key role within the tourism industry. Park tourists contribute to local economies by purchasing meals, accommodations, souvenirs, and transportation. Thus, good community relations can help encourage *appropriate* growth in local communities and can develop a strong local constituency for the parks.

Recommendations:

- The NPS should define a long-term management policy that achieves both preservation and compatible use.
- The NPS should provide guidelines on appropriate visitor behavior through educational and interpretive programs.
- The NPS should develop standardized techniques for measuring visitation and visitor-use patterns in parks.



Buffalo National River, AR; by Connie Toops

PARK BOUNDARIES

NPCA's boundary study arose from a long-standing need to examine the adequacy of the boundaries of existing park areas. We analyzed each park area to determine if boundary adjustments were needed—either to include significant resources located outside of boundaries or to better protect resources already within.

NPCA has determined that, too often, park boundaries do not ensure a park's long-term preservation, nor provide for its most efficient management. So, another purpose of our study was to examine the process by which boundaries are established.

The early parks were protected naturally by their isolation. Because of the tremendous growth in this country, park managers now understand that physical, biological, and cultural resources are inextricably related.

Yosemite's elk and deer, for instance, cannot be protected without protecting their winter habitat, which lies outside the park. Nor can the historic scene in Cuyahoga Valley National Recreation Area be preserved without understanding the dynamics of the watershed.

A few innovative boundary strategies have been devised over the years. At Shenandoah National

Park, Congress developed three separate boundaries: a 250,000-acre boundary as the minimum for a national park; a 385,000-acre boundary that included eventual acquisition; and a 521,000-acre maximum boundary within which properties could be accepted by donation.

Unfortunately, Shenandoah is the exception. Often the criteria for established boundaries seems to vary even within a single park. The boundary of Death Valley National Monument, for example, follows natural terrain, section lines, and state lines in a seemingly random fashion. Policy makers tend to follow man-made lines instead of prominent topographic features.

Map inaccuracy is also a common problem. Although the U.S. Geological Survey is the nation's central mapping agency, it relies solely on NPS information when drawing park boundaries. The NPS, however, has no central office with up-to-date maps of every park area.

In addition to maintaining current maps, the NPS should also be considering adjacent threats in boundary planning. Yet, traditionally, park planning documents have not addressed boundary issues.

A "zone of concern" should be established around each park. Then

public agencies, such as the Bureau of Land Management, and private landowners would know that the NPS expects coordination with surrounding landholders about boundary issues.

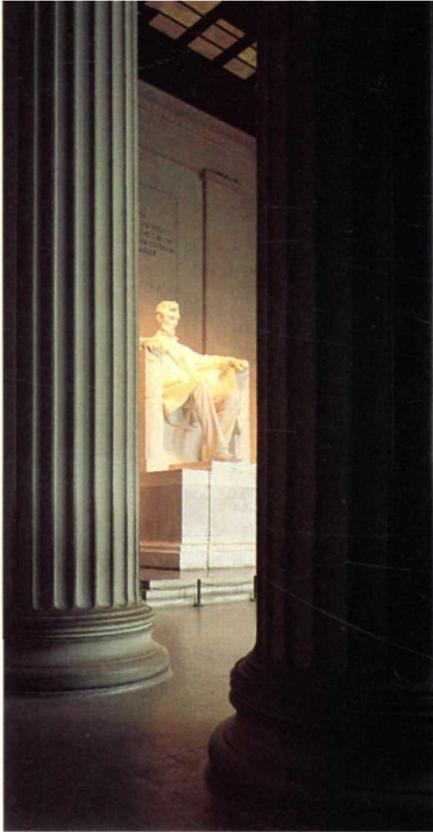
Traditionally, the NPS has never been responsible for such zones of concern, but NPCA has concluded that boundary adjustments alone will not adequately protect park resources.

Recommendations:

- The NPS should implement boundary adjustments recommended in NPCA's boundary study.
- The NPS should work with federal, state, and local agencies to identify a zone of concern for each park area.
- A boundary analysis should be incorporated into each park's planning process.

PLANNING AND THE PUBLIC

Any park planning process begins with a statement for management (SFM), which is supposed to be reviewed and updated every two years. The SFM, however, does not address threats arising outside park boundaries; the instructions for developing the SFM are vague; and the public lacks opportunities to participate in developing the SFM.



Lincoln Memorial, Washington, D.C.; by Jeff Gnass



Pecos National Monument, NM; NPS photo

Following completion of the SFM, preparation of a general management plan begins. This is the major step in planning the *interior* management of a park area—but it should also require information on adjacent land uses.

NPCA also believes more public participation is necessary. The National Environmental Policy Act (NEPA) mandates public participation in the environmental impact statement process.

It is increasingly rare, however, for the NPS to provide adequate public involvement in the NEPA process, the statement for management, or other planning processes. But, without open and honest dialogue, the park becomes a target of controversy.

Another problem with the planning process contributes to inappropriate development within some parks. Although park managers decide what new construction their parks need, it is left to the Denver Service Center to choose the designs and locations of these buildings and other visitor services.

It's as if park managers were acting like private citizens who decide to build a new home. Then, the hired architectural firm is given total power to site, plan, design, and con-

struct the house, without any direction from the homeowner. This is the way the NPS Denver Service Center (which may know nothing about that park's specific needs) manages park construction projects. According to NPCA's analysis, this procedure often leads to excessive development of park areas.

Recommendations:

- The Denver Service Center should be reorganized into three units: planning; compliance/clearance; and design/construction.
- The NPS should develop a model Citizen Participation Program.
- The NPS should establish a design review board made up of distinguished private-sector experts.

LAND ACQUISITION

Few people realize that there are more than two million acres of private land, estimated to be worth more than \$2 billion, inside the boundaries of the National Park System. Privately owned lands exist in some of our oldest and best-known national parks, including Yosemite and Grand Teton.

Eventually it will be necessary to acquire most of these lands because private lands are subject to development, such as logging and mining. By enacting the 1965 Land and Wa-

ter Conservation Fund (LWCF) Act, Congress began a new era in the management of public lands by establishing a fund that provides monies to federal, state, and local governments for land acquisition.

Each year, the fund is credited with \$900 million for federal, state, and local land purchases. (The money comes from leasing portions of the outer continental shelf to oil and gas companies.)

Because of budget concerns in recent years, however, Congress has appropriated only \$250 million annually, which is much more than the Reagan administration has requested.

The recent report of the President's Commission on Americans Outdoors recommended that Congress establish a dedicated trust fund that would provide stable funding—a minimum of \$1 billion per year to replace LWCF.

Besides urging such legislation, NPCA has isolated three other issues relating to land acquisition.

- Acquiring threatened or endangered species habitat within or around park areas is a top priority. America's national parks, which include almost 80 million acres, do not have adequate data on the plant and animal species—where they are,

how many there are, and what habitat they need to flourish.

A servicewide inventory and monitoring of species is vital for their protection. This information should be coordinated with other governmental agencies, such as Fish and Wildlife Service.

- Privately held mineral rights within park areas are another acute problem. Surprising as it might seem, approximately 3,000 mining claims and six million acres of mineral rights are held within units of the National Park System. They are either held as subsurface rights to parkland or as inholdings within parks.

The 1976 Mining in the Parks Act closed parks to *new* mining claims. But other laws and regulations that apply to mineral activity in the parks are complex and often conflicting. The best protection against mining threats is for the NPS to acquire mineral rights within parks.

- Land exchange is a land protection tool that could be used more widely and successfully. Exchanges should not be considered a substitute for outright land purchases, but there are instances where exchange is the best tool for improving the land status of a park.

General principles for federal land exchanges laid down by the Federal Land Policy Management Act requires that 1. the exchange must be in the public interest, 2. the lands must be of equal value, and 3. there must be a willing seller and a willing buyer.

The equal value test, however, can be difficult. How does one place a precise value on grizzly bear habitat or on Anasazi ruins?

The equal value test requires more creative options. And, the government should inventory and identify all federal lands available for exchange.

Recommendations:

- Congress should create a true trust fund, which would provide adequate and reliable land acquisition funds.
- The NPS should complete a standardized inventory of all endangered, threatened, and listed species within park units and should maintain ecological data bases.

- Federal agencies should create inventories of acreage that is available for land exchanges.

NEW PARKS

The preservation of nationally significant areas should be an ongoing responsibility of Congress and the NPS.

A 1972 NPS review concluded that, in order to represent all facets of our cultural history, a minimum of 196 areas should be added to the park system. NPCA-sponsored research, completed in 1987, suggests that the park system lacks 42 percent of all ecosystems defined in the 1972 NPS review.

Yet, since 1981, only five new units have been added to the system (Great Basin, El Malpais, Steamtown, and Harry S. Truman and Jimmy Carter historic sites) and one has been subtracted (Georgia O'Keeffe historic site). Plus, a new areas study has languished.

When the National Historic Landmark Program was established in 1935, it served to identify historic sites for inclusion in the park system. The program, however, needs revitalization. Current monitoring does not adequately assess threats to landmarks or protect them.

The National Natural Landmark Program, too, lacks personnel and adequate support funds. Established in 1962 and administered by the NPS, the Natural Landmark Program was envisioned as a valuable source of candidate areas for the park system.

New areas must be added to the system if the system is to keep pace with the continually increasing public demand for new parkland. From 1950 to 1982, visitation at park areas increased more than tenfold—from 33 million to nearly 330 million.

Selection of new park areas requires the utmost care. Yale historian Robin W. Winks, a former chairman of the NPS Advisory Board, has said, "The true test of national character is in what people choose, by conscious act, in the face of contending choices, to preserve."

Recommendations:

- The Tallgrass Prairie, San Rafael Swell, American Samoa, and 44

other natural areas should be brought into the park system as soon as possible.

- Anasazi Sites, Cape Kennedy Launch Site, Mark Twain Home, and at least 40 other sites of historical significance should be placed under the protection of the National Park Service.

- The NPS should work with Congress to establish a standardized method of assessing the merit of proposed additions.

LOOKING AT THE SERVICE

As the park system has developed over the years, its size and scope have greatly influenced the structure and growth of the National Park Service.

The widening diversity of parks—from natural and cultural to urban and recreation area—and park visitors have sparked new approaches to interpretation and visitor services. And, as parks have become a concern to nearby communities, the NPS has had to hone its public relations and outreach skills.

At the heart of the NPS framework are a central office in Washington, D.C., ten regional offices, and several professional support centers, including centers for cultural resource preservation, land acquisition, archeology, fire management, interpretive design, and law enforcement.

Situations vary with every political administration. Increasingly, though, the political influences wielded by the Interior Department (the NPS's parent agency) are destroying the long-term continuity and direction of the NPS. Because of this increasing politicization, there is an urgent need to make the NPS an independent agency, which is responsible directly to Congress and the President.

If the NPS were independent from Interior, Congress would have to develop criteria for selecting NPS directors, who would be appointed by the President with the advice and consent of the Senate. Much like the Smithsonian Institution, the NPS should have a board of regents, half appointed by the President, half appointed by Congress.



Forbidden Peak, North Cascades National Park, WA; by Jon Gnass

The NPS is responsible for the preservation of the nation's most valuable natural and cultural treasures. Yet, the NPS does not require employees who are responsible for preserving resources to have any technical education.

As a result, one of the most controversial issues in the NPS today is the use of specialists versus the use of generalists. In the past, "generalist" rangers were sufficient to protect resources and provide for visitor enjoyment. Today, the NPS also needs biologists, geologists, archeologists, curators, and others with specialized skills.

Lack of staff exacerbates the problem. Often resource management is neglected in favor of law enforcement, search and rescue, or paperwork.

Another problem within the ranks of NPS employees is that opportunities for career advancement are in short supply; and this leads to morale problems. It is not unusual for employees to remain at one grade level—with the same responsibilities and pay—for five to ten years.

Many NPS employees point to a lack of good managers in the system as a root cause of employee concerns. They call for better management to remedy poor career counseling, inaccurate employee performance appraisals, and inadequate strategies for handling conflicts among parks and between parks and surrounding communities.

Recommendations:

- Congress should enact legislation to make the NPS an independent agency.
- The NPS should define all core responsibilities for each park and determine how much staffing is necessary to meet these responsibilities.
- The NPS should conduct a personnel analysis of central offices to eliminate duplicate or superfluous activities.

NPCA's analysis and its proposed adjustments are not absolute. Nevertheless, this National Park System plan is the first comprehensive attempt to guide the National Park Service so that it may preserve America's heritage in perpetuity.

Going into the Rock

Black Dragon Wash, Hidden Splendor, and the San Rafael Reef

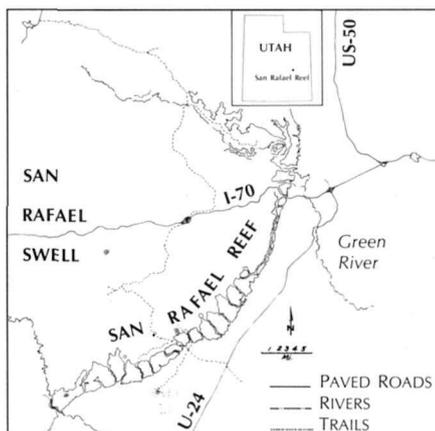
by
Joseph Bauman, Jr.

It is a land timelessly dreaming. At night the wind rushes across the reef. You can hear it flowing through the canyons and shaking the tops of cottonwood trees. It has always been like this.

This is the San Rafael Reef, a rugged sandstone ridge curving like a sickle blade for 56 miles through the southern Utah desert. It once formed the steep eastern edge of a vast domelike structure, the San Rafael Swell.

In the millions of years since the swell lifted, erosion cut it into mesas, hills, sudden deep canyons, sandstone fins, mountainous plugs, isolated smaller knobs. The hills are naked shale and clay, or covered with pinyon and juniper trees; the canyons are rock-walled gorges. It is a wonderland of dry mountains, a little Grand Canyon, prehistoric pictographs, painted badlands, grassy natural parks.

This is an uninsulated desert, where the average high temperature in July is just under 100, the average minimum in January around ten. Only about five and a half inches of precipitation fall in a year. Half of that slams through in great thunderstorms during the summer and early fall, although spring rains can be heavy, too.



Map courtesy of University of Utah Press

The swell's steepest edge, the reef, is along the eastern side. It has resisted weathering better than the soft center. Most of it is intact, but channels carrying flood water off the swell penetrated it, gouging out canyons.

The reef has nearly two dozen major canyons and many side draws and box canyons. The canyons are usually wide at the mouth and about a quarter of a mile across, but they can be tight all the way through. Some are four miles long. The sides may be broken sets of ridges and slopes or single sheer walls. In either case, cliffs soar from the floor, generally 300 to 600 feet tall, and some are much higher.

The reef's crests rise between 800 and 1,500 feet above the nearby desert flats. This ridge varies from four miles wide at the Moroni Slopes and the Old Woman Wash in the south and Black Dragon Wash in the north, to only about half a mile across in the center.

The swell is an uninhabited, broken country of 900 square miles. Parts of it are as spectacular as the reef, and it's something like seven times as large. Desolate ridges are studded with sage and glittering with gypsum. Cattle graze through the reef on their way to the Green River. From the Wedge Overlook in the northern part of the swell, you can see a little Grand Canyon that is more scenic, to my eyes, than the actual Grand Canyon.

I know little about the swell. I set out to learn the reef, and that is all I've managed in more than a dozen years.

From the start, I was dazzled by this incredible, unknown country. The reef was stunningly alien. It was beautiful and challenging, dry and lush, close enough to Salt Lake City that I could explore it on weekends. Best of all, most of it was untouched.

At first, I was excited by the desert's physical treasure. I picked



up a couple of arrowheads, took petrified wood and fossils, and once dug up a claret-cup cactus. I justified this by the thought that the arrowheads were in canyons churned with new motorcycle tracks; the Bureau of Land Management allows collecting 25 pounds of petrified wood a year; and the cactus was growing on a dirt road. In a few years, the desert taught me better.

Unlike the East, where settlers and trails, towns and commerce wore down the wilderness gradually over the centuries, men's scars are new here. The San Rafael country was so recently opened to exploitation that we can name the date—November 5, 1970.

GREEN RIVER—One of the scenic wonders of the United States, the jagged San Rafael Reef, was opened today by a newly completed section of I-70. In the years ahead it will attract millions of visitors.

As well as opening the gate to what is acclaimed to be the most scenic 70 miles of Interstate Highway in the country, the I-70 section opens a new and vital shortcut between the Midwest, Denver, and Los Angeles.

The report on that date, written by Clarence S. Barker in the *Deseret News*, a Salt Lake City newspaper, marked the opening of the longest stretch of virgin highway completed in a century. The ribbons of concrete sliced through the rugged and beautiful swell, cutting right across the reef.

An earlier proposal was for a highway alignment along the route of the Old Spanish Trail, which skirted just north of the reef. It was last used a century and a half ago, but its traces remain in the desert. That would have been a relatively easy and inexpensive route. But this was during the ecologically backward time before the first Earth Day, and the notion was abandoned.

Instead, to amaze motorists and perhaps develop new tourist destinations, the freeway was blasted through the reef at Spotted Wolf

Canyon. As Barker explained in another 1970 article, the Spanish Trail route "would have covered 'run-of-the-mill' scenery, avoiding the rugged defiles and scenic vistas obtained by a frontal assault upon the San Rafael Reef. . . ."

In some places, the canyon was only ten feet wide. It was drilled, dynamited, and filled with concrete, complete with view area turnouts. Now folks speeding from Salina to Green River can glance out the side window and catch a breathtaking vista. The tourist facilities were never built.

I-70 did open the San Rafael country to recreationists, however.

"Scenes beautiful to my eyes on one trip would appear boring on others. I came to realize both viewpoints are mere prejudice."

They included me. I wanted to know the reef. I did not search for beauty alone, though I found it along the way. I also discovered something deeper—nature in timeless balance. Finally, I grew to appreciate the integrity of landscapes that were untouched, places not beautiful to human senses.

Remains in the region reach back toward the time of mammoth hunters. The reef turned out to have an impressive history of cowboys and bandits, explorers and traders along the Spanish Trail. Then, there was the uranium mining boom of the 1950s and 1960s that damaged some areas.

To take one wash as an example, at both ends of Chute Canyon are relics to historic use. Close to the mouth, toward the swell, a corrugated tin mine shack shimmered in the sun. It stood away from the cliff in the midst of brown sagebrush, near a huge boulder painted with

"Morgan's Cabin 1952." Mine names were painted on walls deeper inside the canyon, "Brown Dog #3" and other pups.

Four miles south, at the other end of Chute, graffiti were scratched into a sandstone wall: "Warren Allred '99," "Diamond Ruff 1888," other notations more difficult to read. The antique flourishes were so high on the wall they must have been carved by the horsemen, either cowpunchers or the bandits who rode through the reef. The famous outlaw Butch Cassidy and his desperadoes went through these canyons on their raids.

I flew over the reef and walked on its top. But most of my time was spent walking through the canyons. Almost never seeing another group, my friends and I admired cliff swallows singing in the air, sandstone walls covered with Swiss cheese holes, lizards ducking under ephedra bushes, cottonwoods offering pools of shade.

Some canyons are plain, short, and dusty. You can get heat stroke or blackfly bites that take months to clear up. Scenes beautiful to my eyes on one trip would appear boring and sullen on others. I came to realize both viewpoints are mere prejudice, false perceptions caused by conditioning.

We tend to judge places as good if comfortable, bad if not. We like a wash with a fine play of sunlight and shade and comfortable temperature. There's much more value to nature than our idea of prettiness or usefulness. When I matured, I understood that any undamaged landscape is precious, however harsh.

Still, to me, the reef is a strange and lovely wilderness. Its canyons, cliffs, and boulders are predominantly a light tan, although the colors can range from orange, coppery, or gray-white to pink, with great drip marks and swaths of purple desert varnish. Overhangs streaked with varnish show where the pouroff has been thundering off the reef after every cloudburst for half a million years.

Those lines and patches on the buttery wall are stains from minerals dissolved in the water. Iron and



Scott T. Smith

manganese dried on the rock, and a dark film has been building up, a little more from each storm.

I found I could learn without words.

What is that? It's slipping into more natural mental gear. Call it a state of natural grace, a time of spiritual growth and renewal. It must be a kind of meditation—an unexpected disappearance of self when feelings and surrounding are exactly right. A reverie is triggered by hiking on the sandstone hills, or by seeing humble plants and animals make a living in a hard, barren region. Whatever it is, I don't try to think deep thoughts. I don't try. I don't think—when it happens, I have absolutely no thought. Time stops.

I call it going into the rock.

This feeling of harmony with nature may build through a day of tough hiking, and climax in the minutes when I lean, sweating, against a hot boulder. Or it can

come suddenly with a glance over my shoulder.

Near the end of Bell Canyon my camera jammed. My friends Conrad and Karen walked through and I stayed to work on it with a set of screwdrivers I carry. Alone, I hunkered in the shade of a slickrock shelf.

The wash has undercut the sandstone. I am floating over the gravel. The lumpy brown ledge cradles an elongated puddle with a silvery rim of reflected sunshine—distinct round pebbles in dry hollows of the shelf—white impurities on the shelf, like growths of rock—the gravel floor a few feet below.

That night we camped immediately in front of the reef in a remote area near the mouth of Bell Canyon. During the still evening, we took

The San Rafael River winds along the edge of the ancient San Rafael Swell.

short walks through the hills. Again, I spaced.

Thousands of clumps of Indian ricegrass shine in the sunset. Among them, an occasional bright red glow: bladderstems, weeds with red seed tubers swelling their center stems. The swellings are glossy, actually dull brown with red vertical stripes. There is no breeze. The ricegrass hang their heads attentively. I stride among them, surrounded by these clumps looking at the gullies, hills, and shining grass on the opposite side of the wash.

The bladderstems could have been underseas creatures, with their twigs sprouting like feelers. By winter they will be dry and brown. The ricegrass clusters grew spaced evenly

apart, undoubtedly an adaptation that lets them share the scanty rainfall and soil nutrients. They thrive in a moonscape of pounding heat. That night, bats squeaked across the sky.

It's a magic country, outside of time. The challenges are the same faced by Indians eight thousand years ago: heat and cold, getting enough water, finding shade in the hottest part of the afternoon, when the sun is high in the brazen heavens and no cliff or bush throws a shadow, and you wonder why you're there.

It can be dangerous and uncomfortable.

Conrad and I were stupid enough to camp in South Temple Wash around the middle of November. We arrived at sunset and I put up my tent. The temperature seemed tolerable to me.

In the blackest part of the night, I awoke to piercing cold, shivering violently. Climbing from my sleeping bag, I fumbled into my long johns and sweater, then struggled back into the bag. It was still bitter, so I pulled my heavy coat in, too.

For hours, cold seared every inch of skin not tightly bundled. My shins stung. I barely slept. Trying to get a drink from my canteen, I found the stopper was frozen so tightly to the spout I couldn't open it. Later, in the predawn dimness, I saw the clear plastic canteen was half filled with ice spars.

About then, Conrad heard me stirring, walked to the tent and said he had not slept at all. He had had to get up in the night; once outside his bag he shook uncontrollably and began to panic, verging on hypothermia. We learned later that the low had been only five degrees Fahrenheit.

But those times were part of the challenge, the testing of physical nature and my soul. Sometimes I passed the tests; sometimes I failed.

Usually, the rewards came more easily.

In the evening, we sit drinking red wine, talking and laughing by the fire in the cool air. When the night's fine, nobody wants to bother with a tent. So, as the desiccated juniper

and sage send up sparks, we lie in our sleeping bags, glasses on, staring at glittering star fields and the filmy highway of the Milky Way.

On clear moonless nights, the stars alone light up the canyon. When the moon is out, it's like a searchlight, and we hike at mid-



Donald Young

night. Or I can pitch a tent then, seeing every rock and cactus. The sandstone amplifies the beams.

Eventually, I became so relaxed in the desert that I enjoyed it best while alone. Like a coyote catching winks during the day's heat, I've crawled into a cleft in a giant boulder to nap while the sunlight toasted my pant legs. That was literally going into the rock.

Thirteen years after I started tramping into the reef, I found the place where the wind is born.

The U.S. Bureau of Land Management is the landlord of nearly all the San Rafael Swell. Agency planners tried to juggle newer environmental laws and old directives to facilitate grazing, encourage oil and gas exploration, boost uranium mining. It's a built-in conflict: laws demand a new ethic, but the BLM has a houseful of old clients. Unfortunately, preservation is not the BLM's strong suit.

An official wilderness designation would offer limited protection for most of the reef. Under wilderness, which can be established only by act of Congress, scarring activities are

supposed to be banned. But this rule has many loopholes.

Chief among them is that the BLM is not obliged to preserve wilderness values on land not in its wilderness study areas. In fact, laws give developers the right to mine, drill, and build roads there.

Delicate, ochre pictographs—in the Barrier Canyon style—decorate the walls of Temple Wash and other canyons that cut through San Rafael Reef. Some are more than 6,000 years old.

While most of the reef is in three study areas—and in 1986 the Utah BLM made a preliminary recommendation to protect them—the Moroni Slopes, Temple Mountain, and most of the swell are not even under study. Altogether, the agency does not support wilderness for three-quarters of the San Rafael country.

Because the reef doesn't exist in a vacuum, damage to the swell would harm it, too. And if Congress should designate it as wilderness, that is still a weak shield; other loopholes allow mining and road construction across wilderness areas.

Disasters loom on the near horizon like some monstrous impending thunderstorm. The first drops have begun smacking onto the sandstone: ● Motorized recreationists drawn by the opening of I-70 keep coming. Today, they are the greatest immediate threat to the San Rafael ecosystem.

Their whining motorcycles and three- and four-wheel-drive rigs destroy the solitude. Every year, more trails are crashed through the sagebrush in once-silent canyons.

Off-road vehicle drivers launched a national letter-writing campaign to prevent the BLM from "locking up"

trickle of money they might bring should the nuclear industry someday resurrect. Federal rules require that to keep claims current, one hundred dollars' worth of assessment work must be performed every year. Sometimes this is done at the mine itself. Just as often, it's "road work,"



Scott T. Smith

San Rafael Swell offers an education in rock formations. These boulders are found in Straight Wash, one of the more dramatic areas in the BLM wilderness study area of the reef.

this region with wilderness recommendations. For some reason, motorcyclists have tremendous influence with the agency.

BLM not only acquiesced in the ORV destruction, but actually encouraged it. Agency officials signed an agreement allowing a motorcycle club to mark and maintain a trail system in the swell immediately adjacent to the reef's Crack Canyon Wilderness Study Area.

The desert heals slowly. Breaking the thin soil cover causes erosion. The motorcycle tracks wash deeper with each cloudburst. They are reinforced with more ORV abuse.

Everywhere in the swell, hills are being carved by off-road vehicle tracks. The BLM has made vast portions into ORV sacrifice areas, such as Buckhorn Draw with its heavily vandalized pictographs. This is permanent damage.

• Several played-out uranium mines are occasionally worked for the

blading new stretches of dirt roads to improve access.

• The Moroni Slopes are the southern terminus of both the reef and the swell. A great channel that is dry most of the year, Salt Wash, half-circles the slopes. Salt Wash is the site for a proposed federal salinity control project.

To keep project pumps chugging, a power line would be built along the scenic dirt road that runs from Utah Highway 24, past Factory Butte, and to the edge of the wash. The road would be "improved," and an 11-acre evaporation pond would be constructed, along with an equalization pond of more than an acre and a half. Pipeheads would stud the desert.

Yet, Bureau of Reclamation officials have filed a formal "Finding of No Significant Impact," which can allow the project to roll ahead without further environmental studies. Although Reclamation officials say the salinity control unit is being dropped for now, Harl Noble of the Salt Lake regional office has said it could be revived.

• A gigantic tar sands development, proposed to extract synthetic fuel

from gummy petroleum deposits, was okayed by the BLM for tracts of land in the center of the swell.

Leases were converted to allow industrialization, and BLM planners ruled that this would have no impact on the wilderness quality of the nearby reef. Actually, it would destroy any remaining tranquility in the region.

• When Utah achieved statehood, it was given four square-mile sections of every federal township of 36 square miles. That amounts to around one hundred state parcels scattered throughout all of the swell and reef.

The Division of State Lands and Forestry, which manages Utah property, unabashedly boosts all kinds of development. State officials allowed an exploration company to level a drill pad immediately in front of a pictograph panel thousands of years old in South Temple Wash.

When I-70 opened, the BLM launched a program of studies on how to deal with the onslaught of visitors. The intention was to protect the swell while encouraging and controlling limited tourist development. Study teams produced imaginative and sweeping recommendations.

Almost nobody knew about the study. No national groups fought for the swell. Neither the BLM nor Congress followed up on the recommendations. Because of this inaction, the destruction of the San Rafael country seems assured. The natural balance may be utterly overthrown within ten years.

That would be a tragedy. The San Rafael Swell is largely as it has been since the Creation. We don't have many places like it—a still-intact, stunning section of the Colorado Plateau.

The San Rafael Swell should be preserved as a great ecological desert park—not developed for mass tourism, but set aside for its own quiet merits.

Joseph Bauman, Jr., is the environmental writer for the Salt Lake City Deseret News. His book, Stone House Lands, was published last year.



Lyme Disease

**A new disease, carried by ticks,
spreads through the parks**

by Edward Bruske

It was nearly four years ago that Walt Dabney, chief ranger for the National Park Service, then stationed at Everglades National Park, first showed symptoms of the disease. It started with a red rash, followed by aches, pains, and nausea similar to the flu. Months later, pain erupted in Dabney's joints, as he developed a form of arthritis.

A marathon runner, Dabney ended up with arthritis in both knees and has had arthroscopic surgery performed on one of them. Meanwhile, a succession of at least nine different doctors tried—and failed—to figure out what was wrong with him.

Things then went from bad to worse, as Dabney began to suffer loss of memory and lapses in his concentration.

Today, after years of agony and massive doses of antibiotics, Dabney knows only too well the true nature of his once-mysterious ailment. Somewhere in 1984, Dabney was

Ticks that transmit Lyme disease prefer coastal grasslands, such as found at Fire Island. There, Lyme disease is carried by mice, white-tailed deer, and raccoons; but dogs, cats, and horses can also bring the disease home.

bitten by a tiny tick that infected him with Lyme disease, a serious health menace similar to rheumatoid arthritis that is only beginning to be recognized by members of the medical community.

It has, however, already stricken numerous other Park Service employees as well as untold numbers of park visitors.

Called by some scientists "the great imitator" because of its ability to mimic other diseases (and thus resist proper diagnosis), Lyme disease has been reported in 32 of the 50 states. Currently, epidemiologists believe it is spreading from its stronghold in the Northeast to other parts of the country, particularly coastal areas and parts of the upper Midwest.

Last year, 1,500 cases were reported to the Federal Center for Disease Control, a number that authorities believe may be just a fraction of the real toll. And, for those who have contracted the disease, the long-term implications are still unclear.

Spread primarily by ticks, the bacterium that causes Lyme disease was only first identified little more than a six years ago, in 1981. Patients in the latter stages of the dis-

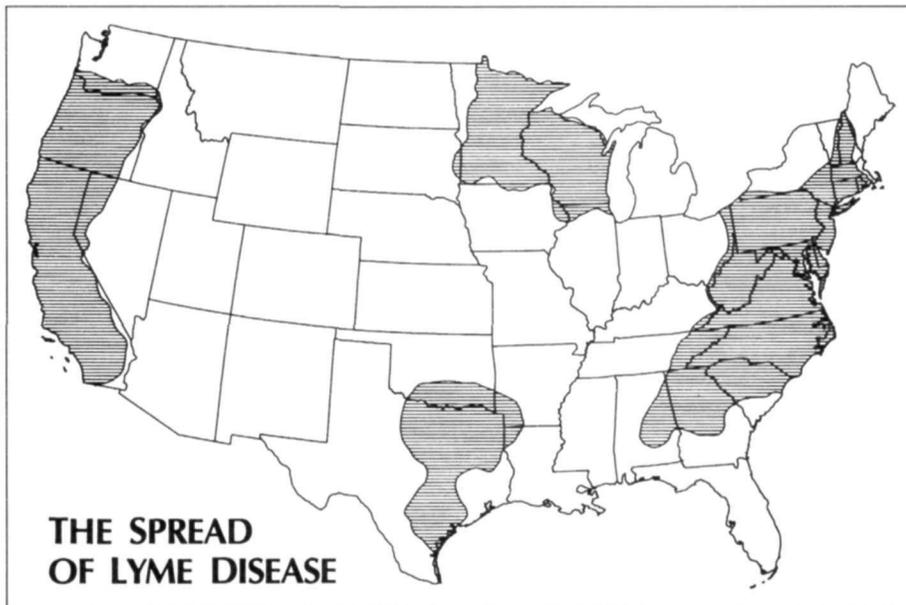
ease can suffer a number of brain and other nervous system disorders. Antibiotics can bring relief, but researchers are finding that symptoms can recur without warning, months or even years after the disease is first contracted.

Dabney's case was finally diagnosed in early 1987, after three years of pain and concern, when a sample of his blood was sent to State University of New York at Stony Brook for testing. He recently underwent 28 days of intramuscular injections of antibiotics and said he had improved markedly.

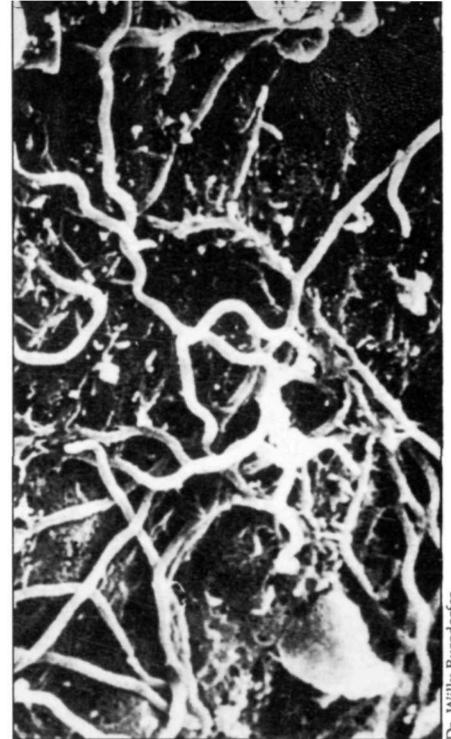
Perhaps as bad as the disease itself were the years that went by when Dabney didn't know what was wrong with him. Nor did any of the the doctors he visited, despite numerous tests and visits to a variety of specialists.

"I was a climber, I ran marathons. And then everything started going wrong," Dabney said. "You can forget what you were going to say, or where you were going to go. I was almost crippled from arthritis of the knees."

Because of its close association with ticks, which thrive on deer, field mice, and other mammals, Lyme disease presents a clear threat



Map by Terry Kilpatrick



Dr. Willy Burgdorfer

People are usually bitten by ticks when ticks are in the nymphal stage. Tick nymphs are most active during late spring and summer, just when beaches and woods are filled with vacationers. Pregnant women should be especially cautious, because Lyme disease can even be transmitted to their unborn children.

Borrelia burgdorferi, which causes Lyme disease, is a coiled bacterium and, thus, has been grouped with the spirochetes. It was discovered in 1981.

to the nation's parks. But research into the disease is still in its infant stages, and Dabney and other National Park Service officials are at a loss to pinpoint precisely which areas might be affected.

Dabney said there has been little Park Service money to research the disease. Instead, park officials rely mostly on state and federal health experts, who fear that Lyme disease still may be widely misdiagnosed because so many doctors have never heard of it.

Authorities say Lyme disease may have been around for years, but it was consistently diagnosed as other diseases until, in 1975, when Polly Murray, a medical technician in Old Lyme, Connecticut, noticed a strange pattern of rheumatoid arthritis in young children there. She was among the first to believe that the disease was caused by ticks.

The causative agent of Lyme was discovered in 1981 by Dr. Willy Burgdorfer of the National Institutes of Health's Rocky Mountain Laboratory in Montana. He isolated the infecting agent of the disease, which was then identified as a spirochete bacterium, similar to the bacterium

that causes syphilis, in 1984. The species has been named for Burgdorfer: *Borrelia burgdorferi*.

Initially, it was thought that Lyme was native to North America since the spirochete had first been found here. But, now there is evidence that the disease has been known in Europe since the beginning of the century as ECM (*erythema chronicum migrans*), meaning a spreading red rash—one of Lyme's early symptoms. The term "Lyme Disease" is now internationally accepted to describe a complex of symptoms.

Although Lyme has now been reported in a majority of states, as well as in Europe and Asia, most cases have been contracted in eight states—Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Minnesota, Wisconsin, and California—with the heaviest concentration of cases occurring on the East Coast.

On some islands off the shore of Massachusetts, for instance, as many as half the inhabitants have the disease. Though only fatal in less than five percent of all cases, Lyme disease can lead to brain disorders similar to Alzheimer's disease.

Also particularly hard hit by Lyme has been Suffolk County and parks in Long Island, New York, where researchers at the hospital of the State University of New York at Stony Brook have taken a leading role in developing methods to detect and treat the disease.

Not far away, at Fire Island National Seashore, another kind of research, sponsored by the Park Service, is focusing on the ticks themselves, and how they go about spreading Lyme.

In just a few years, Lyme disease has gained a healthy respect at Fire Island, where more than 15 park employees—or 20 percent of the staff—have come down with the disease. This includes newly installed Park Superintendent Noel Pachta, who was infected shortly after arriving there in April from a post in the Virgin Islands.

The expert on Lyme disease at Fire Island, though, is Dr. Howard Ginsberg, an insect research specialist from the Center for Coastal and Environmental Studies at Rutgers University. Ginsberg was originally hired by the Park Service to study the habits of mosquitoes that breed



Dr. Raymond Dattwyler



Left, male; right, female, Rocky Mountain Lab

A circular, expanding, red rash is such a common symptom of Lyme disease that doctors will treat you for Lyme disease even if blood tests are negative.

At present, the deer tick (*Ixodes dammini*) is the only tick known to transmit Lyme disease. This tick is the size of a pinhead (only one-sixth the size of the common dog tick). After a blood meal, it may enlarge several times. If you are bitten by a tick, take it to a doctor or to a public health office to be identified.

in Fire Island's marshes. Two years ago, Ginsberg turned his full attention to the island's ticks, seeking to unlock the secrets of Lyme at its source.

During those months when the ticks "quest" for mammals on which to feed, Ginsberg has been a frequent visitor to the park, wandering the trails behind the sand dunes along the Atlantic to the Great South Bay to the north, trapping the little beasts.

Although his research is just beginning, what Ginsberg has found so far is that ticks are both prolific and resilient, and that a high percentage of them carry the disease.

"So little is known about it, that pretty much anything I do is new," said Ginsberg, who estimated that half of all adult ticks in the park are infected with Lyme bacteria.

How the bacteria originally made their way into the ticks remains a mystery. What Ginsberg has found is that at least two types of ticks on Fire Island—the lone star tick and the more common northern deer tick—are potential carriers in both the nymphal and adult stages of their life cycles.

The tiny nymphs—no bigger than the dot over an "i"—stay close to the ground under leaves and grass, waiting to catch a ride on their favorite target, the white-footed mouse, or on another mammal or bird.

The adults, meanwhile, climb to higher levels of the park's vegetation, content to wait for the first warm-blooded creature that brushes past.

During Ginsberg's outings into Fire Island's bush, he typically picked up three adult ticks on his clothing every five minutes. And how long they had been waiting for the good scientist to come along is anybody's guess.

"When I catch a tick," said Ginsberg, "I take it back to the lab and put it in a vial in the refrigerator. It can live months in there without a meal."

In all, Ginsberg said he has examined about 1,000 ticks in the laboratory, and he is working on a computer program that one day may help predict tick movements that spread Lyme disease. Already, Ginsberg said he has been surprised to find infected ticks in areas where they had not been reported before.

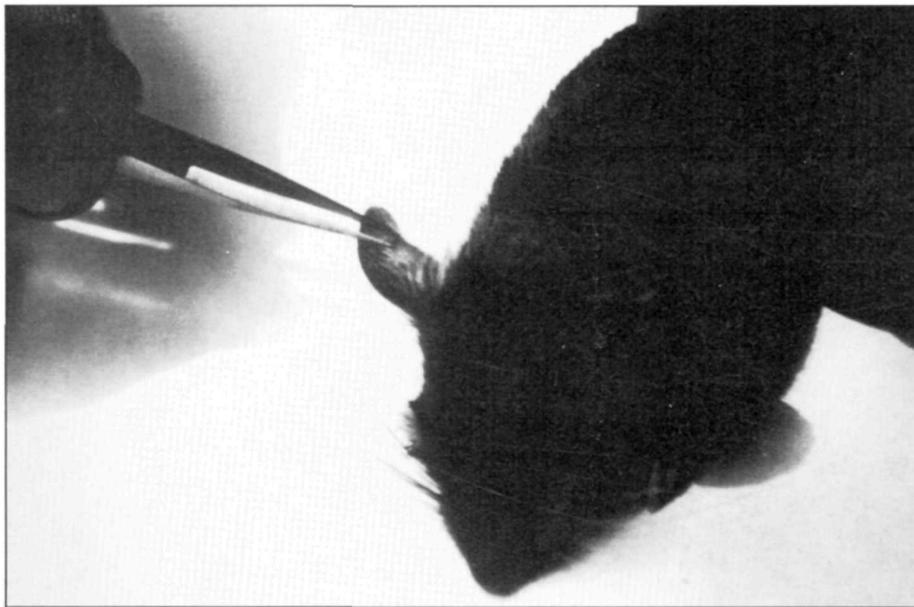
Last year, in a survey of East Coast regional parks, Ginsberg found the bacteria as far north as Acadia National Park in Maine. "I was amazed. I didn't think I'd find them [in Acadia] at all.

"One of the problems with this disease is that the symptoms are very variable and it's often misdiagnosed," Ginsberg said, in relation to his research. "So it may be prevalent, and nobody's aware of it."

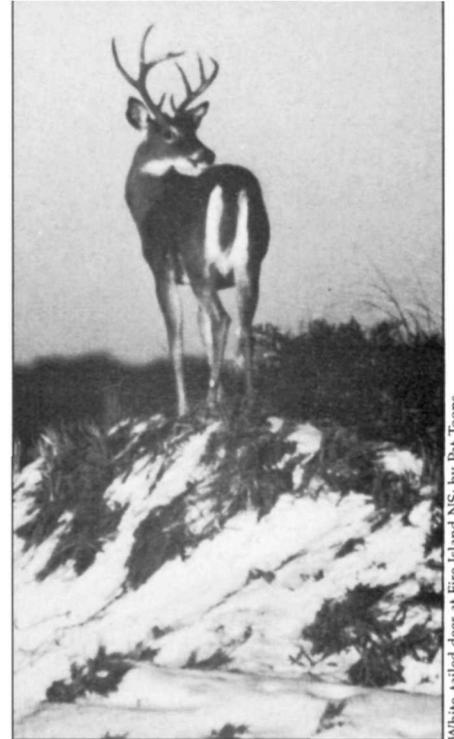
This prospect also concerns park officials, who take a cautious approach toward warning visitors of possible infestations at various parks. At Fire Island, where incidence of Lyme disease is well known, notices of the hazard abound.

Visitors arriving at the park by ferry confront large signs emblazoned with the tick's profile and a description of Lyme disease even before they board the boat. Campers at the park receive a brochure on the disease when they register.

"We try to feel comfortable—though I'm not sure we always do—that we are making an outstanding effort to get the information out to



Dr. Edward Bosler



White-tailed deer at Fire Island NS; by Pat Toops

The deer tick has a four-part life cycle: tick eggs are hatched in early summer; the larvae feed once during the summer, usually on mice; during the following spring the larvae become nymphs. During this stage they live in high grasses and, again, feed only once, usually on larger mammals, such as dogs, deer, and humans.

In autumn, the adult tick attaches to a host, usually a white-tailed deer, where it mates. The female lays eggs in the spring, and the cycle begins again.

people," said Superintendent Pachta, who chairs a local commission on the disease for surrounding Suffolk County. "It's even a matter of getting local doctors to look out for it."

The Park Service also recently prevailed on the U.S. Department of Labor to grant worker's compensation for Lyme disease contracted on the job. This ruling ended a growing dispute with NPS employees. Now, some rangers are concerned that the coverage doesn't extend to spouses and children.

At other parks, though, officials said more evidence of the disease needs to show itself before they undertake an all-out effort to warn the public.

Said Edie Shean-Hammond, spokeswoman for the Mid-Atlantic National Parks region, "It's sort of catch-as-catch-can. Until we know that it's there, we won't be ramming it down visitors' throats. You don't want to get people panicky if there hasn't been a reported incident."

The Park Service so far has printed 250,000 brochures on Lyme disease for distribution nationwide. With millions of visitors each year,

and many park access points unpatrolled, there is some question of how far such an effort will reach.

At the St. Croix Riverway on the Wisconsin-Minnesota border, six of the park's 34 employees have been diagnosed with Lyme in the last two years. There are more than 200 access points to the park's more than 250 miles of river, and officials there estimate that only 20 percent of visitors ever come in contact with park personnel.

"They walk through the woods. That's all it takes. Any time you walk any place around here at the right season, you're likely to pick up ticks," said park zoologist, Dr. A.R. Weisbrod. Weisbrod contends that his park needs to conduct research similar to that being done at Fire Island National Seashore.

"We need to know the distribution of ticks in this part of the world. We need to know what their life cycle is. We need to know what kind of ticks we have. That's got to get resolved because that's going to determine in the long run what you can do about them."

But NPS officials in Washington, D.C., maintaining that ticks are just

as much a problem outside the parks as they are in them, insist that public health officials bear the most responsibility for dealing with the disease. They reject suggestions of a broader survey of parks for Lyme.

"Boy, that would take money. And we don't have it," said Joseph Schock, chief health officer for the Park Service. "I would oppose that kind of project, to tell you the truth. We might not find [the disease] now. But what about next week? I would tell people that any time you're in an area where you might have the habitat for ticks, you need to be careful."

The outlook for Lyme disease is uncertain. Dr. Russell Johnson, a pioneer of Lyme research at the University of Minnesota, is working with hamsters in hopes of developing a vaccine.

At Fire Island, employees have also been urged to exercise greater precautions. Those who must venture from the boardwalk area into the underbrush now wear white overalls instead of the customary green uniforms (the better to spot ticks). Each fall, Fire Island person-



by Connie Toops

In the dense woods of Fire Island and other areas of the eastern United States, 65 percent of deer ticks may be infected with Lyme disease.

nel get together for a "Lyme Fest," featuring free blood tests along with the more traditional burgers and volley ball.

Others are experimenting with means of controlling ticks. This year Ginsberg plans to try a method of tick management, developed at Harvard University, in residential areas of Fire Island: laying down cotton balls laced with a pesticide that is not harmful to mammals. Field mice take the cotton home to pad their nests, exposing larval and nymphal ticks to the toxin.

Ginsberg readily acknowledges that, though this and other chemical strategies have shown preliminary success, they are expensive and potentially damaging to other wildlife. For the time being, he said, perhaps the best that vacationers and other potential victims of Lyme disease can do is to take a few simple precautions. They should wear light-colored, protective clothing, check for ticks, use insect spray, and report immediately to a doctor if symptoms of the disease appear.

Ed Bruske is a reporter on the metropolitan staff of The Washington Post.

LYME DISEASE

knowledge

READ ABOUT THE DISEASE;
LISTEN TO THE EXPERTS



Brochure, copyright Pfizer Inc., 1987.

Pesticides cannot possibly eliminate all ticks. Instead, people should reduce the risk of exposure (see box below) and learn about Lyme disease: Warning signs are posted in parks where the disease has been found; and public health organizations and drug companies are mounting a public education campaign.

Facts About Lyme Disease

PREVENTION

1. Avoid tick habitats whenever possible.
2. Wear long pants with cuffs tucked into socks.
3. Wearing light-colored clothing will help you spot ticks.
4. Protect yourself with repellents and your pets with repellent collars.
5. Brush off your clothing and check your pets before entering the house.
6. Undress and check for ticks; they usually crawl about for several hours before burying into the skin.
7. Remove any attached ticks by gently tugging repeatedly with tweezers at the place where the tick's feeding tube enters the skin.

DIAGNOSIS AND TREATMENT

1. Check for any rash or red patch, especially one that slowly

- expands over several days. The red patch can get quite large (1 inch to 18 inches), and it may be ring-shaped.
2. Flu-like symptoms (low-grade fever, chills, headache) often occur in early stages of the disease.
3. Symptoms similar to meningitis, such as stiff joints, difficulty in concentrating and remembering, as well as fatigue, can occur in the later stages of the disease.
4. The final stage of the disease (weeks to months later) involves elevated temperature and pain and swelling in one or more joints.
5. If you note any of the above symptoms following a tick bite, call your physician.
6. Lyme disease is treatable with antibiotics at any stage; the earlier it is diagnosed, the easier it is to treat.

Campus in the Wild

Pursuing a college education in the national parks

by John Kenney

How would you rather study astronomy: by peering at star charts while listening to a classroom lecture, or by hiking to the top of Sentinel Dome in Yosemite National Park for an unobstructed, 360-degree view of the night sky?

And, instead of merely reading textbooks on archeology and viewing museum collections, why not also work with pre-Columbian Indian experts at Anasazi sites in the Southwest?

If you are interested in college-level courses, whether you are pursuing a degree full time or just taking a class or two on the side, our national parks can provide a refreshing and welcome alternative to the traditional setting of crowded lecture halls, dark-paneled classrooms, and over-used libraries.

Colleges, universities, and national park institutes and associations around the country offer a variety of field-study programs covering a wide range of disciplines—from biology, botany, and ecology to history, archeology, and ethnography.



Photo courtesy of Center for Cave and Karst Studies

WHITE MESA INSTITUTE COLLEGE OF EASTERN UTAH 639 WEST 100 SOUTH 50-1 BLANDING, UT 84511

Each year, the White Mesa Institute, operating through the College of Eastern Utah in Blanding, offers a variety of short, three-day to two-week instructional field expeditions into the southwestern desert. Many of these field courses take place in National Park System units, such as Canyon de Chelly, Chaco Canyon, and Hovenweep.

The desert serves as an ideal laboratory for courses in archeology, history, geology, and archeoastronomy. It is also a source of inspiration for those taking White Mesa's courses in photography, painting and creative writing.

The cost of the programs varies from \$100 to \$550. Although classes offered are not strictly for college credit, credit is available at additional cost through the College of Eastern Utah, Mankato State University, and the University of Utah.

The institute's course-offerings catalog is available upon request.

WILDLANDS RESEARCH 3 MOSSWOOD CIRCLE CAZADERO, CA 95421

Wildlands Research, a program connected with San Francisco State's Extended Education Department, offers field study courses in more national parks than any other university-related program. Field courses include excursions to Zion, Bryce Canyon, Capitol Reef, Canyonlands, Yellowstone, Glacier, Wrangell-St. Elias, and Hawaii Volcanoes national parks, as well as to parks in Canada and Nepal.

Among the courses Wildlands Research offers are an 18-day study of Glacier's endangered species—the wolf, the grizzly, and the bald eagle—and a six-week sojourn through the national parks of the Colorado Plateau. The latter course takes a close look at threats to the plateau's parklands and examines the reasons for creating these national parks.

Most of Wildlands' field classes complement coursework for biology, ecology, and environmental studies majors. Course length varies from

Left: Professor Art Palmer leads karst geology students through Mammoth Cave in Kentucky. Right: A biology class observes life in a small puddle in Glacier National Park.

two weeks to three months. Credit is awarded by San Francisco State University; and costs range from \$360 to \$735. A brochure detailing upcoming programs is available.

**CENTER FOR CAVE AND KARST STUDIES
WESTERN KENTUCKY UNIVERSITY
BOWLING GREEN, KY 42101**

The Center for Cave and Karst Studies at Western Kentucky University offers a number of field courses each summer in Mammoth Cave National Park. Experts in cave studies come from around the country and from abroad to lead the week-long seminars, which combine formal lectures with extensive trips into Mammoth Cave.

The center examines all aspects of cave studies, from archeology and geology to the hydrology of karsts (systems of underground caverns and streams). Specific classes range from a basic study of the history of Mammoth Cave exploration to an intensive inquiry into state-of-the-art methods for dealing with the groundwater problems of karsts.

Costs vary from \$126 to \$531 per course, depending on whether the student wishes to attend on the undergraduate or graduate level, and whether or not the student is a Kentucky resident.

Brochures for the summer of 1988 will be available starting in February. Contact the center if you are interested in obtaining brochures for 1988 summer courses.

**YOSEMITE ASSOCIATION
P.O. BOX 230
EL PORTAL, CA 95318**

Each year the Yosemite Association, located in Yosemite National Park, offers a program of short field seminars that are conducted in the park. Credit is available for many of these courses through California Polytechnic State University.

The seminars, which are two to five days long, focus on the biologi-



Photo courtesy of Wildlands Research

cal, botanical, and ecological fields. The Yosemite Association also offers courses in astronomy, photography, and writing.

One of the more intriguing seminars explores the ethnobotany of the Western Sierra Indians, including Native American uses of plants for food, medicine, fibers, weapons, tools, music, art, and magic. Another examines the universalities in nature, such as recurring geometric and arithmetic patterns and cycles, and the relationship between order and randomness in nature.

Prices for the seminars range from \$65 to \$200. The 1988 season begins in May, and winter/spring catalogues are available now.

**COLLEGE OF THE ATLANTIC
BAR HARBOR, ME 04609**

Unlike the relatively short field studies described above, the College of the Atlantic in Bar Harbor, Maine, offers, as part of its regular curriculum, classes that feature trips into nearby Acadia National Park. These classes are available in the fields of ornithology, animal behavior, ecology, geology, and botany.

The trips to Acadia supplement classroom lectures with actual observation of the animals, plants, and geological formations discussed. Or-

nithology students, for example, can gain first-hand knowledge of bird behavior, including migration, predation, breeding, and flight.

For information on still more college-level courses to be found in national parks, contact the following organizations:

- **Yellowstone:** The Yellowstone Association, P.O. Box 117, Yellowstone National Park, WY 82190.
- **North Cascades:** North Cascades Institute, 2105 Highway 20, National Park Service, Sedro Woolley, WA 98284.
- **Grand Teton, Nez Perce, Craters of the Moon, Yellowstone, and others:** University of Idaho, Department of Wildland Recreation Management, Moscow, ID 83843.
- **Canyonlands, Arches, and others:** Canyonlands Field Institute, Professor Valley Ranch, P.O. Box 68, Moab, UT 84532.
- **Glacier:** Glacier Institute, P.O. 1457, Kalispell, MT 59903.
- **Point Reyes, Yosemite, Hawaii Volcanoes, and others:** Sierra Institute, Box AA, University Extension, University of California-Santa Cruz, Santa Cruz, CA 95064.

John Kenney is editorial assistant of National Parks magazine.

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Gallery

MAKING EDGAR ALLAN POE'S INFLUENCE RING TRUE

Independence National Historical Park has just won a national award, based on the idea that "less is more." The park's innovative approach to interpreting Edgar Allan Poe's Philadelphia residence helped keep the emphasis on Poe's writing rather than on his physical surroundings.

This house is one of four Poe houses in the National Park System. The others are in New York, Baltimore, and Richmond.

So, instead of duplicating efforts by filling the house with period furniture (none of which could be documented as ever belonging to Poe), the NPS emptied the house and painted all the rooms a pale grey.

The NPS decided to fill the rooms with recitations of Poe's works and explanations of his literary influ-



Raven sculpture at Poe NHS

ences. In an adjacent building, there is an audiovisual program and an exhibit, and this year they have finished a reading room, furnished as Poe specified in his essay, "Philosophy of Furniture."

HOW TO CONVERT A RAIL TO A TRAIL

Passage of the Rails-to-Trails legislation in 1983 was seen as a great boon to hikers and other trail users. This act provides a means by which abandoned railroad beds can be converted to multipurpose trails.

But the rules for converting rails to trails are so complicated that few grassroots groups could put them into action. In 1985, the Rails-to-Trails Conservancy was created to act as a liaison and facilitator for community groups who are interested in working on a conversion.

The conservancy has published two books to help people interested in the Rails-to-Trails program. *A Guide to America's Rail-Trails*, a complete directory of the 125 existing rail-trails, is in its second edition. *Converting Rails to Trails: A Citizen's Manual* is new. The manual gives step-by-step information on the conversion process, including how to research the corridor, how to work with public officials, and how to negotiate with the railroad.

For more information or to place orders, contact the Rails-to-Trails Conservancy, 1325 Massachusetts Ave., NW, Suite 400, Washington, D.C. 20005; (202) 783-0980.

GERMAN FUND SPONSORS ENVIRONMENTAL STUDY IN EUROPE

If you have ever considered applying for a grant from the German Marshall Fund, now is the time. Applications for various fellowships are due on April 15, 1988.

• Seven fellowships will be awarded to working environmentalists, who will spend up to two months in two or three European countries, examining environmental policy-making that is directly relevant to their work in the United States.

Eligible fields of interest include waste management, soil and groundwater protection and management, open space conservation, and public information and environmental policy communication.

• Applicants to the Marshall Fund are also eligible for two similar fellowships offered by the American

Council on Germany, an American nonprofit organization.

For more information, contact the German Marshall Fund of the United States, 11 Dupont Circle, NW, Washington, D.C. 20036; (202) 745-3950.

WORKING YOUR WAY THROUGH THE PARKS

Here's a tool. Twice a year, the nonprofit American Hiking Society (AHS) publishes a directory of volunteer work available in parks and forests.

In the directory, AHS offers more than 2,000 opportunities from 295 different agencies in 41 states. There are positions that are appropriate for seniors, families, club groups, and college and high school students.

The publication is available by mail for \$3 a copy from the American Hiking Society, Dept HP, 1015 Thirty-first Street, NW, Washington, D.C. 20007.

MIND EXERCISES FOR TREE HUGGERS

"Visualize that your mind is a pristine mountain lake. At the edge of the lake is a mountain ridge with its image reflected upon the lake's surface. Imagine that your thoughts are winds that ripple the lake's surface, preventing you from seeing the reflection clearly, but as your thoughts slow down and the breezes cease. . . You see the image of the mountains perfectly."

—Joseph Cornell
Listening to Nature

Author and educator Cornell has recently written a book for adults who want to deepen their awareness of nature. By combining quotations from famous naturalists, Native Americans, and philosophers together with transcendental exercises and expressive photographs, he helps you see the natural world a little differently.

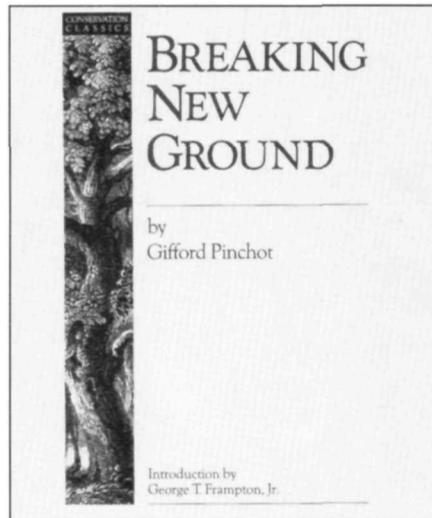
At times the book may sound a bit beatific. Yet, Cornell's perspective can take those who want an intimate relationship with nature a step further. You can order a copy (\$11.95 softcover) from Dawn Publications, 14618 Tyler Foote Rd., Nevada City, CA 95959; (916) 292-3484.

ENVIRONMENTAL CLASSICS

GET A NEW SHELF LIFE

Unlike most natural sciences, environmentalism has a short history. It does, however, have a very long and significant reading list. Recently, there has been growing concern that some of the most important books—now out of print—would be lost. In response, a number of publishing houses are releasing new editions of classic environmental books.

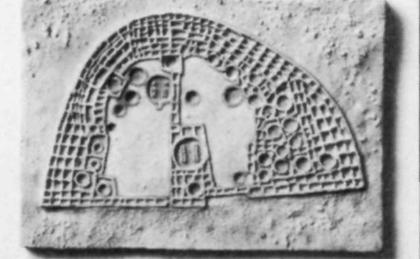
Sierra Club is republishing all the John Muir classics. Viking has released a new edition of Peter Mathiessen's *Wildlife in America* with updated material. And Island Press has taken on an even more ambitious project.



It is launching a new series called Conservation Classics. These seminal books of the conservation movement are facsimile editions shot from the same plates as the originals but with new introductions written by scholars of environmentalism.

The first three editions on the docket are *Plowman's Folly* and *A Second Look* by Edward H. Faulkner, originally published in 1943 and 1947, respectively; *Breaking New Ground*, by Gifford Pinchot, first published in 1947; and *Tree Crops: An Alternative Agriculture*, by J. Russell Smith, first published in 1929. These are scheduled for release in February. For information, contact: Island Press, 1718 Connecticut Avenue, NW, Washington, D.C. 20009; (202) 232-7933.

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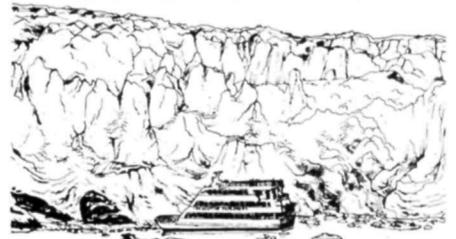


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Members Corner

Meeting of Minds

There is still time to register for NPCA's national conference, "Protecting and Planning for Parks of the Future." To be held at the Hotel Washington in Washington, D.C., March 14-16, the conference will bring together park professionals and conservationists to discuss and share innovative means of preserving and protecting our parks.

Keynote speaker for this event will be Congressman Bruce F. Vento (D-Minn.), recipient of NPCA's 1987 Conservationist of the Year Award.

The conference will focus on five themes: protection, new parks, use, education and interpretation, and funding. Specific topics will include legal measures of park protection, new funding strategies, state and local efforts to protect park peripheries, tourism and concessioners, park

carrying capacities, new interpretive programs, and the balance between preservation and use.

For information and a brochure, contact Ellen Barclay, NPCA, 1015 Thirty-first St., NW, Washington, D.C. 20007, (202) 944-8550.

Reading Alert

Although they are valuable, professional clipping services often miss coverage, even in the major papers. If you come across a mention of NPCA in a newspaper or magazine, please clip or copy it and send it to NPCA, Public Relations Dept., 1015 Thirty-first St., NW, Washington, D.C. 20007. Many thanks.

Plan for the Future

NPCA is proud to announce that its plan for the future course of the National Park System, *Investing in Park Futures*, is available. Subtitled *The National Park System Plan: A Blueprint for Tomorrow*, this nine-volume set is the result of years of planning and effort, and the first comprehensive park plan ever. To receive a

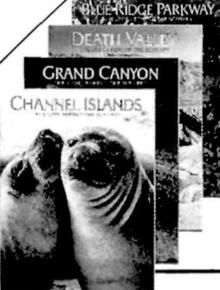
copy of the single-volume executive summary, send \$12.50 to NPCA Member Services, 1015 Thirty-first St., NW, Washington, D.C. 20007.

Travelers' Guides

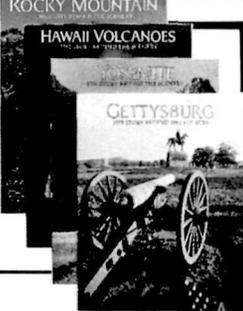
To help you make better use of the parks in your area, NPCA and Rand McNally have produced an eight-volume set of regional guides to the National Park System. Available individually or as a set, the guides contain detailed maps and descriptions of park facilities, trails, recreation opportunities, camping areas, and visitor services. The guides sell for \$2.50 each or \$16.00 for the entire set and can be purchased through NPCA's Member Services Department.

Parks on Video

NPCA is now offering three home videos on the parks—*Wild Alaska*, *Touring America's National Parks*, and *Touring Alaska*—for purchase through its Member Services. Each one is about an hour long and sells for \$29.95.



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Former teacher, B.S. degree Health, Phy.Ed., Rec. and Speech minor desires career in environmental field. Very interested and willing to learn. D. Roberts Rt.3 Box 548, Silsbee, Texas 77656. (409) 755-1600.

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Ed Bower

Great Smoky Mountains

Park Portfolio

By the time the Great Smokies was established as a national park, about 60 percent of the area it covered had been logged, and over 6,000 families had cleared their patches of land, built their homes, and grown their crops on the land.

Although, at first glance, this mountain wilderness seems pristine, most of the lower-elevation forests are fields and logged over areas recovering from the impact of human use. But 40 percent of the park's 516,000 acres represents the most extensive virgin forest remaining in the East.

Excerpted from Great Smoky Mountains: The Story Behind the Scenery, by Rita Cantu; KC Publications, Box 14883, Las Vegas, NV 89114; \$4.50 postpaid.



NPS

Newspapers served as wall paper and "there was a place for everything" in the Walker sisters' cabin in Little Greenbrier Cove in the Great Smokies.



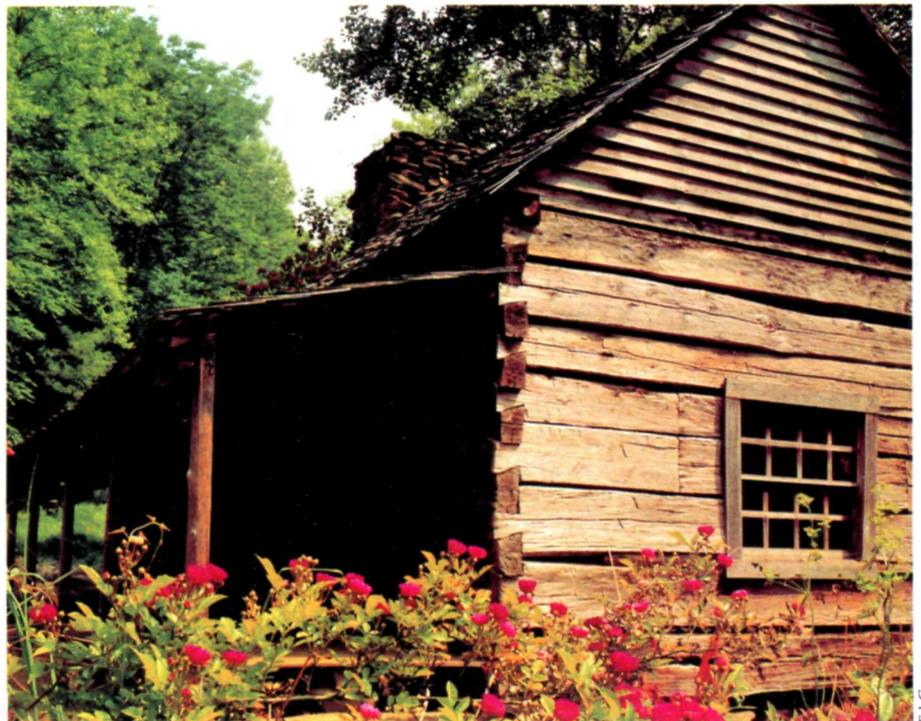
Ed Bower

Above left: The Great Smokies is one of our most diverse and verdant national parks. It harbors a variety of plant life unequalled in other temperate areas of the world.

The northeast-southwest orientation of the mountains supports a number of habitats that would not be as varied if there were only a cold north face and a warm south face. The height and ruggedness of the mountains also add to the diversity of plant communities found there by offering a wider range of ecological niches.

Above: Churches were centers of spiritual and social life for mountain communities. There are more than 130 cemeteries in the park. Many are near churches; others are private family plots near old homesites.

Right: This cabin, located on the Noah "Bud" Ogle trail, is one of the larger mountain homes, unusual in that it has a flower garden, a spacious front porch, and a window.



Ed Cooper

Guarding the Parkland Fund

by William Lienesch

It is easy to ignore the Land and Water Conservation Fund. The fund, which provides land acquisition money for national, state, and local parks and recreation areas, is complex.

Although a grassy bluff overlooking a lake may be the perfect place to picnic, the details of its acquisition are often dry and confusing.

The real story, however, is not the details of LWCF acquisition procedures, but what the Land and Water Conservation Fund (LWCF) has accomplished since 1965, when it was established. During the past 23 years, LWCF has funded more than 33,000 state and local recreation and preservation projects.

Acquisition projects include both the purchase of 2.9 million acres by the federal government for national parks, wildlife refuges, forests, and public lands, and the purchase of 2.3 million acres by states and municipalities for parks and recreation.

In fact, virtually every community in this country has benefited from the Land and Water Conservation Fund.

Despite these successes, the fund could be even more effective if more of its annual \$900 million credit were being spent. The Land and Water Conservation Fund does not draw upon tax dollars to fund park and recreation projects; instead, LWCF is funded primarily by a percentage of the money raised from outer continental shelf oil and gas leasing. In order for that money to be used, Congress must appropriate the funds.

Yet, recently, the Reagan administration has asked for virtually no funding of land acquisition or

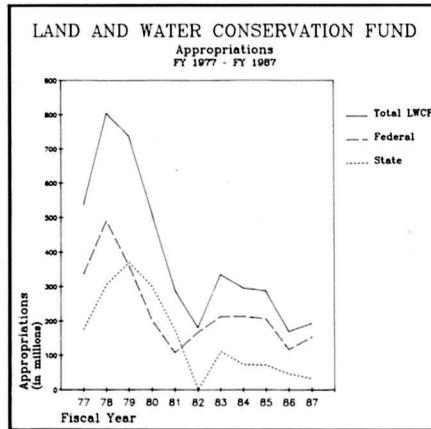


Chart by Kathy Sierra

recreation projects. For the past seven years, Congress has taken the fund in its own hands by appropriating *much* more LWCF money than the administration requested.

Yet, appropriations have still averaged less than \$250 million annually. Unspent funds in LWCF, called the "authorized but unappropriated balance," currently total more than \$5 billion.

The need for the fund has never been greater. We lose more than one million acres of valuable wetlands, shorelines, and agricultural land annually. Growing communities have inadequate parks and playgrounds. More than two million acres of private lands exist within boundaries of National Park System units.

This situation prompted the President's Commission on Americans Outdoors to call for a self-sustaining, endowed trust of \$1 billion a year to replace the present fund. We at NPCA think that the actual needs are significantly larger.

For many years, one of NPCA's highest legislative priorities has been to create a higher and more stable

level of funding for the Land and Water Conservation Fund. The past year has been spent examining creative ways to improve the role of LWCF and the similarly funded Historic Preservation Fund (HPF).

We have been working with a coalition of diverse organizations that shares this concern. So far, our message has been well received in Congress. Bills are pending that carry out the vision of the President's Commission on Americans Outdoors.

LWCF is a complex issue, but the continued health of the fund depends upon broad-based public support. At first glance, improving the Land and Water Conservation Fund may not be as appealing as saving the Arctic National Wildlife Refuge, ridding the air of chemical pollutants, or preventing the damming of a wild river.

Yet, without LWCF, the precious wildlands and green space that have shaped the American character will disappear even faster in the future than they have in past decades.

William Lienesch, NPCA's director of federal activities, is one of the leaders in the effort to improve funding for LWCF and HPF.

From time to time we call on people to help support LWCF and to write members of Congress. If you would like to receive these alerts or to help in any other way, please write: NPCA, Federal Activities-LWCF, 1015 Thirty-first St. NW, Washington, D.C. 20007.

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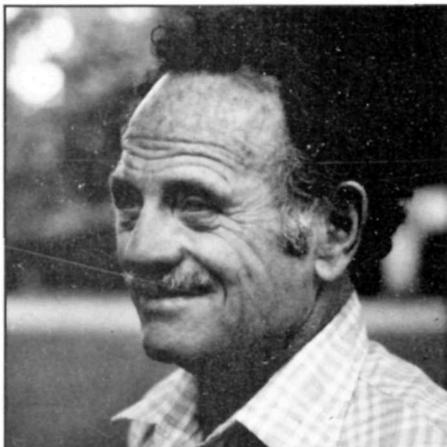
Marjory Stoneman Douglas Award

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



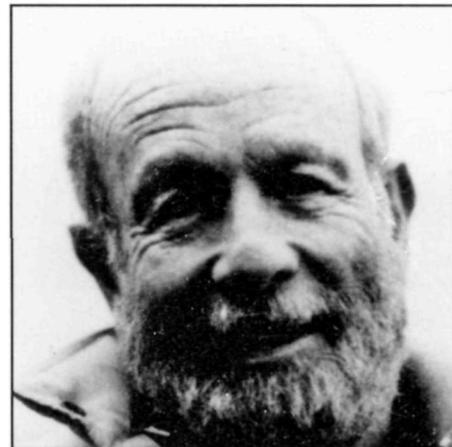
1985 RECIPIENT

MARJORY STONEMAN DOUGLAS. Author of *The Everglades: River of Grass*, Mrs. Douglas was largely responsible for the establishment of Everglades National Park in 1946 and continues her work as the Founder and President of Friends of the Everglades.



1986 RECIPIENT

MICHAEL FROME. Mr. Frome, a writer and an environmental scholar, has been a persistent advocate for our national parks and other public lands. Mr. Frome is the author of "The Promised Land" and is currently working on a book about the National Park System.



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

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



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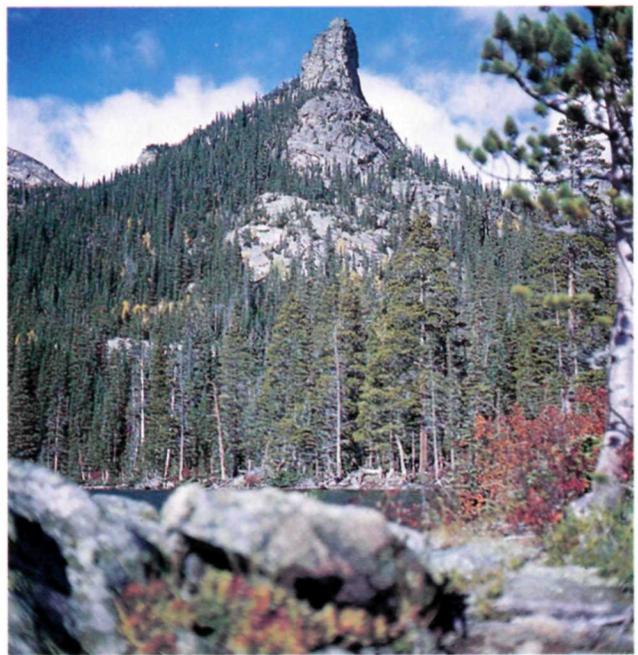
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