

National parks

July / Aug 83



Commentary

Independence

It is time to consider making the National Park Service an independent federal agency. This concept, which we have discussed with critical leaders on "the Hill" and prominent conservationists around the country, is an idea that deserves consideration. This idea is a reaction, not just to the impact of this Administration, but to the long-term politicization the National Park Service has suffered to varying degrees by this and previous administrations.

Secretary of the Interior Watt is carrying out a campaign that can only lead to the National Park Service looking like EPA under Anne Gorsuch. The management is being moved around the country and mid-level personnel manipulated by the hundreds. The executive offices are being dismembered and reassembled to allow for more political pressure and influence. Funds have been cut to zero in critical programs such as acquisition of inholdings. All this impact is reality. Unfortunately, previous administrations have also shown that the National Park Service is not one of highest priority; therefore, in some management areas, Mr. Watt is merely accelerating a prior trend of degradation.

The idea of an independent National Park Service would at least give the Park Service the ability to be managed by professionals under a board that would be appointed for overlapping terms by different Presidents, thereby reducing political influence. A funding level would need to be established by Congress to assure continuity for staffing, land acquisition, operation, and maintenance. Congress could continue to review specific project funding and to carry out its essential functions of oversight on a periodic basis to assure that the national park program is being properly implemented.

This is a bold concept. Yet it is one that is called for by the very de-

manding times that we are in. If President Reagan continues for another term, there is little likelihood that the National Park Service will ever be the same. If a new President is elected, we have heard platitudes but no specific commitment to bring the National Park Service back to the level at which it should be to protect our nation's natural and cultural heritage.

The concept of a National Park Service in 1916 was a bold and innovative idea. Since the creation of the Service, the agency has received the blessing of creative ideas by such great leaders as Franklin Delano Roosevelt, Phil Burton, and Laurance Rockefeller. Now it is time that we again be bold, that our generation show the awareness that changes may be needed to resolve crises that seem to go from administration to administration and Congress to Congress. An independent National Park Service may be the solution to this problem. We believe it deserves careful study. We welcome the opinion of our members and of those concerned about the future of the great American invention, the National Park System.

—Paul C. Pritchard
President

Editor's Note

This month *National Parks* focuses on wildlife in the national parks, a topic of deep interest and concern to many people.

As background, Ro Wauer and Bill Supernaugh trace the evolution of National Park Service wildlife management philosophy from the days when animals were classified "good" or "bad" to the present, when managers look at entire ecosystems and the natural interactions of all species within them (p. 12).

Continuing from there, Candy Garry gives a broad overview of the current status of wildlife in the national parks—the problems and the successes (p. 8). A photo portfolio (p. 18–19) illustrates some of the species involved in successful NPS wildlife programs.

Michael Bean, specialist in endangered species law, gives us an update on the status of endangered species protection in recent years (p. 20). News editor Michele Strutin explains the efforts of sport hunters to get at wildlife in the national parks in Alaska (p. 25), and Steve Kaufman's photographs illustrate the most sought-after game species in Alaska (p. 26–27).

Just for fun, John Varley and Paul Schullery describe the pleasures of fish watching (p. 22), and wildlife photographer Leonard Lee Rue advises you how to take good photos of wildlife (p. 6).

On other subjects, Ken Englade describes the problems afflicting Chattahoochee River National Recreation Area in Georgia (p. 28); NPCA grassroots coordinator Jim Welsh tells how readers can influence park planning and management decisions (p. 33); and former assistant editor Joan Moody gives a heartfelt tribute to national park champion Phil Burton (p. 35).

Next issue we will be looking at marine reserves in the United States, with special attention to the Virgin Islands—and at how the push to sell off energy leases now will affect public lands for generations.—EHC



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FRONT COVER Mountain lion, by Leonard Lee Rue III

BACK COVER Alaska brown bear cub, by Steven C. Kaufman

The philosophy of wildlife management has come a long way since the days when the National Park Service used to kill cougars and other predators because they were "bad" for killing prey species (p. 12). Yet Alaskan park wildlife still is threatened by well-heeled trophy hunters and their powerful allies (p. 25).

National Parks & Conservation Association—established in 1919 by Robert Sterling Yard with the support of Stephen Mather, the first Director of the National Park Service—is an independent, private, nonprofit, public service organization, educational and scientific in character. Its responsibilities relate primarily to protecting, promoting, and enlarging the National Park System, in which it endeavors to cooperate with the National Park Service while functioning as a constructive critic. Life memberships are \$1000. Annual membership dues, which include a \$7 subscription to *National Parks*, are \$200 Sustaining, \$100 Supporting, \$50 Contributing, \$25 Cooperating, and \$18 Associate. Student memberships are \$13. Single copies are \$3. Contributions and bequests are needed to carry on our work. Dues in excess of \$7 and contributions are deductible from federal taxable incomes, and gifts and bequests are deductible for federal gift and estate tax purposes. Mail member-

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Members Corner

Members still have time to sign up for our exciting Salmon River trip. We'll be taking historic dories through the River of No Return Wilderness in Idaho, July 22-29. The trip costs \$596 (including transportation from either Lewiston, Idaho, or Missoula, Montana). Last-minute reservations can be made by calling Grand Canyon Dories, (415) 851-0411—but hurry!

Escape the heat with NPCA. If the summer doldrums have wilted you, join us in the lush green of Great Smoky Mountains National Park, August 28-September 1. The Cataloochee Ranch in North Carolina hosts NPCA members and friends for a week of just about whatever suits your fancy. Active folks have their choice of swimming, playing tennis, hiking, rafting, or

horseback riding. Those of you who want to "get away from it all" will have the opportunity to do just that. Six days and five nights at the ranch cost \$400, including the activities mentioned above, plus three sumptuous meals a day, NPCA escort, taxes, gratuity, and the chance to experience the wonder and beauty of the unequaled Great Smoky Mountains. We have all the details—write the NPCA Office of Public Affairs, 1701 18th Street, NW, Washington, D.C. 20009.

Canyonlands welcomes NPCA, September 4-9. The ancient slickrock and canyons of Utah and Colorado wait for us to explore them; and we will spend six days touring Canyonlands, Arches, and Mesa Verde national parks. Hike, bird, photograph, seek out hidden niches, or simply enjoy the most spectacular scenery on earth. We'll visit with park superintendents and experts to discuss the serious threats facing this area. The tour combines a few evenings of

camping (rental equipment available) and a few evenings in comfortable hotels. The \$600 cost includes most meals; roundtrip transportation from Grand Junction, Colorado; guides; accommodations; entrance fees; guest experts; and NPCA escort. Details are available by writing NPCA Tour, P.O. Box 1206N, 452 N. Main Street, Moab, Utah 84532. Don't delay, space is limited.

Plan ahead. NPCA is preparing a 1984 tour program just for you: the Everglades in the spring; Alaska in the summer; the Colorado River in early fall. Visit the parks with NPCA. We offer educational tours of parks and related areas for members and their guests at the best prices possible. Support NPCA by supporting the Members Tour Program.

For more information on NPCA Members Tour Program, please write NPCA Office of Public Affairs, 1701 18th Street, NW, Washington, D.C. 20009.



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Members Tour Coordinator

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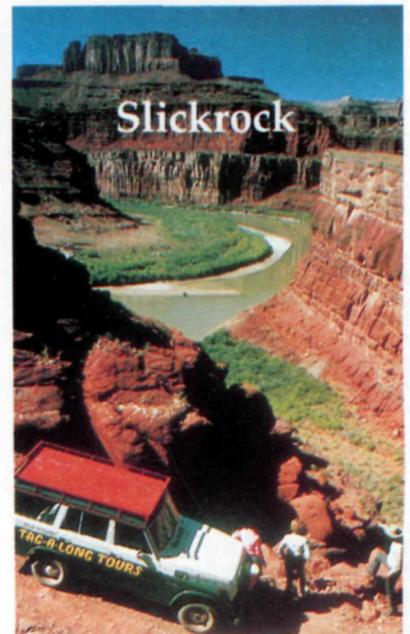
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NPCA Members and friends—plan to join us for two of the most exciting tours of national parks this year: September 4-9, we will tour the Slickrock Country, taking in Canyonlands, Arches, and Mesa Verde National Parks. The complete tour costs \$600, and includes most meals, accommodations, tour guides, entrance fees, and NPCA escort.

August 28-September 1, we will be at the Cataloochee Ranch in the Great Smoky Mountains. A week, including tours, rafting, horse back riding, all meals, taxes, gratuity, and NPCA escort, costs \$400. Send us the attached coupon for details.



Slickrock

Feedback

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

Cover to Cover

What a surprise to pull my March/April issue of *National Parks* out of my mailbox and see my uncle's house on the back cover! Known as the Pink House in Cape May, New Jersey—my hometown—it was built by my mother's great, great uncle, Eldredge Johnson. It has become quite a landmark in New Jersey, having been photographed and painted by many artists.

Julia Fox Hudson
Dillon, Colorado

I enjoyed the articles on cultural resources in the March/April issue of *National Parks*. I commend NPCA for its awareness of and dedication to effective cultural resource management practices in our nation's national monuments.

Perhaps you can clarify one point of confusion. On the contents page you note that the cover contains a photograph of Miner's Delight cabin. However, you also note in the caption on page 21 that the cover depicts the Cunningham Cabin in Grand Teton National Park, which is approximately 150 miles northwest of Miner's Delight. Which is correct?

Michael A. Massie
South Pass City, Wyoming

Cunningham Cabin is pictured on the cover; the drawing on page 21 is of Miner's Delight. Sorry for the confusion. —Ed.

Olmsted: Another Viewpoint

There are a number of historical errors in the article on Frederick Law Olmsted in the March/April issue: 1. The Washington Mall—together with the grounds of the Capitol, White House, and Smithsonian Institution—was designed by Andrew Jackson Downing, America's first

landscape architect, and his London-born partner, Calvert Vaux, in 1851–52. In 1880, Olmsted did work on a planting plan for the Capitol terraces, but he had no part in the original design.

2. The winning entry in the competition to plan Central Park was prepared by Vaux as a tribute to the memory of Downing. At that time, in 1857, Olmsted was employed by the city as superintendent of labor. 3. Olmsted was in California throughout 1865, trying to salvage a failing mining project in Mariposa, while Vaux was laying out Prospect Park in Brooklyn.

M. M. Graff
Brooklyn, New York

Olmsted worked on the design of all three areas, but no one person can be solely credited. —Ed.

Somewhere in New Mexico

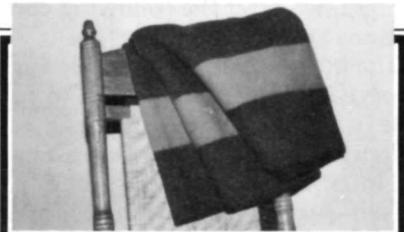
I enjoyed reading "Tracking Ancient Patterns at Chaco" by Michele Strutin in the March/April issue. One reference, however, prompts some comment. The end of the second paragraph states, "The road to Chaco . . . lies halfway between Bloomfield and Cuba, New Mexico; a dirt turnoff near Nageezi Trading Post. Nowhere, really."

Nowhere, really?! Since 1975 I have practiced medicine one day per week in clear view of the Nageezi Trading Post. The Nageezi Navajo Chapter House, the Nageezi preschool, and the new Nageezi Multi-purpose Center are within a few hundred yards of the Chaco Canyon turnoff. These buildings represent the center of a community of approximately 2,500 people. Although it is technically off-reservation, "nowhere really" is a chapter of the Navajo Tribe, largest Native American group in the U.S.

Richard L. Kozoll, M.D.
Cuba, New Mexico

Privatization and the Parks

Misinformation and political rhetoric have once again gained the upper hand. This time, the unlikely victim is Senator Henry Jackson ["Privatization and the National Park," January/February]. To set the record



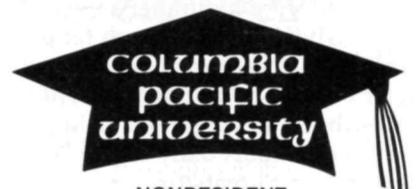
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straight, we offer the following corrections and clarifications:

- The inventory of BLM public land acreage identified for disposal to date is *2.5 million acres*. Acreage tentatively identified for sale offering in 1984 is *250 thousand acres*.
- Four-year revenue estimates for the overall initiative have been reduced from roughly \$17 billion to \$4 billion. Annual revenues projected for public land sales are about \$300 million per year versus \$1 billion per year in the original estimates. The annual cost of carrying out the initiative is roughly \$18 million.
- This is not a "new" initiative for the Department of the Interior, but rather a change in the management emphasis utilizing FLPMA's statutory authority.

*Garrey E. Carruthers
Assistant Secretary/Interior
Land and Water Resources*

At one point in my article I state that Secretary Watt told the Senate Committee on Energy and Natural Resources last summer that "as much as 35 million acres of the public's lands could be sold under this program." My information was taken directly from Secretary Watt's testimony before the Committee. The fact is that this program is being "clarified" almost daily as the Administration retreats from privatization in the face of stiff congressional and public opposition. Rather than a "clarification," it seems to me that Mr. Carruthers is updating the current situation.

This is precisely the same situation regarding the second point. The new revenue estimates are, in fact, lower than those projected in the FY 1983 budget. These new figures were not available at the time my article was written.

Certainly the sale authority the BLM is proposing to use to dispose of public lands it administers is not new; nowhere in my article did I imply that it was. Like the President, I view privatization as a new management initiative. Mr. Carruthers apparently disagrees with both of us.

*Henry M. Jackson
U.S. Senate*

Photo Tips

I was studying wildlife before I ever picked up a camera, and I study it at every possible opportunity today. The ultimate knowledge of wildlife—where it will be, what it will and can do and why—is the major requirement for successful wildlife photography.

Because the national parks are the greatest reservoirs of wildlife in this nation, most wildlife photographs are taken in them. For one, a wildlife photographer cannot compete with the gun; it is next to impossible to photograph wildlife that has been made wary by hunting pressure. But parks remain an oasis for wildlife.

Although the general behavior of a species can be learned, you must always remember that an individual creature may not follow the pattern. Wildlife subjects should always be approached with the caution and respect they deserve. In general, animals have a "fight-or-flight" distance; if given the chance, most wild creatures will turn and run from man. An animal taken by surprise, however, may feel trapped and may attack to protect itself. To successfully photograph wildlife, you must use telephoto lenses—the bigger the better. I customarily use a 400 mm lens and frequently a 600 mm. The great advantages of using telephoto lenses are that you don't have to get so close that you might be in danger, and the animal will not feel threatened and will behave naturally.

Photographers will encounter very few bears in our national parks, because most have been removed to backcountry areas. Bears should not be fed; they should not be approached closely; and they should be photographed only from a distance. Any time you get within 150 feet of a bear, you are too close. The most dangerous bear is the one that is not seen. When in bear country, make lots of noise by talking or wearing bells on your pack to let bears know you are coming. Female bears with cubs, and any bear guarding a food cache, are particularly dangerous.

Most people use the national

parks during June, July, and August; but this is the poorest season for photographing wildlife. Hot weather keeps the animals hidden in the shade or seeking relief from stinging insects by going to high elevations. September brings relief from the heat and the tourists. It also brings on the rutting, or breeding, seasons of both elk and moose, when these magnificent animals display their finest, peak physical condition. During this season, however, these animals are most dangerous. Having lost their fear of human beings because of their protected status, the males, at least, are ready, willing, and able to do battle with anything that gets in their way.

Most animals signal their emotions by their actions. Elk often paw the ground or rake the bushes with their antlers when they are becoming angry. When they curl their upper lip up, like a dog snarling, they are about to charge. Moose usually raise the hair of their manes as a first sign, then lay back their ears. When these two signs are followed by the opening of the mouth and extension of the tongue, you are in big trouble.

Bison usually roll their eyes: the dark pupils all but disappear, and you can see the bloodshot whites of their eyes. Then the back humps even higher than usual, and finally the tail arches in a horseshoe shape. If you see all three signs together, chances are the bison is already thundering your way. Many people with a healthy respect for bison, bear, and moose don't consider deer dangerous. Deer, however, can be deadly adversaries. When a buck begins to paw the ground, lays back his ears, erects all the hair on his entire body, tucks his chin in, opens his mouth, and flicks his tongue up his nose, you are confronting a potentially deadly situation.

In sum, by using telephoto lenses you can avoid "pushing" an animal into a corner; by knowing the first signs of aggression, you can save face, and perhaps your life.

The most widely published wildlife photographer in the country, Leonard Lee Rue III has written eighteen books on wildlife topics.

Bookshelf

The Northern Yellowstone Elk: Ecology and Management

by Douglas B. Houston (New York, Macmillan Publishing Co., 1982), 474 pages, 160 photos, \$48.00.

Yellowstone's elk are the source of the National Park Service's oldest wildlife controversy. Since the early 1900s, differences of opinion, of scientific interpretation, and of philosophical direction have kept the elk in the spotlight.

Concern has centered on the herd's presumed tendency to overgrow its range, thus risking both massive dieoffs and habitat deterioration. Over the years the NPS has tried to limit the population by shooting or transplanting animals.

During the 1960s, when NPS science programs were being overhauled, Yellowstone stopped all control actions and the herd was allowed to "regulate" itself. Since then the northern herd (the largest) has grown from a few thousand to about 20,000, and has reached an equilibrium level that fluctuates with environmental and habitat conditions. Wildlife managers have watched this process closely, but they disagree on how well it will work.

During the 1970s, Douglas Houston studied the northern herd, and his book, *The Northern Yellowstone Elk*, is an impressive presentation of the issues and problems of managing this wildlife resource. Through exhaustive field studies, and equally thorough combing of Yellowstone's extensive and little-used archives, he has reconstructed and revised the history of the herd in a masterful piece of scholarly detective work.

The Northern Yellowstone Elk is a remarkably able statement not only about the animals but about the philosophical challenges of wildlife management in the parks. As managers and the public become more aware of their responsibilities in protecting the ecological integrity of the parks, the Houston study may serve as a significant model.

—Paul Schullery, former Ranger-Historian, Yellowstone Park



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Bats to Bighorns, Salamanders to Sea Turtles

The National Park Service must manage park habitats
in order to make them more "natural,"

by Candace Garry

The ideal situation for populations of wildlife would be a totally natural, perfectly balanced ecosystem free from human interference. "Although a system without human interference is impossible, we should strive for it," Bill Supernaugh, a National Park Service (NPS) wildlife biologist, said recently.

Imbalances will always exist, however, many of them the result of human interference. In fact, because of mounting pressures, the NPS must "interfere" in order to keep a semblance of natural balance within units of the National Park System. Such "interference" is called "resource management."

Public lands, such as those in the National Park System, are becoming increasingly important for the protection, study, and maintenance of major wildlife populations in this country. Furthermore, national parks, in particular, provide America's wildlife with the maximum level of protection.

Even with such protections, adverse impacts—such as air pollution and accelerated development—outside park boundaries exacerbate the problem of trying to maintain the ecosystems necessary for healthy populations of wildlife. A myriad of other problems—ranging from political interference to poaching to overcrowding in the parks—encroach upon populations of wildlife.

It is impossible to examine the status of wildlife in each national park here, but an overview of a few of the major problems, programs, and successes provides at least some insight.

Endangered and Threatened Species

Approximately half of the 230 species of animals listed as threatened or endangered in this country are native to units of the National Park System. Although the NPS has a protection program for endangered species, it does not have an inventory of all endangered and threatened species that live in our national parks. This lack inhibits a comprehensive approach to protecting these vulnerable species, particularly some of the less glamorous, smaller ones, such as the Indiana bat and the eastern indigo snake.

One endangered reptile that has received a lot of attention, however, is Kemp's (Atlantic) Ridley sea turtle. Smallest of the great sea turtles, Ridley turtles have been found throughout the tropical waters of the Gulf of Mexico and the Caribbean Sea; and the majority have nested on a beach near Rancho Nuevo, Tampipas, Mexico.

Wildlife biologists and others are concerned because the number of female turtles nesting in their traditional Gulf Coast areas has declined from 40,000 in the 1940s to less than 200 today. The decline has been attributed to mortality among hatchlings due to inadvertent human interference and to commercial harvesting of eggs and adults.

In 1967 the NPS, in cooperation with the government of Mexico and several conservation organizations, began the task of restoring the Ridley sea turtle population. Historically, the turtles have nested in somewhat smaller numbers at Padre Island, off the coast of Texas. Be-

cause the island is protected as a national seashore, Padre Island became the focus of NPS efforts. For the past six years scientists have removed between 1,000 and 3,000 eggs from the turtles' nests near Rancho Nuevo and transferred them to Padre Island for incubation.

Some of the hatchlings are released in the park; others are reared at a nearby National Marine Fisheries Service laboratory. When they grow large enough to fend off natural predators, the young turtles are set free in the Gulf of Mexico with the hope that the females will return to nest on Padre Island.

Populations of humpback whales—another endangered marine species—are also declining. Commercial whaling had reduced the numbers of North Pacific humpback whales to less than 1,000 by the 1940s, down substantially from their original, estimated population of 15,000. Rangers at Glacier Bay National Park in southeast Alaska had regularly recorded seeing approximately 25 whales each summer between 1967 and 1977. (These whales were part of a localized Alaska coastal population of about 100 animals.) In 1978 the whales unexpectedly left their summering grounds in the bay, causing a 25 percent drop in the localized humpback population; and only a few returned the next two years.

"It has been difficult to pinpoint the reason for the whales' exodus because of inadequate scientific research thus far," according to John Dennis, an NPS scientist. "But there has been some indication that human activity, especially the cruise



National Park Service

Above, a red-cheeked salamander; right, a desert bighorn ram. Both suffer from loss of habitat.



Leonard Lee Rue III

ships in the bay, has had a detrimental effect on the whales.”

As a result, the NPS limited the number of vessels allowed in the bay. Commercial fishermen, tour operators, and private boaters have objected to the cap on their activity in the bay; and many claim the restrictions affect the economy of the area. The NPS is hoping that recently completed studies on humpback whale ecology, Glacier Bay acoustics, and the reasons whales were initially drawn to the bay will provide some answers to the decline of humpback whales in Glacier Bay and point a direction for encouraging their return.

The grizzly bear, a species listed as “threatened” by encroachment, has become so scarce at Yellowstone National Park (Wyoming) that it is now the subject of nationwide publicity. Diminishing wilderness habitat in areas adjacent to the park, the increase in backcountry visitor use at Yellowstone, and poaching are among the main reasons for the overall decline of the grizzlies.

Reports by the Interagency Griz-

zly Bear Steering Committee, which is composed of federal and state agencies, show that the Yellowstone grizzly population has declined to approximately 200 animals and indicate that strong protective measures are needed. As a result, the Steering Committee is seeking a crackdown on poachers, and the NPS has stepped up its program of temporarily closing critical backcountry areas of Yellowstone in order to reduce human-grizzly confrontations.

Exotic and Feral Species

Plants or animals that people have introduced into habitats not natural to these species are termed “exotics,” and wildlife exotics can and do seriously damage national parklands. Of the top twenty problems listed in a 1980 NPS survey of resource management problems, eight were related to exotics. As a result, more time and funds have been allocated to this problem in recent years than to any other natural resource management issue, according to NPS officials.

Wild boars at Great Smoky

Mountains National Park (North Carolina/Tennessee) and Hawaii Volcanoes National Park (Hawaii); mountain goats at Olympic National Park (Washington); and Barbary sheep at Carlsbad Caverns National Park (New Mexico) and Guadalupe Mountains National Park (Texas) are examples of exotic species that plague the parks.

In 1912 a group of hunters introduced European wild boars in the Great Smokies. In this predator-free environment the boars multiplied, causing serious problems in Great Smoky Mountains National Park, particularly during the past thirty years. The boars eat plants, acorns, and berries (as well as smaller animals such as salamanders), thereby destroying the habitat and food supply of species native to the ecosystem.

Among the feral exotics in national parks (that is, those species that were once domesticated, but have reverted to a wild state), burros have been the biggest headache for the NPS. Miners and prospectors brought the burros into what is now

The National Park Service mandate for preservation includes all creatures great and small. Here, Dr. Michael J. Harvey, of Memphis State University, examines clusters of Indiana and grey bats clinging to a cave ceiling at Buffalo National River, as part of a bat recovery team survey.



Connie Toops

Death Valley National Monument (California), Bandelier National Monument (New Mexico), and Grand Canyon National Park (Arizona) in the late 1800s, and the animals multiplied rapidly.

Historically, the NPS has exercised its authority and kept burro populations small by routine shooting. But, during the past fifteen years, horse protection and conservation organizations have filed lawsuits and brought public pressure to bear against the killings. As a result, NPS officials say burros increased to levels that harm park resources. The animals destroy vegetation, damage prehistoric sites, and compete directly with native species such as bighorn sheep and mule deer for forage and water.

Live capture and removal of the burros proved extremely costly for the NPS, and the Bureau of Land Management's Adopt-a-Burro program has met with only limited success. More recently the NPS allowed the Fund for Animals and other private organizations and individuals to trap and airlift the animals from Grand Canyon National Park. In this situation, the NPS responded to public disapproval in a positive way and still got approximately 95 percent of the burros removed. (At the end of the live removal phase, a shooting program rid the Grand Canyon of virtually all the remaining burros.) Conservation groups hailed the joint effort as producing a particularly successful solution.

Population Management Problems

Prairie dogs in Wind Cave and Badlands national parks in South Dakota are an example of a native spe-

cies that has grown beyond its historic population levels in each of these parks, becoming "pests" within the park and on adjacent private lands. Nearby ranchers complain that the prairie dogs compete with their livestock for vegetation, and they have urged the NPS to eliminate the rodents.

NPS officials suspect that one of the main reasons for this overpopulation is the increase in the elk and bison populations. These ungulates have cropped the native grasses to such an extent that they have altered the habitat, making it more favorable for prairie dogs. Adding to the problem is the shortage of predators—wolves, hawks, coyotes, and the endangered black-footed ferret—that Wind Cave, in particular, has experienced in recent years. Although the solution is controversial, the NPS is using zinc phosphide, a rodenticide, to control expansion of the prairie dog towns.

Some NPS officials have considered reintroducing predators to Wind Cave in order to control the prairie dogs and to return the park to a more natural predator-prey balance. There is also a growing interest in returning wolves to Yellowstone. The lack of predators in national parks creates only one kind of imbalance, however. Because of population problems at various parks, NPS officials are using reduction and reintroduction programs as a means of restoring balance to an ecosystem.

For example, elk and bison in some of the western and Rocky Mountain parks (Wind Cave and Colorado National Monument, among others) exist in such high numbers that they devour food sup-

plies, and various programs are underway to reduce elk and bison surpluses. Another program concentrates on restoring declining or extirpated species, such as bighorn sheep, to parks where human events have led to population losses. Such a program is being carried out in cooperation with the state of Utah, and involves translocating bighorn sheep from a healthy herd at Canyonlands National Park to other national parks in that state.

Insularization

The making of national parks into "islands" is not exactly a recent phenomenon, but this problem of insularization greatly concerns NPS officials today because it seriously threatens wildlife populations within the parks.

Insularization occurs when land management policy and practice directly outside a park differs greatly from that within. One result of this problem is that populations of wildlife are isolated, preventing the sort of genetic exchange that keeps populations of wildlife healthy.

At Glacier National Park (Montana), for example, the development and mineral extraction surrounding the park is so extensive that the activity disrupts the natural ebb and flow of wildlife into and out of the park.

"Ten years ago you couldn't pick out Glacier's boundaries," said Bill Supernaugh. "Now you can, because of the exploration and development that literally surrounds the park. It is becoming 'Glacier National Island,' and I fear for the future of areas like this where we preserve only remnant habitats."

Increased human activity creates

Having survived shore predators, a tiny loggerhead turtle hatchling enters the surf, taking the next step toward maturity. Programs are underway at national seashore nesting sites for loggerheads at Cape Lookout and for Kemp's ridleys at Padre Island. Far right, brown pelicans sun in Virgin Islands National Park; populations are down at Everglades National Park.



National Park Service



Pat Toops

unnatural boundaries for wildlife in national parks, and this isolation has so affected the Yellowstone ecosystem that no one can guarantee that Yellowstone National Park's grizzly bear population will remain at viable levels. Because they range widely for food and because individual territories are vast, grizzlies do not remain in the park but move throughout the greater Yellowstone ecosystem. When bear activity and human activity conflict, the bears are usually the losers. Shenandoah National Park (Virginia) is losing its black bear population not only to poaching and road kills, but also because of the increase in development surrounding the park.

Carlsbad Caverns is another national park where the needs of wildlife and the interests of humans conflict. Ranchers claim that mountain lions kill their livestock and then retreat into the national park, thwarting predator control efforts by state agents. The ranchers became irate and urged NPS officials to do something about the situation. When the state of New Mexico and the Department of the Interior contemplated entering into a cooperative agreement to authorize shooting of the offending mountain lions within the park, conservation groups filed suit to prohibit the killings.

Several solutions to the isolation caused by adjacent land pressures have been suggested. One, the NPS should consider more land easements with its neighbors as a means of staving off encroaching development. Two, developers must be willing to pay for research necessary for determining impacts upon wildlife and for determining the most sensible means of mitigating the impacts.

Alaska

The future of wildlife management in units of the National Park System in Alaska is of particular concern. For the most part, populations of wildlife in Alaska are not yet endangered; and, because Alaska still has vast wild areas that support wildlife in a relatively undisturbed state, the NPS has been able to employ practices that take visitors into account without disrupting the animals.

For example, the NPS restricts vehicle access into Denali National Park, allowing only limited numbers of tour buses to enter the most primitive parts of the area during the summer months when visitation is at its peak. This policy not only preserves the dignity and natural state of the park and its massive wildlife habitat, but it also minimizes disruptive encounters between humans and wildlife. Moreover, visitors are able to glimpse a grizzly, a herd of caribou, a moose, or an elk that might not otherwise stay close enough to the road for viewing.

Although the wildlife of Alaska is not endangered, it is threatened by a recent proposal. Senator Ted Stevens (R-Alaska) has introduced a bill to downgrade certain national park areas from "park" to "preserve" in order to allow sport hunting.

Funding and Research

One of the NPS's biggest wildlife management problems is a lack of funding and staff to support scientific research; and this impediment will increase as budgets shrink and costs soar. "There is not so much difficulty making management understand the need for adequate research," said one NPS scientist. "It's just that in the budget squeeze

health, safety, and maintenance comes first—research last." The current administration's major emphasis is on maintenance, beefing up park roads and facilities. But, in the words of Laura Loomis, NPCA's program coordinator for wildlife issues, "If the basic resource [the wildlife and scenic values] is not adequately taken care of, what do you have? What is there left for the visitor to enjoy?"

Vast resources are required to conduct proper research, particularly firsthand research in remote areas like Alaska. Also, costs vary a great deal. Studying bear activity in Yellowstone, for example, is certainly more expensive and more difficult than studying white oak trees in Shenandoah. The NPS must be willing to spend the money for good research in order to make responsible decisions. Not only does the National Park Service lack adequate personnel to research and plan resource management, the NPS also lacks enough field resource managers to carry the work out.

The wildlife management issues at stake in the National Park System are crucial, complex, and sometimes even contradictory. A good examination of the status of wildlife populations today and prudent, responsible decisions in the future can help ensure the preservation of a magnificent and cherished American heritage—our wildlife.

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"The national park idea represents a far-reaching cultural achievement, for here we raise our thoughts above the average, and enter a sphere in which the intangible values of the human heart and spirit take precedent. . . . Freedom prevails—the foxes are free to dig burrows where they will; to hunt ptarmigan, ground squirrels, and mice as the spirit moves; . . . The grizzlies wander over their ancestral home unmolested; dig roots and ground squirrels, graze grass, and harvest berries according to whatever menu appeals to them. The 'bad' wolf seeks an honest living as of yore; he is a respected citizen, morally on a par with everyone else. . . . Our task is to perpetuate this freedom and purity of nature, this ebb and flow of life."

—Adolph Murie

WILDLIFE MANAGEMENT IN THE NATIONAL PARKS

An historical perspective . . .

by Roland H. Wauer & William R. Supernaugh

In speaking to delegates to the Second World Conference on National Parks in 1972, Dr. Hugh F. Lamprey, Director of the Serengeti Research Institute of Tanzania National Parks, stated:

There is a common misconception that the management of wildlife in national parks consists mainly of the protection and control of animal life. The truth is that the greater part of wildlife management lies in the conservation of the animal's habitats. Given freedom from disturbance, animal populations will require little or no management, provided the natural vegetation of their habitats remain intact. The management of animal life in national parks in most aspects is so closely associated with the management of the vegetation which support it, that it is unprofitable to discuss one without the other.

Wildlife management in America has changed a good deal during the 111-year history of the national

parks. It has evolved over the years, often by trial and error, from a practice of protecting only the largest and grandest species of animals to protecting natural systems for the perpetuation of all resources therein.

The establishment of Yellowstone National Park in 1872 was the first indication of an awakening of a national conscience regarding America's waste of its natural resources. Yellowstone National Park, the world's first, was dedicated as a "pleasuring ground for the benefit and enjoyment of people"—the protection of a specific site of outstanding natural values.

Yellowstone's first superintendent had neither staff nor salary, and the killing of park wildlife was commonplace. Market-hunters reached

into every part of the West, including the new national park. Of the hundreds of thousands of bison that roamed the vast grasslands and foothills of our prairie states during the early nineteenth century, only 540 were found within the Yellowstone country. In 1883, therefore, Congress authorized the Secretary of War to provide U.S. Army troops, when requested by the Secretary of Interior, to provide the needed protection to Yellowstone's wildlife and scenery.

By 1916, with increasing support from an American public that began to recognize the significance of their parks, Congress acted to establish the National Park Service. The fledgling agency was mandated to "conserve the scenery and the natural and historic objects and the *wildlife* therein and to provide for the

enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" (emphasis added).

"Good" vs "Bad"

The nation's goal was no longer related just to public use and the recognition of superb scenery and scientific curiosities; now it extended to protecting significant natural and cultural resources that contributed to the parks' establishment. The infant National Park Service continued to give preferential treatment to features considered most beneficial, and it adopted a management philosophy of protecting some resources but eliminating or reducing others. Thus, deer and elk and bison were "good," but the predatory wolves, grizzly bears, and mountain lions were "bad."

Dorr Yaeger, a Yellowstone National Park naturalist of the 1920s, wrote regarding the park's predators,

During the early days of the park, it seems that there were a great many more of these animals than we have at the present (1931). . . . It was necessary, due to their ravages of deer and elk, to place the cougar on the predatory list along with the wolf and coyote, and they have been gradually killed off through the years.

This biological morality prevailed for several decades, anchoring some common myths that crop up even among today's park users.

Wildlife die-offs and the decline of significant habitat components within parks—from the Sequoia groves of the Sierra Nevada to the virgin hardwood forests of the East—provided ample evidence that resource conservation practices of the early 1900s were not working. The example of the Kaibab deer herd on Grand Canyon's north rim is a classic of the times. Raymond Dasmann describes what happened:

Before 1906 there were not many deer in the Kaibab country. Nobody knows how many, for sure, but the best guesses say about 4000 animals. Supported in part by this deer population was an abundant population of predatory animals, plains wolves and coyotes, mountain lions and bobcats, and some bears. Sharing the range with them were sheep and cattle in addition to other wild animals. In 1906, President Theodore Roosevelt, acting in

the name of wildlife conservation, proclaimed the Kaibab region a federal game refuge. To make room for more game, the livestock were moved out. To allow the game to increase, trappers were put to work removing the predatory animals. Operating with great efficiency these men exterminated the wolf and greatly reduced the number of other predators.

Between 1906 and 1924 it is estimated that the Kaibab deer herd had increased from 4000 to 100,000 animals. Between 1924 and 1930, 80,000 deer died from starvation. Between 1930 and 1939 further die-offs reduced the herd by another 10,000. The rest managed to survive.

The condition of the land resulting from the excessive overgrazing by deer on the north and south rims of the Grand Canyon was deplorable. It triggered concern from Park Service administrators, many of whom were influenced by pioneer ecologists such as Joseph Grinnell and Aldo Leopold. So, in 1929, when George M. Wright, an independently wealthy biologist doing field studies in Yosemite National Park, suggested a wildlife survey of all the national parks, the suggestion met with approval.

The results of this survey, written by Wright and his two colleagues, Joseph S. Dixon and Ben H. Thompson, were published by the National Park Service in Fauna Series Numbers 1 and 2 in 1933 and 1935. The stated objective of Fauna No. 1 was "to present a report which would delineate the existing status of wild life in the parks, analyze unsatisfactory conditions, and outline a proposed plan for the orderly development of wild life management." Fauna No. 2 presented additional information and served "as a medium for the exposition of a developing wilderness-use technique as it affects the biological aspects of the national parks."

The tone of these reports was best established in the first paragraph of the first chapter of Fauna No. 2 by Wright; he wrote:

How shall man and beast be reconciled in the conflicts and disturbances which inevitably arise when both occupy the same general area concurrently? As man is at once poser of the question, arbiter in the arguments, and, above all, himself the executioner, his verdict will be determined directly by the use he wants to make of any particular area and the order in importance to him of those uses.

A Wildlife Division was established by the Service in 1932, with George Wright as its first chief. This Washington, D.C., based Division became the first organizational unit dedicated to "planning, reviewing and assisting in ecological research and management of the biological resources." It became the predecessor of the varied natural resources management and natural science programs of later years. "As long as Wright was in Washington to exert a reassuring influence at the top, hostility to the ecological approach was muted," wrote Lowell Sumner. And in describing Wright's contributions, he wrote, he was "so far in the forefront of his time that the publications of wildlife management and ecological protection of parks . . . still sound modern."

In February 1936, George Wright was killed in an automobile accident that left the Park Service without the driving force for a true ecological conscience that was so important in the evolving bureaucracy.

The great potential for excellence in natural resources management that existed during the Wright years never recovered. In spite of the presence of brilliant field biologists who undertook natural science studies in the parks, the program never again got a foothold within the Service. Smathers described the conditions that followed Wright's death:

For the next 25 years the opposing school of thought, which was coming to feel that biologists were impractical, unaware that parks are for people, and a hindrance to large scale plans for park developments, increasingly prevailed.

During the 1930s and 1940s, wildlife management within the National Park Service was one of reaction rather than proaction, the concept that Wright had worked so hard to sell. When coyote control, as a means to "preserve" antelope, deer, and bighorn in Yellowstone National Park, was practiced again in the late 1930s, wildlife biologist Adolph Murie was assigned to a two-year study. His report, "Ecology of the Coyote in the Yellowstone," was published in 1940 as Fauna Number 4. This report upheld the

policy of protecting predators and became a major contribution to animal ecology. And in 1939, when a national controversy arose over the decline of Dall sheep and an increase in wolves in Mount McKinley National Park, Murie undertook another two-year survey that resulted in his report, "The Wolves of Mount McKinley," Fauna Number 5, in 1944. Murie's work is considered classic in the literature of vertebrate ecology and wildlife management.

War and Neglect

World War II dealt a severe blow to the growing National Park Service, further accelerating the decline in personnel and funds. Wildlife management projects were restricted to those that addressed only the most critical "brushfire" issues.

The war years did provide the park resources with a temporary respite from the hoards of visitors seeking out the parks for recreation in ever-growing numbers. At the war's end, however, Americans again began to come to the parks; and they found inadequate and insufficient facilities in many of the areas.

Acknowledgment of these shortages resulted in an ambitious ten-year program to restore visitor and employee facilities, but Mission 66 ignored the resources management and science. Victor H. Cahalane, who had become Chief of the Service's Wildlife Division following the death of George Wright, resigned in 1955 because he believed that "ecological research had been too long ignored when plans for Mission 66 included no positive, biological programs" (Smathers).

National Park Service emphasis during the post-war years was almost totally related to new construction and visitor services, such as roads, campgrounds, and visitor centers. Revitalization of a resources management and research program had a low priority; and, when increased visitor use was coupled with benign neglect of wildlife and other natural resources, the very values that parks had been established to preserve became threatened. Sumner described the conditions that existed during the 1950s:

In the parklands themselves, biological time-bombs had gone on ticking through all the years of inattention. Now giant sequoias were leaning and falling with attention-catching frequency and people were asking why, fears were being expressed that DDT was becoming an ever greater biological hazard, . . . that feral goats threatened the survival of unique vegetation in the national parks of Hawaii, and that Everglades National Park was dying of thirst. Above all, the fifty-year-old, infrequently-faced-up-to-problem of the Yellowstone elk was to come back into public view, its ecological aspects worse than ever.

Several informed citizens began to express concern. In 1959, Dr. Stanley A. Cain, Chairman of the Department of Conservation at the University of Michigan, told participants in the Sixth Wilderness Conference that "the National Park Service does not have a program of basic ecological research . . . fails to approach at all closely to the fundamental need of the Service itself. . . . The Service is missing a bet not having an adequate natural history research program." And when the Secretary of the Interior's Advisory Board voiced a similar concern for a more effective research program, Secretary Stewart Udall initiated two outside appraisals of the situation.

Vignettes of Primitive America

The first of these appraisals was undertaken by the Secretary's Advisory Board on Wildlife Management, chaired by Dr. Starker Leopold. The question posed to this group was, "How far shall the National Park Service go in utilizing the tools of management to maintain wildlife populations?"

The second of the appraisals was undertaken by the National Academy of Sciences Advisory Committee to the National Park Service on Research, chaired by Dr. William J. Robbins. This committee was specifically instructed to "conduct a study of national park accomplishments, needs, resources, values, and opportunities in the natural sciences and in such related fields as may be deemed appropriate by the Academy" and to report the findings and recommendations to the Secretary.

The "Leopold Report," as the first appraisal became known, stated in the summary that:

The goal of managing the national parks and monuments should be to preserve, or where necessary to recreate, the ecological scene as viewed by the first European visitors. As part of this scene, native species of wild animals should be present in maximum variety and reasonable abundance. Protection alone, which has been the core of Park Service wildlife policy, is not adequate to achieve this goal. Habitat manipulation is helpful and often essential to restore or maintain animal numbers. Likewise, populations of animals themselves must somehow be regulated to prevent habitat damage; this is especially true of ungulates.

The Leopold statement emphasized the significance of restoring "vignettes of primitive America." It included the need to control exotic species and perpetuate native wildlife populations, recognizing that "wildlife should not be displayed in fenced enclosures; this is the function of a zoo, not a national park." The report called for the "expansion of the research activity in the Service to prepare for future management and restoration programs" and recommended that "every phase of management itself be under the full jurisdiction of biologically trained personnel of the Park Service."

The Robbins report provided an excellent overview of the natural science program of the Service and made a series of twenty recommendations. The most pertinent of those include:

2. The natural history resources of each park should be inventoried and mapped. . . . 4. A permanent, independent, and identifiable research unit should be established within the National Park Service to conduct and supervise research in natural history in the national parks. . . . 7. The National Park Service should itself plan and administer its own mission-oriented research programs directed toward the preservation, restoration, and interpretation of the national parks. 8. Research should be designed to anticipate and prevent problems in operational management as well as to meet those which have already developed. 9. A research program should be prepared for each park. . . . 20. Action in implementing the recommendations of the present Committee's report should be taken promptly.

Also in 1963, the Conservation Foundation was assessing national park conditions. Its report, *Man and Nature in the National Parks*, by F. Fraser Darling and Noel D. Eichhorn, was published in 1967. This report, in referring to the Leopold and Robbins report, stated:

In most essentials the Leopold and Robbins Committees have only restated, 30 years later, the conclusions of Wright, Dixon and Thompson. It seems incredible that such a promising line of management should have been abandoned, particularly since ecological deterioration in many parks has now progressed so far that it is noticed by even the casual park visitor. . . . In matters of ecological awareness and responsibility there seems to be positive resistance to new ideas, or re-acceptance of old.

There is little doubt that the Leopold and Robbins reports provided the boost necessary for the Service to initiate changes in its resource program. Indeed, selective changes began to occur. Smathers stated:

Shortly after acceptance of the two reports by the Service, there followed two parallel organizational units with separate missions, one of research, and the other resources management. The research group appeared to be highly influenced by the Robbins Report, while the resources management group developed its program primarily around the Leopold Report recommendations.

The Service experienced a period when considerable emphasis was placed on listing the flora and fauna, describing the natural history of an area, and identifying resources that had disappeared in historic time. Considerable debate often went into fixing the time at which settlers disrupted the native wildlife populations. Once extirpated species were identified and a range survey was conducted to establish forage availability, reintroductions were initiated. Unfortunately, investigation into *why* the animals were no longer present was often overlooked in an attempt to meet the Leopold recommendation of restoring historical species diversity. Failures were common; and successes, where they occurred, frequently required heroic efforts. Desert bighorn died of live-stock-induced para-infections. Elk migrated out of the area and were subject to hunting, poaching, or traffic accidents. Some species were maintained only by supplemental watering or feeding programs. Wildlife management went beyond placing a similar animal on its historic range. Resistance to disease, climatic adaption, and changing vegetation patterns were belatedly recognized as parts of the prescription that had to be written before the introduction might "take."

Wildlife Ecology

In a general way, however, the 1960s was a decade of progress in examining natural values within the parks and drawing together the activities of research and resources management. Not since the 1930s, under the leadership of George Wright, had the perpetuation of resources received so much attention. But it was not until the 1970s that the basic objective of the modern natural resources program of the Service evolved into the refined ecological perspective that is prescribed by the Service today—the perpetuation of a park's natural processes and total systems dynamics rather than the preservation of individual members of single populations of related harvestable animal species. This holistic orientation in natural resources management replaced the concept of preserving vignettes of primitive America at a fixed period in history which had, only a decade earlier, replaced the archaic concept of protecting only selected species.

During the first half of the 1970s the number of field scientists and the annual science/natural resources management budget increased significantly. But in spite of this and the spreading of an ecological consciousness within the Service, wildlife populations continued to be troubled. Contributing to this problem was the factor that the attention of key Park Service administrators was diverted elsewhere. Rapidly increasing visitation, coupled with 1970 riots in Yosemite National Park, created an immediate need for a major law enforcement capability for dealing with these problems. At the same time, impacts on park buffer zones and accelerating threats from technological advances on adjacent lands were increasing exponentially.

Two studies in the 1970s considerably influenced the National Park Service. The first of these studies was conducted by the National Parks and Conservation Association. Results were reported to the Service in autumn 1978 and were subsequently published in *National Parks & Conservation Magazine*, March and April issues, 1979.

About the same time the Conservation Foundation surveyed various land managing agencies including national parks and released its report entitled "An Issue Report—Federal Resource Lands and Their Neighbors" (Shands). Both reports stressed the impact of adjacent land uses on park values. The NPCA report stated that "residential and commercial developments account for about half of all wildlife problems. . . . Even though the loss of habitat occurs outside the park unit, it still affects wildlife within the unit."

The Service reacted to the pressure exerted by the media and public interest groups. This time the principal stimulus was a congressional request of the Park Service to evaluate the condition of its resources and to prepare a report to Congress. The resulting report, *State of the Parks—1980: A Report to the Congress*, stated that "no parks of the system are immune to *external* and *internal* threats, and that these threats are causing significant and demonstrable damage. . . . This degradation or loss of resources is irreversible. It represents a sacrifice by the public that, for the most part, is unaware that such a price is being paid" (emphasis added). The report's section on "Threatened Resources of the National Parks" states:

Threatened biological resources include a wide variety of living organisms and biological entities. Collectively, biological resources in national parks were reported to constitute 32% of all the reported threatened resources. . . . Ranking . . . shows mammals as the single most mentioned biotic group followed by plant and wetland communities. Vertebrate animals, when regarded as a single group of related organisms with common problems, account for over 35% of all threatened resources in this grouping.

This information, provided by park staffs, indicated that the plight of wildlife species was recognized but that integrated solutions were not available.

As a followup to the 1980 report, Congress asked the Service to prepare a second report that would outline a strategy for preventing and mitigating the problems described in the *State of the Parks* report. In January 1981 the National Park Service

submitted a second report, *State of the Parks: A Report to Congress on the Servicewide Strategy for Prevention and Mitigation of Natural and Cultural Resources Management Problems*. It identified numerous prevention and mitigation activities underway and anticipated within the parks, and also listed a number of generic projects planned Servicewide.

This report outlined a systematic planning concept for identifying, assessing, and resolving the problems through the use of updated Resources Management Plans. It pledged that these plans would continue to be the Service's vehicle for resource planning and that all units of the System were to complete their plans within the year.

A major companion emphasis was the initiation and development of a Natural Resources Management Specialist Trainee Program within park units having significant wildlife, vegetative, land use or abiotic resource threats. This program has been implemented with the idea that deterioration of resources can best be combated by well-informed employees at the field level who are responsible for the day-to-day activities. The monitoring of natural systems, problem identification, and research for solutions require the transfer of research findings into use by park management as an absolutely essential component of the objective of preventing and mitigating loss of resources. The missing link has been an effective facilitator that relates to both disciplines, a body tuned to ecological processes that can talk to both manager and scientist.

Wildlife Programs Needed

The successful perpetuation of wildlife populations within the national parks depends upon understanding the resource relationships and creating and directing an integrated resource protection program. Professional resource specialists that understand the technology and possess the facilitating ability to implement the necessary programs are absolutely essential in the modern

world of resources management. The management of resources is no longer a part-time job for half-trained people. It is no longer a game of responding only to the most visible issues. Wildlife management by benign neglect will no longer even get the Service by for another year. The Park Service must abandon the trail-worn philosophy of greasing only the squeaky wheel, or else the sudden loss of the previously silent ones will just as surely halt us in our efforts.

The National Park Service enters the 1980s and beyond knowing that wildlife programs must reflect less art and more science. The management of wildlife and its necessary habitat requires all the knowledge and tools available in this technological world if park values are to be protected. Park manager Boyd Evison has stated this well: "The National Park Service is now in the business of preserving natural processes. We should intervene only to the extent to counteract the unavoidable effects of past mistakes."

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William R. Supernaugh is a Wildlife Biologist with the Division of Biological Resources in the Washington office of the National Park Service. Prior to his three years as the wildlife program coordinator, he served as the Resources Management Specialist at Glen Canyon National Recreation Area. Previous NPS assignments include Supervisory Park Ranger positions on the Blue Ridge Parkway and the Natchez Trace Parkway.

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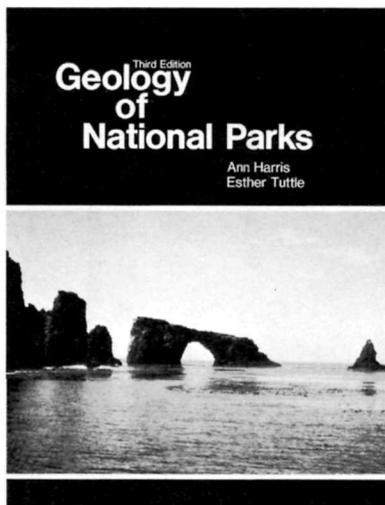
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The endangered peregrine falcon (Falco peregrinus anatum) has been a major focus of research in parks across the country in recent years. Dinosaur National Monument in Colorado claims the most extensive program, where eyries have been monitored since 1977, and a statewide program involves removing eggs from nests, incubating the eggs, and getting skilled climbers to carefully replace the chicks in nests.



USFWS, by Mike Smith

Wildlife Survivors Portfolio



Glenn Clemmer

The humpback chub (Gila cypha) was virtually wiped out from its natural range along the Colorado River when the construction of the Glen Canyon Dam dramatically changed the river habitat. The Yampa River in Dinosaur National Monument and the Little Colorado River in Grand Canyon National Park now provide crucial protected havens for the chub, whose habits remain the subject of considerable study.

Inasmuch as the national parks provide the only remaining protected habitats for many endangered species, park research and reintroduction programs are vital to the survival of many species on the endangered list. The species shown on these pages are living proof of the effectiveness of such programs. Nevertheless, National Park Service wildlife specialists report that widespread loss of habitat remains the major contributing factor tipping the balance toward extinction.

A slight increase in the numbers of crocodiles (Crocodylus acutus) in Everglades National Park has satisfied research biologists that this endangered species will survive as long as its habitat is protected from disturbance by man. A special refuge has been set up within the park, and efforts to protect nesting areas on Key Largo have been partially successful. Research indicates that protective measures far less expensive than a major reintroduction effort will be sufficient to maintain normal populations.



USFWS, by W. H. Julian

*A large, slow-moving cousin of the common gray squirrel, the Delmarva fox squirrel has always ranged within an isolated arm of land along the mid-Atlantic coast consisting of parts of Delaware, Maryland, and Virginia. This endangered species (*Sciurus niger cinereus*) can thank the Chincoteague National Wildlife Refuge at Assateague Island National Seashore for its survival. A population of 150 squirrels at the refuge now provides pairs for other federal lands and protected areas.*

Pat Toops



Good stewardship, according to Interior Secretary James Watt, means taking care of what one has before reaching out for more. Guided by that philosophy, Watt has endeavored tirelessly to halt the expansion of the National Park System, as readers of this magazine well know. Less well known is that the same philosophy purports to guide Watt's administration of the federal endangered species program. The consequences for the nation's thousands of species now teetering on the brink of extinction have been extraordinarily harmful.

To put the present crisis of the endangered species program in focus, one must first review its statutory basis. In 1973 Congress enacted the Endangered Species Act to provide "a program for the conservation" of endangered and threatened species and "a means whereby the ecosystems upon which [they] depend may be conserved."

The first step in that program is the identification and listing of species in imminent danger of extinction ("endangered species") or likely to become so in the foreseeable future ("threatened species"). This task was primarily entrusted to the Fish and Wildlife Service in the Department of the Interior. Once listed, a species receives a wide array of protections, including, for most species, protection from hunting, collecting, commercial trade, and other prohibited activities.

Another and often far more significant form of protection is bestowed by Section 7 of the Act. That provision requires *all* federal agencies to *ensure* that *any* action authorized, funded, or carried out by them not jeopardize the continued existence of any listed species. The Act's goal of preserving the ecosystems upon which endangered and threatened species depend was to be achieved primarily through Section 7's brake on the engine of federally sponsored habitat destruction.

The Endangered Species Act's

ENDANGERED SPECIES: The Illusion of Stewardship

most serious test came with the Supreme Court's 1978 decision halting construction of Tellico Dam because of its threat to the snail darter, an endangered fish. Suddenly, Congress had to decide whether it really meant what it had said in Section 7. Despite enormous pressure to dismantle the provision, Congress kept it basically intact, merely adding a special exemption process that could be invoked only in exceptional cases.

The battle over Tellico Dam meant vastly different things to different people. To environmentalists, the battle was yet another in a series of battles against environmentally destructive, economically meritless public works boondoggles. Ironically, to those who would be elected to federal office two years later on a platform of eliminating wasteful government spending, it represented environmental extremism in its ultimate folly. (Indeed, the derisive term "snail darter type" has been used in the Reagan Administration to label Environmental Protection Agency associated scientists who do not share the Administration's environmental goals.)

To James Watt's Interior Department, the Tellico controversy and Congress' refusal to budge very far in response to it apparently meant that the Endangered Species Act

could still spell a lot of trouble for federal development agencies and for private businesses in need of federal permits. One way to contain that trouble was to put the brakes on future additions to the endangered and threatened species lists. Immediately upon taking office, Secretary Watt put the brakes on hard.

When the Reagan Administration took office, the Fish and Wildlife Service had already identified about 2,000 species that it knew to be precariously close to extinction and eligible for listing under the Endangered Species Act. Yet, nearly a year later, the Service had still not listed any of the species that had been proposed for listing in the prior Administration. Neither had it proposed any new listings of its own. John Spinks, a career civil servant who heads the Service's Office of Endangered Species, grew frustrated with the hurdles that political appointees in the Department continually used to block listing decisions. In a blistering memorandum, he accused them of deliberately obstructing the listing process "by pseudo-legalistic ploys being used as excuses for delay."

Spinks' memo surfaced at the congressional hearings underway as part of the Act's reauthorization process

in early 1982. Those hearings put the spotlight on Interior's recalcitrance in listing species. Under pressure, Interior grudgingly relented and, thirteen months into the new Administration, listed its first endangered species. The unlikely object of the Department's attention was the "Hays Spring amphipod," a species as "safe" for private and public developers as any the Department could have picked, for it occurs only in a single natural spring within the National Zoo in the center of Washington, D.C.

Interior's efforts to bottle up the listing process ultimately led to significant new amendments to the Endangered Species Act. Those amendments, signed into law in October 1982, were intended to expedite the listing process by removing Interior's authority to consider anything other than biological factors in determining whether to list a species. By the time the amendments were signed, the number of species listing proposals outstanding had dropped to fewer than ten, the lowest number ever since the initial months following the Act's passage in 1973.

Since the Endangered Species Act Amendments of 1982 became law, Interior's listing record has improved somewhat, although the Department still bitterly resists many listing proposals. One of the most recent additions to the endangered list is the Selkirk Mountain woodland caribou herd in Idaho. That herd is the last in the "lower 48"; its numbers have recently declined to no more than twenty individuals. It is threatened by poaching and potentially by nearby logging activities. Interior listed it on an emergency basis in January 1983, but only after the National Audubon Society and Defenders of Wildlife threatened to sue to force its listing. Indeed, only when the environmental groups readied their court papers for filing and scheduled a hearing for preliminary relief did the Department reverse a decision report-

edly made by Watt himself not to list the caribou.

As another example, in mid-March of 1983, Interior issued with much fanfare the first of a new type of permit authorized by the 1982 amendments. The permit authorizes the incidental killing of three different endangered species in the course of developing a major residential subdivision on San Bruno Mountain, one of the last undeveloped areas in the hills immediately south of San Francisco. Environmentalists tried in vain to persuade Interior to withhold action on the permit until the status of nine other species that occur on San Bruno was determined. All nine have been identified by Fish and Wildlife as likely candidates for listing, though it now seems unlikely that any will ever be listed.

A final example of Interior's continuing recalcitrance is its resistance to entreaties for a prompt listing of the Bay checkerspot butterfly, the extensive studies of which by Dr. Paul Ehrlich have made it among the best known species to evolutionary ecologists. The most viable of its three remaining small populations is currently threatened by a golf course development on a California county park previously acquired with the help of federal funds. Only by listing the butterfly will the Department have a legal handle to influence the proposed development, yet it has taken no action to do so.

Secretary Watt's response to criticism of the poor listing record of his Administration is to deflect it by arguing that he has deliberately sought instead to emphasize the recovery of species already listed over the listing of new species. He points to the 160 "recovery plans" approved or "under review" in his Administration compared to the 78 of the Andrus Administration. Secretary Watt is certainly correct that the goal of the Act is the recovery of species so that they no longer need to be listed as threatened or endangered. "Recovery plans," however,

are no more than their name implies. They are *plans* for action, not action itself. The real measure of stewardship is not the volume of paper one can produce embodying plans for future action, but rather the actions one is committed to take to bring about species recovery and the resources one commits to that effort.

Measured on that scale, Secretary Watt's claim to enlightened stewardship of our endangered species resources proves transparent. For many, and perhaps most, the mere fact of listing is the most important action that can make its ultimate recovery possible, because Section 7 provides a mechanism for arresting federally supported degradation of its habitat. Yet, Watt's policy of strangling the listing process chokes off any real hope of recovery for the many species already known to be eligible for protection but not yet listed. Likewise, for many species already listed, the protection of their habitat through acquisition is a needed recovery measure, yet Watt's adamancy against increasing the federal estate bars that recourse. Finally, the recovery of most species will depend upon a close working partnership with the natural resource agencies of the states, yet for three years in a row the Administration has sought to eliminate all financial assistance for state endangered species programs.

Time is running out for our endangered and threatened species. They are an irreplaceable gift that we must protect. Once they are lost, we will not have an opportunity to reconsider our folly. If they are to be preserved for our own welfare and that of future generations, we will need a commitment to a policy of good stewardship that is not transparent, but real.

Attorney Michael J. Bean is chairman of the Environmental Defense Fund's Wildlife Program and author of the Council on Environmental Quality's 1977 work, The Evolution of National Wildlife Law.



Fish Watching in Yellowstone . . .

. . . a growing pastime, by John D. Varley & Paul Schullery

Appreciating wildlife is a matter of patience and understanding. In a national park, wildlife appreciation is actually wild country appreciation; the difference between watching an elk in a zoo and in a mountain meadow is not as simple as it seems. You are seeing that elk as a self-responsible part of an enormous wild system in Yellowstone. What you are witnessing in Yellowstone is a truly primitive vignette. You are seeing wildlife at its most exciting and enriching.

Once you accept that it is your responsibility to find and enjoy the animals on their terms, you've already reached far beyond the reason for going to a zoo. As essential as zoos are in the modern world, they make animal-watching very easy (which is why bird-watchers don't count birds seen in cages as official "sightings"). The triumph of enjoying wildlife in its natural setting is more than knowing how to find it; it is also knowing, like the fisherman, that you cannot always succeed.

Very few people ever give a thought to appreciating fish in any way but by catching and eating them, but fish, like other wildlife, are worth watching. Their world, full of predators, severe environmental stresses, and remarkably diverse habitats, places great demands on them. It is a world no less exciting than its dryland counterpart.

Practical Fish Watching

Fish watching is much easier than you might think. Fishermen have good reason to discover the pleasures of the underwater setting, and we can take some cues from their experience. Polarized sunglasses are a big difference. The first time you look into water through polarized

lenses it will seem to you that a window has been opened into an alien place. Polarizing filters are available for good cameras, too, and fish photography is as challenging as other wildlife work.

If you're searching for fish in a river that has a broken surface, look for patches of smooth water. Such patches seem to last a long time, and you can follow one along the current, using it as your window the way children use a drinking glass to see below the surface of a pond.

Once you've located fish, the next step is to figure out what they're doing. If they are rising to the surface and seem to be feeding, try to figure out what they're eating. Look for floating insects along the shore. The behavior of feeding fish can tell you a lot. For example, fishermen have noticed that because most adult caddisflies do not drift on the surface for long after they emerge, fish have learned that they must take the flies quickly. Fish rising to caddisflies are said to make a much more splashy surface disturbance than when they are rising to mayflies, which often float quietly for many yards before flying away.

There are few more exciting scenes in nature than the feeding frenzy that can occur during a heavy "hatch" of aquatic insects. There are ponds in Yellowstone that seem fishless until an evening emergence of *Diptera* brings so many fish to the surface that the rise rings look like rainfall. The Yellowstone River is famous for its heavy emergences of mayflies and caddisflies, when several dozen large trout will be feeding within casting distance of the angler. One's first encounter with such a gathering of appetites can be unsettling. Perhaps the most impressive

such event in Yellowstone is the emergence of the large stoneflies known locally as salmon flies. They are as much as two inches long, and the response of the fish to this sudden rain of meat is an awesome feeding spree. It usually happens in June and July, and is one of the west's most sought-after fishing experiences.

If the fish you see are not rising to the surface, but simply holding their place in the current, they may be feeding on aquatic insect life, such as mayfly nymphs. Watch for occasional opening and closing of the mouth, or frequent swaying from and returning to one position. If you get close enough you may see their food drifting in the current. Trout do most of their feeding below the surface, either as just described or by cruising around hunting. You might see them nose-down in the gravel, digging out other forms of immature insects. Look for especially large ones hunting for smaller fish.

Where to Watch Fish

The best known spot for fish watching in Yellowstone is Fishing Bridge. For seventy years Fishing Bridge was one of the most popular fishing areas in the park. The bridge hosted countless anglers who lined both walkways catching trout, hats, and Chevrolets in a happy festive atmosphere. Most serious anglers avoided the place, but the sheer numbers of fishermen had disastrous effects on the fish population. In the early 1960s, an average of 49,000 anglers used the bridge every year, and the average time it took to catch a trout was more than seven hours.

In 1973, the bridge was closed to fishing, with surprisingly little objection from the users. The closure

was necessary to protect trout spawning runs, but it had another benefit—it gave us a chance to see an amazing undisturbed aquatic scene.

It took only a few years for the fish populations to recover enough so that many large trout could be seen, sometimes thousands of them. After ice-out (an exciting event itself, with the crumbling ice sheets of Yellowstone Lake moving into the river and grinding along under the bridge), which occurs in May or June, visitors can witness the drama of the spawning run. Millions of eggs are laid in the gravel within sight of the bridge. The trout are both river residents, moved upstream to spawn, and lake residents, moved down from the lake for the same reason. Longnose suckers also spawn in this same area in June and July, so that a great concentration of wildlife occurs for almost two months. The fish draw many pelicans, gulls, and mergansers, as well as an occasional eagle or osprey.

After the spawning season, many fish stay near the bridge as permanent residents. Their feeding habits can be observed at length, always a rewarding pastime for anglers. People feed the trout, which they shouldn't do, but people no longer pose a threat to them.

Fish watching from Fishing Bridge is an enlightening experience. When a trout of eighteen or twenty inches rises directly below you to take a floating insect, and you look directly down its open gullet, it's suddenly a lot easier to think of a fish as a predator.

Possibly the most spectacular activity fish-watchers may witness in Yellowstone is the spawning run, just mentioned. In June and July, trout in the Yellowstone River move upstream through Le Hardy's Rapids, where ranger-conducted walks are scheduled during the run. The fish jump through the white water exactly like their large cousins, the salmon. In many smaller streams around Yellowstone Lake, trout can be seen on their spawning beds, preparing the redds for eggs, defending their little territories and fighting over mates. If you decide to explore

any out-of-the-way streams, remember that the fishing season never closes for grizzly bears.

Fish watching is not confined to the Yellowstone River. The lake itself provides many opportunities. Along the shore (the docks at Bridge Bay Marina are especially good) you can observe the schooling behavior of redbreast shiners. Schools of fish are as mystifying as flocks of birds, whose flight always seems under some kind of group consciousness that enables all the birds to change direction at once. Researchers are still trying to figure out how they do it. Watch the fish; can you pick out the one who seems to be the leader? If so, chances are that in a moment the group will change direction and your leader will suddenly be at the tail end of the school. How they coordinate their elaborate aquatic choreography is only one of the intriguing questions they raise. Why are all the ones in a group the same size? Where are the young? Which ones in the group have the best chance to get food, or the least chance to get eaten?

Speaking of predators, look for trout preying on the shiners. You may see a sudden swirl, or the flash of many turning fish, as a trout drives through the school. Occasionally the shiners will jump into the air in a quick silvery spray in their efforts to escape.

Over on the Madison River there is a very special window into the fish's world. Halfway between the West Entrance and Madison Junction the road crosses the river at Seven Mile Bridge. The bridge provides a vantage point at least as good as that offered by Fishing Bridge. Watch the traffic. Approach the railing slowly and quietly. There are often a number of large trout holding in the current, especially on the upstream side of the bridge. They lie between banks of weeds, in deceptively tricky currents; they are rarely captured by anglers. They are quite wary, and so you have to approach them carefully or all you will see is quick flight.

This bridge is one of the best places in the park for acquiring an appreciation of how unlike ours the

fish's world is. In mid-winter, when elk and bison are struggling to survive, and bears are lost in their bear-dreams, the world below the bridge is going full tilt. Because of the thermal runoff in the Firehole and Gibbon rivers, the Madison is a comfortable fifty degrees—a great temperature if you're a trout.

Aquatic vascular plants and algae are cranking out oxygen, various insects are growing, grazing, and preying, and the trout are living it up at a pace equaled nowhere else in the area except in the bars in West Yellowstone.

If we seem to have devoted a lot of time to describing an activity of limited interest, it's because fish watching has become a major visitor pastime. In 1978 more than 130,000 people used Fishing Bridge for fish watching. In August of that year more people watched fish from the bridge than fished in the whole park. For most people water is a foreign element, and they look no farther than its surface. Yellowstone's underwater wilderness is much too vital and appealing a place to be ignored by anyone who really enjoys nature, so we're pleased to see a growing number of people taking advantage of the pleasures of fish watching.

John D. Varley worked as a biologist with the U.S. Fish and Wildlife Service in Yellowstone National Park for eight years and is the author of numerous scientific papers and technical reports on fisheries subjects. He is currently working for the same agency in Idaho, in salmon and steelhead enhancement.

Paul Schullery worked in Yellowstone as a ranger-naturalist and as park historian for several years. He is the author of The Bears of Yellowstone, editor of Old Yellowstone Days, and author of numerous shorter articles and reports on Yellowstone history and management.

This material is adapted from the new book Freshwater Wilderness: Yellowstone Fishes and Their World, published in 1983 by the Yellowstone Library and Museum Association, Yellowstone National Park, Wyoming 82190.

Alaskan Senators:

Gunning for the Alaska Lands Act

Alaska is one of the few—no, the only state in the United States that is still truly wild. Others have pockets of wilderness; a few states even have large tracts of wild land. Alaska alone supports the vast numbers of ungulates—caribou, moose, Dall sheep—and predators—grizzlies, black bears, wolves—that provide an idea of the wealth of wildlife that once ranged over all of this country.

Now rangers at Yellowstone National Park count merely a couple of hundred grizzlies. Wolves are found rarely in the Lower 48. And the great herds of animals that once roamed the central plains are only a memory.

In creating the Alaska Lands Act, many legislators foresaw the development of Alaska and the need to preserve in this last place national parks where healthy populations of animals would thrive unthreatened, keeping alive a wide range of the planet's ever-shrinking genetic diversity.

Alaskan senators Ted Stevens and Frank Murkowski, who have the support of Secretary Watt and other Interior Department officials, have been pushing their colleagues to downgrade these national parks with S. 49. The bill would degrade the status of 12 million acres of national parks—more than one-third of all the national parklands in Alaska—to national “preserve,” where sport hunting is permitted.

Even though the beneficiaries amount to only 102 hunting guides and those sport hunters wealthy enough to fly into the remote lands proposed for reclassification, both senators have been pressuring the Energy Committee to approve S. 49

and move it to the Senate floor as quickly as possible, before environmental groups and other opponents of the bill rally the support needed to stop it.

At Committee hearings held on April 15, Senator Stevens threatened, “If this festers . . . the next bill I introduce will cover mining, and oil and gas, areas that were closed to timber, the areas that were closed to access, and . . . we will use this as a springboard to get to the other issues that bother us.”

Senator Stevens' words belie the protests by supporters of S. 49 and by Stevens himself that sport hunting is the only issue in question right now.

In rebutting Stevens' statement, Cecil Andrus, Interior Secretary when the Alaska Lands Act was passed, reminded the senator that “we did, in fact, make many, many compromises.” Andrus pointed out that, at first, 65 million acres were recommended for parkland. That number was reduced to approximately 50 million; and the final compromise allocated 24.5 million acres as new parkland and 18.9 million acres as national preserve.

Although supporters of S. 49 say they are being deprived of valuable hunting lands, the first study on wildlife numbers completed by the National Park Service shows otherwise. Of all the Dall sheep in Wrangell-St. Elias Park/Preserve, only 19 percent were found in the national *park*.

“This is not a hunting issue; this is a parks issue,” Andrus said. Environmentalists concur.

In his testimony before the Com-

mittee, NPCA President Paul Pritchard reaffirmed that “this bill has very little to do with improving public hunting in Alaska and everything to do with violating the integrity of the national parks in Alaska. The bill sets a dangerous precedent not only for the national parks in the Lower 48, but for national parks throughout the world.”

At a press conference a few days before the hearing, Marlin Perkins, of television's “Wild Kingdom,” condemned the bill as a threat to the integrity of the National Park System and said, “America's national parks are a model for the rest of the world.”

At that press conference, NPCA Director of Federal Activities T. Destry Jarvis, who is also chairman of the Alaska Coalition, pointed out the antipark nature of S. 49, which Stevens and Murkowski contend is merely prohunting.

“These people do not have only Alaska in mind,” Jarvis said, explaining that the Safari Club International, which strongly supports S. 49, tried to get legislation introduced last year that would have opened *all* national parks in the System to hunting.

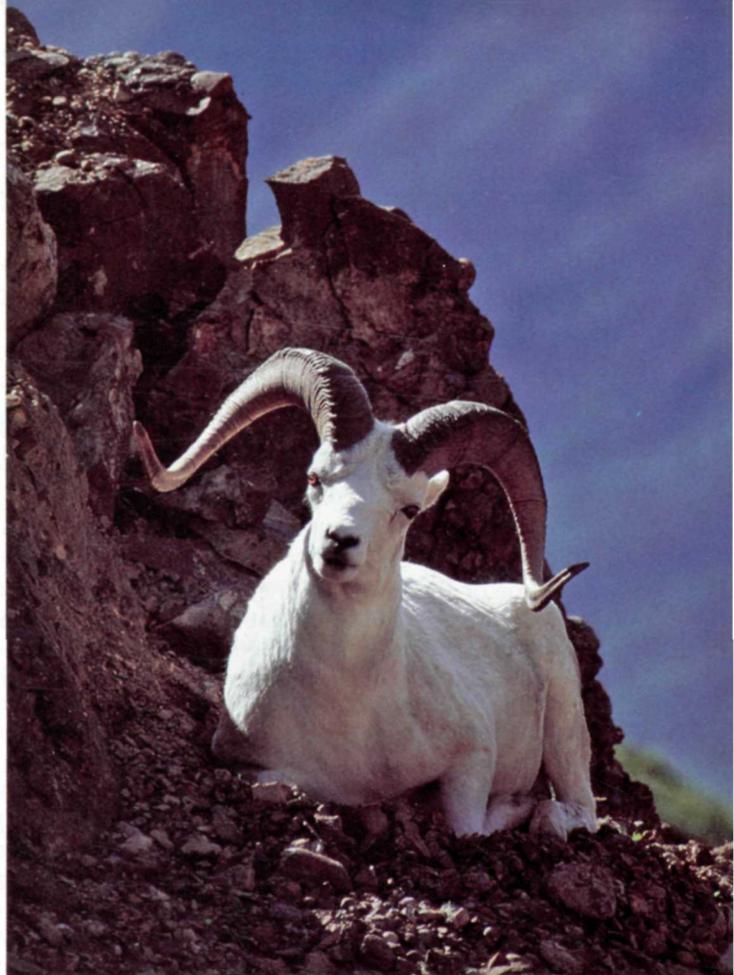
Environmentalists fear that if Alaska parklands can be reclassified to accommodate hunters, any national park could be reclassified to accommodate any other special interest group. To please a hundred hunting guides and their wealthy clients, environmentalists reason, Alaskan senators Stevens and Murkowski would jeopardize the entire National Park System.

—Michele Strutin

ALASKAN GRAND SLAM

portfolio by Steven C. Kaufman

Grizzly, Dall sheep, caribou, and moose comprise Alaska's "grand slam" that trophy hunters spend thousands to bag. Environmentalists believe that animals should have *some* sanctuaries from hunters; that's what national parks provide. While negotiating the Alaska Lands Act, environmentalists accommodated sport hunting interests by agreeing that many large tracts intended as national parks would be designated "national preserves" instead. Moreover, sport hunting is permitted on all other public lands in the state, including national wildlife refuges. Yet hunters now are trying to grab *even more* national park acreage by redesignating them as national preserve lands.



Dall sheep ram

Bull moose





Caribou

Alaskan brown bears

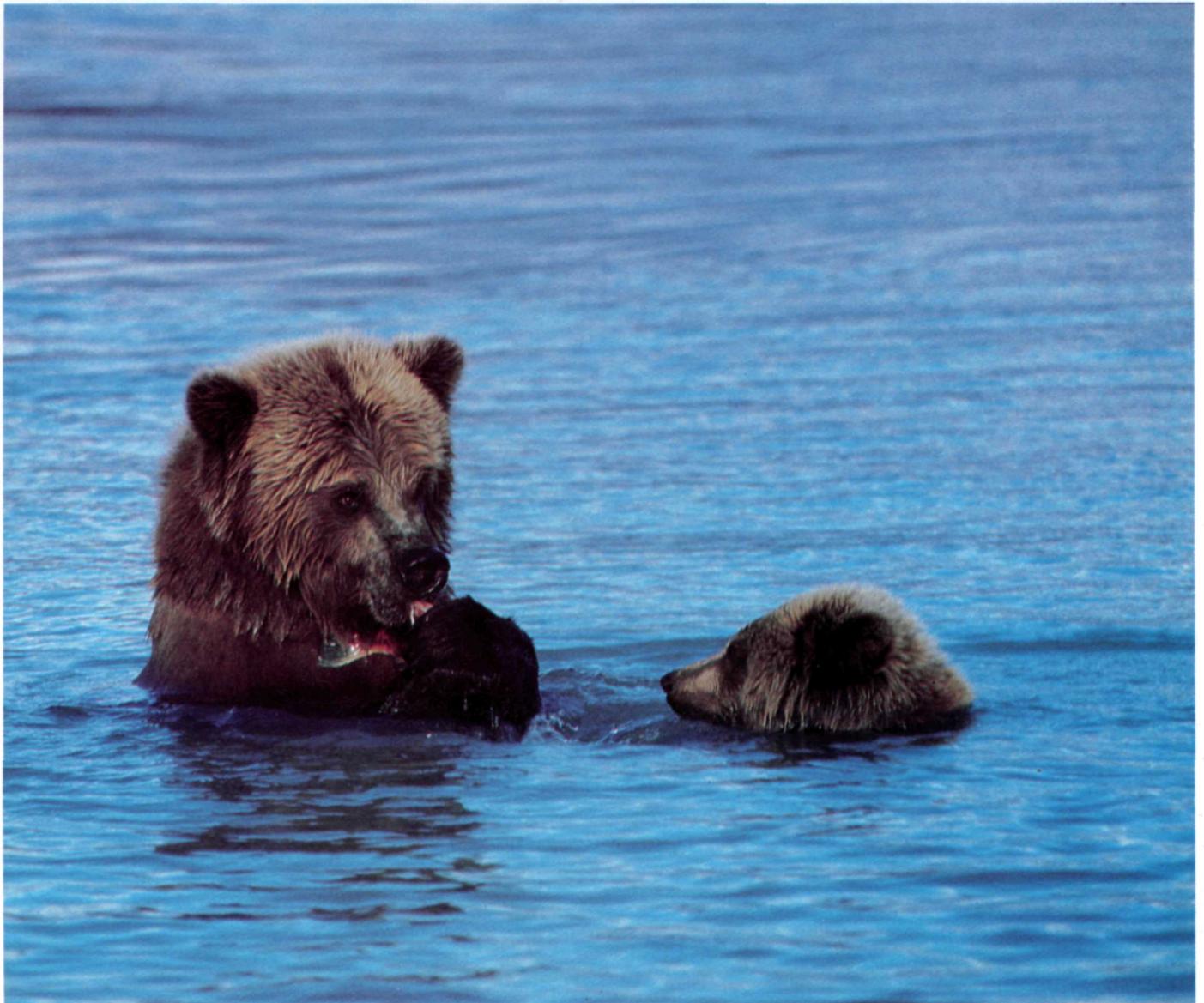




Photo by Ron Sherman

THE CHATAHOOCHEE CONUNDRUM

The Chattahoochee River National Recreation Area on the outskirts of Atlanta is shaping up as a battleground between environmentalists and an anti-expansion Administration. If the Administration wins, the country stands to lose one of its most pristine urban rivers.

by Ken Englade

When the Chattahoochee River comes rushing out of Buford Dam, fresh from the bottom of Lake Sidney Lanier in central Georgia, it is colder than chilled white wine and just as clear. In the summer, or even on the myriad winter days when the Southern sun turns January temporarily into June, the cool water lowers the air temperature along the river and creates a fog that wraps around huge mid-stream boulders and creeps halfway up the pines on Bowman's Island, giving the river a positively eerie look. As the river moves south on its fifty-mile journey to the heart of Atlanta, the water warms and the fog dissipates, leaving a crystal clear stream that one would swear has never been touched by civilization.

The impression is, however, fleeting. Just a few miles farther downstream, over another dam and countless small rapids, the Chattahoochee turns a light chocolate color and transforms from a lonely and surreal waterway into one of the most heavily used recreational rivers in the country. Flowing southward into the Atlanta metropolitan area, the river remains remarkably pristine. And a number of people would like to keep it that way.

Park advocates are fighting a desperate battle with an Administration that not only is unwilling to request the additional funds necessary to preserve the stream, but has condemned the concept of "urban parks," the category they seem to place on the Chattahoochee River National Recreation Area (CRNRA). The CRNRA may be near an urban area, but its natural and historic attributes more than justify its protection within the National Park System.

The Chattahoochee, either as a river or a park, is a treasured resource, especially for Georgians. Dammed several times along its course, the river has been labeled a "well-developed" waterway by the Corps of Engineers. The Chattahoochee is the main stem of a tri-river system that runs a 450-mile course from headwaters in the mountains of northern Georgia to the Gulf of Mexico. The riverway is exception-

ally valuable as a recreational facility and as the sole source of potable water for 90 percent of the 2 million residents of metropolitan Atlanta, a hefty chunk of the state's population. The river corridor, however, contains treasures of less tangible value as well.

In earlier days, the Chattahoochee served as the boundary between the Creek and Cherokee nations. The Creeks gave the river its name, which translates to "River of Flow-ered Stones," because of the delicately colored boulders that line its course. The Cherokees, who lived on the western bank, called the nearby valley "The Enchanted Land." Surprisingly, much of the enchantment of the area survives today.

Although it is all but surrounded by metropolitan Atlanta's sprawl, the Chattahoochee retains a singular wilderness and beauty, drawing an increasing number of appreciative settlers to its banks. Such settlement must be controlled and limited if the river and the CRNRA are to survive in anything like their present form.

Despite the encroachment of civilization, the Chattahoochee River National Recreation Area still offers, according to the National Park Service, "one of the most unspoiled scenic, historic and interesting rivers within any major metropolitan area" in the country. It is a habitat for birds and wildlife. Its numerous ravines contain rare and endangered botanical species, some of which can be found only in the southern Appalachians. Foresters say the river corridor is interesting because its vegetation represents an overlap of Appalachian and Coastal Plain species. The forest is primarily oak and pine, with the faster-growing pine replacing the hickory that once predominated. Georgia protects a number of species of plants found within the corridor, among them yellow lady's slipper, bay star-vine, false hellebore, lobed barren-strawberry, and goldenseal.

South of Atlanta, native fishes thrive in the Chattahoochee's warmer waters—yellow perch, bluegills, chubs, suckers, stonerollers, shiners, daces, and bass. To the

Opposite, an eerie mist rises from the cool, pristine waters of the Chattahoochee River of north Atlanta. Below, one of the river's many fans takes a flying leap into the water.



Photo by Ken Englade

north, brook, brown, and rainbow trout are stocked for fishermen; but only the brook is native. Browns and rainbows were added after Buford Dam was built and the downstream water temperature changed from warm to downright chilly—45 degrees practically year 'round.

In 1976, an immature bald eagle was sighted over Bull Sluice Lake; peregrine falcons have also been sighted along the river corridor.

Wildlife along the Chattahoochee's banks includes raccoons, opossums, squirrels, rabbits, muskrats, and beaver, with deer and bobcats in upstream sections.

Thousands of years before the Creek and Cherokee claimed the Chattahoochee as their own, the river corridor supported primitive hunters and gatherers. Studies performed by Dr. Ellen Ehrenhard for the park document human presence as early as 7000 B.C. Assistant Superintendent Ralph Bullard comments, "The whole corridor is dotted with one site after another. I guess prehistoric man enjoyed the river as



Photo by Ron Sherman

much as we do today." The National Park Service is keeping the site locations close to the chest, because publicity on one major site resulted in its being pilfered. Historians have also documented a number of old mill ruins and several mansions of the Civil War era. One of the mills uncovered purportedly had produced a fabric called "Roswell grey"—renowned for its use in the Confederate uniform.

The future of the Chattahoochee hinges on a confusing number of interlocking factors—including a Corps of Engineers proposal to build a reregulation dam 6.3 miles below Buford Dam. The crucial issues will be in the hands of local and state governments, developers, landowners, the National Park Service, and conservationists. Although all groups claim the river's preservation as their primary concern, their efforts sometimes conflict and often confuse the issues. Conservationists say they do not oppose "wise and prudent" development—that, in fact, some development should be

planned for. But they fear that current protections will not be enough to guide development in a direction that will be compatible with the park. And they say the Park Service has reneged on its original plans for protections.

Although the Chattahoochee runs for almost five hundred miles, the recreation area covers only forty-eight miles—the distance between Buford Dam to the north and Standing Peachtree Creek just inside Atlanta. The Chattahoochee River National Recreation Area officially came into existence in 1978 when Congress passed Public Law 95-344. This law, quickly signed by Georgia's native son, President Jimmy Carter, authorized an expenditure of up to \$72.9 million for 6,300 acres of land along the river. Because that amount would not buy anywhere near all the land along the banks in the forty-eight-mile corridor, the NPS proposed a plan to buy fourteen separate tracts, ranging in size from a few acres to several hundred. Cooperative management of the land between the tracts and closely

monitored development would prevent commercial infringement on the park atmosphere.

The tracts would be chosen on ecological, environmental, historical, recreational, and scenic bases. The tracts would serve as pristine oases in a more loosely protected corridor with the Chattahoochee as the connecting link. The proposed park was quickly christened "the string of pearls."

Now, though, the string is unraveling; the pearls are in danger of being scattered.

Of the \$72.9 million authorized by Congress, \$66.9 million has been spent. But Administration cost estimates failed to allow for inflation and rising land values: the \$66.9 million has purchased only 3,595 of the 6,300 acres authorized by Congress. In a kind of Alice-in-Wonderland logic, the NPS coped with these reverses by revising its recommendations for the size of the CRNRA; in a 1982 press release, they announced their intent to keep the park acreage at 3,500.

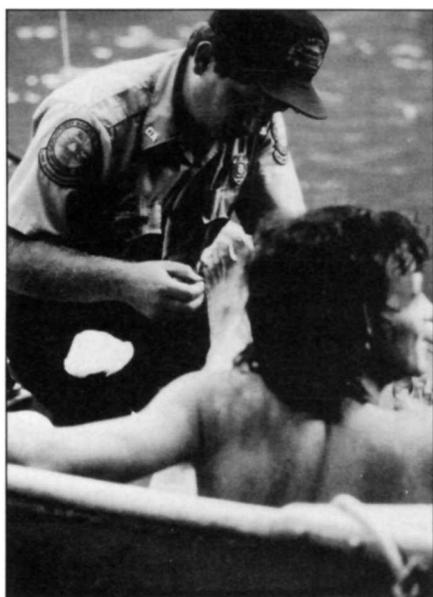


Photo by Ken Englade

Opposite, a river raft race in the early 1970s drew thousands of Georgians to the Chattahoochee. The river's popularity has grown since then by leaps and bounds, yet park protections remain unclear.

The NPS decision came as quite a blow to environmentalists, homeowners, and regional planners, all of whom wanted a park more like the one described in the authorizing legislation and had hopes that the National Park Service would become a major stabilizing influence along the Chattahoochee.

In a countermove, thirteen environmental organizations united as The Chattahoochee River Coalition and suggested an alternate plan. Under the coalition's proposal, the CRNRA would be composed, not of the 3,500 acres the NPS is now recommending, and not even of the 6,300 acres mandated by Congress in 1978, but of 7,328 acres.

G. Robert Kerr, a director of the coalition's core organization, The Georgia Conservancy, says the plan would work through a complicated system of juggling monies and swapping 252 acres of land already acquired by the National Park Service. In five years, the funding for the coalition plan could be met, if Congress were to appropriate the money the coalition has requested.



Photo by Ken Englade



Photo by Ken Englade

But still another plan is in the works. CRNRA Superintendent Arthur Graham said he has been working on a new draft proposal, which may finally be formally introduced later this year. This time the NPS seems to be moving in the direction the environmentalists want to travel.

Graham's idea would be to use the now-unappropriated \$6 million to buy an additional 1,000 acres, thereby increasing NPS-owned parkland to 4,500 acres. The NPS would then ask the state of Georgia and the county and local governments involved to put up additional funds necessary to bring the total acreage to 6,300 acres. Although the local governments would retain ownership of the land, the NPS would assume management of the property and incorporate it into the CRNRA.

"The major difference in our proposal and the coalition's proposals would be that we would suggest a partnership, while the coalition wants the NPS to acquire all the property," said Graham. Kerr re-

Top left, a park ranger assists an injured rafter; left, a frisky dog breaks the mood of lazy relaxation; below left, Georgian rabbits ride the river, too.

sponds that "state and local governments are already partners. They donated 700 acres to the park. Now it's NPS' turn." Still, stuck between Administration policies and a congressional mandate to protect a park, many National Park Service officials have had to compromise their land acquisition needs.

The Administration's negative views on acquiring lands for urban parks can be traced directly to Secretary Watt. In a March 1981 speech he stated, "I do not believe the National Park System should run urban parks. I have strong views on that. We will use the budget system to be the excuse to make major policy decisions." Perhaps the park hardest hit by the budget cuts has been Santa Monica Mountains NRA near Los Angeles. Other areas have suffered too. Chattahoochee River NRA is far from the only area facing problems because of Interior's new acquisition policies, but the difficulties here are perhaps typical: When there are no monies provided to acquire parklands near urban areas, plans for protections supported by the people and the Congress can fall apart.

There are, however, other issues pressing besides the basic question of land acquisition. Under a new policy that affects parks across the country, the Department of Interior must approve all land acquisition plans; and, theoretically, even if the money problem could be worked

out, the plan could be thrown out in Washington. Ironically, Interior has instructed that what were formally called "land acquisition plans" are now to be called "land protection plans." Acquisition seems to be a dirty word in Interior these days.

Kerr is mindful of this. "Besides congressional appropriations, another hindrance to land acquisition is the unwillingness of Interior to spend the money once it's appropriated," said Kerr. "Especially, on urban parks."

Although the river corridor could be protected by a pair of state laws—the Metropolitan River Protection Act (MRPA, pronounced Murpah) and the Soil Erosion and Sedimentation Act—both are riddled with holes. MRPA, the brainchild of a planning and research group called the Atlanta Regional Commission, sets up a 4,000-foot-wide corridor along the river (2,000 feet on each bank) within which development is supposed to be controlled. The problem is, for years no agency has been empowered to enforce the law. The four counties that border the river have ended up being responsible for making decisions about the law's applicability. As one might expect, each of the counties has tended to enforce laws somewhat differently.

"The counties continue to look for ways to make it easier for developers," said Kerr. "There is a feeling in some areas that there should be an overriding state authority."

The coalition has been working with the state and county officials to amend MRPA so that its protections are enforceable. Recently, amendments were added that give counties more police powers, increase penalties for violations, and allow the state to enforce regulations if the counties fail to do so. An added incentive to the counties is the stipulation that the state can bill a county for the cost of enforcement if the county fails to do its duty. Counties are now required to pass through three tough review steps, including public hearings, before they can override any decision of the Atlanta Regional Commission.

As a result of these changes on the local level, it has become tougher for developers to obtain approval for their proposals. Kerr warns, however, "We're still in a footrace with developers. Unless we can get additional federal protections, we stand to lose a thousand acres authorized for the park to developers within the year." Bills based on the coalition's proposals have been introduced in both the House and the Senate to increase the park acreage and get the additional appropriations required to buy the land.

The Atlanta Regional Commission has also been acutely aware of the problems, particularly Interior's seemingly unenthusiastic acceptance of responsibility for the river's future. In that vein, the ARC has also come down heavily on the National Park Service for its original proposal to reduce park acreage. Paul B. Kelman, chief of the ARC's environmental planning division, said the organization is on record opposing the plan, claiming it was "in stark contrast with the authorizing legislation" which set up the park.

Kelman says the new park proposals suffer from the same disparity. "What they [the NPS] are saying is they have taken just one aspect—recreation—and ignored the others, such as protection," said Kelman. "It appears that even the new park plan was based only on budgetary grounds," which in turn, reflects "short-sighted planning."

The recreation issue, in fact, is almost as controversial as land acquisition. The National Park Service estimates that some months during the summer season more than 100,000 people raft down the river. Handling that much traffic without clear land protections can complicate park management considerably.

In the current proposal, the NPS gave up on possible land purchases on the upper stretch of the forty-eight mile corridor, figuring sooner or later the Corps of Engineers would win approval of its plan to build the reregulation dam. When that dam is built, NPS reasoning goes, "pearls" along the upper river

will be either submerged or become valueless for recreational purposes.

"Basically we're proposing to concentrate federal ownership on the lower end of the park where recreational demands are greatest," Graham said. "We propose to add some tracts that are not within the currently authorized boundary because of their potential to meet the tremendous demand for active recreation along the Chattahoochee." The NPS figures a million persons a year use the Chattahoochee, and its current policy seems to favor recreation over preservation. This attitude has infuriated both environmentalists and homeowners.

Superintendent Graham said the proposal he is now working on, however, reverses earlier proposals in that the NPS is again looking at property above the Corps' proposed dam site.

Environmentalists have been confused by the switches in NPS proposals and are particularly worried about the increasing threats from developers. Kerr figures developers pose the greatest threat to the park.

Graham says he is as worried about development as Kerr is. "We had hoped the counties would exercise good practices in controlling development," he says, "but I don't see much indication of that now. It's the same old song: Let's get things built."

Graham does, however, emphasize that the NPS is not unaware of the problem, and he hopes his new comprehensive land protection plan will be finished before the end of the year. As his plan proposes, "There are a lot of ways [to protect the land] other than buying it." Whether or not any of the proposed new protections can become effective in time remains to be seen.

Ken Engle, a fourteen-year veteran of United Press International and a former newspaper reporter, is currently a freelance writer working out of Atlanta. He is a contributing editor of Atlanta magazine and has published articles in People, Quill, Business Atlanta, Forbes, and other magazines on political, sociological, and legal issues.

Grassroots Guardians of the Parks

NPCA Expands Network

Public participation in planning our national parks aims to keep the National Park Service and the Congress honest. The 1916 legislation that created the National Park Service (NPS) charges the agency with the job of conserving the natural and cultural resources of the national parks for future generations. The NPS has not always followed the letter of the law, however; and, occasionally, Congress has tried to dilute the law. The most consistent and dedicated support for the parks has come from the public.

To its credit, the NPS planning process offers—at least on paper—many opportunities for citizens to contribute to decisions affecting the protection of national park resources. Congressional hearings also provide opportunities for people to voice opinions on matters affecting the parks. To make our concerns known, we must take advantage of these opportunities—the NPS planning process and park-related congressional action—for public involvement.

Contacts

NPCA is constantly advocating the protection and improvement of the national parks and, because we are a membership organization, we rely on our members to get involved. We have two programs that help members take part in protecting the parks: the Contact program and the National Park Action Project.

NPCA members who join the Contact program receive bulletins—called “NPCA Alerts”—detailing issues that will affect the national parks. Sometimes an issue can affect the entire park system, such as legislation to change clean air protections. Other times the problem con-

cerns a particular park, such as a draft general management plan that proposes new development for the park.

The alerts briefly describe the problem and what Contacts can do to help. Usually, this involves writing a letter to the National Park Service or some other federal agency, or writing to members of the House and Senate. The issues featured in the alerts often can be affected by immediate public reaction. Results, however, can take time. Many of the issues Contacts worked on in 1982, such as the Park Protection Act and the Clean Air Act reauthorization, take months or years to resolve. Others, such as the Land and Water Conservation Fund, are ongoing.

Sometimes alerts are not sent to the entire list of Contacts, and they are not always published at regular intervals: the issues are the deciding factor in both cases. For example, last year an alert concerning mining in Death Valley National Monument was sent only to Contacts in California. Another concerning the proposed Park Protection Act was sent to Contacts in selected congressional districts.

Besides the letter writing they do, Contacts provide NPCA with valuable information about threats to national parks in their areas. News from the field alerts our Washington, D.C., office to issues that we might not know about otherwise. In addition, chapters of the Garden Club of America participate in NPCA’s Contact program.

NPAP

The National Park Action Project (NPAP), NPCA’s other public participation program, differs from the Contact program in that the NPAP is

designed specifically to strengthen the grassroots constituency for each national park. NPAP representatives generally live close to and are concerned with a particular park. They work with the park staff, concerned citizens, and NPCA on the park planning process as well as publicizing threats to the various national parks and encouraging other people to become involved in park protection. NPAP representatives receive the “NPAP Exchange,” a newsletter that contains information on current park issues and helps link NPAP representatives across the country.

Publications

Besides its Contact and NPAP programs, NPCA has several publications for people who are interested in getting involved in national park protection. Two of them, the *Citizen’s Action Guide to the National Park System* (\$2.00) and the *Citizen’s Action Guide to Over-Sand Vehicles in the National Seashores* (\$2.50), are booklets that contain practical information, such as how the National Park Service and the NPS planning process work and how to organize public support. A third item (available free of charge) summarizes the National Park Service planning process and notes all opportunities for public participation. (A citizen’s action guide on mining and the parks is due out later this year.)

To order any of these publications, or to find out more about either the Contact program or the National Park Action Project, please contact Jim Welsh, NPCA, 1701 18th Street, N.W., Washington, D.C. 20009.

Jim Welsh coordinates NPCA’s grassroots programs.

Grassroots Guardians

NPS Revises Guidelines

In October 1982, the National Park Service (NPS) released revised planning process guidelines for all areas of the National Park System. NPCA Contacts, National Park Action Project representatives, and all concerned citizens should be interested in these changes because they affect formal public participation in preparing management plans for the national parks.

With the new guidelines, the NPS is attempting to reduce time and money spent on management plans by combining or eliminating some of the planning steps. Whether the new streamlining produces the desired results will take time to evaluate. One certain result, however, will be a reduction in the number of opportunities for public comment, making early and vigorous public involvement essential.

Under the old guidelines, the NPS prepared a planning alternatives document, which was followed by a formal public comment period. The new guidelines substitute a briefer "Alternatives Public Involvement Document" (APID), which essentially follows the same form as the earlier document, outlining general plans that fit under the categories of no action, minimum action, and

some action. The major difference is that the NPS may opt to bypass this step.

This option to omit the alternatives document strengthens the need for concerned citizens to become involved early in the planning process. If an individual is aware that a planning document must be prepared—because the park is just being established or boundaries are changing or the previous plan needs updating—then that person may appeal to the NPS to prepare an APID.

The APID, which informs citizens on the legal parameters of the various alternatives, precedes an open forum called a "scoping" meeting. At scoping meetings citizens can voice their concerns and discuss the alternatives for a park plan for NPS representatives. It is at this stage, before the NPS has made any firm decisions or begun work on the draft General Management Plan, that citizen comment may have the most impact on NPS decisions. Announcements of scoping meetings will be made in the *Federal Register* and local newspapers, and will be sent to those people who have expressed interest.

The major change in the new guidelines is the consolidation of the

planning documents—the General Management Plan (GMP) and its accompanying Environmental Document (ED) or Environmental Impact Statement. While this move may indeed reduce time and money spent by combining two documents that contain much identical information, it also effectively eliminates two public comment periods. The old guidelines included four formal public comment periods, one after each of the following: the draft GMP, the draft ED, the final GMP, and the final ED. The new guidelines permit two major comment periods: one after the draft GMP/ED and one after the final GMP/ED.

This quantitative change does not necessarily imply that various public viewpoints will receive less attention. But fewer opportunities for public participation necessitates more vigorous and intensive public analysis.

By eliminating overlapping information in the management plans, the NPS allows time and energy to be spent more efficiently in analyzing the combined plans. If citizens get involved early in the planning process and maintain their concern, the NPS changes may actually be beneficial.

Getting Involved

I would like to become an NPCA Contact and receive the NPCA Alerts.

Name _____

Please send me more information about the National Park Action Project. The unit of the National Park System that I live close to and am especially interested in is _____.

Street Address _____

City, State, Zip _____

Please return the completed coupon to Jim Welsh, NPCA, 1701 18th St., NW, Washington, D.C. 20009.

Daytime Telephone Number (____) _____

Phillip Burton

1926–1983



Gate Bridge as the backdrop, National Park horsemen as an honor guard, and hundreds of people joining with the largest delegation of members of Congress ever to attend such a ceremony for a colleague. People often questioned how someone who was not an outdoorsman could be such a great champion of national parks and wildlands. In fact, it was joked at the memorial service that Phil Burton hardly ever went outdoors except to sneak a cigarette outside the home of photographer Ansel Adams. The answer to that question is simple: Phil Burton really cared about the parks because he cared about people.

He wanted to preserve the rich diversity of America's people, her history, and her land in the National Park System. He gave to Congress the idea of urban parks, as exemplified by the Golden Gate National Recreation Area, which stretches from the forts, ethnic museums, and harbor of urban San Francisco to the undeveloped windswept headlands of Marin County. (The House recently passed H.R. 2600, which dedicates this park to Burton.)

It is strange not to hear Phil Burton's booming voice in the Interior Committee hearing room anymore, or to feel the energy that would suddenly fill the room as he strode in. His voice could be abrasive at times and his mannerisms abrupt, but he was the one who was always there when the little people and the big wild places needed a fighter. Phil Burton spoke out against ravaging the land or hurting those who would be jeopardized by silence or polite acquiescence to the forces of greed. A bear of a man, his gruff exterior concealed the proverbial "heart of gold."

When Phil Burton died on April 10, 1983, many in Congress, in the conservation and labor communities, and in his city of San Francisco felt we had lost a friend and mentor.

Yet most Americans are probably unaware of his legacy in changing the history of the House of Representatives and in fighting for social justice and environmental protection. NPCA members know a special part of Burton's legacy, though. His National Parks and Recreation Act alone added twelve areas to the National Park System, nearly tripled park wilderness acreage, tripled the size of the National Trails System, and marked the biggest single expansion of the Wild and Scenic Rivers System.

As chairman of the House Subcommittee on National Parks during the 95th and 96th Congresses, he guided legislation for thirty new park units through Congress and resolved many long-standing controversies (he can be credited with expanding Redwood National Park and protecting the Boundary Waters Canoe Area Wilderness). He was also instrumental in passage of the Alaska Lands Act and many other conservation achievements during the past few decades. Two days after Burton died, the House passed his California bill, which designates some 2.3 million acres of national forest land as wilderness.

Phil Burton's memorial service was held at his favorite park—San Francisco's Golden Gate National Recreation Area—a beautiful beside meadow with the Golden

Burton sincerely wanted to reach into the future, to preserve wild places for the benefit of generations to come. With his maps before him, he plotted to save green space just as adroitly as he planned the district lines in California at reapportionment time. He was a man of practical prophecy. In a May 1979 interview in *National Parks & Conservation Magazine*, Burton warned, "Our enemy is time. If we don't move quickly, we won't be able to do that which we have the votes to do now because development will be taking place in areas where it should not. . . . All my senses and my judgment tell me that time can't be anything but the mortal enemy of preserving a decent environment."

Burton was criticized for some of the areas he shepherded through Congress. Considering the current policies of Interior Secretary James Watt, however, these parks and wildlands were designated none too soon. Watt not only has opposed creation of new areas, but has refused to spend money appropriated for acquisition of parks designated under Burton. Consequently, many of these areas are now threatened by development. The Park Protection bill (H.R. 2379) complements much of Burton's work and could protect many of the parklands Burton fought to establish.

Several times during his chairmanship of the parks subcommittee Phil said, "You know, this business of protecting unspoiled places is kind of like a religion to me . . . we really have only about ten years left to save these places." That gives us until about 1988—the end of whatever Administration may be in power next.

Phillip Burton never stopped fighting or working for what he believed in; we shouldn't either. "Be happy in your work" was his favorite expression—delivered with a mischievous grin. —Joan Moody

Joan Moody, formerly assistant editor for National Parks & Conservation Magazine, worked as Phillip Burton's press secretary during 1981 and 1982.

NPCA Report

Congress Questions Lack of Parkland Purchases

In late April and early May, Representative John Seiberling, chairman of the House Subcommittee on Public Lands and National Parks, held three days of oversight hearings on the lack of land acquisition by the National Park Service (NPS). Testifying as the initial witness, NPCA Assistant Director of Federal Activities Bill Lienesch severely criticized the Administration for failing to spend land acquisition funds appropriated by Congress.

By the end of Fiscal Year (FY) 1982, only 51 percent of the funds appropriated for that fiscal year had been spent. In most years, about 90 percent of the funds is spent by the end of the year. Halfway through FY 1983, less than 15 percent of that fiscal year's funds had been spent.

Several of the witnesses were landowners who wanted to sell their property to the NPS but were unable to do so. Generally, park superintendents were in favor of buying these

parcels, but the Interior Department denied approval.

Alf Jensen, one of the landowners, has property in Olympic National Park that contains critical elk habitat. Developers have offered to buy his land, but Jensen has refused because he believes the land should be part of the park. The NPS has recommended that the park acquire the property; but, so far, Assistant Secretary G. Ray Arnett has refused to allow the NPS to purchase the property.

Because now all acquisitions must be approved by Arnett's office, Bill Lienesch said, "It is not surprising that the pace of acquisition has slowed immensely."

By refusing to purchase land from willing sellers, the Interior Department often complicates for the future what is presently a simple situation. Norman Rado's father owned land within Cuyahoga National Recreation Area. As executor of his father's estate, Rado is trying to sell the land before the situation is greatly complicated when the estate is divided among the nine siblings.

With a few exceptions, the Interior Department is requiring officials at each unit of the National Park

System to prepare land protection plans before parklands authorized by Congress can be purchased. These plans could employ acquisition alternatives such as zoning, cooperative agreements, and easements (for which the NPS pays a property owner to convey development and other such rights to the NPS).

Zoning laws can change, however; and, if not written with extreme care, easements can contain many legal loopholes. At Antietam National Battlefield Site, for example, the NPS paid a property owner \$60,000 for an easement. Because of a loophole, the man built a house on the property and the NPS could do nothing about it.

The first group of land protection plans are due in to Assistant Secretary Arnett's office in September 1983. When most of the draft plans are released for public comment sometime this summer, it will be possible to determine whether the plans are sincere attempts to protect parks or poor substitutes for acquiring land as ordered by Congress.

In the meantime, the Administration continues to drag its feet on acquiring lands as Congress wishes.

Coal Land Exchange Would Benefit Chaco

On April 27 the Interior Department's San Juan Regional Coal Team met to discuss a land exchange that could affect the future of Chaco Culture National Historical Park. The team, whose region includes New Mexico and Colorado, heard testimony regarding Santa Fe Pacific Railroad Company's desire to exchange coal land in McKinley County—a few miles from Chaco—for equitable land approximately thirty-five miles south of Chaco near a tract called the Lee Ranch.

NPCA believes this exchange would benefit the national park and Chacoan outliers by removing the threat of coal mining. Santa Fe Pacific sees benefits for itself in the exchange. By blocking together the coal tracts it already owns with the close-by Lee Ranch land, Santa Fe Pacific would concentrate mining

activities in one area, allowing the company to save money by merely adding a spur line to its existing railroad.

Conservationists believe that blocking coal land together makes sense environmentally. Coal tracts that are not scattered all over the landscape put less of a burden on the environment, in some respects: The more concentrated the mining, the fewer haul roads, haul railroads, and support-system clutter. This land exchange would also benefit one of our most archeologically sensitive national parks.

In his testimony before the regional coal team, NPCA's Southwest Representative Russ Butcher said, "We believe this exchange would be in the public interest and would provide an important precedent for the blocking up of federal coal tracts elsewhere—to environmentally less sensitive areas."

Plans Site Dam at Yosemite's Border

National Park Service (NPS) officials are following closely the progress of a dam proposal for the South Fork of the Merced River next to Yosemite National Park. Right now the Merced Irrigation District's proposal is in the formative stages, but the 400-acre reservoir created by a 70,000-kilowatt hydroelectric dam could affect wildlife and visitation at Yosemite and the upper reaches of the South Fork itself.

Steve Botti, a resources management specialist at Yosemite, said, "The whole lake would be no more than a couple of miles at any point from the park."

Because the reservoir and the 370-foot dam would be sited so close to the park, the biggest impact by far would be on the view, especially as seen from the Wawona Road entrance to the park. What is now a

Isle Royale Wolf Program Now Geared to Monitoring

In January 1983, Rolf Peterson, head of the wolf study program at Isle Royale National Park, had received no funds from the National Park Service (NPS) to continue the 25-year-old study and no indication that funds would be forthcoming. The winter of 1982–83 was also one of the most critical for the study and for the Isle Royale wolf packs. From a high of fifty animals in 1980, the wolf population had plummeted to a mere fourteen by late 1982—a 72 percent decline in two years. Also, the scientific team conducts its most intensive research during a seven-week period beginning in January.

The funding crisis caused great concern because, as Isle Royale Superintendent Donald Brown said, "This is the definitive study on the moose-wolf relationship and on predator-prey relationships in general." The Michigan island location makes the study "as close as you can get to a perfect laboratory situation," continued Brown.

In recent years NPS money for the program has amounted to \$30,000 per year. Because the project requires about \$60,000—most of it for flight expenses incurred in monitoring—Rolf Peterson found he had been spending half his time looking for private funds to make up the difference.

A new NPS rule requires that all research projects of \$10,000 a year or more be reviewed annually by the office of the Assistant Secretary for Fish, Wildlife, and Parks; and last autumn the wolf team sent in a request that the NPS fund the entire project. What was handed down from the Assistant Secretary's office in February was a denial. Eventually a meeting between Isle Royale officials and Assistant Secretary G. Ray



Rolf O. Peterson

Scientists now think the wolf-moose cycle at the park is 25 years long.

Arnett resulted in approval for \$30,000 per year, but for a scaled-down monitoring program rather than the full research project.

Although Peterson says there has always been a "bare bones approach" to funding the project, the researchers are now being asked to gear their work toward the kind of resource management that would provide information to help route trails away from denning areas.

"Scientific objectives are realized only on a national or international scale," said Peterson, whereas NPS objectives have become localized.

Superintendent Brown said the effort now is to "get information we need to manage visitor use and development on the island."

Although the NPS may not be as interested in detailed research on the relationship of weather and vegetation cycles to beaver, moose, and wolf populations as formerly, scientists in Canada and other countries are. The wolf researchers will try to continue collecting pure scientific data; but they will also have to continue tracking down the necessary funds—and private sources of funding are drying up, they say.

While human concerns over funding and procedures flared, the

mammals of Isle Royale continued their inexorable cycle. During the mid-1960s into the 1970s, the beaver population rose, in part, because high precipitation caused an increase in vegetation. The wolves, therefore, had a plentiful source of food during the warmer months. The high precipitation also led to greater predation of moose calves in winter.

With abundant prey, the wolf population soared until in 1980 it reached its peak of fifty animals. Researchers think that the island cannot support more, because, during the next couple of years, females did not go into estrus, and wolves turned on each other until the population was reduced to fourteen.

Although the Isle Royale wolf population seemed to be in danger of dying out last year, thirteen new pups were born this year, bringing the population back to the level it was when the study began in the 1950s. Peterson believes that the researchers have now witnessed an entire wolf-moose cycle. The test of this hypothesis will be if the number of wolves continues to mirror previous population curves.

According to Peterson, "There is more reason to continue [the study] now than there has ever been."

wilderness view would be radically altered to include the reservoir, the dam, and all of the concomitant activity associated with the two.

According to Jim Huddleston, an NPS official in the western region's Division of Planning and Environmental Quality, the project would

threaten "the river resource itself." At present, the South Fork of the Merced is considered a wild trout stream and is listed in the Nationwide Rivers Inventory. It is a potential candidate for the Wild and Scenic River System, but the dam would change all that. NPS officials

and fishers also fear that exotic species from the reservoir would make their way upriver and degrade the natural composition of river wildlife, including native trout.

The project could affect three species of plants—the Yosemite onion and two types of sunflower—that

Reader Interest Survey

We want to know how interesting readers found each item in this month's issue of the magazine. Please circle the number in the column to the right of each title that best describes your reaction. You may enclose comments or suggestions if you wish. Please mail the form to **Editor, National Parks, 1701 18th Street, NW, Washington, DC 20009.**

| | <i>Very Interesting</i> | <i>Somewhat Interesting</i> | <i>Not Interesting</i> |
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Excellent Good Fair Poor

How would you rate the cover? 1 2 3 4

Additional comments _____

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Your name/ and address (optional): _____

are now candidates for the Endangered Species list. Populations of these species are small, and Yosemite's Steve Botti said that "any impact to them or the environment might change their status on the list."

In addition, the reservoir would flood the wintering grounds of one of the park's herds of migratory deer. Park rangers also presume that a certain number of people seeking recreation on the reservoir will gain access by cutting through Yosemite, necessitating more rangers and a change in management in that section of the park.

This past spring the Federal Energy Regulatory Committee issued a permit to the Merced Irrigation District, giving the district three years to complete a study of the project, including a complete Environmental Impact Statement. The proposed dam would not be within the

boundaries of the Merced Irrigation District, but District Secretary Manager Jay Anderson says it is not at all unusual for irrigation districts to plan and build hydroelectric projects outside their district boundaries.

What some people do question is the need for another dam to generate electricity. The Merced Irrigation District already has two dams farther downriver on the main stem of the Merced. Of the power produced, the district says that only "a small fraction is used in the foothills."

In explaining the district's desire for another dam, Jim Huddleston said, "A lot of these irrigation districts want to get into the power business because it makes money."

Indeed, the irrigation district plans to sell the electricity to a utility company, and the most likely purchaser is Pacific Gas and Electric. As of this writing, however, PG&E has not committed itself.

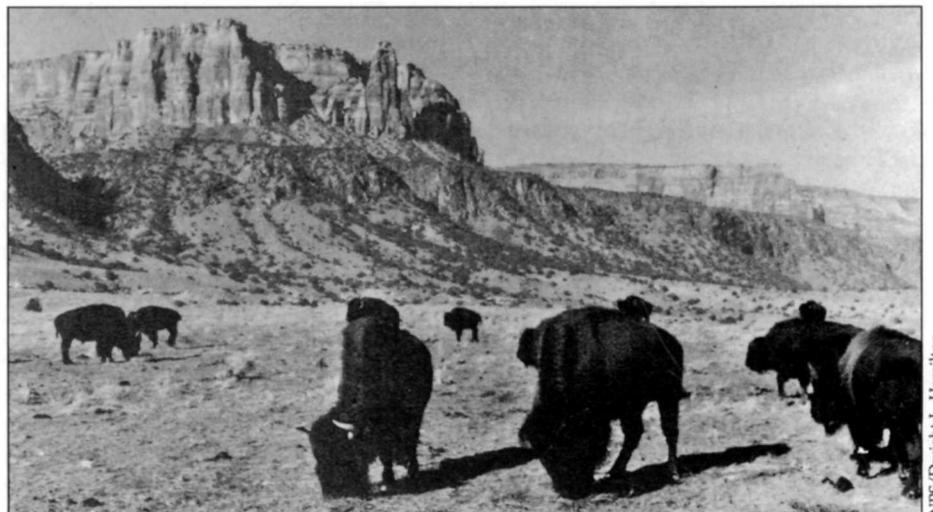
Bison Tear Up Landscape at Colorado Park

In 1926 John Otto, trail builder and the first custodian of Colorado National Monument, brought three bison into the monument's canyons. He had wanted to make the monument more attractive to visitors and had asked schoolchildren in nearby Grand Junction to donate buffalo head nickels for purchasing the animals.

Now thirty-two bison roam these canyons; and, according to Chief Ranger Hank Schoch, the herd is "having a devastating effect on the range. The bison are within their historic range, but this is not classic bison country."

Traditionally migratory animals, the bison at the park are confined—by fence and rugged terrain—to 2,500 acres, only 1,700 acres of which contain forage. That's not a

To save Colorado National Monument, the NPS will move bison to Badlands.



NPS/Dwight L. Hamilton

lot of territory for large, foraging animals. The result is that the bison have browsed most of the native foliage in the canyon bottoms and, in the disturbed soil, cheatgrass—an exotic—is taking over, becoming the dominant groundcover. Now, native species account for only 3 percent of the available forage in the areas of Colorado National Monument that contain bison.

Because cheatgrass is not palatable to the bison, except as new growth in the spring, Hank Schoch says they have begun to consume shrubbery. Decimation of the foliage is causing dust problems and soil erosion. In addition, the bison have taken over the watering holes, pushing out the sixteen desert bighorn sheep that were reintroduced in 1980. Park officials say all of this is contrary to the park's management philosophy.

Bears, wolves, and humans are the only predators bison have. The first two species are no longer part of the monument's ecosystem, and "socio-political" considerations keep park rangers from killing the bison in order to control the size of the herd. Reducing the herd used to be more or less routine; and the NPS had an agreement with Native Americans, allowing them to cull bison for traditional, cultural reasons.

Within the past ten years, however, the area around the monument has been subdivided and built up (a golf course lies adjacent to the mon-

ument boundary) and the NPS does not want to kill bison in full view of "people's backyards." Superintendent Dennis Huffman has made a considerable effort to inform the public of the problems caused by the overpopulation of bison and of the NPS intention to remove the bison to another national park.

Badlands National Park in South Dakota has the space and the right kind of vegetation to support bison, and NPS officials there have agreed to take Colorado's herd in order to increase the genetic diversity of their own herd. Once the bison have been moved, Superintendent Huffman plans to restore the park's damaged lands to their natural state.

There is a snag, however. Bison can be infected with *Brucella* bacteria, which cause cattle to abort, and the animals will not be allowed across state lines until they have been tested for brucellosis. South Dakota has even stricter standards, requiring proof of vaccination against the disease before allowing such animals to enter the state.

The Colorado National Monument bison have not been tested since the 1960s, nor have they been vaccinated. Because of the urgent need to remove the bison before they totally destroy the canyon bottoms, South Dakota has granted a special waiver and will allow the NPS to move the bison to Badlands beginning July 1, if they prove disease free.

NPCA Pleased With Denali Road Plan

Officials at Denali National Park have come up with a plan for the park road corridor that NPCA believes is well researched, providing a thorough background for all possible actions.

In comments on the plan, NPCA Director of Federal Activities T. Destry Jarvis said, "Denali is one of the few parks where visitors can observe a tremendous variety of Alaska's wildlife from buses and cars. This unique experience should never be impaired by increasing road traffic, which would inevitably result from the paving of the park road."

Jarvis also points out that paving roads and parking areas would be uneconomical because paved surfaces are so damaged by permafrost that they would have to be repaired yearly. NPCA does recommend continued maintenance of the gravel road.

Before beginning repairs, however, the National Park Service should take into account the information contained in its plan on migratory paths and seasonal grazing areas of caribou, bear, and Dall sheep in Denali. NPCA also recommends that no development occur until an environmental assessment is completed.

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Feral Pigs Considered Nuisance at Pinnacles

Feral pigs have been rooting up the landscape in Great Smoky Mountains National Park and in the national parks of Hawaii for years. Now the animals are making unwanted appearances in the national parks of California; and National Park Service (NPS) officials, realizing that the pig populations are growing, are looking for ways to keep them out of the parks.

Although feral pigs have been spotted in Sequoia/Kings Canyon National Park, they have reached the nuisance level in Pinnacles National Monument. And Superintendent Rothwell Broyles thinks "they're eventually going to become a problem throughout the state."

The animals are descended from a cross between domestic pigs and boars that were brought into the area years ago for sport hunting. No one definitely knows why the pig population has increased, but NPS officials speculate that it may be because of a change in the vegetation cycle or because people are hunting the animals less.

"We don't yet know how much damage they are doing," said Broyles, "but we've seen what they do in Hawaii."

Although the NPS is studying the habits and numbers of feral pigs in Pinnacles, it must take steps to mitigate the problem before the study is completed.

Because wild pigs are considered game animals in California, the NPS is working with the state game and fish department and looking into ways of fencing off access routes into the park. Broyles says that pig wire should be added to the existing cattle fencing in order to keep both types of animals out.

Fencing, though, is labor intensive. The park has \$40,000 for that purpose in 1983, but the money will provide for only a few miles more than the four to five miles of fencing erected already this year. The NPS needs approximately twenty-eight miles of fencing in order to keep feral pigs out.

In previous years, the Youth Con-

servation Corps (YCC) put up fencing at Pinnacles, thus alleviating labor costs. Unless Congress passes the pending American Conservation Corps bill, this source of labor is unavailable. In fact, last winter's extreme weather caused flooding that damaged \$20,000 worth of fencing constructed by the YCC.

Florida Agrees on Solutions for Everglades

In April the South Florida Water Management District recognized the untenable water situation at Everglades National Park and approved some National Park Service (NPS) proposals to mitigate unnatural disruption of water flows into the park. To protect developed areas and agricultural lands near the park from drought and flooding, the district has been taking water from or adding water to the park, depending on what the adjacent lands need. Of course, the park suffers in either extreme.

Winter is the park's natural dry season, but in recent years water management policies have drowned the habitats of Everglades deer and the nesting areas of the park's wading birds. More than 400 trillion gallons of excess water were spilled into the park last year alone. The unnatural flooding is also destroying the vegetation for which the "liquid prairies" of Everglades are famous.

The agreed-upon proposals include

- Adding more culverts through Levee 28 and plugging the L-28 canal, thus simulating a more natural sheet flow and directing water to dry areas of the park.

- Testing various water-release patterns during the next couple of years to find out what schedules best meet the needs of the park and others in the water district.

- Directing water through culverts under the Tamiami Trail, thus spreading out water releases over a twenty-mile stretch as compared to the present twelve miles.

The Army Corps of Engineers, which will be carrying out these projects, says it will complete work on Levee 28 by the end of December

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NPS/M. W. Williams, American egret chicks

Because of poor water management, park wading bird populations have declined 90 percent since 1934.

1983. The Corps is not committing itself to schedules on any of the other proposals, however.

Given the Corps' record on working with the NPS to help the park, Everglades officials are not surprised. They say the Corps is more interested in cost-benefit ratios than in conservation.

Everglades Superintendent Jack Morehead said, "We have not been able to calculate the survival of alligators or wading birds in dollars and cents. I anticipate a real reluctance on the part of the Corps to implement [the proposals]."

Acid Rain Costs U.S. \$5 Billion Annually

Dr. Tom Crocker, from the National Academy of Sciences, estimates that damages due to acid precipitation in the United States amount to \$5 billion annually. The National Academy of Sciences also finds that at current sulfur and nitrogen oxide emission rates, the number of lakes affected by acid precipitation—already numbered in the thousands—can be expected to double by 1990.

Because many national parks are located in acid-sensitive areas, National Park Service (NPS) scientists and resource managers have begun studying the effects of acid rain on natural and cultural resources in the National Park System. Monitoring sites to measure pH exist in twenty-one national parks across the country; and the studies show that all these parks have experienced acidic precipitation. If pH is below 5.6, precipitation is considered acidic.

NPS scientists warn that pH value cannot be looked at as the sole determinant of acid rain damage, however. In one park—or in one region—the lakes may all be alkaline with pH values of 7; yet, if the soil is thin, the region may be quite sensitive to acid precipitation.

Unfortunately, because of insufficient funding, the NPS study is limited to only twenty-one areas. The NPS is, however, becoming a leader in researching the effects of acid rain on materials and structures such as the Lincoln Memorial and the ruins of Mesa Verde.

Dr. Tom Crocker estimates that acid rain causes \$2 billion worth of damage to materials annually. Masonry, metals, and surface coatings (paint and the like) comprise most manmade resources; of these, masonry is the most susceptible to deterioration. The NPS estimates that approximately 30 percent of its structures are masonry.

The evidence of damage from acid precipitation exists. Yet, Greg Wetstone, a scientist for the Environmental Law Institute, states in his recently published book (based on a three-year study), "The United States, alone among the major western nations, not only opposes new control programs, but has adopted new policies over the past two years promoting increased SO₂ emissions. Under the Reagan Administration, the Environmental Protection Agency [EPA] has approved state emissions control relaxations allowing sources to release more than one million additional tons of sulfur dioxide into the atmosphere annually." At his confirmation hearings, however, EPA Administrator William Ruckelshaus promised to make acid rain a "high priority" issue.

On the legislative side, the National Clean Air Coalition, of which NPCA is a member, is supporting an acid rain control program calling for a 12-million-ton reduction in sulfur emissions in twelve years or less. NPCA is developing a Clean Air Activist list; if you are interested in protecting clean air values, notify us at Clean Air/NPCA, 1701 18th St., NW, Washington, D.C. 20009.

—Debbie Kaufman, NPCA intern

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The Latest Word

GRIZZLY TEAM GETS BOOST The dramatic decline in the number of grizzly bears at Yellowstone National Park

and the threats to the survival of the species in the Lower 48 have caused the Interior Department and the U.S. Department of Agriculture to fortify protection efforts. The agencies have supplanted the previous Interagency Grizzly Bear Steering Committee with a new interagency committee that includes scientists but adds high-level officials with the power to facilitate action.

The new committee also broadens the area of grizzly management and study to include all grizzly habitat in the Lower 48, which supports approximately 1,000 grizzlies, rather than just the Yellowstone ecosystem, which supports about 200 grizzlies at present. Committee members include the Rocky Mountain regional directors of the NPS and the U.S. Fish and Wildlife Service; officials from three Forest Service regions; and one representative each from Idaho, Montana, and Wyoming.

Because of the number of Forest Service representatives on the Committee, their opinions will carry weight. Environmentalists are counting on the Committee members to arrive at a coordinated plan for saving the grizzly.

The NPS has already closed portions of the backcountry in Yellowstone this summer to alleviate conflicts between grizzlies and humans. NPS officials have also indicated that they are contemplating a supplemental feeding program for grizzlies. Considering the problems the NPS had with "garbage-can bears" in the 1960s and the expense, logistics, and politics of feeding grizzlies, NPCA cautions that a supplemental feeding program may create as many problems as it solves.

COOPER INDUSTRIES DONATES MINE CLAIMS TO ALASKA PARK At the beginning of June, Cooper Industries donated mining claims for 10,000 acres in the center of Wrangell-St. Elias National Park in Alaska. The gift to the

National Park Service is the largest ever given by a commercial concern and includes approximately 500 mining claims. Cooper Industries donated the claims to celebrate their 150th anniversary; and their action removes one-third of the claims in Wrangell-St. Elias and 20 percent of all mining claims in the national parks in Alaska. NPCA commends their action as a valued contribution to our National Park System.

APOLLO TOWER SAVED FROM DESTRUCTION On May 6 NASA signed a contract to dismantle rather than destroy the historic Apollo launch tower at Cape Canaveral, Florida. As a result, NPCA, the National Trust for Historic Preservation, and other preservation organizations have dropped their lawsuit against NASA.

At first, NASA balked at preserving the 400-foot tower because of the costs involved. Under pressure from Congress, NPCA, and others, NASA has opted to have the tower dismantled at a cost of approximately \$2.2 million. As of this writing, NASA is not going to ask Congress to appropriate money for the project, but will find the money in its own coffers.

BUREAU PROPOSES A DAM FOR GRAND TETON NP Bureau of Reclamation engineers and others agree that the Jackson Lake Dam inside Grand Teton National Park, Wyoming, is unsafe; but no one can agree on how to solve the problem. The earth-berm dam across the Snake River was completed in 1916, before the park was established. Engineers say that an earthquake measuring more than 5.5 on the Richter scale would cause the earthen embankment to liquify, allowing millions of tons of water to rush downstream, destroying people and wildlife alike. Geologists predict that there is a 40 percent chance for a 7.0 earthquake to occur within the next hundred years.

Such ominous predictions have caused the Department of Interior's Bureau of Reclamation (BuRec), which manages the dam, to come up with some solutions.

At BuRec's estimated cost of \$82 million, bolstering the existing dam would be the most expensive solution.

Building an entirely new dam a few

miles downstream at Pacific Creek would be less expensive, but neither the National Park Service nor any environmental group could support the construction of a dam within national park boundaries. (The only dam constructed within a national park is the Hetch Hetchy facility in Yosemite.) A new dam would inundate the Oxbow Bend area of the park, destroying the habitat of river otter, moose, bald eagle, and blue heron, among others. Oxbow Bend is also a prime wildlife viewing area for park visitors.

Another alternative is to build a detention dam at Pacific Creek, which would hold back the water if Jackson Lake Dam collapsed; but the area would not be flooded permanently. Even so, wildlife habitat would be destroyed, and no one really supports this choice.

Environmentalists recommend lowering the level of the lake and employing water conservation, but farmers and river runners are sure to oppose such measures.

BURLINGTON NORTHERN DONATES On May 18,
SUMMIT OF MOUNT ST. HELENS Mount St.
Helens National Volcanic Monument was formally dedicated, and Burlington Northern, Inc., donated a critical piece to the monument. The railroad corporation contributed 690.6 acres, including the summit and newly formed crater of the monument, which is managed by the U.S. Forest Service.

NPCA URGES SENATE At Senate
TO BEEF UP GEOTHERMAL ACT hearings in
May, NPCA proposed a number of amendments to strengthen the Geothermal Steam Act of 1970. NPCA President Paul Pritchard commented on two bills before the Subcommittee on Energy and Mineral Resources: S. 883, which protects the geothermal features of only Yellowstone National Park; and S. 558, which gives only modest protections to geothermal features of all national parks.

The national parks most obviously in need of protection from geothermal development are Hawaii Volcanoes, Yellowstone, Lassen Volcanic, and Mount Rainier; but twenty-one units in the National Park System could be affected.

Although S. 558 says that geothermal

leasing must not have a foreseeably significant adverse effect on parks, Pritchard commented, "National parks were not set aside for speculation and experimentation. . . . No degree of adverse effect--significant or otherwise--should be intentionally imposed on national parks."

In addition, NPCA suggested that all parks with geothermal features be listed and protected; that Congress review and the public be allowed to comment on all potential leases; that all geothermal development near national parks be monitored continuously; and that all spent fluids be reinjected into each geothermal well.

NPS COMPLETES ACQUISITION The National
FOR GREAT SMOKY MOUNTAINS Park Service
is purchasing
the largest inholding in Great Smoky Mountains National Park. As of this writing, the title transfer will take place in mid-June, thus completing land acquisition for that park. The NPS has been trying to add the 2,300-plus acres to Great Smokies for more than thirty years. Cities Service Oil and Gas Corporation sold the land, which formerly had been mined for copper, and all rights to the land to the NPS for \$1,073,000.

GLACIER BAY PLAN Glacier Bay is
IGNORES SCIENTIFIC FOCUS the second national park in
Alaska to release a Draft General Management Plan (DGMP). NPCA is disappointed with the plan because it does not address the legislative mandate for Glacier Bay National Park and Preserve. The unit was established in 1925 specifically for scientific study of the behavior of glaciers. NPCA hopes this DGMP does not begin a trend for management plans of national parks in Alaska.

Problems NPCA sees in this management plan include--

- Endangered Humpback Whales: Glacier Bay is a summer habitat for humpback whales; but private and commercial vessels also using the bay disrupt whale behavior. The result is fewer and fewer humpback whale sightings. In fact, recent scientific evidence directly links the amount of vessel use to the decline in the number of humpback whales in Gla-

cier Bay. Vessel entry should be limited to protect these endangered mammals, but the NPS wants to double the number of cruise ships (from 89 to 180) allowed in the bay during whale season.

- **Beardslee Entrance Passage:** The DGMP recommends removing this area's wilderness designation in order to allow commercial fishing in these waters. Because the passage includes one of the bay's most developed biological communities, it is desirable for halibut and salmon fishing. But the area is also important to scientific understanding of how an estuarine system develops.

- **Staffing:** Increases in permanent staff refer only to administrative and maintenance support instead of to the resource biologists and resource management specialists who are necessary if the NPS is to explore Glacier Bay's biological, geological, and cultural resources.

PURGING THE UPPER RANKS
OF NPS PROFESSIONALS

Continuing its policy of shuffling around

National Park Service senior executives, the Interior Department has transferred Jimmie L. Dunning, Midwest regional director. Beginning this year, Interior Secretary James Watt has employed provisions of the Senior Executive Service Act to transfer NPS professionals who stand in the way of this Administration's goals.

Secretary Watt had announced that he would reassign five of the eighteen eligible senior executives by September 1983. So far, Interior has demoted John E. Cook for opposing its Alaska policies, has kicked Ira Hutchison upstairs, and transferred Robert Rich to the Bureau of Land Management. Dunning--number four--has been transferred to the Office of Surface Mining.

UPDATE: PARK PROTECTION,
ACC, AND MONO LAKE

NPCA and other environmental organizations may push for an early summer vote on the Park Protection bill (H.R. 2379). They will push for this vote by the full House of Representatives only if they are confident that they have the 290 votes needed to pass the legislation under "suspension of rules"; that is, without the

worry that some representative might add an amendment to weaken the bill. As of this writing, NPCA is working to get that assurance because Representative James Hansen (R-Utah) has indicated he will try to amend the bill in order to allow individual states to interpret "adjacent lands"--thus, any threats on such lands--as they wish.

Both the Senate Energy Committee and the full House have approved bills (H.R. 999 and S. 27) to create an American Conservation Corps, which would provide conservation jobs and training for unemployed youth. Although environmentalists are pleased that both bills have come this far, they say the bills are radically different--in funding the program, for instance--and will require some effort for the House and Senate to reach a compromise.

In testimony on June 2, NPCA's Laura Loomis supported H.R. 1341, which would make the Mono Lake ecosystem in California a national monument. At the hearing held by the House Subcommittee on Public Lands and National Parks, Loomis argued to make the National Park Service--rather than the Forest Service--the managing agency because the NPS would better protect Mono Lake and its threatened gull rookeries.

NEW MEXICO RETRACTS REQUEST:
COUGARS SAFE IN CARLSBAD

The state of New Mexico has re-

tracted its request to pursue mountain lions into Carlsbad Caverns National Park. To satisfy the demands of local ranchers, who claimed they were losing livestock to predatory mountain lions, the New Mexico Natural Resources Department had requested last year that department officials be allowed to track and destroy--within park boundaries--those mountain lions identified as livestock killers. Now, a change in the New Mexico state government has brought a change of heart. Dr. Shirley Hill Witt, the new Secretary of Natural Resources, said the two-year study of mountain lion habits and habitat that also resulted from ranchers' complaints will continue; but that "the most reasonable course is to attempt resolutions of depredation problems other than the killing of offending lions pursued into the parks."

