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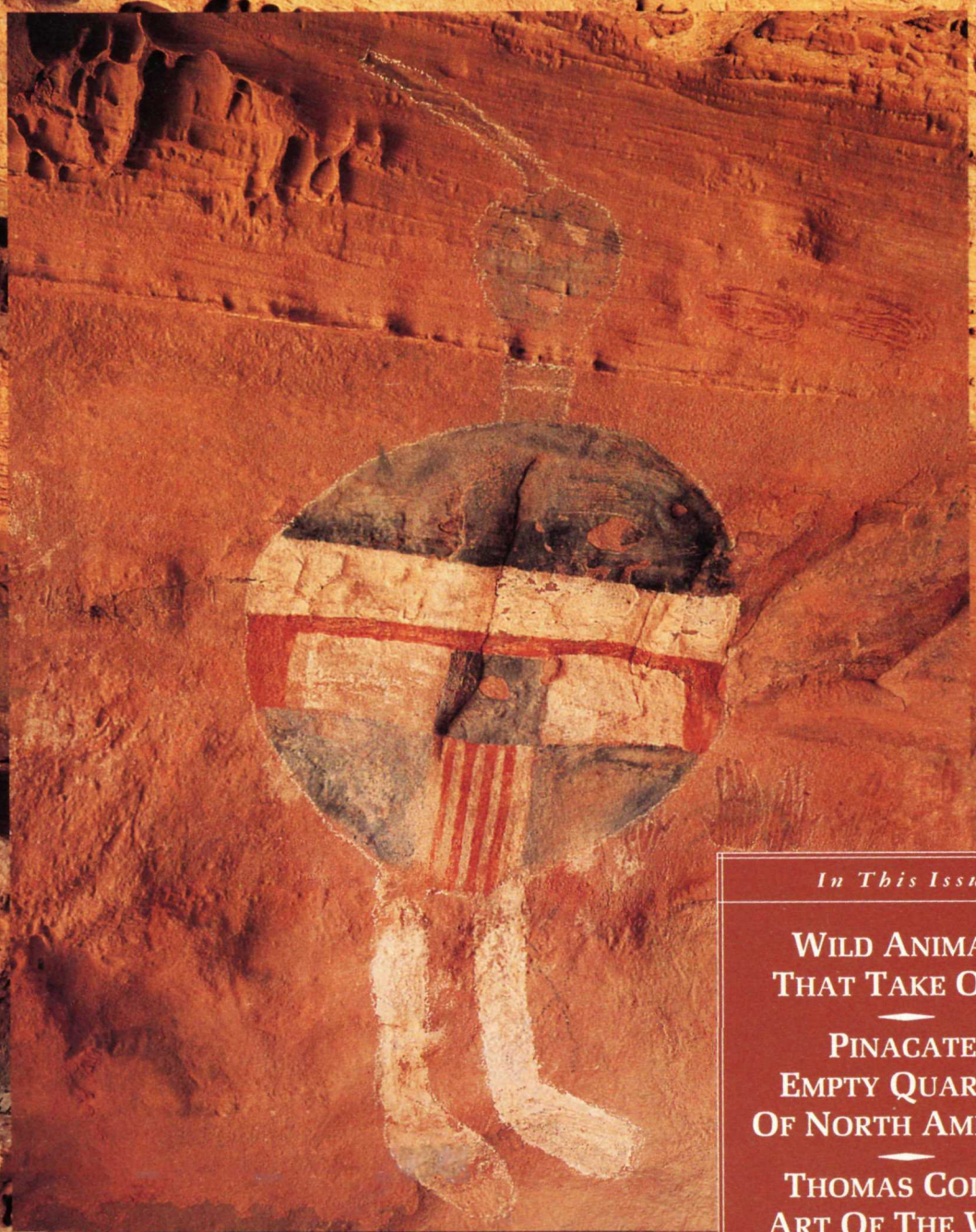

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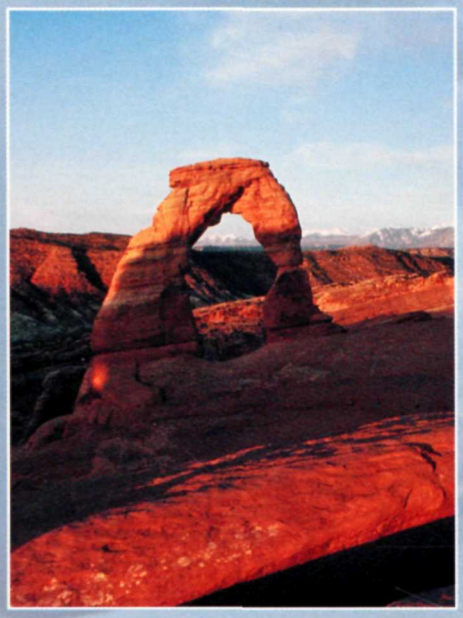

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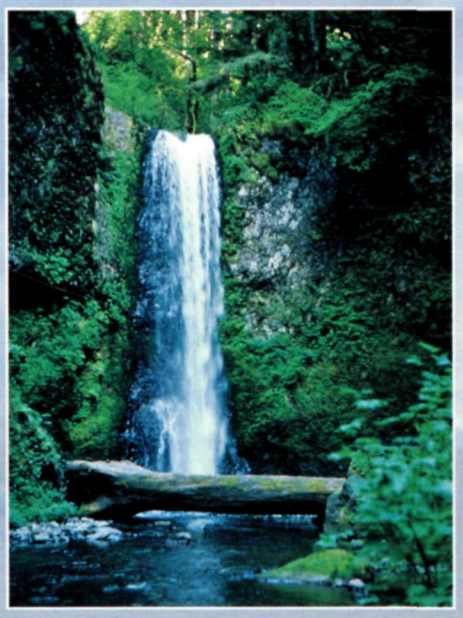
Original music by
David Lanz and Paul Speer



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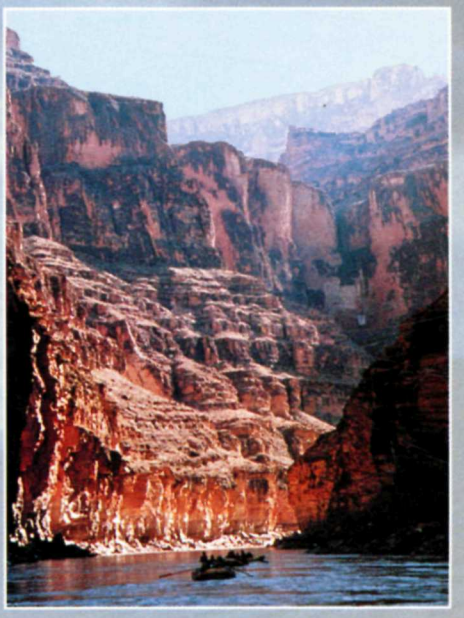

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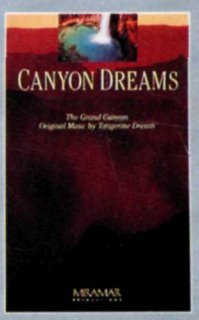

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CONNIE TOOPS

Pushy Wildlife, page 18

EDITOR'S NOTE

The repercussions of human expansion into the natural world are far-reaching, and are not always easily discerned. While direct effects of human encroachment on the wild—air and water pollution, for example, or the destruction of wildlife habitat—are readily apparent, indirect effects can be very subtle, can often go unnoticed, and yet can be quite harmful.

At first glance, no one would consider raccoons, coyotes, or herring gulls threatening to the natural world. They are, after all, wild animals.

Yet these and other creatures, boosted by human expansion, have begun to displace other species of animals, menacing the balance of ecosystems.

Our actions have consequences, and these, in turn, set off chains of events that can have unlooked-for—and undesirable—results.

NATIONAL PARKS

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NATIONAL Parks

THE MAGAZINE OF THE NATIONAL PARKS AND CONSERVATION ASSOCIATION

Vol. 63, No. 9–10
September/October 1989

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Cover: *Canyonlands National Park, Utah, by Jeff Gnass*
"All-American Man" is one of the park system's most famous pictographs.

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

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Setting a Tone

A RADIO COMMERCIAL here in Washington, D.C., says the President has made a lot of promises to help business people but he hasn't delivered yet. In fact, this is the first time I can recall that a President's environmental plans may be ahead of his business plans.

For while the President hasn't produced his promised capital gains tax plan, he has said he will present a serious plan for cleaning up the air. Unfortunately, the plan his administration has presented to Congress falls far short of his stated intent, especially with respect to urban smog.

Even more important is a speech that the President delivered to a group of us here in Washington. In this speech he did something unprecedented—he set environmental standards for his administration by which we can evaluate his performance. [See "Forum," page 16.]

The President presented five principles and also identified specific plans. Among these were his clean air proposals, which he announced the following week. [See "News," page 10.]

Of equal value to me were the philosophical statements contained in his speech, statements such as "Renewal is a way of nature and now it must be the way of man."

These sorts of expressions may be conjured up by speechwriters—not the speaker—and they may be sentiments rather than anything concrete. But the sentiments are important.

They set a tone for the administration. They convey a consensus of the administration's inner circles.

We must still wait to see how deeply these words and this mood pervade the administration. Interior Secretary Lujan is rounding out his appointments, a crucial one being the assistant secretary for Fish, Wildlife, and Parks. This position is extremely important for the policies and programs of the National Park Service.

The administration's philosophy can be measured, in part, by the actions of its officials. For instance, the secretary has helped to keep an airport out of a park unit, for which we commend him. He has, however, approved a jetty near Cape Hatteras National Seashore that scientists advise him would cause severe erosion.

A first, he planned to fill superintendencies at Yosemite and Yellowstone outside the normal, long-established process. NPCA helped convince the secretary to reverse that plan. And the administration supported the much-needed expansion of Everglades National Park as proposed by Senator Bob Graham and Congressman Dante Fascel.

There will be many more tests in the future. What is important now is that the President and his senior officials are on record with stated standards—standards that we can use to evaluate their performances.

Our goal, however, is not merely to judge, but to assist them in every way possible to achieve and improve upon these standards.

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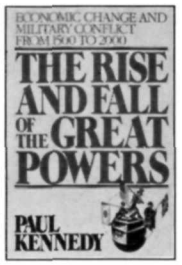

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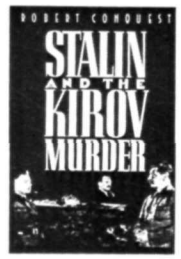

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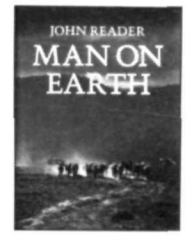

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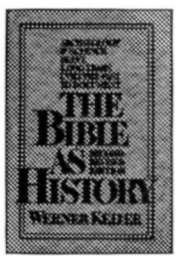

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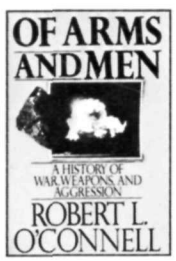

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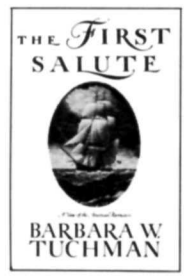

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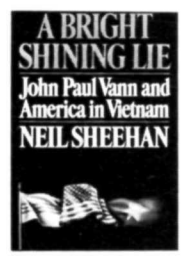

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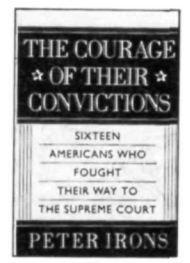

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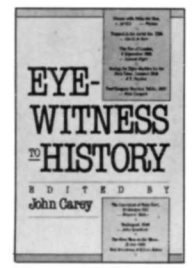

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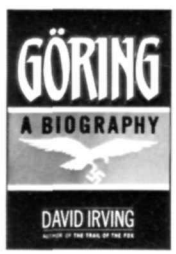

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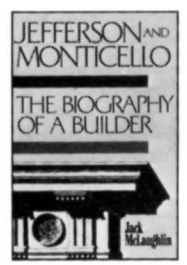

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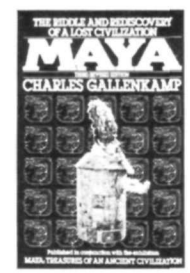

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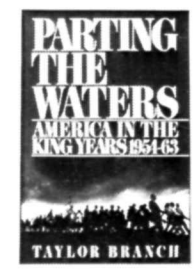

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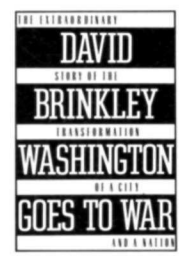

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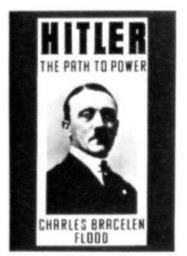

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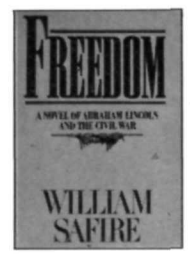

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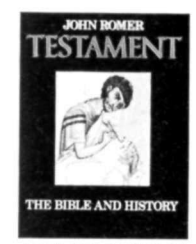

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LETTERS

Ready, Aim, Fire!

The only animals that should be slaughtered are the insensitive humans who poach in our national parks ["The Quiet Kill," May/June 1989]. Their barbarous actions are repellent to animal lovers. We must stop the carnage.

I suggest starting a movement of volunteers who spend vacations in parks assisting game wardens. If we don't do something drastic, there won't be any wild animals left to enjoy.

Alice W. Fowler
New York, New York

"The Quiet Kill" by Michael Milstein was horrifying. These are *our* parks; why must butchers be permitted to continue these atrocities. This sort of brutality should enrage every decent, caring American. It makes me sick.

Jean M. Hodgson
Gainesville, Florida

I am not against hunting if it's done in a responsible and respectful way. But, hand guns, automatic weapons, and cross bows must be banned.

Hunting uses skills learned from nature and should not be a declaration of war against everything that moves. Hunting is not a sport either; sport is a form of competition amongst equals.

Hans E. Meckler
Fort Worth, Texas

I am a law-abiding hunter and conservationist. Blame for the poaching problem—which is caused by poor game management, nonexistent law enforcement, and a criminal justice system that doesn't work—is put on America's 17 million licensed hunters. It makes them out to be poachers looking for an easy kill.

I didn't realize your magazine was an anti-hunting publication. It's usually not a wise idea to alienate 17 million potential subscribers and contributors.

Michael W. Forton
Finksburg, Maryland

For shame. How dare you put hunters and poachers in the same category. You won't find an angrier group of people when it comes to poaching than hunters.

Hal E. Brown
Miramar, Florida

We recognize that the vast majority of hunters is concerned about wildlife and follows the rules. It is illegal *hunters—poachers—who wreak havoc among park wildlife populations, and we believed the article made that distinction.*

—the Editors

Mixed Bouquet

The articles and photos of wildflowers in the May/June 1989 issue were beautiful and interesting to me, an avid wildflower gardener and photographer. How about some articles on wildflowers of the East? I've been a member of NPCA for 30 years and enjoy every issue of the magazine.

Elsie Cory
Brooklyn, New York

Michele Strutin's scenario of the Midwest emigre being "filled with wonder" at the wildflowers in California was ridiculous. If this Midwesterner exists, he must be a city slicker, totally oblivious to the natural world. The Midwest has huge fields, but also wildflowers, though perhaps more subtle than what Strutin prefers.

Joyce Leppard
Plainwell, Michigan

Oil Slicks

The Alaskan oil spill is not the first and probably not the last insult to our environment made in quest of the almighty dollar.

The public outcry is due to Exxon covering up and minimizing long-term effects of the spill. Meanwhile, Exxon reports how well in hand the cleanup is, expecting us to buy this fantasy and pay the tab!

I cannot sit this one out. I hope others will write letters of their own, because letters do help.

It's a shame oil company executives can't be forced to rescue birds and animals poisoned, suffocated, frozen, and drowned due to the spill. Perhaps those same executives could be dipped in crude oil and stranded on a sludge-swept beach surrounded by filthy, cold, sludge-filled seawater.

Betty Van Wicklen
Watervliet, New York

Fear of Flying

We would hate to be riding with Martha Cronin ["Good Times: Summer of '89," May/June 1989] when she drives from New York City to Acadia National Park in "less than half a day's drive."

Hold your hat, buckle your seatbelt, and hang on for dear life!

Barbara and John Street
Milford, Connecticut

Kids' Best Friend

I have been speaking to elementary school children for over a decade about the environment, wildlife, and, in particular, the wolf.

The children adopted a wolf named Lucan as our school mascot. They would love to hear from you regarding assistance to the wolf. [See wolf update in "Notices," page 41.]

Joyce Weldon
Dogwood Elementary School
Smithtown, New York

Corrections

The Navajo Generating Station mentioned in the July/August "NPCA News" ("Study Finds Source of Canyon Haze,") is not owned by the Navajo tribe as the name would imply.

In our July/August feature on global warming ("A Question of Degree," by Jake Page), the opening photograph was incorrectly identified as a nuclear power plant. It is actually a Pacific Gas and Electric Company electrical plant that burns heavy-polluting Indonesian crude oil.

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

NEWS
NPCA

INTERIOR MAY LIFT CAPE COD ORV BAN

The Interior Department is once again considering allowing off-road vehicles (ORVs) to roam large portions of Cape Cod National Seashore, in Massachusetts. Interior plans, in effect, to roll back a four-year ban of the vehicles from most of Cape Cod's beaches.

Interior political appointees left over from the Reagan era directed the National Park Service to rewrite management plans to allow expanded beach buggy use at the seashore. At present, under management plans in effect since 1985, ORV use is allowed only during the summer, on about eight miles of beaches.

NPS officials at Cape Cod have sent the revisions to Washigton, D.C., for review by Interior. Washington officials are examining the changes for compliance with environmental law. At this writing, Interior officials have not disclosed their findings.

NPCA and other environmental groups oppose the rule changes.

"Scientific studies have shown that off-road vehicles harm natural resources," said Bill Lienesch, NPCA's director of federal activities. "Interior should be looking to reduce ORV use at the seashore, not increase it."

NPCA has been working with New England environmental groups to oppose expansion of ORV use.

The move to repeal ORV restrictions came when beach-buggy users reacted enthusiastically to a regulation change published in January in the *Federal Register*. Notice of the change, which would have allowed buggy use on about six miles of additional beach during nighttime in the spring and fall, included an invitation for comment.

Initial direction to alter the regulation came from the office of Allan Fitzsimmons, a special assistant to Interior's assistant secretary for Fish, Wildlife, and Parks. Fitzsimmons, a political appointee, is a holdover from the Reagan administration.

M. WOODBRIDGE WILLIAMS, NPS

ORV groups are pushing for more beach at Cape Cod.

In what seemed a well-orchestrated response, ORV users answered the notice with thousands of letters to the Park Service calling for less restrictions on ORV use in general.

NPS resource managers originally closed much of the seashore's beaches to ORVs in response to a 1984 court ruling that found extensive ORV use inappropriate at the national seashore. In ordering vehicle use restricted, the court also cited aesthetic concerns, problems with ORV access, and a need to minimize conflicts among different types of uses of the seashore.

Similarly, several townships in the area, some of which share beach jurisdiction with the NPS, ban the vehicles.

Also, increased use would likely cause a major law-enforcement problem for NPS rangers, whose patrols are already thinly stretched because of tight budgets.

Further complicating the issue is the imminent transfer of Cape Cod's superintendent, Herb Olsen. At this writing, Olsen is to be moved to the superintendency of Valley Forge National Historical Park, in Pennsylvania. Olsen has managed Cape Cod longer than superintendents are supposed to be held at a park area, according to NPS policy.

He is resisting the move, however, and has appealed the matter to NPS Director James Ridenour.

Cape Cod officials are worried that interpretations of the superintendent shift might heat up the issue. Olsen, a strong supporter of the 1985 management plan, which restricts buggy use, was viewed as a major obstacle by ORV user groups.

"In light of what's taken place here," said one Cape Cod official, "we're worried that the *perception*, among ORV users, of this change might lend them false expectations."

The national seashore was the site of several vocal, pro-ORV demonstrations over the Fourth of July weekend.

In addition to environmental con-

cerns, however, there are several legal problems with the proposed changes in ORV restrictions. First, the courts have already ruled on the appropriate amount of ORV use at the seashore. The proposed changes in allowable use levels would likely be deemed arbitrary, and thus invalid, in future court rulings. If the changes were implemented, court action would very likely follow, given the long history of the issue at Cape Cod National Seashore.

Second, since the NPS restricted ORV use in 1985, some municipal governments that share beach jurisdiction with the National Park Service have enacted off-road vehicle bans of their own. Some of these beaches are among those to be opened up to ORV use under the proposed changes. This will further complicate legal questions.

BILL CALLS FOR WOLF RECOVERY EIS

Representative Wayne Owens (D-Utah) has introduced a bill in the House calling for an environmental impact statement (EIS) to examine the reintroduction of grey wolves to the Greater Yellowstone area.

Completion of an EIS would fulfill provisions of the National Environmental Policy Act, and would constitute a major step toward reestablishing wolves in Yellowstone National Park and surrounding public lands. The animals have been absent from the area for more than 50 years.

An EIS would examine the ecological impacts of reintroducing the wolf to the Yellowstone area, the various methods of reintroduction, and the question of which government agencies would manage the program.

Also, an EIS would examine opponents' concerns, such as the possibility that wolves may stray from protected areas and prey on domestic livestock, and methods of compensating owners for such losses.

Witnesses on both sides of the hotly debated issue testified at House hearings on the bill—H.R. 2786—on July 19.

NPCA and other environmental groups called for completion of the EIS and eventual reestablishment of wolves in Yellowstone. Representatives of farmers and ranchers, fearing livestock depredations, opposed the bill.

NPS Director James Ridenour called the bill premature. He advocated further study of the question before preparation of a full EIS.

Owens' bill directs the Park Service to complete an EIS by the end of 1991. H.R. 2786 also directs the Interior Secretary to select and implement one of the alternatives offered by the EIS within six months of its completion.

The U.S. Fish and Wildlife Service (FWS) now lists the grey wolf as endangered in the lower 48 states. Once widespread throughout the West, the animal's numbers have shrunk drastically with the encroachment of modern man. Government-sponsored eradication programs helped ranchers and farmers hunt, trap, and poison the predators almost to extinction in the contiguous United States. Minnesota hosts the last sizeable wolf population in the United States outside of Alaska.

NPS

Unidentified man with wolf pups—among Yellowstone's last—in 1922.

Wolves were removed from Yellowstone National Park in the early part of this century as part of a National Park Service predator-control policy. Later, wildlife managers realized that predators had played a crucial role in maintaining the Yellowstone area's ecological balance.

With wolves absent, populations of ungulates—hoofed animals such as bison and elk—soared beyond natural levels.

NEWSUPDATE

▲ **NPS Reorganization.** H.R. 1484, a bill to help free the National Park Service from political manipulation by the Interior Department, passed the House in mid-July.

Under the bill, introduced by Representative Bruce Vento (D-Minn.) the NPS director would assume all park-related duties and authorities now held by the Interior Secretary except budget submission. The director would be appointed by the President, subject to Senate confirmation. Provisions establishing a Park System review board to oversee the NPS were dropped when it was amended in committee.

Senator Bill Bradley (D-N.J.) has introduced a companion bill in the Senate.

▲ **Appropriations.** Both houses of Congress have finished work on Fiscal Year 1990 appropriations for the National Park System. Both added about $20 million to the operating budget to ensure that funds be available for new parks created in the previous Congress, and to provide at least a five percent increase for all parks over last year.

The largest increase is in the construction account. The House added nearly $130 million over the administration's request and the Senate nearly $100 million.

Appropriations for land acquisition were similar to administration requests, although both the House and Senate funded a variety of projects not mentioned by the administration.

Differences between the chambers will be resolved in a conference committee scheduled for September.

Bush's Clean Air Bill Falls Short

The administration's clean air proposals—presented to Congress in mid-July—fell short of the lofty goals set by President George Bush in speeches earlier this year.

Environmentalists and congressional leaders attacked Bush's proposed amendments to the 1970 Clean Air Act, calling the Bush bill weak, and, in some instances, a retreat from existing standards.

"I'm disappointed," said Elizabeth Fayad, NPCA's park threats coordinator. "The President used the Grand Tetons as a backdrop to announce his clean air proposals, which contained provisions weakening existing protections for park air quality."

Bush's bill allows exemptions from certain emission standards for power plants that use clean-coal technology. Several plants qualifying for such exemptions affect the air quality of national park units.

The Navajo Generating Station, for example, located near Page, Arizona, employs clean-coal technology. Yet it is responsible for most of the visibility-reducing haze during the winter at Grand Canyon National Park.

Also, the Bush bill fails to correct problems caused by large-volume polluters. As does present law, Bush's bill will require that sources of pollution reduce emissions by a certain percentage of their total output, rather than by a fixed quantity. Several sources located near national park areas, particularly in the West, emit such large volumes of pollutants that they can reduce emissions enough to meet percentage standards, while still spewing tremendous amounts of pollutants.

NPCA, as a member of the Clean Air Coalition, will push for strengthening amendments to the President's legislation and for provisions to protect and improve park air quality in particular.

In other important areas, though Bush's bill would reduce key ingredients of acid rain in the atmosphere, it would not reduce these sufficiently, according to experts. Also, the bill sets a plodding schedule for cleanup of urban air and contains loopholes that may allow greater emission of toxics than the President promised.

Bush's bill requires a 9-million-ton reduction in the annual emission of sulfur dioxide, a main source of acid rain, and a 2-million-ton cut in emissions of nitrogen oxide, the other chief component of acid rain.

The National Academy of Sciences, however, has recommended a 12-million-ton cut in sulfur dioxide, and a 4-million-ton cut in nitrogen oxide emissions, if the problem is to be seriously addressed.

In a progressive provision, though, Bush's bill would set a cap on total acid rain emissions as of the year 2000. In other words, new sources of acid rain after that year would only be permitted if matched by equal reductions elsewhere.

Bush originally promised that only three urban areas—New York, Los Angeles, and Houston—would be granted extensions to a deadline requiring healthy air by the year 2000. The President's bill, however, would allow six additional urban areas to postpone achieving standards until 2010.

The bill also repeals Clean Air Act provisions empowering the EPA to step in and write cleanup plans for states that fail to submit approvable plans. Bush's bill also weakens the EPA's ability to impose sanctions on such states.

Also, the language of Bush's bill contains some serious loopholes. For example, though Bush promised to use the best control technology available to set toxic pollution standards, the bill allows standards to be affected by other impacts, such as costs.

Ranger Association Reports Lean Times

The Association of National Park Rangers (ANPR) released a report in June that details economic hardship among National Park Service (NPS) rangers.

According to the report, low NPS salaries have forced many rangers into extremely tight economic situations and some into near-poverty.

"[Low pay] is the most fundamental and pervasive problem facing the NPS today," the study reported. It has severely deteriorated ranger morale, and is causing many professionals to leave the Park Service for other, higher-paying employment, according to ANPR.

ANPR is an association of 1600 NPS rangers. Its report was based on results of two surveys the group conducted in 1988 and 1989.

ANPR recommends that the Park Service implement cost-of-living adjustments, a housing-allowance system, and an examination of the grade-structure system, among other reforms.

"I'm sick and tired of being paid in sunsets. We are each asked to provide exceptional standards of visitor services, and aren't paid even close to proper pay," stated one respondent.

According to the document, pay rates for rangers in the middle and lower grades have sunk below even the lowest-paying comparable jobs in the private sector and at other government agencies.

Rangers are charged with the day-to-day management, protection, and interpretation of parks. Generally, they are highly educated and well trained.

During the past decade, appropriations, which have not kept pace with increased NPS responsibilities, have forced the NPS to do more with less. Rangers, like all federal employees, have received only small cost-of-living adjustments, amounting, in many cases, to a de facto cut in pay, the ANPR reports.

The report paints a grim picture of ranger economic life, especially for those rangers working in or near major metropolitan areas.

Many respondents said they depend on income provided by spouses or other jobs to survive; some must apply for food stamps and assistance programs to meet expenses.

The report described substandard housing conditions endured by some rangers. According to respondents, rangers sometimes stay in hostels, park campgrounds, or meagre housing without amenities such as kitchen or bathing facilities. Even at higher pay levels, frustration is evident among rangers.

"A person does not expect to become

wealthy in the NPS. . . . Nevertheless, you expect to be able to marry, have a child, and save toward a home," stated one former ranger.

"Why must the Park Service make doing what one loves and what one is good at such an ordeal?" said another respondent. "It's losing lots of good people to other government agencies giving better deals, while our parks are deteriorating before us."

—Peggy Callanan, NPCA intern

UTAH THREATENS PARKS WITH DEVELOPMENT

Utah officials are planning to sell to developers nearly 81,000 acres of state-held lands located within several national parks unless a state-backed land trade is approved by the federal government.

On July 13, the Utah Board of State Lands and Forestry approved a draft "marketing strategy" by which it hopes to sell or lease to developers state "school trust" lands located within Arches and Capitol Reef national parks, Dinosaur National Monument, and Glen Canyon National Recreation Area.

These parcels were originally granted to Utah at statehood to generate revenue for its educational system. They were later included within park boundaries as National Park System areas were created.

The board's decision followed the state's failure to effect a land trade advocated by Utah Governor Norm Bangerter (R). The Governor wants to trade many of the state's scattered inholdings for large blocks of land on the shores of Glen Canyon's Lake Powell. The state envisions commercial development on the shorefront tracts.

Legislation to enact Bangerter's plan failed to pass last Congress, and Interior has not supported the idea.

The National Park Service (NPS) and NPCA opposed the governor's plan, claiming it would result in harmful, inappropriate, and excessive development within the recreation area.

Terri Martin, NPCA's Rocky Mountain regional representative, blasted the state's latest plan.

"This proposal seeks to blackmail Congress by taking actions that will do serious and permanent damage to Utah's national parks unless Congress agrees to an unprecedented land exchange for destructive exploitation within Glen Canyon," said Martin.

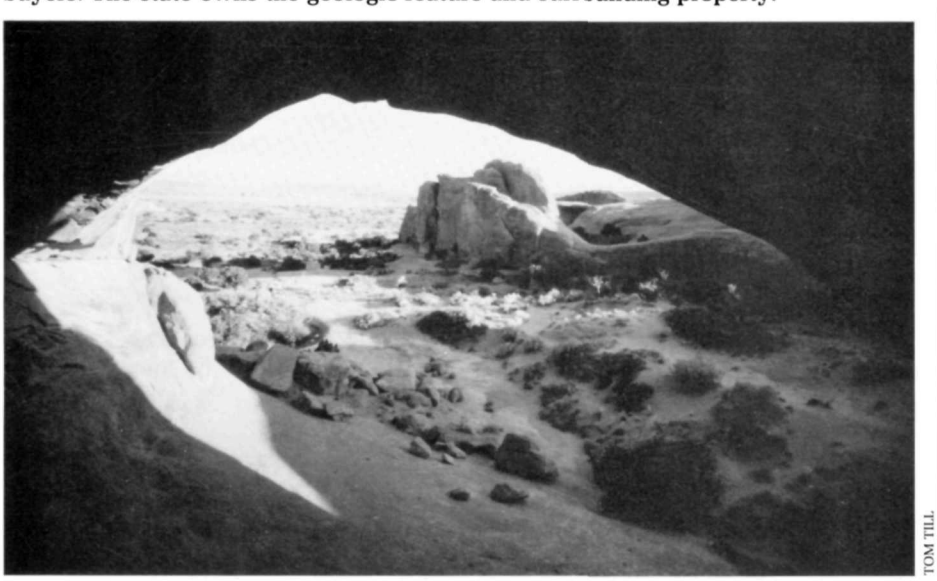
She also emphasized that neither the proposed sale of inholdings nor Bangerter's demand for Glen Canyon lands was founded on legitimate legal grounds, and that they both violate national park protections.

NPCA has written Governor Bangerter and the state board, protesting the board's decision.

The state's marketing strategy highlights a few specific, high-profile sites, such as the Eye of the Whale Arch in Arches, that the state will push for development. Plans will be finalized after a public comment period that will end in early September.

Bangerter has called on Utah's congressional delegates to again introduce legislation to approve his proposed trade. The board says that, unless passage of such legislation is imminent by September 30, it will begin leasing and selling its scattered parcels.

Utah hopes the view through the Eye of the Whale, in Arches NP, will attract buyers. The state owns the geologic feature and surrounding property.



TOM TILL

DYER TO RECEIVE DOUGLAS AWARD

This year's Marjory Stoneman Douglas Award is to be presented to Polly Dyer, a leading conservationist in the fight to preserve and protect Olympic National Park in Washington.

Each year, NPCA and the Bon Ami Company present the Douglas Award to an individual for outstanding efforts to protect a unit or a proposed unit of the National Park System.

NPCA President Paul Pritchard is scheduled to present the award to Dyer at the association's board meeting in Bellingham, Washington, September 13-17, 1989.

Dyer has been a conservationist for decades. She is involved with groups that are active in protecting Washington's three national parks—Mount Rainier, North Cascades, and Olympic.

Dyer has been instrumental in protecting and expanding Olympic National Park. In the 1950s, she successfully fought logging and a coast road slated for the park. In the 1970s, Dyer helped head the campaign to add fifteen miles of roadless beach to Olympic, and to keep the Quinault area from being dropped from the park.

More recently, she successfully rallied conservationists behind the Washington Wilderness Act, which designated wilderness in Washington's national parks and other areas.

SPECIAL REPORT

Interior Sub Rosa

Political Appointees Use The Parks as Pawns

By John Kenney

IN A HALLWAY outside a Senate subcommittee hearing room last May, Senator Patrick Leahy (D-Vt.) stopped Interior Secretary Manuel Lujan to query him about a pressing national park matter. The senator had written Lujan twice on the subject, but had received only a late, vague, unsatisfactory response from a Lujan assistant.

Leahy wanted to know why the National Park Service (NPS) had agreed to allow a Vermont ski resort to construct ski trails, ski lifts, and other facilities on land bordering a segment of the Appalachian National Scenic Trail. The senator wanted to know why the agreement had been brokered without completion of an environmental impact statement, which is required by law, and without public review of the project.

He also asked why the NPS had waived its right to review future development plans. The secretary appeared unfamiliar with the issue, and replied that he would look into the matter.

One of Leahy's letters, echoing what has become a theme of Interior Department-NPS relations, stressed his concern that "the best professional judgment of Park Service managers was ignored during negotiations."

NPS professionals' recommendations were overruled by a handful of Interior officials intent on carrying out the Reagan-era agenda of encouraging commercial use of resources, with little or no regard for park values. Conservationists have since taken Interior to court over the development.

The above incident is symptomatic of the increase of interference by Interior Department political appointees in the workings of the National Park Service.

Interference, though not unheard of prior to the Reagan years, increased markedly under Reagan Interior secretaries James Watt and Donald Hodel. Political meddling reached a new high, however, during the presidential transition and even into the initial months of the Bush administration.

Through a variety of machinations, a small group of Reagan-era holdovers exerted a strong political influence on the Park Service during the end of 1988 and the first half of 1989. That influence was highly detrimental to the morale of NPS professionals, and to their ability to carry out the national park mission.

Whether this process of politicization will continue under the Bush administration remains to be seen. Though some observers believe the climate at Interior is changing, others are more cautious.

Prompted by recommendations in NPCA's *National Park System Plan*, legislation has been introduced in Congress that would, to a great extent, divorce the NPS from Interior, giving it greater freedom from political manipulation. "I feel the parks are being degraded by politicization," said Representative Bruce Vento (D-Minn.), sponsor of the House version of the bill.

As chairman of the House Subcommittee on National Parks and Public Lands, Vento is very knowledgeable about the National Park System. He has been a strong, consistent supporter of national park integrity.

WHAT SCANT official communication Senator Leahy had received on the Appalachian Trail issue had come from Becky Norton Dunlop, who was then assistant secretary for fish, wildlife, and parks. Dunlop was appointed during the closing days of the Reagan administration to fill the vacancy left by outgoing Reagan appointee William Horn. Selected during a congressional recess, Dunlop never faced Senate review.

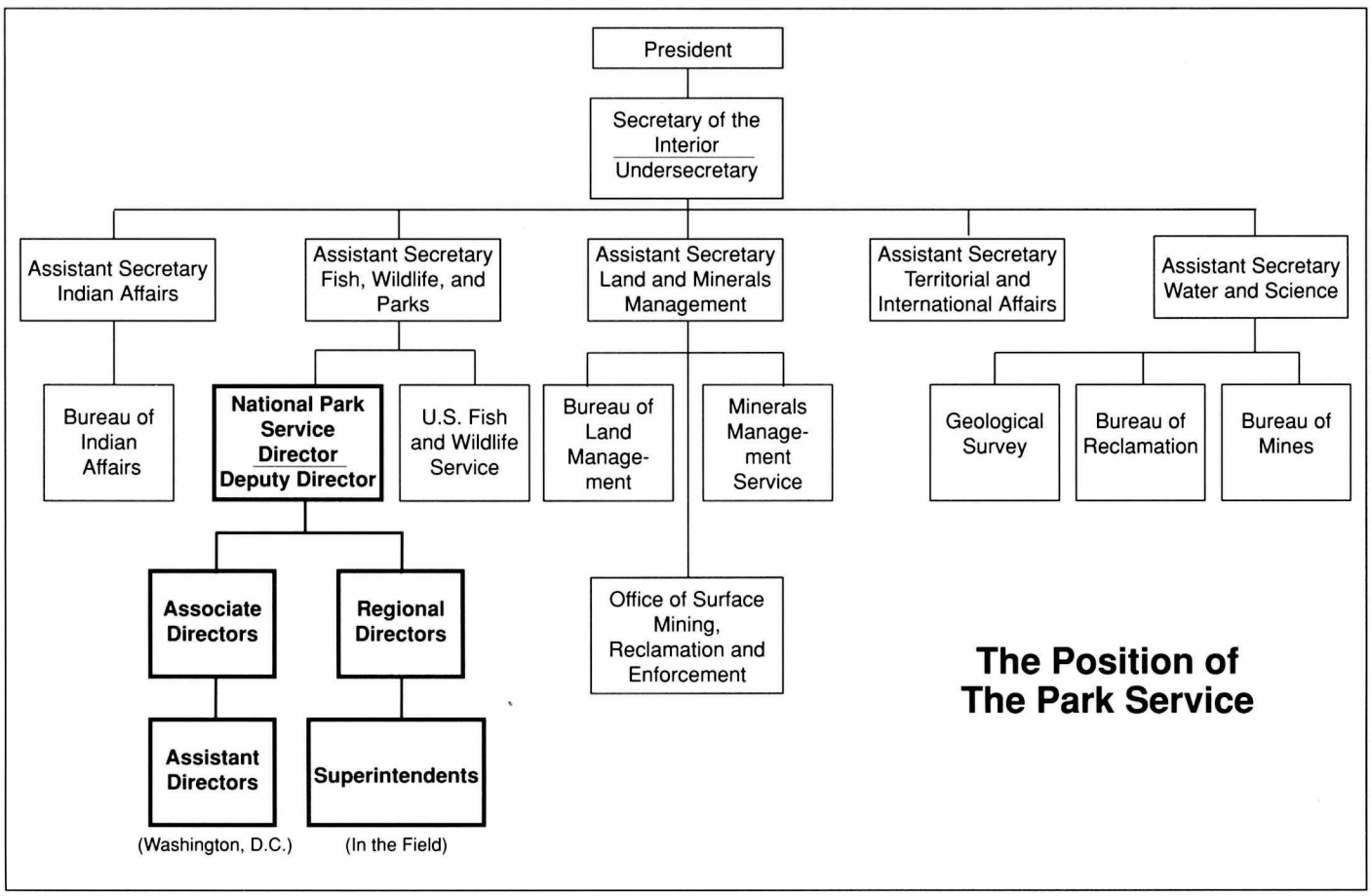
She had been deputy undersecretary of Interior under Hodel. Prior to that, she served in various positions on the Reagan White House staff. A Reagan ideologue, Dunlop had no experience in parks management.

According to reports in the *Washington Post*, her handling of the NPS angered legislators on both sides of the political aisle and culminated in her forced resignation in late May. In an extremely rare move, Senator J. Bennett Johnston (D-La.), chairman of the Senate Committee on Energy and Natural Resources, refused to consider further Interior appointments until Dunlop was replaced.

Johnston's firm stand was ultimately provoked by Dunlop's treatment of former NPS Deputy Director Denis Galvin. A career park professional and 27-year National Park Service veteran, Galvin is highly respected by conservationists, legislators, and fellow park professionals.

"His commitment to the agency's mission, knowledge of the issues, creativity, dependability, and ethical standards reflected the best in public service," remarked Senator John McCain (R-Ariz.).

As the director's right-hand man, Galvin provided advice on policy and handled much of the day-to-day business of



running the Park Service. He was also an outspoken proponent of park values who had locked horns with the James Watt-Donald Hodel teams on many occasions.

Though Galvin had done an outstanding job as deputy director, he was unceremoniously removed from his position in April. Dunlop engineered his ouster.

Though Galvin expressed interest in the post of assistant director for visitors' services, a step down from deputy director, he was denied the job. Galvin was extremely well qualified for the position.

In what was tantamount to exile, Galvin was assigned to a temporary, minor research position at the NPS Harpers Ferry Center in West Virginia.

Interior's treatment of Galvin infuriated NPS personnel, conservationists, and members of congressional committees that had worked closely with him. At this writing, the NPS has indicated that Galvin is to be made associate director for planning and development. This reversal came, however, only after his situation was publicized, and public pressure was exerted on Interior.

In other actions, Dunlop moved to reclassify top NPS superintendencies—those at Yellowstone and Yosemite, to begin with—as Senior Executive Service (SES) positions. The proposal greatly alarmed park professionals and conservationists, and caused such an outcry that new NPS Director James Ridenour has since withdrawn the proposal.

Had it taken effect, it would have injected the influence of political appointees even deeper into the ranks of the NPS.

As SES positions, these superintendents' job performance evaluations would have been ultimately determined by the assistant secretary for fish, wildlife, and parks, rather than by the NPS director, or a regional director.

Since salary and promotion are based largely on performance reviews, observers both in and out of the NPS were concerned that these superintendents could become vulnerable to political pressure from the assistant secretary—a political appointee. There was also concern that the review process could be used to bully outspoken superintendents into line.

Performance reviews for other NPS positions that are now SES—regional directorships, for example—have been abused in this way before.

In another organizational change, Dunlop required that transfers and promotions for all NPS employees down to the GS-13 level—generally, the mid-range of Park Service management—be approved by her office.

This unprecedented level of micromanagement served to undermine the authority of the director and the regional directors, who ordinarily oversee such operations.

In addition, during Dunlop's term as assistant secretary, she and her staff consistently ignored or countered the judgments of Park Service professionals on important issues.

In written comments to the House Subcommittee on National Parks and Public Lands in May, the Association of National Park Rangers described a

chronic attitude of disregard on the part of Interior.

"We ask that the ability of park professionals to voice points of view on significant policy issues be restored and protected," the association stated. "We have watched with dismay as senior National Park Service professionals have testified at congressional or other public hearings. What they say is often at odds with what we know they believe."

Specific examples of this type of politicization include:

▲ Allan Fitzsimmons, special assistant to Dunlop, set a plan in motion at Cape Cod National Seashore to lift a ban on off-road vehicles on a large portion of beach areas at the national seashore. The move was prompted by a letter-writing campaign orchestrated by off-road vehicle users of the beach. National Park Service resource management professionals considered extended vehicle use of the beaches damaging to the seashore, and counseled against lifting the ban.

▲ In the days immediately following the massive oil spill in Prince William Sound, officials of the NPS Alaska region recommended summoning a special, interagency team of logistical experts to coordinate efforts to keep the spill from park areas. Vernon Wiggins, Interior's deputy undersecretary for Alaska, discouraged the measure.

Park Service officials in Alaska summoned the team despite Wiggins' disapproval. The spill's severity soon justified their decision.

Later, when Wiggins' initial position became known, he tried to influence the Park Service's release of information on the spill. Wiggins mandated that all NPS responses to the media be channeled through his office.

▲ According to witnesses testifying before a House subcommittee in May, the Assistant Secretary's office rejected, with little explanation, National Park Service-drafted revisions of oil and gas regulations for park areas. The revisions would have tightened NPS restrictions, providing greater protection for parks from oil and gas development.

The cumulative effect of these countermands and organizational machinations was to create a general "us against them" mentality in the Park Service. Some park professionals described a constant atmosphere of distrust between certain Interior officials and career NPS people.

"There was often the feeling that they were trying to pull something over on us," said one career park professional.

"The feeling with this last group was that every time we made a decision to protect park resources, we were accused of wanting to withhold the resource from the visitors. That isn't so. We have an obligation to protect park values."

"We have watched with dismay as senior park professionals have testified at hearings. What they say is often at odds with what we know they believe."

Dunlop's SES proposal in particular had a highly detrimental effect on NPS morale. NPS employees felt that Interior was telling aspiring career professionals that two of their most coveted jobs were being laid open to manipulation by political appointees at Interior.

The treatment of Denis Galvin also touched a sensitive nerve among NPS employees.

"Denis Galvin got canned. If that doesn't send a clear message, I don't know what else could," said one NPS employee.

FORMER DIRECTOR George Hartzog, Jr., in remarks to the George Wright Society late last year, summed up the mood among park advocates.

"Who will manage our national parks?" asked Hartzog. "A cadre of career park professionals, or short-term, revolving-door politicians driven by agendas of the special interests?"

With the Bush administration only newly in place, the answer to Hartzog's question is still unclear.

President Bush has selected Constance Harriman, a Washington attorney, to replace Becky Norton Dunlop as assistant secretary for fish, wildlife, and parks. A two-year stint with the Interior Solicitor's Office from 1985 to 1987 gave Harriman her only background in parks and natural resources. There she handled legal issues involving natural resources and public lands.

Though short on park experience, in meetings with leaders of conservation groups Harriman has distanced herself from the Watt-Hodel agenda, and declared that she will assert her own management style.

New NPS Director James Ridenour is more overtly a political appointee than most previous directors. Under Bush, for the first time, the NPS directorship was offered in the "plum" book, the list of desirable jobs that become available during an administration change. Traditionally, NPS directors had outlasted presidential changes. His long-time association with Vice-President Dan Quayle, a fellow Indianan, likely played a role in Ridenour's selection.

Ridenour does have experience in parks, resource management, and recreation, however. He headed Indiana's Division of Natural Resources for eight years before his selection as NPS chief.

Some park professionals have reacted positively to initial meetings with Ridenour. One Washington official noted that he seemed at least to listen to professionals' recommendations when making decisions.

Under the present system, the Park Service continues to be vulnerable to manipulation by appointees with short-term, political agendas. Passage of the reorganization bill now before Congress would go a long way toward ensuring that the NPS be freed to pursue its own, congressionally mandated agenda—preserving the parks unimpaired for future generations—the mission for which it was created in 1916.

John Kenney is news editor of National Parks *magazine.*

"THANKS FOR BEING THERE FOR YELLOWSTONE"

NPCA wishes to thank Chemical Bank® management for taking the initiative in supporting America's national parks. This spring Chemical Bank cardmembers had the opportunity to make a difference by contributing to a "Be There for Yellowstone" fund. The fund was created to aid in the restoration of fire-damaged trails, campsites, and visitor facilities in Yellowstone National Park.

One year after the great fires of 1988, the natural wonders of Yellowstone are well into a new era of renewal and reinvigoration. The towering flames cleared the way for new habitats and for an ecological diversity not seen in Yellowstone in decades. Now, thanks to the generosity of these Chemical Bank cardmembers, all Americans have a unique opportunity to witness the rebirth of a great American wilderness.

To all of those who contributed to the fund we extend our heartfelt thanks. We owe you a debt of gratitude for choosing to "Be There for Yellowstone."

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Open Letter to President Bush

A Call to Put Words into Action

By Paul C. Pritchard

Dear Mr. President:

I want to commend you on your June speech at the Ducks Unlimited symposium in which you addressed a number of us in the conservation movement. You articulated principles underlying your environmental philosophy. This letter is in response to your invitation to expand on those five principles. I hope it will give you some ideas, for, as you so aptly stated:

"We can and should be nature's advocate. And that means an active stewardship of the natural world. It will not be enough to merely halt the damage we've done. Our natural heritage must be recovered and restored. It's time to renew the environmental ethic in America—and to renew U.S. leadership on environmental issues around the world. Renewal is the way of nature, and it must now become the way of man."

Bush: The first principle is that sound ecology and a strong economy can coexist. The fact is, our ecology and the economy are interdependent. And it's time to harness the power of the marketplace in the service of the environment.

NPCA: The parks are a perfect example of this. Since the designation of Yellowstone National Park in 1872, the 354 units of the National Park System have been one of the best investments this nation has ever made. In addition to their value as environmental storehouses and keepers of our culture, they are amazing economic generators.

Yet, the parks are being loved to death and encroached upon by development. For example, we have lost more than 90 percent of the wading birds in the Everglades in the last 50 years.

We need more parks. NPCA identified 86 areas in its *National Park System Plan* that would qualify as new units of the National Park System. In addition to their national significance, there is economic justification as well.

We also believe that research is a solid investment that pays dividends in assuring that we don't squander the very resources for which the parks were established. We hope, as part of your first principle, that you support designation of new park areas and the research that will keep them healthy.

Bush: The second principle is that a true commitment to restoring the nation's environment requires more than just a federal commitment. So we're working to promote more creative state and local initiatives, drawing local communities and the private sector into the cause of conservation.

NPCA: In our most recent studies, we have found that the greatest threats to parks often come from actions at local levels. Last year's threats to Manassas Battlefield were due to local government's attempts to upscale zoning of a tract adjacent to the park. The threat at Gettysburg was construction of a tower within the park's visual corridor. The cases go on and on.

For years, NPCA has called for legislation to protect parks from adjacent threats. Our ideas include: first, having other federal agencies such as the Forest Service notify the NPS of any potential problems on adjacent lands that they manage, and, second, making sure that the NPS and local communities work together as neighbors for their common good. We urge your administration to work with Congress and conservationists to assure passage of park protection legislation.

Bush: Our third principle is that preventing pollution is a far more efficient strategy than struggling to deal with problems once they've occurred. For too long, we've focused on clean-up and penalties after the damage is done.

"Our message is simple, polluters will pay."

Technology has given us tremendous power to alter the face of the earth. We must use it to do good. Environmental soundness and industrial design must be partners.

We've already taken several steps in that direction. As you know, I've called for the elimination of CFCs by the year 2000. And we've tightened the Corporate Average Fuel Economy [CAFE]

standards, as the law originally intended. More efficient cars are good for our environment, and good for our energy security. We're going to promote the use of alternative, "neat" fuel technology.

NPCA: I particularly like your third principal. Your willingness to propose the Clean Air bill has, finally, broken the log jam in Congress. Yet, while your acid rain proposals contain features that will enhance the environment, they also contain provisions weakening existing park protections. Your specific legislative language does not support your stated goals. The acid rain section is essential to the parks.

We hope you will stand by your original acid rain standards and deter those forces in your administration working to weaken the acid rain section.

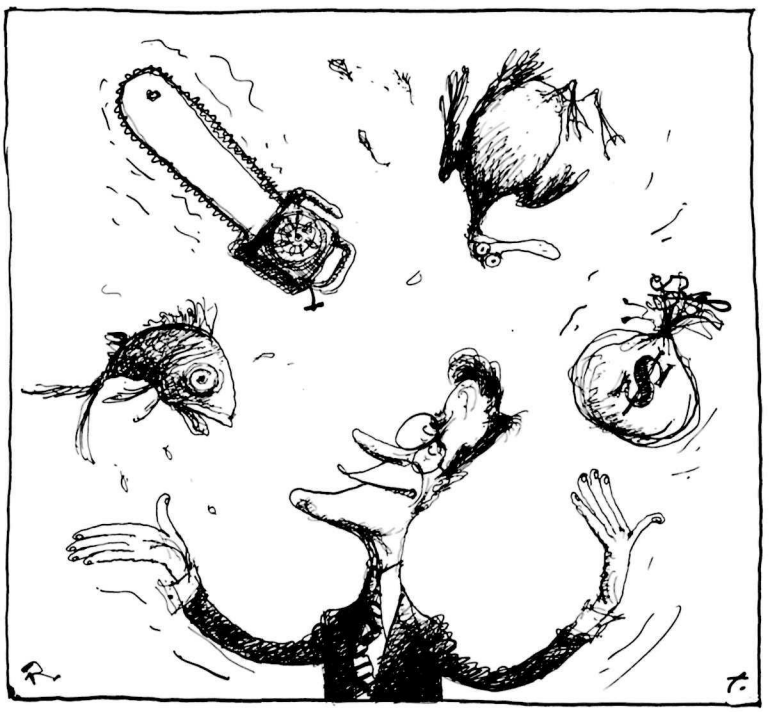
The automobile standards included in the proposal are not strict enough to rid our cities of the plague of smog. The toxics section is also not as strong as it should be. In addition, the CAFE standards could be even tighter.

Bush: The fourth principle is a recognition that environmental problems respect no borders. We're working with nations around the world. From Japan to Brazil, we're discussing ways to reverse rainforest devastation. And we've recommended a ban on international shipment of hazardous waste, unless an agreement is signed that makes sure waste is disposed of safely.

In Germany two weeks ago, I announced our intention to provide technical assistance and new technologies to the nations of Eastern Europe, to help them handle pollution problems. Even our recommendation to ban the importation of elephant ivory underscores this new international emphasis.

NPCA: It is true that environmental problems know no borders. Oil spills around the globe have taught us this. Because of these spills we would hope that you would support our concern for the Arctic National Wildlife Refuge. You voiced your concern over acid rain and the greenhouse effect at the Paris summit, and we hope that concern translates into tough measures.

We often seem unable, or possibly unwilling, to save threatened or endangered species—Everglades birds, the Florida panther, the grizzly, and so many more. Some of these species need international cooperation to protect them.



Your actions to stop the importation of ivory are commendable, but there are others in need of protection: Sea turtle and bear parts are sold around the world, reducing some of these species drastically. Your strong support of laws protecting endangered species and their habitats and the Convention on International Trade in Endangered Species would point the way for other countries.

Bush: The fifth principle is that existing environmental laws will be vigorously enforced. I've requested funds to hire more environmental prosecutors at the Justice Department. Our message is simple—polluters will pay.

Some 40 years ago, a man named Aldo Leopold wrote a book that some of you may have heard of. It was called *A Sand County Almanac.*

"That land is to be loved and respected," Leopold wrote.

That was 40 years ago. And since then, millions of acres of wetlands, habitat for so many plants and animals, have disappeared. And they continue to vanish at an alarming rate.

I ask what the generations to follow will say of us 40 years from now. It could be they'll report the loss of millions of acres, the extinction of species, the disappearance of wilderness and wildlife.

Or they could report that, around 1989, things began to change, that Americans began to hold on to our parks and refuges, that we protected our species. From today, it is the ethical legacy we must inspire in every American.

NPCA: Pollster after pollster and survey after survey have shown that the environment is a concern of all citizens. So, clearly, the mandate of enforcement that EPA Administrator Bill Reilly is working to carry out is a mandate that all of our nation supports.

Laws that immediately come to mind are those that would uphold clean air standards, protect our wildlife against poachers, and punish those who would steal the artifacts of our nation's past.

Mr. President, you have given us one of the finest sets of principles. Not only can we use it to "judge" the actions of your administration, but we can also evaluate our own efforts.

It is truly a model for public and private commitment. And we will do everything possible to assure that this critical decade of the nineties is one in which "things began to change" for the better.

—Respectfully,

Paul C. Pritchard

ILLUSTRATION BY RICHARD THOMPSON

Pushy Wildlife

Animals That Thrive On Human Habitat

By James Lazell, Jr.

WE TEND TO assume that any massive alteration of natural habitat by man is bad for wildlife. There are, however, a number of species that seem to adapt all too easily to our man-made structures—to our edifices. Though we usually think first of buildings when we speak of edifices, Mr. Webster provides the more general notion of an edifice as "a structure, especially one of imposing appearance." Ecologists use the term to include a diversity of man-made structures, such as agricultural developments, dams, reservoirs, drainage schemes, and even interstate highways, as well as buildings.

As our exploding population converts more and more natural habitat to edifices, some animal species explode along with us. Ecologists use the term edificarian to denote such species.

Little attention has been given to the development and expansion of edificarian wildlife, although particular species—rats that carry plague, starlings that oust bluebirds, for example—have been studied intensively. The obvious deleterious effects of these species suggest that other edificarians may merit attention as well.

Beginning in the late 1960s, my work researching and inventorying wildlife on islands and coastal habitats brought edificarian wildlife issues into sharp focus.

I found in case after case that remote islands, for example, were not as previously described by earlier naturalists. Habitats were dramatically different: Some native species were missing, and some other species had become incredibly abundant.

This type of change, known as species turnover and replacement, often involves an edificarian species as replacement animal.

As a National Park Service research collaborator in the 1970s and 1980s, I inventoried animal species at Cape Cod, Cape Hatteras, Cape Lookout, and Gulf Islands National Seashores, and at Everglades National Park. Through my work, I became deeply concerned about the effects that a few edificarian animal species were having on general wildlife diversity.

With the expansion of human development, many national parks have become ecological islands, the carved-up remnants of their original, much larger ecosystems. Like actual islands, the parks may well become increasingly subject to the harmful influences of edificarians.

As a research collaborator at Cape Cod National Seashore and on surrounding islands in the 1970s, I was able to confirm conclusions reached by ornithologists about the harmful effects of several edificarian species of birds. These species have caused havoc on the eastern seaboard, and the problems they have created are typically edificarian.

When herring gulls began to increase and develop nesting colonies in the Northeast during the 1950s, biologists initially hailed this as the return of the native—a fine thing. It was, after all, humans who had egged herring gulls to extirpation on New England coastal islands in the first place.

The practice of egging involves the destruction of all eggs in a nesting colony. This is usually done well along in the nesting season, when most birds have laid their eggs and the eggs are in various stages of development, but before any significant hatch has occurred.

Total egg destruction resets the gulls' reproductive clocks: they all lay replacement eggs at about the same time, within a day or so of first clutch destruction. Human egg harvesters then return and collect fresh eggs suitable for the table.

The appetite for fresh eggs in the 19th and early 20th centuries was ravenous, and the chicken egg industry as we know it today did not exist. Gull colonies soon vanished.

Meantime, the millinery trade consumed our terns. Common terns, least terns, arctic terns, and lovely roseates disappeared from their nesting colonies to decorate fashionable ladies' hats. It seems scarcely credible to most people today, but the millinery trade was once on a par with market gunning—the practice of hunting to supply the marketplace—in the destruction of wildlife.

Laughing gulls (overleaf, by Ron Sanford) are one species crowded out by herring gulls (below), which thrive on human by-products, such as landfills.

RON SANFORD

All of that turned around by the mid-20th century. The passage of wildlife protection laws like the Lacey Act and the development of a viable poultry egg industry had brought egging to a halt.

JOHN SHAW

All four tern species were again nesting in New England. Other species hurt by egging—cormorants and laughing gulls—made comebacks also. Some species locally extirpated by market gunning, like willets and oyster catchers, reappeared. Things were looking good. Then came herring gulls.

It is difficult to think of a species that adapted so rapidly and so successfully to edificarian habitats. Unlike house mice and Eurasian rats, herring gulls had no history of symbiosis with humans. No other larid seabird—member of the gull and tern group—had benefitted directly from massive human presence.

Our victims in one generation became our prodigious beneficiaries in the next. Herring gulls became city birds rivalling pigeons and starlings in sheer biomass.

The central edifice in the success story of the herring gull has been what we euphemistically call the "sanitary land fill"—the dump. I recall one in particular, just west of Boston, we dubbed "the Matterhorn of Waltham." A vast and imposing edifice indeed.

The gulls fed and rested in cities and at dumps, and populations swelled. They continued to nest on small, often remote, offshore islets, where all four tern species, laughing gulls, and cormorants nest. The big herring gulls not only ate the eggs and chicks of smaller species, but literally crowded out nesting adults—even of larger species like cormorants.

By the 1960s it appeared we were going to trade six species of colonial nesting seabirds for one: a horrendous drop in biological diversity.

Nor was the gull problem one of wildlife depletion only. Gulls became a real menace, through sheer numbers, at airports. Human life was directly threatened, and gull population control became mandatory.

Edificarian gulls eat the eggs and chicks of common terns (above).

The story did not end there. Also in the 1960s, we began to see the influx of a second, even larger gull species, the great black-back. These gulls are not as edificarian in habits as herring gulls. True, they are now common around cities, dumps, and airports, too, but their habits are quite different on average from herring gulls'. Great black-backs are predators. On islet after islet the black-backs moved into the middle of herring gull colonies, eating herring gull chicks.

But that could not sustain them. They extirpated entire islands of terns, and moved on to laughing gulls, cormorants, and—off the coastal islets—began to plunder marshland nesting shorebirds and waterfowl. The base provided by herring gulls, in turn provided by us humans, enabled great black-back expansion soon endangering a dozen species.

The gull situation prompted human action. Government and private agencies eventually took steps to reduce herring and black gull populations both around cities and airports and on remote islands like Muskeget and Penikese, Massachusetts, which were important tern nesting sites. Gull nests were eradicated, and landfills and fish-processing wastes were better controlled to reduce the gulls' food base.

As a result, the gull situation seems to have improved somewhat, and other seabirds are nesting in greater numbers on coastal islets. How well these measures will ultimately work, though, remains to be seen. Both species of gulls persist and remain a menace today.

Concomitant with gull problems, edificarian waterfowl began to dominate our eastern coastline from New England all the way down to Florida.

Canada geese had never naturally nested south of the St. Lawrence Valley. However, the confiscation of live decoys by federal agents in the 1930s produced a reservoir of various sorts of Canada geese. These were reared on national wildlife refuges such as Plum Island, Massachusetts. Their progeny were a mix of various subspecies of Canada and white barnyard geese.

The resultant hybrid creature is genetically only a "Canadoid" goose: nonmigratory, resident, and semidomesticated. Reservoirs, golf courses, city parks, and agricultural lands are the edifices that sustain them by providing them with ample pasturage.

However, when nesting season comes these creatures abandon artificial habitats and move back to nature: to marshes and swamplands that once harbored native waterfowl. The Canadoids may eat cracked corn, lawn grass, and putting greens as adults, but their goslings are voracious carnivores in direct competition with black ducks, teal, and even hooded mergansers for insect, invertebrate, and fish prey.

They are devastating to clam and oyster spat and thereby run afoul of human interests. They are, for all that, immensely popular with the public, who largely

see these wholly artificial, unnatural creations of ours as a symbol of the wild. There is scarcely a worse misconception in natural history.

A close relative of the Canadoid goose is the "mallardoid" duck. This feathered contraption was invented in the northeastern United States solely, it almost seems, for the destruction of native waterfowl such as the black duck and the green- and blue-winged teal. If any real mallards ever nested in the northeast, their numbers were so few they could be thought of as incidental or accidental.

Enter the rouen barn duck of Europe, imported early in our colonization process. Domesticated ducks that look like mallards, these farmyard birds do not migrate, but they readily cross with wild ducks.

The influence of rouens alone would not have been disastrous: there were too few of them. It was massive importation of real mal-
rds from the West that proved to
catastrophic.

The resultant mallard-rouen
osses were immensely popular.
ot only did they fill city parks,
servoirs and summer vacation
sort communities—thus delight-
g children toting bread crusts—
ey delighted hunters too: big,
eaty, slow-flying—they did not
igrate away at season's end. Rath-
, they stayed through the winter,
cupying nesting sites needed by
ild, migratory birds returning
ch spring.

Yet a third species—the most classi-
lly edificarian of all—has been added
this exotic menage: the mute swan, a
omestic, European, barnyard species
w gone wild—feral, that is—in North
nerica.

Truly a barnyard bird, the mute swan
o does not migrate. Not only a year-
und resident, with its long neck, it dab-
es—feeds head-down in the water—
eper than most wild species. The mute
an's proficient dabbling depletes food
sources needed by both migrants and
eeding birds.

RON SANFORD

Mallards cross with barnyard ducks to produce a destructive hybrid.

The cumulative, insidious effects of these invaders we have generated have been documented in a number of studies. As residents, they dabble all summer, consuming food supplies needed by incoming fall migrants of native northern species. Edificarian, they move comfortably to artificial habitats in hard times—like winter—and fatten on artificial foods such as cracked corn and hand-fed bread crusts.

The Massachusetts Audubon Society, for example, began a winter feeding program for waterfowl in the latter 1970s. That program directly benefitted the introduced semidomesticated exotics, and therefore was indirectly—but severely—detrimental to native waterfowl.

Unfortunately, even the National Park Service (NPS) tends to benefit edificarian waterfowl at the expense of native species by providing protected nesting sites and by restricting hunting. While some parks have programs to control exotics, many do not. Offering sanc-

tuary to these birds only aids their displacement of natives.

These resident, nonmigratory exotics—Canadoids, mallardoids, and mutes—await the returning natives in spring. Not only do they directly compete for food and nest sites, but the mallardoids readily cross with indigenous black ducks, causing genetic degradation of the native breed.

Back in the 1950s and into the 1960s the Atlantic flyway hosted about 2.2 million black ducks. By 1986, their number had shrunk to about half that—a little over a million birds. Though teal were once abundant, especially on the islands and in the coastal habitats of Cape Cod, there are now barely any teal left in the United States.

What it all needs is complete cessation of exotic stocking programs and artificial feeding, combined with earlier and longer hunting seasons and higher (or no) bag limits on the exotics. To this day, state and local governments import and release exotic waterfowl to stock parks and preserves.

All our native species need to reestablish their natural superiority is termination of our support for their ecological and reproductive enemies.

BOTH NORTH and South, another edificarian species attracted my attention: the raccoon. One of a group of midsized mammals whose numbers have exploded with humanity, this one seems to have the greatest deleterious potential. Others include opossums, skunks, coyotes, and eastern or Florida cottontail rabbits.

As everyone knows, raccoons are wondrously clever. They are much better at literally moving in with us than other edificarian mammal species, and every bit as good at exploiting our artificial habitats.

The presence of our buildings and—seasonally, at least—garbage has made raccoon survival possible in areas where the animal had never before lived. The range of the raccoon has expanded north to lakes and shores that support wildlife unaccustomed to these marauders.

Loons were among the first to go; raccoons have forced them to retreat from much of their former nesting range. Fattened on summer garbage, raccoons holed up in (or under) summer cottages for the winter, where they had previously been unable to survive. The animals laid low and lived on their fat.

They then appeared in the spring, anxiously searching for more food. Nesting loons were immediate victims, as raccoons preyed on loon eggs and chicks.

One is tempted to expand on those advisory signs about trash: ". . . and bring traps so you can take your raccoons back with you, too."

Raccoons did not stop at birds. Because of edifices, turtle eggs also became vulnerable to raccoon predation.

Along the barriers and sea islands flanking our southern coasts, sea turtles began to make a marvelous comeback in the second half of this century. It was heartening indeed for those of us who worked on the huge marine reptiles when leatherbacks and greens began to be recorded nesting in Florida (now regularly in Georgia and occasionally the Carolinas), and loggerheads reappeared all the way north to New Jersey beaches.

But soon there were major, novel problems—raccoons at the top of the list.

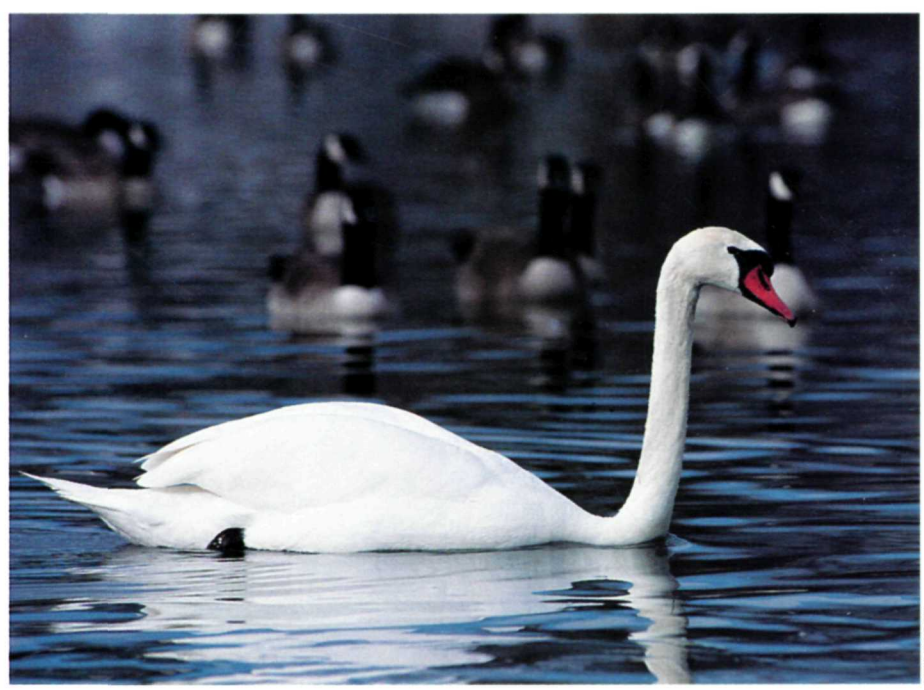
How could raccoons—perfectly native to the southern coasts and islands—be a "novel" problem for nesting sea turtles? Numbers—numbers generated by edifices. As in the North, buildings themselves have been a great boon to raccoons on remote strands. They provide shelter and over-wintering opportunities. They also provide fresh water.

Raccoons do not have specialized kidneys and cannot survive on salt water or even very brackish water. They need water as fresh as that needed by humans. A quick perusal of a beach cottage reveals the wonders provided for a clever raccoon: wash tubs, toilets, oil drums, and even tin cans and bottles at a little dump site, collect and hold fresh water. For the resourceful raccoon our home-away-from-home changes from outpost to base of operations.

It was my colleague in sea turtle work, Dr. Lew Erhardt, in Florida, who first pointed out the significance of another grand edifice in raccoon ecology: the mosquito-ditched marsh.

If you can get up in a small airplane and fly over the once-vast, still-extensive, salt marshes of our southern coasts, from the Carolinas to Florida, you will note that structure has been imposed. A grid of straight-line ditches totally dominates the vision of our marshlands and—in Florida—mangrove swamps. The human effort expended to establish and main-

The imported mute swan depletes food sources needed by native waterfowl.



JEFF FOOTT

CONNIE TOOPS

Raccoon expansion has been disastrous for loons, sea turtles, and cranes.

tain this monstrous network recalls that spent for agriculture. And it has drastically altered ecology too, of course.

In their natural condition, salt marshes and mangrove swamps of any expanse served as formidable barriers to raccoons, or at least sustained low populations. Raccoons are edge animals. They feed heavily on mollusks and crustaceans that live in shallow waters flanking the marshes. The middle of a big marsh is inhospitable to raccoons.

Thousands of miles of ditches, however—originally built to enable fish to reach marsh interiors and therein consume mosquito larvae—have made water edge habitats where none were before. For the hunting raccoon, a mosquito ditch is like highway strip development for the hungry tourist: easy to travel, with fast food galore.

If one looks at the natural structure of land flanking the sea, for example at Cape Sable in Everglades National Park, one notes a relatively high dune system, dominated by grasses, inland from the bare sand beach. Behind the dunes are wetlands, either marsh or swamp. Of course, natural waterways traverse these wetlands, and occasionally touch or approach the dunes. Sea turtles and colonial sea birds nest on the dunes.

A few raccoons had always been able to make it out to the nesting sites, and succeeded in hanging on long enough to effect some egg and hatchling predation. All that was perfectly natural.

It was man's structures—buildings with junk; the vast ditching—that made high-density, long-term raccoon survival and easy access a possibility, and thus a problem that continues today.

WORKING AS A collaborator with Gulf Islands National Seashores in south Mississippi in the mid-1970s, I saw how unexpectedly effective in altering ecology another sort of edifice could be—the Interstate Highway.

At the time, a large group of federal, state, and private agencies were attempting to orchestrate salvation of the Mississippi sandhill crane, a small, dark, somber relative of the migratory sandhills found farther north.

We saw the construction of Interstate Highway 10 as something of a benefit. With the Endangered Species Act in place, and with the Mississippi cranes solidly placed on the endangered list, we could divert the course of this major highway away from the most critical crane habitats.

Better, we could get mitigation lands from the Department of Transportation for the Department of the Interior. Simply put, every acre of that long, slender highway edifice could be traded for an acre of crane habitat in the adjacent wire grass prairies and slash pine flatwoods. The Mississippi Sandhill Crane National Wildlife Refuge was created. The highway was a mixed blessing, but the mix had some fine components—we thought.

I have often thought ecology should be redefined as the study of the complexly unexpected: Interstate 10 gave us thousands of mitigation acres. It also gave us raccoons, crows, and coyotes—in unprecedented numbers.

The interiors of the wire grass prairies and flatwood savannas had harbored few if any classic edge hunters and scavengers with the edificarian proclivities of that trio: raccoon, crow, and coyote. The highway is a grand band of dry land, making a double edge on the crane habitat mile after mile.

Interstate 10, like all highways, is an attenuate slaughter house: countless thousands of animals—from insects to deer—perish on it each year just trying to get across.

Raccoons, crows, and coyotes moved out along the new highway, keeping their feet dry and—sometimes—their bellies full. Their numbers increased rapidly. Soon individuals strayed away from the highway strip, not far, but far enough into the wire grass to find crane nests. . . .

Today, edificarian wildlife poses a greater threat to the Mississippi crane than either gunning or habitat destruction—the two factors that initially combined to endanger the species. The bird has recovered slightly since the establishment of the refuge, and is now holding steady at about 60 individuals.

But it has taken a new awareness of edificarian threats to effect this change. Wildlife agents now trap and remove edificarian species from the refuge.

The unexpected complexities introduced by those animals that have come to live so well with us are now legion. I think of the tragic case of the *iguaca*, or Puerto Rican parrot. Once common, *iguacas* were reduced to a few dozen individuals by outright shooting and by deforestation, which eliminated big trees with suitable nesting cavities. The survivors lived only in remote rain forest.

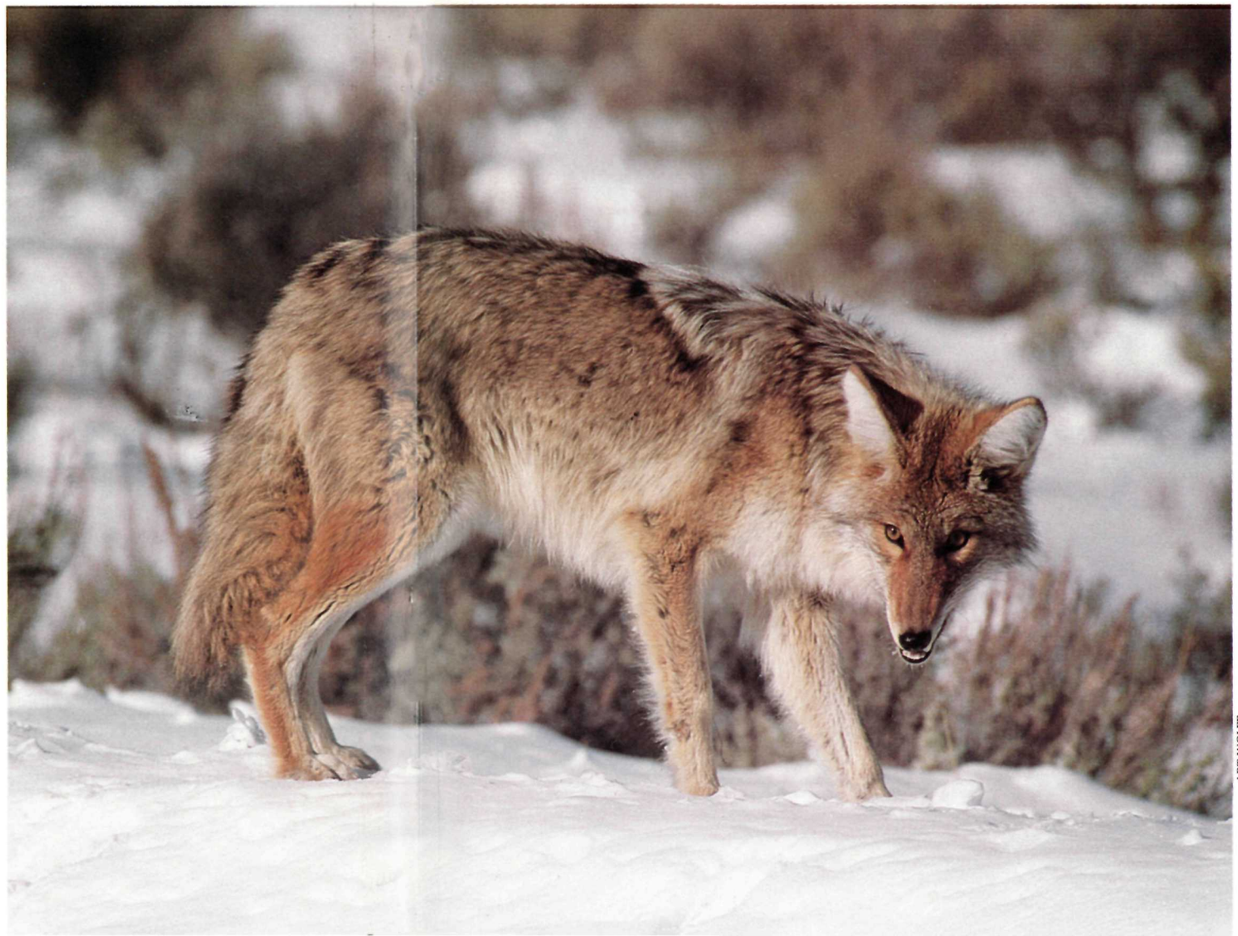
Researchers set up camps to monitor nesting parrots, and things seemed quite all right at first. Then the pearly-eyed thrashers appeared.

These birds were native to Puerto Rico, but had never previously been resident in montane rain forest. The pearly-eyed thrasher has earned the epithet "starling of the Antilles" for its gang nesting behavior and preadaptation to man-made structures. The thrashers ganged up on the parrots to evict them from their nests and take over.

It wasn't until later that the researchers learned it was their camps and clearings that brought the deadly thrashers to the endangered parrots. The *iguacas* are now in desperate straits.

THE CENTRAL feature in understanding and ultimately controlling the adverse effects of edificarian wildlife is discerning subsidies. Subsidies are benefits that some species derive from edifices that give them an advantage over members of more natural, less artificial ecosystems.

The edifice—a building, garbage dump, or highway—is easy to spot. But the subsidy it provides may be quite subtle. A pint of water in a shack's toilet bowl may succor the raccoon who destroys a dozen sea turtle nests. Ten road-killed frogs along 20 miles of highway may enable a coyote to venture into the territories of rare cranes. Ecological catastrophes may hinge on little things.



ART WOLFE

Coyotes—classic scavengers—threaten the Mississippi sandhill crane.

The educational programs that worked so well within my lifetime to popularize hawks, wolves, and killer whales seem to have ended there. We were able to teach people to see the "bad" animals of yesteryear as beneficial, even noble, members of the larger community. Why can we not now move on to educating people to see the destructive effects of some "good" species?

No one wants to exterminate herring gulls, raccoons, or pearly-eyed thrashers. They are native species. However, they do need to be controlled—reduced to natural levels at least—in particular locations and in specific cases, such as when they endanger other species.

National Park System areas would be an excellent place to start. Although reducing animal populations in parks is generally prohibited, exceptions are sometimes made for the overall good of wildlife and maintenance of diversity.

A far better case can be made for extirpation of introduced exotic and feral domestic species when they impinge on native wildlife. The NPS, for example, has long tried to rid Grand Canyon National Park of its nonnative nuisance, the feral burro.

I would love to see the Canadoid geese, mallardoid ducks, and mute swans vanish the way I have seen red-tailed hawks, broadwings, and ospreys return.

Then, perhaps, we might again see the resurgence of nesting black ducks, green- and blue-winged teal, and hooded mergansers where they once were, and still rightfully belong.

Many ecologists believe diverse natural ecosystems are inherently more stable than simpler, artificial ones. When widespread edificarian species replace local native ones overall diversity is diminished.

The species that live best with man are truly becoming worldwide in distribution; local, often endemic, species are losing out.

Dr. James Lazell, Jr., is a biologist specializing in research on rare and little-known animals. He is presently collaborating with the National Park Service on wildlife inventorying and monitoring studies at Cape Hatteras and Cape Lookout National Seashores.

The IMPORTANCE of Being NOTHING

PINACATE—EMPTY QUARTER OF THE SONORAN DESERT

BY CHARLES BOWDEN
PHOTOGRAPHS BY JACK DYKINGA

THE FIRST TIME I saw the Pinacate was from a car window as I roared down to Mexico for a weekend of beer and sun on the beaches lining the Sea of Cortez. The dark desert of volcanic rock baking a few miles west of the highway looked forbidding, grotesque, and frightening. I never thought I would go into it, at least not voluntarily.

And then one day I did, because someone who knew the country took me along. I slept on black cinder flats, walked trails 20,000 years old, held in my hand a stone chopper dropped by another human being 10,000 years before Christ was born. At night the stars screamed and in the dawn my eyes floated across small desert trees whose grey-green leaves groped for life amid the fingers of black lavas.

There was almost total silence and very few words seemed worth saying.

Now I doubt if I will, in any real sense, ever come out. Not that I go there much; that is not necessary. For the tract called the Pinacate is the essence of what desert means. And once you've been in it, the lavas ride in your night thoughts like a raving witch for the rest of your life.

Ed Abbey is a case in point. A man who liked rocks, especially hot rocks, he naturally wound up in the Pinacate:

PINACATE FROM CARNEGIE PEAK

"Serious divisions of opinion between desert rats concern places. Some, for example, feel that Death Valley, in the summertime, at 130 degrees Fahrenheit in the shade, is going too far. Most would agree, however, that ultimate among the various provinces of the Great American Desert is Sonora's Pinacate region, at the head of the Gulf of California. This is the bleakest, flattest, hottest, grittiest, grimmest, dreariest, ugliest, most useless, most senseless desert of them all. It is the villain among badlands, most wasted of wastelands, most foreboding of forbidden realms. At least in the Southwest, the Pinacate Desert is the final test of desert rathood; it is here that we learn who is a true rat and who, essentially, is only a grasshopper mouse."

People tend to remember going into this particular country. Dave Foreman and the other founders of Earth First!—the rude boys and girls of the American environmental movement—dreamed up the organization while sizzling in the Pinacate. The addiction to the place began a long time ago.

Tom Childs, Jr., was born in Yuma, Arizona, in 1870; and around the turn of the century he married into the Sand Papago, the last nomadic culture to persist in the lower forty-eight states. He had 13 children by his wife Marta, and joined her people's ways of wandering the hot deserts—the Gran Desierto of Sonora, the Tule Desert, the Lechuguilla, and, of course, the Pinacate.

The name Pinacate comes from *pinacatl*, the Aztec word for a black beetle, and a lumbering black beetle is found there. The ground itself came from the furnace room of the earth.

"For over 50 years," he told an anthropologist in 1945, "I tracked the desert with only the Sand Papago as my *campañeros*.

"My best friend was old Caravajales, the hermit of *Tinajas de los Papagos* on the Sonora side. It was from him that I learned of the few watering places in this uninhabited land of which the white men know so little."

Caravajales took Childs into the Pinacate, ". . . this immense malpais punctured by craters that lies in a 40-mile belt between Sonoyta and Puerto Penasco on the Gulf of California. In our ascent of the mountains we passed over trails never before trod by white men." Childs fell into the country.

The horses struggled through the dark powder of volcanic ash, obsidian crackled like black shattered glass under their hoofs. The sun beat down on a world of dark rock. "Deep in the monstrous lava-flow," Childs continued in his remembrance, "we came to the cave of *I'itoi*."

I'itoi was a god figure who watched over the Papago (a cultural group now called Tohono O'odham). For example, when the railroad came through southern Arizona in the early 1880s, *I'itoi* was sighted as a little old man driving the game to safety. He has, to this day, one home in a cave under Baboquivari Peak near Tucson, and another in the Pinacate. The two homes are connected by line of sight.

"But what we found in the sacred cave of the Papago," Childs warned in 1945, "I cannot tell." And he never did.

From that point, Childs and Caravajales picked up the Salt Trail, a route skirting the volcanic wastes that Tohono O'odham had followed for generations on vision quests to the Gulf to pick up some salt and hopefully a head full of dreams. Here they found the abandoned huts of the Sand Papago, who Caravajales called, "'*huhuku o'odham*, all gone people."

Caravajales was, in many ways, the last of the Sand people to live the traditional life. He eventually became a spooky desert legend. Some people claimed he killed his enemies and burned them. A friend of mine found one of his camps—an old mat for sleeping, a few stored seeds—45 years after he abandoned it.

For centuries, his people had been fierce defenders of the Pinacate against intruders, and by the latter part of the 19th century they had become proficient at robbing and murdering travelers crossing the wastes.

Many of the Sand people were exterminated in the 1890s when Mexicans, tired of the mayhem, slaughtered them in the dunes. Today, their descendants are clustered in the small desert towns of Arizona and Sonora that ring their ancient home.

Brittlebush and senita cactus bloom amid the Pinacate's frozen lava flows.

For several generations, the 700 square miles of the Pinacate proper, and hundreds of square miles of surrounding dunes and hot flats sometimes called the Gran Desierto, were uninhabited, say from around 1912 until the late 1960s or early 1970s. Mexicans regarded the place with a kind of dread, warning visitors that wild Indians still murdered and plundered in the black desert.

A friend of mine, who began exploring the Pinacate in the mid-1950s, remembers a bird flying up to his face to inspect this newly arrived species and badger sniffing his foot out of idle curiosity. As the North American continent in this century surrendered its last secrets and hideaways, the Pinacate fell away from memory and largely vanished from any concept of use or profit. The last Sand Papago to live there, Juan Caravajales, left around 1912 and, outside of infrequent visitors, an enormous silence fell across the land.

Then, in 1979, the president of Mexico decreed the zone a federal reserve, to be supervised by the *Subsecretaria Forestal y de la Fauna*, which is a part of the *Secretaria de Agricultura y Recursos Hidraulicos* (SARH). Four years later, supervision was passed to the newly formed *Secretaria de Desarrollo Urbano y Ecologia* (SEDUE).

Also, the Pinacate has been nominated for UNESCO's World Biosphere Program. Just across the border in Arizona, Organ Pipe Cactus National Monument qualified for the program in 1976.

In a rational world, one without nations and bureaucracies, the Pinacate, Organ Pipe, and the Cabeza Prieta National Wildlife Refuge would be designated and managed as a single unit. That is the way the Sand Papago saw them and that is the way anyone wandering on foot sees them today. Hopefully, such a revelation will eventually occur to the two nations and the four separate agencies who manage it.

Today, the Pinacate is a pawn in a turf war between SARH and SEDUE for control—much like the tussles between the National Park Service and the Forest Service in the United States.

And while these agencies match bureaucratic wiles, the Pinacate is being plundered by ranchers, *ejidos* (Mexican peasant collectives), cinder mines, and hunters of bighorn sheep and the almost extinct Sonoran pronghorn antelope. For example, the few remaining bighorn sheep within the area sometimes are taken by rich sportsmen who spend thousands for "permits" obtained from government officials who have varying claims to authority.

Setting land aside is difficult enough in Mexico where law and custom dictate that ground must be used. And then there is the matter of demographics.

Mexico has a rapidly growing population, enormous poverty, and very little space for hungry peasants. The Pinacate, a volcanic jumble of black rock, no permanent water, scorching temperatures, and no history of year-round habitation—well, even the Pinacate begins to look like simply vacant land to Mexico City bureaucrats. Plots are readily assigned to phantom peasant communities that periodically erupt and then wither on its borders.

IT IS EASY to decry the destruction of natural places in Mexico. A casual airplane survey of Sonora will quickly reveal huge portions of the state being bulldozed in a desperate effort to create desert grassland for the historically overstocked cattle industry that has persistently grazed everything into dust.

Considering the hopeless finances of Mexico—a $100 billion foreign debt, a brutal rate of inflation, a peso that continues to sink like a stone—it is a kind of miracle that any effort exists to protect the Pinacate.

The federal representative of SARH, whose job it is to patrol the Pinacate, usually cannot afford gasoline for his truck. Fernando Lizarraga has graduate degrees, yet his wages in inflation-crazed Mexico are just about enough to pay the electric bill on the house where he lives with his wife and two children.

I have known similar government ecologists who have had to resort to smuggling merely to stay on the job and feed their families. And yet for years, Lizarraga has persisted in his efforts to save the Pinacate from the gnawing bites of peasants, ranchers, miners, poachers, bureaucrats, and drug dealers whose airfields salt the lavas. Just one more example of the madness the Pinacate evokes in people who have wandered into its harsh stone arms.

At the moment Pronatura, the Mexican equivalent of the Nature Conservancy, has made the Pinacate one of its focuses. And National Park Service people at neighboring Organ Pipe Cactus National Monument help out as much as they can.

There are almost weekly meetings with their Mexican counterparts. But little concrete action results from these contacts. Cooperative management is an idea that has yet to break through the fence that defines the border.

There is unlikely to be any magic solutions to the problems facing the Pinacate in a nation where the minimum wage is about four bucks a day, where half of the population is underemployed, where dreams of jobs draw people from the interior to the Mexican north. In the end, the only thing that may save the Pinacate is its adamant uselessness, its failure to be either spectacular like Yosemite Valley or ruinously fertile like the Iowa prairie.

The brutality of this landscape enables it to capture peoples' minds. The Pinacate that floods our dreams may be the stimulus to salvage the actual Pinacate that bakes under the desert sun.

DARKNESS FALLS and I am curled inside a sleeping circle near Cuervo tank. The small circle of stones surrounding me was left by someone to break the night winds a hundred years ago or 10,000 years ago. When? Hard to say here, where there is no nice stratigraphy of soils, where the wind sweeps everything clean and a stone chopper fashioned 20,000 years ago can be found lying next to an empty can of chilies tossed by a Mexican marching north to a job as an illegal alien in Los Angeles.

Below, a tree hangs over Cuervo tank, the green puddle of water trapped in a rock hole months ago when brief rains raked the mountain. I am on a flat, the ground smooth and punctured here and there by clumps of creosote slowly strangling in the embrace of the encroaching desert pavement.

The air is hot—a few miles south a scientist bagged a temperature of 134 degrees Fahrenheit in the early 1970s. A nighthawk rocks by just over my head and then the moon rises.

I got here by following an Indian trail and, as I fall asleep, there is no one around for miles. That is what the Pinacate means to people who have found their way into its black volcanic folds.

Because of the lavas, the geography here lacks the normal logic of drainage patterns etched on soft desert soils. For about 700 square miles or more, there is not one spring, not one bucket of living water.

The *tinajas* (holes in the rocks) trap some rain for months, or even years, depending on their location. Unless you know where they are, you won't find them. Even this scant water is uncertain.

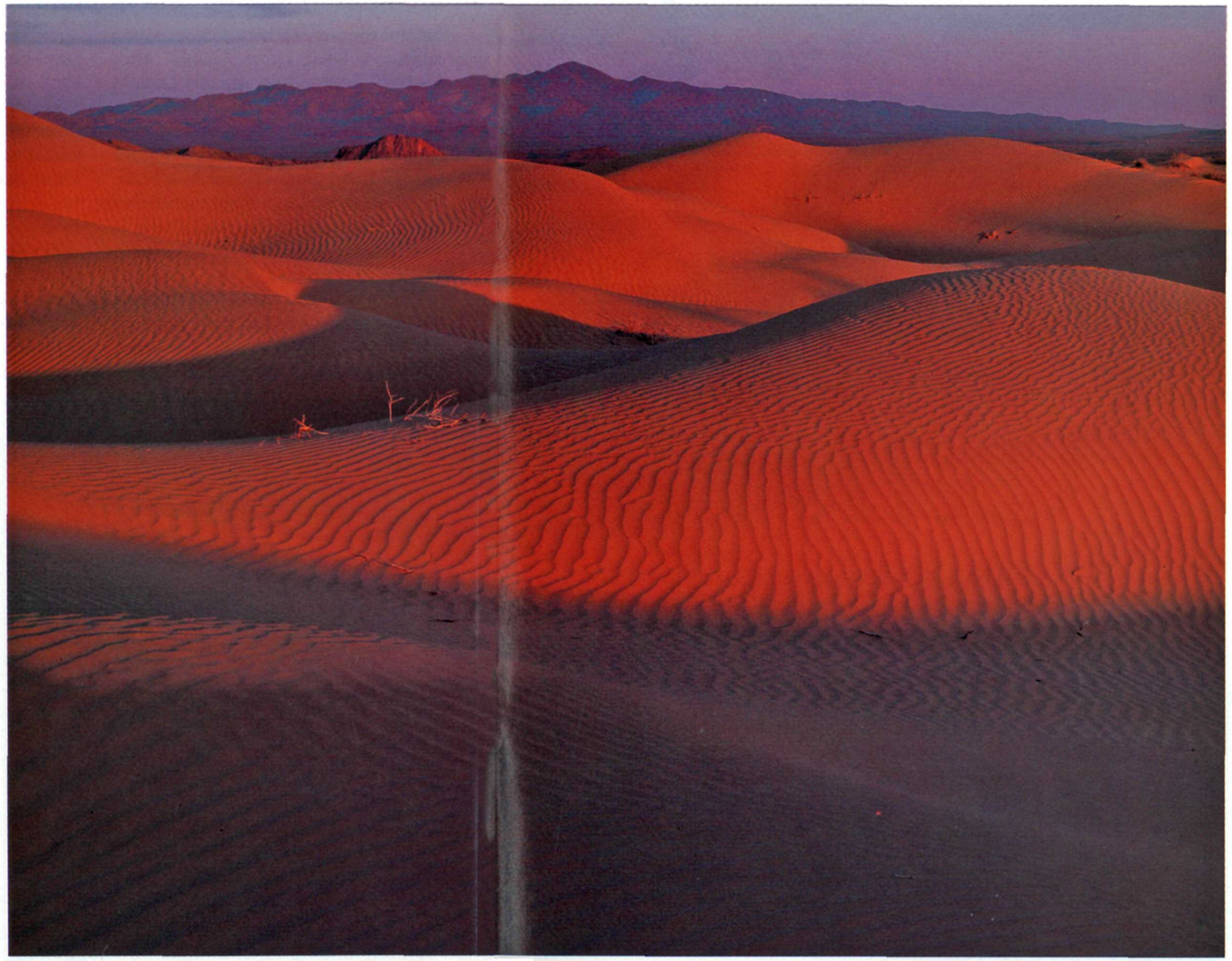
Ironwood, ocotillo, saguaro, the usual constellation of Sonoran desert plants, struggle to maintain toeholds. Once every couple of decades a bounty of winter rains causes an explosion of spring wildflowers. Bighorn sheep and pronghorns persist despite poachers. You can walk for days and days, tromp for a hundred miles and never see another person, or even a footprint.

A case can be made for protecting the Pinacate on the basis of odd species adapted to the black rock, or curious geology (all those craters, volcanic tubes, and tongues of lava), or even the millenia-old archeology which feeds the flames of the debate over how long human beings have been in this hemisphere.

The Pinacate has some of the most ancient Early Man sites in North America. And it may be the only place found in this hemisphere where early hunters were moved by some spirit in the beasts to cremate their kills. Ancient scorched bones can still be found near fires centuries dead.

Photographers now and then capture moments of stark beauty with their cameras, so an aesthetic defense is also possible. But these matters are really beside the point.

The Pinacate matters not because of what it contains, but because of what it causes to happen to us. And it has been happening for a long time.



Pinacate Peak defines the horizon and the dunes of the Gran Desierto.

I am in I'itoi's cave, his second home, high on the flank of the peaks. Geologists would describe it as a volcanic tube with a partially collapsed roof. A huge slab of honeycombed wax hangs from the dark ceiling and the roar of bees fills the air.

Up on the walls, I find old prayer sticks left by earlier supplicants. I wander through various chambers of the home and come upon bones perfectly settled in the dust. I climb out and look across the lavas to the sweep of the lower desert.

Dark lavas lick the base of the mountain, and flats of cinders fan out, the ground pebbled and black and spiked by brilliant clusters of desert trees, the yellow flowers of brittlebush, spikes of ocotillo dancing on green wands. A wash cuts into the desert, sleeping circles resting on its stone shoulders. Below, green puddles from rains a couple of months back, lie trapped in the rocks.

The terrain always seems like an echo of some other place, not one you can locate on a map, but more the landscape that faint memories suggest you walked across in a dream.

I do not have a thought in my head, not one. It has been probably 80 to 100 years since Tom Childs was here. But I do not believe this fact. I expect to turn around and see him sitting on a rock, his face as blank as my own.

After a couple of hours, I leave. When I go to sleep that night I cannot find a single footprint I have made across the desert pavement and the lavas. It is as if I have never really been here. That's probably why a big part of me never leaves.

As Ed Abbey finally decided:

> Well, then, you ask, what *is* the attraction? Why should anyone go out of his way to contemplate the Pinacate country? . . .Perhaps the explanation is that the appeal of the Pinacate lies in its total lack of any obvious appeal. In its emptiness. In its vast, desolate nothingness.

Charles Bowden, of Tucson, has written about the Southwest in Blue Desert *and other books and articles. His latest book,* Red Line, *will be published by W. W. Norton this fall.*

The American Canvas

THOMAS COLE GAVE US A FIRST GLIMPSE OF WILDERNESS

AT THE TIME Thomas Cole, the 19th-century American landscape artist, started grade school, he knew two things: He was going to be an artist and he was going to leave England, his birthplace, and emigrate to America. Even as a boy, Cole wanted to lose himself in the dark, lush American woods he read about in books.

"The great lakes, the flowery plains, the mighty forest, the Alleghenies, the broad rivers, kindled all his enthusiasm. He dreamed of them, talked of them, longed to cross the ocean, and behold them," wrote Louis L. Noble, Cole's minister and friend, who published the first biography of Cole in 1853.

MATHEW BRADY

Cole could not know then, in 1807, that his boyish longings would turn him into America's founding landscape painter. Nor that Cole's vision of the wilderness would inspire the first American painting tradition—the Hudson River School, which was founded in Catskill, New York.

Today, Catskill is a small, old town on the western bank of the Hudson River, 143 miles north of Manhattan. One of its few claims to fame is Cedar Grove, the old Thomas Cole house and studio, which, periodically, is the subject of some attention. Currently, congressional hearings on whether Cedar Grove should be designated as a national historic site are pending.

BY LYNNE BERTRAND

"Voyage of Life," Childhood (left) and Youth (below). The portrait of Cole (above) was one the first photographs of an artist.

Art historians have remarked that the Manhood segment of the "Voyage of Life" series is different from the others. It is filled with dark turbulence and angst. Some say this painting reflects Cole's feeling toward his own adult life.

Cole saw Cedar Grove in 1826, during his first summer in Catskill. It was one of the grandest homes in town—a big, brick Federal-style house with a wide porch and airy walk-through windows. The house was painted the palest yellow and surrounded on three sides by 88 acres of orchards. In time, Cole would live and work there, in a room down the hall from the owner of the house and his nieces.

Cole was 17 when his family left Bolton, England, for London and then Philadelphia. Later, they moved west to Steubenville, Ohio, and then east to Pittsburgh. His father, whose businesses were forever going under and whose family could barely make ends meet, wanted his only son to be a lawyer. But Cole was set on art and spent his time painting, frequently asking members of his family to model for portraits.

This conflict was a major problem in his youth. Once, according to Noble, Cole was "taking a solitary walk, unusually agitated by a recent conversation with his father. 'Well,' he said aloud, at the same moment picking up a couple of good-sized pebbles, 'I will put one of these upon the top of a stick. If I can throw and knock it off with the other, I will be a painter. If I miss it, I will give up the thought forever.'

"Stepping back some ten or 12 paces, he threw [the first stone] and knocked [the other stone] off. He turned and went home immediately and made known his unalterable resolution."

By November 1823, when he was 22 years old, Cole was bent on leaving his family in Pittsburgh and returning to Philadelphia to launch a career in art. Though saddened, his mother wrapped him in the only warm thing she had, the kitchen tablecloth, and then wished him well.

In Philadelphia, Cole caught what he called the blues. His rented room was so cold in the winter that he would trot up and down the alley outside, beating himself with his hands to get his blood running. He painted "scenes of frolic and drinking to sell in the barrooms," but his landscapes were simply not selling.

First, he was sick; then he was broke. At one point he was commissioned to produce a portrait of a dead man, then denied his pay because the figure's face was expressionless. With a surprising amount of fortitude, Cole kept on painting landscapes.

In order to be closer to the art world, Cole joined his parents in Manhattan in April 1825. His studio in the garret of his father's Greenwich Street house was so small that Cole could not move far enough from his work to view it in perspective.

Although portraits were the moneymakers of the day, Cole never was one

The "Voyage of Life" series (here, Old Age) was the most popular and successful of Cole's work. He produced a number of replicas that now are housed in different museums. These paintings are from the National Gallery of Art in Washington, D.C.

for painting people. Instead, he was taken with nature, being out in it and painting it.

George Bruen, an early patron, purchased some of Cole's early landscapes, which allowed Cole enough money to take time off and travel. It was inevitable that one day he would take a steamboat up the Hudson River to paint.

When he did, he found the Hudson River Valley to be a most magical place. Its margins were full of marshes and an endless variety of trees. Its banks rose to the Catskill Mountains and, farther north, to the Adirondacks. Cole returned from his trip with a full sketchbook and painted like a madman.

When he emerged, three Hudson River Valley landscapes were placed in the window of a Mr. Coleman's store in September 1825. These works were well reviewed by the critics and snatched up by two influential painters, John Trumbull and Asher Durand, for $25 each. (Noble writes that Cole would have considered $40 apiece fair compensation.)

One piece, "Lake with Dead Trees (Catskill)," shows a still, brown lake surrounded by decaying trees, a Cole hallmark. The painting suggests the passage of time, a sense of death. Matthew Baigell, an art historian at Rutgers University, remarked on its "feeling of sublime terror."

Those paintings established the moody style that became Cole's signature and, later, that of his followers. That sale, in1825, is now considered the start of the Hudson River School.

Cole's timing was right. By the 1830s, much of the eastern seaboard had been cleared and tilled for farming, the Erie Canal had been built, and much of the coast had been navigated. America had become an easier place in which to live, and the wealthy had time for art.

Up to this point, wealthy Americans went to Europe for doses of culture. Landscape paintings there—where practically every vista had already been mapped, gardened, or fought over—were tame and pastoral.

Americans knew a different landscape, but few of its artists had painted it. A magazine writer of the time said that patrons felt there wasn't anything worth hanging in the new country, except some of its residents.

Cole took his cue—not for him the gently rolling landscapes painted in Europe. Cole's image of wilderness came to represent the fiercely romantic, self-reliant spirit of the new United States.

In Cole's paintings, skies are filled with bright light or dark thunderclouds rolling across the canvas, water crashes down from high cliffs, boulders tip against broken, jagged trees, mountains are covered with fall colors.

"Falls of the Kaaterskill," like most

classic Cole, attests to the power of water crashing down a towering cliff. In that painting, Cole ignored tourists and the handrails constructed for them at the site and, in the tradition of the French romantic philospher Henri Rousseau, added a Native American on the bank.

Ellwood C. Parry III, a University of Arizona art professor who has just published *The Art of Thomas Cole: Ambition and Imagination*, compares Cole's art to the high drama of horror movies and sci-fi films, such as *Close Encounters of the Third Kind*. According to Parry, Cole had a cinematic imagination. Cole had the same sort of grandiose vision Cecil B. DeMille later applied to cinema.

Cole's most famous work, a four-painting series, called *The Voyage of Life*, tracks man through his four stages of life. The canvases have an allegorical Everyman quality, which is the tone Cole favored in his later work. This series, which was completed in 1840, expressed Cole's fascination with the transitory nature of life.

COMPARED TO the drama of his art, Cole himself was a retiring, shy sort—moody and sentimental. He hated crowds, avoided critics, denied interviews with the press, feared God, and played the part of a boyish and misunderstood artist.

A dry wit pervaded his letters. Painting the angel's face in the *Voyage of Life* series, he wrote, "Angels' visits to me are really so few and far between that I forget their features."

He took criticism hard and worked constantly. When he wasn't hiking the mountains of New York and New England with his odd, rising and falling stride, his sketchbook in hand, he was painting the vistas back in his studio.

When it got too dark at night for that, he wrote poems, stories, letters, and played the flute. The urge to work in peace took him—drove him—to move to Catskill in 1833.

John Alexander Thomson and his nieces were willing to take in a boarder at Cedar Grove. They gave Cole an upstairs room, where he started work on a five-canvas series about the rise and fall of a civilization, called *The Course of Empire*. These five paintings were finished in 1836.

DONELSON HOOPS

Cole was originally a boarder at the Catskill house that he made famous.

Although always busy, Cole allowed himself one distraction. He spent an unusual amount of time with Thomson's youngest niece Maria (pronounced Mariah) Bartow.

They often walked together in the Cedar Grove gardens and in the mountains of Catskill. She left flowers for him at his easel; he brought her gifts from New York. She read to him while he painted; he sketched her.

They were married in the west front parlor at Cedar Grove on November 22, 1836. He was 35; she was 23.

Living arrangements were cramped. Maria's sisters, who remained spinsters, bunked dormitory-style in one of the two large rooms upstairs. The Coles lived in the other and John Alexander Thomson took one of the parlors. More rooms were filled soon enough.

The Coles' first baby, Theodore, arrived at 6 a.m., New Year's Day, 1838. Mary was born a year later, in 1839, and Emily was born is 1843.

WITH COLE installed at Cedar Grove, the Catskills became a haunt for landscape painters, many of them Cole's friends and students. The best, Frederick Church, became one of the most famous of the Hudson River painters.

Church eventually traveled the world, painting huge canvases. The New York Metropolitan Museum of Art's John Howat wrote in his book, *Hudson River and Its Painters*, that Church's panoramic landscapes stood the art world and the general public on their ears when first shown in the late 1850s.

Albert Bierstadt, another second-generation Hudson painter, took his easel to the frontier West. His canvases depict such sweeping scenes as "Geysers in Yellowstone" and "Last of the Buffalo."

The list goes on: Jasper Cropsey, John Frederick Kennsett, Asher Durand, Thomas Moran, Thomas Doughty, John Casilear. Kevin Avery, assistant curator of American painting and sculpture at the Metropolitan Museum of Art, said that these men were a distinct community. They gathered formally at receptions and at annual exhibits of their work at the National Academy of Design, an organization Cole helped found.

Less formally, they lived near or with each other and often would go off, sketching and hiking together. Church lived with Cole; Cropsey lived in nearby Hastings-on-Hudson, and some Hudson painters shared space in a New York City studio.

Despite Cole's fame, no real fortune ever came to him. He was always struggling to bring in enough money to pay rent and feed the family. Parry thinks that the poor economy of the day limited Cole's financial success.

Others have suggested that Cole might have been a success if he had painted only landscapes, but he introduced allegory and moral lessons into his paintings. The public accepted them, but critics gave them mixed reviews. One blasted Cole's art as "sermons in green paint."

Meanwhile, his journals and sketchbooks reveal a tender picture of Cole's last years with his family. During this time he was sometimes ill, often blue, and, for many of his later years, feeling the weight of his own mortality.

On February 5, 1848, Cole washed his brushes and left his easel. He never went back to his studio. Pleurisy filled his lungs with fluid. The doctor employed every life-saving technique he knew, including bleeding Cole, to no avail.

Cole's beloved Hudson River was frozen over when he died at 47. No mourners could reach Catskill by steamboat for the funeral. That September, Maria gave

Continued on page 44

Spirits In Stone

ANCIENT ROCK ART FOUND THROUGHOUT THE PARKS

BY TIM BROWNING

FOR CENTURIES, Native Americans have used stone as a canvas. Today, their art remains as silent expressions from once-flourishing cultures that have long since disappeared.

Although its varied symbols remain, rock art's original meanings have been scattered by time. Archeologists struggle to interpret the art by studying both the artifacts associated with it and symbols that continue to appear in more modern cultures. Hunting scenes, stars, wildlife, and human-like figures are interpreted as cultural, religious, or ceremonial symbols, astronomical observations, or expressions of the supernatural.

"Rock art seems to say something beyond the material culture of the people who created it," says Canyonlands National Park archeologist Chaz Cartwright.

Petroglyphs and pictographs are the most commonly seen rock art forms. Petroglyph designs were etched onto a rock face or chipped away by bone chisels and rock hammers.

Pictographs are rock paintings, often displaying many colors. Native Americans crushed minerals to form pigments, which they mixed with water to create red, black, yellow, white, and blue paints. Some pictographs show the use of primitive paintbrushes fashioned from plant fibers, while others were created by simply spreading pigment onto a rock face by hand.

Native Americans also produced "negative" image pictographs by painting around an object, such as a hand or foot, on a rock surface. Common examples are found in El Morro NM and Virgin Islands NP.

Some of the best rock art museums in the country are found on the rock faces, canyon walls, and caves of our national parks. The following parks feature art from Anasazi to Spanish conquistadores, and landscapes from desert to tropical island. The sites described below are not specifically located for their own protection. Consult with park rangers for exact site locations and accessibility. This is just a start; the remaining parks that feature rock art are yours to discover.

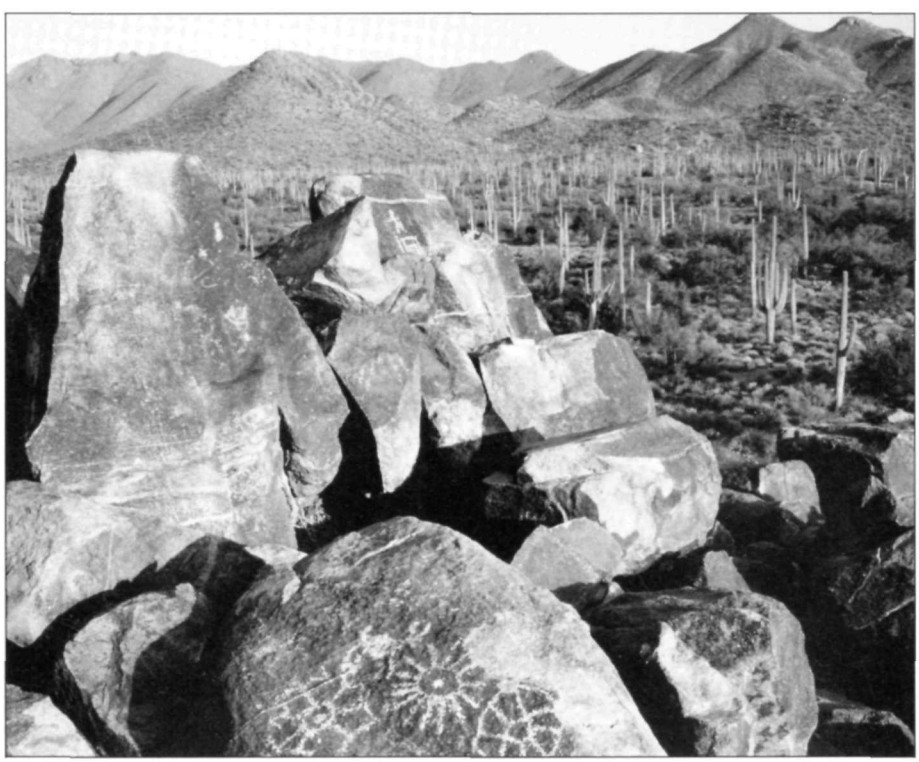
Canyonlands

Canyonlands' geologic history is reflected in a labyrinth of canyons, spires, and arches. The Utah park's isolated canyons and arid climate have helped preserve a broad array of Indian rock art and artifacts for thousands of years.

Visitors enter the park on U.S. 211, winding between petroglyph-etched canyon walls. Indian ruins and rock art sites are scattered throughout the park's remote canyons, including several striking polychromatic pictographs.

Only an able hiker could locate All-American Man, a rotund, smiling figure painted on a secluded wall in Salt Creek Canyon (see cover photo). The figure's

The Southwest's arid climate helped preserve ancient rock art in Arizona.



WILLARD CLAY

red, white, and blue-striped body conveys an uncanny sense of modern American patriotism.

Located in remote Horseshoe Canyon, the Great Gallery tops rock art's must-see list. Large, ghostly figures angle off in all directions along the 90-foot panel. Broad-shouldered, hollow-eyed figures, warring figures, and animals surround Kokopelli—a humpbacked, flute-playing character still seen in modern Pueblo lore.

Archeologists believe the Anasazi or an earlier nomadic culture created the panel. The Great Gallery was created apart from any significant ruins, which suggests the area was of special religious or ceremonial importance.

Newspaper Rock is also well worth viewing. Navajos called the rock outcropping "Tse Hane," or "rock that tells a story."

It's aptly named, featuring dozens of scenes etched into the sandstone: hunting scenes, wildlife, footprints, anthropomorphic characters, and geometric shapes. For more information, contact Canyonlands National Park, 125 West 200 South, Moab, UT 84532; (801) 259-7164.

El Morro

El Morro translates from Spanish as "headland," or "bluff." A 200-foot sandstone mesa, El Morro rises abruptly from the high desert plains of western New Mexico.

For centuries, Indians, Spanish conquistadores, and American pioneers were attracted to one of the isolated mesa's rock art panels. The petroglyph's meandering path of hand and footprints led thirsty wanderers to a basin of rare desert water.

El Morro's principal rock art feature is Inscription Rock, a panel of inscriptions and petroglyphs at the base of the mesa.

"Inscription Rock has approximately 2,000 different inscriptions," says Ranger Leslie Soldo. "The petroglyphs chronicle generations of travelers who camped at El Morro."

Soldo suggests the monument's earliest petroglyphs of deer, sheep, bear claws, and geometric shapes are connected to Anasazi ruins on the mesa rim.

Ornate names, dates, and poetry recount the building of missions and Spanish exploration of the New Mexican Territory. El Morro's final wave of inscriptions was created by westward-bound pioneers. For details, contact El Morro National Monument, Ramah, NM 87321; (505) 783-4226.

Chaco Culture

Also in New Mexico, this serene desert canyon houses prehistoric ruins that once served as a political and cultural center for the Anasazi.

In 500 A.D., the Anasazi made a crucial transition from a nomadic to an agrarian lifestyle. During their prime in the 11th century, the Anasazi built massive pueblo towns, established a network of roads hewn from stone, and developed innovative irrigation techniques. Despite these successes, the Anasazi declined within less than a century, probably victims of a prolonged drought.

The Chacoan Anasazi were prolific creators of rock art. Hunting scenes, wildlife, and celestial observations can be viewed from park trails. One celestial pictograph shows a star, crescent moon, and a handprint.

"The pictograph may have been an Anasazi sky-watching site, or, possibly, it records a supernova that exploded out of the Crab Nebula in 1054," says Ranger Bonnie Winslow.

This unique astronomical event would have been visible to Anasazi stargazers, and astronomers estimate the supernova would have coincided with a waning crescent moon, as the pictograph shows. For details, contact Chaco Culture National Historic Park, Star Route 4, Box 6500, Bloomfield, NM 87413; (505) 988-6716.

Amistad

Lake Amistad NRA in Texas is best known for its motor-boating opportunities, but it has also been called the Sistine Chapel of American Rock Art.

Amistad archeologist Joe Labadie estimates hunters and gatherers first inhabited this region along the Rio Grande in 8,000 B.C., creating some of the oldest and most impressive rock art panels in the New World.

TOM TILL

Utah's Freemont Indians typically drew a broad-shouldered human figure with earrings, headpiece, and shield.

Panther Cave is perhaps the most impressive of the area's more than 250 art sites. The panel was named after a 22-foot panther painted on a cave wall. The huge cat is surrounded by over 300 multicolored figures that are so crowded that some shapes are painted over previous drawings. Rangers provide directions to the cave, which requires a private boat to visit. For information, contact Amistad National Recreation Area, P.O. Box 420367, Del Rio, TX 78842; (512) 775-7491.

Virgin Islands National Park

The Virgin Islands were born of volcanic activity, a dramatic contrast to the existing string of lush islands set in an azure Caribbean Sea.

The islands' varied history includes migrating Indian cultures, Spanish explorers, pirates, and the Danish planters who eventually colonized some of the islands.

Island natives etched the park's major petroglyphs around a small freshwater pool at the base of a waterfall. Park rangers conduct guided tours along the islands' Reef Bay Trail, which follows a streambed to the site.

"The petroglyphs are anthropomorphic, with round, stylized faces," says park archeologist Judy Shafer.

For more information, contact Virgin Islands National Park, P.O. Box 7789, Charlotte Amalie, St. Thomas, VI 00801; (809) 775-6238.

Channel Islands

The Channel Islands rise precipitously from the coastal waters off southern California. The park's rocky, dry terrain hosts many species of sea birds, seals, and sea lions, some of them endemic to the islands.

In addition to their wildlife, the islands also contain a rich archeological past with numerous sites left by the ancient Chumash culture.

"The Chumash lived on both the mainland and the islands and, though hunters and gatherers, they managed to develop into a complex society," explains park archeologist Don Morris.

Morris estimates the island rock art was created between 3,000 and 5,000 B.C., which is consistent with Chumash sites on the mainland.

"The island Chumash appear to have retained a more traditional style, producing abstract designs, linear grooves, and simple crosses," says Morris. Rangers conduct guided tours to the islands, and will take interested visitors to rock art sites. For more information, contact Channel Islands National Park, 1901 Spinnaker Drive, Ventura, CA 93001; (805) 644-8157.

Tim Browning is currently writing a science-fiction novel set in the Southwest.

Rock Art

Etiquette

It's been centuries since an Anasazi artisan carefully applied the final etching on a petroglyph, or an archaic hunter dipped his hand in pigment to begin a pictograph.

Today, ancient art panels and their surrounding ruins tell archeologists the kinds of activities that occurred around a site, who lived there, and when the art was created.

"The measure of a site's importance is not in the treasure it contains, but what it can reveal about human behavior," says Wyoming archeologist Todd Guenther.

Sadly, many sites can no longer reveal anything. Unlike our modern art, which is roped off and enclosed in museums, rock art has always been vulnerable to natural wear and tear. Many sites have been destroyed by flash flood, rock exfoliation, and natural erosion.

Still, future preservation of rock art is most threatened by encroaching development. Expanding highways make once inaccessible sites easier to reach. While more people have a chance to see these sites, the risk increases for both intentional and unintentional vandalism.

Until recently, archeologists would not disclose site locations in order to prevent vandalism. But modern archeologists agree that a greater public understanding of rock art's historical significance and fragility are the best methods of preserving it. Today's national park interpreters inform visitors of both site locations, and the ancient art's relevance and fragility.

Rock art will enchance future generations of interested park visitors if we treat it with respect. Please do not touch rock art; pictographs can be irreparably damaged by simply touching the centuries-old pigments; do not mar the site in any way; and do not climb on surrounding ruins to get a closer look at the art.

Rock art represents a fragile link with our distant past and deserves the best treatment we can give it.

—Tim Browning

Using Nature As a Model

NPCA Initiates a Program To Teach Children About Parks

By Dianna Hunter

"If your toaster breaks and you take it apart, what do you do with the pieces?" Debbie Liggett, interpreter at Voyageurs National Park in northern Minnesota, asked a group of classroom teachers. The answer, of course, was, "Save them."

Saving the pieces, Liggett explained, is what biological diversity is all about.

Liggett and the teachers were field-testing a new curriculum designed to encourage elementary school students to visit national parks.

A related and equally important goal is to introduce students to critical environmental concepts, such as biological diversity—the wide variety of life forms that creates a healthy balance in any given environment.

Many of the program's activities explain the connection between biodiversity and the children's everyday lives.

For example, one exercise teaches students that each four-ounce hamburger they eat represents about 55 square feet, or a half ton, of tropical forest lost to cattle grazing.

"Some species are disappearing before they can be identified and before their importance to their ecosystem can be understood," says Carol Langer, a regional coordinator for the Minnesota Environmental Education Board (MEEB), which is organizing the environmental curriculum.

"It's been said that biological diversity is like the canary in the mineshaft," said Langer. "A decrease in the number of species in an area is a danger signal for its ecological balance."

The curriculum, entitled "Biological Diversity—It Makes a World of Difference," was initiated after a chance meeting on an airplane flight between Langer and another conservationist—Paul Pritchard, president of NPCA.

Langer explained that MEEB, a unique quasigovernmental and volunteer organization, produces educational materials, workshops, radio programs, videotapes, and conferences about environmental issues.

> *Biological Diversity—It Makes a World of Difference* is in a three-ring binder format and is 264 pages. The curriculum will be available in October 1989 through NPCA's Park Education Center, 1015 Thirty-first St., NW, Washington, D.C. 20007. For more information, please call Carol Langer, (218) 327-4445.

Pritchard told Langer that there is a need for educational materials to help the National Park Service reach out to classroom teachers.

Langer was intrigued, so she contacted Voyageurs National Park, and formed a steering committee of Minnesota environmentalists, scientists, and educators to begin a project. They decided to develop a curriculum that would be geared to grades four through six and would coincide with the 1989 National Park Service interpretive theme, biological diversity.

Neil DeJong, an interpreter at Voyageurs National Park, coordinated the project with Langer. Ed Hessler, of the Minnesota Environmental Sciences Foundation, wrote the curriculum.

The current curriculum has ten units. Some of the activities are designed for teachers' use in the classroom before and after park visits; some are for the use of park interpreters and teachers during class visits to the parks. The curriculum is adaptable, simple, and requires few purchased materials.

For instance, one activity—a biological diversity hunt—gives students cards with instructions such as, "Watch a plant for ten minutes and record the number and kinds of insects that visit it."

Another activity asks students to "Be an animal detective. Find evidence that animals have been in a particular spot." The species do not have to be identified, simply observed.

Many of the activities focus on interesting and simple observation—a reason this curriculum appeals to teachers in a variety of disciplines.

There are activities in language arts, mathematics, physical education, and social science, as well as in science. And, the activities apply to any park in the country. "The activities in the classroom will help the students understand their own backyards," Langer said.

Activities also help students understand terms such as "endangered" and "extinct." During field trips, rangers talk about the species their park is trying to preserve and the management efforts being done in these species' behalf.

The National Park Service, which funded the project's development, is

GOLDEN GATE NRA; RICHARD FREAR

also producing a 20-minute videotape to accompany the curriculum. And every year-round park interpreter will receive a copy of the curriculum. Teachers and others may order copies from NPCA, which printed the curriculum and will handle its distribution.

Dianna Hunter is a Minnesota freelance writer. Her book on that state's farming crisis will be published this autumn.

Whale Tales

NPCA members have sent nearly 5,000 petitions urging Secretary of Interior Manuel Lujan to protect the endangered humpback whale. The whales, who spend summers feeding off the coast of Alaska, returned this year to find Prince William Sound contaminated by last spring's massive oil spill.

Researchers are presently monitoring the Sound's whale population for possible displacement or other adverse reactions to the spill.

Wolf Tracks

Wolves should be returned to Yellowstone National Park and other natural habitats, according to park visitors recently polled by NPCA.

Last year, NPCA distributed informational brochures in several national parks as part of our Wolf Education Task Force. NPCA hopes the brochure will help dispel many myths about the grey wolf, *Canis lupus*—one of nature's most interesting, legendary, and misunderstood creatures.

Although the wolf once played an integral role in its ecosystem, serious wolf research did not begin until sometime in the 1940s. As a result, public perceptions were shaped by folktales' image of the "big, bad wolf." Wildlife managers regularly killed wolves both to protect game animals and in response to ranchers' complaints of wolf raids on livestock.

Between 1915 and 1942, nearly 25,000 wolves were killed in a federal predator control program. Today, the wolf is endangered in all of the contiguous United States except Minnesota.

Biologists have recently recognized that the wolf's absence has left a tremendous void in all its former ecosystems. While many ranchers and hunters—who compete with large predators for game—oppose reintroduction, national public opinion polls overwhelmingly support it.

One show of public support came from Ms. Barrack's third-grade class at Dogwood Elementary School, Smithtown, New York. The students wrote letters urging President Bush and Secretary of Interior Lujan to support protection and reintroduction programs. They also sent NPCA drawings of their favorite canine.

Representative Wayne Owens (D-Utah) recently introduced legislation to promote the grey wolf's recovery in the Greater Yellowstone ecosystem. Favorable public opinion will be crucial to its passage.

DOGWOOD ELEMENTARY; SMITHTOWN, NEW YORK

It's a Party!

Join us for dinner and dancing at National Parks and Conservation Association's Tenth Annual Members Reception and Dinner, to be held on Thursday, November 16, at the Grand Hyatt Hotel in Washington, D.C. For more information, contact Elliot Gruber, NPCA, 1015 Thirty-first St., NW, Washington, D.C. 20007, (202) 944-8548.

Owls, Hawks & Eagles

ANYONE WHO has witnessed a kettle of 5,000 broad-winged hawks or the sudden swooping kill of a sharp-shinned hawk knows the thrill and power of the raptor. More than other birds, the raptor families inspire almost mystical passions among birders. In a departure from information-only bird or raptor guides, a new pocket-sized book by Millie Miller and Cyndi Nelson captures the spirit of the raptor in a way that few others have.

Talons: North American Birds of Prey, one of the *Johnson Pocket Nature Guides*, covers all but eight of North America's hawks and, as a welcome addition, all of its owls. Miller and Nelson's finely painted raptors glide and sweep through the hand-lettered pages of the book, slicing at will through sentences and even carrying off range maps in their talons.

The folksy text, which describes the long-eared owl as a "real fly-by-night" bird and the culmination of a peregrine's stoop as a "fatal knuckle sandwich," almost disguises the well-informed description that gives any guide its lasting value.

Though too short to be a definitive guide, eccentric, and inexplicably ignoring eight of the lesser-known hawk species, *Talons* gives character to some of our favorite avian cousins; and it fills niches left vacant by the more traditional guides. In addition, a portion of the proceeds from *Talons* will benefit the Raptor Education Foundation in Aurora, Colorado. Other Johnson guides cover North American hummingbirds, mushrooms, and regional wildflowers.

Talons: North American Birds of Prey, by Millie Miller and Cyndi Nelson; Johnson Books, Boulder, CO; 1989; 34 pages, colored illustrations.

—James Toole

Pint-Sized Photography Book

There are no lack of how-to photograph books for beginning photographers, but *Travel Photography Pocket Mate* offers something else. First of all, it is pocket-sized and printed on extra heavy paper that can take abuse.

Secondly, it offers a wide range of the kind of technical information that you may need when you are out in the field shooting and then, later, when you are archiving or showing your photography.

For instance, the book explains the three different ways of using a flash or doing "stop action" photography, as well as how to store your slides, care for your equipment, or put together a slide presentation.

As writer Jason Rubinsteen says, "You don't have to be a professional to take terrific travel pictures, but it helps to think like one."

Travel Photography Pocket Mate by Jason Rubinsteen; Travel Photography Press, Inglewood, CA; 1987; 104 pages, black and white photographs.

***Talons, North American Birds of Prey:* eccentric, interesting, and small.**

Tracking Crime

This past summer, as part of a computer science internship, Sante Fe University graduate Betty Moore developed a program to simplify and standardize park ranger crime reports. It also creates a database on criminal activity that can be tapped by the entire park system.

Now, parks will be able to track and compare criminal activity, both within each park and within the system. The program is currently being reviewed in the Washington office as a model for a nationwide system.

Safe Syringe Disposal

Becton Dickinson, a medical supply company, produces syringes for the more than 2.3 million American diabetics who take insulin daily. Although hospitals and clinics have developed routine ways of disposing of used syringes, most patients at home have not.

In the face of public concern about medical waste washing up on beaches this spring, Becton Dickson began a year-long campaign for safe syringe disposal.

A mailing that explains safe syringe disposal has been sent to 600,000 people and more will be sent throughout the rest of the year. A letter on safe syringe disposal will also be included in every order they fill. For more information, call 1-800-237-4554.

Combating Global Warming

There is no doubt that the public is becoming more aware of impending environmental dangers, such as global warming. But that's not enough.

Americans will have to start changing their living habits radically to reverse destructive environmental patterns that are emerging.

There are 101 good suggestions on how to alter energy use available in "A Citizen's Guide to the Greenhouse Crisis," published by the new Greenhouse Crisis Foundation. The foundation has published the booklet as part of a three-year educational campaign to teach individuals how to reverse the global warming trend.

For instance, plant trees or a garden rather than a lawn; broad-leaved plants absorb more carbon dioxide than grasses. Or, don't buy fruits and vegetables out of season, since it takes additional carbon fuel to transport them to local markets. Buy a light-colored car with tinted windows; it requires less air-conditioning.

For your copy, write the Greenhouse Crisis Foundation, 1130 Seventeenth St. NW, Washington, D.C. 20036; or call (202) 466-2823.

Final Notes: A conference on Constructed Wetlands, Overland Flows, and Other Alternative Sewage Treatment Methods will be held in Albuquerque, N.M., September 21-22. For more information, contact Ted Brown, New Mexico Environmental Health Assn., P.O. Box 5281, Santa Fe, NM 87502; (505) 827-2790. . . .Open Space Connections, a national conference with workshops on open-space issues, will be held in Albuquerque, New Mexico, October 15-17. For more information, call (505) 823-4016 or write, 1989 National Open Space Conference, Parks and Recreation Department, P.O. Box 1293, Albuquerque, NM 87103. . . .The 16th annual natural areas conference will be held between October 17 and 20 in Knoxville, Tennessee. Topics will cover a wide range of issues, including global warming and design of natural areas. For more information, contact Eric S. Menges, Archbold Biological Station, P.O. Box 2057, Lake Placid, Florida 33852; (813) 465-2517. . . .The Department of the Army is publishing a new series of battlefield guides intended for self-guided tours or group study. The first book, *The Battle of New Market*, includes information on personnel, strategies, and the order of battle. These are not children's stories, but serious history intended "to enhance the professional development of Army officers." Available from the Government Printing Office, Washington, D.C. 20402-9325 (stock number 008-029-00187-0; $2.00).

THOMAS COLE

Continued from page 36

birth to their last child and named him Thomas.

While landscape art would change from panoramic to intimate and less dramatic subjects over the next decades, Cedar Grove passed hands from Cole's wife and sisters-in-law to his oldest son, and then from one Cole to another. The house went up for sale in 1979; at that time about three and a half acres remained of the original 88.

Cole's house and studio, Cedar Grove, was designated a national landmark in 1965. Donelson Hoopes, now director of the Thomas Cole Foundation, said the place just missed becoming a clutch of tract houses. Instead, the property was bought by three art collectors who saw an advertisement for it in the *New York Times.*

Since then, they have offered the house and grounds to the National Park Service. Estimates for repair and rehabilitation are $160,626; after that, it will cost approximately $180,000 a year to keep the site open.

Early in the 1980s, a private group began working to preserve the property. The National Park Service, in response, analyzed different preservation possibilities.

Unfortunately, these efforts collapsed when James Watt became secretary of Interior and canceled all new acquisitions.

The Cole Foundation now protects the property with the hope that it will be incorporated into the park system as recommended by NPCA's *National Park System Plan.*

By the end of 1989, Congress is expected to decide whether to designate Cedar Grove as a national historic site and part of the National Park System. A bill to designate the site was introduced by Representative Gerald B. Solomon (R-N.Y.) in both the 100th and 101st sessions of Congress.

"It's time we pay tribute to the creative people in the history of this country," wrote Solomon when soliciting support for his bill.

The congressman and NPCA believe that the inclusion of the Thomas Cole house would be a landmark decision. The move would welcome arts as part of the cultural heritage represented in our park system, where monuments to political leaders and battlefields now dominate.

The National Parks and Conservation Association supports the acquisition. Bruce Craig, NPCA's cultural resources coordinator, said, "The larger issue is not just the Cole site, but getting the National Park System to reflect national artistic movements in music, art, and literature. The Hudson River School is a good place to start."

The rooms of Cedar Grove stand now as they did then, but the house is nearly empty. A few pieces of furniture and the headquarters for the Cole Foundation

Cole introduced allegory into his paintings, and one critic blasted Cole's art as 'sermons in green paint.'

are kept at Cedar Grove with some of Cole's paints and brushes. There are three small galleries—on Cole, the Hudson River School, and the preservation of the house—open to the public.

The quiet stillness here seems odd, compared with the commotion that must have filled the house when the Cole family lived there.

In his last years, Thomas Cole moved his studio to a low-lying outbuilding that had been a bunkhouse for farmhands.

Today, that building still stands, but a second studio (decorated with the popular Italianate features of that time), does not. Only a few scattered foundation stones are left.

From the studios at Cedar Grove, Cole produced several hundred paintings, which, according to Parry, was the bulk of his work. His paintings, shipped by steamboat to New York galleries, won the heart of the American public.

Cole's dozen years at Cedar Grove also saw the Catskill-Canajoharie Railroad cut a rough slice through the woods north to Albany. The irritation of this intrusion turned him into one of America's first conservationists, as he stormed in prose, poetry, and speech about the offense.

"Beauty should be of some value among us," he wrote. "That where it is not necessary to destroy a tree or a grove, the hand of the woodsman should be checked."

The landscapes that were Cole's subjects are still intact and within easy walking and driving distance of Cedar Grove. Frederick Church's castle, "Olana," and other historic sites are also close by.

The house could be used, Craig says, as a center for the study of the Hudson River School of artists. It could also be used as a conference center and a gallery for contemporary Hudson River artists as well.

The house would be a tribute to Cole, the artist who brought respectability to American landscape painting.

So American were Cole's paintings that Philip Hone, a 19th-century collector, critic, and member of the National Academy of Design, wrote in his diary,"I think every American is bound to prove his love of country by admiring Cole."

Did Cole influence the idea of wilderness in America? "There are those who would argue he invented it," says Parry. Cole was hiking in and painting the mountains at a time when people were afraid to travel in them.

Perhaps it is as fitting a tribute to the Catskill artist who loved the deep rivers and dark forests of America that 23 years after he died, a young Hudson River School painter, Thomas Moran, headed west to paint the huge vistas of buttes and canyons of the newly explored American frontier.

Moran's watercolor sketches were some of the first images anyone had seen of the West. When Congress saw them, its members created our first national park, Yellowstone.

Lynne Bertrand is a freelance journalist living in Massachusetts and is currently writing nature stories for children.

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Monarchs of the Mist

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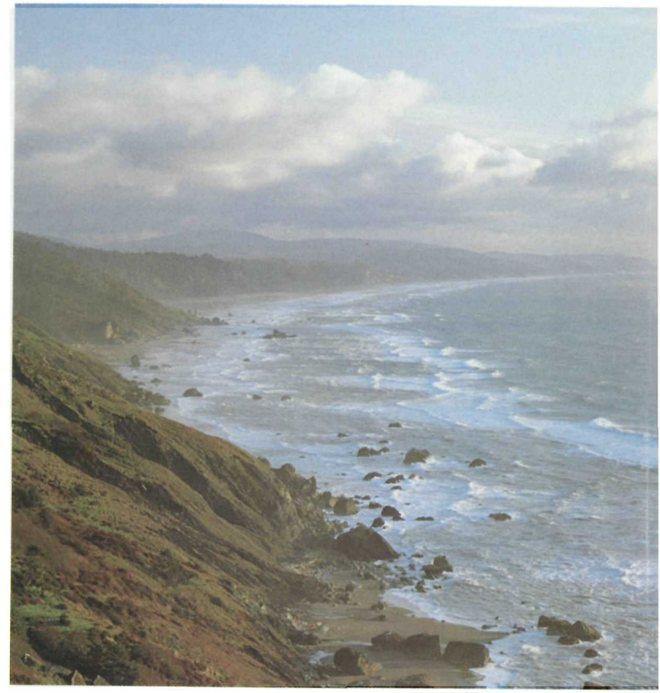

LARRY ULRICH

Top left: calypso orchid; left: redwood sorrel; upper right: Gold Bluffs Beach; lower right: rhododendrons, Last Chance Trail.

LARRY ULRICH

REDWOODS WERE once distributed over vast regions of the earth. Fossil records indicate that millions of years ago they were found in Europe and Asia and as far north as St. Lawrence Island on the Bering Sea, a place far too inhospitable today for redwood growth.

The world's tallest tree, a 367.8-foot-high redwood discovered in 1963 by the National Geographic Society, grows in Redwood National Park in California.

The life cycle of the coastal redwood begins between November and March when tiny male and female conelets are produced on different branches of the same tree. Pollination usually occurs in May; the winds blow the sulphur-colored pollen from the male cone to the female cone. When fertilized, the female cone matures in approximately five months.

Once released from their cones, redwood seeds tend to settle within 400 feet of the parent. And though a high wind can sometimes carry them far afield, the seeds usually germinate on duff or logs, in debris, or under vegetation gathered around the parent tree's base.

Redwoods also reproduce by sprouting, a rare characteristic of conifers. The sprouts result from the elongation of a dormant bud in the stem. Large woody masses of these form the burl tissue for which the tree is well known. Inside, their wood grain is intricate and beautiful. Some of these burl growths may weigh as much as 500 pounds, and, large or small, they are able to produce sprouts even when removed from the redwood's trunk.

The female redwood cones are smaller than a human thumbnail and it takes more than 200 of them to weigh a pound. Their seed is only 1/16th of an inch long, no bigger than a tomato seed, and yet it will produce a tree that may eventually weigh 500 tons and reach heights exceeding that of the Statue of Liberty.

In contrast to redwoods' great height and weight, they have a relatively shallow root system. Their roots extend outward perhaps 50 feet and downward only 6 to 10 feet. The bole, or trunk, that rises from this root system is usually quite straight, tapering to a spire at the top. Its base is flared, giving the tree additional support.

No known diseases kill mature trees. Nor do any insects seriously damage them. Fire, of course, is a serious danger to seedlings and younger trees, although the large mature redwood is quite fire tolerant. Examination of the growth rings of a tree that fell in Humboldt County in 1933 showed that it had survived no less than 10 fires in its 1,200-year lifespan.

Excerpted from Monarchs of the Mist, *by Joseph E. Brown; Coastal Parks Assoc.; from NPCA Park Education Center, 1015 Thirty-first St., NW, Washington, D.C. 20007; 44 pp, PB, $5.75 (includes postage/handling).*

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