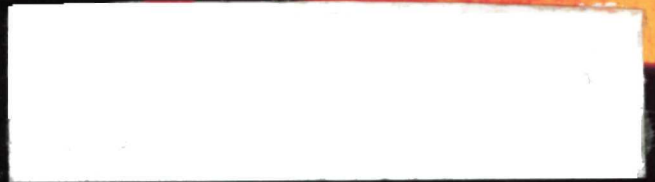
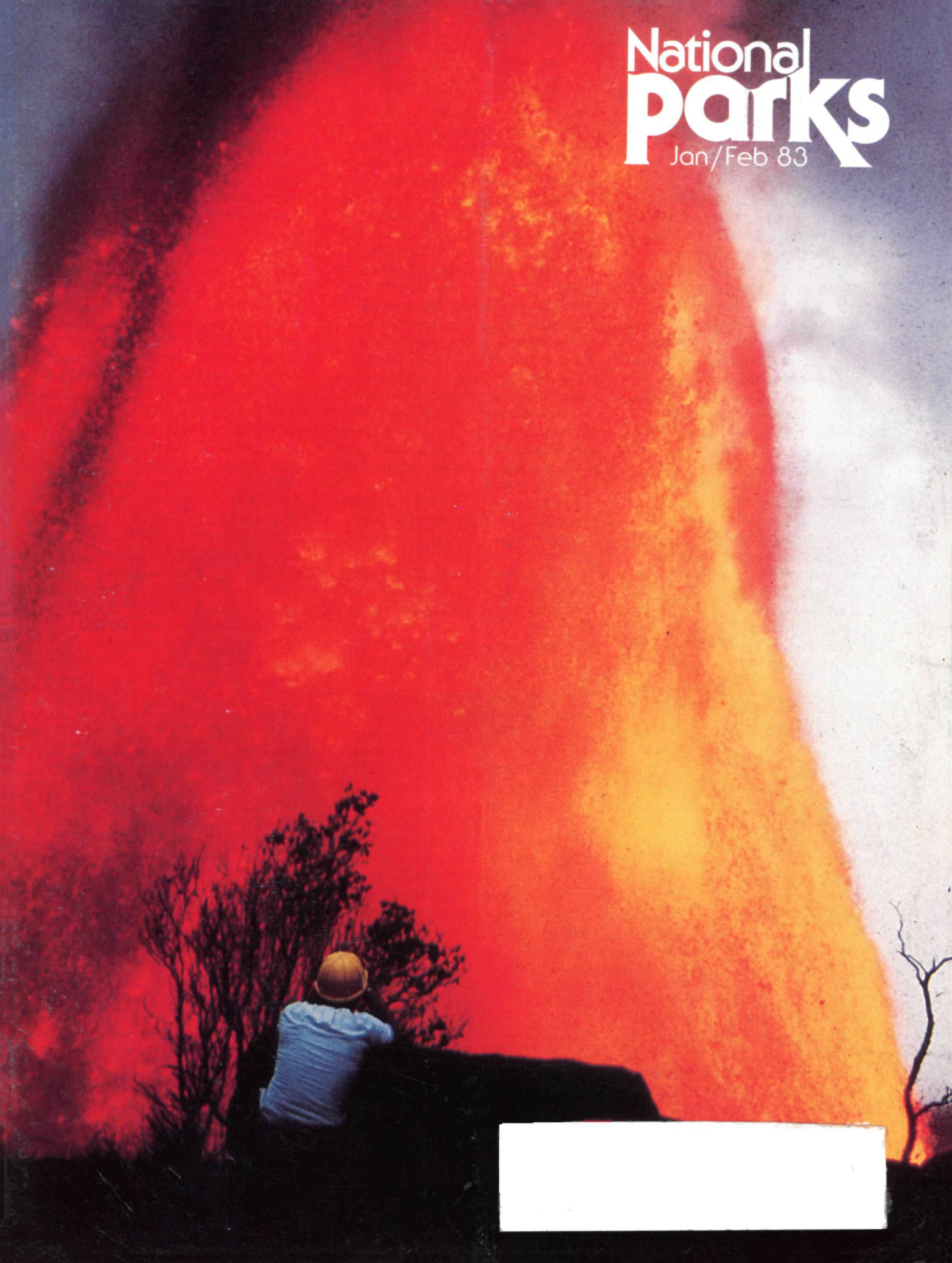


National parks

Jan/Feb 83



Commentary

Danger Ahead

The political-economic situation that confronts us in this country is charged with danger for our national parks. The danger arises from the sickness that grips the economy, and the destructive, reversionist governmental policies that derive from it. It is as if the ghosts of our exploitive past had come back to roost—and not only to roost, but to finish their job of despoiling the land.

Under the dynamic leadership of NPCA's president, Paul Pritchard, this association is meeting the situation head-on, aggressively and creatively. Centered on a restructured, revitalized Washington headquarters, NPCA is expanding into a powerful outreach organization.

Our traditional functions in the Washington arena continue unabated, but with a closer tie-in to what is happening "out there" at the local and regional levels.

In the Southwest, Russ Butcher and Terri Martin battle ill-conceived energy development and the proposed nuclear waste site near the entrance to Canyonlands National Park.

In the Midwest, Steve Burr campaigns for the concept of a Ranchland Trust to preserve the remnant prairie in the Flint Hills of Kansas.

Of prime significance is our new initiative designed to develop a nationwide security system to protect the parks. Labeled the National Parks Action Project, it is making gratifying headway in the hands of our grassroots coordinator, Jim Welsh.

A seminal strand in this growing network of relationships is the Mid-Atlantic Regional Council, directed by NPCA Vice Chairman Mary Carroll, who also heads our new National Parks Historical Advisory Committee.

Elsewhere, too, we are moving with determination and promise. *National Parks* magazine flourishes. Membership is up. So is funding. Our Carrying Capacity Program for

the parks proceeds apace. Staff efforts raised more than \$70,000 for facility restoration at Bandelier.

Conferences have become almost an NPCA way of life since our watershed get-together on "The Future of the Parks" at Jackson Hole in 1981, so admirably planned and executed by the staff and Vice Chairman Hank Phibbs. Last October, the first of the annual Freeman Tilden Awards—made possible through benefactor K.C. DenDooven—was given at the Cooperating Associations of the National Park System conclave at St. Louis. Coming up this year is a conference to be held in the Lüneburger Heide Nature Reserve of Germany to exchange preservation ideas. Slated for San Francisco is a convocation on the subject of urban parks.

A new and positive spirit animates our trustees as they move toward more personal and direct involvement in park matters. Their meetings now, when feasible, are combined with trips to the parks. Last year they were at Yosemite and San Francisco's Golden Gate. This year will see them at Independence National Historical Park in Philadelphia.

There is no dearth of problems engaging their attention: the breakdown of interpretive services, a persisting inholding dilemma rife with contention and misunderstanding, a scuttled acquisition program. These are to name but a few.

Our National Park System represents one of the towering achievements of history. It is a monument to that which transcends our human nature and is, perhaps, the clearest expression of the idealism at the base of American life. Like the cathedrals of the Middle Ages, it is a work of the spirit that should be revealed, cared for, and not left unfinished.

—Gilbert F. Stucker
Chairman of the Board

Editor's Note

Beginnings bring the challenge and excitement of new goals and new opportunities for innovation and experimentation. As we individually challenge ourselves anew and thereby grow, so, too, does NPCA sparkle with new ideas and plans for growth.

We who work on the magazine are planning the contents of issues many months in advance, and we think you will be pleased with our plans. Beginning with this issue, we are placing some of our service departments in the front of the magazine; and we are initiating a new one, "Members Corner," to tell you about upcoming special events, trips, publications, and anything else we think will benefit or intrigue you.

In this issue Senator Henry Jackson explains why the Reagan plan to make money by selling government lands is not such a good idea. You will explore a wilderness of lava and learn how volcanic eruptions are predicted. You will visit a strange lake in California that desperately needs help to survive. You will find out how exotic plants and animals are crowding out native species in the national parks. And you will learn the present status of pending legislation that will affect the air you breathe.

Have you ever wished you could live in a national park? Well, you can—at least for a while—by volunteering to work in various capacities. We'll tell you what it's like and how you can volunteer. We'll also tell you about opportunities for paid summer jobs in the national parks.

Finally, we'll keep you up to date in "NPCA Report" on the many projects NPCA is working on.

The next issue of *National Parks* will focus on the diversity and problems of the cultural resources in the National Park System. Watch for it!—EHC



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COVERS Front, Mauna Ulu eruption of Kilauea by U.S.G.S.

Back, HVO researchers, by Boone Morrison

**As the fire goddess creates fountains of lava in Hawaii Volcanoes National Park,
U.S. Geological Survey scientists conduct research dangerously near the eruption.**

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

ship dues, correspondence concerning subscription or changes of address, and postmaster notices or undeliverable copies to National Parks & Conservation Association, 1701 Eighteenth Street, NW, Washington, D.C. 20009. When changing address, please allow six weeks' advance notice and send the address label from your latest issue along with new address. *National Parks* is published bimonthly. Contributed manuscripts and photographs are welcome on speculation. They should be addressed to the Editor at Association headquarters and should be accompanied by a stamped, self-addressed envelope. No responsibility can be assumed for unsolicited material. Articles are published for educational purposes and do not necessarily reflect the views of this Association. Title registered U.S. Patent Office, Copyright © 1982 by National Parks & Conservation Association. Printed in the United States. Second-class postage paid at Washington, D.C., and at other offices.

Members Corner

Member Tours Announced

The new year begins with NPCA offering our members several exciting and educational national park tours. In March, NPCA members can tour Everglades National Park in Florida. The week-long trip will combine canoeing, birdwatching, walking, and snorkeling for a complete park experience. In May, we return to the New River in West Virginia for our fourth annual whitewater rafting trip. This day-long trip includes rafting some of the most exciting whitewater in the East.

August brings a two-week tour of Alaska, including Denali National Park and Glacier Bay National Park. This year, NPCA is seeking to bring our members the highest quality national park experience at the best price. More NPCA member tours are being planned—watch for further details.

Book Offer for Members

NPCA is making the beautiful, hardcover version of William H. Amos's *Wildlife of the Rivers* available to members at a reduced cost for a limited time. This educational book contains 183 color photos and 232 pages. *Wildlife of the Rivers* sells for \$18.95, but is available to NPCA members for \$16.10 (plus \$1.25 postage and handling). All orders should be sent to NPCA at the address listed below before March 1.

NPCA Slide Show

The slide/tape presentation on the national parks, which NPCA and the Garden Club of America sponsored, is now available. The show highlights the historic and natural beauty found in our parks and looks at current threats. It is available—on loan—to interested groups.

Members Corner

Members Corner will appear regularly to keep members informed of special offers, trips, and other benefits. For further information, write NPCA Public Affairs, 1701 18th St., NW, Washington, DC 20009.

Feedback

We're interested in what you have to say. Write Feedback, 1701 18th St., NW, Washington, DC 20009.

Mad About Utah Parks

Having visited and hiked to most of the lovely red slickrock attractions, I can sincerely appreciate your concern for their preservation.

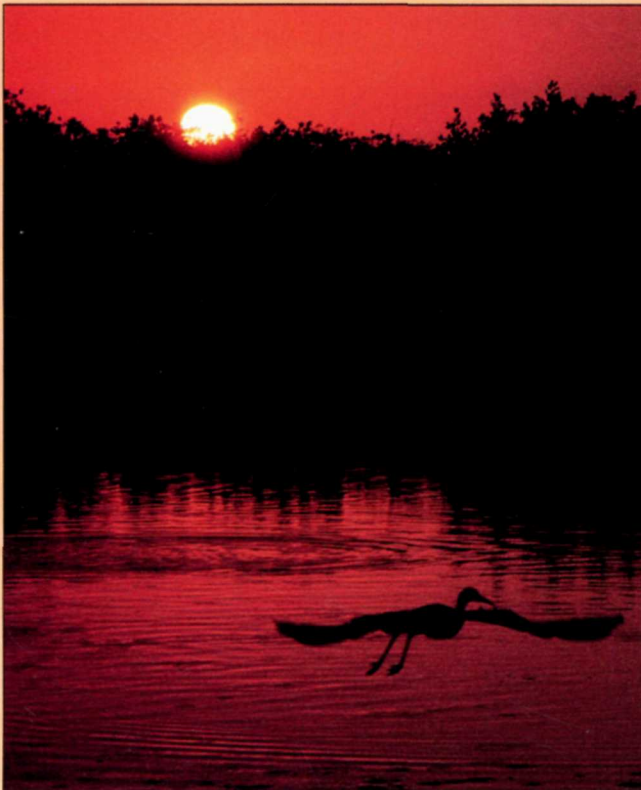
*Mary Chilton
San Antonio, Texas*

I'm fighting mad. I'm writing my congressman today!

*Mrs. A.F. Tuttle, Jr.
Martha's Vineyard, Mass.*

Might vs. Right

In regards "Watt's Wrong with the NPS" [September/October 1982], I would like to commend Leonard A. Frank for the letter he wrote. It's too bad that not everyone will state their true feelings. As for Mr. Dickenson, I feel that the park system needs



Sunrise at Mrazek Pond, by Connie Toops

NPCA presents: EVERGLADES/DRY TORTUGAS EXPLORATION, March 5-12

Experience Everglades National Park—a vast sweep of sawgrass, mangrove swamps, and tropical seas, teeming with wildlife. Swing through the Dry Tortugas, where warm Gulf of Mexico waters have favored the formation of coral reefs, fantastically arrayed with marine and aquatic plant life. This wide-ranging trip offers snorkeling, canoeing, hiking, and birdwatching. Join us for eight exciting days off the beaten path, on an adventure designed especially for NPCA members by Everglades Canoe Outfitters, the most experienced outfitters in the park.

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more leaders like him. If others would follow his examples, perhaps he would have enough supporters so no one would need to fear losing their job.

*Nadra Farina
San Diego, California*

Backyard Parks

Some of my neighbors have gathered together in an attempt to stop the deterioration of Fairmount Park, one of the largest city parks in the U.S. We anticipate the need of good advice in the political arena and in drawing up a list of requests for the park commission and city council.

The same may be going on in cities all over the country. I want to encourage you to develop and make available to others the expertise they will need to save the parkland that is right in their backyards.

*Milton Lادن
Philadelphia, Pennsylvania*

NPCA will be addressing these and related land protection issues in an upcoming publication. —Ed.

Dickenson Lauds NPCA

I am pleased to receive the donation of \$60,000 from the National Parks & Conservation Association to be used for restoration at Bandelier National Monument. I appreciate NPCA's efforts to raise funds for the preservation of our cultural heritage. This is a landmark effort in many respects. This project has not only identified the significance of historic structures in traditional archeological sites, but also focused attention on the important role played by the CCC in the construction of facilities in America's parks. The CCC design using regional architectural forms adapted to park use has weathered the test of time and is now recognized as an American architectural style.

I appreciate the tremendous support of individuals and businesses that you were able to muster for this new participatory activity of the American people with the National Park System.

*Russell E. Dickenson
Director, National Park Service*



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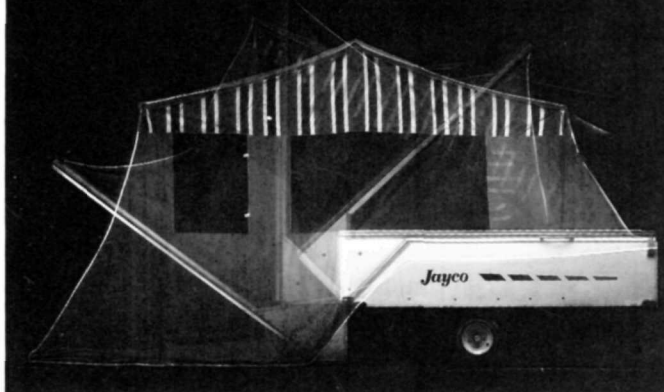
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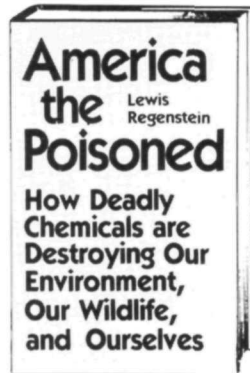
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Bookshelf

Wilderness and the American Mind, by Roderick Nash (New Haven: Yale University, 1982), 426 pages, \$25.00 cloth, \$7.95 paperback. According to Roderick Nash, "Wilderness was the basic ingredient of American civilization." In this third edition of his book, first published in 1967, Professor Nash examines America's changing concept of wilderness and analyzes the Grand Canyon Dam controversy, the national wild and scenic river system, and the impact of the 1980 Alaska National Interest Lands Conservation Act. In 1981, the editors of the *Los Angeles Times* listed *Wilderness and the American Mind* among the one hundred most influential books published in the United States in the last twenty-five years.

**Animals, Nature & Albert Schweitzer*, edited by Ann Cottrell Free (New York: The Albert Schweitzer Fellowship, 1982), 98 pages, \$4.50 paperback. In addition to being a philosopher, Albert Schweitzer was also a physician, musician, theologian, author, and is probably best known as the founder of the Schweitzer Hospital at Lambaréné, in Equatorial Africa. This small biography shows how his philosophy developed throughout his dedicated career.

**Wolves of Minong*, by Durward L. Allen (Boston: Houghton Mifflin Company, 1979), 500 pages, \$17.50 hardcover. In February 1949, a pack of breeding wolves took advantage of an ice jam on Lake Superior to cross the narrow stretch between Canada and Isle Royale, Michigan. Before the invasion of the wolves on that cold, wintry day in February, the island was inhabited mostly by a herd of moose and small carnivores. Because of overpopulation, the moose were destroying their food supply and were starving to death. The quiet arrival of the wolves onto Isle Royale National Park was an event welcomed by scientists. The wolves would control the moose population and offer scientists a unique opportunity to study the

predator/prey relationship of the wolf and moose in a limited geographic area. So, Isle Royale became an open air laboratory for author Durward Allen, who spearheaded the drive to set up the study, and the many graduate students who joined him during his eighteen-year study of the island's ecosystem. *Wolves of Minong* relates the story of those eighteen years on Isle Royale, offering insight into the workings of a wild community, and entertaining with amusing anecdotes and intriguing facts about the little-understood wolf, the moose, and the many other wild inhabitants of Isle Royale.

***Volcano Watching**, by Robert and Barbara Decker (Hawaii: Hawaii Natural History Association, 1980), 82 pages, \$5.95 softcover. *Volcano Watching* is an informative book on volcanoes, how they work, and where they are located on Hawaii and around the world. Robert and Barbara Decker tackle such questions as how hot lava is [from 500 to 1200 degrees Celsius], how areas devastated by lava revegetate, and whether the Hawaiian Islands are sinking. The text is well illustrated with superb color photographs and detailed graphs.

Trailside Plants of Hawaii's National Parks, by Charles H. Lamoureux (Hawaii: Hawaii Natural History Association, 1976), 82 pages, \$4.95 softcover. When the Hawaiian Islands rose from the sea some fifteen million years ago, they were nothing more than barren rocks with absolutely no vegetation. In time, plants grew on these rocks, plants that had been able to cross at least 2,000 miles of ocean. Their spores and seeds either floated on the water or were carried by wind or birds who made their way to Hawaii. From this haphazard beginning, close to 3,000 species and subspecies of endemic Hawaiian plants evolved. In *Trailside Plants of Hawaii's National Parks*, Professor Charles Lamoureux identifies 187 plants, providing a brief description of the plant and a color photograph. He tells where the plants can be found in each park and reveals unusual ways in which the plants have been used by native Hawaiians.

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ERRATUM

Correction for the 1981 NPCA Annual Report (*National Parks*, May/June 1982, page 9) reads, "... with no additional increase in percentage of expenses," rather than "... with no additional funds."

| STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (Required by 39 U.S.C. 3685) | | |
|---|--|-------------------------------------|
| Title of Publication: <i>National Parks</i> , Publication No. 373900 | | |
| Date of filing: October 15, 1982, Frequency of issue: <i>Bimonthly</i> , Annual Subscription Price: \$7.00 | | |
| Location of known office of publication: 1701 Eighteenth Street, NW, Washington, DC 20009 | | |
| Location of the headquarters of general business offices of the publishers (not printers): 1701 Eighteenth Street, NW, Washington, DC 20009 | | |
| Publisher: <i>National Parks & Conservation Association</i> , 1701 Eighteenth Street, NW, Washington, DC 20009 | | |
| Editor: <i>Eugenia Horsman Connolly</i> , 1701 Eighteenth Street, NW, Washington, DC 20009 | | |
| Managing Editor: <i>Same as above</i> | | |
| Owner: <i>National Parks & Conservation Association</i> , 1701 Eighteenth Street, NW, Washington, DC 20009 | | |
| Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, other securities: <i>None</i> | | |
| For completion by nonprofit organizations authorized to mail at special rates: <i>The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes have not changed during preceding twelve months.</i> | | |
| | Average no. copies each issue during preceding 12 months | Single issue nearest to filing date |
| Extent and nature of circulation | | |
| A. Total no. copies printed (Net Press Run) | 37,973 | 43,187 |
| B. Paid circulation | | |
| 1. Sales through dealers and carriers, street vendors, and counter sales | <i>None</i> | <i>None</i> |
| 2. Mail subscriptions | 33,375 | 34,214 |
| C. Total paid circulation | 33,375 | 34,214 |
| D. Free distribution by mail, carrier, or other means | | |
| Samples, complimentary, and other free copies | 250 | 178 |
| E. Total distribution (sum of C and D) | 33,634 | 34,392 |
| F. Copies not distributed | | |
| 1. Office use, left-over, unaccounted, spoiled after printing | 4,339 | 8,795 |
| 2. Returns from news agents | <i>None</i> | <i>None</i> |
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Europe

Iceland: 16 days, 6/17, 7/8, 8/5 • Islands/Highlands of Scotland: 21 days, 6/2, 7/14 • Switzerland: 17 days, 7/15, 8/12 • Greece: 19 days, 3/28, 9/19 • Spain: 20 days, 4/15, 9/16.

Asia and Africa

Japan: 23 days, 6/3 • Sri Lanka: 18 days, 2/18, 11/18 • Walking in Foothills of Western Himalayas: 23 days, 4/14 • Himalayas: Nepal, Sikkim & Bhutan: 19 days, 3/17, 10/6 • Kenya: 23 days, 2/3, 7/21, 10/20 • Zimbabwe & Botswana: 19 days, 5/26, 7/7, 10/13.

Oceania and Australasia

Australia & New Zealand: 28 days, 2/12, 10/1 • New Zealand & the Milford Track: 22 days, 2/11, 11/11 • Papua New Guinea: 22 days, 5/20, 8/5, 11/4.

Write for the 1983 Questers Directory of Worldwide Nature Tours. If a particular tour strikes your fancy, ask for its Detailed Itinerary.



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An intrepid young woman hikes to the summit of Earth's largest active shield volcano in Hawaii Volcanoes National Park, by Melinda Allan

Soloing Mauna Loa

Standing alone beside the *ahu* that marks Mauna Loa's 13,679-foot summit, I exult in the breathtaking vista of Mokuaweoweo Caldera, a huge pit that stretches three miles across. The panorama includes the peaks of neighbor Mauna Kea and of Haleakala National Park on the island of Maui, adrift on a sea of clouds in the distance. According to ancient Hawaiian legends, volcano goddess Pele dwells here on the island of Hawaii. A temperamental lady, she is quiescent today. Only a few puffs of smoke rising from the caldera's floor hint at the turmoil beneath this massive mountain, Earth's largest active shield volcano.

My euphoria was a mixture of pride at having gained this eminence after struggling many miles over rough terrain, plus some giddiness from the dizzying altitude. Hawaiians call Mauna Loa the "Long Mountain," an appropriate title. From the lookout at 6,662 feet, it's an eighteen-mile trek to the summit, a gradual but demanding climb. I stood at the rim longer than I had intended to stay, staring until the view became blurry.

A cold wind quickly brought me back to reality: I had to make the National Park Service patrol cabin before dark. Traveling over jagged *'a'a* lava would be hard enough, without the added complication of finding the *ahus*—rock cairn trail markers—in the dark. I zipped my sweatshirt against the chilling wind and put on a nylon jacket. Just twenty-five miles west, tourists

were basking in the warm sun at the beaches on the Kona coast, but tonight at this altitude the temperature would drop below freezing.

It was late afternoon, and my shadow walked ahead of me as I maneuvered slowly across chunks of lava. The trek back around North Pit seemed endless. When I finally reached the trail junction and retrieved my backpack, I was thoroughly winded. I lay beside my pack gulping the thin air like a dying fish. Oxygen brought quick relief, though, and soon I was ready to continue. An inviting stretch of smoother *pahoehoe* lava spread out beyond the junction. It seemed to be an easy two miles to the cabin.

Half an hour later, however, I stood shivering in the chill air. My heart was thumping from the exertion; my lungs were weary. I scanned the dusky cinder hills for some sign of my destination. Only a straight line of *ahus* stretched ahead, silhouetted against the horizon in the lingering twilight.

Now my feet protested the day's fifteen-plus miles of rough-rock backpacking. I had not allowed enough time for my body to become acclimatized to this elevation, and I had crammed too much exertion into this day. Ideally, Mauna Loa is a full five-day trip—two days up, two days down, and a layover day for climbing to the summit.

Long shadows crept across the desolate landscape. The only remaining light was a dim glow on the horizon left over from sunset, and a new crescent moon. Using a flash-

light, I stumbled from one *ahu* to the next.

Gloom settled over the mountain. I began to feel a glimmer of fear for the first time. I was alone here, except for fiery Madame Pele, who could set off an eruption at any time. On impulse, I called to her, but of course there was no answer. After all, Pele is only a myth. Then I saw a rounded shape ahead. The cabin!

I forgot about Pele as I tried to trudge faster. Six *ahus* later, I realized that it was just a pile of rocks assuming the appearance of a crude cabin. I should not have attempted to make both the summit and the cabin in the same day.

The night became unnervingly quiet. Even the wind was hushed. Lava wilderness stretched for miles in every direction. I had journeyed to this remote mountain seeking solitude and silence; now I had more than I cared for.

At last. Solid lines abrupt against the horizon. The cabin seemed close, but a short hill put it fifteen minutes away. I pushed the door open slowly, uncertain of what would be waiting in the blackness. I flashed my light from bunk to bunk. The cabin was deserted. I shucked the pack, spread my sleeping bag on the nearest bunk, and collapsed.

When I awoke, the sky was turning pink. Sunrise. I grabbed my camera and rushed outside. The land was still quiet but less eerie than the previous night. The sun burst free of lowland cloud cover and tinted the cabin roof and



James F. O'Brien, © NPCA



Photo by Melinda Allan

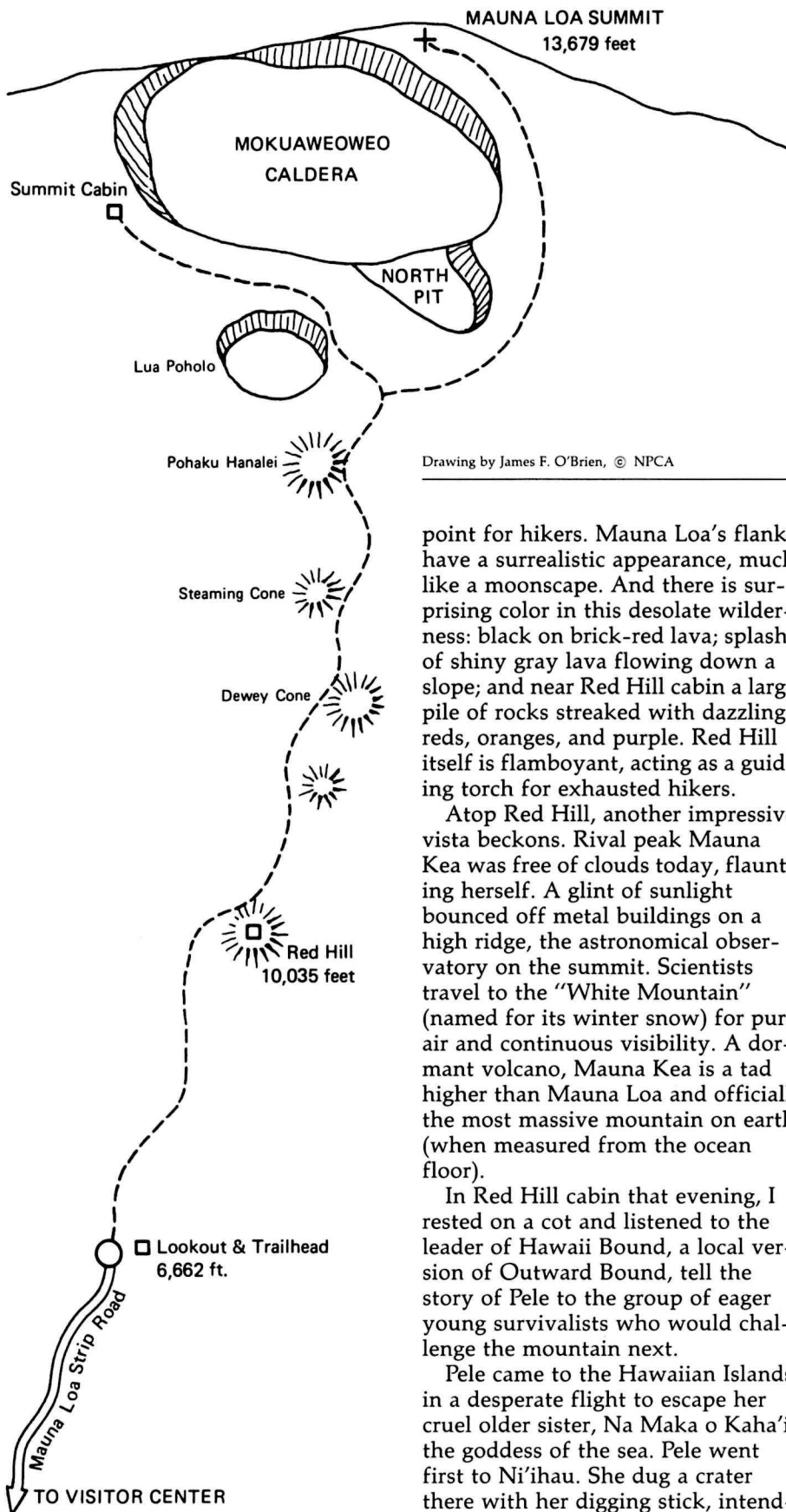
caldera rim with warm light. Everything else remained dingy. Orange glow gradually encompassed more and more of the terrain, but the air was still cold enough to send me hurrying back indoors for warmth. Inside, relief was only momentary. I realized that I had to go out into the cold again. With my camera still tucked inside my sweatshirt, I ran to the ramshackle outhouse. There was no door, but the view from within

was spectacular. A jumble of pink and gray lava rock extends to a ledge and halts. Beyond this rim the caldera was flooded by sunlight. Cheerful reds streaked the far wall, bold against the white haze and the turquoise sky. No wonder the door was gone.

Despite this missing door, the two cabins on Mauna Loa's slopes are well maintained. Fresh water is usually available at both cabins, de-

pending on rainfall and amount of use. In addition to furniture, a first-aid kit is available for emergencies. These cabins are exceptions to the rule against structures in wilderness areas; they are maintained primarily for the use of researchers from the Hawaiian Volcano Observatory.

Fantastic lava formations enliven the ten-mile trip back down to Red Hill, at 10,035 feet the halfway



Drawing by James F. O'Brien, © NPCA

From the trailhead at the lookout on Mauna Loa Strip Road, the round-trip hike to Mauna Loa's summit wends thirty-six miles through a desolate volcanic wilderness, with an overnight stop at Red Hill halfway up. The view at the top includes Mokuaweoweo Caldera, three miles across, and the distant peaks of Mauna Kea and Haleakala National Park.

point for hikers. Mauna Loa's flanks have a surrealistic appearance, much like a moonscape. And there is surprising color in this desolate wilderness: black on brick-red lava; splashes of shiny gray lava flowing down a slope; and near Red Hill cabin a large pile of rocks streaked with dazzling reds, oranges, and purple. Red Hill itself is flamboyant, acting as a guiding torch for exhausted hikers.

Atop Red Hill, another impressive vista beckons. Rival peak Mauna Kea was free of clouds today, flaunting herself. A glint of sunlight bounced off metal buildings on a high ridge, the astronomical observatory on the summit. Scientists travel to the "White Mountain" (named for its winter snow) for pure air and continuous visibility. A dormant volcano, Mauna Kea is a tad higher than Mauna Loa and officially the most massive mountain on earth (when measured from the ocean floor).

In Red Hill cabin that evening, I rested on a cot and listened to the leader of Hawaii Bound, a local version of Outward Bound, tell the story of Pele to the group of eager young survivalists who would challenge the mountain next.

Pele came to the Hawaiian Islands in a desperate flight to escape her cruel older sister, Na Maka o Kaha'i, the goddess of the sea. Pele went first to Ni'ihau. She dug a crater there with her digging stick, intending to stay. But Na Maka broke into

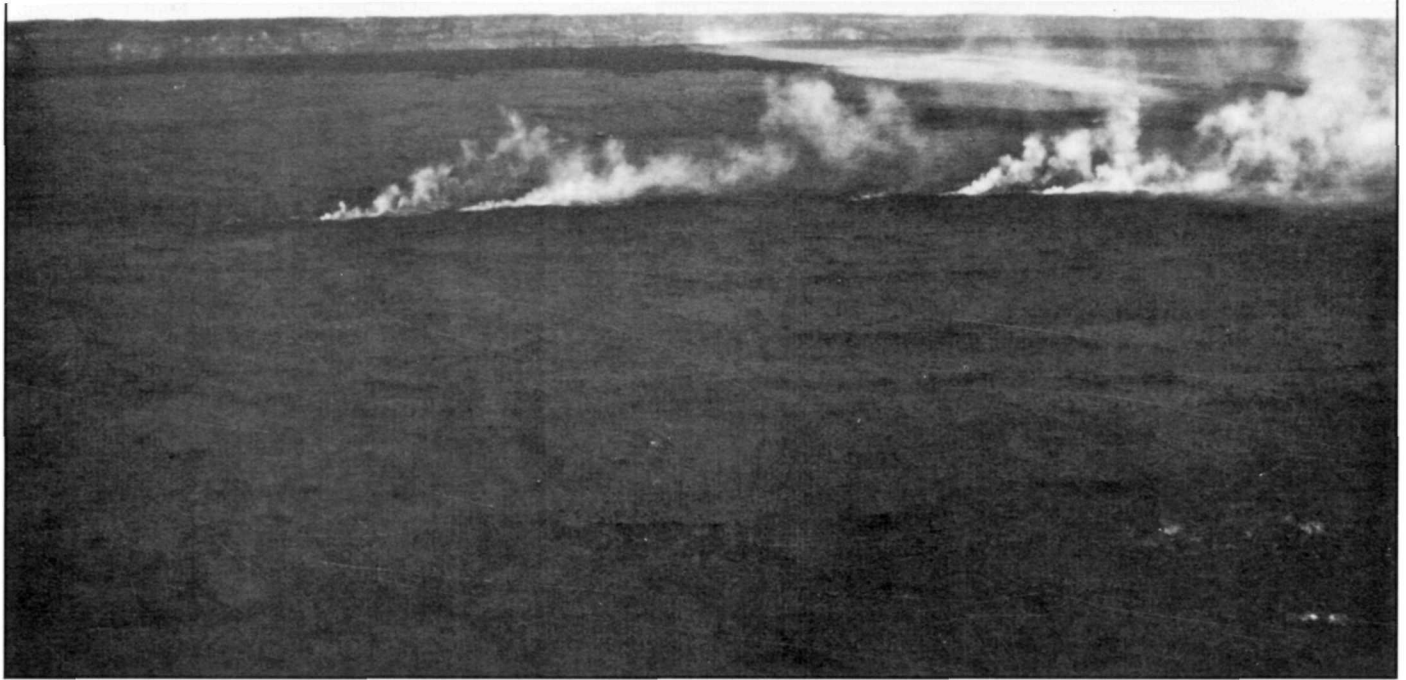
that shallow pit, forcing Pele to flee to another island. Pele fled to Kaua'i and built a larger house. However, Na Maka chased her away from there, too. Then Pele went to O'ahu, to Moloka'i, to Lana'i, to Koho'olawe, to Molokini, and to Maui. Each time Pele dug a crater, Na Maka drove her away.

Weary, Pele climbed high on the last island, Hawaii, and dug deep. There she found a refuge at last.

The storyteller explained that this legend represents the conflict between two important natural forces of the Pacific Islands—the eroding sea and island-forming volcanoes. The land is doomed to extinction, because the ocean crashes against the shorelines, continuously eroding them. Eventually even the Big Island will be worn down by wave action into a coral reef atoll and finally will disappear into Na Maka's domain. "Then," the leader droned, "Pele will seek a new refuge. A new volcano will start up in the sea, forming another island."

This Polynesian account of the succession of Pele's homes agrees with the relative ages geologists assign to the islands. Ni'ihau and Kaua'i are the oldest, and the Big Island is definitely the youngest. In fact, Hawaii is still growing, making inroads on the sea with new lava flows.

At midnight I awakened and stepped outdoors. The sky blazed with a trillion stars. A meteor ripped



Mokuaweoweo Caldera, by Melinda Allan

across the Milky Way, and I thought about the legend of Pele. I knew she is not real. On the other hand, I seemed to sense a presence, a power beneath my feet.

Next morning, after another spectacular sunrise, I collected my gear and made one last trip to the drip cave for fresh water. The cave is a short walk over Red Hill and down the far side. Water collects on the ceiling of the rocky overhang, then drips into a metal gutter that directs the flow into a big wooden barrel. Moss and ferns thrive in this dank grotto, permanently shielded from sunlight. The water is cold, musky, delicious. I filled my canteens from the barrel, then dipped a cupful to enjoy right away. This water, unlike that in the storage tank at the cabin, has never known chlorine.

The return trip was slow and easy. I lingered in Mauna Loa's wilderness backcountry, savoring the haunting solitude, the vast panoramas, the stark beauty. I tried to imagine the ancient Hawaiians who lived near the seacoasts venturing timidly up the mountainside to pay homage to Pele, whom they both loved and feared. She was not only the creator of all land here in the midst of the sea, but also the destroyer, sometimes taking lives and homes haphazardly with her eruptions.

Soon the barren terrain was behind me, and a few plants graced the trailsides. The lower trail follows pillows of reddish-pink *pahoehoe*

lava. Smooth and cushioned, it's fun to walk on. And its ropy-textured surface provides good tread.

Finally I descended to the open 'ohi'a forest, habitat of the rare Hawaiian goose called a *nene*. Flaming red 'ohi'a flowers greeted me near the trailhead. A sturdy fence keeps destructive wild goats out of Mauna Loa's wilderness area. I secured the gate tight against their intrusion into that delicately balanced ecosystem.

Later that afternoon, at park headquarters, I leave my backpack with the rangers and hike to Halemauau Crater, Pele's firepit inside Kilauea Caldera. The trail winds down from the visitor center through lush tree ferns, as high as my neck in places, with orchids blooming beneath them. The scent of ginger blossoms and the stench of sulphur intermingle in the forest air, and birdsong interrupts the silence.

I carry a handful of red 'ohelo berries, a traditional offering to the fire goddess. I toss them into the smoking firepit, then return carefully across the caldera floor, trying not to disturb her. "Step lightly, for you are on holy ground," the ancient Hawaiians said of places like this. I have begun to believe in Pele.

Freelancer Melinda Allan writes extensively about outdoor topics. She especially enjoyed her rugged but exhilarating 36-mile hike to the summit of Mauna Loa.

IF YOU GO . . .

- Train in advance for rigorous hiking.
- There is no charge—and no reservations are accepted—for overnight rest houses on Mauna Loa; first-come, first-served.
- At Park Headquarters register on arrival for use of the rest houses, check on trail conditions and water supplies, and buy a detailed map.
- Allow at least three days (better, five days) for the 36-mile round-trip hike to Mauna Loa's summit.
- Be completely self-sufficient when attempting Mauna Loa. Take your own stove, fuel, flashlight, supplies; include warm clothes and rain gear.
- For more information, write Superintendent, Hawaii Volcanoes National Park, HI 96718 (808/967-7311).
- To read about the geology, human history, and natural history of Hawaii Volcanoes before you go, write for a price list of publications to Hawaii Natural History Association, P.O. Box 74, Hawaii National Park, HI 96718.

Accurate predictions of volcanic eruptions help ensure the safety of visitors to Hawaii Volcanoes National Park, by Fred Gebhart

Monitoring Hawaii's Volcanoes



U.S. Geological Survey photograph by Norman Banks, 1982.

An Hawaiian Volcano Observatory researcher takes the temperature of an active lava flow on April 30, 1982.

"I felt the first quakes about 8:45," a park ranger says. "At 8:55, the call came to close the road and the crater trails." Two and one-half hours later, Kilauea began spewing red rivers of molten rock.

There was no panic, no injury, no fleeing the eruption; just the opposite at Kilauea, the world's only drive-in volcano. At least 45,000 visitors converged on Hawaii Volcanoes National Park during the next nineteen hours to watch lava fountains from only a few hundred yards away.

Kilauea Volcano, on the island of Hawaii, is the traditional home of Pele, Hawaii's legendary fire goddess. Now she shares her home with the U.S. Geological Survey's Hawaiian Volcano Observatory without complaint—probably because without HVO, Pele would fume alone.

It's easy to miss HVO's importance as you turn off Crater Rim Road. The small block buildings have a lived-in air, like a well-kept museum that may have seen better days. It *was* a museum once, more than forty years ago, as well as Park Headquarters. But the large picture window overlooking Halemaumau Crater, Kilauea's main crater inside the huge summit caldera, suits the scientists just fine.

The view inside the window is almost as other-worldly as the steaming firepit below: incomprehensible diagrams on the walls, banks of equipment reaching to the ceiling, and a row of old-fashioned machines marking white lines on slowly rotating black drums—seismographs, recording the earth-

quakes that never seem to stop. But that's all you can see, for the building is closed to the public. "We're a working lab," says twenty-four-year HVO veteran and Assistant Director Reggie Okamura. "There's just not enough room in there for tours."

Nor is there enough room for the twenty-five-odd staffers and their equipment. Boxes overflow offices and labs into corridors. Computer printouts and reports cover every horizontal surface, while walls are invisible behind charts, graphs, and some of the spectacular photos HVO has accumulated since it opened in 1912. The computer room is filled to bursting, and users must slip through narrow aisles sideways, like crabs. "Budget cuts," Okamura smiles sadly. "Our new building is still on paper."

It was this cramped tangle of cables and displays, backed by decades of staff experience, however, that told Chief Scientist Robert Decker when it was time to close the roads and trails the morning of Friday, April 30, 1982—and when it was safe to let the public back in a few hours later.

That day was Kilauea's third eruption since 1975, another perfect HVO prediction. Cameras had been locked in place long before anything could be seen on the surface. "The indications were so localized," Okamura grins, "that there was no way we could be off." And when the earth split open at 11:30 a.m., every lens was on target.

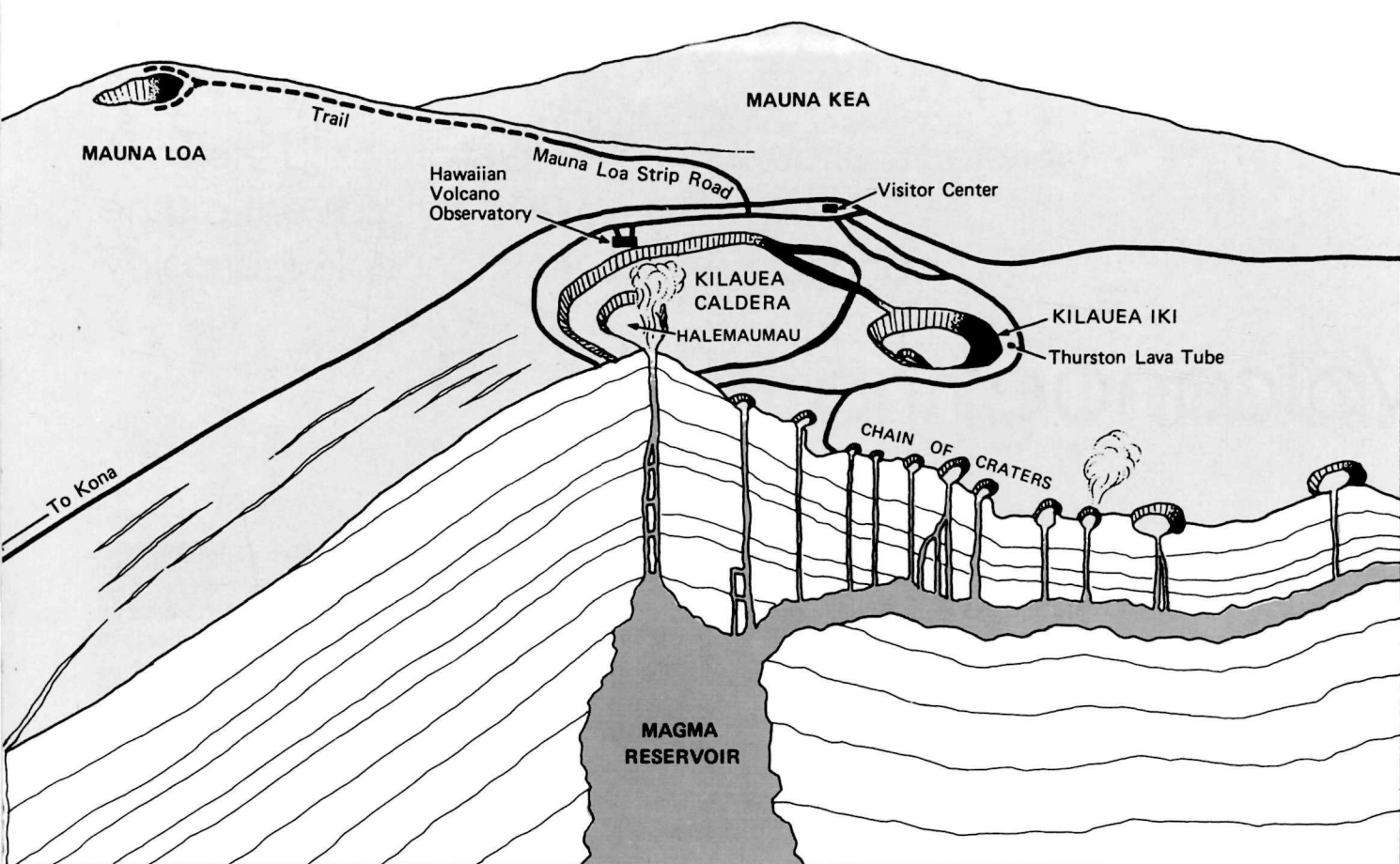
The "indications" came from instruments that can pick up changes of one part per million, about like making a martini with one drop of

vermouth to sixteen gallons of gin—and finding it not dry enough. The tiny measurements monitor tremendous but slowly moving forces. The earth's crust is broken into huge plates, drifting on a semi-liquid interior. Plates sometimes slip with a grinding, sliding motion, as along California's San Andreas fault. Other times, plates collide, crumpling into mountains like the Himalayas.

Most of the world's six hundred active volcanoes are concentrated along the "Ring of Fire"—plate boundaries around the rim of the Pacific Ocean. But Hawaii is in the *middle* of the Pacific Plate. A hot spot deep under the island forces magma, or molten rock, to the surface, much as a stove flame causes heated water to rise in a pot. The northwest drift of the Pacific Plate over the hot spot has created the Hawaiian Islands, part of a chain of largely submarine volcanoes stretching 6,000 kilometers to the Bering Sea.

Magma stretches and cracks the rock as it rises from reservoirs about sixty kilometers below the surface. Hundreds, sometimes thousands, of tiny earthquakes occur as the rock breaks. Most of the quakes are less than 2 on the Richter scale—much too small to be felt. A system of forty-six seismographs around the island pinpoints every vibration and its strength and shows whether it is pounding surf, an automobile, a hiker, or an earthquake. The jagged seismographic lines illustrate movements many kilometers below the surface.

When "solid" rock shifts up and



James F. O'Brien, © NPCA

out to make room for the rising magma, the mountain bulges, like a balloon being inflated. Measuring the bulge is an indirect way to take the volcano's blood pressure. Geodimeters use laser beams to measure changes in distance to the millimeter. Tiltmeters measure the change in slope to the microradian—the difference between level and placing a dime under the far end of a beam one kilometer long.

Other instruments track magma from local changes in gravity and magnetic field, as well as the reception of very low frequency radio waves from distant military installations. The chemical makeup of gases escaping from vents in the volcano and variations in the way rocks conduct electricity provide yet more information.

The first sign of the impending eruption came in November 1980. The caldera floor began to rise steadily. By August 1981, 44 million cubic meters of magma were stored beneath the crater. Suddenly, the instruments reported, the volcanic balloon began to deflate as magma

drained away. Just as suddenly the bulge was back as new magma moved up. "If the current tilt pattern continues for another six weeks," Decker predicted, "1982 is going to be a very good year."

A series of sharp earthquakes was recorded at 8:40 a.m. on April 30, 1982. It took only minutes to decide that magma was moving to the surface. A call went to Hawaii Volcanoes National Park Superintendent David Ames, suggesting that the crater floor be cleared of people and a section of the rim road be closed.

HVO "suggestions" are taken seriously. HVO data and researchers helped set up the Mount St. Helens evacuation zones that kept the death toll to sixty-one instead of thousands. During a 1971 eruption of Kilauea, HVO suggested that a viewing platform be closed; the platform fell into a lake of boiling lava an hour later.

"We couldn't run the park without HVO," Ames says flatly. "If we didn't have the observatory telling us, minute by minute, what is going to happen, we'd have to keep the public back ten or twenty times as

far, completely off the summit. If HVO moved out, we'd have to hire their staff or practically close the park." Pele's fireworks have killed only one person since the park opened in 1916. An explosion rocketed a boulder into a photographer in 1924—while he was in a restricted area—and he died from loss of blood from a severed artery in his leg.

Mid-plate volcanoes are relatively well-mannered. Kilauea seldom explodes, although it has blazed with 600-meter lava fountains. Lava—magma that has reached the surface—is usually thrown only a few meters or flows like mud, slowly, predictably.

"When the volcano rips open," Ames exclaims, "it's a real event. There's more excitement here than on the fifty-yard line at the Superbowl." Sightseers jam every road leading into the park. Busloads of tourists ignore interpretive displays to run for the nearest viewpoint, booing the announcement that the bus must continue on.

It is an equally busy, and more dangerous, time at HVO. An eruption offers a rare chance to sample



U.S. Geological Survey photograph

At the Hawaiian Volcano Observatory—perched on the edge of Kilauea Caldera overlooking Halemaumau Crater, home of the fire-goddess Pele—researchers study Hawaii’s seismic activity. As the Pacific Plate has moved over a hot spot, volcanoes have formed each Hawaiian island in succession. Even now, Kilauea (map, lower right black dot) is slowly dying as the plate carries the island north-westward; and Hawaii’s newest volcano—Loihi (lowest dot)—is forming 1,000 meters beneath the ocean surface. Someday Loihi will become an island, too.

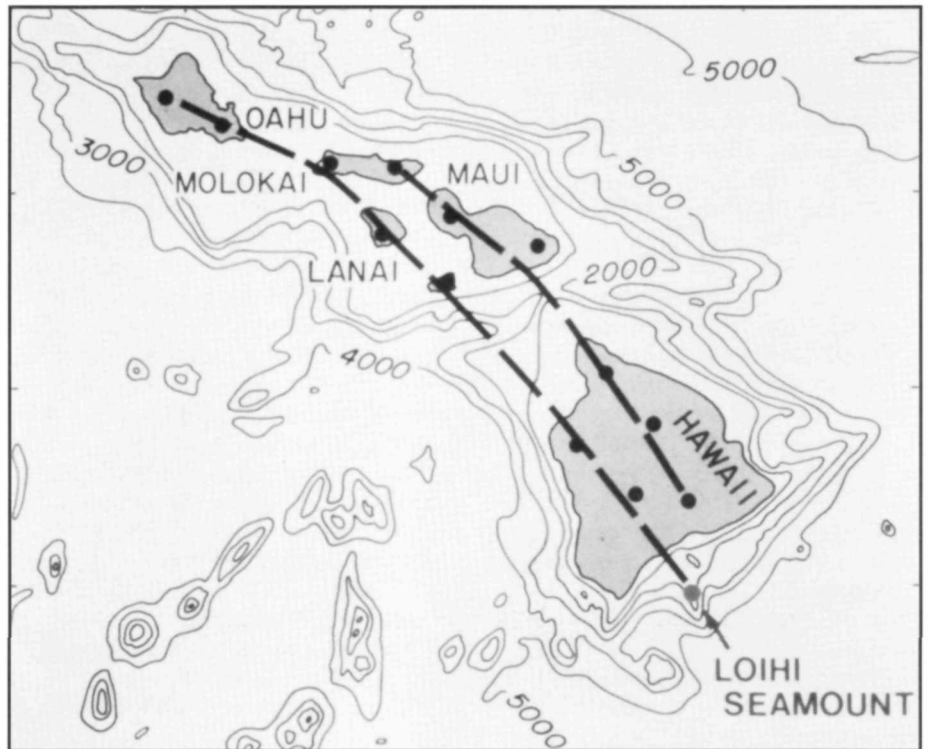


U.S. Geological Survey photo by J. D. Griggs, 1979

the planet’s molten interior directly, as well as its choking gases and 1200° C temperatures. New instruments have to be installed as the old ones are covered by meters of newborn rock. Observations and photography never stop.

“People always want to know two things about volcanoes,” an HVO seismologist noted. “If one is erupting: How soon will it stop? If it’s dormant: When will it erupt? The answer is the same in both cases: We are one day closer.”

Kilauea blew again with a short but spectacular summit eruption on September 25 and 26, with only a two-hour warning. And Kilauea’s next eruption is on the way. The caldera remains inflated. The balloon is still stretched to the breaking point with liquid fire. “David,” the HVO call will come, “it would be a good idea to close the rim road and clear the crater. Pele is on the loose again.”



U.S. Geological Survey

Freelancer Fred Gebhart has written for a wide variety of publications, including Lady's Circle, Skies West, and Westways.

Privatization and the National Parks

... a proposal to sell off America's public land will seriously affect the national parklands, by Senator Henry Jackson

FEW ASPECTS of the Reagan Presidency have been more controversial than its environmental record. Since assuming office in January 1981, President Reagan, primarily through Secretary of the Interior James Watt, Environmental Protection Agency Administrator Ann Gorsuch, and Department of Agriculture Assistant Secretary John Crowell, has initiated a plethora of environmental and natural resource-related policies and programs that have alarmed conservationists, congressional leaders, state and local politicians, and millions and millions of concerned Americans.

The list of this Administration's transgressions against the environment and against those who love and respect the outdoors is long. The Administration has—

- pledged to eliminate urban national parks and recreation areas, through the budgetary process;
- insisted on zero funding for the Historic Preservation Program and the Land and Water Conservation Fund (LWCF) state grant program;
- frozen acquisition of national parklands already authorized for inclusion in the National Park System by the Congress;
- sought to amend the LWCF Act to allow the money to be used for maintenance and rehabilitation rather than for acquisition of parklands;
- placed a moratorium on all new park area designations;
- encouraged oil and gas leasing in wilderness areas and actually issued leases in at least two existing wilderness areas; and
- proposed drastic increases in park entrance and user fees.

As drastic as these policies and programs are, I am even more con-

cerned about yet another proposal of this Administration—a proposal to sell the nation's public lands to the highest bidder. This proposal—whether it is termed "privatization," "asset management," or "good stewardship"—is really little more than a shortsighted attempt to mortgage the rich public-land heritage of the American people for a dubious short-term economic gain. In my view, this proposal, perhaps more than any other announced to date, has serious implications for the nation's parklands.

President Reagan signed Executive Order #12348 on February 25, 1982. This Executive Order directs each federal agency, including the departments of Interior and Agriculture, to inventory its landholdings to identify properties that might be sold to help reduce the federal deficit. The Federal Property Review Board created by the Executive Order is empowered to review and approve all federal real property transfers, including the conveyance of excess and surplus property under the Federal Property Act. The goals for the program were outlined in the President's FY 1983 budget, which anticipates that the land sales program will generate some \$17 billion over the next five years. Last May in testimony before the Senate Committee on Energy and Natural Resources, Secretary Watt said that as much as 35 million acres of the public's lands could be sold under this program.

Legislatively, the privatization concept came before the Congress in 1982 in the form of a Resolution, S.R. 231, introduced by Senator Percy.

As drafted, this Resolution, which was referred to the Senate Governmental Affairs Committee, would

have directly affected a variety of federal lands under the jurisdiction of the Secretary of the Interior and the Secretary of Agriculture as well as federal property administered by the General Services Administration. The inventory provisions, and presumably the subsequent "liquidation program," could affect (1) national preserves and recreation areas administered by the National Park Service; (2) national conservation and other special management areas such as the California Desert National Scenic Area administered by the Bureau of Land Management (BLM); (3) national recreation areas and other units of the National Forest System; (4) units of the Wild and Scenic Rivers and National Trails systems; and (5) all the public domain lands administered by the BLM.

Although the Administration and those supporting the Percy Resolution have disavowed any intention of disposing of "national treasures," S.R. 231 as drafted contemplated just that. Moreover, there is no ambiguity about the proposed fate of BLM and Forest Service lands. On February 25, 1982, in testimony on S.R. 231 before the Senate Governmental Affairs Committee, Office of Management and Budget Director David Stockman referred to much of the public domain and National Forest System as "residual property" having "potential for higher and better use in private ownership." This Resolution must be viewed as an attempt to reverse the congressionally established policy that most federal lands should be retained in federal public ownership and as affirmation of the Reagan Administration's misguided commitment to the Sagebrush Rebellion. Fortunately, no

further action was taken on this Resolution during the 97th Congress. Just before the Congress adjourned for the election recess, however, Senator Percy introduced a new bill, S. 2973, on behalf of the Administration which would make significant changes in the LWCF by earmarking funds from surplus property sales for reduction of the national debt rather than covering them into the Fund for acquisition of parklands. Both of these proposals should be monitored closely in the 98th Congress.

How does privatization threaten our national parks? In the first place,

Santa Monica Mountains National Recreation Area.

The most likely candidates for sale are parcels of BLM and Forest Service land. One immediate impact of this program is reflected in the current freeze on land exchanges pending the completion of the inventory and identification of potential tracts for sale. On the one hand, the Administration has been extolling the virtues of land exchanges as an alternative to fee acquisition of national parklands, while the most likely candidates for such exchanges have been placed off limits as potential revenue raisers for the sale program.

for exchange. I find it unlikely that such a pool of "leftover" lands would buy much in terms of park inholdings.

Another threat to the parks resulting from this program is the potential impact on lands adjacent to National Park System units. Since the issuance of the "State of the Parks Report" in 1980, increasing concern has been voiced regarding threats to parks from external forces. Air and water quality problems, noise pollution, increased traffic impacts, and increased industrial and residential development just outside national park boundaries are just some of the threats to park resources identified in this report.

Inasmuch as many national park units, especially in the West, are buffered by national forest or BLM lands, the conveyance of some of these lands into private ownership will only exacerbate these problems. Tracts of public-domain lands located adjacent to our national parks are likely to be prime candidates for purchase by developers and land speculators seeking to cash in on having a national park in their "backyard." Although national park units themselves may not be sold under this program, we may find that the impacts are just as real if other critical public lands that serve as park buffers wind up in private hands under the guise of "asset management." Moreover, privatization is a potential threat to the creation of new park units. The Great Basin and the California Desert, for example, are two areas with significant park potential that are threatened by the sale of large blocks of BLM land.

A second aspect of the asset management program—in addition to

Public-domain lands located adjacent to our national parks are likely to be prime candidates for purchase by developers and land speculators. . . .

I believe it is fair to say that the program does not envision direct sale of portions of existing units of the National Park System. Despite the inartful drafting of the Percy Resolution, Yellowstone National Park will not be sold to the highest bidder under this program. In some ways, the direct sale of the nation's "crown jewels" would be easier to combat than the existing proposal. Public outrage would be such that any direct assault on the National Park System would be met with fervent opposition. No, the potential impacts of this program on the national parks are more subtle than outright sale in most cases. There does seem to be, however, a continuing interest at Interior in deauthorizing certain NPS units, like

Right away one can see the inconsistency between two policies of this Administration. Exchanges have proven to be an important means of acquiring inholdings within park areas. With tight natural resource budgets likely to be the norm for the foreseeable future, this method of acquiring parklands has significant potential. Yet, this Administration's "privatization" program raises real questions about its commitment to an aggressive and meaningful exchange program in the near future.

Additionally, once the moratorium expires and the sale program proceeds, it is likely that the most desirable parcels—those most promising candidates for exchange—would be sold first, leaving only remnants to make up a pool of lands

selling the public lands—is the current moratorium and the Administration's policy regarding the conveyance or discounted sale of surplus or excess property to state and local governments and nonprofit entities. With only limited exceptions, the Reagan Administration, through the newly created Federal Property Review Board, has directed the General Services Administration not to assign or convey any federal real property for public discount conveyance.

This policy is clearly contrary to the intent of Congress when we enacted the Recreation and Public Purposes Act and the Federal Lands for Parks and Recreation Act of 1970.

It makes little sense to auction off prime federal property—especially in urban areas—to private developers when public recreation needs in these areas are going unmet.

This policy fails to recognize the multitude of public and private benefits that accrue to the American citizenry through the existence of quality recreation and park systems provided by state and local governments as well as by the federal government. This policy fails to recognize that this nation's park and recreation needs cannot be effectively met with money alone. As is true in the case of exchanges, the Administration, as a result of its privatization program, has embarked on patently inconsistent policies. On the one hand, the Administration has insisted on zero funding for the Land and Water Conservation Fund and the Urban Parks Program, and a moratorium on new national park units. Simultaneously, the Administration has curtailed recreation-related land conveyances to state and local governments that could be used in taking resource and visitor pressures off national park units. As state and local governments struggle to operate park and recreation systems without state grant money from the Land and Water Conservation Fund, the Reagan Administra-

tion is curtailing a very popular and proven low-cost program that could help to meet the recreation needs of the American people.

It makes little sense to auction off prime "surplus and excess" federal property—especially in urban areas—to private developers when public recreation needs in these areas are going unmet. For those of us struggling to come to grips with what the "new federalism" is all about, these conflicting policy directives are especially troublesome.

Still another factor that should be considered in this context is the disposition of the funds from the sale of these lands. Under existing law,

proceeds from sales of federal property go into the LWCF to be used for land acquisition for local, state, and national parks. As noted earlier, the Reagan Administration has proposed, however, to change the law and use these funds instead to "reduce the federal deficit." Although it is not clear exactly how the deficit will be reduced through such sales, the implications for the acquisition of new parklands are obvious. With both the federal and state sides of the LWCF already cut to the bone by Administration budget requests, this particular aspect of the privatization program seems to be little more than another effort to terminate another source of funding for parks.

Aside from these specific aspects of the federal land sales program, the privatization proposal is symptomatic of a larger threat to our country's park resources—this Administration's concept of "stewardship," which is cited as the rationale behind a number of misguided policy initiatives. Evidently, for Secretary Watt and others in the Reagan Administration, "stewardship" in the

context of privatization means getting the public lands in private hands as quickly as possible; "stewardship" means using funds from such sales for rehabilitating roads and buildings instead of for protecting wildlife or other park resources; "stewardship" means balancing the budget at the expense of acquiring critical park lands; and "stewardship" means balancing the budget at the expense of the recreation needs of state and local governments that have come to depend on the availability of surplus federal property to meet these needs.

Privatization is *not* stewardship. It is the beginning of a shortsighted and narrow-minded program to sell our precious public lands for a short-term monetary gain that can only bankrupt future generations of Americans who will need the public lands for recreation and relaxation. I am confident that many of us in the Congress will continue to scrutinize carefully and to oppose this dubious program.

Senator Henry M. Jackson (D-Wash.) is the ranking minority member of the Senate Committee on Energy and Natural Resources. As such, he is a key figure in all congressional legislation relating to energy, natural resources, and conservation. Recently, he sponsored legislation to protect the area around Mount St. Helens and to prohibit oil and gas leasing in existing and potential wilderness areas. As chairman of the Senate committees on Interior and Insular Affairs and Energy and Natural Resources from 1963 through 1980, Senator Jackson led the way to the creation and enlargement of countless units of the National Park System, including the Alaska National Interest Lands Conservation Act. He was also the author of the Federal Land Policy and Management Act, the Wilderness Act, the Wild and Scenic Rivers Act, the Youth Conservation Corps Act, and various other bills relating to energy and the environment.

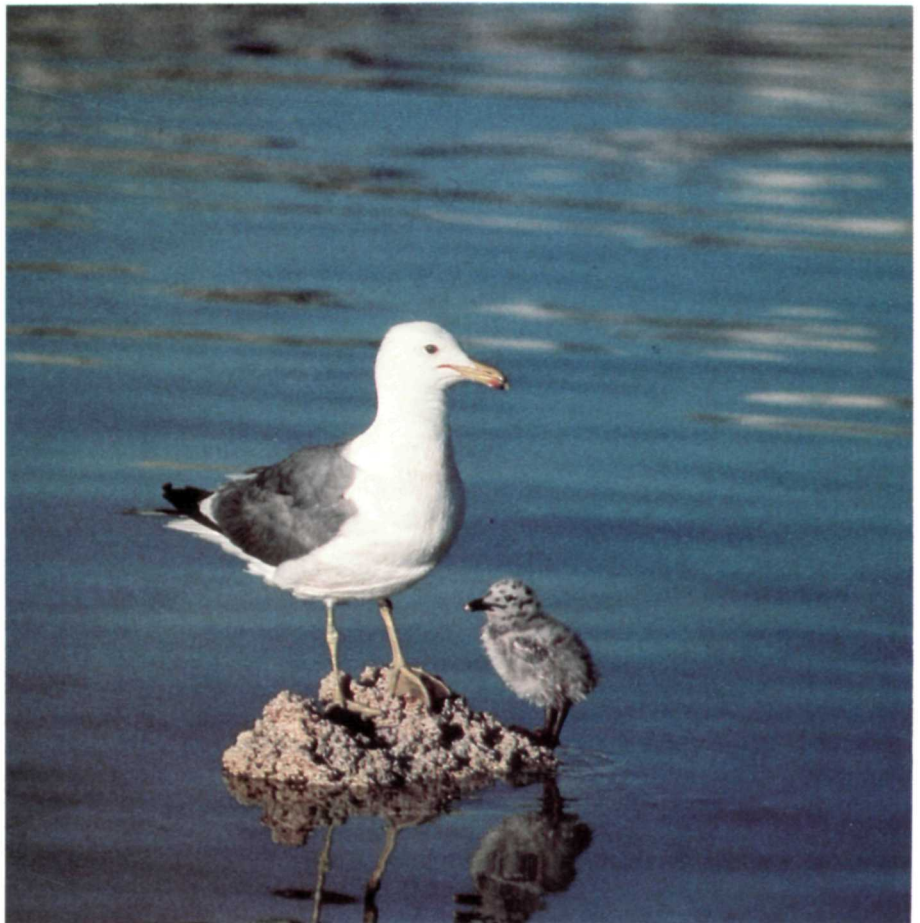
Mono Lake's Vanishing Act

Because of its insatiable thirst, Los Angeles is siphoning off the waters that feed Mono Lake. This breeding ground for thousands of gulls, grebes, and phalaropes may well disappear,

by Meredith Wiltsie

Mono Lake reminds one of the infinite. This vast inland sea, thirteen miles across by eight miles long, is an ancient feature of the eastern California landscape dating back to the formation of the Sierra Nevada. Shimmering under high-altitude sunlight and cradled between snowy summits and a chain of volcanoes, the cobalt-blue waters of Mono Lake seem life-giving, vibrant, and eternal. In the warm seasons Mono Lake boils with brine shrimp (*Artemia monica*)—15,000 of them in every square meter—and the sky seems to wheel with the flapping wings of thousands of birds. Ringed by the delicate green of a sagebrush plain, from a distance the view of Mono Lake shifts like a kaleidoscope with the wind and the multitude of wildlife attracted by its saline water. Isolated, with no outlet, the ice-age lake has lasted a million years, mystifying many who stop to explore its haunting beauty.

Looking across this turquoise desert sea to the bleak horizons of Nevada and the Great Basin, one can easily imagine a Paiute Indian chipping arrowheads from the native obsidian and explaining to his son the eternity of wind and water. The lake inspires such thoughts.



Michael Dressler, Mono Lake Committee

California gull and chick find refuge on a monticule of tufa.



James F. O'Brien © NPCA

Mono Lake takes its name from the Indians who lived along its shores—called Monachi by the Yaquis with whom they traded across the Sierra. In Yaqui, the name alluded to the tribe's main diet and trading goods—brine fly pupae, or *Ko-cha-bee* to the Monos. Huge numbers of these immature flies feed in the shallow waters at the shoreline; and the Monos would gather, dry, husk, and store the grainlike pupae to enliven a diet based on piñon nuts and wild seeds.

It is said that the Indians worshiped spirits that lived where fresh water bubbles from rocks in the middle of the lake's salt bed and where raging winds rise up without warning. More recent inhabitants lack that respect. The modern view across Mono Lake is quite different than any native dwellers once saw. Most strikingly, parts of the shoreline now bristle with legions of strange tufa stalagmites, some with bases in the water, others hundreds of feet from shore. Over the centuries, these tufa towers formed where freshwater springs bubbled up through the mineral-rich lake. Twenty years ago most of these spires were submerged; but today their ghostly figures stand exposed like a phantom army, gnawed by sun and capricious winds—eerie monuments to a day when Mono Lake was much bigger.

Mono Lake is dying. If action is not taken quickly to reduce

the diversions of its tributaries by the Los Angeles Department of Water and Power, the lake will soon shrink into a sterile, chemical sump surrounded by miles of quicksand and alkali dust flats. Powerful measures, such as national monument designation, are needed if this oasis is to survive against the monstrous thirst of southern California. The saddest part of the problem is that even modest water conservation efforts would be more than enough to save the lake.

Most threatened by the death of Mono Lake are tens of thousands of California gulls (*Larus californicus*), 20 percent of the species' total population. Every spring screeching flocks of these birds congregate on Mono Lake's desolate volcanic islands to nest and rear their young. Not only is the lake an aquatic refuge on their lengthy migration routes, but because fish cannot tolerate Mono's saline water, the graceful birds have no competition for the abundant brine shrimp, brine flies, and algae. These factors, and a scarcity of alternative sites, make Mono the largest gull rookery in the Pacific Coast states—and second only to the Great Salt Lake rookery. Other ocean birds like eared grebes, Wilson's phalaropes, northern phalaropes, and snowy plovers also depend on Mono Lake for a share of the briny invertebrates. More than eighty species of birds find a niche here.

In May and June as many as fifty



Mono Lake Committee.

thousand gulls can be feeding, chattering, and preparing for the hatch at Mono Lake. In the past, lucky ones found nesting space in the dark crater of Negit Island and were safe from coyotes and other nonwinged predators.

Because of intensive use of water, by 1977 the level of Mono Lake had dropped sufficiently to expose a land bridge connecting the mainland and Negit Island. Despite blasting done by the California National Guard to excavate a moat, in 1978 coyotes used the bridge to invade. In the ensuing chaos the gulls panicked and attacked each other's nests. Few

chicks survived. The 1981 hatch also suffered a devastating loss from yet another catastrophe. Significant drops in the population of brine shrimp had been recorded for 1980 and early 1981. In June and July of 1981, a critical time for baby gulls, there was such an extreme shortage of brine shrimp that 25,000 gull chicks (about 90 percent of the year's hatch) starved to death.

Is the brine shrimp population suffering from the increasing salinity and mineral content of Mono Lake caused by water diversions? Is there a maximum level of salinity that brine shrimp can tolerate? These

questions are critical to the future of life in and on Mono Lake, but they have not yet been conclusively answered. Numerous studies are being done on all aspects of Mono Lake—the gulls, the brine shrimp, the water itself—and many of the studies are sponsored by the Los Angeles Department of Water and Power. While these studies continue, so do the water diversions.

The fate of Mono Lake was sealed in the early part of this century by a few men interested in promoting the growth of Los Angeles. They realized the town had enormous po-

Mono Lake with the Sierra Nevada at its back: Negit Island (at left) was once a secure breeding ground for birds. Now, because Los Angeles has drawn off so much water, alkali flats encrust Mono's shoreline and form a land-bridge to Negit that allows coyotes and other predators to cross over and ravage the rookeries.



Tim Snyder, Sky King Photo

Gulls still swirl around the tufa formations that line Mono Lake. They feed themselves and their chicks on the lake's countless brine shrimp. In recent years, however, the water has been so saline that the hatch of brine shrimp has been low and thousands of chicks—about 90 percent of the 1981 hatch—starved to death.

tential, but only if they could find a large and dependable source of water. Without that, their dream would remain only chaparral and desert.

On the advice of William Mulholland and others, by 1940 the city government had purchased most of the land and water rights in the Mono Lake area and other eastern Sierra regions. Public money also built a 340-mile aqueduct south through the Owens Valley and across the Mojave Desert to Los Angeles. To fill it, four out of five major streams flowing into Mono Lake were diverted, along with all of the ill-fated Owens River. In the forty years since, the lush farms and orchards of Owens Valley have become a desert and Mono Lake has dropped forty-six feet to its lowest level in millennia. The amount of

water still flowing into Mono is negligible, and evaporation continues to drop the lake 39 inches annually.

The surface area of the lake has shrunk from 86 to 61 square miles, and 17,000 acres of alkali dust are now exposed to the winds. Despite this growing air pollution problem, the aqueduct's export power was increased by 50 percent in 1970, and the system is being used at its maximum capacity.

The Los Angeles Department of Water and Power (DWP) plans to continue diversions at current rates and believes the lake will stabilize at one-third of its pre-aqueduct size. Mono Lake is 9½ percent saline now; and it is estimated that the salt content will reach 15 percent by the year 2000 if present diversions

continue—a percentage some say is too high to support life. Many scientists argue that continued diversions will make the lake too saline to support the life chain; higher salt concentrations will affect the brine shrimp and—indirectly—many of the birds and animals that depend on them. Alkali dust is especially harmful and has been shown to cause significant morbidity in humans.

There is no easy solution to this environmental tragedy. Los Angeles long ago outgrew its own aquatic resources. The streams that once flowed into Mono Lake provide Los Angeles with 17 percent of its water; and, as this water rushes southward toward sea level, it generates 1 percent of the city's electricity. Land and water rights are legally owned

by the city of Los Angeles and by federal agencies such as the Bureau of Land Management; and all of the aqueduct, tunnels, and turbines have been paid for. Now, Mono Lake and the Owens Valley provide Los Angeles with a cheap and easy supply of water. Unless the DWP is forced by a court order or an act of Congress to return water to Mono Lake, concerned citizens have little recourse.

The debate over whether Mono Lake must maintain a certain level of water to support wildlife and to preserve its scenic heritage has raged for at least a decade. In 1978 the California Department of Water Resources created an Inter-Agency Task Force to study the situation. Included were the California departments of Water Resources and Fish and Game, the U.S. Bureau of Land Management, the U.S. Forest Service, the U.S. Fish and Wildlife Service, the Los Angeles Department of Water and Power, and Mono and Inyo county governments. Within a year the Task Force presented its report and urged the immediate reduction of diversions to the aqueduct, implementation of a water management program, and further research on environmental resources.

The Task Force representative from Los Angeles declined to sign the report.

The Los Angeles Department of Water and Power policy has created a groundswell of outrage concerning the lake's demise, and numerous suits have been filed to protect the "public's trust." One is currently before the California Supreme Court. Since 1978 a nonprofit citizens group called the Mono Lake Committee has been directing efforts to save Mono Lake and to urge the development and adoption of an overall water use plan in California. The Mono Lake Committee supports the Task Force's recommendations and has developed a plan for realistic compromise between the city's needs and the lake's survival.

The Committee insists that Los Angeles does not have to go thirsty to save Mono Lake. Small water conservation efforts by both city

dwellers and farmers could save the lake and other California bodies of water. Shower flow restrictors and toilet dams in every Los Angeles home would not limit time use but would conserve enough water to ensure a healthy future for Mono's brine shrimp and gulls. Reclaimed agricultural waste water would be another tremendous source of water for California. It is not a matter of having to do without to preserve our lakes and streams, but one of judicious and efficient application of the resources we have. The greatest tragedy for Mono Lake is that its fate is being determined more by

greed, ignorance, and waste than by any real environmental shortages.

As controversy continues, the lake drops steadily lower. Soon, fewer and fewer gulls will soar over Mono Lake, and someday the tufa towers will guard only alkali flats and a brackish puddle. Significant action must be taken soon if Mono Lake's shimmering expanse is to continue reflecting life.

Meredith Wiltsie, who lives on the eastern side of the Sierra in Bishop, California, leads treks in the Himalayas and is working on a book about Bangladesh.

Heavy Runoff Gives Mono Lake a Reprieve

Although the proposed legislation concerning Mono Lake is on hold until the 98th Congress takes it up, the lake has won a temporary reprieve. Thanks to an unusually heavy snowpack in the Sierra last winter and a wetter-than-usual summer, the volume of runoff was great enough to allow the Los Angeles Department of Water and Power (DWP) to be benevolent.

Since last summer, the DWP released more than 60,000 acre-feet of water into Mono Lake. In drier years water is tapped from Mono's feeder tributaries for the sole use of Los Angeles. This weather-related gain has elevated the lake's surface more than one-half foot above last year's level; but capricious climatic conditions do not provide a lasting solution to the problems of Mono Lake and its wildlife.

Representative John Sieberling (D-Ohio), chairman of the House Subcommittee on Public Lands and National Parks, recently visited Mono Lake to observe the areas proposed for national monument status. The visit related to future House activity on four separate bills, which would—

- Establish Mono Lake as a national monument and would include the Mono Craters as part of the natural geographic boundaries. NPCA supports this bill.

- Designate only Mono Lake as a national monument in the National Park System.
- Loosen Los Angeles' hold on the area by repealing the act that grants L A purchasing rights to lands surrounding Mono Lake.
- Guarantee Los Angeles' rights to water from Mono Lake's tributaries. The Los Angeles Department of Water and Power supports this bill and the Committee to Save Mono Lake is contesting the premise of the bill in court.

Los Angeles Aqueduct



Michael Dressler, Mono Lake Committee



EXOTICS IN THE PARKS

Feral goats and hogs, African iceplants, and other exotics are invading our national parks,

by Monica Goigel & Susan Bratton

A wrangler slams the gate on a "floating corral" and secures a small herd of burros huddling nervously together on a raft in the Colorado River. "Ready!" yells one of the raft's crew, and the vessel lurches into the surging currents that cut the massive walls of the Grand Canyon. The veterinary students who helped to inspect and load the burros watch with relief as the raft safely rounds the first bend and disappears down the rapids.

At a cost of hundreds and even thousands of dollars per animal, the National Park Service and a number of private organizations have been cooperating to remove nonnative burros from Grand Canyon National Park, Bandelier National Monument, and other important natural areas. The burro removals—which began with controversial shooting programs and evolved into sophisticated live captures followed by rafting, trucking, or even helicopter airlifts—are one of many ongoing attempts by the National Park Service to reduce the impact of "exotic" species on fragile and often irreplaceable park resources.

An "exotic" is a species of plant or animal transported by man to an area it did not originally inhabit. Inasmuch as National Park Service policy calls for the protection of native flora and fauna, exotics that harm native species are considered undesirable invaders of parklands. In the 1980 "State of the Parks Report" presented to Congress, more than three hundred park areas reported a total of 602 threats to park resources related to exotic species, only 30 percent of which were adequately

documented by scientific study. Some of the more serious problems, such as the European wild boar invasion in Great Smoky Mountains National Park, have received coverage by major newspapers, television networks, and conservation magazines. Others, such as encroachment of Japanese honeysuckle in many southeastern parks and monuments, are not well known to the public.

The roots of the problem with exotics date back to the fifteenth century, the beginning of the age of European exploration and colonization. Transported away from their native homes by sailors, traders, and colonists, many species came to flourish in new habitats, sometimes continents away from their original ranges. Sportsmen moved game animals to improve hunting and fishing. Agriculturalists brought domestic animals and crop plants to newly cleared sites. Ships full of grain and other produce accidentally conveyed insects, fungi, and weedy plants along with useful species. The past five hundred years have produced an unprecedented mixing of previously disjunct flora and fauna and hundreds of "invasions" by exotic species. Today, these processes are continuing to affect both the wildlands and the historic units of our National Park System.

"So what?" one might ask. "Invasion is a natural phenomenon. Species can alter their home ranges even without the help of man." Unfortunately, not only has man greatly increased the invasion rate and put species where they never could have

arrived on their own; but also some of the invaders have so changed natural ecosystems in national parks that populations of native species have been reduced or even extirpated.

Exotics can modify normal ecological processes or relationships, including predator-prey and herbivore-plant relationships; nutrient and energy cycles; and soil-building and erosion processes. Having left their usual predators and parasites at home, populations of exotics may overwhelm native species in their new environment and destroy resources critical to the survival of the native inhabitants.

The European wild boar, for example, arrived in North Carolina in 1912 (with the help of some wealthy hunters and a wild animal dealer in Berlin, Germany). The beasts soon escaped from the hunting preserve where they were first enclosed. Despite an epidemic of hog cholera and continual harassment from local hunters, they spread into the protected forests of Great Smoky Mountains National Park by the late 1940s.

Research evaluating the boars' impact on the Great Smokies indicates that the primary problem is the destruction of plants growing on the forest floor and attendant animal communities. In the most heavily damaged sites, the voracious pigs have reduced herbaceous ground cover as much as 98 percent. Rooting by hogs disturbs scenic spring wildflower areas and the rich turf of the mountaintop grassy balds. The wild boars also eat native animals, such as rodents and salamanders, and they



Photo by Susan Bratton

radically change the beds of leaf litter and loose surface soil important to small mammals such as voles and shrews. The hogs compete with native black bears for fruits and nuts, especially in the fall.

Herbivores on the loose in national parks include both feral animals (once-domestic animals now gone wild) and species introduced from wild stock. In either case, overgrazing by these animals is a common concern. Wild mountain goats, for example, introduced from Washington's Cascade Range into the state's Olympic Mountains between 1925 and 1929 already were adapted to the extreme weather conditions found on high ridges. Expanding to an estimated seven hundred individuals by 1980, the goats reduced plant cover, shifted the dominant species of plants to more grazing-resistant and less palatable varieties, and initiated severe soil erosion in fragile alpine areas. Goats are known to eat at least three rare species of plants endemic to the Olympic Range and could eventually cause the extinction of one or more of these species.

Because of short growing seasons and shallow soils, recovery of these delicate meadows will be slow once the vegetation is gone.

Predatory animals also end up where they don't belong and may raid nests or attack immature or adult individuals of native species. Mongooses brought from Africa to the Caribbean have devastated reptiles, amphibians, and ground-nesting birds. The mongoose is probably responsible for the demise of a population of rare lizards in Buck Island Reef National Monument, Virgin Islands; and the large number of mongooses on Buck Island itself has thwarted attempts to reintroduce the lizard.

Exotic fish introduced to improve sport fishing often outcompete native fishes. European brown trout and western rainbow trout brought to the Great Smoky Mountains are reducing the range of the Appalachian brook trout and could eventually limit the natives to a few streams, protected from invasion by high waterfalls. Ironically, eastern brook trout introduced to the

streams of western parks are causing similar problems by outcompeting species like the greenback cutthroat trout.

Exotic plants can supersede native flora and sometimes change entire landscapes. African iceplants have taken over eroded areas in Channel Islands National Park, California; and they effectively exclude rare natives, such as the giant coreopsis, a sunflowerlike shrub. Tamarisk, a native of the Mediterranean, has invaded springs and watercourses and has established dense thickets in several desert parks. The deep roots of the tamarisk lower the water table, thus eliminating sources of surface water essential to native wildlife. The Australian pine, introduced into Everglades National Park at the turn of the century, actually modifies the deposition of sand on beaches, thereby reducing nesting sites for the endangered American crocodile. Also at Everglades, melaleuca trees were introduced by a forester who liked the plant and flew over the area in 1936 dropping melaleuca seeds from his plane.

This immature rainbow trout has been netted from a stream in Great Smoky Mountains National Park, where rainbows and European brown trout are taking over the range of the native brook trout. Park Service staff and volunteers are using electroshock to temporarily stun fish in the water, so that exotic fishes can be removed and records of changes in a stream's fish populations can be made.

In light of the large number and variety of difficult problems concerning the invasion of our parks by exotics, conservationists and preservationists need to ask, What is the status of the struggle against exotic species? How well is the National Park Service (NPS) documenting the impacts and population dynamics of exotics? And what remains to be done?

The most prominent NPS success is the complete removal of burros from Grand Canyon by professional trapping. Similar efforts are underway to remove burros from Bandelier, misplaced mountain goats from Olympic, and the goats from the national parks in Hawaii. The burros, descendants of miners' pack animals, will return to a domestic existence with people who wish to adopt them. In the study concerning mountain goats at Olympic, the NPS removes 50 to 60 goats per year and relocates them to suitable wild habitats within their original range. Within the National Park System as a whole, however, management efforts have fallen far short of their goals.

The impacts of feral burros, goats, and pigs on Virgin Islands National Park are largely unknown, for instance. Park biologists have started a radio tracking study—with twenty burros wearing transmitters—to trace movements of the animals across the mountainous island of St. John; and they intend to follow this work with a study of burro-caused vegetation and soil disturbance. Inasmuch as burros were once widely used as pack animals by inhabitants

of the islands and are still thought of as part of island culture, an important element of the Virgin Islands research effort will be to determine the sociological implications of burro management.

Cumberland Island National Seashore has greatly reduced hog-rooting damage in forests and marshes by continual live trapping of feral hogs. Park staff and visitors now rarely see hogs, except at the isolated northern end of the island. Despite two major scientific projects, however, the impacts of feral horses on Cumberland's spectacular dune system are still inadequately documented. Years of grazing by domestic livestock, including cattle, have affected the vegetation from the beaches to the interior of the barrier island and have removed much of the understory from the majestic live oak forests. Biologists do not know whether horses are still disturbing these systems. Public comment on the proposed general management plan for the national seashore favors retaining a herd of horses on the island but does not reject the possibility of population control. The horses on Cumberland Island are increasing in number and could exceed the carrying capacity of the marshes and the interdune grasslands in the future.

In the Great Smokies, wild boars—smarter and more elusive than feral hogs—are proving hard to catch. The hog-trapping program in the Great Smokies has managed to reduce rooting around NPS buildings at the visitor center and in the Cades Cove historic district; but it has barely curtailed the disturbance

to wildflower areas or the expansion of the boar's range into previously hog-free sections of the national park. In fact, the boar has expanded its range to include three-fourths of the acreage in Great Smokies; and, as a direct result of the animal's depredations, a species of salamander and John's Middletooth snail—both endemic to the park—are threatened.

A recent agreement with hunters from North Carolina allows interested private citizens to aid boar removal by maintaining and checking traps and by transporting animals to release sites where they may be harvested by sportsmen during the regular hunting season. This new cooperative program has eased political tensions over a local complaint that the National Park Service was *eliminating a game animal*. Capture techniques are still costly and inefficient, however, and are difficult to employ in the more inaccessible regions of the park.

Small exotic mammals, including rats, rabbits, and mongooses, present a special challenge for sensitive island parks. Often unaccompanied by their native predators, these exotics can increase unchecked on such islands. Channel Islands National Park has attempted to reduce rabbits, only to have them breed faster than rangers could remove them. The elimination of the mongoose on St. Johns in the Virgin Islands is probably impossible at present, but biologists are planning an experimental extirpation of these pesky creatures on the much smaller Buck Island.



Photo by Susan Bratton

The proliferation of the Brazilian pepper tree and Australian melaleuca has become a serious threat to the stable ecology of sections of Everglades National Park. Here, a fire management

Increased attention to the state of aquatic resources in national parks has produced improvements in fisheries management. Parks, such as Yellowstone, that once stocked exotic trout and bait fishes are now strictly controlling new introductions. Great Smokies has successfully depleted invading populations of rainbow trout through use of electroshocking devices that stun fish for a short period. This technique allows removal of live exotic fish while natives are safely returned to the stream. Unfortunately, these methods require large crews and do not completely eliminate all the individuals of the target species. We still do not know enough about the general characteristics of aquatic systems in our national parks, and much of the fisheries management is still based on "stopgap" measures.

In the war against exotic plants, some parks have found that changes in general management policies are helpful. Wind Cave National Monument in South Dakota has adjusted the schedule of fire prescriptions to inhibit seeding and spread of nonnative prairie grasses such as Japanese brome. Yosemite National Park has found that burning at certain times of the year encourages exotic thistles so should be avoided then.

Much of the control of exotic plants, however, is still just plain hard work and requires a direct attack on spreading populations. Managers have tested cutting, burning, and using small amounts of herbicide (toluene) on tamarisk in Death Valley. Tamarisk is a tough nonnative shrub that sprouts and reseeds easily, and consumes large amounts of water. But experiments have

crew member monitors a blaze set to burn off these plants. Managed fires help keep exotic plants here in check until more effective methods can be developed to eradicate the invaders.

shown that once it is gone from a spring, the water starts to flow again.

In an attempt to reduce the amount of pesticides being used in our parks, plant ecologists have tried improved methods of herbicide application on kudzu, a tenacious exotic inhabitant of roadbanks and old home sites. The new program favors an intensive initial effort to kill roots as well as leaves. This is followed by very selective control of remaining vines and the reestablishment of seedlings of native trees. Within three to four years, annual spraying of toxins will no longer be necessary because the kudzu will be completely gone. Biologists are now discussing ways to develop similar programs, using burning, cutting, or chemical controls, for other vines such as English ivy and Japanese honeysuckle.

Technology often limits control efforts, and in many cases practical control methods remain to be discovered. When the woolly aphid first began to kill fir trees crowning the high peaks of the Great Smokies, no control was known other than heavy spraying with very poisonous pesticides. Park managers decided that spraying would do too much damage to other organisms, so no action was taken other than to study aphid populations and the decline of the fir. Recently scientists have found a detergent that soaks the "wool" of the aphid and causes it to die "of exposure." The detergent is not toxic to mammals or birds and breaks down quickly in the soil. Resource managers are now testing the detergent in the Smokies in hopes it will provide the long-awaited tech-

nological breakthrough. Unfortunately, some other old problems, such as the continued spread of the gypsy moth to the south and to the west, are still beyond the reach of the best and most ambitiously applied controls.

Although many national parks inherited their exotics from past agriculture or other human interference, new threats are still appearing. As the burro problem is being conquered, Barbary sheep are being sighted in Carlsbad Caverns National Park, New Mexico. Everglades, after years of fighting the Australian pine, is now confronted with two plants that are even more difficult to get rid of—the "ornamental" Brazilian pepper tree (schinus) and dense stands of Australian melaleuca. Not only is growth of melaleuca encouraged by burning, but, when it is cut, the slashed stems and branches begin to take root if left lying on the ground.

There is no doubt that the National Park Service's research programs have provided much necessary information about the ecology and impacts of exotic species on native species and national park ecosystems, and they have provided many clues about better methods of control. Most parks still have no survey data on distributions of exotics, however, and a number of major questions remain to be answered. New initiatives in resource management, including the creation of more positions for resource managers in national parks, are helping to speed both creation and completion of the necessary management programs. Continued efforts to improve man-

agement of exotic species will be needed to help protect the integrity of park resources.

In order to preserve our national parks for future generations, the National Park Service should be encouraged to keep up the good work. Funding for resource protection projects will continue to be critical. The following measures would help eliminate problems with exotics.

1. Practice anticipatory management. Immediately remove invading species that may threaten park resources.
2. Continue efforts at prevention, such as prohibiting use of live fishes for bait.
3. Continue population surveys and inventories of exotic species. Expand scientific research into parks that are not yet covered.
4. Continue documentation of impacts of exotic species, even where control is presently impossible.
5. Encourage further research on novel and humane methods of control.
6. Provide adequate staff and funds to complete projects that are feasible and are now under way.

Monica Goigel, a graduate student working on a Ph.D. at the Institute of Ecology, University of Georgia, Athens, has worked as an intern in Yellowstone National Park and with the Man and the Biosphere program in Washington, D.C.

Susan Bratton is a professional ecologist also at the Institute of Ecology. She has supervised a number of research projects on exotic species, including the European wild boar. Her favorite avocation, other than hiking, is writing.

VOLUNTEERS IN THE PARKS

by Marjorie Corbett

Ever since the Volunteers in Parks Act was passed in 1970, the National Park Service has depended more and more upon a growing body of volunteers to help interpret and maintain the national parks. These days, volunteers play a crucial role in the National Park System, often performing services and offering programs that would otherwise be nonexistent for lack of funds or staffing. More than eight thousand volunteers worked a total of 534,000 work-hours in the parks last year, contributing an estimated

\$4 million worth of labor. The contributions of Volunteers in Parks (VIPs) mean far more than dollars, however. When people work as VIPs, they are helping ensure that the parks will be preserved for future generations.

Volunteers in Parks can work in an endless variety of roles, each person contributing what he or she has best to offer. Some parks use volunteers in historical or natural interpretation, some to help maintain backcountry trails or supervise campgrounds, a few to help with ar-

cheological research. Some of the most popular VIP programs feature "living history" interpretation, in which volunteers act out historical characters in full costume—from early pilgrim settlers, to mule skinner, to Civil War soldiers. But the Park Service needs volunteers in many other areas as well. In the material that follows, we offer a taste of what it's like to be a VIP in several different programs. NPCA encourages members to offer their special skills to the park programs that can best use them.

Bridging the Bechler Backcountry

Dennis disappeared into a white haze of sleet and pelting hail. I watched his pale, blue backpack bob and sway between the bare cables of the suspension bridge.

I considered the roiling stream below and the icy cables ahead. I was next.

Grasping the hand cables, I hooked the heel of one hiking boot cautiously onto one lower wire, then the other, and began to slide forward. I recalled Joe's comment earlier in the week: "I like situations like this, they test your mettle."

Slide one boot six inches, slide opposite hand forward. Now, the other boot, the opposite hand. Any sudden shifting of weight would send the cables swinging crazily, bouncing the body between in four directions, if not into the water below. Ice from the cables slushed onto my leather gloves. I centered my weight and sixty pounds of backpack on the tensed wires, something like a spider hanging in its web.

By mid-stream, my glasses completely fogged over. "It's just as well," I thought. "I don't want to see that river down there." Somehow my arms and legs began to force a slow rhythm from the swaying cables, and I reached the bank without

mishap. I heaved myself to the ground and turned to watch Jon, a veteran backpacker, cross the wires.

He schussed quickly towards us. Suddenly he slipped, and for an instant he shivered in balance like a tightrope walker, hanging on. In a matter of seconds, he regained control and reached the bank. From under his dripping poncho hood, Jon looked up at us and grinned. "Almost lost it that time," he cheerfully remarked.

I would remember Jon's irrepressible good humor, Dennis's bobbing blue pack, and my own brief moment of courage long after that day's soggy, stumbling hike to the bottom of the canyon.

We were eleven, ten men and myself, and this was no ordinary trip into the backcountry. Each of us had volunteered to work in Yellowstone National Park's Bechler District for twelve days in July as part of the American Hiking Society's Volunteer Vacations Program. The AHS program offers a variety of trips each year, providing some one hundred volunteers to work in as many as fifteen national parks and forests. Our trip was jointly administered by AHS and the

Park Service through the Volunteers in Parks program (VIP). We had chosen to do much-needed trail maintenance in this exquisite, remote corner of Yellowstone.

Some of us were experienced backpackers, some were beginners, and we came from all over the country—California, Minnesota, New York, Colorado, Missouri, and Washington, D.C. Our group was a healthy mix of backgrounds, including artist, designer, potato broker, bartender, building contractor, high school graduate, and editor. Being the only woman, and more desk-bound than most of the others, I felt at a disadvantage at first in terms of muscle. But each of us had something to contribute and a strong motivation to be outdoors working

Joseph Ruggiero





Joseph Ruggiero

to help preserve one of the most captivating sections of backcountry trails available to hikers in this country. We worked, learning as we went, under the supervision of District Ranger Dunbar Susong and his crew of summer seasonal rangers.

By six o'clock in the evening, part of our group had arrived at our first meeting place. We had pitched our tents under lodgepole pine in a grassy glade surrounded by wildflowers. While some recounted tales of previous trips, others explored the banks of the powerful tumbling stream called the Falls River, whose tributaries we would trace on our journey across the meadows, up the canyon, and almost to the Continental Divide. Dinner had featured the last of the fresh or canned food we would see for a while. One by one, we gathered on the bench, anticipating the arrival of the ranger with mounting curiosity.

The sun was slanting low over the river when Dunbar rounded the bend with his wife Alice. Alice greeted us with a smile, but Dunbar looked a little disappointed that only six of us had arrived. We assured him that five more were due, any time now. "Well . . ." he drawled, "we might as well start."

Dunbar began to recount the special features of this section of Yellowstone—views of the Tetons, Western blind snakes that look like big earthworms, moose, waterfalls, hot pools, wildflowers, and sandhill cranes. He told us a grizzly had been sighted in the area, an unusual oc-

Opposite, Ken struggles to cross a boggy section of meadow trail. Above, Eric and Dennis work to stabilize bridge cables stretched by winter snowload.

currence there, and we ought to hang our bear bags high. While Dunbar spoke, I watched, fascinated, as two, then five, then seven mosquitoes attached themselves to his tanned cheek. Completely unfazed, he rubbed his chin thoughtfully, looked up from under the rim of his cap, and revealed the most vital piece of information we were to receive on this trip: "We had heavy snowfall last winter. The meadows are still soaked from the runoff. Hope you waterproofed your boots."

I began to suspect that wet feet were not the only danger we faced from the waterlogged ground. A bumper crop of mosquitoes was likely to be more trouble. What I didn't suspect, as my ankles, hands, and all other exposed parts began to swell with mosquito venom, was that our commercial brands of repellent, effective in most backcountry circumstances, would be completely useless here. We had discovered Bechler District's most prolific species of wildlife. After a few days of eating, breathing, and working closely with those thirsty bloodsuckers, we purloined a couple of bottles of official government bug repellent, 70% active ingredient, guaranteed to eat holes in nylon fabric and keep those little monsters out of our hair.

As the work began, we discovered that Ranger Susong was a meticulous, exacting foreman with a

talent for coming up with solutions to the problems particular to the trails in this area.

The district's trails had been abused for years, especially worn down by horsepacking groups from nearby towns. The bad trail conditions had been exacerbated by this year's heavy snowfall, remnants of which still whitened the upper reaches of the Pitchstone Plateau. The district is characteristically boggy in the meadow areas and is crisscrossed with tiny streams and no fewer than fifty tumbling falls along the upper canyon. Diverting water from trails and trails from water had become the focus of Dunbar's work.

His strategy, it became clear, was to keep horse traffic and backpacker routes separated where possible and to consolidate and "harden" trails that tended to meander in a braided tangle in wet places. His summer staff is small, and without yearly support from volunteers like us, the cause would soon be lost.

One manifestation of Dunbar's strategy is the "bog bridge," a flattened log or series of logs carefully placed on stable sills to cross over a muddy section of trail. Another key structure is the suspension bridge, which allows safe passage for backpackers over wide, rushing streams, but diverts horsepackers to ford at marked crossings. Bridges are Dunbar's specialty and they became ours as well.

Right, crew members relax: flipping through *National Parks* and backflipping into Boundary Creek. Below, the crew strains to position bridge frame under Dunbar's watchful eye.

We learned to choose trees for cutting that were both strong and near the bridge site. We used double-headed axes, bark-scraping blades, auger bits, and strange tools called pulaskis and cant-hooks. These simple but effective hand tools we applied to the materials at hand—mostly standing deadwood, lodgepole pine that had fallen victim to the pine borer. Every log had to be scraped clean, and placed in perfect alignment with the others, both plumb and true, even if its foundation was a soupy bog.

Each morning we would swallow breakfast, pack our daypacks with lunch and Kool-aid, and break up into teams to work on several projects near our campsite. As each crew worked, Dunbar or one of his seasonals would direct the activity and pitch in and sweat right alongside. The days passed in a rhythm of waking, working, swimming, and sock washing. Hardier souls would stay up to watch the moon rise, braving the evening's onslaught of mosquitoes, and being rewarded with shooting stars, crescent moons,



Marjorie Corbett

and the ghostly, spine-tingling howls of nearby coyotes.

Site by site, we moved higher into Bechler Canyon, leaving a legacy of sturdy bridges behind us. Douglas fir, scree-sided canyon walls, and rushing waterfalls replaced the wildflowers, wide meadows, and curving streams below. When we reached Three Rivers Junction, a round hollow fortified by sheer cliffs stretching to the top of the plateau, we were rewarded with a special treat: hot pots. Near this campsite and for several miles northeast, strange geothermal features lined the trail. We walked through meadows spotted with deep green-blue pools, edged with orange algae, and punctuated by steaming vents crusted over with

bright mineral stains. Farther up the trail, at Ferris Fork, a bubbling mix of icy snowmelt and boiling springs became a mecca for tired feet and sagging spirits in late afternoon. We even had a latrine, built by the previous year's volunteer vacation crew, that featured a seat heated by steam from a nearby vent.

One morning, ten days into the trip, we wrapped up our work at Three Rivers by installing a bog bridge under blazing alpine sun. By lunchtime a line of dark clouds filled the narrow slot of blue showing above the canyon walls. By the time we were ready to pack up our tents, the clouds had turned to rain, the rain to sleet mixed with hail, and

Marjorie Corbett



our equipment was soaked. I hunkered down under my poncho and ate my last green apple, contemplating the options. Three of us decided to make a run for it, figuring the weather would break soon. We were wrong.

Dennis, Jon, and I hiked the fastest, slipperiest eight miles of canyon trail in Yellowstone National Park that afternoon. With visions of Swiss Miss dancing in my head, Dennis's helping hand on the tricky parts, and Jon's joking and prodding from behind, I reached our next campsite without breaking a leg.

"What's the difference between the Bechler backcountry and a bucket of water?"

"I dunno. What?"

"A bucket has a handle."

That night dinner was Jon's dehydrated mac 'n cheese mixed with my freeze-dried green peas. When Dennis contributed a spare packet of cocoa, it became the best meal, bar none, that I ever ate in my life.

During the last days of the trip we completed work on a bog bridge for a particularly mucky section of trail, where the canyon meets the edge of Bechler Meadows. I enjoyed the satisfaction of knowing that I was helping reroute the trail that had trapped me, thigh-deep in mud, on an earlier crossing. I seemed

to be the test case for these "backpacker boobytraps," for invariably I would choose the route that led to the deepest hole. My crew buddies had become adept at extricating me from such predicaments. Without these guys, I realized, I might still be sinking, under the full weight of my pack, in some gorgeous soggy meadow, waving my hands frantically in an attempt to flag down a rescue plane. As crew members drove in the last spike, I surveyed the bridge. It looked like it would be there for a long, long time.

On the hike out across Bechler Meadows, I reflected on how much more skillful I had become at crossing slippery logs over precipitous streams, handling a double-bladed axe, judging the size and weight of a section of lodgepole pine. By the time we reached the ranger station and finished up with hot showers, I was convinced that I could do this kind of work again, and probably would. Some of our crew would be applying for jobs as seasonal rangers, and by now they had plenty of experience. And sometime next summer, maybe somewhere in the northwoods, I'll be back out there with my cant-hook and pulaski, enjoying the camaraderie, hard work, and special insight into a park that make a volunteer vacation in the parks an unforgettable experience.

Volunteer Vacations

The American Hiking Society will offer fifteen Volunteer Vacations this summer, some of which will be administered through the NPS Volunteers in Parks program, the rest through the U.S. Forest Service. The work consists primarily of trail maintenance and construction performed in groups of ten to fifteen under the supervision of a ranger. The trips range in length from ten to fourteen days and usually take place in remote, backcountry areas.

In previous years, volunteer vacationers have enjoyed the rugged scenery of such places as the White Mountains of New Hampshire, the Great Bear Wilderness in Montana, Admiralty Island in Alaska, and Haleakala National Park in Hawaii. Ages of participants have ranged from 13 (accompanied by a parent) to 70. You do not have to be a member of the American Hiking Society to participate, but volunteers must meet certain qualifications because of the rigorous nature of these work trips.

For more information contact:

Kay Beebe

American Hiking Society
Volunteer Vacations Director
P.O. Box 86
North Scituate, MA 02060

HOW TO VOLUNTEER IN THE PARKS

For those who would like to volunteer in the parks, but don't find the rigors of backcountry trail maintenance work appealing, there are countless alternatives.

In the past, volunteers have worked all kinds of jobs in the parks. Many volunteers have worked regular weekly schedules at parks near their homes—evenings, weekends, or day hours are possible. In past years, interested people have simply walked into park offices and asked if they could volunteer. If the park had no active volunteer program in place, the staff would try to find a job that needed doing and train the volunteer to do it.

But volunteer recruitment is changing, according to VIP National Program Manager Roy Graybill. "We are asking each park to list priority jobs that can be

covered by volunteers. That way we can be sure to match skills with specific jobs." Valuable staff time can be saved this way, and volunteer skills can be used more efficiently.

The parks need skilled volunteers more than ever before. Although volunteers are expressly forbidden by NPS policy to supplant paid staff, they can and do serve as fill-ins on jobs that are no longer funded. In addition, Volunteers in Parks are now authorized to work in resource management positions, mostly involving maintenance work in the backcountry, an area of work that was restricted in previous years. Following is a sampling of some of the special projects worked on by VIPs this past year.

Dr. Ronald Keiper, a professor of zoology, is fascinated by the wild pony

populations at Assateague Island National Seashore. For six years he has worked on research projects studying the herd's social behavior and the carrying capacity of the island. First he worked as a VIP, but more recently he was able to use National Park Service grants to further his important work. Along with his studies, Keiper volunteers giving slide show talks for visitors.

At another end of the park, winter storm damage to the dunes threatened the stability of the island. The district naturalist recruited local volunteers—students from the nearby Marine Science Consortium and other local residents—to help plant dune grasses.

At Fort Donelson National Military Park in Tennessee, two college freshmen spent their summer performing authentic Civil War music for the park inter-

pretive program. In February of each year, other volunteers help interpret the Civil War battle that took place at Fort Donelson.

Last year, at Glacier Bay National Park in Alaska, a volunteer helped catalogue the park library and transcribe oral history tapes. Many parks need skilled librarians to help organize books and papers. Language translation, especially in Spanish, German, and French, is also increasingly needed in the parks. Many parks keep volunteer translators on call for foreign visitors. A VIP at Olympic National Park last year translated the park brochure into German.

In Great Smoky Mountains National Park this year, volunteers trapped exotic hogs and moved them to state hunting preserves. These local volunteers, mostly hunters familiar with the habits of the animals, work with trained NPS staff to learn how to safely handle the aggressive creatures. Other VIPs at Great Smokies are monitoring trout habitat, acid rain, and watershed changes. Last summer, volunteers recorded baseline data of changes in park traffic due to the visitor flow to the Knoxville World's Fair. In autumn, no less than thirty-five volunteers worked in the park, and many more helped with interpretive and visitor services in the busy summer season.

In addition, the members of the Smoky Mountain Hiking Club help maintain the Appalachian Trail; two dog handlers work their trained dogs in search and rescue operations; local doctors help with medical emergencies; and a cross-country ski club assists with winter backcountry patrols.

Each year at Shenandoah National Park, a retired couple is chosen out of a

number of applicants to act as campground host at Lewis Mountain campground, the smallest site in the park. VIPs with campers or tents are increasingly being used as full-season campground supervisors at lesser-known campgrounds. In return for acting as supervisors, collecting fees, giving out general information, and possibly presenting evening talks, volunteers often receive free campsite use, sometimes with camper hookups. This allows VIP hosts the luxury of living in a national park for an entire season.

Shenandoah uses about twenty-five VIPs each year, in a variety of other positions, including library science, curatorial work, staffing entrance stations, and giving out general park information.

For Helen Johnston, a retired government worker who volunteers at the C&O Canal National Historical Park in Maryland, the rewards have been many.

"I have a set of crutches back there in the trunk of my car," she starts her story. "I first got to know the canal and towpath after I broke my foot. A friend would drive me here every day so I could exercise my leg by walking on the flat surface of the towpath. I became a regular visitor, and I got to know the park very well." Through her interest in the natural history of the area, Mrs. Johnston got to know some of the rangers. When a ranger asked if she would be interested in giving interpretive talks, she wasn't sure what she could do. But months of walking the towpath had given her a solid background. For the past seven years, Helen has been leading school groups and other visitors on a circuit hike called "Sights and Sounds of the Seasons" that mixes tree and plant

identification with a little local history. She clearly enjoys her work and plans to remain at the park for a long, long time.

The best time to contact parks about volunteer positions for the summer is in January. Before you go to a park to offer your skills, think about what kinds of skills you have to offer—professional, special hobbies, or interests like wildlife or photography. Then think about where those skills could be used. First, you should take a look at parks nearby. Often you can talk to park staff directly and get a good idea of a park's needs. Then, make a list of more distant parks. If you are able to volunteer for a period of months away from home, the park may be able to provide a campsite. Housing for regular staff is extremely limited, so don't expect to get lodging in a cabin or bunkhouse. Write to the superintendent of the park you are interested in, listing the skills you'd like to offer. Check page 41 for information about the Student Conservation Association, a group that arranges internships for high school and college-age students. NPCA members should fill out the questionnaire on this page, or write and let us know how the VIP program could work best for you. Write: NPCA, Box VIP, 1701 18th Street, NW, Washington, D.C. 20009.

Marjorie Corbett, Assistant Editor of National Parks, volunteered in Yellowstone last summer and hopes to do it again. She would like to thank Dennis, Dave, Scott, John, Jon, Eric, Andrew, Kenny, Dan, Joe, Dunbar, Alice, Don, and a host of seasonal rangers for making her trip an unforgettable experience.

VIP QUESTIONNAIRE

1. Have you ever worked as a VIP? ___ Yes ___ No
2. If not, would you like to? Why or why not?
3. What kind of work would you like to do as a VIP? (Circle one)
 interpretation resource management backcountry maintenance other (explain)
4. What is your background, work experience, etc., that might relate to VIP work?
5. How long could you commit to volunteer at a park away from home? 2 weeks 30 days summer season other
6. Would you be more likely to volunteer if housing, food were supplied by the National Park Service? ___ Yes ___ No
7. Can you provide your own transportation to a park nearby? To a distant park?
8. Which NPS region do you live in?
 Rocky Mtn. Southwest West North Atlantic Pacific Mid-Atlantic National Capital Southeast Alaska Midwest
9. How old are you?

Breathing New Life Into the Clean Air Act

by Susan Martell Buffone

On that April morning, the House Energy and Commerce Committee room was filled to capacity. Industry and Reagan Administration representatives outnumbered conservationists and public health advocates four to one. Chairman John Dingell (D-Mich.) gaveled the committee to attention and led the way through an acrimonious debate on the future of air quality in our National Park System.

At issue was the Clean Air Act, the law that requires the clean-up of areas where air is unhealthy to breathe and protects existing clean air from becoming an atmospheric

eters of environmental change. Degraded air quality in these areas could mean serious air pollution problems in other places.

Believing he had the votes on his side, Chairman Dingell asked for a roll call vote on an amendment offered by Congressman James Broyhill (R-N.C.) designed to strip air quality protection from the 29.5 million acres of national parks designated since 1977 and severely weaken protection for the air quality in the parks established before 1977. Guaranteed air quality protections would be removed for the 380 national monuments, the wild and sce-

Dingell wanted weaker auto standards. Broyhill wanted weaker industry controls. It was a coalition of convenience.

dump. The law remains in effect even if Congress does not reauthorize it, but conservationists and industrialists agree that the law needs to be updated.

Lobbying among House members had been intense on clean air issues relating to our national parks. A letter in favor of saving the remaining clean air in this country, signed by representatives Udall (D-Ariz.), Burton (D-Calif.), Sieberling (D-Ohio), and Vento (DFL-Minn.), lay on the dais before each committee member. It warned that the national parks and wilderness areas serve as barom-

nic rivers, national preserves, wildlife refuges, and 90 percent of the remaining clean air in this country.

Moreover, the Environmental Protection Agency has failed to enforce the visibility protections for national parks and wilderness areas required by the Clean Air Act; and Congressman Broyhill's proposed amendment endorsed this flaunting of the law.

An analysis of Broyhill's amendment prepared by the National Park Service for Congressman Philip Burton reported that current average annual visibility in the Grand Canyon would *drop* from 200 kilometers to



U.S. House of Representatives Photo Service

Reps. Dingell and Broyhill

12 kilometers. This amendment would permit construction of new polluting facilities three and one-half times closer to any national park than existing law allows.

Chairman Dingell wanted to weaken the auto pollution standards; Congressman Broyhill wanted controls on stationary sources weakened. It was a coalition of convenience.

As the vote began, a hush fell over the room. The vote proceeded slowly. When it was over, the amendment had been defeated 17 to 19. Only two votes saved the com-

mittee from endorsing a wholesale giveaway of the nation's clean air. At stake is not only the quality of the air in these "special areas," but also the quality of the air where American citizens live and work. Although the committee's action does not carry the force of law, it will greatly influence the final outcome when the legislation is presented to the full House of Representatives.

The committee moved quickly to a vote on a counter-proposal by Congressman Ron Wyden (D-Oreg.) designed to streamline the cumbersome procedures required by the Clean Air Act and preserve the future air quality of the National Park System. The Wyden plan was enthusiastically adopted 25 to 13. The chairman's gavel cracked loudly, recessing the committee for two hours. The audience moved about in stunned amazement.

For the moment, the American people had won. Their overwhelming support for clean air had overcome one of the most powerful committee chairmen in Congress, a man who had fought ferociously to overturn air quality protections in clean air areas. Chairman Dingell's fragile coalition of congressmen representing coal and electric utility interests and automakers had dissolved when the Broyhill amendment failed. The chairman no longer had the votes he needed in favor of weakening the auto standards, a change sought by his Detroit constituency.

Undaunted by the majority vote in committee, Chairman Dingell refused to allow the House Energy and Commerce Committee to consider clean air issues for four and a half months. Meanwhile, behind closed doors, he pressured seven committee members to try to refashion this section of the law.

Chairman Dingell tried to cut deals on control programs for acid rain, toxic pollutants, and auto emissions, and on a program to prevent the significant deterioration (PSD) of air quality in clean areas. By moving behind closed doors, keeping the meetings secret, and excluding congressmen Henry Waxman (D-Calif.) and Ron Wyden—leaders supporting a strong Clean Air Act—Dingell

attempted to nullify one of their key tools, the voice of the American people. The Wyden amendment withstood this mighty pressure.

In the Senate Environment and Public Works Committee the picture was somewhat brighter. The Wyden amendment had been modeled on a compromise worked out earlier by chairman Robert Stafford (R-Vt.) and senators Gary Hart (D-Colo.), Peter Domenici (R-N.Mex.), and Slade Gorton (R-Wash.).

In March 1982 the Senate committee had voted 16 to 0 to endorse the basic framework of the PSD program. Their amendment provides that all national parks (6,000 acres or

Unfortunately, neither the House nor the Senate as a whole has debated these issues. The Clean Air Act is up for grabs in the 98th Congress, which will convene this month.

The National Park Service's 1980 "State of the Parks" report listed more than one-half of the units in the National Park System as threatened by air pollution. In fact, sometimes it is hard to see the "purple mountains' majesty."

Already the Grand Canyon, inundated with pollution from the Los Angeles basin and from copper smelters in Arizona, experiences 100 days of the year when visibility is

The development and use of pollution control equipment actually created 100,000 to 200,000 new jobs.

more) and wilderness areas (5,000 acres or more) established before 1977 will continue to be Class I areas with a very small allotment or "budget" for allowable new pollution. Any national park established after 1977 plus wild and scenic rivers, national monuments, wildlife refuges, national preserves, and other federal conservation areas (10,000 acres for each area) are designated as Class II areas with a larger but still limited budget for new pollution. States are permitted to upgrade these areas to Class I.

Other parts of the country where the health standards are being met also are designated Class II. Under the Senate amendment, states can remove the budget limitations in attainment areas, however, provided that the "best available pollution control technology" is used on new industrial plants and that meaningful long-term air quality controls are established and adhered to.

The Senate committee also endorsed a twelve-year program to control acid rain. A landmark, first-step victory, the 15 to 1 vote on this provision represents the first recognition by Congress that acid rain is a serious problem deserving governmental action.

obsured. Moreover, scientists are beginning to observe fish kills and the acidification of lakes in the Rocky Mountains and in many other national parklands [*National Parks*, July/August 1982].

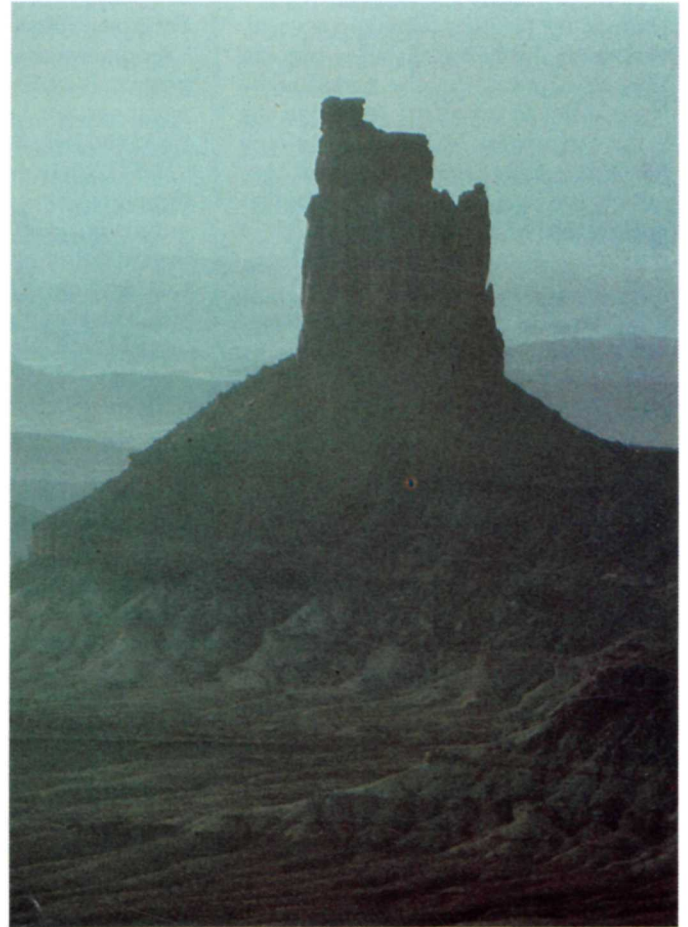
The next decade promises to be a boom time for mineral development in the Overthrust Belt of the Rockies. Much of the country's developable energy resources—coal, oil shale, uranium, among others—lie in close proximity to many of our presently pristine national parks. If we allow the air in our national parks to become so full of sulfur dioxide and its associated pollutants that it becomes difficult to see through, can we ever hope to achieve basic health standards in our unhealthy cities?

Industry representatives argue that the costs of pollution control outweigh the health and welfare benefits to the American people. Yet a report prepared by the Public Interest Economics Foundation shows that pollution control is more than just an added cost of doing business. In fact, the economic benefits of the Clean Air Act substantially exceed the costs of compliance. Often pollution controls assist in bringing greater efficiency to the operation of a plant, and significantly contribute



Gordon Anderson

On a clear day (left), Candlestick Tower in Canyonlands National Park shows up in relief against the Orange Cliffs at the far end of Canyonlands Basin. The second image of the tower (below) was taken with the same photographic equipment. The difference: a temperature inversion had trapped pollutants from nearby power plants. The haze of dirty air obscures all but the most obvious geologic features.



Gordon Anderson

to the safety and health of its employees.

The foundation's report, which is the most comprehensive survey to date, estimates benefits from the Clean Air Act of \$21.4 billion compared to costs of \$17 billion. The report also estimates that unemployment was 0.1 to 0.2 percent lower per year than it would have been without the Clean Air Act. The development and use of pollution control equipment actually created 100,000 to 200,000 jobs.

The national parks must not become the last frontiers of clean air in America. The Clean Air Act will protect the air in our nation's parklands and other places only so

long as the American people convey clearly to their senators and representatives their strong feelings about protecting these resources.

You can help secure a Clean Air Act that guarantees breathable air for future generations and relatively pure air in our national parklands.

Yours is the most effective voice for Congress to hear on national park and clean air issues. Time and again letters, phone calls, and visits to members of Congress by their constituents have made a critical difference in shaping the outcome of the legislative process.

NPCA maintains regular contact on these issues with our members who have expressed a specific interest in the Clean Air Act. If you want

to receive information about legislative activities that relate to clean air and how you can help—please send us a postcard indicating your desire to receive these materials. Write Clean Air, National Parks & Conservation Association, 1701 18th Street, NW, Washington, D.C. 20009.

The 98th Congress will decide the fate of the air you and your children breathe. Don't stand by and watch it happen. Get involved. Your voice can be heard—and it *will* make a difference.

Susan Buffone, NPCA's Clean Air Program Coordinator, has worked extensively on natural resource legislation relating to air and water.

NPCA Report

Underway— NPCA's Petition Project

Conservationists and a cadre of legislators are familiar with the myriad threats to the national parks, but can the same be said for the park-visiting public? In an effort to bridge the information gap, NPCA has initiated its "Protect the Parks" program, which is a national education and petition drive aimed at concerned park visitors and neighbors of the national parks.

Canvassers have been circulating fact sheets and petitions at beaches and battlefields, great natural areas and historic sites in an effort to in-

crease issue visibility and citizen participation.

Popular support for the national parks has been overwhelming. In six weeks of autumn canvassing at 16 park sites, over 50,000 visitors signed the petition. Andy Strauss, NPCA Petition Project Coordinator, says, "People are reacting not only to the proposals of Secretary Watt, but also to a heartfelt belief in continued parkland acquisition."

NPCA has entered into cooperative agreements with twenty-two grassroots groups in the training and organization of canvassers. As of this writing, NPCA is hoping for 100,000-plus signatures by the close of 1982 and plans to continue the project into 1983.

Besides referring to specific park

threats, such as air pollution and mining, the petition calls upon the administration to "take action to ensure that the natural and cultural heritage of the national parks will be wisely preserved for use by present and future generations." In addition, the petition requests adequate levels of staffing and funding as well as new park resource management and preservation initiatives.

Thousands of signed petitions, when presented to the director of the National Park Service, will testify to the firm foundation of citizen concern for the future of the National Park System. Notes Coordinator Strauss, "Tomorrow's administrator with less-than-positive intentions will have to deal with the outgrowth of today's nascent mandate."

Yellowstone Grizzlies— Losing Ground to People

In a memorandum made public last autumn, Roland Wauer, chairman of the Interagency Grizzly Bear Steering Committee (IGBSC), made an urgent plea for immediate action to save the ultimate predator of the Yellowstone National Park ecosystem. IGBSC, which is composed of six state and federal agencies, is studying the endangered Yellowstone grizzly population and trying

to determine how it can best be managed.

The group's findings caused Wauer to state that "unless some change occurs to reduce the grizzly's mortality rate soon, the probability of retaining this wildland species in Yellowstone National Park is minimal." IGBSC statistics show that only 200 grizzlies remain in the Yellowstone ecosystem, which includes lands outside the park. Of this number, only 30 or so are adult females.

But the numbers do not accurately reflect the composition of the grizzly population. At least half of the population is made up of subadults; probably just 40 to 60 of the grizzlies are adult males. According to NPS wildlife biologist Dr. Richard Knight, who is team leader of the Steering Committee, many grizzlies do not survive adolescence; thus the small number of mature adults.

Also, the numbers are not really precise. The committee obtained its figures by tagging a fraction of the individuals in the field and extrapolating population figures from the information gathered about range movements, territorial needs, and other factors.

Indeed, the Steering Committee would like to undertake a more extensive radio tagging program in coming years, but it feels that what is needed now is protection of the remaining population.

Protection is complicated by the changing range of the Yellowstone grizzly, however. Since the park dumps were closed about a decade ago, grizzlies have expanded their ranges in search of wild foods.

As Dr. John Dennis, chief of the NPS natural science division, explained it, grizzlies had to spread out, "away from preservation lands onto multiple-use lands" even though the threats are greater.

Pulling the Strings on Parkland Purchases

On September 30, 1982, Congressman John Seiberling, chairman of the House Subcommittee on Public Lands and National Parks, held oversight hearings with Interior Assistant Secretary G. Ray Arnett. A major topic of discussion was the new procedures for land acquisition.

Previously, land was acquired by National Park Service personnel in the field, and final authority for acquisition rested with the regional directors. Now each and every acre of land acquired must be approved by the Director of the National Park Service and Assistant Secretary Arnett.

In practice, each parcel will be ap-

proved by Ric Davidge, Arnett's assistant. Davidge used to be managing director of the National Holders Association, an organization that regularly opposes land acquisition for the national parks.

proved by Ric Davidge, Arnett's assistant. Davidge used to be managing director of the National Holders Association, an organization that regularly opposes land acquisition for the national parks.

During the hearing, Representative Dale Kildee (D-Mich.) asked Arnett if he had approved "none, some, or many" acquisitions under the new policy; but Arnett could not answer the question. He had to rely on his staff to provide the answer—"none." The incident indicates that Arnett relies on Davidge to handle land acquisition issues.

In 1981, the Reagan Administration tried to stop land acquisition by instituting a moratorium and by requesting inadequate appropriations. Both efforts failed when NPCA and other conservation organizations rallied congressional support.

The Administration claims that the new policy is intended to ensure that adequate funds are available to pay condemnation awards as they are made by the courts. In reality, NPCA sees the new policy as another attempt by the Administration to slow down or stop land acquisition for our parks. The measure could tie up indefinitely acquisition of acreage needed to complete designated park boundaries, including acreage for which Congress has already appropriated funds.

NPCA will continue to watch the acquisition process closely. If the new policy slows or stops acquisition, we will do whatever is necessary to reverse the Administration's position. NPCA members can help by alerting us to any land acquisition problems.

Exotics in Hawaii Given Lift Out of Park

As part of an experimental program aimed at ridding Haleakala National Park (Hawaii) of exotic animals, the National Park Service has begun airlifting feral goats out of the park. Feral goats and pigs damage rare Hawaiian plants, destroy habitat of endangered birds, and cause soil erosion. So far, thirty-six goats have been helicoptered out of the park to be sold for their meat.

Oceans, Rain Forests Concern Bali Conferees

From October 11 to 22, 1982, the World National Parks Congress held its major meeting for this decade. Government planners and managers—plus representatives of conservation organizations and private citizens—from 68 countries gathered together in Bali, Indonesia, to sort out the problems facing protected areas and to identify those areas of the globe in need of protection.

The rapid expansion of the human population and our consumption of the planet's resources was an overriding concern. In its declaration, the Congress stated, "The benefits of nature and living resources that will be enjoyed by future generations will be determined by the decisions of today. Ours may be the last generation able to choose large natural areas to protect."

NPCA President Paul Pritchard attended the conference and points out the importance of concentrating on "longer-term social realities rather than short-term political realities."

The Congress focused their concern on areas that particularly need safeguarding. Resolutions include

- Recognizing the significance of marine and coastal resources and adopting programs to protect them for all nations. The Congress recommended marine research programs and a biogeographical classification system similar to the one used for terrestrial areas.

- Identifying and aiding particularly fragile biomes: tropical rain forests; drylands, especially those undergoing desertification; wetlands, such as European peatlands; and tundra.
- Maintaining the stability of Antarctica against mineral exploitation, and establishing it as the first World Park.
- Educating the international public to the contributions made by parks and nature reserves, such as safeguarding gene pools, protecting watersheds and air quality, and facilitating appropriate tourism.
- Encouraging traditional societies to continue living in harmony with their environment.

Grizzly, by Fred Mang, Jr., National Park Service

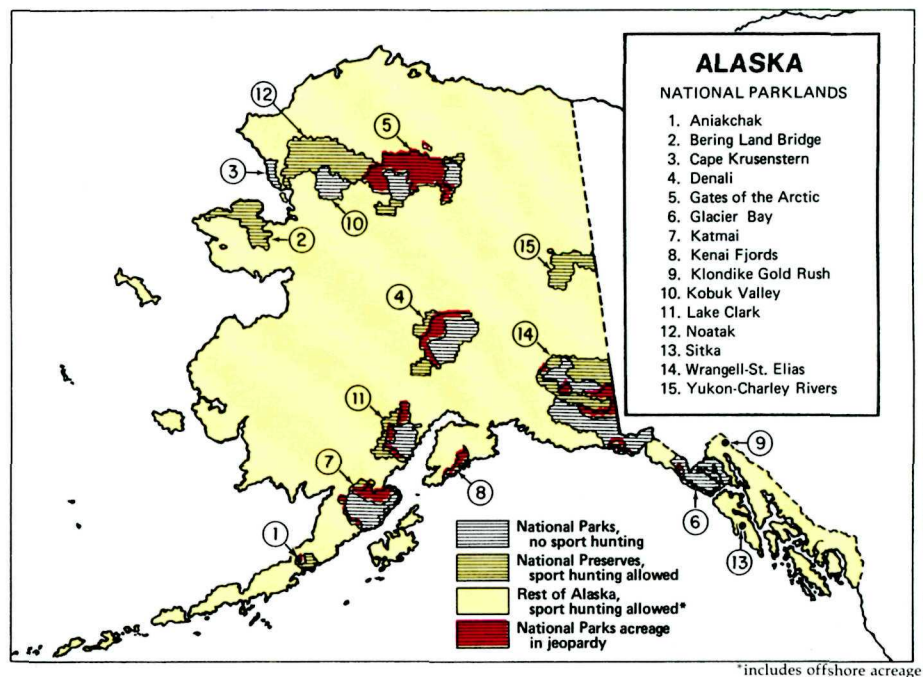
Alaska Parklands

What More Do They Want?

Congress took nine years to put together the complex Alaska Lands Act. The Act was ratified two years ago, the blink of an eye in legislative time. Yet Alaska senators Ted Stevens and Frank Murkowski are already pushing bills that would alter the Act in favor of a special interest group—commercial hunting guides.

In short, the senators want more land for sport hunting in Alaska. The land they desire is all in the national parks: Wrangell-St. Elias, Denali, Gates of the Arctic, and others. To get even these parklands, Congress did a lot of compromising. The 18.9 million acres of national preserves was one of the trade-offs. Sport hunting *is* allowed in the preserves—as well as on national wildlife refuge land, Bureau of Land Management acreage, and all other federal land in Alaska. In fact, of the 375 million acres in the state, only 8.6 percent is off limits to sport hunting. Of the 24.5 million acres of national parkland, Stevens and Murkowski want to change 12 million to “preserve.”

Conservationists are incensed at what they see as an assault on the idea of what national parks should be; that is, sanctuaries relatively free from disruption. Besides contesting the need for more hunting land, they



Map by James F. O'Brien, © NPCA

fear that the proposed legislation could set a precedent by putting in question the protections afforded to *any* unit in the entire National Park System. Conservationists figure that if the status of parkland in Alaska can be changed at the behest of a special interest group, so could that of any other parkland in the system.

Most of the contested areas are far from Alaska's population centers, and the majority of weekend sport hunters would not be affected. And those who subsist by hunting are already allowed to do so within national parks. The people senators Stevens and Murkowski are trying to help number fewer than 100. These commercial hunting guides can command prices of \$30,000-plus to help a trophy hunter shoot down the “grand slam” of Alaskan big-game hunting: Dall sheep, grizzly, moose, and caribou.

Senator Stevens, however, gives the impression that his proposal is not elitist. He has said, “Our single purpose is to reopen Alaska's prime hunting lands for the American sportsman. As it stands right now, for example, almost half of Alaska's prime Dall sheep country is off limits to hunters. That is what we are going to correct.”

Yet the first study done by the

National Park Service to determine wildlife populations in the national parks of Alaska shows that 70 percent of Dall sheep in Wrangell-St. Elias are located in the national preserve lands and, thus, can be hunted at will. Also, Gates of the Arctic National Park, which would be most affected by the sport-hunting bills, is adjacent to the William O. Douglas Wildlife Refuge; they share a common terrain and, therefore, similar accessibility. A good number of permits for hunting Dall sheep in the refuge are never used, never applied for, according to the U.S. Fish and Wildlife Service. This fact begs the question of why more parkland need be reopened to hunters.

An added slap in the face to environmentalists is Senator Stevens's companion bill on sport hunting in Alaska. This bill audaciously asks the federal government (i.e., U.S. taxpayers) to compensate hunting guides registered in Alaska for income lost when 8.6 percent of the state was closed to sport hunting. The price tag for the welfare of hunting guides: \$20 million.

Finally, NPCA believes disrupting a hard-won law passed by a majority of contending factions does not make sense, especially when the change would benefit so few.

Paving the Wilderness at Glacier

No one can figure out why the Montana Department of Highways wants to build a four-lane highway to Glacier National Park. But the department wants the road so badly it has pursued this goal for about twenty years. Some speculate that the highway department is trying to pay off an old political debt.

Whatever the reason, NPCA, Montana conservation organizations, and others are trying to set up a final roadblock to this plan because the four-lane would cut a wide swath through the largest grizzly population in the lower 48.

U.S. Highway 2, the present access road to Glacier, is a narrow two-lane; and although environmentalists, park officials, and the U.S. Fish & Wildlife Service agree that the road needs to be upgraded to make it safer, they also contend that an improved two-lane instead of a four-lane would be perfectly adequate for the park's seasonal traffic. NPCA's Laura Loomis says the route should "be compatible with the nature of the park and its environs."

Environmentalists also say they have evidence to prove that the state highway department has manipulated highway statistics to favor their cause. In fact, Annual Average Daily Traffic counts show that traffic actually has decreased in recent years.

With the strength of the grizzly population at Yellowstone National Park in question, Glacier and its environs contain the healthiest of the remaining grizzly populations in the contiguous United States. Estimates of the number of bears left in the North Continental Divide area (that is, Great Bear and Bob Marshall wilderness areas, plus the park) range from 300 to 600. Highway 2 is the only paved route that bisects this wildlife corridor; and if it becomes too formidable a barrier, the grizzly breeding pool—as well as the population of gray wolves—could become divided, thus lessening chances for these species to flourish.

As the date for a final decision on Highway 2 draws nearer, environmentalists are gearing up to defeat

another proposal that will affect Glacier. Again, the Montana Department of Highways wants to upgrade a road; in this case, the unpaved North Fork Road, which borders the park and the wild and scenic North Fork of the Flathead River.

Environmentalists contend that if the highway department paves the dirt road, it will blatantly violate the Transportation Act of 1968. This act forbids encroachment on land bordering wild and scenic rivers. Paving the road would also violate the Endangered Species Act, which protects the habitat of endangered or threatened species, such as the grizzly.

Working Your Way Into Conservation

Mark Twain once explained, "I never let my schooling interfere with my education." A summer conservation job provides that "educational" experience outside the classroom and opens the door to a possible career in cultural and natural resources. If working in conservation is a goal, a summer job with the National Park Service (NPS) or the Student Conservation Association is a step in that direction.

Jobs with the NPS range from trail workers to park technicians, and seasonal employees are placed in all types of parks, from natural areas to historic monuments. Applicants must be U.S. citizens and at least eighteen years of age by May 1983. Each seasonal employment application packet contains a complete listing of available jobs and required skills, an instruction guide, a list of park areas, and general information on housing and other necessities.

Applications are available from any national park or regional office or from the National Park Service, Seasonal Employment Office, Department of Interior, 18 & C Sts., Washington, D.C. 20240, (202) 343-6901. January 15 is the deadline for applying. (Volunteer programs within the National Park System are going strong. See article, page 30.)

The High School Program or the Park and Forest Assistant Program of the Student Conservation Association (SCA) provides the volunteer the opportunity to help better man-

The Federal Highway Administration (FHWA), which could use some leverage on the state, has been backed into a corner. Environmental groups say that if the FHWA meddles, the Montana Department of Highways will accuse them of "big brotherism" and trot out the issue of states' rights.

To voice your opinion on Glacier highway issues, write Senator Max Baucus (D-Mont.), Dirksen Senate Office Building, Washington, D.C. 20510, or Representative Pat Williams (D-Mont.), Longworth House Office Building, Washington, D.C. 20515.

age our natural resources. Duties include a range of activities, such as patrolling backcountry in Glacier National Park or leading guided hikes along the rim of the Grand Canyon.

The High School Program is open to anyone between the ages of sixteen and eighteen. Programs run from three to four weeks and are co-educational. The Park and Forest Assistant Program is open to anyone eighteen and older and runs eight to twelve weeks. Though assistants do not receive a salary, transportation costs to and from the site, housing, and food costs are paid by the association. (The SCA raises its share of program costs from corporate donations, foundation grants, and membership contributions.) Jobs are offered year-round. Applications for the summer programs are due by March 1. For more information and application forms, write SCA, P.O. Box 550, Charlestown, NH 03603, or call (603) 826-5206.

Helping Out in the Outdoors, a directory of volunteer jobs in parks and forests, is available at many public and university libraries. The directory lists conservation jobs for both teens and adults. Jobs include explaining the history of an area, improving trails, and serving as campground host. Copies may be ordered at a cost of \$3.00 postpaid from Helping Out, 16812 36th Avenue West, Lynnwood, WA 98036.

—Laurie Gruel, NPCA intern



Hawaii Volcanoes NP rain forest, by NPS/William Dunmire

Geothermal Sprawl to Border Hawaii Volcanoes Park

Hawaii plans to become energy self-sufficient, and for good reason. The state is burdened with the highest electricity rates in the nation, and all its fossil fuels must be imported.

State planners, therefore, have devised a program that includes other sources of energy: solar, wind, biomass, hydropower, ocean thermal, and geothermal. This last is causing an uproar, however, because the state's ambitious plans would plunk down a huge geothermal development right next to Hawaii Volcanoes National Park on the Big Island.

The state, in conjunction with the Campbell estate, which is providing the land, and the True/Mid-Pacific Geothermal Venture, would spread out the Kahauale'a Project over 25,000 acres, including 12.5 miles of common boundary with Hawaii Volcanoes National Park.

To produce the planned 250 megawatts of power, the project would need more than 100 geothermal wells, five power plants, a switching station, transmission lines, and miles of connecting road. And getting to sources of geothermal energy requires some effort. The developers will have to drill deep into the earth (an estimated 4,000 to 8,000 feet below sea level). As steam shoots up through a well, it produces noise. "Like the roar of a jet on takeoff" is how it has been described.

Another byproduct of geothermal development is hydrogen sulfide gas. Emissions, in general, cause concern about the future of the park's air quality and possible acid rain problems. But this particular emission bothers promoters of tourism as well as park supporters. The odor of rotten eggs wafting downwind to the *ohia* rain forest might not enhance interest in the park, which now draws 1.57 million off-island visitors per year.

Conservationists fear that all this planned industrial activity might put something of a strain on the park's rain forest. Lush and seemingly indomitable, rain forests actually have proven to be one of the planet's most precarious types of ecosystem; and UNESCO designated this one as a Biosphere Reserve. Even the state, which is pressing for the project, had originally zoned land next to the park for conservation.

Besides their concern about the spread of nonnative plants that thrive on disturbed land, environmentalists bring up threats to endangered species. Hawaii's share of the 105 species of birds listed as endangered or threatened is approximately 50 percent. Populations of two of these endangered species, the *i'o* (Hawaiian hawk) and the *o'u* (honeycreeper), make their homes in the *ohia* forest that is included in the

geothermal proposal. As the plant communities of the park go, so go the endangered species.

What irks local residents in all this is that most of the planned geothermal power will be cabled to Oahu. Right now the Big Island uses only 90 megawatts of energy, and islanders and national park officials would be happy if the state scaled down their plans. They believe the effects of the Kahauale'a Project would exact too high a price from the natural features of the island of Hawaii and from Hawaii Volcanoes National Park.

Guam Park Plan Ignores WWII Focus

The far-away problems involved in managing War in the Pacific National Historical Park actually mirror the problems that occur at almost all other historical parks. The predicament most common to this type of park is how to keep it true to its *raison d'être*—in this case, the only national park to represent the history of World War II and the Pacific Theatre in particular. Usually historical parks, by their very nature, are close to civilization. Because they are pockets of green space, they often become the focus of recreational pursuits.

In her comments on the draft management plan for War in the Pacific, Laura Beaty, NPCA's program coordinator for historical parks, pointed out the necessity of protecting the WWII-era structures. She also noted that to help maintain distinctions between recreation and interpretation, the NPS should "pursue the proposal for a Guam National Seashore."

One other issue that NPCA and David Lotz, a prime mover in the Marianas Recreation and Park Society and a National Park Action Project representative, are definite on is the need to fulfill legal requirements "to employ and train residents of the Northern Mariana Islands to develop, maintain, and administer the park." According to Laura Beaty, people who live near a park must feel that the park's concerns are their own in order to coexist amicably.

Congress Wraps Up Grazing, Sleeping Bear Bills

Before the October election recess, Congress acted on a number of issues that will affect our national parks, including

- Approval of extended grazing rights at Capitol Reef National Park, Utah. The legislation gives ranchers another twelve years to graze their cattle in the park, including a ten-year federal study on possible damage to the land plus an automatic two-year extension.

Theoretically, the Interior Department could halt grazing before 1994 if the federal agencies studying the issue determine that damage to Capitol Reef is too great. Though ranchers did not get everything they wanted, environmentalists are not pleased with this precedent setter.

T. Destry Jarvis, NPCA's Director of Federal Activities, said, "If the National Park Service had political courage, they could restrict grazing by limiting the number of animals or limiting them to certain seasons."

- Approval of proposals concerning Sleeping Bear Dunes National Lakeshore, Michigan. The legislation

increases authorization for land acquisition and requires that the National Park Service continue to manage *potential* wilderness areas as they would designated wilderness. The bills also delete the Leelanau County segment of the park except for two important natural areas; and they extend occupancy for inholders who built homes between 1964 and 1970 (the date Sleeping Bear was established) to make inholder regulations consistent.

- Legislation that deletes 1,000 acres of Black Bay plus approximately 782 acres elsewhere in Voyageurs National Park, Minnesota.

In exchange, the park acquires approximately 319 acres, including land picked out for the visitor center. The one bone of contention between House and Senate proposals is that the House bill authorizes fee purchase of the state lands whereas the Senate asks only for a short-term lease.

- As of this writing, the bill that clarifies boundaries and gives more protection to natural areas on Isle au Haut (in Acadia National Park, Maine) needs only the President's signature.

National Parks
Jan/Feb 1983 issue

Reader Interest Survey

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

| | Very Interesting | Somewhat Interesting | Not Interesting |
|--|---------------------|-------------------------|--------------------|
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| EDITOR'S NOTE <i>(inside front)</i> | 1 | 2 | 3 |
| MEMBERS CORNER <i>(p. 4)</i> | 1 | 2 | 3 |
| FEEDBACK <i>(p. 4)</i> | 1 | 2 | 3 |
| BOOKSHELF <i>(p. 4)</i> | 1 | 2 | 3 |
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| VOLCANOES <i>(p. 12)</i> | 1 | 2 | 3 |
| PRIVATIZATION <i>(p. 16)</i> | 1 | 2 | 3 |
| MONO LAKE <i>(p. 19)</i> | 1 | 2 | 3 |
| EXOTICS <i>(p. 24)</i> | 1 | 2 | 3 |
| VOLUNTEERS <i>(p. 30)</i> | 1 | 2 | 3 |
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| NPCA REPORT <i>(pp. 38-43)</i> | 1 | 2 | 3 |
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| THE LATEST WORD <i>(p. 46)</i> | 1 | 2 | 3 | 4 |
|-----------------------------------|-----------|------|------|------|
| | Excellent | Good | Fair | Poor |

How would you rate the cover? 1 2 3 4

Additional comments _____

You may publish comments

Your name and address (optional): _____

How They Voted on Park Protection

On September 29, 1982, the full House voted on the Park Protection Act (H.R. 5162), which NPCA strongly supports. The bill passed by a wide margin—319 to 84. Below is the breakdown of votes on Park Protection. Those representatives not listed below voted "yea," in support of the bill.

| NAYS—84 | | | | |
|---------------|---------------|--------------|------------|--------------|
| Archer | English | Livingston | Schulze | Burton, John |
| Ashbrook | Erlenborn | Loeffler | Shumway | Chappell |
| Badham | Fields | Lott | Skeen | Clay |
| Bailey (MO) | Fountain | Lungren | Smith (NE) | Collins (TX) |
| Barnard | Goldwater | Marlenee | Smith (OR) | de la Garza |
| Benedict | Goodling | Marriott | Solomon | Ertel |
| Breaux | Gramm | Martin (NC) | Staton | Forsythe |
| Brown (CO) | Grisham | McClory | Stenholm | Holland |
| Broyhill | Hall, Ralph | McCurdy | Stump | Marks |
| Burgener | Hammerschmidt | McDonald | Tauzin | Mattox |
| Chappie | Hance | Montgomery | Thomas | Moffett |
| Cheney | Hansen (ID) | Moore | Walker | O'Brien |
| Coats | Hansen (UT) | Morrison | Watkins | Robinson |
| Conable | Hartnett | Oxley | Young (AK) | Roth |
| Craig | Hendon | Patman | | Santini |
| Crane, Daniel | Hightower | Paul | NOT VOTING | Savage |
| Crane, Philip | Hiler | Petri | | Skelton |
| Dannemeyer | Holt | Quillen | Annunzio | Stanton |
| Dornan | Hubbard | Rhodes | Bafalis | Trible |
| Dreier | Jeffries | Roberts (SD) | Beard | Weiss |
| Edwards (OK) | Johnston | Roemer | Blanchard | White |
| Emerson | Kazen | Rogers | Bliley | Young (FL) |
| | Kogovsek | Rousselot | Bolling | |
| | Leath | Rudd | Brown (OH) | |

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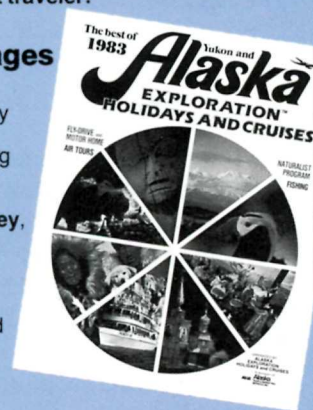
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The Latest Word

NPCA HONORS BROWN, HIGHLIGHTS At NPCA's CANYON COUNTRY AT DINNER annual

dinner and reception, held in Washington, D.C., on November 18, the organization announced that Mrs. W.L. Lyons Brown was voted an NPCA Trustee Emeritus. Mrs. Brown has served the organization well for nine and one-half years and has also furthered conservation goals through the Garden Club of America and other organizations.

NPCA's fete was capped by a dramatic slide show of national parks in the Southwest. DeWitt Jones, who photographed the images, delivered an eloquent accompanying narrative.

NPCA MEMBER DUES For the first time INCREASE THIS YEAR since 1978, NPCA is

raising members' dues. At its November 1982 meeting, the Board of Trustees approved the increase, which is effective January 1, 1983. The new breakdown is as follows: associate membership, \$18; cooperating, \$25; contributing, \$50; supporting, \$100; sustaining, \$200; student/retired, \$13; and life membership, \$1,000.

EPA JUDGE RECOMMENDS Administrative Law USE OF BANNED POISON Judge Spencer Nissen, who is under

the aegis of the Environmental Protection Agency, has recommended reinstating use of Compound 1080 for poisoning sheep-killing coyotes. As of this writing, ranchers and environmentalists are awaiting the final decision of EPA Administrator Anne Gorsuch.

Judge Nissen's guidelines would limit the poison to use in sheep collars and to regulated amounts in "single lethal dose" baits. Federal or state employees would apply the baits no closer than two per square mile and would be required to check the baits regularly; but environmentalists say the risk for abuse would be high.

Laura Loomis, NPCA's wildlife program coordinator, also points out, "The privilege of using public grazing lands for re-

duced fees is one thing. Poisoning the wildlife on those lands for the benefit of the sheep industry is quite another."

An additional cause for concern that the judge did not address is the possibility of secondary poisoning. Under normal conditions, Compound 1080 sheep collars have been shown to leak, and could thus spread poison into an animal's wool and flesh. No safeguards have been called for, and opponents of 1080 fear the poison, which has no known antidote, could be ingested by humans. The last time 1080 was in use, more than a dozen people died from accidental poisoning.

BARRIER ISLANDS BILL The Barrier Is- SIGNED BY PRESIDENT lands Bill, which

NPCA supported and worked on, was signed into law by President Reagan in October. The new act will reduce development on unstable barrier islands, which flank the eastern seaboard, by barring the use of federal subsidies. Developers also will no longer be able to obtain federal flood insurance--a big factor in areas so liable to flooding.

PARK SERVICE LOOKING National Park TO HALVE CHATTAHOOCHEE NRA Service (NPS)

Director Russell Dickenson has recommended that the amount of acreage for the Chattahoochee National Recreation Area (NRA) be cut in half. Though the Chattahoochee is praised as one of the least spoiled riverine corridors near a large city (Atlanta, Georgia), Dickenson and other NPS officials say the agency cannot afford to purchase the remaining 2,800 acres.

Because of inflation and land speculation, \$66 million of the \$72.9 million allocated for Chattahoochee NRA purchases has already been used. That money bought only 3,500 of the designated 6,300 acres. Park officials are talking with state and county officials, trying to work out less expensive protections such as donations, easements, and land exchanges.

Environmentalists, however, are keeping in mind Interior Secretary James Watt's opposition to urban parks. Even if the original boundaries are upheld, people close to the issue doubt Interior will request the needed funds from Congress. Any

promise to keep Chattahoochee NRA's original size would be as empty as the park's land-fund coffers.

Watch for the management plan due out in early spring and send your comments to the Superintendent, Chattahoochee NRA, Box 1396, Smyrna, Georgia 30080.

CONGRESS WRANGLES OVER MONEY FOR PARKLAND PURCHASES

The House Interior Appropriations Subcommittee has approved \$90 million for national parkland acquisition in 1983. As of this writing, it is expected that the Senate figure will be lower. The subcommittee voted to obtain a total of approximately \$250 million for federal, state, and local parkland purchases from the Land and Water Conservation Fund (LWCF), which was established for this purpose, among others. The Reagan Administration would like to use the money for other purposes.

LWCF funds will be used to buy land to help fill out congressionally designated boundaries at national parks such as Biscayne, Olympic, and Santa Monica mountains, as well as for acreage along the Appalachian National Scenic Trail.

HOUSE HAMMERS OUT NUKE WASTE BILL

The House met its goal and approved a nuclear waste bill before the end of the lame duck session. The question now is whether the House and the Senate can reconcile the differences in their respective proposals. They are under pressure from this Administration to accomplish just that.

- Deadlines for selection of the dump site are 1986 for the Senate and 1987 for the House.

- The House bill says "away from reactor" storage is limited to federal property, whereas the Senate bill is less restrictive.

- Both houses of Congress require that any state veto on a nuclear dump site must be sustained by one house; thus, putting the burden of proof on the state.

- Neither House nor Senate requires a complete Environmental Impact Statement for site recommendations and allows the less stringent Environmental Assessments.

Meanwhile, the Department of Energy

says it has enough information on the proposed salt sites. Yet, the agency has not tested groundwater in Canyonlands Basin, which flows past the dump site, across the park, and down to the Colorado River.

In a related issue, Canyonlands National Park has called for a noise study in an effort to protect the park on another level. The study would assess the amount of aural disruption caused by the proposed nuclear waste dump and haul railroad.

Gene Nodine, district manager of the Bureau of Land Management in that area, has come up with a singular suggestion. When the haul railroad is not carrying out nuclear waste, it could be used to transport visitors.

WATT DENOUNCES PLAN TO JETTISON PARKS

A plan had been brewing at the Interior Department

to cut certain units of the National Park System. The plan, which was revealed in December by NPCA and by the *Los Angeles Times*, resembled Interior Secretary James Watt's unsuccessful attempts to delete a number of urban parks. When Watt heard the news, however, he vehemently denied any knowledge of such a plan and clamped a lid on its progress.

A memo from Interior's assistant inspector general had proposed to study the transfer of small park units, such as Lincoln Home and Agate Fossil Beds, to state and local governments as well as to private organizations. Economic streamlining was the stated reason. Yet, Congress had included some of these culturally significant parks in the system specifically because state governments could not afford to care for them.

Environmentalists will be watching to make sure that this threat to 52 national park units does not crop up again.

NPCA PRESIDENT TO ADDRESS SOUTHEAST CONFERENCE

Paul Pritchard, NPCA's president,

will be a featured speaker at the Georgia Conservancy's annual conference January 28-30. The conference, which will address the future of public lands and how they will be affected by present federal policy, is one of the major environmental events in the Southeast.

