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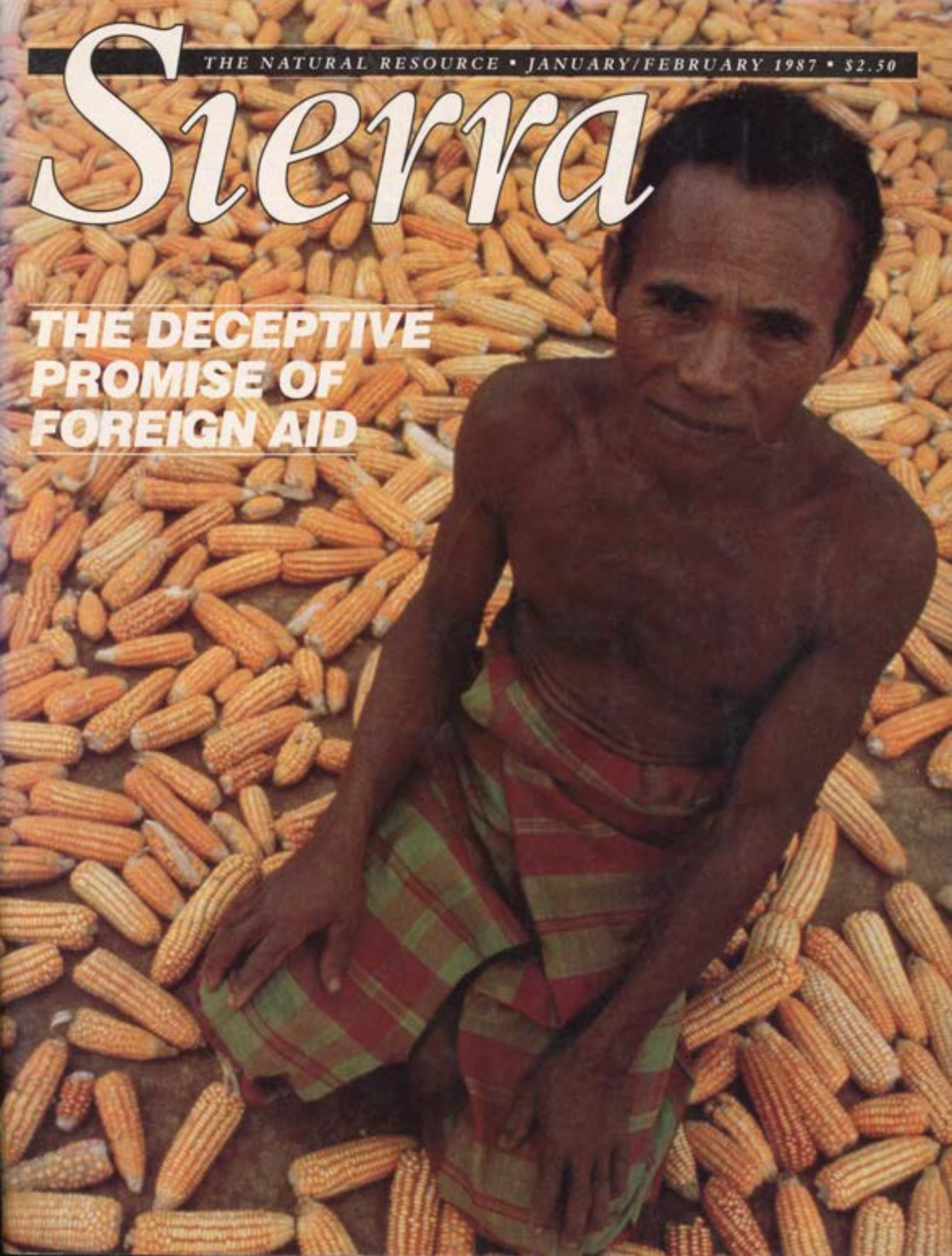

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THREE-POINT PASSIVE SAFETY BELT SYSTEMS ARE AN EFFECTIVE COMPLEMENT TO BELT-USE LAWS.

General Motors is equipping 10% of its 1987 model cars with automatic lap/shoulder belt systems for the driver and for the right-hand front seat passenger. It is the first step in meeting a federal requirement to phase in passive restraints.

The automatic systems will be standard equipment on most 1987 models of the Pontiac Grand Am and Bonneville, Buick Somerset, Skylark, and LeSabre, and Oldsmobile Calais and Delta 88. By 1990 we plan to equip all GM cars with passive restraint systems.

The belts in the GM system will be connected to the car at three anchor points—one toward the center of the front seat, and two on the front door.

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Opening the door pulls the belts forward for entry. Closing it brings the belts into their operating position. A single push button at the center anchor point releases the system in an emergency. Retractors pull the released belts into storage positions on the door.

Extra attachment points will be built into cars equipped with these systems so you can secure most child restraint systems with an auxiliary lap belt.

General Motors is pursuing other programs that will help reduce the number and severity of injuries caused by accidents. We are designing energy-absorbing interiors. We are phasing in rear-seat lap/shoulder belts, beginning with some 1987 models—kits will be made available through GM dealers to retrofit most older cars with these systems. And we will be equipping some 1988 model cars with driver-side air bags to supplement safety belts.

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VOL. 72/No. 1 JANUARY/FEBRUARY 1987

Sierra

COVER: The illusion of plenty—an Indonesian transmigrant with his crop. *Photo © Michael K. Nichols/Magnum.*

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LETTERS

YOU MEAN IT'S NOT?

Magazines often accentuate the unusual—even caricature—in order to make a point, but *Sierra* misled its readers by splashing Rep. John Seiberling's peculiar personal sentiments across the page in bold print ("Fare Thee Well, John Seiberling," November/December 1986). Seiberling's accomplishments on behalf of our wilderness areas have been remarkable. He was able to accomplish so much because he realistically made sure that legitimate concerns on both sides of an issue were recognized.

Excellent methods, these! So why trumpet his nonsensical, political rhetoric that "the oil industry is one of the most greedy and selfish industries in this country"? It only makes Seiberling and *Sierra* look pitifully narrow-minded.

Kenneth E. Telleen
Ventura, Calif.

TO MAP, PERCHANCE TO DREAM

Thank you for printing Sen. Alan Cranston's good and timely piece "In Defense of the Desert" (November/December 1986), and for fleshing out its descriptions of the proposed national parks with a useful map. We need to make detailed planning maps of such important proposals available to a wide audience, not only for organizing support but also for giving the map freaks and armchair travelers among us a chance to dream and plan.

Editorial space is precious, I know, but a map is worth more than a thousand words.

Malcolm A. Nelson, Professor of English
Fredonia State University College
Fredonia, N.Y.

SLIGHTING AN ALLY

I enjoyed your recent article "Acid Rain Wars: Civil at Last" (November/December 1986) about the bipartisan effort in Congress to solve our country's most serious, unresolved environmental problem—acid rain.

However, while you accurately and fairly described how close we came to passing a bipartisan acid rain bill in the last session of Congress, your article unfortunately misrepresents the position of one of our key allies, Rep. Tom Tauke (R-Iowa).

According to author Cass Peterson, Rep. Tauke was "the vote Waxman needed in 1984 when the last serious House effort on acid rain went down to a 10–9 defeat in his Energy and Commerce Subcommittee." Tauke wasn't even a member of Rep. Henry A. Waxman's (D-Calif.) subcommittee in 1984, and the deciding vote—which silenced the acid rain debate during *that* session of Congress—was cast by Rep. Dennis Eckart (D-Ohio).

In fact, Tauke worked very closely with my Republican task force, and with Rep. Waxman, to draft H.R. 4567, the acid rain legislation that passed Waxman's Health and Environment Subcommittee on May 20, 1986, on a 16–9 vote. Tauke was a member of the subcommittee during this past session; he voted for the bill and was instrumental in lining up Republican support on the subcommittee and in Congress.

Contrary to the impression given by the article, Tauke is a key ally in the legislative fight against acid rain.

Rep. Sherwood Boehlert (R-N.Y.)
Washington, D.C.

THANKS, ERNIE

I thoroughly enjoyed Carolyn Mann's article on Ernie Dickerman ("Grassroots Profile," November/December 1986). However, no single article could do complete justice to the work Ernie has done in support of wilderness.

Ernie not only "made his rounds," to quote Mann, throughout the Southeast; fortunately, his rounds led him throughout the Northeast too. Ernie was instrumental in helping us get wilderness designation for areas in Vermont, New Hampshire, and Massachusetts. He also helped us protect significant portions of Green National Forest as wilderness through the RARE II process.

We all learned a tremendous amount from Ernie, and his enthusiasm was contagious. At grassroots organizing, he is superb. Present and future generations owe him a major debt for the

boundless energy he brought to the wilderness issue.

Peter B. Smith, Coordinator
Vermont Wilderness Association
Healdville, Vt.

One salient aspect of Ernie Dickerman's character needs to be told. During the many years that I've been active in Virginia, Ernie has seldom missed a meeting of the various organizations to which he belongs. The point is this: The "neophyte activist" need not seek him out—Ernie will come to you. He is always helpful, energetic, optimistic, and supportive. Ernie utilizes his intelligence, his common sense, and all else that he possesses to help others protect the environment. He has not asked for anything in return.

A mark of any outstanding human being is an altruistic nature. That is Ernie Dickerman, nothing less.

Paul F. Sims, Council Delegate
Virginia Chapter, Sierra Club
Richmond, Va.

TOO IMPORTANT FOR EXPERTS

Nuclear holocaust is the ultimate environmental catastrophe. That's the best answer I can offer to Richard Sybert's concern over the Club's "gradual politicization" ("Letters," September/October 1986).

In my 30-odd years as a Sierra Club member, the Club has never been apolitical. Here at the Sierra Club of Western Canada, for example, we're battling to save the best parts of the Queen Charlotte Islands (South Moresby) from logging and mining—basically a political struggle.

Nuclear-free zones are an expression of public will—a drive toward peace that is not allowed in a controlled society like the USSR, where the common people have no say about the official peace policy of the government. From the reports of unbiased observers who have visited the USSR, there is no doubt that the Russian people desire peace as fervently as anyone, while still remaining ready to defend their motherland, which they see as beleaguered from without.

The patronizing tone of Sybert's letter annoyed me. Military strategy and security matters are too complicated for you laymen—leave it to the experts, he

seems to be saying. Well, we've left it to the experts for 40 years, and look at the mess we're in, with an overwhelming arsenal of destabilizing weapons systems. Let the Sierra Club speak out, using its credibility and influence to achieve true disarmament, a test ban, and de-escalation—measures necessary to avoid total disaster and the destruction of our lovely planet.

Emlen Littell
Victoria, B.C., Canada

HOUSEHOLD WASTE

Your article on household hazardous waste ("Toxics on the Home Front," September/October 1986) raised a number of issues with which citizens and government agencies alike are grappling. Here in Massachusetts, the departments of Environmental Management and Environmental Quality Engineering offer a matching grant program to help cities and towns fund local collection days.

Experience with past collection days suggests, however, that only one percent of all households bring their wastes to the collection site. While we would like to see greater participation, substantial increases would overwhelm the system. Therefore, we view annual collection days as a short-term approach to the problem.

Clearly, alternatives such as transfer stations and more frequent collections should be investigated. But we should bear in mind that greater participation, along with increased attention to formerly unregulated small commercial generators of waste, are increasing the quantity of waste requiring special treatment and disposal.

Due to public opposition, states across the nation have found it next to impossible to locate new sites for treatment, storage, and disposal facilities such as incinerators and solvent recovery plants. This suggests that it will be equally difficult to establish local transfer stations for small quantities of hazardous waste. Without a change in public attitudes, public policy will be incapable of coping with the problem.

We also need to remember that household and industrial hazardous wastes are related. As consumers, we buy products and services such as cars and dry clean-

ing that entail the generation of hazardous waste. The solutions to the household hazardous waste problem are to be found concurrently with solutions for industrial waste. Poor management of hazardous waste generated anywhere can cause problems for us all.
James Gutensohn, Commissioner
Massachusetts Department of
Environmental Management
Boston, Mass.

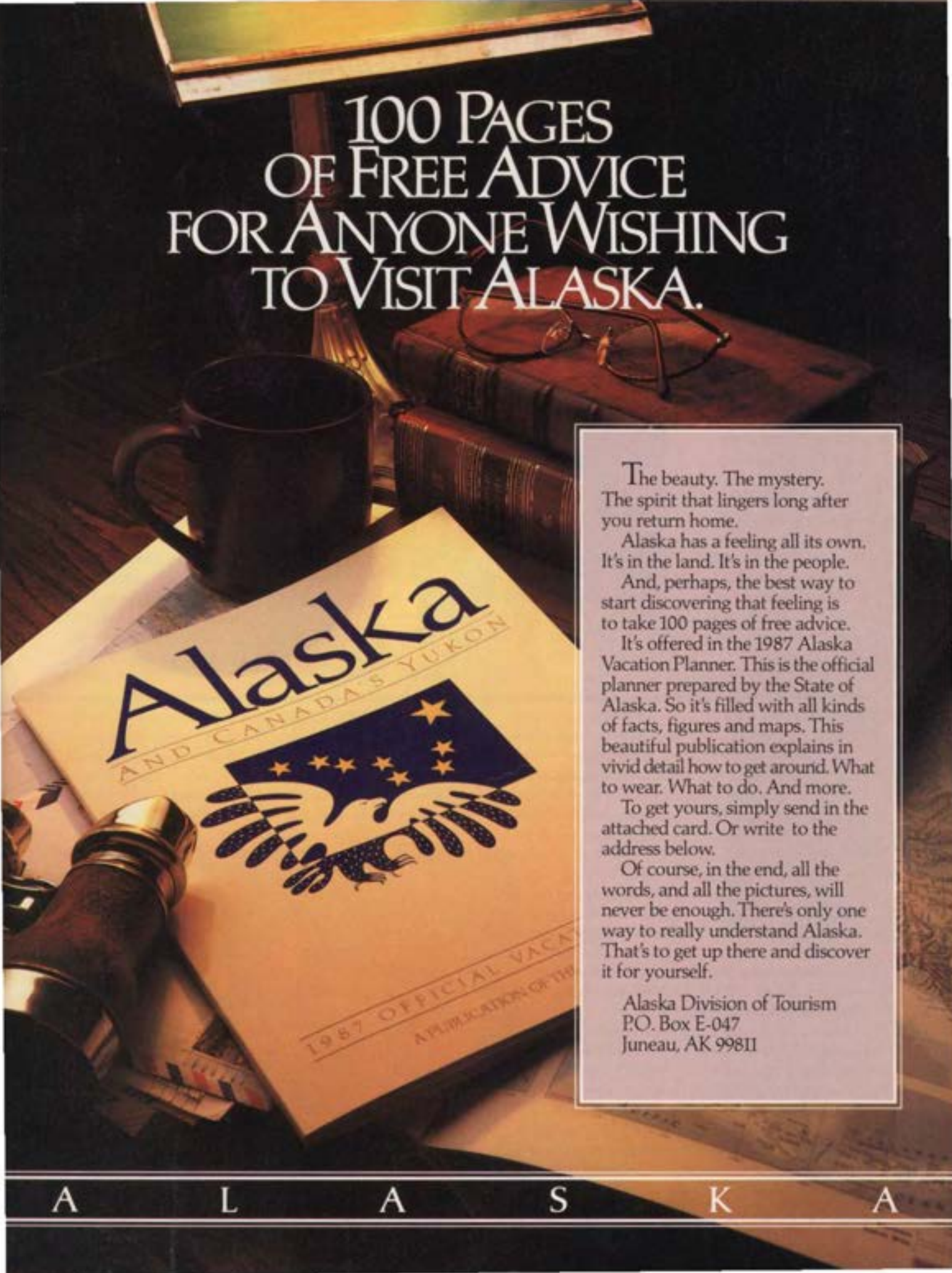
TO GET TO THE OTHER SIDE

I hope that the highway modifications mentioned in *Sierra*'s September/October article "Restoring the Everglades" will help the Florida panther. Modifications of the concrete median road dividers that are metastasizing on the nation's highways is also necessary; otherwise, they're going to wreak havoc on urban and suburban short-legged travelers—raccoon, opossums, skunks, and weasels. A potential catastrophe is at hand, and no one is aware of it or, for that matter, even looking.
Edward Cunniffee
New York, N.Y.

SIERRA CLUB TRAIL EFFORTS

As a district ranger, I have worked with Sierra Club service trips for the past five years, both in Wyoming and Colorado. The volunteers who take these cleanup and trail-repair trips are becoming quite popular with Forest Service ranger districts, and I would like to convey my satisfaction to the readers of *Sierra*. I count the Sierra Club as an important part of Forest Service efforts toward trail maintenance and rehabilitation of damaged areas of the backcountry. Often our dwindling budgets would not allow such projects to be done at all if not for the efforts of Sierra Club members.

Sierra Club members and Forest Service employees have more in common than most of us realize, and we can accomplish more by working together than we can by being adversaries. Service trips, where individuals and Forest Service personnel work side by side toward a common goal, are the perfect setting to foster a spirit of cooperation.
Michael D. Lloyd, District Ranger
Shoshone National Forest
Greybull District
Meeteetse, Wyo.



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A L A S K A

ONCE IN A LIFETIME

A rare Andean herb caused quite a stir among California botanists last fall when the 25-foot plant began blossoming 72 years earlier than expected.

Puya raimondii, a member of the Bromeliaceae family, is a relative of the pineapple. This specimen, collected on a botanical expedition in Bolivia, grew from a seed planted 28 years ago in the Botanical Garden at the University of California–Berkeley. Normal blooming age for the *Puya* is 100 years. According to Botanical Garden Curator James Affolter, this *Puya* probably flowered early because Northern California's climate is much milder than the cool temperatures of its native habitat.

The *Puya* usually lives at 13,000 feet in the Peruvian and Bolivian Andes. It is rare partly because Indian shepherds living on the treeless terrain have been using it to fuel their campfires.

The Guinness Book of World Records ranks *Puya raimondii* as the slowest-flowering plant, the largest herb, and the plant with the largest cluster of flowers on one stalk. Affolter says the garden's *Puya* set its own record by being the first to flower in cultivation.

In November, the herb was expected to bloom until the end of the year, though no one could be sure. Affolter is trying to get more seeds for the Botanical Garden in the hope that another *Puya* will blossom—if not 28 years from now, at least in another century.

—Rebecca Poole

BIRD BRAINS SET WORLD RECORD

It was a 55-year endeavor, but Harvard University ornithologists recently completed a 15-volume, 6,400-page work that identifies every kind of bird on Earth. This is the first time in history that any group of animals has ever been completely documented.

Check-list of Birds of the World, which sells for $605, inventories about 35,000 kinds of birds. It lists species and subspecies (organized by family), followed by the names of their discoverers and geographic ranges. Raymond Paynter, Jr., curator of birds at Harvard's Museum of Comparative Zoology, spent the past 26 years supervising the project.

"I often wondered, 'Am I going to spend the rest of my life working on this book?'" says the 60-year-old Paynter. "After all, the last guy died before he finished it."

James Peters, Paynter's predecessor, started the ambitious project back in 1927. But after 25 years of hard labor, Peters completed only a third of the book before he died. Paynter picked up the pages in 1960 and, with the help of dozens of colleagues from around the world, finished the book a few months ago.

"Every biologist wants an inventory like this," he says. "We would like to inventory all types of animals so that a hundred years from now our successors will know what's been lost. After all, you can't complain about losing animals unless you know they exist. But a proj-

A N-N-NEW P-P-PARK FOR C-C-CANADA

"Why build a national park where no one will ever, ever go?"

That was the question posed by a Canadian government biologist in response to the recent establishment of the 15,251-square-mile Ellesmere Island National Park, located off the northwest coast of Greenland, well within the Arctic Circle.

That nearly a quarter of Ellesmere Island deserves national park protection is not a matter for dispute; its fragile ecology and majestic scenery qualify it from both environmental and touristic standpoints. Although visitors will likely be few and far between—the area is so remote that an expensive expedition is required just to get there—the impacts of even the occasional drop-in are expected to be severe.

"If more than 50 people walk a trail in any one year, the trail could be ruined," says John Alan Lee of the Sierra Club of Ontario, referring to the delicate lichens and other flora that cling to life despite the harsh conditions. Before the island was granted park status, an average of 20 visitors traveled there each year.

Canada's new Environment Minister, Tom McMillan, made a commitment to establish a park on the island when he took office a year ago, and some observers feel he was under pressure to keep his promise after the environmental abuses of his predecessor, Suzanne Blais-Grenier. Others with a more cynical attitude suspect the move was designed to distract conservationists from the ongoing battle over the resource-rich South Moresby area of British Columbia's Queen Charlotte Islands.

For his part, McMillan says the decision was not so much a political gesture as a logical step toward completing Canada's national park system. To show his sincerity, he made a trip to the faraway island of mountains, glaciers, fjords, and arctic wildlife for the dedication ceremony last fall. But, alas, his celebratory remarks had to be cut short because of the biting cold.

—Jonathan F. King

ect like this is not about to be done again soon. Who knows? It may *never* be done again."

According to Paynter, it would not be feasible to produce such a complete index of any other group of animals, with the possible exception of butterflies and mammals. Paynter says birds are unique in this respect, because they have been scrutinized unlike any other animals for hundreds of years. As a result, the bird is the most well-known type of animal. *—R.P.*

AN ABOUT-FACE FOR THE BLM

Across the high desert of southern Idaho you can almost hear ranchers of the old west spinning in their graves. The incomprehensible is happening: The Bureau of Land Management (BLM) is planting sagebrush in an effort to create more jackrabbit habitat.

Historically, sagebrush and jackrabbits have been as welcome on the range as dandelions and termites in suburbia. For almost half a century, ranchers and the Grazing Service (which later became the BLM) used tractors and chains,

chemical poisons, fires, and everything short of bombs to destroy sagebrush. Land cleared of sagebrush and other shrubs has been planted with monocultures of exotic grass, turning dynamic ecosystems into cow pastures.

Lately, however, numerous lightning- and arson-caused range fires have destroyed more sagebrush than desired. In this part of the country, when sagebrush is burned and the land left uncultivated, nonnative and highly flammable cheatgrass quickly carpets the scorched earth. The cheatgrass often catches fire the following year, burning additional acreage of sagebrush and cow pastures in an ever-expanding cycle of range fires.

As a result of these fires, the population of jackrabbits, the primary prey of golden eagles, has decreased dramatically. BLM biologist Mike Kochert says eagle nesting in the Snake River Birds of Prey Area hit a 15-year low last year. A natural dip in the jackrabbit population may be partly to blame, he says, but unless sagebrush makes a comeback the 482,640-acre Snake River preserve, host to the world's densest concentrations of nesting raptors, will continue losing its ability to support eagles and other large birds of prey. Antelope, mule deer, sage grouse, and other wildlife species are also threatened by the plant loss.

Given this scenario, the BLM has begun a cautious (some say timid) sagebrush reseeding program. Last fall the agency planted sagebrush seed on 120 acres of burned ground, and in the spring it planted 40 acres of sagebrush in experimental one-acre plots designed to test different planting techniques.

According to BLM Bruneau Resource Area Manager Mike Pellant, sagebrush planting is expected to increase in the coming years. With the help of an aggressive reseeding program, the Snake River Birds of Prey Area may once again become prime jackrabbit and golden eagle country.

—Glenn Oakley

FIELD NOTES

"My bees cover a thousand square miles of land which I do not own in their foraging flights, flying from flower to flower for which I pay no rent, stealing nectar but pollinating plants in return. It is an unruly, benign kind of agriculture, and making a living by it has such a wild, anarchistic, raffish appeal that it unsuits me for any other, except possibly robbing banks."

—*from* A Country Year, Living the Questions, *by Sue Hubbell*

UGANDA'S WILD CHILD

He wasn't swinging from the roots of trees like the boy in Rudyard Kipling's *Jungle Book*, but like Mowgli the young boy found in a Ugandan jungle several months ago is believed to have been nurtured by wild animals for as long as four to five years.

The two-and-a-half-foot tall, 22-pound boy was living with a tribe of monkeys when he was discovered by a Ugandan military unit. Having "captured" the boy, who is estimated to be five or six years old, the soldiers turned him over to the Naguru orphanage in Kampala.

The orphan has been called a "monkey child" because he grunts and squeals, jumps around with his hands clenched, and prefers to eat grass. He seems to be afraid of people and tries to scratch anyone who approaches him. The boy's

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☐ Israel
☐ Lebanon
☐ Mexico
☐ Nepal
☐ Philippines
☐ Southern States (U.S.)
☐ Sri Lanka
☐ Thailand

3. Would you like a picture of your sponsored child?

Shortly after we select a child for you, we can send you a photograph and brief personal history, if you desire.

☐ Yes ☐ No

4. Would you like to exchange correspondence?

If desired, correspondence can build a meaningful one-to-one relationship and provide a unique educational experience for the sponsored child. In areas where illiteracy is high, a village representative will keep you informed of the progress your child is making. Translations, where necessary, are supplied by Save the Children.

☐ Yes ☐ No

5. Would you like information about the child's community?

Because 50 years of experience has taught us that direct handouts are the least effective way of helping children, your sponsorship contributions are not distributed in this way. Instead they are used to help children in the most effective way possible—by helping the entire community with projects and services, such as health care, education, food production and nutrition. Several times a year you can receive detailed reports on these community activities which provide permanent improvements to the child's environment. Would you like to receive such information?

☐ Yes ☐ No

6. How do you wish to send your sponsorship contribution?

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☐ Monthly, $16
☐ Quarterly, $48
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☐ Annually, $192

7. Do you wish verification of Save the Children credentials?

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☐ Yes ☐ No

(A complete audit statement is available upon request.)

8. Would you rather make a contribution than become a sponsor of an individual child at this time?

☐ Yes, enclosed is my contribution of $_____

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nurses call him Robert.

Robert's new caretakers believe he was separated from his parents when he was about a year old, during one of Uganda's countless civil war battles. The jungle where he was found is north of Kampala, in the Luwero Triangle, one of the country's major battlegrounds. Several hundred abandoned children have been found wandering around villages in the area since last January, and foreign relief workers say there may be more children trying to survive in the jungle.—*R.P.*

SCORECARD

The 99th Congress compiled a solid record on environmental quality and public lands issues. In many instances bipartisan majorities supported the improvement of key laws despite resistance from President

- The Superfund was reauthorized for five years with provisions that devote $8.5 billion to the cleanup of abandoned hazardous waste sites and that establish stringent cleanup standards.
- A coal-leasing bill intended to weaken antispeculation provisions of existing law failed to pass.
- Wilderness areas totaling 98,000 acres were designated in Georgia, Kentucky, Nebraska, and Tennessee. A small Great Basin National Park was established in Nevada.
- The Safe Drinking Water Act was renewed for five years. While it provides no safeguards for private wells, the law establishes a program for the protection of public wells and drinking water supplies.
- Wild and Scenic River designation now protects stretches of the Black Creek in Mississippi, the Cache la Poudre in Colorado, the Horsepasture in North Carolina, and the Saline Bayou in Louisiana.
- Oil and gas leasing decisions affecting the California coast will be delayed until at least 1989.
- The Pacific Northwest's Columbia River Gorge is now protected after more than a decade of work by environmentalists. An 80-mile section of the gorge encompassing 270,000 acres has been designated the Columbia Gorge National Scenic Area.

TROUBLED WATERS

Fish served in Los Angeles may be spiced with a little something the cook didn't intend—DDT and its chemical cousins, polychlorinated biphenyls (PCBs).

There is mounting evidence that fish in polluted Santa Monica Bay are being contaminated by municipal, industrial, and agricultural toxins that are released into the bay.

But none of this comes as a surprise to marine biologist Dennis Kelly, head of the Coastal Dolphin Survey Project at California's Orange Coast College. In 1982 Kelly observed an increasing number of abnormalities in Pacific bottlenose dolphins (*Tursiops truncatus*) living off the Southern California coast. When he and Orange County veterinarians began performing autopsies on beach-stranded dolphins, they found that the animals' tissues contained the highest levels of DDT and PCBs recorded for any mammal population in the world.

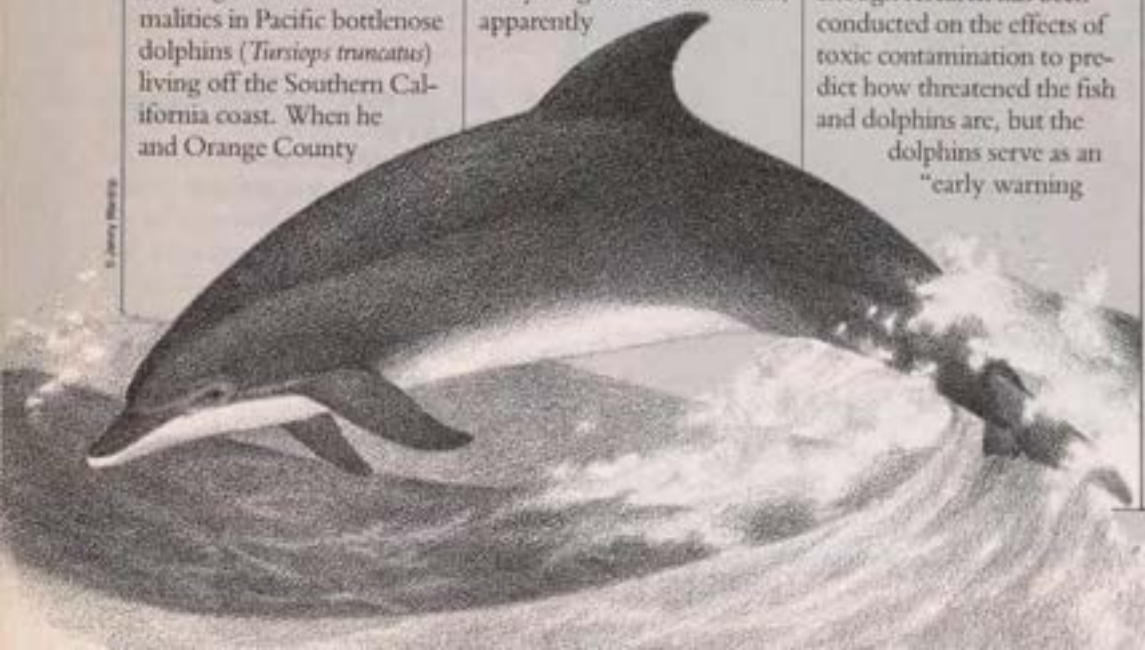
The autopsies also showed that the dolphins suffered from a variety of ailments, including pneumonia, tumors, abscesses, ulcers, and parasite infestations. Some even had enlarged lymph nodules and abnormal-size organs.

Last year, high levels of DDT and PCBs were also found in the blubber of a baby bottlenose dolphin, although it was most likely too young to have eaten fish; apparently the animal was contaminated by its mother's milk.

The bottlenose dolphin spends most of its life within a mile of shore, eating many of the same species of fish that people catch off the beaches and piers. Not enough research has been conducted on the effects of toxic contamination to predict how threatened the fish and dolphins are, but the dolphins serve as an "early warning system," Kelly says, "a litmus test of what shape the fish are in."

Last January, California health officials ordered a $1-million study to test chemical levels in species caught by commercial fishermen in the Los Angeles area. And in October, the city of Los Angeles yielded to pressure from the EPA to spend $3.3 million to study pollution in Santa Monica Bay. During the same month the city lost a nine-year battle with the EPA and finally agreed to pay a $625,000 fine—one of the largest ever collected from a city under the federal Clean Water Act—for dumping raw sewage into Santa Monica Bay.

—*Shelley Pritikin*



Reagan. Encouraging levels of support were realized for action on additional issues—notably, strengthening all provisions of the Clean Air Act—when the 100th Congress convenes in January.

Tropical forests and biological diversity were addressed by two laws: One prohibits the Agency for International Development from funding projects that destroy rainforests, the other requires the agency to work to prevent species loss.

Important bills on acid rain control, the California Desert, the Arctic National Wildlife Refuge, and oil and gas leasing on federal lands were introduced.

Clean Water Act reauthorization supported by environmentalists was passed unanimously by Congress but vetoed by President Reagan. The bill almost certainly will be passed again easily in 1987.

National appliance standards that could have reduced energy consumption and brought significant savings to consumers were vetoed by President Reagan although they represented an unprecedented cooperative effort among environmental organizations, consumer groups, and the appliance industry.

Road construction in the national forests (which effectively removes lands from consideration as wilderness) was given a $229-million budget, $199 million more than environmentalists advocated and $50 million more than the Forest Service requested.

House and Senate conferees failed to agree on the terms reauthorizing the Federal Insecticide, Fungicide, and Rodenticide Act.

SHE SELLS SPRINGBOKS BY THE SEASHORE

Africa may be the furthest thing from the minds of tourists visiting Waikiki, but that hasn't stopped a former South African citizen from marketing African animal parts in the heart of Hawaii's most popular tourist area.

© Jerry Wurdz

Riding on the hooves of the popular film *Out of Africa*, Annette DeGeer transformed an ice-cream parlor at the Waikiki Trade Center into Africa In Hawaii, a shop whose stock in trade is African curios, artifacts, and animal parts—including trophy heads, springbok and zebra skins, cowtail fly swatters, and carved ostrich eggs.

DeGeer opened the shop last summer, she says, because tourists are interested in more than maitais, aloha shirts, pineapples, and a suntan. Displayed prominently on the store's walls and white-tiled floors are springbok mats ($60), a zebra skin ($1,500), buck and warthog heads ($500 and $800), and one of her most popular items, elephant-foot stools ($125 to $350). Two stuffed lion cubs, one reclining and another standing, cost DeGeer $6,000 each, but they are not for sale.

According to a newspaper advertisement announcing the store's opening, a rhinoceros head would be among the items for sale. But when the store opened the head was not to be seen, because the animal is on the endangered species list. DeGeer blames the advertising mistake on the South African supplier who wrote the ad.

"What? . . . They turned it into a WASTEbasket?"

The shop owner claims that none of the animals she sells is on the endangered species list, and that most of them died of natural causes. "The lion cubs, I was told, died of diarrhea or pneumonia," DeGeer says. "And if you look closely at the elephant's toenails, you can see that this was a very old elephant. But you can never tell," she adds. "That's why I always deal with reputable people."

But federal officials say that what an importer may be told and how an animal actually died are often two different stories. "You can be sure that all those animals sold in the store did not die of natural causes," says Janet Hammer, wildlife inspector for the law enforcement division of the U.S. Fish and Wildlife Service in Honolulu. "Animals not listed on the endangered species list—such as the springbok, blesbok, busbok, kudu, and most zebra—can be killed for any reason. They could have been killed specifically for this type of purpose."

Nevertheless, "people are very interested in owning one of these beautiful animals," DeGeer says. "Business couldn't be better."

—Tim Ryan

Handel, Water Music The English Concert/Pinnock. "Quite the best performance...now on the market."—Gramophone Archiv *DIGITAL* 115306

Dvořák, Symphony No. 9 (New World) Chicago Symphony Orchestra/Solti. "The playing is superlatively good."—Gramophone London *DIGITAL* 115168

Perlman: Mozart, Violin Concertos Nos. 3 & 5 Vienna Philharmonic/Levine. "Radiantly sumptuous."—High Fidelity DG *DIGITAL* 115146

America, The Dream Goes On The Boston Pops/Williams. Title song, *America, Battle Hymn Of The Republic*, more. Philips *DIGITAL* 115134

Handel, Messiah (Highlights) Musica Sacra/Westenburg. *Hallelujah Chorus, I Know That My Redeemer Liveth*, more. RCA *DIGITAL* 153586

Rubinstein: Rachmaninoff, Piano Concerto No. 2; Rhapsody On A Theme Of Paganini Chicago Symphony/Reiner. RCA 170232

Ravel, Daphnis et Chloé (Complete) Montreal Symphony/Dutoit. "An absolute dream performance."—Stereo Review London *DIGITAL* 115520

Brahms, Cello Sonatas Yo-Yo Ma, cello; Emanuel Ax, piano. 1985 Grammy Award Winner, Best Chamber Music Performance! RCA *DIGITAL* 154044

Pavarotti: Passione Title song, *La Palummella*, 10 more. "A sumptuous festival of Neapolitan plums."—Opera News London *DIGITAL* 115441

Mozart, Requiem Leipzig Radio Choir; Dresden State Orchestra/Schreier. "Exceptionally satisfying."—High Fidelity Philips *DIGITAL* 115039

Galway: Clair De Lune (Music Of Debussy) With Marisa Robles, harp. Sonata for Flute, Viola & Harp; Reverie; more. RCA *DIGITAL* 150499

Rimsky-Korsakov, Scheherazade Vienna Philharmonic Orchestra/Previn. "A fresh and spacious reading."—Gramophone Philips *DIGITAL* 115415

Romantic Organ Music Peter Hurford plays Widor, Vierne, Alain, Franck, Karg-Elert, Brahms, Mendelssohn & Reger. Argo *DIGITAL* 115221

The Canadian Brass: High, Bright, Light & Clear Air On The G String, Masterpiece Theatre Theme, other Baroque gems. RCA *DIGITAL* 144529

Richard Stoltzman: Begin Sweet World Title song, *Amazing Grace, Clouds, Abide With Me/Blue Monk, Morning Song*, more. RCA *DIGITAL* 150414

Horowitz In London Recorded live! Schumann, Kinderscenen; Chopin, Polonaise-Fantaisie & Ballade No. 1; more. RCA *DIGITAL* 162507

Orff, Carmina Burana Hendricks, Aler, Hagegård. London Symphony Chorus & Orchestra conducted by Eduardo Mata. RCA *DIGITAL* 144503

Pops In Space John Williams leads The Boston Pops in music from Star Wars, Close Encounters, Superman, more. Philips *DIGITAL* 105392

Mozart, The Piano Quartets Beaux Arts Trio; Bruno Giuranna, viola. "Absolutely indispensable."—Stereo Review Philips *DIGITAL* 115271

Pachelbel, Canon in D Also includes other works by Pachelbel & Fasch. Maurice André, trumpet; Paillard Chamber Orchestra. RCA 133877

Wagner, Orchestral Highlights From The Ring Vienna Philharmonic/Solti. Ride Of The Valkyries, Magic Fire Music, more. London *DIGITAL* 115426

Julian Bream: Music Of Spain, Vol. 5 Albéniz & Granados on guitar. "Electrifying...A treasurable disc."—Gramophone RCA *DIGITAL* 114746

Gershwin, Rhapsody In Blue; An American In Paris; Concerto Pittsburgh Symphony/Previn (pianist & conductor). Philips *DIGITAL* 115437

Galway Plays Khachaturian Flute Concerto; Sabre Dance; Masquerade: Waltz; Adagio Of Spartacus And Phrygia. RCA *DIGITAL* 160162

Pavarotti: Mamma With Henry Mancini: Title song, *Non ti scordar di me, Musica proibita, Vieni sul mar*, 12 more. London *DIGITAL* 115310

Mahler, Symphony No. 4 Kiri te Kanawa, soprano. Sir Georg Solti conducts the Chicago Symphony Orchestra. London *DIGITAL* 115092

Rudolf Serkin: Mozart, Piano Concertos Nos. 12 & 20 "He makes every phrase glow with life."—Stereo Review DG *DIGITAL* 115062

Vivaldi, The Four Seasons The English Concert/Pinnock. "The finest recording of [it] I've heard."—High Fidelity Archiv *DIGITAL* 115356

Reich, Variations For Orchestra; Adams, Shaker Loops San Francisco Symphony Orchestra led by Edo de Waart. Philips *DIGITAL* 115479

Sousa, Stars And Stripes Forever Philip Jones Ensemble. Plus *Semper Fidelis, El Capitan, Washington Post*, 11 more. London *DIGITAL* 115051

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Artur Rubinstein: Chopin, 14 Waltzes "[His] playing is relaxed, assured, and wonderfully controlled."—American Record Guide RCA 101987

Mozart, Symphonies Nos. 40 in G Minor & 41 in C (Jupiter) James Levine conducts the Chicago Symphony Orchestra. RCA *DIGITAL* 104810

Kiri te Kanawa: Blue Skies With Nelson Riddle: Title song, *Speak Low, How High The Moon, So In Love*, 8 more. London *DIGITAL* 115035

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Bach, Organ Works Daniel Chorzempa plays the Toccata & Fugue in D Minor; the Prelude, Largo & Fugue in C; more. Philips *DIGITAL* 115193

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FORESTS

Some Plain Dealing Pays Off

A diverse group of West Virginians has produced something rare—a national forest plan that puts the forest before the trees.

The Monongahela, a national forest whose defenders are helping to plan its future.

Dennis G. Hanson

OVER THE YEARS, the Monongahela National Forest in northeastern West Virginia has had its share of national publicity.

Many citizens protested extensive timber cutting here in the 1960s and early '70s, but Forest Service administrators dragged their feet or refused to listen. The controversy finally provoked a lawsuit, which the agency lost. The suit, in turn, stimulated passage of the National Forest Management Act of 1976, which is now guiding the preparation of detailed management plans for national forests across the country.

The Monongahela Forest is once again the center of attention—for entirely different reasons. Its new forest plan gives highest priority to wildlife and recreation—not timbering—in three quarters of the forest. It also states that 15 percent of the forest, including 13 of its 19 nonwilderness roadless areas, will be closed to public vehicles, new road building, and commercial timber cutting.

"It's the most talked-about forest plan in the country," says an aide to Rep. Robert Wise (D-W.Va.), who supported environmentalists' efforts to revise the plan.

What brought about this dramatic shift in the agency's priorities? It didn't take a lawsuit this time, but it did require hundreds of hours of work—as well as wit, courage, and civility—on the part of conservationist activists, state employees, and the Forest Service.

The agency's draft management plan, issued in December 1984, had set ambitious goals for the Monongahela over the next 50 years: coal mining, quadrupling the timber harvest, and almost tripling road mileage. Recreation and wildlife values were considered secondary to commodity production, and the roadless areas that Congress had not designated as wilderness were scheduled to be roaded and logged within ten years.

The public responded with nearly 4,000 letters and phone calls from more than 17,000 individuals, most of them expressing concern over the plan's emphasis on development activities.

"It's the largest response we've ever gotten to anything we've done in West Virginia," says Monongahela Forest Planner and Information Officer Gil Churchill. "We expected about a quarter as much." It is also the largest outpouring of opinion drawn so far by any forest plan in the eastern United States, according to The Wilderness Society's Peter Kirby.

The newly formed West Virginia Chapter of the Sierra Club was one of the groups that expressed serious concern over the draft plan. "We were new and absolutely committed to going

about things in a positive way," says Mary Wimmer, a biochemistry professor who co-chairs the chapter's conservation committee. "We wanted communication—not litigation—to be our method."

Several conservation and sporting groups, including the Sierra Club, Trout Unlimited, the Audubon Society, the West Virginia Wildlife Federation, the West Virginia Highlands Conservancy, and the West Virginia Citizen Action Group, joined forces to publicize the plan's flaws through meetings, mailings, and media coverage. "Our message to citizens was that communication is part of the process, and that if you participate, the Forest Service will have to listen," Wimmer says.

And listen it did. After extending the 90-day public comment period by 30 days, the agency decided it would redraft the plan with the help of anyone who was interested.

Meanwhile, Wimmer decided to devote five weeks of vacation time to the new plan. Later she spent most of her days off on the project. "For about a year or so, the Monongahela became my life," she says.

"Mary and the Club tried to help us find a direction," says Ralph Mumme, former Monongahela Forest supervisor and current director of timber management for the agency's Southern Region. "They got out, went door-to-door, and explained it on the streets."

"They seriously wanted to know more—what we were facing, what latitude we had," the Forest Service's Churchill says of the activists. "And they were extremely positive—they gave us information on things we could actually do something about. When we got together, it wasn't just another public meeting. It was a place to do work."

The result, a plan approved last July, barely resembles the timber-oriented draft. In addition to emphasizing wildlife and recreation in much of the forest, the final plan cuts the draft's road-building program by a quarter, its timber-harvest targets by more than half. Where timbering is allowed, it will be more closely regulated than before. Coal mining in the forest will be considered on a case-by-case basis under strict environmental guidelines, with public involvement in any leasing decisions.

In the 15 percent of the forest where roads and timber harvests are banned, managers' prime concern will be protecting the watershed, remote wildlife habitat, and opportunities for dispersed recreation. "This new management prescription is a highlight of the plan. It protects some of the best remaining wildlands in the Monongahela," Wimmer says.

"The forestry community feels that the plan represents a backing away from commodity uses of the forest," says Roger Sherman, public affairs forester for Westvaco, a company that produces paper, packaging, and chemicals in the state. "But with the amount of discussion that went on, there doesn't seem to be much point in an appeal."

West Virginia Sen. Robert Byrd (D) says he was initially worried about whether the redrafting sessions would include all relevant segments of the public: "I was concerned that all have a chance to be heard." In the end, he says, the Forest Service planners produced a document that is "a good reflection of the views of the various groups that use the forest."

The negotiating sessions are over, but the Sierra Club's West Virginia Chapter has not finished its work on the Monongahela National Forest. In addition to helping implement the new plan, Wimmer and Chapter Outing Chair Paul Turner have been organizing volunteers to help repair sections of the 700-mile trail system devastated by a 1985 flood. The forest sustained

Mary Wimmer

From paperwork to pick work: Volunteers restore flood-damaged trails in the Monongahela National Forest.

millions in damage, and volunteers from three states are doing everything from trail inventory to rock removal, from clearing brush to relocating trailbed. As of last September, 60 volunteers had put in more than 1,300 hours on the project.

"We managed to build bridges," Wimmer says of the new forest plan. "Now we have to maintain them."

DENNIS HANSON, *former senior editor of* Audubon, *lives in Bend, Ore. He wrote "The Rise and Demise of Forest Planning" for the January/February 1986* Sierra.

ENERGY

Whose Power to Which People?

America's hunger for electricity may spell destruction for more than one remote corner of the Canadian wilderness.

James Baker

FOR CONSERVATIONISTS, it's bad enough to build a big hydroelectric dam at all—to kill a living river by drowning it. But it compounds the crime to raise a dam solely to sell the power to a foreign country at bargain rates. In doing so, the dam builders wreak havoc not only on the environment, but on the nation's economic and political systems, too.

Does it make sense, when Canada is already awash in surplus electricity, for the province of British Columbia to build a $2-billion hydro project just so it can sell the dam's power to U.S. utilities at fire-sale rates? The provincial government has decided that it does. The British Columbia Hydro and Power Authority, a publicly owned corporation popularly called B.C. Hydro, will build its controversial Site C Dam on the remote Peace River—as soon as U.S. West Coast utilities can overcome a legal obstacle that is blocking them from signing contracts to import the dam's electricity.

Located in the northeastern reaches of the province near the small town of Fort St. John, Site C would take six years to build, cost an estimated $2.28 billion (U.S.), and generate 900 megawatts of electricity—enough power to run the city of Portland, Ore.

Although British Columbia has sold surplus electricity south of the border for many years, it had resisted a policy of building dams solely for power exportation. Then, in September 1985, former Premier William Bennett unexpectedly announced that the provincial government would jump into the business of large-scale power export.

Why the switch? Because B.C. Hydro kept pushing the project. "You have to understand that B.C. Hydro is virtually an authority unto itself, whose whole reason for existence is to build dams," explains Robert Miles, chair of the Sierra Club of Western Canada.

If British Columbia does build Site C,

The Peace River Valley, viewed from the Hudson's Hope Highway. If B.C. Hydro's Site C dam is built to export power to the United States, it will flood the area shown here.

the province will become that much more involved in a booming trade that disturbs power planners and environmentalists on both sides of the border. Net Canadian exports of power to the United States increased more than 16-fold between 1970 and 1984—from 2,386,000 megawatt hours, valued at $22.5 million, to 39,554,905 megawatt hours, valued at $1.05 billion. Today Canada supplies 1.6 percent of all U.S. electricity, including 17 percent of New York's and 6 percent of New England's.

The environmental consequences of this trend have been severe. In the 1970s, Quebec's massive James Bay project not only saddled the province with a $15.1-billion public debt and a huge electricity glut, it also drowned hundreds of square miles of the once-virginal La Grande River, with profound effects on wildlife and Native peoples.

With Site C, British Columbia threatens to make—on a smaller scale—Quebec's mistakes all over again. The dam would drown two free-flowing tributaries of the Peace River along with their healthy fisheries. (The Peace has already been impounded twice upstream from Site C.) Once the dam's gates closed, hundreds of moose would die; other creatures that depend on the northern, sunny side of the canyon for critical winter habitat would suffer as well.

Along the river valley, there are 16,000 acres of arable land for vegetable crops, even at the high latitude of 55°N. The *Vancouver Sun*, the province's largest daily newspaper, recently questioned "the desirability of flooding B.C.'s last remaining tract of valuable agricultural land to power air conditioners in California."

Moreover, officials have consistently indicated that B.C. Hydro intends Site C to be merely the first of several hydroelectric projects—all of them justified under the new provincial policy of building big dams strictly for export. For the Stikine River in the province's northwestern corner, B.C. Hydro has proposed a megaproject of five dams generating 2,900 MW at a cost of $5 billion or more just for construction. Meanwhile, conservationists want a vast Stikine national park reserve to protect this magnificent wilderness of bear, salmon, glacially carved mountains, the Grand Canyon of the Stikine, and the 400-mile-long, unspoiled river. With memories of James Bay still fresh in mind, the Stikine megaproject a real possibility for the future, and more environmental catastrophes planned by B.C. Hydro, conservationists in both Canada and the United States are fighting to nip large-scale energy exportation in the bud—at Site C.

"We shouldn't export our environmental damage to Canada, and we don't need to," says Marc Sullivan, executive director of the Northwest Conservation Act Coalition in Seattle. "At roughly half the price B.C. Hydro will charge for Site C power, we could pre-build conservation—our cheapest, cleanest, most reliable source of new energy."

There are similar economic arguments to be made against Site C from the Canadian side. According to B.C. Hydro's own calculations, by the year 2000 nearly a million megawatt-hours could be saved by the province annually if basic conservation programs for industrial, commercial, and residential

users were to begin immediately. The corporation has ignored this strategy, however, dismantling its conservation department and completing hydro projects elsewhere that guarantee a surplus of power well into the next century.

Some people are also concerned that Site C won't turn a profit once completed. To attract U.S. buyers, B.C. Hydro has offered 25-year contracts at the comparatively low rate of 3.5 to 5 cents per kilowatt-hour, but it's been calculated that the province would require an average price of between 8.15 and 8.5 cents per kilowatt-hour to realize a 10-percent profit on its outstanding capital investment. In other words, the Site C dam would lose money at a time when B.C. Hydro already owes more than $5.5 billion to its bondholders.

The plan to build Site C has hit one significant snag. To deliver the juice to California utilities, B.C. Hydro must ship the electricity through the Intertie, a system of transmission lines spanning the West Coast states. The Intertie is owned and operated by the U.S. government through the Bonneville Power Administration (BPA), which has surplus hydroelectricity of its own to sell to California.

Although a dozen West Coast utilities are waiting to buy Site C power, they cannot legally sign on the dotted lines until B.C. Hydro gains access to the Intertie from the BPA. But the BPA insists that the Intertie, which has reached its load limit, must transmit power from domestic producers before foreign suppliers. Already angry over new U.S. tariffs against B.C. wood products, the Canadians accuse the BPA of trying to obstruct international trade. Stung by such accusations, the BPA signed an agreement with B.C. Hydro and the potential American buyers last year to study the Site C project.

The study will undoubtedly ignore the question of whether the large-scale export of hydroelectricity makes sound public policy for British Columbia. "Canada is essentially an American branch-plant operation," says the Sierra Club's Miles. "We are trapped in a vicious circle. The United States imports our electricity, which powers more economic growth and more demand for electricity. In turn, Canada builds more dams to supply more power, which destroys our land and piles up our public debt." The best way out of the vicious circle would be more conservation in both nations—certainly not more dams in Canada.

JAMES BAKER, *a freelance writer in Seattle, Wash., is a frequent contributor to* Sierra.

HAZARDOUS WASTES

Biology's Answer to Toxic Dumps

The right microbes in the right environment will feast on harmful wastes. One species' poison may be another's meat.

James J. Holbrook

RAIN FALLS as a rubber-gloved technician shovels mud and hauls it to a nearby lab. For years a Minnesota sawmill dumped its wastes here, and for years rain has been leaching traces of the wood preservative pentachlorophenol (penta) into the groundwater. But now scientists are using the site, one of more than 500 penta pits across the nation, to study the possibility and profitability of using bacteria to clean up hazardous wastes.

The concept is not new. Bacteria have been used to treat municipal wastewater for almost a century. But during the last few years biochemists have been showing that nature can provide organisms capable of metabolizing some of our most troublesome toxins.

The microbe being tested at the Minnesota site is called *Flavo bacterium*. Ron Crawford of the University of Minnesota's Gray Freshwater Biological Institute isolated the bacterium by continuing to feed a sample of penta-contaminated soil a steady diet of penta. "Over a period of several months, any organism that can't metabolize penta will not survive," Crawford explains. *Flavo bacterium* converts penta into harmless carbon dioxide and chlorides.

Another researcher at the institute, John Wood, is experimenting with an alga that can convert dissolved heavy metals such as lead and mercury into insoluble forms, thus keeping them out of the food chain.

At the Woods Hole Oceanographic Institution in Massachusetts, microbiologists Craig Taylor and Holger Jannasch have maintained a colony of sulfur bacteria collected near deep-ocean vents. In their natural habitat these organisms live on the hydrogen sulfide leaked by the vents, so they may be useful in removing sulfides, a primary cause of acid rain, from the emissions of coal-fired power plants.

In another promising development, Michigan State University biochemists Steven D. Aust and John A. Bumpus recently reported that the same enzyme system that enables the fungus *Phanerochaete chrysosporium* to decompose dead trees is also capable of reducing several deadly and persistent poisons—DDT, lindane, PCBs, and dioxin—to carbon dioxide.

These and other lab triumphs have demonstrated the feasibility of using biological methods to clean up hazardous wastes. It's not yet clear, though, whether this technology will succeed in the marketplace.

"What's holding up the use of biological treatments is the market," says Sierra Club Political Director Carl Pope, co-author of *Hazardous Wastes in America* (Sierra Club Books, 1982). "The demand hasn't been there, because it's cheaper just to dump the stuff."

But as dumps grow more controversial and expensive—and biological techniques grow more sophisticated—the market is beginning to respond. In 1985, for example, the Rothschild Venture Fund and the Plant Resources Venture Fund provided $500,000 and the promise of significant additional funding to the newly formed Minnesota firm Biotrol, Inc. The company now offers a penta cleanup service that uses Crawford's *Flavo bacterium*. Biotrol is one of several U.S. firms trying to apply the ideas of modern microbiology to toxic waste disposal.

"The hazardous waste industry is on the verge of an explosion," says Minneapolis attorney and Biotrol co-found-

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* ○ No purchase or test drive is required for eligibility. Sweepstakes open only to licensed drivers who are residents of California, Nevada, Oregon or Washington. ○ Winners will receive a 1987 Panama Canal cruise for two, worth up to $4,200 per person (retail value), on Royal Viking Line. ○ Cruises are subject to space availability. Actual cruise will be confirmed within 30 days prior to sailing date. No cash will be awarded in lieu

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GM CHEVROLET

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of cruise award. ○ Port charges and personal expenses on board the ship are the responsibility of the winner. ○ Accommodations on the cruise are G type cabins. These accommodations may be upgraded if the winner chooses to pay the cruise fare differential between the G category and the upgraded category. ○ This contest is not open to travel agents or to Royal Viking Line employees or their families.

er Lindsay Arthur, "much the way the computer industry was 20 years ago. It's likely to be a multibillion-dollar-a-year industry."

Technical problems remain, however. Biological treatment is not simply a matter of pouring a slurry of microbes into a pit and billing the customer. "You've got to provide an environment the bugs can thrive in," says Boyd Burton, president of Biotrol. "You need proper levels of oxygen, along with a suitable pH and temperature. Naturally occurring conditions do not support the right kind of bacteria."

One possible solution involves placing contaminated soil and water into self-contained "bioreactors" that will allow technicians to control surrounding conditions. Although it will require significant outlays of capital, this is the approach being explored by Biotrol.

Another solution involves altering the micro-organisms. "In the future we will use genetic engineering to modify the bugs, to give them a greater tolerance for their environment and a more voracious appetite," Burton predicts.

Environmentalists are hopeful, but approach the industry with caution. "Even the introduction of naturally occurring organisms into new environments can be disruptive of ecosystems," says Pope. "When you go beyond that to genetic engineering, you have to be very careful you know exactly what you're doing to the environment."

Burton accepts that responsibility willingly: "There will be many skirmishes, many questions about whether we know enough," he says. "It will be our obligation to know enough."

In Burton's opinion, the new technology's success is just a matter of time. "In a decade or so we will not only be able to clean up the mess we have now, but we will be able to handle the waste we produce each year. We're a long way from that today, however. We've just entered the slugging match of development and demonstration of practical commercial processes."

Environmentalists are keeping a close watch on the emerging industry. If it can fulfill even part of its initial promise, we could soon be treated to the spectacle of watching profit-making companies compete to clean up the Earth.

James J. Holbrook is a freelance writer based in Minneapolis, Minn.

WILDLIFE

High Noon at Western Haystacks

Conflicts between ranchers and wild animals have been growing more intense—and more expensive to resolve.

Sheila Robertson

The cow elk staggered through the crusted snowdrifts beside the frozen stream. Behind her, five stark-ribbed companions struggled to keep up. There had been seven earlier; soon one more would give up the search for food.

The cow had found forage along this route in the past, but now she was headed for disaster. A detour around the fences of a new subdivision was forcing the elk far down the valley, into plowed fields.

The wind shifted. The cow hesitated, then changed direction. She recognized the scent carried by the snow squall—hay. As the frost-paled sun dropped below the horizon, the elk made it to a stackyard and began tearing into the bales.

Within five minutes, truck headlights outlined the herd against the hay. A man yelled and fired a rifle into the air. Barking dogs scattered the elk and chased the leader until she floundered in the snow.

An hour later, a government truck pulled into the yard. The man who came to meet it wasn't happy.

"This is getting expensive!" he yelled. "I lost 20 bales last week and they're back tearing up more tonight!"

"We'll panel these stacks tonight—that should keep them out," replied the man from the wildlife agency.

"It better, or I'm going to send you boys the bill!"

With minor variations, this scene is

played out across the West nearly every winter. Lately the confrontations have become more frequent and more intense. In some states the costs associated with wildlife damages, or depredation, have increased 12-fold in the last five years, and complaints have doubled in the 11 western states.

Part of the problem is the current financial crisis in agriculture. Many landowners who have tolerated wildlife depredation for years are now less able to bear the expense. But environmental conditions are also a factor. Each year wildlife and agriculture are crowded closer together as key winter range is overgrazed or replaced by cultivated fields, tree farms, orchards, subdivisions, shopping malls, reservoirs, vacation homes, or roads.

When a tough winter comes along, wildlife pays for the habitat loss. More than 40,000 mule deer starved to death near Salt Lake City in the winter of 1983–84 when extremely harsh weather forced them into the densely populated valley. Since the previous severe winter, many acres of critical deer habitat just outside of town had been developed.

"That land is worth $50,000 to $60,000 an acre now," says John Kimball of Utah's Department of Wildlife Resources. "We can't afford to acquire it, so big game along the Wasatch Front [the city's mountainous eastern border] has been written off."

In some cases, wildlife is starving because of poor range conditions. Charles Kast, who farms and ranches near King Hill, Idaho, says that nearly 700 deer invaded his fields last winter because they couldn't find forage on adjoining public land. He estimates that the damage to his haystacks, turnips, and grain cost him between $5,000 and $10,000.

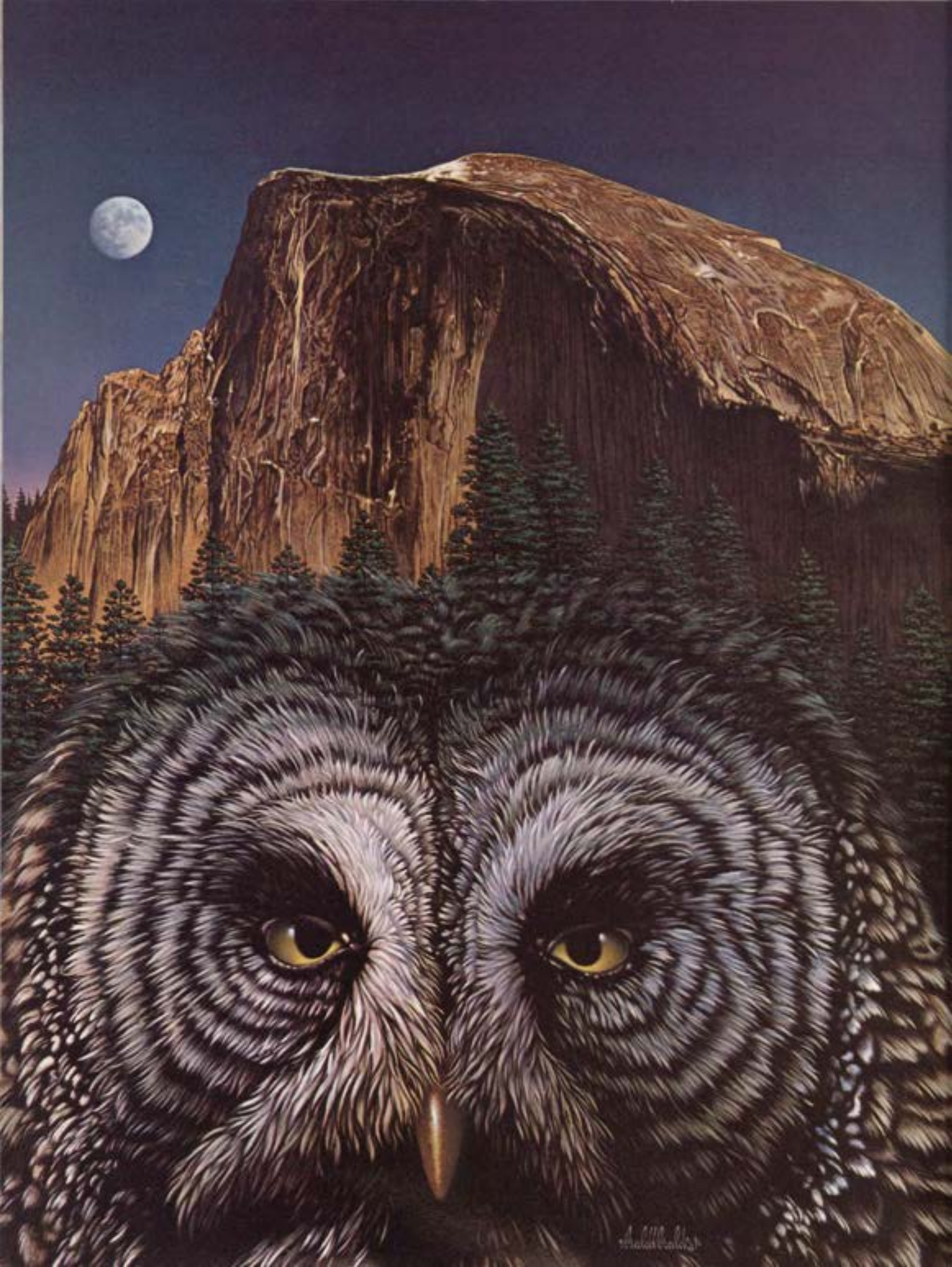
The burden of resolving these problems falls on state governments, which are in charge of managing wildlife within their borders. Four western states—Wyoming, Colorado, Utah, and Washington—pay for damage caused by wildlife, and farmers, ranchers, and even timber companies are lobbying hard for payments in other states. Only in Montana have the courts ruled that landowners must accept limited depredation as a cost of doing business.

States that already pay damage claims are looking for new sources of funding. Part of a sales-tax increase that Washington state voters turned down in November would have covered burgeoning depredation costs. State fees for hunting licenses pay the bills in most states, but as the costs of depredation soar, hunters are arguing that the burden should not be theirs alone.

Randy Morris, chair of the Committee for Idaho's High Desert, is against making taxpayers cover the damage that he believes ranchers have brought on themselves. "Because of grazing abuses, about half the range in southern Idaho is in poor condition," he says.

For state wildlife agencies throughout the West, the rising costs of depredation are putting a big squeeze on budgets that are already tight. "The more we spend on depredation, the less money there is for other projects," says Al Langston, manager of the Wyoming Game and Fish Department's Information Section, which spent $2.1 million—10 percent of its budget—on depredation last year.

Aggressive efforts to keep wildlife off



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State-purchased hay keeps these pronghorn antelope off Interstate 80 near Bliss, Idaho. As good rangelands disappear, wildlife and civilization are coming increasingly into conflict.

private land are accepted in most states. When storms in the fall of 1985 drove wildlife onto private land near Laketown, Utah, rancher Val Siddoway shot more than 150 deer. The state's Department of Wildlife Resources found that Siddoway was within his rights in trying to protect his property.

The Oregon Department of Fish and Wildlife allows black bears to be killed for gnawing on privately owned trees. Timber companies in the state destroy about a hundred bears a year, claiming that they cause economic losses on tree farms.

Oregon resident Cathy Sue Anunsen became concerned last spring when she heard that three timber companies—Starker Forests, Willamette Industries, and Hull Oakes Lumber Company—had hired a government trapper to kill black bears for this reason in Oregon's Coast Range mountains. She suggested more humane management techniques to the Department of Fish and Wildlife and the timber companies. "They acted like this wasn't any of my business," she says.

Anunsen and the Fund for Animals sued the companies in state court, arguing that they had not proved that killing the bears was the best solution to their problem. "We maintain that there are better, more responsible ways to balance man's and animals' needs," says her attorney, Craig James. (A ruling on the case was still pending at press time in late November.)

Many wildlife agencies feel caught in an impossible situation as they struggle to satisfy both damage claimants and the public. All are looking for solutions, and at least one agency has sought outside help. After spending a record-breaking $4 million on depredation-related problems in 1983–84, the Colorado Division of Wildlife hired a conflict resolution group to bring farmers, ranchers, resort owners, environmentalists, government agencies, and other concerned groups together to work toward more effective, less expensive policies.

Its work is not yet complete, but the group has reportedly made some progress. "It has really done a lot to make the various interests less suspicious and more aware of each other's problems," says Robert Hembrode of the state wildlife agency.

The group is trying to distinguish wildlife damages that deserve state money and attention from those that do not. Based on these decisions, "We hope to draft statutes that are more realistic," Hembrode says.

A big-game specialist, Hembrode believes that wildlife advocates must address some serious political problems. Many landowners are fed up with efforts to increase wildlife numbers. "We are not at biological carrying capacity," Hembrode says, "but we are at political carrying capacity." ■

SHEILA ROBERTSON *lives in Boise, Idaho.*

Parts of this article appeared in the November/December 1985 issue of Idaho Wildlife.

ARMS CONTROL

Teams of American scientists have occupied three stations near a Soviet weapons testing site. Their mission just might explode one of the myths blocking a nuclear test ban treaty.

Gaining Ground Zero

Leslie Y. Lin

IT BEGAN A LITTLE MORE THAN a year ago as a crazy idea—a joke really—in Tom Cochran's office, but it was destined to become the first private citizens' initiative in the history of nuclear arms control efforts. As a result of the far-fetched notion, by March six seismic stations will be monitoring the major nuclear weapons test sites of both the United States and the Soviet Union.

At the center of this unique arms control event is the Natural Resources Defense Council (NRDC). In addition to working on traditional environmental issues, the organization about six years ago began to examine the environmental effects of the production and possible use of nuclear weapons. Dr. Thomas Cochran, a physicist and NRDC senior staff scientist, gradually amassed considerable data on weapons, fissionable materials, arms industries, and military facilities in the U.S. and USSR.

Cochran and his colleagues also wanted to know the number, magnitude, and purpose of nuclear weapons tests. Until 1982, keeping track of U.S. tests had been fairly simple: Most were announced by the government. In 1982, however, the Reagan administration decided to announce fewer tests, wishing to play down its stepped-up testing program. To justify this change in policy, officials pointed to the Soviets, who announced none of their tests.

Even after the increase in unannounced tests, Cochran and his colleagues could obtain seismic data from the U.S. Geological Survey (USGS) and the Hagfors Observatory in Sweden. When an earthquake-like event occurred with its epicenter at the Nevada Test Site, it was safe to assume that a U.S. nuclear test had taken place.

Then came a paper presented at a June 1985 scientific meeting in Pajaro Dunes, Calif. Written by Ray Kidder of the Lawrence Livermore Laboratory, the paper discussed the military significance of low-yield nuclear tests. Kidder's data included a figure showing the ratio of explosive yields to the total number of tests in Nevada between 1980 and '84.

Cochran compared Kidder's data with information on known tests. To his surprise, he found that between four and eleven low-yield tests appeared to be both unannounced and undetected by outside monitors; even the USGS had missed tests in the one- to two-kiloton range.

As Cochran, Stan Norris, and Bill Arkin began work on a paper announcing their finding to the public, they became increasingly frustrated by their inability to get information about low-yield tests. According to Cochran, Arkin jokingly suggested, "Why don't we put our own seismic station in there and monitor them ourselves?"

They kicked the idea around for a while, but it presented some obvious and serious problems, not least of which was that of appearing to release official state secrets. Then Cochran attended a funeral with NRDC scholar-in-residence Gary Milhollin. He mentioned the idea of private seismic stations; Milhollin facetiously suggested an improvement: Why not monitor the Soviets as well?

Although it was the second crazy idea he had heard in as many days, Cochran recognized that a proposal for a joint U.S.–Soviet project solved many problems and presented some interesting

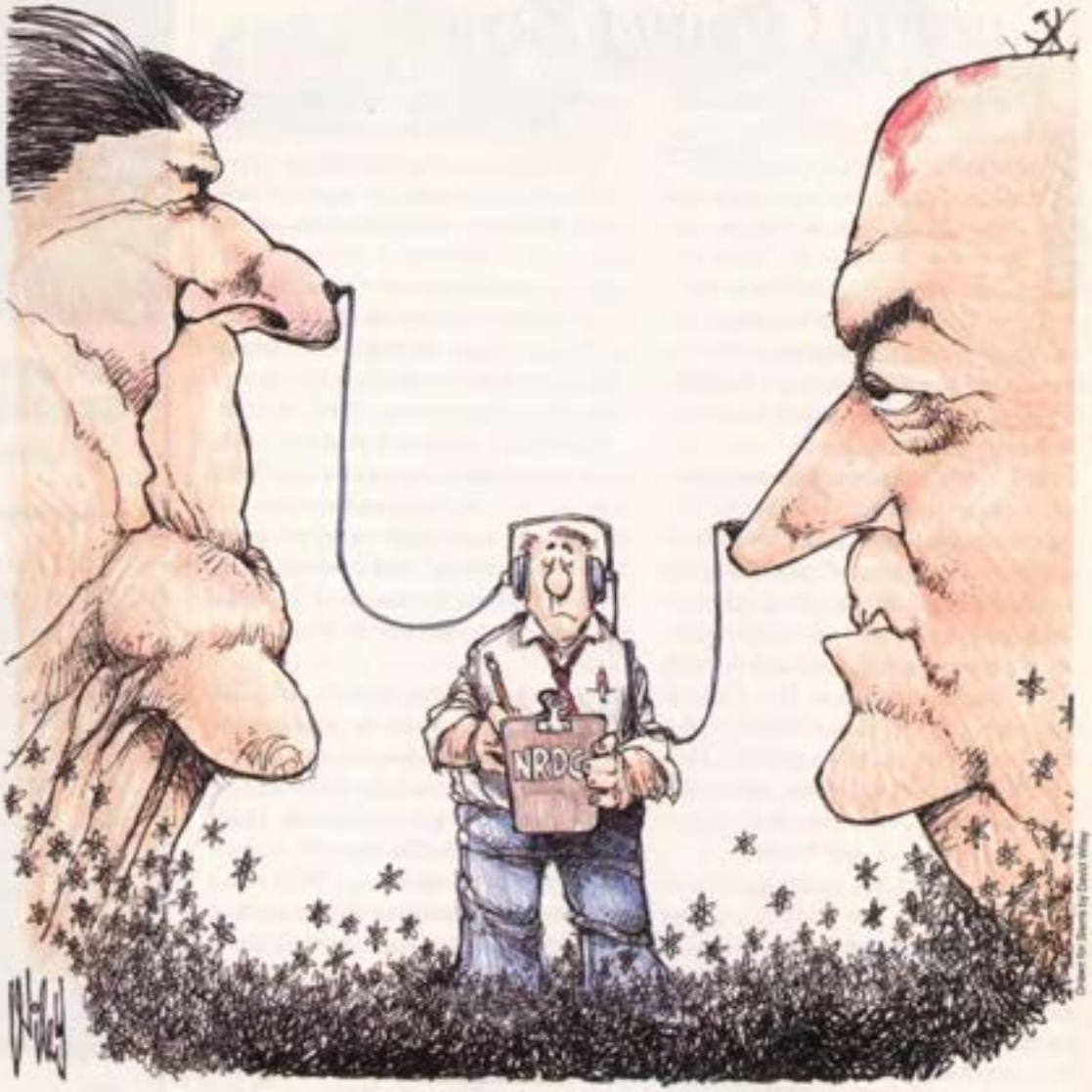
policy implications. The problem of appearing to release state secrets could be avoided if both countries were to exchange comparable information. Best of all, the project seemed to be a way to call the bluffs of both Reagan and Gorbachev: Reagan's insistence that verification is the major stumbling block to a test ban treaty and Gorbachev's claim that it is not.

Cochran discussed the idea with as many appropriate people as he could find, including U.S. Deputy Secretary of State John Whitehead, arms control expert Paul Nitze, geophysicist Charles Archambeau, and a delegation of Soviet scientists who were attending a meeting of the Federation of American Scientists in Virginia.

At that meeting, Cochran raised the idea with Princeton professor Frank von Hippel. On a subsequent visit to the Soviet Union, von Hippel discussed several verification proposals, including NRDC's, with Yevgeny P. Velikhov, Gorbachev's unofficial science advisor. Velikhov, a vice-president of the Soviet Academy of Sciences, suggested holding a workshop on verification issues in late May at the Soviet Academy of Sciences' Symposium on Arms Control. Von Hippel arranged for Cochran, Archambeau, and NRDC chairman Adrian DeWind to attend.

In Moscow the American contingent met with Velikhov and other members of the Soviet Academy of Sciences, with whom they discussed NRDC's seismic verification proposal. Several days later the Americans were asked to come to the academy and meet with Velikhov, who told them, "All is agreed." It was the beginning of the Natural Resources Defense Council–Soviet Academy of Sciences Nuclear Test Ban Verification Project.

Without further ado, DeWind sat down with a notebook and pencil and drafted a two-page agreement with his colleagues. In it, NRDC and the Soviet Academy of Sciences agreed to establish "three seismic stations adjacent to each of the principal nuclear weapons testing sites in the two countries: near Semipalatinsk in the Soviet Union and the Nevada Test Site in the USA. These six stations will be manned and operated jointly by the Natural Resources Defense Council of [the] USA and the Academy of Sciences of the USSR." The agreement further noted: "The project's findings will be helpful in demonstrating verification procedures to be used during a test moratorium or under a nuclear test ban treaty."



Seismic equipment for all six stations was to be obtained by NRDC, which would bear the costs of the U.S. installations. The Soviets would purchase seismic and computer equipment for their stations from NRDC.

The scientists decided to begin by the end of June, a mere month after the

signing of the agreement. Geophysicist Archambeau took on the task of putting together a field team and assembling the seismic equipment. Staff and supporters of NRDC were called in to help raise the $1 million necessary to launch the project, obtain equipment export licenses, and answer the unceasing calls from news media.

At NRDC's Washington office, the atmosphere was charged with excitement. "It's a tribute to the staff that we were able to assemble everything necessary for the project in one month," says Jacob Scherr, an NRDC senior attorney. "Certainly, we were buoyed by the tremendous response of the general public. We seem to have struck a chord in a population tired of waiting for arms control progress."

The NRDC field crew, which included Jonathan Berger and Jim Brune of the Scripps Institution of Oceanography, arrived in Moscow in early July. Soviet scientists took the Americans to the first area near the Semipalatinsk testing grounds. Walking over the immense grassy plain studded with hardy pines, they located granite outcroppings ideal for setting up surface seismometers. At Karkaralinsk the first seismometer was immediately set up, tested, calibrated, and allowed to run overnight. In the morning the scientists pulled the first recording paper. In a jubilant mood, everyone present signed the first seismogram; Cochran now has the framed document hanging over his desk.

By midsummer, surface monitoring stations were in place at two other sites, and preparations were under way for installation of more sensitive and accurate instruments at the bottom of 300-foot bore holes.

Meanwhile, the verification project had begun to have an impact in the United States just a few blocks from NRDC's Washington office. A display featuring the project stood in the Capitol rotunda. In the House of Representatives, 18 members of Congress, including the chair of the Armed Services Committee, offered a nuclear test moratorium amendment to the Defense au-

thorization bill. The measure called for a verifiable one-year halt to nuclear tests greater than one kiloton, beginning January 1, 1987. The amendment hinged upon reciprocal action by the Soviet Union, which has had a test moratorium in place since July 1985. Rep. Ed Markey (D-Mass.) held up the historic first seismogram before the House during debate on the amendment, which passed 234–155. It was the first time ever that the House had voted to cut off funds for nuclear testing.

It was around that time that the Reagan administration, which had been fairly neutral on the project, changed its attitude. Assistant Defense Secretary Richard Perle characterized the project as "an absurd . . . private excursion." Nuclear testing was necessary, officials said, to ensure the reliability of existing weapons and to perfect new ones.

Nevertheless, NRDC staff began to plan the Soviet scientists' visit to the United States. In September, during the heat of the Daniloff controversy, the scientists' visa applications were sent to the White House, where they languished. The September trip had to be cancelled.

The NRDC submitted new applications for a November visit. A new obstacle appeared when the State Department offered the Soviets two options. Under the auspices of the U.S. government, the scientists could stay two weeks, visit possible sites for U.S. seismic stations, and work with NRDC scientists—but only if they agreed to observe a U.S. nuclear test that employed a device for measuring the yield of large explosions (which the United States feels would be useful in verifying compliance with existing treaties). Otherwise, they could visit for one week under NRDC auspices and would not be able to visit the candidate sites.

The Soviets delayed their decision until after their October meeting with Cochran and Berger in Moscow. They chose the second, one-week option, saying that they were seismologists interested in a complete test ban, not in nuclear explosions.

Berger inspected the Soviet stations during his October visit. "They outdid themselves," he says. The Soviets had invested the equivalent of $150,000 in the facilities, finishing them well ahead of schedule. Every site now has a bore hole, laboratory, surface seismometer vault, emergency electrical generators, and housing for the scientists.

The Soviet team of five seismologists arrived in the United States on November 9 and met with NRDC's seismologists to review potential U.S. station locations. Unable to visit the sites, they relied on maps, slides, and rock samples. The three sites chosen—Nelson and Troy Canyon, Nev., and Deep Springs, Calif.—are all located on Bureau of Land Management land and require federal permits for the downhole phase. Cochran does not expect problems in obtaining these.

At a news conference on November 14, Vladimir Baranovsky of the Soviet Academy of Sciences' Department of Disarmament discussed the Soviet testing moratorium. He told reporters that the Soviets could allow perhaps 20 American tests to go unanswered, but "if there are no signs that the other side will join our moratorium, then [there may have to be] a political reassessment of the situation." On the day that he spoke, the United States conducted its 23rd nuclear test since the Soviet moratorium began.

Despite the administration's position, the verification project has helped revive interest in and hopes for a comprehensive test ban treaty. "It's clear that a private citizens' organization can play an important role where governments fail," says NRDC attorney Scherr. "We moved in at a time of incredible opportunity for progress in arms control—an opportunity the administration has failed to take advantage of."

As a result of this historic collaboration, American and Soviet scientists are removing the major technological barrier to a comprehensive test ban. The political obstacles, more difficult to surmount, remain. ■

LESLIE Y. LIN *is a freelance writer in Washington, D.C.*

Capture the Spirit of America's Indian Youth

• Shown smaller than actual size of 8½" diameter

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BRAVE & FREE

The legends and customs of America's Indians have long held a fascination for us all. They are a proud people who have great respect for nature and her animals, and who teach their children these same values.

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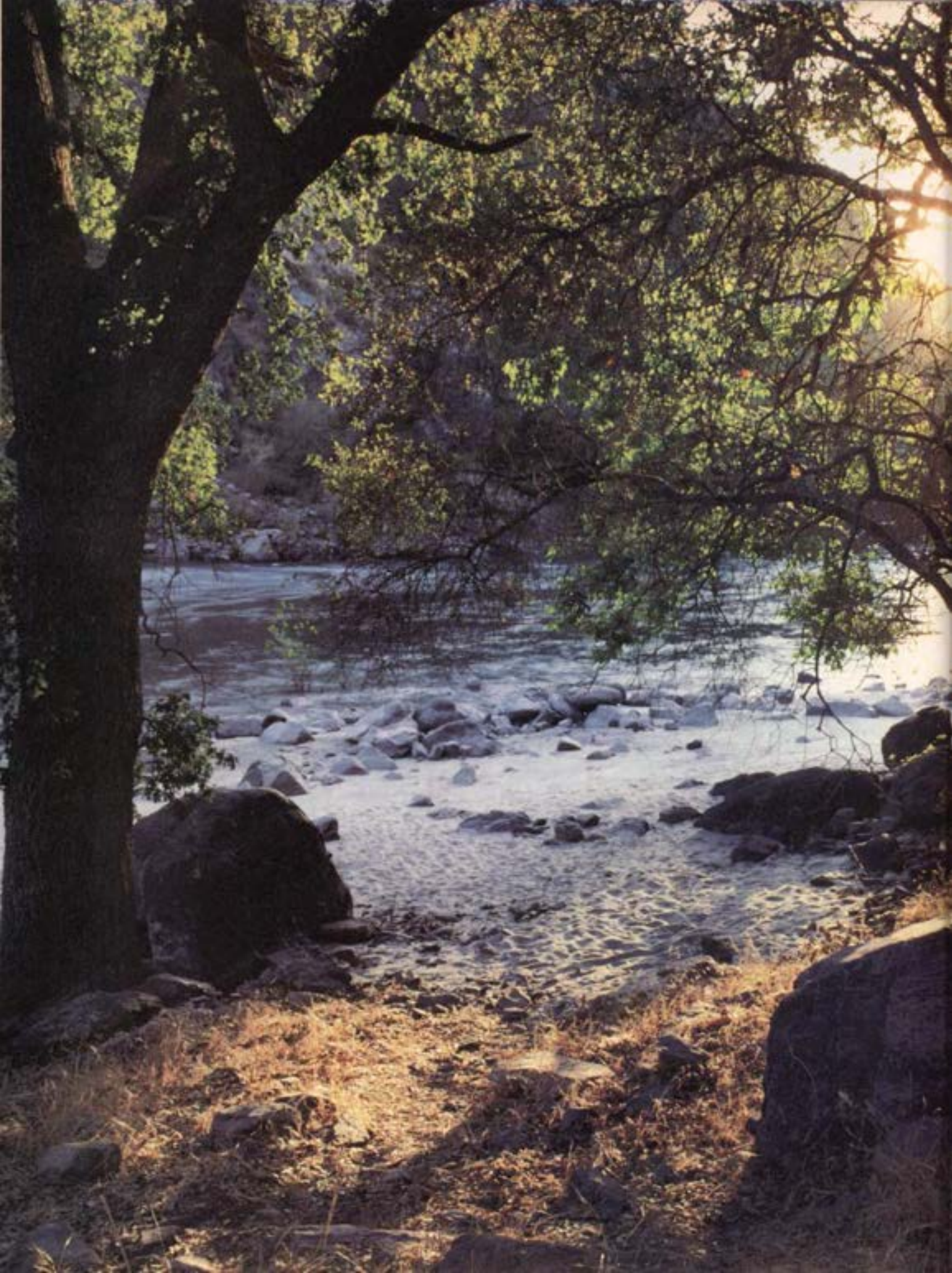
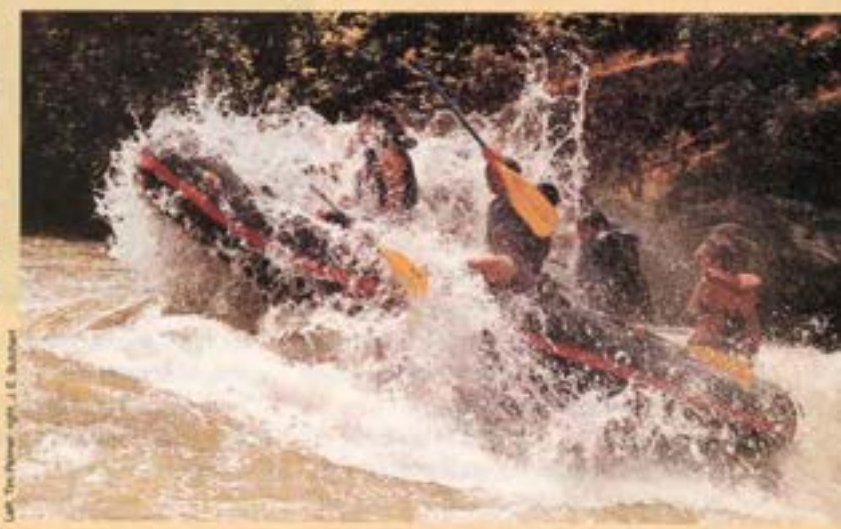


The Long Fight for Kings Canyon

Patrick Carr & Kathy Glass

Hydropower developers in California's Central Valley are planning to drown one of the nation's grandest river canyons–all for a drop in the energy bucket. It's the latest threat to a spectacular area that was first defended by John Muir.

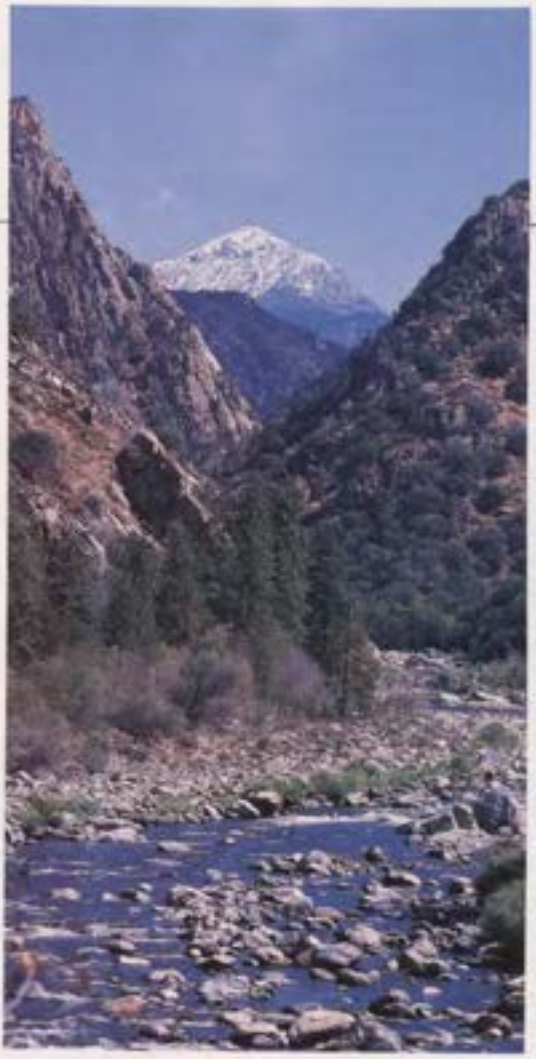


The lower Kings River canyon—at left, near the proposed Rodgers Crossing dam site—is a tranquil place . . . in spots.

Far upstream of the Kings River's lower canyon, snow on peaks soaring above 14,000 feet buries the river's source in the rugged wilderness of Kings Canyon National Park. Hundreds of falls, cascades, and rapids on the river's forks and tributaries propel its waters westward down the granite slope of the Sierra Nevada. Tumbling across the park boundary, the Kings' two principal forks merge to flow down the deepest canyon in the nation, with Spanish Mountain towering 8,240 feet above the riverbed. Miles of whitewater and oak-studded hillsides later, the river falls into a huge reservoir, the first link in a chain of developments that in most years prevents even a drop of Kings water from entering the Pacific.

The outstanding natural qualities of the Kings River watershed—its forests, rivers, high mountain lakes and valleys—inspired John Muir and the conservation leaders who followed him to seek its protection from damming, logging, overgrazing, and other threats. Today the battle continues, this time against a powerful water district that wants to dam the river's main stem at a place called Rodgers Crossing. The dam would flood a section of the river canyon dearly valued by the anglers, hikers, and whitewater boaters who come from all over California—particularly the flat, hot Central Valley—to enjoy what it has to offer.

The following is a chronicle of a hundred years of struggle to preserve the Kings River backcountry.



The High Sierra's granite crags loom 8,000 feet above the riverbed as the main stem of the Kings River, unimpeded by diversions above Pine Flat Reservoir, winds its way westward through its lowland canyon.

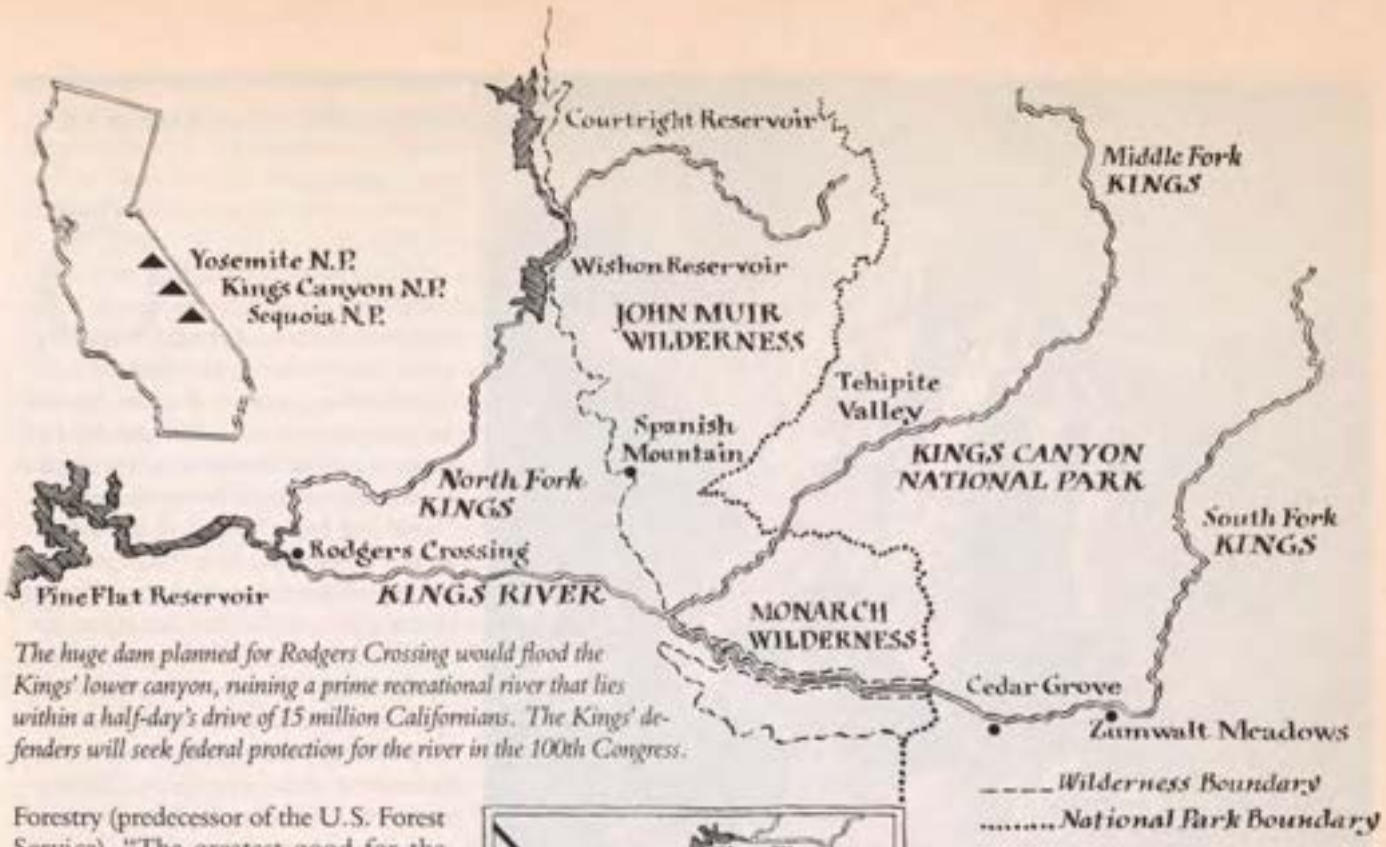
John Muir was among the first white men to visit the deep glacial canyon of the South Fork Kings known as Cedar Grove. Twenty years later, in 1891, he described his explorations of the area in an article for *The Century*, a popular magazine of the day. Congress had recently established Yosemite National Park, and Muir wanted it known that the Cedar Grove was "longer and deeper and lies in grander mountains than the well-known Yosemite of the Merced."

It was also endangered. As Muir recounted climbing peaks and exploring Tehipite Valley (another "spacious and enchantingly beautiful" Yosemite-like canyon on the Kings' Middle Fork), he described finding on nearby ridges "sequoia giants . . . ruthlessly turned into lumber" and wildlife "being rapidly reduced in numbers." As just one more piece of a nation still fresh from clearing its western frontier, the Kings country was open to whomever sought to use it.

To Muir, the solution was clear. "All of this wonderful Kings River region," he wrote, "along with the sequoia groves to the south, should be comprehended in one grand national park. Let our law-givers then make haste before it is too late . . . and all the world will rise up and call them blessed."

The law-givers initially took Muir's advice, although their response was couched in terms of forest preservation, not of national parks. Responding to public outcry over logging abuses on public lands, President Benjamin Harrison in 1893 designated by executive order a 13-million-acre system of forest reserves that included the Kings River canyon and much of the country to the south. Logging, mining, and sheep grazing were banned by administrative decree. With little effort, the Kings was protected from headwaters to foothills, along with many other scenic lands of the West.

But the victory would not be so easily kept. Prodded by commercial interests, some members of Congress began agitating either to open the forest reserves to development or to abolish them. Their complaints reached fever pitch in February 1897, when President Grover Cleveland added 21.4 million acres to the system, again with stipulations to prevent development. Congress voted to change the focus of reserve policy from preservation to utilization, to be regulated by the Agriculture Department's Division of



The huge dam planned for Rodgers Crossing would flood the Kings' lower canyon, ruining a prime recreational river that lies within a half-day's drive of 15 million Californians. The Kings' defenders will seek federal protection for the river in the 100th Congress.

Forestry (predecessor of the U.S. Forest Service). "The greatest good for the greatest number" was the agency's unofficial motto, and in accordance with that philosophy it allowed 200,000 sheep to graze the lush meadows of Kings and Sequoia country.

Congress had imposed a setback but not a final defeat, for a lack of roads still kept loggers from Cedar Grove, Tehipite, and nearby forests. Guaranteeing that these areas would remain forever wild became a primary goal of preservationists, especially after the loss of Yosemite National Park's spectacular Hetch Hetchy Valley to San Francisco water interests in 1913. In the wake of that crushing defeat for Muir and the young Sierra Club, the question of the purposes our national parks ought to serve and the values they ought to embody came increasingly to command conservationist attention.

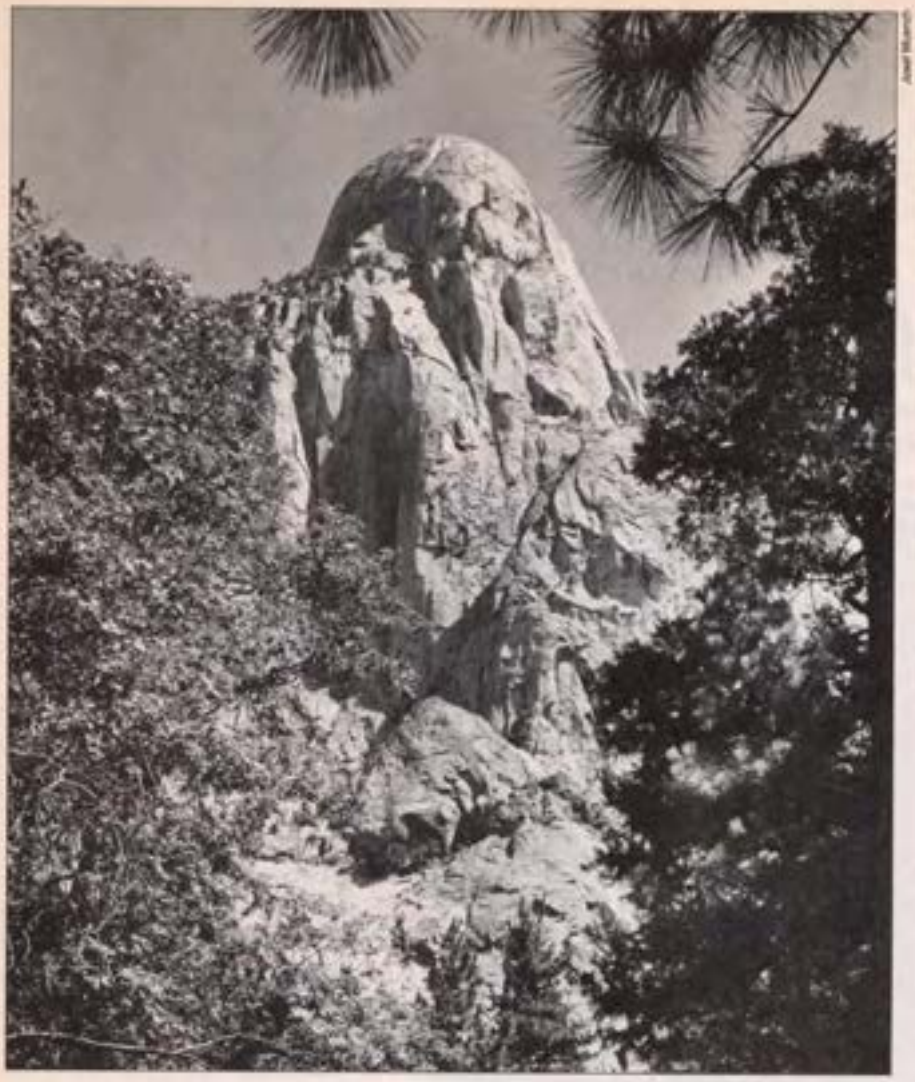
Ironically, the answer came in the form of legislation authored by a leading supporter of Hetch Hetchy Dam, California Rep. William Kent. His act created the National Park Service in 1916, institutionalizing preservation by directing the new agency to manage the parks "by such means as will leave them unimpaired for the enjoyment of future generations." Stephen T. Mather, a prominent member of the Sierra Club, became director of the agency.

As Park Service director, Mather had as his first priority the realization of Muir's ambition to preserve the Kings country and the High Sierra east of the existing Sequoia National Park. Plotting with the Sierra Club's William Colby, he led a series of "Mather Mountain Parties" to introduce influential businessmen to the Kings and Sequoia country. Once his patrons were softened up by the scenery, Mather secured their endorsement of his plan and even solicited funds to buy out private landowners who might block park status.

Mather's efforts met with only partial success. Nine bills to preserve these areas were introduced between 1916 and 1923, but each met powerful opposition. Mather and his allies adjusted boundaries to accommodate loggers and ranchers, and attached Teddy Roosevelt's name to the proposed park to spur public support, but no bill succeeded.

Opposition initially arose from the same loggers, ranchers, and Forest Service bureaucrats who had earlier lobbied against the preservationist aspect of the forest reserves. But a new, tenacious class of wilderness opponent emerged after 1920, the year Congress passed the Federal Power Act, which created a legal mechanism for intensive hydroelectric development of the nation's rivers. Prospects of tapping the Kings' 14,000-foot drop lured developers from 400 miles away. The city of Los Angeles and, later, competitors from the Central Valley proposed an elaborate plumbing system of dams, tunnels, and powerhouses extending high among the canyons of the Middle and South Fork Kings.

Faced with the prospect of no park at all (or one, like Yosemite, that could have dams imposed upon it), Mather and the Sierra Club shortened their sights in 1926. They endorsed a bill that allowed expansion of the less controversial Sequoia National Park while keeping the Kings' many dam sites under Forest Service control. The legislation preserved priceless sequoia groves and a spectacular portion of the High Sierra, but its passage temporarily took the



Tehipite Valley, long coveted by hydropower developers, was added to Kings Canyon National Park in 1965.

steam out of Kings Canyon efforts. Fortunately, the Kings' roadless, rugged canyons kept dam builders away, and the controversy died down for a while.

In 1935, Franklin Roosevelt's New Deal proposed putting the nation back to work, and punching a road into the untamed Kings watershed was a job and a half. Supported by loggers and dam builders—as well as some park supporters who saw highway access as vital to obtaining support for preservation—the Civilian Conservation Corps began building a road to Cedar Grove. As long as the region remained under Forest Service control, it appeared that access would guarantee development.

Or would it? By the mid-1930s strange transformations had occurred within the nation's land management agencies. Spurred by wilderness supporters within its ranks and tired of seeing its domain overrun by expanding national parks, the Forest Service developed the world's first system of wilderness preserves, a program pre-dating the much stronger legislative provisions of the 1964 Wilderness Act. Meanwhile, some park administrators were developing the wilderness more with visitor amenities—such as hotels, ski resorts, and roads—than the Forest Service was doing with its timber sales and mines.

Not surprisingly, when FDR's Interior Secretary, Harold Ickes, suddenly launched a new campaign for Kings Canyon National Park in 1935, he found that he would first have to persuade a Sierra Club increasingly suspicious of the Park Service's commitment to conservation. Knowing he could never sell Congress on a Kings Canyon park without the Club's support, Ickes, a man with "the soul of a meat axe and the mind of a commissar" (as a contemporary congressman put it), came to San Francisco to lobby the Club's Board of Directors.

"The Forest Service had been handling the area well," says former Club President Richard Leonard. "We were afraid the Park Service would overdevelop the canyon." But the Interior Secretary promised a different kind of national park, to be treated as a primitive wilderness, without hotels and resorts. "Foot and horse trails will be encouraged," Ickes said, "but roads must be held to the absolute minimum." Pleased with the plan, the Sierra Club signed on.

The fight for the proposed John Muir–Kings Canyon National Park sparked the Club's hottest battle since Hetch Hetchy and reinvigorated the organization with new talent. Mountaineers, hikers, and photographers whose involvement in the Club had been limited to recreation now committed themselves to defending a place they loved. *Sky-Land Trails of the Kings*, the Sierra Club's first film, was shot during Club outings and became the centerpiece of a grassroots organizing program often presented by a new part-time employee named David Brower, who would be a leader in the conservation movement from the 1950s on.

But water developers again kept Kings Canyon legislation bottled up, and compromise seemed necessary if any significant portion of the Kings were to be protected. A bill designed by Ickes and his ally Rep. Bertrand W. Gearhart of Fresno removed Cedar Grove and Tehipite Valley from the proposed park. Both canyons were coveted by Central Valley hydropower developers as the best of many possible dam sites. The Sierra Club accepted the compromise as necessary to ensure passage, but The Wilderness Society, the National Parks Association, and others regarded the two canyons as essential to the park and strongly opposed the bill.

A rancorous conflict developed. Pro-compromise partisans accused opposing conservationists of being stooges for Forest Service employees who quietly sought to sabotage the bill even though the agency's official position was in sup-

THE KINGS UP CLOSE: FOCUS ON A THREATENED RIVER

Tim Palmer

Of all the rivers in the United States outside Alaska, the Kings enjoys the greatest undammed vertical drop. And this is only one superlative among the many that make it a symbol of free-flowing rivers everywhere.

The Kings' High Sierra headwaters include the finest backcountry. Cedar Grove on the South Fork and Tehipite Valley on the Middle Fork have much of the grandeur of Yosemite without the crowds. Below Kings Canyon National Park, the granite-walled river runs through the deepest canyon in North America. Farther down, trail-accessible sections offer some of the finest trout fishing in California, and the lower canyon is a people's river much like California's Stanislaus before it was dammed.

Above the clear water of the lower canyon, the shoreline rocks are dazzling in red, orange, black, and white. Above them are thickets of wet-rooted sycamores, then groves of oaks, centuries old, then golden grasses on smooth slopes, then Sierra peaks that shine with snow eight months of the year.

The canyon is not only a feast for the eyes but a refuge for wildlife. I have seen more birds, insects, and snakes here than in any other canyon. At times the trails are covered with mountain lion tracks. Foxes hunt on the hillsides; eagles soar among the cliffs. Two major deer herds shelter here during winter.

Archaeological sites show that the Kings may be one of the few Sierra canyons where Indians stayed the winter rather than migrate down to the valley. It remains a winter refuge, located below the snow that blankets many other Sierra recreation areas and above the fog that shrouds the Central Valley for weeks at a time.

The lower canyon is used by tens of thousands of people, many of them anglers. This reach of the river is the largest designated Wild Trout Fishery in California, where 20-inch rainbow trout are not uncommon. Some biologists call the Kings the state's finest freestone (nonlimestone) river for trout.

For a close-up view, people take more than 20,000 raft trips down the river each year. Here are the highest flows of raftable whitewater in the Sierra; at 20,000 cubic feet per second this river takes on much of the character of the Colorado of the Grand Canyon. Nine miles of the Kings are also a favorite of kayakers, and a wilderness run above the more popular section is among the most challenging whitewater descents in the West. At low flows the Kings is one of the finest rivers in the Sierra for the advanced canoeist.

The entire Kings Canyon—from Muir Pass to Pine Flat Reservoir—is public land, managed by the National Park Service and the U.S. Forest Service. The Park Service recommends Wild and Scenic River designation of its section of the Kings, but the Forest Service has refused to consider similar protection for the lower canyon until the Kings River Conservation District completes its multimillion-dollar study of the Rodgers Crossing Dam. This unnecessary project would eliminate 62 percent of the main stem's Wild Trout Fishery, all of the rafting run, 88 percent of the road-accessible lower canyon, 3,000 acres of public land and wildlife habitat, 13 tributary streams, four campgrounds in two national forests, and the Kings River National Trail, which leads hikers into the wild canyon above the road's end.

In the last two decades, few major dams have been built over the objections of river conservationists; yet even in a place with the qualities of the Kings, the fight continues. Because values of national significance are at stake, the Kings will be one of the nation's major river protection battles of the 1980s.

TIM PALMER, *author of* Endangered Rivers and the Conservation Movement *(University of California Press), works for the Committee to Save the Kings River.*

port of the park. One pamphlet published by the pro-compromise Emergency Conservation Committee branded The Wilderness Society "the Bewildered Society" for its opposition to the bill. Interior Secretary Ickes, a long-standing adversary of the Agriculture Department, groused, "Most conservation organizations swallow hook, line, and sinker anything that they are told by the Forest Service."

Elsewhere the battle raged with equal fury. Even with the boundary compromise, farmers, who sought dams for irrigation, and hydropower interests, who were insistent upon developing the entire watershed, remained powerful opponents of the park. Ickes cleverly divided the two groups by offering farmers the Bureau of Reclamation's help in building an irrigation dam on the Kings well below the park boundary, where hydropower potential would be limited.

The strategy worked. Embittered holdouts tried to entrap Rep. Gearhart in a bribery scheme, but were beaten when he revealed their efforts to Congress on May 2, 1939. Ten months of struggle followed before President Roosevelt signed legislation creating Kings Canyon National Park on March 4, 1940. "The main objectives have been substantially achieved," Francis Farquhar wrote in *The Sierra Club Bulletin*. "The question of Cedar Grove and Tehipite Valley remains."

Other questions also arose. Competing against local power developers, the city of Los Angeles sought dams not only at Tehipite and Cedar Grove but at three sites within the new park. Kings Canyon Superintendent E. T. Scoyin was aghast. "No proposal ever made relative to any national park ever carried the seeds of such vast destruction as is now faced by Kings Canyon," he said.

But time continued to prove the wisdom of Ickes' "divide and conquer" strategy. After 429-foot-high Pine Flat Dam was built for irrigation in the lower canyon east of Fresno, farmers opposed the hydroelectric reservoirs because they might interfere with the river's flow. Combined with conservationist support for the park, their complaints stopped the dams at the drawing boards.

Congress added Cedar Grove and

Tehipite Valley to Kings Canyon National Park in 1965, and the Federal Power Commission denied Los Angeles' other dam proposals. A large chunk of the Kings River watershed had finally been protected, though the main stem of the river—the dramatic, deepest part of the canyon—and the accessible lower canyon were still vulnerable.

With the safety of the park guaranteed and the Kings River canyon's lowest stretches flooded by Pine Flat Reservoir, attention has turned to the great gorge that lies between. Although much of this portion of the canyon was included in Muir's original park proposal, it was left to today's nature-lovers and recreationists to prove that the Middle Kings has a constituency.

Until the early 1970s, few knew about this area. Without timber or grazing meadows and too rugged to serve as a transportation route, it was ignored by developers and ranchers. Likewise, most people heading for the Sierran wilderness sought the glacier-carved peaks of the Kings' upper reaches.

While the boom in river recreation has dramatically increased visitation to the Middle Kings, its popularity could be short-lived. In January 1985 the questionably named Kings River Conservation District (KRCD), a local water-development agency, announced that it had contracted with Bechtel Corporation for a five-year, $2.1-million feasibility study of a dam at Rodgers Crossing, a mile and a half above Pine Flat Reservoir. The dam would flood between 9 and 11 miles of the canyon, its waters rising to as far as a half mile below Garlic Falls, just ten miles from the boundary of Kings Canyon National Park.

"The KRCD's interest in building the Rodgers Crossing dam flies in the face of reason," submits Donn Furman, executive director of the Fresno-based Committee to Save the Kings River. Studies previously prepared for the KRCD echoed findings already announced by the Army Corps of Engineers: The dam would be uneconomical. Because other developments on the Kings already tap nearly all the river's average flow, Rodgers Crossing would yield water only in above-normal runoff conditions, which occur in one year out of three. Water production would average 2 percent of current irrigation use in the 1.1-million-acre Kings River service area, and the dam's power production would pale beside that of other dams already built on the Kings.

"The way KRCD officials talk, you'd think those earlier studies showed the project to be a gold mine," Furman says. "Despite the negative results they've foreseen, the KRCD seems committed to building Rodgers Crossing." Furman notes that while Bechtel's study won't be completed until 1989, the KRCD budgeted $234,000 in 1986 to pay for designing the dam and to wage a public relations campaign in support of it.

For their part, KRCD officials claim that previous feasibility studies were not sufficiently comprehensive, and argue that the dam should have been built long ago. However small or expensive the dam's water yield may be, the district claims, it is needed to offset the large drain on groundwater pumped for irrigation by local farmers—far more than naturally returns to the ground.

Conservationists acknowledge the groundwater problem but point out that even a slight improvement in irrigation efficiency would free up more water than Rodgers Crossing would provide. They also argue that the dam's energy production would be far less than the potential yield from such relatively benign technologies as cogeneration, wind power, and conservation.

Such arguments are used to bolster conservationists' conviction that the Kings' lower canyon is a resource best left as it is—a conviction not shared by KRCD officials. The canyon "may be beautiful in the spring," KRCD General Manager Jeff Taylor told the *Fresno Bee*, "but it is not beautiful during the summer."

Visit the Kings any summer day, and you'll find plenty of people who disagree with that judgment.

"I've been kayaking the Kings since 1973," says Bill Canning, co-owner of Kings River Expeditions, "and every year there are more people coming up here and getting excited about what this river has to offer." Kings River Expeditions is one of three whitewater rafting companies that run thousands of people down the endangered stretch of the river each summer. Many of Canning's passengers are residents of the Central Valley, an area that traditionally supports large water developments. But even among valley residents he sees a growing antagonism toward "publicly subsidized water projects that mainly benefit large farms."

Canning contends that a major reason the KRCD is pursuing a seemingly uneconomical dam is to bail out huge farming interests that grow cotton in the salty soils of Tulare Lakebed, historically the Kings' terminus but now only occasionally flooded by the river. "There's almost no end to the subsidies these guys receive to support the price of their cotton, to fund the water they grow it with, and—if Rodgers Crossing is built—to keep their lakebed land from flooding," Canning says.

If conservationists win this latest battle to preserve the Kings, it will be by placing the river in the National Wild and Scenic Rivers System. Legislation to that end was introduced in the last session of Congress by Rep. Richard Lehman (D-Calif.). His bill—which would protect 17 miles of the Main Stem Kings and 75.5 miles of the river's Middle and South forks—had 76 cosponsors, including more than half of California's delegation. Lehman plans to reintroduce the bill early in the new session, and hopes for an even stronger level of support, which will be necessary if protective legislation is to pass.

Is it fair that such elaborate legislative steps must be taken to preserve the Kings, while to destroy it requires only a permit from the development-minded appointees on the Federal Energy Regulatory Commission? Fair or not, it's the reality that Rep. Lehman and the river's many supporters are confronting, and just one of the lessons of the long campaign to preserve the high country where the Kings originates. Nearly a century after John Muir began the struggle, it's time to complete the task of preserving the canyon of the Kings. ■

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COVER

ALL IN THE NAME OF AID

PATRICIA ADAMS

In November 1984 the world learned to its horror that thousands and perhaps millions of Ethiopians were starving to death. People opened their hearts and pocketbooks to help save the African nation from its dual disasters of drought and famine. Little did the world know that it was helping to rescue victims of earlier aid efforts.

Government-funded aid agencies have been changing the face of the developing world for more than two decades. No doubt some of their efforts have helped the recipient nations. But it is becoming clear that many projects have caused severe environmental and cultural disruption, negating any benefits by destroying the fragile ecosystems in which human and beast have survived for centuries.

Ethiopian victims of drought, famine, and misguided aid.

The plight of the Ethiopian people was caused not only by a sudden lack of rainfall. It is the tragic outcome of misguided human intervention begun long ago.

In the 1960s the United Nations Food and Agriculture Organization proposed converting large tracts of central Ethiopia's Awash River Valley to sugar cane, cotton, and banana plantations. The project called for a series of dams on the river to provide both water for the crops and electric power for the capital city, Addis Ababa. Because the plan was so ambitious, the World Bank and the African Development Bank were brought in to help finance it.

Before the construction of the dams, the valley's rich floodplains—a mixture of savannas, swamps, and riparian forests nurtured by the biannual floods of the Awash River—had supported 150,000 people. But with the damming of the river, flooding decreased dramatically. As the valley's bottomlands became arid, the land could no longer support its inhabitants. To the Afar, one of

The World Bank's Portfolio of Sorrow

TRANSMIGRATION

Indonesia, the world's fifth-most-populous nation, is home to more than 300 ethnic groups. More than half its 165 million people live on the island of Java, which accounts for less than 7 percent of the nation's total land area. The archipelago's outer islands are sparsely populated by tribal peoples.

Wishing to solve this "population problem," the government of Indonesia, with support from the World Bank and

A transmigrant family begins a new life in Irian Jaya. A lottery determines in which government-built, dirt-floored house (top) they will live.

several tribes in the region, the misery wrought by the dams was so severe, so much worse than the droughts and other hardships of the past, that it was explained as a punishment from God.

To make way for the plantations, lands traditionally held by 20,000 people were expropriated, mostly without compensation. Forced to leave, the people and their livestock crowded onto lands near the newly irrigated plantations. One by one, the displaced tribes began to spill onto the lands of their neighbors. Normal migration routes were blocked, and tribal warfare intensified as the region's land base eroded. When the rains failed in the early 1970s and again in the early 1980s, the people, bereft of their former resources, became wards of famine-relief stations.

Ethiopia's story is being repeated in many places throughout the developing world. In Botswana, an $18-million World Bank project aims to increase beef production for export by almost 50 percent, despite the country's severe overgrazing problems. In Zimbabwe and Zambia, 56,000 people were displaced in the 1950s by the World Bank's Kariba Dam; because the lands they moved to

the Asian Development Bank, has embarked on a massive resettlement project—perhaps history's most ambitious. Millions of people are being moved from the inner islands to the tropical forests of Kalimantan, Sulawesi, and Irian Jaya in an attempt to "integrate all the ethnic groups into one nation, the Indonesian nation," as a key government official put it. Once resettled, the migrants discover that the poor soil of the land given to them offers them little chance of survival, and that they will soon be forced to clear more rainforest.

The displaced tribes are not being compensated for their lost lands, and there have been skirmishes with the Indonesian army, which is enforcing the resettlement.

More than 500,000 "surplus" Javanese are leaving for Indonesia's less-populated islands each year.

POLONORESTE

The $1.6-billion Polonoreste Project, to which the World Bank has contributed $434 million in loans, seeks to transfer many of Brazil's rural poor to the pristine Amazon rainforest in the northwestern state of Rondonia. During the past four years more than 500,000 migrants have traveled the new 900-mile

The Trans-Amazon Highway cuts across northern Brazil into Rondonia. The frontier towns of Polonoreste (top) rise—and often fall—in the ashes of cleared rainforest.

could not support the additional population, many became dependent on food relief. In Bangladesh, the Chittagong hill tribes were displaced in the early 1960s by the U.S.-financed Kaptai Dam, which flooded 40 percent of the region's arable land.

The list goes on, and one fact becomes clear: Many of the hardships facing the developing world have their origins in the reckless development that takes place in the name of aid.

THE AID AGENCIES of the world can be divided into three categories: those that are run privately, such as Oxfam and Save the Children Fund; federal government agencies such as U.S. Aid for International Development (USAID) and the Canadian International Development Agency (CIDA); and agencies run jointly by many nations, the multilateral development banks (MDBs).

Private or nongovernmental organizations, as they are often called, tend to be independent of government aid policies because they raise money from public donations. Their projects are generally small and carried out at the

highway that has been cut through the tropical forest. Instead of finding the excellent farmland promised by government brochures, the settlers have encountered poor soils unsuitable for agriculture, conflicts with indigenous peoples, and rampant disease.

Searching for land that will sustain them, the settlers clear more and more forest. The Polonoreste project area now has the highest rate of deforestation in the Brazilian Amazon. If present trends continue, an area the size of Oregon will be completely razed by the end of this decade.

The development has also brought despair to the area's 8,000-plus tribal people. Lacking resistance to diseases brought by the settlers, such as influenza and measles, some of the 55 indigenous groups are facing extinction.

Many migrants bound for Rondonia (top) arrive to find living conditions crueler than those they left behind.

THE NARMADA RIVER VALLEY

For millions of Indian Hindus, the Narmada River valley is a sacred place, a pilgrim's destination. But the World Bank and the Indian government are planning to transform the valley completely over the next half century, as 30 large dams, 135 medium-size dams, and some 3,000 associated irrigation projects will be constructed along the resource-

Construction has already begun to disrupt life in the Narmada River valley. When the gates of the soon-to-be-completed Sardar Sarovar Dam close (top), thousands of people will be forced onto nonproductive lands.

grassroots level, so their environmental effects (with a few exceptions) are minimal and contained.

Government agencies such as USAID and CIDA are called bilateral aid agencies because they operate on a one-to-one basis with the country receiving aid. On behalf of their taxpayers, bilateral agencies negotiate and administer loans and grants to developing countries. Yet most of these agencies have no systematic, mandatory procedure for incorporating environmental costs into the formulas used to determine whether a project should proceed. (USAID, with the best environmental record, is the lone exception.)

But the pace for international development assistance is set by neither the private nor the bilateral agencies. Dwarfing them in importance are the world's five MDBs: the World Bank, the Inter-American Development Bank, the Asian Development Bank, the African Development Bank, and the Caribbean Development Bank (to which the United States does not belong). Together the MDBs lend almost $24 billion a year and attract an additional $50 billion in loans for their projects from other aid agencies, national governments, and private commercial banks. This imposing lending pool makes the MDBs the largest public-development lenders in the world, and gives them significant leverage in influencing development policies in the hundred-odd countries that are their debtors.

The pacesetter among the MDBs is the World Bank, which in fiscal year 1985 accounted for a little more than 70 percent of the money loaned by the MDBs. All of the World Bank's 150 member countries are shareholders, and are entitled to vote at board meetings in proportion to their shares. The United States, which contributes nearly 20 percent of the bank's assets, has by far the largest vote.

Potential World Bank projects can be suggested either by bank staff or by government officials of borrower countries. Over a period of years, studies and consultants' reports (often prepared by European and North American consulting firms) wend their way through the bank's bureaucracy to the board of directors, where projects are agreed upon more often by consensus than by formal vote. In a situation peculiar to the World Bank, most member countries are also borrowers who, because they are shareholders, sit in judgment of their own loan applications. Given that arrangement, it's not surprising that no project presented to the World Bank's board of directors has ever been turned down.

Over the last 30 years, the MDBs have favored large agricultural and rural development projects. Next in popularity are energy developments (primarily large hydroelectric projects) and transportation projects (primarily roads). Together these three types of project received more than half the World Bank's loans in 1985.

Although there are a number of opportunities within the World Bank's project-approval process for environmental and social concerns to be addressed, they very rarely are. The bank is committed on paper to environmental protection, but employs only four of its staff of 7,000 to conduct environmental assessments. With these few rests the task of monitoring hundreds of ongoing projects and examining approximately 300 new ones each year.

THE CULTURAL and environmental violations associated with massive aid projects have not been the result of ill will. Multilateral development banks devote few resources and apply little scrutiny to these issues because they have been permitted to operate in a vacuum, and have not had to answer to the public of any nation. In the rare cases when the banks carry out environmental assessments, they are usually conducted by consultants hired by the proponents of the project—the MDB or the government of the aid-receiving country. Residents of the lending or the borrowing country never have the opportunity to see these assessments, test their assumptions, or challenge their conclusions.

Public scrutiny, public hearings, and freedom-of-information legislation would not end all unsound projects. But

rich river basin. The inducement: promises of jobs, potable water, irrigation, and flood control. The cost: tens of billions of dollars, the forcible removal from their homes and relocation of more than a million people, and the loss of some 1,375,000 acres of land, including 11 percent of the valley's forests.

The first phase of the project, construction of the Sardar Sarovar Dam, is well under way, and the planners' priorities are now quite evident. The Indian government and the World Bank have spent more money housing staff, building roads, and setting up a communications system than they have allotted for the permanent resettlement of the 67,000 people who already have been displaced by the dam.

Local laborers, who make up the project's nontechnical workforce, use stones to line one of the hundreds of irrigation channels.

comparing the environmental record of the United States to that of Canada, Britain, or any other country in which citizens have weaker or nonexistent rights to an open policymaking process yields the inescapable conclusion that information is an important source of power. Armed with information, the public could challenge the value of proposed projects, and might be able to prevent environmental disasters before they begin.

Several years ago the Inter-American Development Bank financed a study of the environmental and economic effects of two proposed hydroelectric dams in Haiti, with the intention of eventually financing construction. Because the dams would have flooded vast tracts of prime agricultural land, the project met with widespread opposition from local farmers, the church, and rural development workers, and from human rights groups and environmental activists around the world. The controversy was heightened by an independent report by Haitian agronomists, economists, and sociologists that stated that the country would lose the capacity to produce food for some 60,000 Haitians annually. The report showed that the total revenue from the river valley's agricultural output was 40 percent greater than could be expected by construction of the proposed dams.

The bilateral CIDA, which had paved the way for these dams with an earlier study, and the Inter-American Development Bank both refused to comment on the independent report. The Canadian agency also declined to make public Inter-American's original assessment of the dam's viability, saying that it was not their study—but that Inter-American might release it. The MDB also refused, but suggested asking the Haitian government (under Jean-Claude Duvalier at the time). It never responded.

Meanwhile, the Haitian communities that would be affected by the dams had also asked the Inter-American Bank for a copy of its study. They were also refused. It became clear that a handful of MDB and Haitian officials intended to decide, in isolation, whether to flood one of the nation's most fertile regions.

An enormous international lobbying effort by the Haitians, aided by groups in France, the United States, and Canada, finally pressured the bank to postpone construction of the dams. But few MDB projects attract such international attention and scrutiny. The result is that only the most glaringly destructive projects can be stopped—and then only if enough international outrage can be summoned. For the dozens of other projects as yet unnamed and unknown except to the banks and their clients, there is not even a battleground.

The closed approach is the norm for the world's bilateral aid agencies as well as for the MDBs. The one exception is USAID: By law, its projects are subject to varying degrees of environmental evaluations, which are available to the American public. But when it comes to the World Bank and other MDBs, the taxpayers who help fund them are kept in the dark. While the U.S. government insists on the right to see bank documents—which the banks provide, for fear of cuts in funding—the governments of other nations do not make even these minimal demands.

The cost of the MDBs' failure to have an open and fair process has been enormous. In one five-year period at the beginning of the decade, more than 400,000 people were forcibly displaced by World Bank water projects. Thirty-three new dams more than 500 feet high are slated to be built in the developing world by 1990. If plans proceed as scheduled, virtually all the world's major river valleys will be lined with reservoirs by the year 2000. Other aid projects, from cattle ranching to colonization, exact an equally devastating toll. As long as the MDBs continue to operate without public accountability and without regard for human and natural conditions, their work will remain a travesty of what we once considered aid. ■

PATRICIA ADAMS *is the author of* In the Name of Progress: The Underside of Foreign Aid *(Doubleday Canada/Energy Probe, 1985). She is executive director of the nonprofit research organization Probe International in Toronto, Canada.*

BANKING ON CHANGE: WHAT YOU CAN DO TO HELP

IN JUNE 1983 Congress began the world's first in-depth investigation of the environmental records of multilateral development banks. The most important breakthrough came in December 1985, when Congress passed a resolution mandating that U.S. directors at the banks "vigorously promote" environmental reforms in their lending practices. A similar measure passed last December. You can encourage your senators and representative to maintain their interest in the banks' environmental reforms by writing to them at their offices in Washington, D.C.

Still, the multilateral development banks are treaty organizations, and no single government can legislate their activities. Citizen action is necessary in borrower as well as donor countries to focus attention on specific projects and eventually change the way the banks work.

You can express your concern about the effects of World Bank projects on the environment and indigenous populations by writing to Barber Conable, the bank's president (1818 H St. N.W., Washington, DC 20433). Ask him what policies the bank plans to implement to prevent further damage.

The Sierra Club's International Program in Washington has been involved in the bank-reform campaign and can help answer questions you may have about the banks' planned or ongoing projects. The program recently published "Bankrolling Disasters," an illustrated booklet on the environmental effects of multilateral development banks, available for $3 ($5 overseas) from Information Services at Club headquarters in San Francisco.

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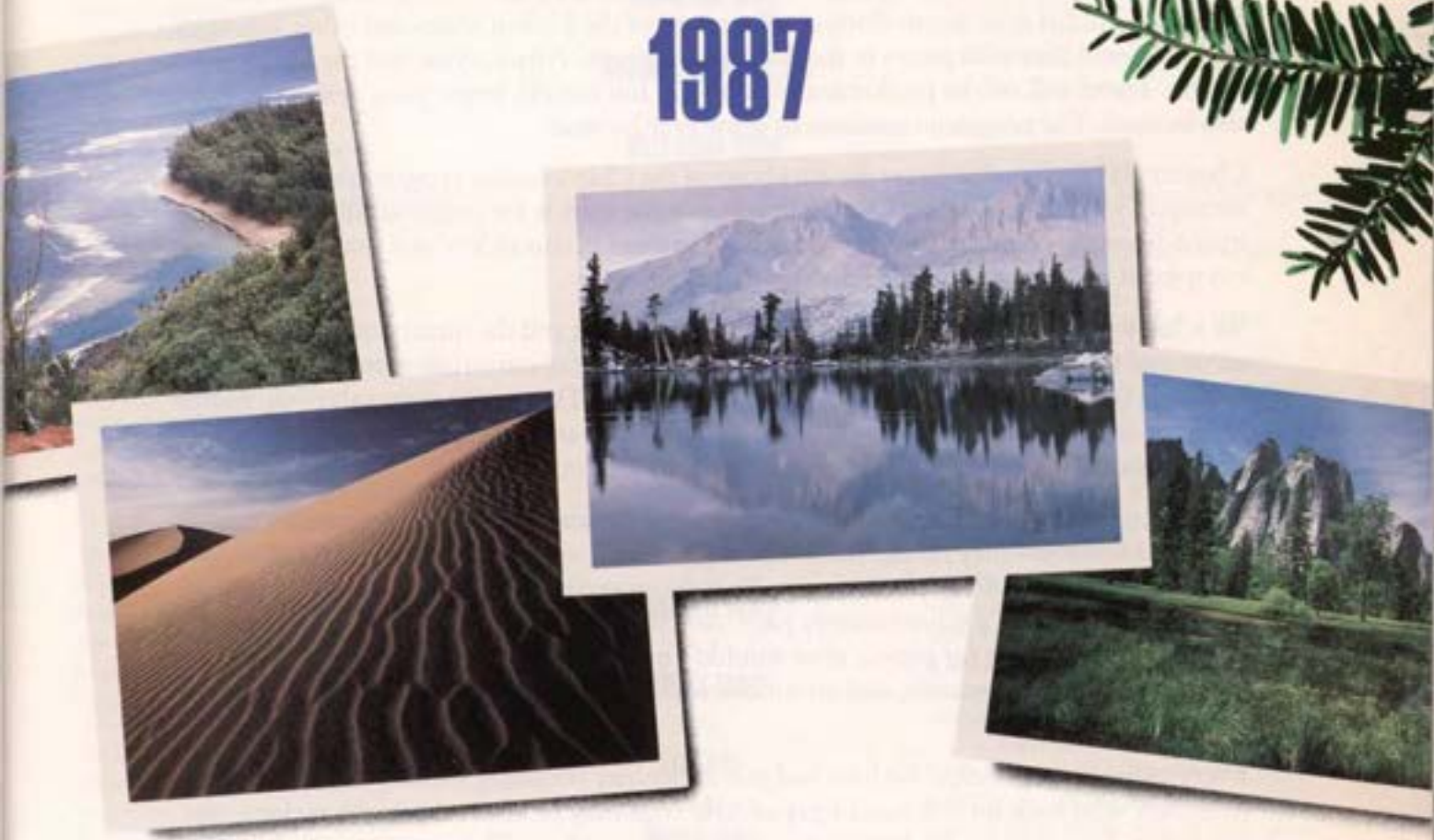


CHAIRMAN'S MESSAGE

The Outing Program started when a group of conservationists joined for a fun-filled excursion into the Sierra Nevada in 1901. This year, close to 3,500 Club members will follow a path that now winds through all sections of the United States and other countries. Members will visit wild places in the Americas, Europe, Africa, Asia, and the South Pacific. Travel will still be predominantly on foot, but camels, jeeps, vans, and boats will also be used. The program continues to grow year by year.

Chapter and group outings are the backbone of the Club's outing program; they serve their members well. The National Outing Program is the vehicle for conservationists from many diverse areas of the country and abroad to meet in comradery and share their enjoyment and concern for the Earth's wild places.

We Club members are serious about the world we live in and the quality of life for ourselves and future generations. Outings provide a forum for information and ideas while the emphasis is simply on fun and enjoyment with friends. They are a safety valve—an escape from the realities of air and water pollution, land abuse, and the threat of nuclear annihilation. Participants feel the joy of knowing that they are not alone.

The spectrum grows. Your Outing Committee continues to expand opportunities for members wherever they reside. Reflecting their mood, we are offering more service trips in the eastern and midcontinental states. We have more opportunities for senior or other members who prefer a more leisurely pace. And the Inner City Outings Program provides wilderness adventures for people who wouldn't otherwise have them—disadvantaged youngsters, disabled persons, and senior citizens—offering them access to the richness of the world around them.

Every path has its puddles! We have had our difficulties obtaining liability insurance. Members who look for our usual array of river trips may be taken aback; the pickings are fewer than in past years. We hope they are equally rewarding. Those sensitive to the falling value of the dollar will find expanded opportunities to enjoy their vacations within the fifty states and the Western Hemisphere.

As you enjoy the following pages and decide which outing to join, be assured that you will be part of a community of members who have similar interests, the desire to learn, and the commitment to "preserve, protect, and enjoy" the world we all must share.

Dolph Amster

Dolph Amster
Outing Committee Chair

CONTENTS

This catalog is dedicated to H. Stewart Kimball. Dr. Kimball has participated in and led outings for over 50 years, and served as chairman of the Outing Committee for 20 years. We wish him well in his retirement.

Cover Photographs—Butterfly: Edward S. Ross. Front Cover (left to right): Steve Griffiths, Stephen Kasper, Stephen Kasper, J. Clifton Meek. Back Cover (left to right): Steven Kline, Robert Reiter, Harlan Pincus

Important Notes—Please Read Carefully

- The Outing Department will begin processing reservations for summer and fall trips on January 5, 1987. Applications received before that date will be processed as if received on January 5. Supplements will be available after January 1.
- To order supplemental information on specific trips, please see page 112.
- Make sure you read carefully the Reservation and Cancellation Policy before applying.
- Many trips can accommodate special dietary needs (e.g., vegetarianism, allergies), while others cannot. Check individual trip supplements or contact trip leaders about your particular situation.
- Make sure to include your membership number on your trip application. It can be found on your membership card or on the mailing label of your copy of *Sierra*.

Photos Wanted The Outing Department thanks our photographers and requests that black-and-white prints and color slides for outing publications be sent to Marla Riley, Sierra Club, 730 Polk St., San Francisco, CA 94109. We especially need black-and-white prints.

The Morley Fund, created in 1951 by the bequest of Mrs. F. H. Morley, has money available to help defray the trip fees of teachers and other educators who could not otherwise afford to go on trips. If you think you might qualify, inquire by writing to the Outing Department, Sierra Club, 730 Polk St., San Francisco, CA 94109, for an application.

INNER CITY OUTINGS

Inner City Outings (ICO) is the Sierra Club's community outreach program. Our volunteers, trained in recreational and safety skills, provide wilderness adventure and leadership training for those who wouldn't otherwise have them. Our outreach populations include youth of diverse cultural and ethnic backgrounds, hearing or visually impaired persons, senior citizens, and mobility-impaired individuals.

To recruit participants for outings, ICO leaders work in cooperation with community agencies. Outings include day-hikes, backpacking, whitewater rafting, cross-country skiing, and snowshoeing. In 1986, leaders provided 220 outings for more than 2,200 participants.

Five new groups were established in 1986. The ICO Subcommittee has resources (including small start-up grants) to assist Sierra Club members interested in forming ICO groups in their respective chapters.

Inner City Outings is supported in large part by donations. Contributions to the program are tax-deductible. Checks should be made out to: **Inner City Outings/Sierra Club Foundation.**

Donations and requests for information should be sent to:

ICO Subcommittee
Sierra Club
730 Polk St.
San Francisco, CA 94109

The subcommittee is grateful to those who contributed to Inner City Outings in 1986, particularly those who made donations in memory of Tom Fleuret, Stephen Manas, Tom Pillsbury, and Scott Ramsey. The subcommittee is also grateful to the following clubs, corporations, and foundations for their support:

Alpine Winter Foundation
Edna and Jack Belasco Foundation
California Alpine Club
Clavey Equipment
Mary A. Crocker Trust
First Interstate Bank of California Foundation
Edwin Gould Foundation for Children
International Business Machines Corporation
The Leanin' Tree Publishing Company
McKesson Foundation, Inc.
Shaklee Corporation
L. J. Skaggs and Mary C. Skaggs Foundation
The Whole Foods Restaurant

Inner City Outings is coordinated by the ICO Subcommittee of the National Outing Committee. There are currently 23 ICO groups, each affiliated with a Sierra Club chapter or group:

Austin, TX
Boston, MA
Charlotte, NC
Chicago, IL
Cincinnati, OH
Denver, CO
Detroit, MI
El Paso, TX
Laramie, WY*
Los Angeles, CA
Miami, FL
New Orleans, LA
New York, NY
Philadelphia, PA
Raleigh, NC*
Sacramento, CA
San Francisco, CA
San Jose, CA
Santa Cruz, CA*
Seattle, WA*
Stillwater, OK
Washington, DC
Wichita Falls, TX*

*established in 1986

Philip Ash

ALASKA

Alaska is about one fifth the size of all the lower 48 states put together! Yet it has a smaller population than that of San Francisco, with nearly half living in and around Anchorage. Of the 365 million acres of land stretching from the Arctic Ocean to the glaciated bays and rainforests of southeastern Alaska, most are essentially uninhabited.

The Alaskan wilderness is almost beyond comprehension. The permafrost of the Arctic slope, the grandeur of the Brooks Range, the Taiga (winter territory of the caribou), the immense river drainage systems of the Yukon, Porcupine, and literally thousands of other rivers and streams—all are a part of this magnificent land that culminates, in a sense, at Mt. McKinley, the highest point on the North American continent.

Sierra Club trips offer a wide range of terrain and possibilities for studying a fascinating diversity of wildlife and flora that mirrors the country itself—an opportunity to encounter wilderness of such magnitude and power that the experience is at once humbling and uplifting.

Conservation issues are a critical concern in Alaska. These trips involve areas where important decisions are made that affect the future of Alaskan land. Beyond the pure wilderness experience, our trips provide a chance for active conservationists to study an area firsthand and to use that knowledge to help determine its future.

Nothing you have done before can quite prepare you for your first encounter with Alaska. Nothing you do afterward will let you forget it.

All Alaska trips require leader approval.

Craig Lamper

[87051] Kenai Fjords Sea-Kayaking, Alaska—June 21–July 4. *Leaders, Carol and Howard Dienger, 3145 Bandera Dr., Palo Alto, CA 94304.* Come sea-kayaking with us to explore the rugged glaciated coastline of this incredible mountain fjord system southwest of Anchorage. Glacial ice that once flowed downward from Harding Icefield carved these deep-water fjords where we can now paddle in bays protected from the open sea. We begin in Northwestern Lagoon and paddle to Aialik Bay, all within Kenai Fjords National Park, renowned for abundant wildlife and tidewater glaciers. Layover days allow time for hiking up to view the icefields capping all but the tops of the Kenai Mountains. No kayak experience is necessary, but you must be comfortable in a very small boat in deep water. Charter transportation to and from the starting point is not included in the trip price.

[87052] Kenai Highlight, Alaska—June 23–July 2. *Leader, Jerry Lobel, 2216 E. Sahuaro Dr., Phoenix, AZ 85028.* The Kenai National Wildlife Refuge harbors the greatest number of large mammal species in the United States, including Dall sheep, goat, moose, wolf, and bear. This trip will feature a variety of experiences, including animal watching, photography, trout fishing, peakbagging, and possibly some minor glacier travel. We hope to take a couple of overnight backpack trips from our base camps to offer a balance of leisure and challenge, so prior backpacking experience is required. This trip will also allow first-time visitors a chance to experience some of the best of Alaskan wilderness and opportunities to visit on their own the interesting historic communities of Homer, Soldatna, Kenai, and Ninilchik several days before and after the trip. Charter transportation to and from the starting point is not included in the trip price.

[87053] Alaska's Wildlife to Hawaii's Lush Greenery—June 25–July 10. *Leader, Serge Puchert, 11025 Bondshire Dr., Reno, NV 89511.* Taking advantage of an inexpensive triangular flight fare, this trip will offer the rugged scenery and plentiful wildlife of Denali National Park and the beautiful beaches and spectacular Waimea Canyon on Kauai. Six of our seven days in Alaska will be spent camping, exploring, and hiking in Denali National Park, with a possible overnight backpack. With the use of rental cars on Kauai, we'll move from park to park for eight days, sleeping on beaches, swimming, hiking, and enjoying the island's many points of interest. An optional backpack to the famous Napali Coast will also be offered. Participants must be experienced campers.

[87054] Turquoise/Twin Lakes, Lake Clark Park, Alaska—July 6–15. *Leader, Blaine LeCheminant, 1857 Via Barrett, San Lorenzo, CA 94580.* This area remains largely unknown and unexplored mountain country of classic grandeur. Mountains of heroic proportions rise steeply from lush vegetated lowlands. The region incorporates much of Alaska's far-flung diversity into a manageable size. Scenic and biological values typical of other parts of the state are also represented in the Lake Clark region. Our route skirts the western flank of the Chigmit Mountain Range (an extension of the Alaska Range), placing us well within viewing and day-trip distance of some of the region's most glittering highlights. Charter air transportation is not included in the trip price.

[87055] Valley of 10,000 Smokes, Katmai Park, Alaska—July 12–25. *Leader, Dolph Amster, P.O. Box 1106, Ridgecrest, CA 93555. Photographer, Martha Murphy.* In 1912 Katmai was the site of one of the largest volcanic eruptions in history. Ample evidence of the event remains, and there are still active fumaroles and potentially active volcanoes in this segment of the "Ring of Fire." Other major attractions include glacier-clad mountains and abundant wildlife, especially the Alaska grizzly or brown bear. We will begin at Brooks Lodge, where we will enjoy many of the resources provided by the park; salmon fishing should be outstanding. We then backpack through this exciting wonderland for ten days, emphasizing photographic opportunities and local exploration. The terrain is gentle and distances will not be long, but Katmai's weather is both unpredictable and unforgiving. Flexibility and a sense of humor will be most helpful. This will be a leisurely to moderate trip.

[87056] Noatak–Gates of the Arctic Backpack, Alaska—July 19–August 1. *Leader, Wilbur Mills, 3020 NW 60th St., Seattle, WA 98107.* The Noatak region offers exceptional cross-country hiking. Starting at a lake in Gates of the Arctic National Park, we will explore some of the glacier-carved tributaries of the Noatak River. Outstanding scenery, fine alpine camping, and the opportunity to view numerous species of arctic wildlife and plants are among the highlights of this little-traveled region. Our route will cover about 50 miles with time for several days of exploration without full packs. Hiking is moderate but requires frequent stream crossings. Trip members must be experienced backpackers in good condition. Charter air transportation is not included in the trip price.

[87057] Brooks Range, Gates of the Arctic Park, Alaska—July 19–August 2. *Leader, Bob Hartman, 1988 Noble St., Lemon Grove, CA 92045.* In 1929 Bob Marshall and Al Retzlaf explored this "most unknown section of Alaska." Today the central Brooks Range is as wild as it was when Marshall named its peaks. Scrambling along ridges and to summits we will see vistas experienced by few. There will be time for fishing, natural history study, and photography in this seldom-traveled area. Our mountain home north of the Arctic Circle will be high in the Brooks Range along the Continental Divide. Members must be adventurous, experienced, and in top physical condition to meet the demands of this rugged wilderness. Charter air transportation is not included in the trip price.

[87058] Noatak River Canoe Exploration, Gates of the Arctic Park, Alaska—August 3–15. *Leader, Sharon Wilkinson, 1988 Noble St., Lemon Grove, CA 92045.* The Noatak River is not only recognized as a Wild and Scenic river, the United Nations has also declared it a world Biosphere Reserve. We will explore the upper reaches of the river by canoe with day-hikes up side valleys in the western Brooks Range. Photography, fishing, and natural history study will fill the long summer days north of the Arctic Circle. Abundant wildlife in the region includes moose, caribou, sheep, fox, bear, and wolf. Canoeing proficiency is not necessary, but some paddling and wilderness travel experience is required. Charter air transportation is not included in the trip price.

[87059] Atlin Lake Backpack, British Columbia—August 4–14. *Leader, Sigrid Miles, 1056 First Ave. N., Napa, CA 94558.* Near the northwest corner of British Columbia lies Atlin Lake and a very isolated range of pristine mountains. Lower forests of spruce and balsam give way to high, open alpine meadows. Caribou, stone sheep, and bear are often seen. We will hike in relative ease accompanied by a local guide. Some forest trail and primitive mountain huts at higher camps make this a very accessible area for moderate backpacking. The trip starts in Whitehorse and includes a visit to historic Atlin. The trip price *includes* the cost of a charter air shuttle to and from the starting point.

[87060] Arctic Mountains and Rivers, Arctic Wildlife Refuge, Alaska—August 7–15. *Leader, Cal French, 1690 N. Second Ave., Upland, CA 91786.* Across the Brooks Range north of the Arctic Circle lies an enormous game refuge; Caribou, musk ox, bear, and arctic char are the usual residents. There are also hundreds of species of flowering plants. Occasional visitors include wildlife biologists, geologists, native hunters, and (rarely) backpackers. Our nine-day moderate backpack will follow the Achilek and Kongakut rivers and cross the mountains between them. We have planned two layover days. Backpack experience is required. Charter air transportation is not included in the trip price.

BACKPACK TRIPS

Backpack trips are an adventurous and rewarding way to experience the wilderness. Packing everything you need for the trip adds an extra dimension of freedom and satisfaction to your outing. And backpacking has another benefit: It is the least expensive way to go.

Our trips are really small expeditions. Each is individually planned by the leader, who seeks challenging routes and attempts to get off the trails and set up camp in untrampled, out-of-the-way places wherever possible. The trips almost always provide one or more layover days for relaxing or exploring.

Every trip is run with a central commissary; all members share cooking and cleanup chores. All are expected to carry a fair share of food and commissary gear in addition to personal belongings, clothing, sleeping bags, etc.

Your trip leader serves as a teacher as well as a guide, and will demonstrate the ways of traveling best suited to protecting the land and making participants more aware of good wilderness manners. For example, in almost all cases we cook using stoves instead of fires.

There are more than 90 backpack trips being offered this year throughout the United States. They vary greatly in length and difficulty. To help you make a selection based on your own fitness and experience, we have rated the trips in five categories: Leisure (L) trips have fairly easy daily mileages, up to 25–35 miles in a week of four to five travel days, the remainder being layovers. Moderate (M) trips cover a longer distance, closer to 35–55 miles in a week, and may include rougher climbing and more cross-country routefinding. Strenuous (S) trips cover as many as 60–70 miles per week, with greater ups and downs and continuous high-elevation travel. Leisure-Moderate (L-M) and Moderate-Strenuous (M-S) are interim ratings. Individual trip supplements explain each trip's degree of difficulty in more detail.

Leaders are required to approve each applicant before final acceptance, and will ask you to write a response to their questions. These responses help the leader judge your backpacking experience and physical condition. Unless specified, the minimum age for trips (excluding junior backpack trips) is 16.

[87032] Superstition Mountains—East End, Tonto Forest, Arizona—February 15–21. *Leader, Michelle Bussiere, P.O. Box 1892, Tempe, AZ 85281.* The east end of the Superstition Mountains is the least used and one of the wilder sections of this popular wilderness area. Our hike will start in the high desert at about 2,500 feet and climb to beautiful juniper forests at about 5,000 feet. We will visit ancient Indian ruins, an old homestead ranch, and the Reevis Mountain desert survival school, where we will spend a day learning about local plants and have a meal prepared for us with homegrown food. (Rated M)

[87033] Superstition Wilderness Sampler, Tonto Forest, Arizona—March 21–28. *Leader, Dan Leeth, P.O. Box 440289, Aurora, CO 80044.* Best known for the legendary Lost Dutchman Mine, the spectacular Superstition Mountains stretch from cactus-covered desert to ponderosa pine forest. Our loop trip samples

Alpine Pursuits

the best of this colorful land—lush desert springs, bizarre rock formations, ancient Salado Indian ruins, an abandoned ranch and orchard in the pines, and numerous old mines. While there are no layover days, early morning departures will allow time for individual exploration. (Rated M-S)

[87062] The Grand Canyon—South Rim to the Colorado River, Arizona—April 4–11. *Leader, Bob Posner, 2555 Le Conte, Berkeley, CA 94709.* We meet at the Cameron Trading Post on the Navajo Indian Reservation and drive parallel to the Little Colorado River into the Grand Canyon. After exploring the South Rim we backpack to the Tonto Plateau to camps near Salt and Hermit creeks and on the Colorado River at Granite and Boucher rapids. Views of the North Rim, leisurely exploration of side canyons and their wildflowers, and experiencing the power of Horn, Crystal, and Hermit rapids are highlights of this trip. (Rated L-M)

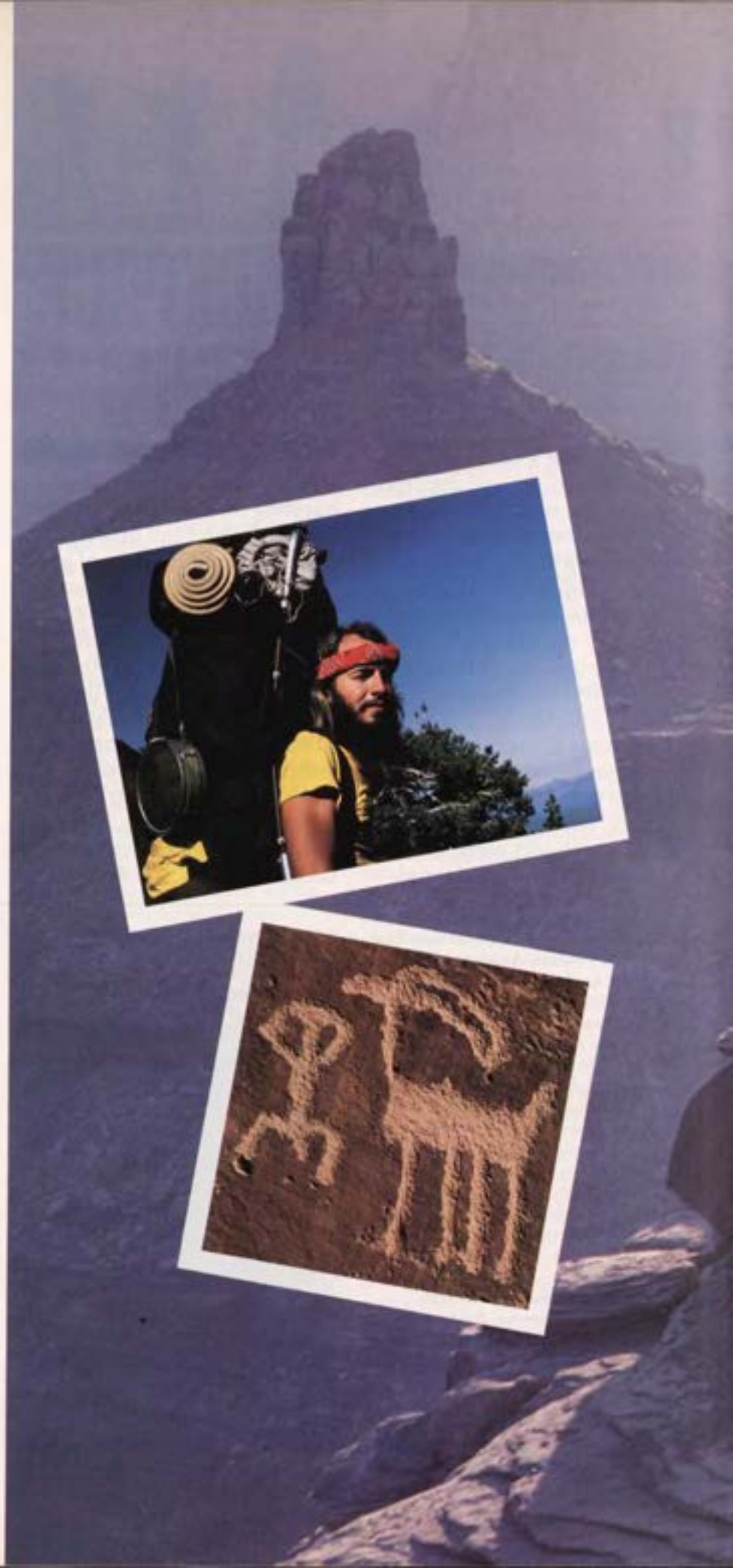
Background Photo: Steven Kline
Insets (clockwise): David Geisinger, Gail Boyd, Gary Ladd, Steven Kline, Brenton Beck

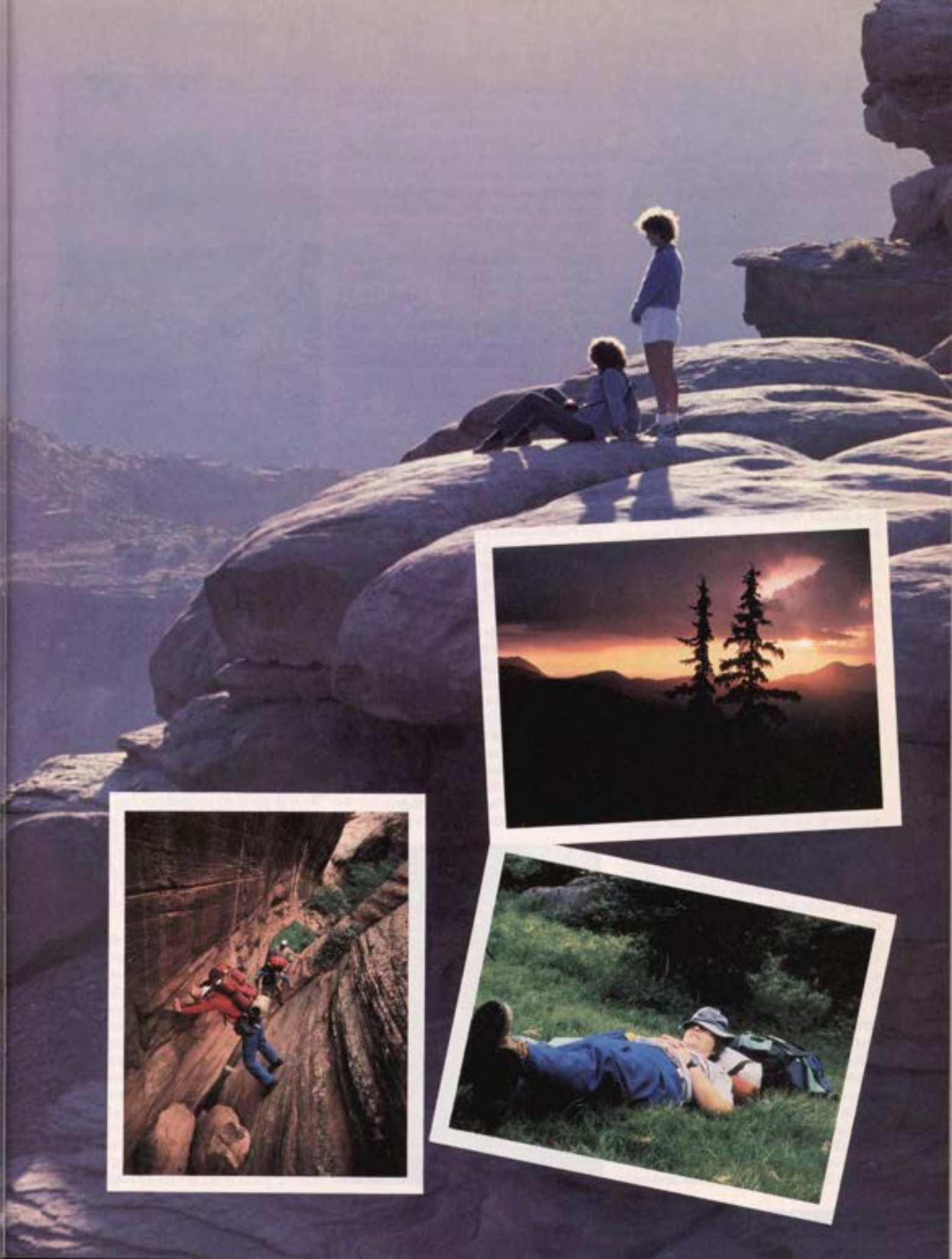
[87034] Salt Trail—South Rim, Grand Canyon, Arizona—April 10–18. *Leader, Bert Fingerhut, 177 E. 79th St., New York, NY 10021.* This trip, designed for dedicated and experienced Grand Canyon backpackers, will descend the old and very steep Salt Trail, fight the willows and tamarisk along the Little Colorado River, go cross-country on the Escalante route, and ascend the Hance Trail to the South Rim. (Rated S)

[87035] Galiuro Wilderness, Galiuro Mountains, Arizona—April 5–11. *Leader, Sid Hirsh, 4322 E. 7th St., Tucson, AZ 85711.* This southeastern Arizona mountain range is wilderness at its best—primeval, very rugged, and seldom visited. Our route is over dry, brushy ridges with brightly colored soils, past great rock formations on the way up, and into thickly forested canyons with running streams and irresistible pools on the way down. Signs of humans, mostly in Rattlesnake Canyon, are limited to some turn-of-the-century gold mines and a couple of old cowboy line camps. Travel is off trail, over difficult overgrown trail, and on some good trail. Although there are no layover days, there will be plenty of time to explore and enjoy. (Rated M-S)

[87036] Kanab Canyon/Thunder River, Grand Canyon, Arizona—April 25–May 2. *Leader, Peter Curia, 1334 W Willetta, Phoenix, AZ 85007.* The scenery in this area is perhaps the best the Grand Canyon has to offer the off-trail adventurer. There's the expanse of the Esplanade, the redwall narrows of Jumpup, the usually muddy but always sinuous Kanab Creek, the sculptured floor in Scotty's Hollow, the murmur of Whispering Falls, and finally the explosive headwaters of Thunder River. The terrain is difficult and there are no layover days, but the memories that go with you are forever. (Rated S)

[87063] Slickrock Wilderness, Nantahala and Cherokee Forests, North Carolina/Tennessee—April 25–May 2. *Leader, Bob Temple, 8357 Four Worlds Dr., #7, Cincinnati, OH 45231.* Located just south of the Great Smoky Mountains, Slickrock and two adjacent wilderness areas make up an isolated roadless preserve of fast-flowing streams and 5,000-foot peaks. Our trip will feature several layovers and time to explore on dayhikes. A midweek food drop will lighten our loads. Waterfalls, spring wildflowers, and a walk out through one of the largest virgin forests in the eastern United States are highlights of the week. This trip is suit-





able for novices as well as experienced backpackers desiring a leisurely outing. (Rated L-M)

[87064] Hells Canyon, Oregon—April 29–May 7. *Leader, Tom Erwin, 631 Elverta Rd., Elverta, CA 95626.* Hells Canyon is the deepest river canyon in the world. There may be remnants of snow in the fir and pine trees on Freeze Out Saddle, but cactus will be blooming amongst the sagebrush at the canyon bottom. Virtually every life zone is present in the canyon, and the concentration of wildlife at this time of year is unique. Large herds of elk, raptors nesting in the cliffs, Canada geese nesting along the river, and other resident and migratory birds will be present. The route will be on-trail. Layover time and at least one food cache are planned. The journey to Enterprise, Ore., will be an interesting prelude to the actual hike. (Rated M)

[87037] Painted Rocks Leisure Loop, San Rafael Wilderness, California—May 8–15. *Leader, Len Lewis, 140 Stacy Ln., Grass Valley, CA 95945.* Our trip takes place in condor country, and although the condor is almost gone, a portion of its beautiful home still remains. (We did see a condor on a 1984 trip.) From the desert across the high potrero, our trip leads us to the Sisquoc River. Along the way we'll see exotic, wind-formed rock formations and wonder at cave paintings left by Native Americans years ago. This trip beckons both the experienced and novice backpacker. (Rated L-M)

[87038] Navajo Mountain/Rainbow Bridge, Arizona—May 9–16. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* On the Navajo Indian Reservation in southern Utah, Navajo Mountain rises to a height of 10,388 feet, dominating the local landscape. Rainbow Bridge, magnificent sandstone canyons, slickrock vistas, spring wildflowers, and sparkling creeks make this trip a delight for hikers and photographers. Time is allotted for dayhiking many of the side canyons we will pass on our circumnavigation of Navajo Mountain. (Rated M-S)

[87039] Paria Canyon—Vermilion Cliffs Wilderness Area, Arizona/Utah—May 17–23. *Leader, Susan Groth, 6630 S. 43rd St., Phoenix, AZ 85040.* Paria Canyon and its tributary, Buckskin Gulch, are two of the most spectacular canyons in the desert canyon country of the Colorado Plateau. The canyon walls often rise 1,000 feet or more above the canyon floor, and are sometimes as close together as a few feet. During our 40-mile trip we will hike down through six geologic formations with colors ranging from red and brown to purple and gray. We will see Indian petroglyphs and numerous natural arches, amphitheaters, and pinnacles. Time is allotted for a number of short dayhikes to points of interest. (Rated M-S)

[87040] Sierra San Pedro Martir, Baja California, Mexico—May 20–29. *Leader, Wes Reynolds, 4317 Santa Monica Ave., San Diego, CA 92107.* Sierra San Pedro Martir is the highest mountain range in Baja California. We begin hiking at Vallecitos, a large grassy meadow with pines and aspens. We will continue through boulder-strewn rolling hills and arroyos, visit the alpine meadows of La Encantada and La Grulla, enjoy flowing streams, and at lower elevations see oak woodlands mixed with western slope chaparral. There will be opportunities to observe some of the human history of this area and, if conditions permit, to view both the Pacific Ocean and the Sea of Cortez from a nearby peak. The first and last nights will be spent relaxing at the Meling Guest Ranch in the chaparral-covered foothills. (Rated L-M)

[87041] James River Crossing, Jefferson and George Washington Forests, Virginia—May 23–30. *Leader, Chuck Cotter, 1803 Townsend Forest Ln., Brown Summit, NC 27214.* This Appalachian Trail odyssey takes us through the lovely Blue Ridge Mountains in Virginia. The trail snakes its way through these exquisite wooded mountains where wildflowers abound; the trip dates coincide with the peak of wildflower display. Highlights include visits to Apple Orchard Falls, Apple Orchard Mountain (4,125'), and James River Gorge (660'). A layover day will be spent exploring the James River Face Wilderness, established in 1975 by the Eastern Wilderness Act. Numerous rock ledges exist along the trail, providing wonderful views of the surrounding countryside. This section of the Appalachian Trail is considered extremely beautiful. (Rated L-M)

Cheryl Smith

Regina Rubin

[87065] California's Lost Coast and Redwoods—May 24–30. *Leaders, Bob Posner and Len Lewis, 2555 Le Conte, Berkeley, CA 94709.* The wild, untamed beauty of the rugged Lost Coast and the serene stillness of the magnificent redwood forest beckon the young at heart. We will travel on isolated beaches, listening to the sounds of surging surf and barking sea lions. Wildflowers, stream fishing, photography, and birdwatching will be among the pleasures available on this trip, a truly unique outing for both the beginner and old hand. (Rated L-M)

[87042] Dark Canyon, Utah—May 24–31. *Leader, Barry Morenz, 1209 N. Stewart, Tucson, AZ 85716.* Remote and infrequently traveled, this splendid canyon begins in cool pine and fir forests at 8,000 feet and descends into the warmer desert as it empties into Lake Powell at 3,700 feet. The canyon is narrow and deep in places, with towering sandstone walls and plenty of plunge pools and waterfalls. We will explore side canyons on a layover day and as time permits. A boat will ferry us from Lake Powell to Hite Marina, where a bus will transport us back to our starting point at Bluff. (Rated L-M)

[87043] Arch Canyon, Southeast Utah—May 31–June 6. *Leader, Belva Christensen, 715 W. Apache, Farmington, NM 87401.* Arch Canyon is an important archaeological area, with cliff dwellings located next to or in high alcoves on canyon walls. The upper portion contains side canyons made for exploring. Three magnificent arches formed by years of wind and rain can be viewed among the pine and fir trees. (Rated L-M)

[87066] Black Elk Wilderness, Black Hills Forest, South Dakota—June 7–13. *Leader, Faye Sitzman, 903 Mercer Blvd., Omaha, NE 68131.* Nestled between Mt. Rushmore and the grand Cathedral Spires of the Needles is the heart of the sacred "Paha Sapa." We will traverse Harney Peak (7,242'), Black Elk's "Center of the Earth," enjoy the vistas from granite ridges, and camp in lush forested canyons. Exceeding the Appalachians in altitude and the Alps in age, this wilderness is generously graced with wildflowers, beaver ponds, butterflies, mushrooms, and mountain goats. Travel days average five miles and we will have one layover day. This trip is ideal for well-conditioned beginners as well as experienced backpackers who enjoy well-organized, stimulating treks. (Rated L-M)

[87067] Vermont's Green Mountains—June 21–27. *Leader, Dan Nelson, 666 Upper Merriman Rd., Akron, OH 44303.* The Green Mountains run the length of Vermont from Massachusetts to the Canadian border. We'll follow the Long Trail, starting in one of the most remote sections at Lincoln Gap. We'll travel north over many peaks, including Camel's Hump, the second highest in the state. Mileages will be moderate to compensate for the often rugged terrain. June is a good time to visit because we will encounter fewer people. Abundant wildflowers and views of the astonishingly green countryside are only part of the beauty this trail offers. A food cache will lighten our packs. (Rated M-S)

[87068] Zion Narrows, Utah—June 28–July 4. *Leader, Don McIver, 7028 W. Behrend Dr., Glendale, AZ 85308.* Zion National Park in southern Utah is famous for its beautiful narrow canyons sculpted in the Navajo sandstone. We will hike through the Zion Narrows and two lesser-known canyons to experience the full spectrum of beauty in this outstanding wilderness area. Clear, dry days with lots of wading through the Virgin River will be offset by cool nights at remote campsites. This trip is unique in that it visits all three of Zion's more accessible canyons. (Rated M-S)

[87069] Canyon Paradise, Yosemite Park, Sierra—July 6–14. *Leaders, Patty Biasca and Bill Walsh, 1139 Westmoreland Circle, Walnut Creek, CA 94596.* Starting from Virginia Lakes, we will explore four of the eleven parallel canyons of northern Yosemite. This little-traveled area features country as spectacular as any you'll see in the Sierra; the trip includes two days below the dramatic Sawtooth Ridge. Two layover days are planned, with plenty of time for side trips. (Rated L)

[87070] Mt. of the Holy Cross Wilderness Area, White River Forest, Colorado—July 8–15. *Leaders, Carol Benson and Bill Myers, 2575 S. Syracuse Way, #D201, Denver, CO 80231.* This peakbaggers' special, timed to coincide with the end of the Sierra Club International Assembly, will offer the opportunity to view some of Colorado's beautiful high country. We will explore a deserted mining town and make optional nontechnical climbs of Mt. of the Holy Cross (14,005'), Notch Mountain (13,224'), Whitney Peak (13,271'), and Mt. Jackson (13,670'). Expect spectacular views and possibly spring flowers. Our hikes and camps will be at or above 10,000 feet. (Rated M-S)

[87071] Alferd E. Packer Special, La Garita Wilderness, Colorado—July 8–17. *Leader, Bob Berges, 21 Stone Harbor, Alameda, CA 94501.* Near famous Slumgullion Pass astride the Continental Divide lies little La Garita Wilderness. From here Packer and five companions left on a spring gold-prospecting trip more than a hundred years ago. Shortly afterward, Packer returned alone; he was convicted (with good reason) of cannibalism. Your leaders do not promise to

Bill Davis

Marilyn Sholin

emulate Packer's cuisine or serve Slumgullion stew, but there will be a pleasant loop trip with two layover days for peak attempts or relaxation. (Rated M-S)

[87072] Mt. Hooper Looper, John Muir Wilderness, Sierra—July 11–19. *Leader, Gary Swanson, P.O. Box 8551, Emeryville, CA 94662.* We will begin this nine-day adventure with a boat ride across Florence Lake, then follow the San Joaquin River to the high country west of the Sierra Crest. Cross-country travel will take us on a loop among the peaks of the Pinnacles, Gemini, Seven Gables, and Mt. Hooper. Two layover days in the rugged beauty of this alpine region will provide time for hiking, fishing, peakbagging, or just resting in camp absorbing the magic of azure lakes nestled in glacier-carved valleys. Campsites will range in elevation from 8,000 to 11,000 feet, their beauty rivaled only by two 12,000-foot passes with panoramic vistas of the wilderness that is the namesake of John Muir. Half the 40-mile trip will be off-trail. (Rated M)

[87073] Midway Pass, Hunter Fryingpan Wilderness, White River Forest, Colorado—July 12–18. *Leader, Fred Gunckel, 2111 New York Ave. SW, Albuquerque, NM 87104.* Views of the famous Maroon Bells and time for sunbathing, photography, or just sleeping late are featured in this leisurely-paced trip in one of Colorado's newest wilderness areas. Beginning at Independence Pass (the highest automobile pass in the United States), we will climb to 11,800 feet. Our lowest elevation will be 10,800 feet. All travel will

be on developed trail, except for two short days on primitive trail. The trip features two layover days; its leisure-to-moderate rating reflects the high altitude and short but steep initial climb from Independence Pass. (Rated L-M)

[87074] Garfield Grove Big Trees, Sequoia Park, Sierra—July 12–19. *Leader, Ellen Howard, 521 Francisco St., San Francisco, CA 94133.* This pleasant hike through pine woods to lakes, new green meadows of early summer, and the grandeur of giant redwood forest will be complemented by a turn in higher open country with views toward distant Sierra ranges. The trip is designed for backpackers who would like a nice workout on moving days combined with a few layovers for relaxing, natural history study, sketching, photography, and fishing. Campsite elevations vary from 8,400 to more than 10,000 feet. This loop from our trailhead at Mineral King will cover approximately 38 miles. (Rated M)

[87075] Cascade Valley–Fish Creek, Sierra—July 13–20. *Leader, Wes Reynolds, 4317 Santa Monica Ave., San Diego, CA 92107.* Beginning at Lake Mary, we cross the Mammoth Crest at Duck Pass. South of the crest lies Cascade Valley, whose steep sides and flat bottom were gouged out by glacier action more than 10,000 years ago. This allowed Purple and Minnow creeks to cascade from side canyons into the valley below. Layover days will give us time for photography, fishing, and daytrips. We will be at Lost Keys Lakes one night before continuing to Iva Bell Hot Springs. On the last day we will visit Devil's Post Pile National Monument. (Rated L)

[87076] Trinity Alps, Mines and Lakes, Trinity Alps Wilderness, California—July 18–25. *Leader, Jean Ridone, 272 Coventry Rd., Kensington, CA 94707.* Remnants of a not-so-well-known gold rush beckon to be explored in the Trinity Alps, tucked away in northwestern California. Waterfalls, lakes, meadows, craggy granite mountains, glacial cirques, and forests are the setting in which we travel as we retrace the steps of last century's gold miners. There will be time for fun and further exploring on our layover day. Elevations range between 3,500 and 8,000 feet, mostly on-trail. (Rated L-M)

[87077] Lake George, New York—July 19–25. *Leader, Sally Daly, 11 Birch Dr., RD #1, Albany, NY 12203.* Although better known as a popular, developed Adirondack recreation area, the solitude of a

backpacking experience can be enjoyed in the vast Lake George wild forest bordering the lake. The peaks provide vistas of the lake and distant mountains, while mountain ponds invite swimming and fishing. Hiking on abandoned forest roads much of the way and two nights at each campsite allow adequate time for side trips and watching sunsets. After hiking 1,400 feet down, our final days will be spent exploring the shoreline of the lake. (Rated L)

[87078] Hemlock Crossing, Ansel Adams Wilderness, Sierra—July 19–27. *Leader, Jim Watters, 600 Caldwell Rd., Oakland, CA 94611.* Our trip undertakes 40 challenging miles deep into the newly expanded and rechristened Ansel Adams Wilderness east and south of Yosemite. The first few days have us trekking across the upper portions of a series of strikingly beautiful canyons along the Merced–San Joaquin Divide. Next we gain the solitude of the farthest lake basins that mark the beginning of the North Fork of the San Joaquin River. We start and end this adventure on-trail, but midway our route is entirely cross-country, although in moderate hops. Among the trip's highlights are magnificent views of the dark and imposing Ritter Range and, later, the iridescent cascades and strings of green meadows in the lower river canyon. A choice of accessible peaks awaits us on layovers and short hiking days. (Rated M)

[87079] Wind River Peaks and Glaciers, Bridger Wilderness, Wyoming—July 19–28. *Leader, Dave Derrick, 1916 Spring Dr., Louisville, KY 40205.* The North Wind River Range contains some of the most highly glaciated mountains in North America. From our trailhead near Pinedale, we follow the footsteps of explorers John C. Fremont and Kit Carson to the Titcomb Basin. Two layover days at Titcomb Lakes allow climbs of Fremont Peak (13,745') and views of the vast glaciers astride the Continental Divide. Our loop continues back to Elkhart Park, with camps at several trout-filled high lakes. Long days on the trail are interspersed with four layover days for peak climbing, fishing, and relaxing in this remote alpine wilderness. (Rated M-S)

[87080] Rubicon River Loop, El Dorado Forest, California—July 19–28. *Leader, Modesto Piazza, 614 Bayview Ave., Millbrae, CA 94030.* One of California's most popular hiking areas lies above the southwest shore of giant, mountain-rimmed Lake Tahoe. This gentle wilderness incorporates most of the best features of the High Sierra in a very small area. It is prime lake country, with 130 lakes packed into a hundred square miles of mountain scenery ranging from 6,140 to 9,983 feet. We will hike through high passes and beautiful forest; our campsites will be on lakes cool enough to rejuvenate our aching bodies and warm enough to swim. Two layover days will permit exploration of more lakes and a climb of Mt. Tallac (9,735') for a view of the Lake Tahoe area. Well-conditioned beginners are welcome. (Rated M)

[87081] Jewel of the Northern Rockies—Glacier Park/Bob Marshall Wilderness, Montana—July 19–29. *Leaders, Bill Evans and Wayne Chamberlin, P.O. Box 2834, Novato, CA 94948.* The Continental Divide winds its sinewy route northward through these 2-million-acre wildernesses, all critical great bear habitat and home of the largest grizzly bear population in the Lower 48. The bears' home is a spectacular array of nature's best—emer-

ald alpine lakes, sheer peaks where only mountain goats tread, meadows full of beargrass and huckleberries, dozens of small glaciers, and a unique mix of wildlife. Join us for a memorable visit to this alpenglow country. (Rated M)

[87082] Silver Lake, Sequoia Park, Sierra—July 20–28. *Leader, Andy Johnson, 206 DeMontfort, San Francisco, CA 94112.* All backpackers with some prior experience are welcome on this nine-day outing in the southern Sierra. Silver Lake is nestled in the Great Western Divide west of Mt. Whitney. Once across the divide we'll be completely surrounded by mountains and wilderness. One highlight of the area is a campsite at a secluded lake near upper Soda Creek. We'll hike 40 miles with two layover days. Expect plenty of peaks to climb and lakes to swim in. (Rated M)

[87083] Dorothy Lake Leisure Loop, Yosemite Park/Emigrant Wilderness, Sierra—July 25–August 1. *Leader, Jeff Mulligan, 16419 Monte Cristo Dr., Hacienda Heights, CA 91745.* Our hike begins just east of Sonora Pass at Leavitt Lake. Hiking south toward Yosemite National Park, we pass through several high lake basins. Heading north from Dorothy Lake, we will cross over the Sierra Crest and pass through the eastern edge of the Emigrant Wilderness. There will be plenty of time for further exploration or just relaxing on our three planned layover days. (Rated L)

[87084] Five Acre Lake Leisure, Emigrant Basin, Sierra—July 25–August 2. *Leaders, Helen and Ed Bodington, 697 Fawn Dr., San Anselmo, CA 94960.* From our roadhead at Crabtree Camp, we will travel to the West Fork of Cherry Creek and cover a wide loop, camping at Yellowhammer, Five Acre, and Long lakes. A layover day will allow time for a climb of nearby peaks, looking for wildflowers, or fishing. Travel days will average six miles with 1,000 feet of elevation. This is a leisurely trip for both well-prepared newcomers and backpacking veterans. Canelo, our friendly llama, will carry equipment on this trip. (Rated L)

[87085] Sawatch Range of the Collegiate Peaks, Colorado—July 25–August 5. *Leader, Al Ossinger, 12284 W. Exposition Dr., Lakewood, CO 80228.* This trip begins and ends in Vicksburg between Buena Vista and Leadville. Traveling up Missouri Gulch over Elk Head Pass to Missouri Basin, we will include a climb of Mt. Belford (14,197'). During our stay in Missouri Basin we will climb Missouri Mountain (14,069'), Iowa Peak (13,881'), and Emerald Peak (13,904'). We then continue down Pine Creek and over to Frenchman's Creek for climbs of Mt. Columbia (14,073') and Mt. Harvard (14,420') before heading back to Pine Creek and over Elk Head Pass to Vicksburg. (Rated M)

[87086] Doubletop Mountain Loop, Bridger Wilderness, Wyoming—July 26–August 1. *Leaders, Barbara Beaumont and Eric Sieke, RR 2, Box 341, North Liberty, IA 52317.* Starting at Green River Lakes Campground, we will make a 41-mile loop. Our layover days will be spent traveling cross-country above timberline, one day to a lake featuring large brook trout, another to climb Squaretop Mountain, the most photographed peak in the Wind River Range. The small size of the group will enhance the wilderness experience. (Rated M)

Charles Ford

[87087] West Walker Natural History, Sierra—July 26–August 1. *Leader, Ann Hildebrand, 1615 Lincoln Rd., Stockton, CA 95207. Naturalist, Suzanne Swedo.* Your appreciation of the lovely, dramatic watershed of the West Walker River on the east side of Sonora Pass will be enhanced by on-the-spot opportunities to study the area's natural history. We will discuss the geologic forces that produced the Sierra Nevada range and study wildflowers, trees, birds, and mammals as we pass through various environments. Our naturalist truly enjoys sharing her love and knowledge of the wilderness with others who appreciate their natural surroundings. We will be treated to a packer assist on day one and enjoy a layover day just over the ridge in northern Yosemite National Park. (Rated L)

[87088] Miter Basin, Sequoia Park, Sierra—July 26–August 1. *Leader, Tom Jones, P.O. Box 351, Moffett Field, CA 94035.* From Horseshoe Meadows on the eastern Sierra we will hike 30 miles in the Golden Trout Wilderness and Sequoia Park. Heading for high country we will be in the shadow of 13,000-foot peaks and camp by Sky Blue Lake. Our route crosses New Army Pass and follows Cottonwood and Rock creeks to the upper reaches of Miter Basin. Our two layover days will provide exceptional panoramas and allow us ample time to explore this unique land of glacial cirques and lakes. Layover options include climbing Miter Summit (12,770'), dayhiking to Iridescent Lake, or simply taking photographs. (Rated M)

[87089] Rosy Finch Lake, John Muir Wilderness, Sierra—July 26–August 2. *Leader, Jim Gilbreath, 7266 Courtney Dr., San Diego, CA 92111.* This trip features cross-country travel through eastern High Sierra alpine valleys during the peak of summer beauty. We will begin at the McGee Creek trailhead (8,350') northwest of Bishop, and finish eight days later over Mono Pass (12,000') at the Rock Creek trailhead. We will have three layover days for fishing, photography, peak scrambling, or simply admiring the abundant wildflowers and dramatic geology. Possible peak climbs include Red Slate (13,163') and Mt. Izaak Walton (12,099'). Total distance is 30 miles, most of which will be cross-country. This trip is not for beginners; talus experience is necessary. (Rated M)

[87090] Big Game Ridge, Teton Wilderness, Wyoming—July 26–August 4. *Leader, K. Patrick McClanahan, 500 Kerber Rd., West Lafayette, IN 47906-9433.* Home to moose, elk, bear, cutthroat trout, and the rare trumpeter swan, Big Game Ridge is one of the most beautiful but least visited areas of the Teton Wilderness. We'll be hiking seven to eleven miles per day through flower-filled alpine meadows at 6,900 to 10,300 feet near the headwaters of the Snake River. Our trip will include spectacular vistas of the Tetons to the west and visits to Yellowstone Meadow and Parting of the Waters. Two layover days will give us time to fish, swim, explore nearby peaks and plateaus, or seek out the abundant wildlife. The trip is flexibly paced, allowing you to enjoy this longer-than-average backpack trip with only moderate hiking experience. (Rated M-S)

[87091] Yosemite Panoramic View, Sierra—July 30–August 8. *Leader, Joe Davis, 10543 Odessa Ave., Granada Hills, CA 91344.* This trip begins at Glacier Point (7,200'), overlooking Yosemite Valley and Yosemite Falls, and ends in the valley. We will travel on the Panorama Trail for views of Half Dome and Vernal and Nevada falls. Our route will lead us to views of the Sierra Crest, many waterfalls, mountain lakes, and meadows. Campsites will be at lakes, streams, or rivers. A food drop, two layover days, and short daily mileages (seven maximum) make this a leisurely trip. Three days will be moderate because of elevation gains and crossing Red Peak Pass (11,200'). Novices and experienced backpackers are welcome. (Rated L)

[87092] Yosemite South Leisure, Sierra—July 30– August 8. *Leader, Phil Gowing, 2730 Mabury Sq., San Jose, CA 95133.* The grandeur of southern Yosemite with its many lakes, verdant meadows, and crystal-clear streams along with a few magnificent High Sierra peaks make up the spectacular area we will spend nine days exploring. Short moving days and several layover days will give us ample time for swimming, fishing, climbing, or just lying around camp enjoying the good life. A packer-dropped food cache will lighten our loads to make the trip even more enjoyable. Who could ask for anything more? (Rated L)

[87093] Yosemite's High Sierra—A Beginner's Backpack for Women—August 1–8. *Leader, Roz Bray, 41 Hawthorne Ave., Los Altos, CA 94022.* Discover the joy of backpacking on this women's introduction to the beauty of Yosemite National Park. We will follow the John Muir Trail through high mountain meadows lush with wildflowers and streams, pass breathtaking granite slopes polished smooth by ancient glaciers, ascend world-famous Half Dome for an incomparable view of Yosemite Valley, and walk alongside the Merced River as it cascades into waterfalls. You will gain self-confidence and learn many new skills: packing your gear, cooking on stoves, setting up a tarp, reading a map, and having minimal impact on the wilderness. Elevations range from 7,000 to 10,000 feet. There will be time for photography, nature study, and swimming. (Rated L-M)

[87094] Rogue River Canyon, Oregon—August 1–8. *Leader, Carolyn Downey, 1931 E. Duke Dr., Tempe, AZ 85283.* This moderate 40-mile trip starts at Graves Creek and ends at Illahe, closely following the north bank of the Rogue River as it winds its way toward the Pacific. The scenic beauty of the river is unsurpassed as it drops from gorge to canyon. This section, protected by the Wild and Scenic Rivers Act of 1968, is one of the most remote river courses in the United States. We can watch rafts run exciting whitewater rapids, and photograph the great variety of waterfowl, deer, and perhaps even a black bear or two. One night will be spent at the famous Paradise Bar Lodge. Daily mileages will vary from three to seven with little elevation change. (Rated L-M)

[87095] Across the Mono Divide, John Muir Wilderness, Sierra—August 2–9. *Leader, Jack Wickel, 1009 5th St., Hermosa Beach, CA 90254.* The Mono Divide branches westward from the Sierra Crest. Forested glacial recesses penetrate its northern slopes, while to the south the Bear Lakes Basin offers numerous alpine lakes and meadows. We'll spend eight days exploring this region, entering via Pine Creek Pass and exiting over Mono Pass. Our 42-mile route is nearly one third cross-country with three passes higher than 12,000 feet. Two layover days at superb timberline lakes allow for fishing or bagging several 13,000-foot peaks. A packer assist cuts loads the first day. (Rated M-S)

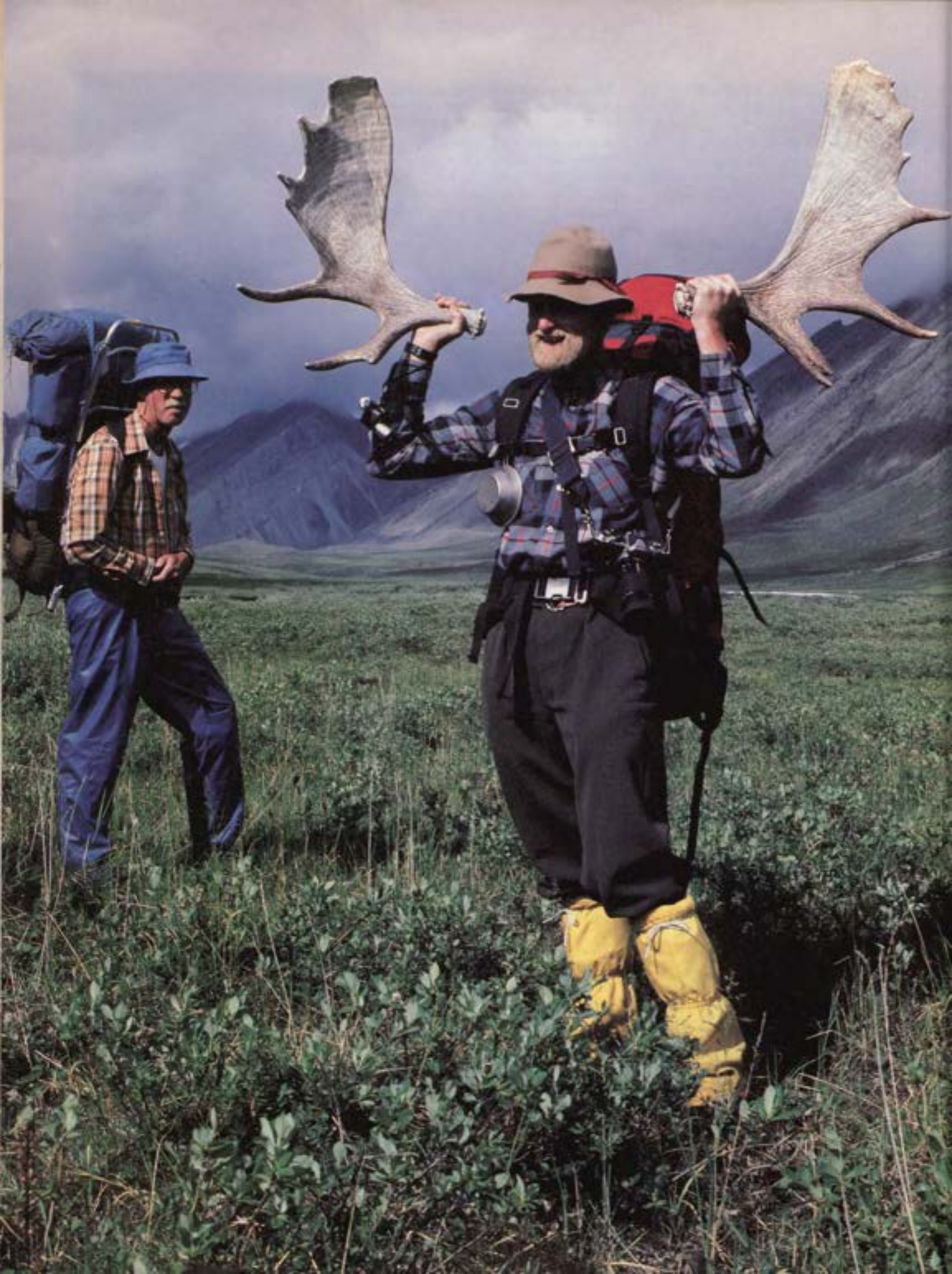
[87096] North Fork Falls Leisure, Bridger-Teton Forest, Wyoming—August 3–10. *Leader, Bill Bell, 2431 N. 86th St., Kansas City, KS 66109.* This eight-day outing provides the beginning and less-demanding backpacker a rare opportunity to visit three exceptional wilderness sites in a single outing—North Fork Falls, Parting of the Waters, and Two Ocean Plateau (10,000'). Three layover days will allow ample time to enjoy this wilderness area seldom traveled by backpackers. Abundant wildlife and the view from the plateau make this trip a photographer's delight, and anglers will enjoy the fishing at Enos Lake. We will cover approximately 45 miles. (Rated L-M)

[87097] North Palisade Circuit, Inyo Forest, Sierra—August 3–10. *Leader, Chuck Schmidt, 4292 Wilkie Way, Apt. N, Palo Alto, CA 94306.* Our approach to the Sierra will be from the east at Big Pine Creek. To reach the Palisade region, we will cross Southfork Pass (12,550') and descend into Le Conte Canyon. Our return will take us through Dusy Basin and over Jigsaw Pass (12,622'). Some of our campsites will be situated near lakes in the beautiful Sierra high country above 10,000 feet. Two layover days are planned for dayhikes or relaxation. (Rated M-S)

John Morris

[87098] Lakes Plateau, Absaroka-Beartooth Wilderness, Montana—August 6–15. *Leader, Dwight Taylor, 2 Marston Rd., Orinda, CA 94563.* The classic alpine beauty of the Beartooth Mountains makes them a favorite among backpackers and veteran mountaineers alike. The Beartooth Wilderness borders Yellowstone National Park and contains alpine plateaus, deep canyons, forests, wildlife, and Montana's highest peaks. Three layover days are planned. We'll travel about 55 miles, mostly on-trail, spending five days in the deep canyons of the Stillwater River and five on the Lakes Plateau. There will be opportunities to climb, observe wildlife, and fish for trout. (Rated M)

[87099] Sequoia Redwoods and Lakes, Sequoia Park, Sierra—August 7–15. *Leader, Don Lackowski, 2483 Caminito Venido, San Diego, CA 92107.* Our loop out of Mineral King offers an opportunity to observe several diverse features of Sequoia National Park. We will visit a wilderness grove of giant Sequoias, five alpine lake basins, and the Kaweah Peaks Divide, crossing the Great Western Divide twice. Several full and partial layover days provide ample opportunities to pursue individual interests such as fishing, photography, dayhikes, and peak climbs. (Rated M)



[87100] Sonora Pass to Tuolumne Meadows, Yosemite Park, Sierra—August 7–16. *Leader, Jim Carson, 706 Wildcat Canyon Rd., Berkeley, CA 94708.* Following the eastern Sierra Crest, our outing will bring us through several deep, glaciated canyons. During this ten-day, 76-mile hike, we will take the Pacific Crest Trail en route to such natural wonders as Benson Lake's Riviera beach. Among the planned activities will be photography, nature study, and a possible climb up Piute Mountain (10,571'). The trip will feature a popular modified natural food diet. (Rated M-S)

[87101] Evolution–Mt. Goddard Loop, Kings Canyon Park, Sierra—August 7–16. *Leader, Diane Cook, 631 Elverta Rd., Elverta, CA 95626.* In the center of the Sierra, east of Fresno, Calif., lies the remote stillness of the Ionian Basin. We will walk up the long corridor of Goddard Canyon toward the dark mass of Mt. Goddard (13,568') and pass through a broken granite entry to Ionian Basin. Here green and purple heather is accentuated in the strong sunlight. We cross the Goddard Divide (12,440'), skirting Evolution Basin before dropping to McGee Lakes. We will leave by way of the Evolution Valley section of the John Muir Trail before soaking off nine days of granite dust in a hot spring on our last night. On two layover days, the trout will be calling, and several peaks will beckon to show you the endless vistas of the Sierra. (Rated L-M)

[87102] Matterhorn Canyon Loop, Toiyabe Forest, Sierra—August 8–18. *Leader, Sy Gelman, 1387 7th Ave., San Francisco, CA 94122.* Spectacular scenery and high mountain lakes are the highlights of this northern Yosemite area. Although we start at 7,200 feet, our trek will take us through beautiful canyons and high passes offering panoramic views. Two layover days beside high mountain lakes will allow us time to rest, fish, visit the unusual slides area, or climb Matterhorn Peak. A pack drop midway will lighten our load. Well-conditioned beginners are welcome. (Rated M)

[87103] Teton Backcountry, Grand Teton Park, Wyoming—August 9–15. *Leaders, E. Allan Blair and Caroline Hicks, 20 Linden Ln., Plainsboro, NJ 08536.* We will hike the Teton Crest Trail, which passes through the remarkably beautiful and interesting high country west of the Tetons. To the east are the Teton high peaks, to the west, the lower sedimentary mountains. The trail crosses a number of high passes and occasional snowfields and touches glaciers. The views and wildflowers will be spectacular. (Rated M-S)

[87104] Yosemite Beginner's Backpack—August 9–15. *Leader, Suzanne Swedo, 2145 Basil Ln., Los Angeles, CA 90077.* The Ten Lakes Basin near the geographic center of Yosemite National Park provides a dramatic and scenic setting for beginning backpackers to acquire the skills essential to backcountry camping and travel. Short hiking days of less than five miles and an early layover day will allow time for learning about equipment, wilderness cooking, use of map and compass, wildflowers, geology, and minimum-impact use of the land. (Rated L)

[87105] Thunder Mountain, Kings Canyon and Sequoia Parks, Sierra—August 11–20. *Leader, Patrick Colgan, P.O. Box 325, La Honda, CA 94020.* Rediscover the joy of wildness and the essence of spiritual freedom that can be found in backpacking. Spend ten glorious days amid snowcapped peaks, pristine backcountry meadows, and remote granite cols. A packer ferries food and supplies up to our first campsite on this moderate-to-strenuous high-altitude frolic. Two layover days for optional nontechnical climbs, fishing, snoozing, and lollygagging complement our agenda. The trip is mainly for experienced backpackers, but strong, spirited beginners are welcome. Start now by getting in shape. (Rated M-S)

[87106] Absaroka-Beartooth Wilderness, Montana—August 11–21. *Leader, Chuck Shinn, 7885 Vue Rd., Meridian, ID 83642.* We will spend ten days just north of Yellowstone Park exploring one of the most pristinely beautiful areas in the United States. Two layover days will give us time to enjoy the excellent fishing, abundant wildflowers, and spectacular alpine scenery. (Rated M-S)

[87107] Women's Beginner Backpack, Ansel Adams Wilderness, Sierra—August 15–22. *Leader, Carol Hake, 12830 Viscaino Rd., Los Altos Hills, CA 94022.* Beneath Banner Peak and the Minarets lie dozens of lakes, large and small. We'll travel short distances between these gems and leave most afternoons free to swim, sketch, relax, or explore without packs. This trip is suitable for beginners or experienced women who want to perfect their wilderness skills—using a topo map and compass, cooking on stoves, setting up shelter, and learning natural history and care of the environment. Elevations range from 8,500 to 10,000 feet. Total distance will be less than 30 miles. (Rated L)

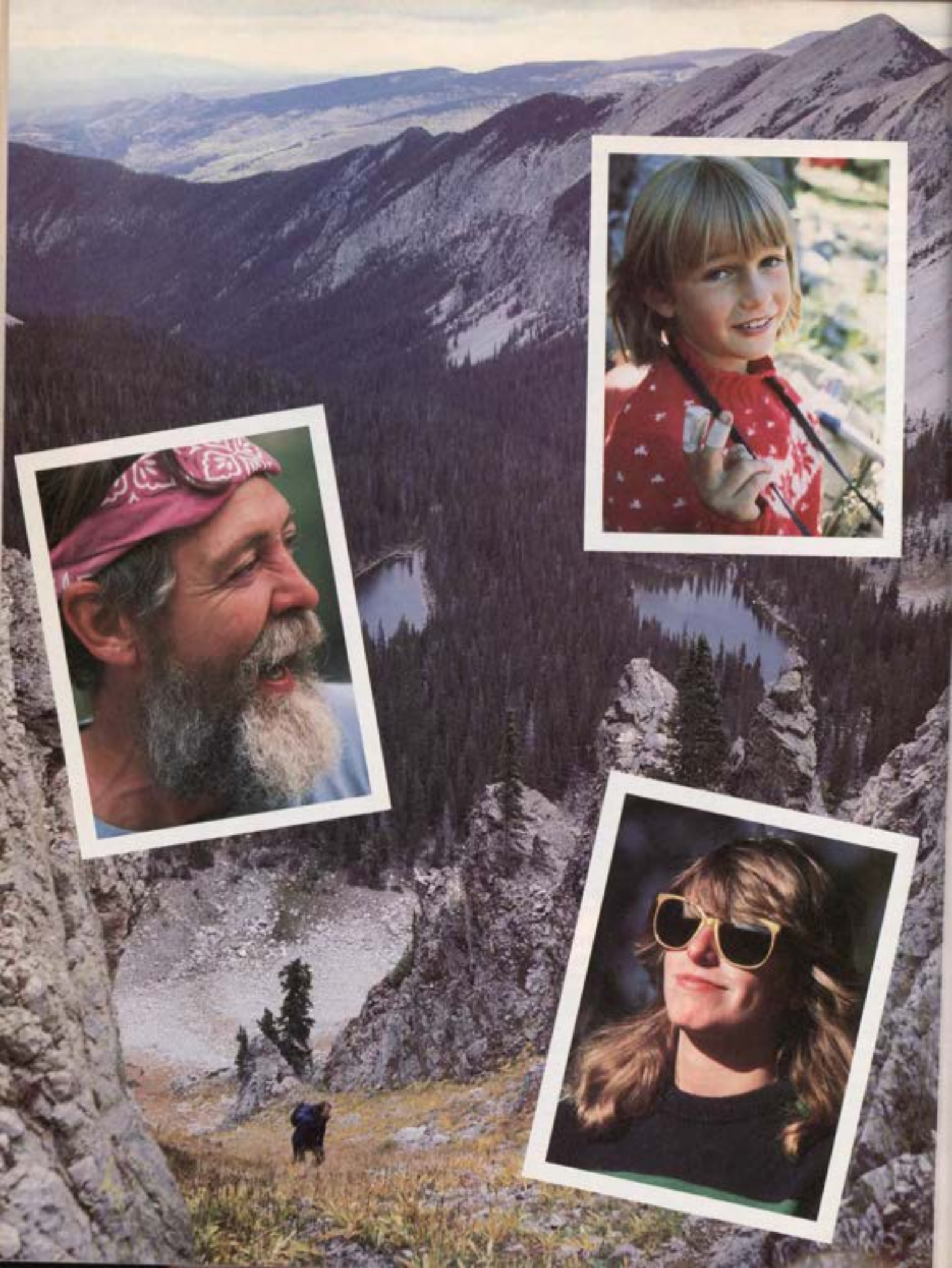
[87108] Mt. Ansel Adams Revisited, Yosemite Park, Sierra—August 15–23. *Leader, Don Donaldson, 4125 Terra Granada, #1B, Walnut Creek, CA 94595.* The objective of our 44-mile loop will be to establish a three-day base camp in the scenic upper Lyell Fork Canyon in Yosemite's high country. We plan to spend a day exploring the high and remote lake areas on the west side of Mt. Lyell and another day climbing majestic Mt. Ansel Adams. Although mostly a leisurely trip, there will be several difficult moving days that include cross-country. (Rated L-M)

[87109] Ritter Range Leisure, Ansel Adams Wilderness, Sierra—August 15–23. *Leader, Hal Fisher, 6111 Baltimore Dr., La Mesa, CA 92041.* Come visit some of the most dramatic country in the Sierra, with views of alpine lakes and unique land forms. We will travel to Garnet, Thousand Island, and Waugh lakes with views of Banner Peak and Mt. Ritter. There will be layover days for photography, peakbagging, fishing, or the backpacker's favorite—relaxation. The trip will total 26 miles in five moving days. (Rated L)

[87110] Red Devil Lake, Yosemite Park, Sierra—August 15–23. *Leader, Fred Schlachter, 7185 Homewood Dr., Oakland, CA 94611.* A nine-day loop will take us over five passes—including Red Peak Pass, the highest trail point in the park—and to numerous high lakes as we explore a little-visited area in southern Yosemite. We will have some vigorous hiking days and two layover days, one for an optional climb of Merced Peak—the highest in the Clark Range (11,726')—the other to explore the shore of Red Devil Lake. We will have a food drop to lighten packs and plenty of time for swimming, photography, and fun. (Rated L-M)

[87111] Hopkins Basin, John Muir Wilderness, Sierra—August 16–23. *Leader, Jim Gilbreath, 7266 Courtney Dr., San Diego, CA 92111.* Hopkins is one of several lovely eastern High Sierra alpine basins we'll visit, characterized by flower-filled meadows, clear streams, and a surrounding view of climbable peaks. There will be three or four layover days for fishing, climbing, or loafing, and a midway food cache to keep our loads light. We'll be camping at approximately 11,000 feet, with ten cross-country miles out of a total of 26. Photographers, bring your gear!

Carol Dienger



The roadhead will be Convict Lake near Bishop. Prior backpacking experience is necessary. (Rated L-M)

[87112] Circumambulating the White Clouds, Sawtooth Recreation Area, Idaho—August 17–28. *Leader, Sheri Serna, 2075 Coombsville Rd., Napa, CA 94558.* Located 50 miles northwest of Sun Valley, the White Cloud Mountains are Idaho's most scenic backpacking area. They are home to mountain goat, antelope, elk, black bear, bobcat, mule deer, coyote, beaver, and an elusive herd of bighorn sheep. Many of the lakes contain cutthroat trout. Three layover days and some short cross-country travel days make up for the high elevations and rugged terrain and permit us to fish, climb, and enjoy the wildlife. Our route starts at Slate Creek to the north and visits several drainages and numerous lakes before ending at Livingston Mill. (Rated L-M)

[87113] French Canyon/Bear Lakes, John Muir Wilderness, Sierra—August 19–26. *Leader, Bill Engs, Drawer 3248, Crestline, CA 92325.* Experience two contrasting remote mountain basins: the vast, open high country surrounding French Canyon and the isolated granitic pockets containing the Bear Lakes. Our route passes through a variety of natural areas as we ascend to Pine Creek Pass (11,200') and loop around via Merriam Lake and Italy Pass (12,300'). We travel three to seven miles a day with a layover day at Bear Lakes. One third of the 30-mile total is off-trail. (Rated M-S)

[87114] Ritter Range and Sierra Crest Peakbagging, Sierra—August 20–29. *Leader, Howard Drossman, 921 Spaight St., Madison, WI 53703.* The Ritter Range and Sierra Crest southeast of Yosemite National Park provide some of the most scenic peak ascents in the Sierra. Our trip starts and finishes at Granite Creek. The route climbs toward Isberg Lake and follows the Merced/San Joaquin Divide. The loop from Marie Lakes winds over Island Pass to Thousand Island, Garnet, and Iceberg lakes, returning to the trail south of Iron Mountain. The trip will cover 60 miles in eight hiking days. The layover days and shorter hiking days will give us a chance to hike up Foerster, Electra, and Rodgers peaks, and Mts. Ritter, Lyell, and Ansel Adams. The menu will feature a tasty and healthy natural food diet. The strong backpacker will welcome the challenge of the cross-country route with peak ascents. (Rated S)

[87115] Cartridge Pass Peakbagging, Kings Canyon Park, Sierra—August 21–29. *Leader, Vicky Hoover, 735 Geary St., #501, San Francisco, CA 94109.* In the Sierra, if you can't get there in one day, it's remote. We'll need three days to reach secluded Lake Basin, idyllically nestled in the high central Sierra above Cartridge Creek. We'll venture to various peaks from Observation to Arrow, near the source of the South Fork of the Kings River, and travel more cross-country than on-trail. Our packer-assisted first day will take us from 5,000 to 10,000 feet. (Rated M-S)

[87116] Clark Range, Ansel Adams Wilderness/Yosemite Park, Sierra—August 21–30. *Leader, David Reneau, 330 Nimitz Ave., Redwood City, CA 94061.* On this ten-day loop we will explore the alpine lake basins, forests, and peaks of the Clark Range and the Merced–San Joaquin Divide. From Clover Meadow we visit the many lakes below Gale Peak before crossing Fernandez Pass (10,200') into Yosemite. We then cross the Clark Range at scenic Red Peak Pass (11,200'). Total hiking distance will be 55 miles. Two layover days will allow time for nature study, fishing, relaxation, and climbs of nearby peaks. (Rated M-S)

[87117] Baxter State Park, Maine—August 22–29. *Leader, Leonard Frank, 205 W Moore St., Hackettstown, NJ 07840.* Baxter contains 200,000 acres of forest wilderness broken only by granite peaks and a multitude of clear lakes and streams where wildlife abounds. Strict limitations on the number of overnight visitors have kept the park unspoiled by human activities. Katahdin's highest peak rises to 5,240 feet, providing beautiful views and wonderful opportunities for photography. Because of the rugged terrain and unpredictable weather, participants must be in good physical condition and have the proper equipment, although extensive backpacking experience is not necessary. We will have three layover days so we can climb peaks without heavy packs. (Rated M)

[87118] Kaweah Basin, Sequoia and Kings Canyon Parks, Sierra—August 23–September 1. *Leader, Bob Madsen, 3950 Fernwood Way, Pleasanton, CA 94566.* The Kaweah Peaks Ridge provides grand views of the southern Sierra. We will hike around the ridge, using trails to connect us to vast basins through which we will travel cross-country. Passes we will traverse include Kaweah (12,300') and Pants (12,000'). Two layover days will allow us time to explore these remote areas on our ten-day, 55-mile hike. (Rated M-S)

[87119] Behind Mt. Whitney, Sierra—August 24–September 1. *Leaders, Letty and Cal French, 1690 N. Second Ave., Upland, CA 91786.* Tucked behind the sheer east face of Mt. Whitney lies the glaciated rolling country of the upper Kern River basin. Surrounding peaks guard the access to this gentle wilderness. Lakes hide in the many angles and corners of the land, offering hikers individual Shangri-las. Much of our route is cross-country, away from the well-used trails. We will have two layover days for peakbagging, fishing, or nature-noting. Both leaders are interested in the history, geology, and ecology of this lofty area in "The Range of Light." (Rated M)

[87120] Mt. Goddard Panorama, Kings Canyon Park, Sierra—August 24–September 2. *Leaders, Marilyn and Dan Smith, 817 Lexington Ave., El Cerrito, CA 94530.* Mt. Goddard divides the San Joaquin and Kings river drainages and forms the rim of picturesque Ionian Basin. The summit was eagerly sought by early explorers for its prominence and panoramic views. Our route to Mt. Goddard crosses Le Conte Divide, stepping from forested trails to cross-country travel in Ionian Basin beneath the spires of Scylla and Charybdis. Layover days are planned for peakbagging, fishing, and relaxing amidst the High Sierra scenery. We will return via the alpine lakes of Blackcap Basin and Bench Valley. (Rated M)

[87121] Yellowstone Waterfalls, Yellowstone Park, Wyoming—August 25–September 3. *Leader, Sue J. Estey, 1008 Henderson Ave., Menlo Park, CA 94025.* Geysers and hot springs, moose and bear, owls and ouzels, lodgepole pines and Indian paintbrush can be expected on our trip across the Continental Divide through the Bechler region of southwest Yellowstone. Streams cascade off the glacier-sculpted volcanic plateau in waterfalls with names like Twister, Wahhi, and Colonnade. The 55 miles are relatively level, and two layover days will give us time to relax by the streams and catch some trout. (Rated L)

[87122] No Name Plateau, Sequoia Park, Sierra—August 26–September 5. *Leader, Gordon Peterson, 222 Royal Saint Ct., Danville, CA 94526.* High above the Kern River just north of the Red Spur is an unnamed plateau containing ten lakes and thirteen ponds. It has been traversed

Background Photo: Steve Ohringer
Insets (clockwise): Randy Silver, Steven Kline, Steven Kline

only on two known occasions. On our first trip through, in 1968, we looked for evidence of past use and found none. I am confident that the area remains in the same condition today. While the plateau will be the high point of the trip, it will be rivaled by views from Little Clair Lake, Mt. Kaweah as seen from Sky Parlor Meadow, Little Five Lakes, Big Five Lakes, and Columbine Lake. We can expect some adventuresome cross-country travel. (Rated S)

[87123] Sky Blue Loop, Cottonwood Lakes to Mt. Whitney, Sierra—August 29–September 6. *Leader, Sandy Sans, 2570 Dell Ave., Mountain View, CA 94043.* Our entrance to the High Sierra will be Cottonwood Lakes southwest of Lone Pine. We will travel to a string of camps above 10,000 feet; our two layover days will be spent surrounded by 13,000-foot peaks and Mt. Langley (14,027'), making the trip a peakbagger's delight. The timberline lakes will also provide ample opportunity for exploration, photography, and fishing. We cap off the trip by camping on the tallest peak of them all, Mt. Whitney. (Rated M-S)

[87124] Kings-Kern Divide, Kings Canyon and Sequoia Parks, Sierra—August 29–September 7. *Leader, Joe Uzarski, 1222 Union St., San Francisco, CA 94109.* For those seeking a panoramic High Sierra experience, this trip could be for you. Starting at Cedar Grove roadhead (5,035') we will surmount the divide via Forester Pass (13,180') and off-trail via Harrison Pass (12,720'). Three layover days will allow time to enjoy the scenery. Optional climbs of Mt. Brewer (13,570'), Center Peak (12,760'), and Gregory's Monument (13,910') will be offered. This 59-mile trip best suits backpackers with high-altitude and off-trail experience. (Rated M-S)

[87125] Crawford to Kinsman Notch, White Mountain Forest, New Hampshire—August 30–September 6. *Leader, Caroline Hicks, 165 E. 90th St., #3A, New York, NY 10128.* Gliding from one ridge to another, we will take in such sights as the Old Man of the Mountain, The Basin (a glacial, granite pothole also called Old Man's Foot), and Lonesome Lake, one of the most beautiful spots in Franconia Notch. On one day we will climb five peaks along the Garfield and Franconia ridges of the Appalachian Trail, with each magnificent vista topping the last. Afterward there will be a layover day at the lake to swim, relax, observe wildlife, or dayhike. This is a unique White Mountains trip where traffic is lighter and views are better. (Rated S)

[87126] Ionian Basin, Kings Canyon Park, Sierra—September 4–12. *Leader, Frances French, 330 Nimitz Ave., Redwood City, CA 94061.* Rugged, isolated, and starkly enchanting, the Ionian Basin lies below Mt. Goddard in the blackrock heartland of the Sierra Nevada. From there our mostly cross-country, 43-mile loop parallels the John Muir Trail north through the spectacular Davis and McGee lakes, into Evolution Valley, and out challenging Lamarck Col (12,920'). Two layover days are planned for relaxation and nature study, as well as a possible climb of Mt. Goddard (13,568'). (Rated M-S)

[87127] Upper Basin, Kings Canyon Park, Sierra—September 9–19. *Leader, Mac Downing, 2416 Grandview St., San Diego, CA 92110.* Upper Basin below the Sierra Crest on the John Muir Trail is the source of the South Fork of the Kings River. Trip highlights include Bishop Pass (12,000'), Dusy Basin, Grouse Meadow in Le Conte Canyon, Mather Pass (12,765'), Bench Lake, and Taboose Pass (11,500'). Mt. Sill (14,100') and Arrow Peak (12,927') are climbing possibilities. Three layover days and a food drop ease our 11-day on-trail trip. (Rated L-M)

[87128] "O Be Joyful," Gunnison Forest, Colorado—September 13–19. *Leaders, John Lutz and Bill Myers, 11563 Lillis Ln., Golden, CO 80403.* The aspen will be turning gold and the elk bugling as we begin our trip up the east side of the Ruby Range and down into the Raggeds Wilderness. Our journey will take us from the alpine heights of 12,000 feet down through Gold and Silver basins, huge stands of aspen, and out by way of Dark Canyon with its large ferns and rushing creek. Moderate pace and daily distances combined with a layover day will allow us to take side trips and enjoy quiet personal time. Come share the best of Colorado, and bring your camera. (Rated L-M)

[87129] Bryce Canyon, Bryce Park, Utah—September 19–26. *Leader, Michelle Bussiere, P.O. Box 1892, Tempe, AZ 85281.* Enter another world—Bryce Canyon, one of America's finest national parks. The limestone hoodoos have eroded, leaving beautiful castles and statues to wander through. Our trip will combine dayhikes from the rim with a multiday backpack through the forests and valleys of Bryce. This unusual amphitheater offers endless photographic opportunities. (Rated M-S)

[88350] Adirondack Park—Long Lake to Algonquin, New York—September 26–October 4. *Leader, Sally Daly, 11 Birch Dr., RD #1, Albany, NY 12203.* Beginning on the Northville-Placid Trail near Long Lake Village in Adirondack Park, our first days will be over relatively easy terrain with steeper ascents and descents as we reach the high peaks area. Fall color will enhance our 35-mile route along sparkling Long Lake and Cold River to a point from which we can dayhike up Algonquin (5,114'), the second highest mountain in New York. (Rated L-M)

[88351] Tanner-Hance Trails, Grand Canyon, Arizona—September 27–October 2. *Leader, Bob Madsen, 3950 Fernwood Way, Pleasanton, CA 94566.* The Tanner Trail below the Watchtower affords access to the wide canyon area of the Colorado River. Three days of cross-country travel down the river to narrow Granite Gorge give us the chance to discover the area's diversity. As we ascend to Grandview Point from Hance Rapids, many environmental contrasts will be seen in the canyon. The trip rating reflects the climb up on the last two days. (Rated M-S)

[88352] Canyon and Slickrock Hiking, Bureau of Land Management Wilderness Study Areas, Utah—October 3–10. *Leader, Bert Fingerhut, 177 E. 79th St., New York, NY 10021.* Our strenuous trip will explore one or possibly two of the wilderness study areas on BLM land in southern Utah. These areas are incredibly beautiful, some are extremely remote, and others are rich in Anasazi ruins. The Sierra Club and other conservation groups are fighting to maintain much of this land as wilderness. (Rated S)

JUNIOR BACKPACK

Share the wilderness with other young backpackers! Guided by competent and experienced leaders who enjoy young people, participants hike the backcountry, bag peaks, travel off-trail, and learn wilderness camping skills. As with regular backpack trips, there is also time for fishing, swimming, snow-sliding, or just watching the clouds drift by. Everyone is expected to help with cooking and cleanup chores and to carry a fair share of community gear and food. Parents are requested to assist with transportation to the roadhead and home again.

[88353] Zion Backcountry, Utah—October 4–10. *Leader, Don McIver, 7028 W Behrend Dr., Glendale, AZ 85308.* Come enjoy the fall scenery in the remote backcountry of Zion National Park in southern Utah. Your leader will share his extensive knowledge of Zion's remote backcountry and guide you to seldom-visited areas not serviced by trails. We'll have the opportunity to do some exploring and routefinding and enjoy spacious views of sandstone pinnacles and spires offset by narrow sandstone canyons with clear, cool streams. Elevations will range from 3,500 to 6,500 feet, with temperatures from 30 to 70 degrees. (Rated M-S)

[88354] Escalante Wildlands, Utah—October 10–17. *Leader, Bob Hartman, 1988 Noble St., Lemon Grove, CA 92045.* The Scorpion wilderness study area features convoluted slot washes, broad slickrock ramps, and flowing sand dunes. The first two days we will explore 26,000 acres of land the BLM deleted from its wilderness proposal—land that is still supported by the Sierra Club for inclusion in the Utah wilderness bill. Then we go to Egypt Bench and descend to the Escalante River and Moody Creek. The upper reaches include the Circle Cliffs and Waterpocket Fold, haunts of Edward Abbey's Monkey Wrench Gang. Fall offers warm days, cool nights, and clear, dry weather. This trip is definitely for wilderness-loving, adventurous backpackers! (Rated M)

[88355] Thunder River/Deer Creek, Grand Canyon, Arizona—October 10–17. *Leader, John Ricker, 2610 N. 3rd St., Phoenix, AZ 85004.* Thunder River spouts out of two or three caves at the foot of the redwall limestone and tumbles half a mile to where it joins Tapeats Creek. Deer Creek runs through a narrow gorge in a broad, level valley and then drops more than one hundred feet into the Colorado River. Our route along a horse trail drops 4,000 feet over a series of three cliffs, then becomes cross-country to Tapeats Cavern through Suprise Valley to Deer Creek. There will be three layover days for fishing and exploring caves and Indian ruins. The hikes in and out are strenuous. (Rated M-S)

[88356] Pine Barrens Environmental Issue Excursion, Wharton State Forest, New Jersey—October 11–17. *Leaders, E. Allan Blair and Joan Goldstein, 20 Linden Ln., Plainsboro, NJ 08536.* The Pine Barrens are a threatened wild area within a short drive of Philadelphia, New York, and Atlantic City. There is a constant fight to develop them or make them more accessible to motorized recreation. We will backpack and canoe through the Pine Barrens, bringing in resource people to help us learn about the issues and how we can help protect the area from mindless exploitation. (Rated L)

[88357] Appalachian Trail, Nantahala Forest, North Carolina—October 18–24. *Leaders, Marjorie Richman and Rosemary Brinko, 8106 Whittier Blvd., Bethesda, MD 20817.* Our moderate, seven-day, 72-mile backpack along the Appalachian Trail below Great Smokies National Park and above the Georgia border will be divided between traveling along a 5,000-foot ridge composed of balds characteristic of the southern Appalachian range, and descending into 3,000-foot gaps of hardwood forests. Highlights include the autumn foliage and an ascent of Cheotah Bald, known for its knife edge of blue slate. (Rated M)

[88358] Ozark Highlands Trail, Ozark Forest, Arkansas—October 18–24. *Leader, Larry Ten Pas, 2413 S. 15th St., Sheboygan, WI 53081.* Peak fall color is anticipated for this outing in the ridge and valley country of northwest Arkansas near Clarksville. Hikers should expect steep slopes to climb and descend, but these efforts are rewarded by mountaintop vistas, rock formations, and water features. The trail permits foot traffic only—no horses or motorized vehicles are permitted. Highlights of our route include White Rock Mountain, Lake Shepard Springs, and the Mulberry River valley. (Rated M)

[87130] Sawtooth Ridge, Yosemite Park, Sierra—July 26–August 2. *Leader, Rick McEuen, 13781 Strubel's Ln., Grass Valley, CA 95949.* The Sawtooth Ridge, a rugged, glacier-carved cluster of alpine peaks, can be viewed from Bridgeport as you approach the trailhead. The ridge forms the backdrop for this exciting backpack trip for novice or experienced teens, ages 13 to 16. We will enjoy fine views of this magnificent range from our all-trail loop in the northern Yosemite backcountry. There will be time for relaxing or fishing, and a layover day for a climb of Matterhorn Peak. (Rated L-M)

Lori Lamb

BASE CAMP

Base camp trips offer a wide range of wilderness activity in many natural settings. Common to all trips is a camp that serves as the base of operations for overnight backpacking, fishing, photography, ecological study, or simple nature walks in the surrounding wilderness. Some activities are organized, but the choice of whether to participate is left to each individual. Many trips include a naturalist on the camp staff.

Trips usually begin with dinner at the roadhead. The following day, up to 25 pounds of dunnage per person is transported from roadhead to camp while the trip members hike in. Camp is set up on arrival, and—except at the beginning and end of each trip—neither packstock nor packers are in camp. Members take turns performing camp chores, including meal preparation, with instruction and aid from camp staff.

Base camp trips vary with locale. For example, in the Southeast, base camp trips never use mules, but set up camp after a short hike into the wilderness. Some trips stay in lodges or cabins instead of camping. The following are general descriptions of the main types of base camps.

ALPINE CAMPS: Located in more remote spots and at higher elevations, these camps are for those who seek a rigorous program of wilderness activity in relative isolation. Cross-country hiking and overnight backpacking are popular.

BASE CAMPS: Especially suited for newcomers and family groups, the hike into camp is usually easier and the activities less strenuous than Alpine Camps.

BACKCOUNTRY CAMPS: Our most remote location, reached by a two-day hike, is primarily an adult trip, although teenagers are welcome. It's more a do-it-yourself camp in which members are encouraged to conduct their own ventures. Staff leadership is available when needed.

DESERT CAMPS: Spring, fall, and winter are the times for desert camping. Members' cars are used for side-trip transportation. Activities consist mainly of dayhikes to points of interest.

LODGE TRIPS: Lodge trips stay in small inns, cabins, or lodges, usually reached by a hike in. These trips combine the advantages of a wilderness setting with comfortable accommodations.

[87025] Anza-Borrego Natural History, Anza-Borrego Park, California—March 21–28. *Leader, Carol Baker, 2328 33rd St., San Diego, CA 92104.* The Anza-Borrego Desert comprises more than a million acres in Southern California east of the coastal range. Uniquely juxtaposed terrain and land forms vary from 6,000-foot piney crags to fossilized badlands to a low inland sea, all supporting a rich variety of desert plants and animals for us to study with a consulting naturalist. Participants will carpool to provide daily vehicle support to campsites and trailheads. Hikes are easy to moderate; energetic walkers may climb a peak. Weather will be mild but with possible rain and wind.

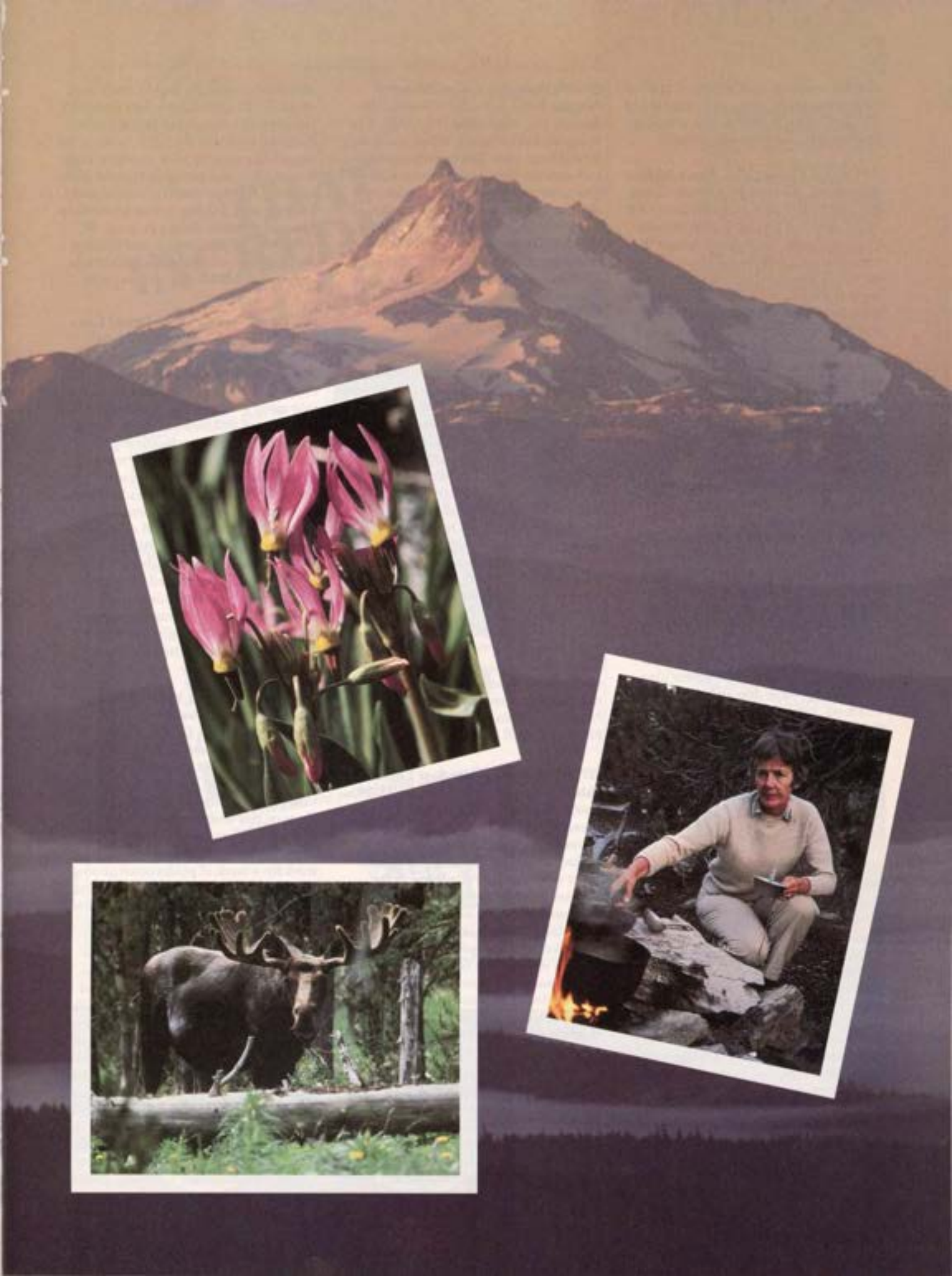
[87027] East Mojave Scenic Area, California—April 11-18. *Leader, Joanne Barnes, 960 Ilima Way, Palo Alto, CA 94306. Naturalist, John Hohstadt.* Spring vacation gives us a perfect opportunity to visit the desert region proposed as Mojave National Park in Sen. Alan Cranston's California Desert Protection Act. From our camp at 5,600 feet, we will take leisurely-to-moderate dayhikes to 600-foot sand dunes, caverns, canyons, cinder cones, volcanic spires, mesas, and petroglyphs. More strenuous peak climbs are also a possibility. A naturalist will be with the group to help us learn more about this beautiful area.

Dan Smith

[87132] Scenic Golden Gate, Golden Gate National Recreation Area, California—June 21–27. *Leader, Betty Watters, 600 Caldwell Rd., Oakland, CA 94611.* Join a first-of-its-kind base camp planned especially for nonresidents of Northern California who will be making Sierra Club history. Traditionally, base camps have been located in or near wilderness areas, but our camp will be at a secluded beach cove within sight of the city of San Francisco. From our campsite just across the Golden Gate, we will venture out each day to hike redwood forests, mountains, parks, seashores, and (time permitting) a wildlife preserve. All will gain a sense of what has been done and what still needs to be done to conserve open space in a major population center.

[87133] Donner-Tahoe Exploration, Sierra—July 12–19. *Leader, George Appel, 885 Miller Ct., Ventura, CA 93003.* Rediscover the route of the ill-fated Donner Party along the granite outcroppings and hidden lakes of the Donner-Tahoe Basin. From our comfortable base camp at Clair Tappaan Lodge west of Donner Pass, we will get a sense of the history and beauty of the region on dayhikes and on an overnight trip. Both easy and moderate hikes make this outing suitable for families,

Background Photo: J. Clifton Meek Insets (clockwise) Barb McBeth, J. Clifton Meek, Stephen Kasper



couples, and singles of all ages. Excellent cuisine and lodge duties will be shared by all. Guest experts provide instruction in photography, history, and geology.

[87134] Joe Crane Lake, Ansel Adams Wilderness, Sierra—July 18–30. *Leader, Bill Davies, P.O. Box 2636, Fairbanks, AK 99707.* The east fork of the San Joaquin River originates in the Ansel Adams Wilderness just outside the southeastern border of Yosemite National Park. Our camp at Joe Crane Lake (9,500') provides backpackers with easy access to the Yosemite backcountry via Isberg Pass, and spectacular views from Isberg Pass for dayhikers. The trail to base camp leaves Granite Creek (7,600'), skirts Knoblock Meadow, then winds through the forest before turning off onto the trail to Joe Crane Lake. The total distance is approximately six miles. The trip is flexibly designed for dayhikers as well as those with a strong interest in overnight backpacking from our base camp.

[87135] Deer Creek, Trinity Alps Wilderness, California—July 19–26. *Leader, John Esterl, 1008 Henderson Ave., Menlo Park, CA 94025.* This new base camp location provides alpine views, flowers, and hiking at a mere 6,000 to 7,000 feet. There are several nearby lakes for fishing (rainbow and eastern brook trout) and swimming. Dayhikes offer flower identification, probable deer sightings, lush meadows, moderate peakbagging (8,000'), and relics of 19th-century gold mining. The Trinity are generally less visited than the Sierra Nevada, so wildlife sightings are more common. The seven-mile hike to base camp, with 4,000 feet of elevation gain, is made enjoyable by streams along the low-level trail.

[87136] Golden Trout Alpine Camp, John Muir Wilderness, Sierra—July 23–31. *Leader, Sandy Sans, 2570 Dell Ave., Mountain View, CA 94043.* Enjoy a week in an alpine basin dotted with scores of glacier-blue lakes and pools, each holding a treasure of golden trout and other delights. Our eight-mile hike in from North Lake (9,400') along the North Fork of Bishop Creek takes us past Mt. Emerson, over Piute Pass (11,400'), and into our camp near the timberline of white-bark pines. Mt. Humphreys stands as an imposing sentinel to the northeast, while behind us are the peaks of Glacier Divide. Scramble up nearby peaks or among the lakes, identify seasonal flowers and geological formations, photograph your memories, or drop into the forests below for an overnight stay.

[87137] Rangeley Lakes, Maine—August 2–8. *Leader, Bob Holcomb, 819 Fairway Dr., Waynesboro, VA 22980.* The Rangeley Lakes region, which consists of several large lakes, lies in a mountainous area near the New Hampshire border. Our camp will be located in a state park on the south shore of Rangeley Lake, only a few miles from the Appalachian Trail. We will hike several parts of the trail. Optional canoe trips, swimming, and other activities will round out our stay in this wild and beautiful section of the state. Children are welcome; minimum age is four.

[87138] Glacier Park Photography, Montana—August 9–16. *Leader, Howard Drossman, 921 Spaight St., Madison, WI 53703. Photography Instructor, Randy Silver. Naturalist, Ken Horner.* Glacier National Park stretches 60 miles southward from Canada along the Continental Divide. Within its borders are some of the most scenic trails and spectacular wildlife anywhere in the country. Our base camp off Going-to-the-Sun Road provides access to many beautiful dayhikes in the park. Glacier is spotted with more than 200 azure lakes and almost a thousand miles of rivers and streams. The geology is dominated by two picturesque ranges divided by glacier-carved valleys in the northern Rocky Mountains. Come join us with your camera to see why John Muir called this park "the greatest scenery on the North American continent." Photographers of all skill levels are welcome.

[87139] Historical Meadow Lake, Tahoe Forest, Sierra—August 23–29. *Leader, Bob Ruff, 3371 Longview Dr., San Bruno, CA 94066.* Participate in the exploration of old immigrant trails, early Indian habitats, abandoned mines, and ghost towns on short dayhikes in the Donner Pass area of the Sierra Nevada. Our unusual Gold Country campsite at beautiful Meadow Lake is directly accessible by vehicle. Campfire discussions and lectures will provide fascinating historical background, and pertinent literature will be provided. This leisurely trip is well-suited to individuals and families with children eight years and older.

[87140] Fall Alpine Camp, Clark Range, Sierra—September 7–18. *Leaders, Mildred and Claude (Tony) Look, 411 Los Ninos Way, Los Altos, CA 94022.* Experience the breathtaking sweep of the Minarets, the Sierra Crest, and Mts. Ritter, Banner, and Goddard as the fall colors deepen in the High Sierra. We follow a moderate seven-mile trail to reach our camp (8,700') at an alpine lake under the remote Clark Range bordering Yosemite National Park. On dayhikes, drink in the rugged beauty of granite summits, rock-bound lakes, and plunging streams while enjoying the captivation of nature study, photography, fishing, or just pure relaxation and gourmet dining in camp. We welcome couples, singles, and families with children ten years and older. Pack-stock carry our dunnage and supplies.

[87141] Havasu Canyon–Grand Canyon, Arizona—September 19–26. *Leader, John Malarkey, 861 S. Kachina St., Mesa, AZ 85204.* Come hike with us to this Grand Canyon Shangri-la on a unique base camp gourmet trip. Our supplies and commissary will be horse-packed to camp by Havasupai Indians, lightening our loads and enhancing our enjoyment of Havasu Canyon scenery. Optional dayhikes will be to the Colorado River, Esplanade rim overlooks, Beaver Trail, numerous side canyons, and many of the famous blue-green swimmable pools of Havasu Creek. An alternative for the less ambitious will be extended viewing of spectacular Havasu or Mooney falls to meditate, paint, or photograph to your heart's content. One night will be spent at the lodge in Indian Village.

[87142] Monument Valley Photography, Navajo Tribal Park, Utah—September 20–27. *Leader, Tom Roy, 9 Sunset Trail, Rockwall, TX 75087. Photography Instructor, Bea Brownson.* Explore the classic western scenery of Monument Valley in the company of other photographers on this leisurely base camp trip. Daily excursions into this colorful, high-desert country will provide the framework for a week of professional photography instruction. All proficiencies and formats are welcome. Navajo guides will help us find the best subjects.

[88359] Everglades Park, Florida—December 26–31. *Leaders, Vivian and Otto Spielbichler, 9004 Sudbury Rd., Silver Spring, MD 20901.* Our base camp at Flamingo at the southern tip of the park is a unique subtropical wilderness, home to rare birds and animals. We will take daily walks or canoe trips to explore mangrove and buttonwood environments, freshwater ponds, brackish water, open coastal prairies, and saltwater marshes. This leisurely trip is for people of all ages who enjoy bird and animal watching, photography, and relaxation.

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BICYCLE TRIPS

Bicycling does no more harm to the environment than walking, yet covers much more country in a way that puts you closely in touch with your natural surroundings. Some trips intersperse travel days with layover days, but all include ample time for activities such as swimming, hiking, and sightseeing. Terrain and distance variations require different levels of skill and physical conditioning. Most trips are self-contained (no sag wagons), so trip members carry all gear on their bikes and buy groceries daily. Leader approval is required for each participant.

[87144] Chesapeake Bay, Eastern Shore, Maryland—June 7–13. *Leader, Alice Van Deburg, 441 Virginia Terrace, Madison, WI 53705.* Country immortalized by James Michener and William W. Warner is ours to sample as we pedal along the Eastern Shore enjoying beaches, wildlife, seafood, and maritime culture. Our loop covers mostly flat terrain along rivers, over bays and inlets, and on Assateague Island, where wild ponies roam. A rest day at the Chincoteague National Wildlife Refuge and a night's stay at an inn in the historic Oxford/St. Michael's area are highlights of the trip. We carry our own gear and average about 55 miles per day.

[87145] Wisconsin Hills and Valleys—June 7–14. *Leaders, John Arthur and Diane Zelman, 1125 Jenifer St., Madison, WI 53703.* Pack your panniers for this scenic eight-day tour traversing the rolling hills and valleys of the unglaciated terrain between Madison and the Mississippi River. Using Wisconsin's superb system of paved country roads, we'll travel through open farmland and small towns to the bluffs of Devil's Lake State Park and to Wildcat Mountain. A layover day at the Eagle Valley Environmental Center near Wyalusing State Park will allow ample time for exploration and photography. The tour's highlight is an overnight stay at a historic inn at Mineral Point, site of one of the earliest mining villages in Wisconsin. We'll average 50 miles of moderately strenuous riding per day, carrying our own gear and camping most nights.

[87146] Vermont Bicycle Tour—June 14–20. *Leader, Margaret L. O'Neil, 460 Club Way, #44, Hackensack, NJ 07601.* Starting from the shores of Lake Champlain, we'll spend six days bicycle-touring central and southern Vermont, stopping each night at a campground. We will cycle through rolling countryside, passing numerous historic sites and antique shops along the way, through open farmland, quaint New England villages, and covered bridges. Moderate daily mileages should allow enough time to swim (at least once in an abandoned quarry), visit antique shops, picnic, and just relax. A sag wagon will transport community and personal gear between campgrounds.

[87147] Cycling Nova Scotia, Canada—June 21–28. *Leader, Eileen M. O'Connor, 222 McLennan Dr., Fayetteville, NY 13066.* Reaching Yarmouth by ferry from Portland, Maine, we begin our western loop, taking in quaint seaport villages as we

Linda Ovsey

Stephen Kaplan

head toward the Annapolis Valley and the Bay of Fundy. We will bicycle a minimum of 50 miles per day over rolling terrain hugging the coastline. Nova Scotia's stunning scenery and sense of peace and harmony are difficult to find in today's hectic world. We'll have some time for sightseeing and taking in local events.

[87148] Northern California Coast Bike Tour—July 25–August 2. *Leader, Debbie Sakarias, 1119 Evilo St., El Cajon, CA 92021.* This nine-day, 375-mile self-contained tour will follow Highway 101 from Arcata to Leggett, then continue on Highway 1 to San Francisco. The sleepy fishing villages, rural trading centers, and antiquated logging towns invite an adventure into the past. Highlights include the Victorian dwellings of Ferndale, the coastal redwoods of Redwood National Park, the craggy Mendocino Coast, Skunk Railroad, and foggy Point Reyes. Moderate mileages will allow ample time for fishing, hiking, sightseeing, and relaxing. We will camp mostly in state parks and purchase fresh food daily.

[87149] The Golden Triangle Bicycle Tour, Canada—August 2–9. *Leaders, JoAnn and Paul Von Normann, 732 S. Juniper St., Escondido, CA 92025.* Our 400-mile, self-contained bicycle tour in British Columbia and Alberta will introduce us to three spectacular national parks: Yoho, Kootenay, and Banff. The massive, soaring peaks of the Canadian Rockies form the northern borders of these parks. We'll be provided with an abundance of mountain scenery, alpine lakes, glaciers, dramatic canyons, and hot springs. One layover day and several short cycling days will allow us ample time to explore the heart of this magnificent park system.

[87150] Finger Lakes "Grand Tour," New York—August 16–22. *Leader, Frank Traficante, 9 Sherbone Pl., Sayreville, NJ 08872.* The Finger Lakes region of central New York state is superb bicycling country—rolling farmlands, gorges, waterfalls, historic towns, grape arbors, wineries, and numerous freshwater lakes. Camping at state parks, we will use a sag wagon to carry all the gear we need. The extra mobility this provides will enable us to tour the entire region. Beginning at Ithaca on Lake Cayuga, we head north to Lake Ontario, west to Letchworth State Park and the spectacular Genesee River Gorge, east to Hammondsport on Keuka Lake (the center of New York's wine region), then back to Ithaca to complete our loop.

[87151] Cape Cod Bicycle and Island Tour, Massachusetts—September 13–19. *Leader, John Rogers, 310 Monroe St., Ithaca, NY 14850.* Late summer finds Cape Cod's ocean waters warm and the coastal routes relatively uncrowded for exploring by bike. Our loop tour beginning and ending in Hyannis will include the Cape, Martha's Vineyard, and Nantucket. Ample opportunities will be available for swimming, photography, and nature study.

[87152] Yosemite Sampler—Bike and Hike—September 13–20. *Leader, Bill Lande, 8 Museum Way, San Francisco, CA 94114.* Autumn in Yosemite National Park features warm days, cool nights, and fewer tourists. We will visit Tuolumne Meadows in the high country (8,600'), Yosemite Valley (4,000'), and the Mariposa Grove of Giant Sequoias (4,000'). Three layover days will allow us to explore these areas by foot and bike at our own pace. At the beginning of the trip, a support vehicle will ferry us from the valley to Tuolumne Meadows and carry our commissary gear only. This trip is for experienced cycle tourists, and is rated moderate to strenuous because of steep climbs at high altitude.

BURRO TRIPS

Burros, the friendliest and gentlest of pack animals, are your companions on these wilderness outings. Suitable for the novice camper or seasoned outdoorsperson of any age, a burro trip is truly a different type of outing. The burros are led by participants and carry most of the loads. Although the burros' pace on the trail is not fast, burro trips cannot be characterized as leisurely; participants must be in good physical condition. Most routes are at high elevations (8,000 to 12,000 feet) and a typical day covers five to ten miles.

Everyone takes part in the trip activities, including cooking, burro care and wrangling, and dishwashing. Layover days provide free time for relaxation or more strenuous activity. The burros provide elements of adventure and gentleness not to be found on other outings. A burro trip is a fine opportunity to get to know these delightful animals, see some beautiful wilderness, learn about the outdoors, and get some exercise—in short, to have an unusual and interesting adventure.

Kerr Mass

[87026] Panamint Mountains, Death Valley, California—April 4–11. *Leader, Steve Akeson, 129 Lake Ave., Piedmont, CA 94611.* The Panamint Mountains form the western boundary of Death Valley. Rising abruptly from the desert with peaks in the 7,000- to 10,000-foot range, the mountains provide panoramic views of Death Valley to the east and Panamint Valley to the west. Long ago, Indians spent their summers in this desert of sage and pinyon pine. With our string of burros we will follow miners' trails up to the crest. Spring is an ideal time to visit the area; the snow will have cleared and the wildflowers should be starting to bloom.

[87154] Peeler Lake Family Trip, Yosemite Park/Toiyabe Forest, Sierra—August 1–8. *Leader, Don White, 411 Walnut Dr., Monmouth, OR 97361.* This moderate 32-mile trip will take us from Leavitt Meadow off the Sonora Pass highway up West Walker River to Upper Piute Meadows below Tower Peak. Then we will head over Buckeye Pass to our final alpine camp at Kerrick Meadow (9,400'), just below Peeler Lake on the crest of the High Sierra. On the last day we descend the eastern Sierra scarp to Twin Lakes near Bridgeport. We will have three layover days with time to fish, climb, or relax.

[87155] Pancakes and Passes, Canyons and Asses, Yosemite Park, Sierra—August 8–15. *Leader, Robin Spencer, 41 Byron Dr., Pleasant Hill, CA 94523.* This hearty trip beckons adventurous hikers. The trail begins at Twin Lakes (7,092') near Bridgeport and ends at Green Creek in the Hoover Wilderness. Our sturdy burros will endear themselves to us as we cross Ass, Burro, and Summit passes (10,000'+), and wind through Slide, Matterhorn, and Virginia canyons in northern Yosemite National Park. Daily hikes vary between six and ten miles. Two layover days among the many lakes and jagged mountains allow time for fishing, peakbagging, and other adventures.

[87156] Across Northern Yosemite, Sierra—August 15–22. *Leaders, Linda Coffin and Don Bain, 507 Vista Heights Rd., Richmond, CA 94805.* From the ancient black and red rocks of Yosemite's northeast border, we will descend the long glacial canyons of the Tuolumne River headwaters to the top of its grand canyon, then thread through a maze of granite domes to Tenaya Lake. This will be a relatively easy trip with no elevations over 10,000 feet. A dayhike to Waterwheel Falls will be one of the highlights of this trip.

[87157] Ten Lakes Family Trip, Yosemite Park, Sierra—August 22–29. *Leader, Dan Holmes, 41 Byron Dr., Pleasant Hill, CA 94523.* This leisurely trip visits the Tuolumne River, Ten Lakes, and Grant Lakes in central Yosemite. From the shores of Tenaya Lake, named after an Ahwahneeche Indian chief, we hike over passes and through Ten Lakes Basin to the headwaters of the stream that forms Yosemite Falls. This trip offers families a splendid chance to exercise and relax with other families and companionable burros in a beautiful wilderness setting.

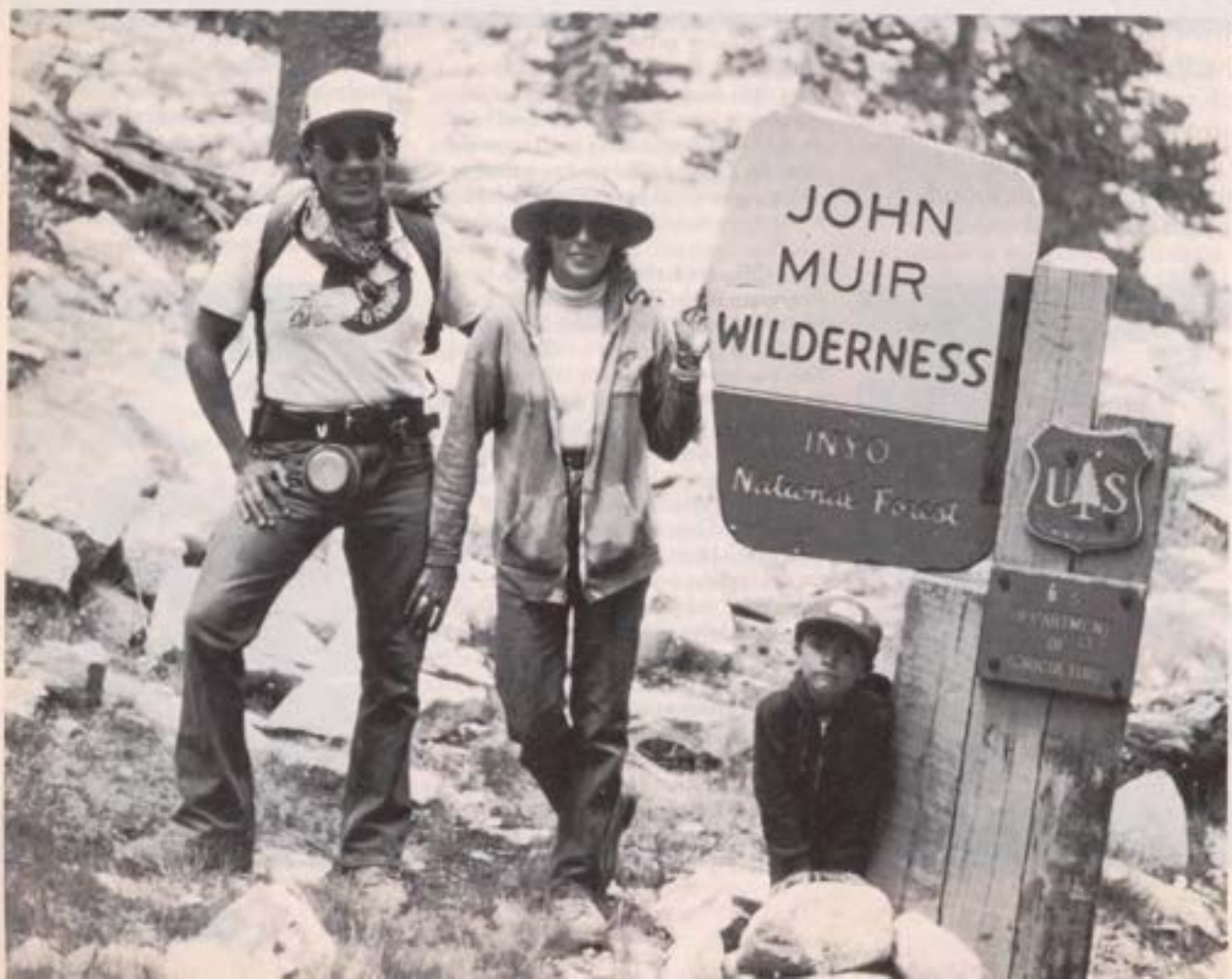
Linda Coffin

FAMILY TRIPS

Wilderness threshold trips have one specific goal in mind—to make it easy for families to enjoy the outdoors together. We introduce families to the joys of camping in a cooperative atmosphere, and allow children to experience the fun of outdoor living with others their own age. Adults and older children share commissary duties and other camp chores. Besides helping less experienced families learn basic outdoor skills, the program also tries to increase awareness of an area's plants and animals and an appreciation of ecological relationships. In addition to two-parent families, we welcome single parents, grandparents, or aunts and uncles.

Threshold camps vary. On wilderness trips, packstock is used to transport food, dunnage, and equipment from roadhead to camp. On other trips motor vehicles may be used to transport the gear while participants hike from camp to camp. On lodge-based trips the "camp" is but a few yards from the road. In all cases the area surrounding each campsite offers various opportunities for family enjoyment: nature study, dayhikes, solitude, fishing, and swimming. The group meets for breakfast and supper, with lunch packed at breakfast. Most activities are informal and unstructured. Evenings often involve group activities.

Before you choose a trip, be sure to read the trip description carefully. There are different levels of difficulty and sometimes age or conditioning restrictions. General good health is required and some physical conditioning is advisable. Families going into high country camps should plan to spend a day at high altitude before the trip for acclimatization.



Bob Flores

[87159] Little Harbor Wilderness Threshold, Channel Islands, California—June 21–28. *Leaders, Wanda and Tom Roy, 9 Sunset Trail, Rockwall, TX 75087.* Come share a diverse, exciting adventure on Santa Catalina Island. "From the mountains to the sea" will be our theme as we explore the central portion of this 26-mile nature preserve from mountaintop and coastside camps. Along the way we'll have the opportunity to see buffalo, fox, bald eagle, evidence of Indian history, sunsets, breathtaking vistas, endemic plants, and—of course—crashing surf and sandy beaches. We will have naturalist-led talks and hikes to build our understanding of the island's unique ecosystem. And yes, there will be plenty of time to just relax in the sun and swim. The trip is for families with children six years and over. Two seven-mile hikes are part of the itinerary; neither is strenuous, but you must be in good shape.

[87160] Golden-Honeymoon Lakes, John Muir Wilderness, Sierra—July 20–26. *Leaders, Beth and Bob Flores, 2112 W. Portobello, Mesa, AZ 85202.* From the roadhead at Pine Creek we will hike about six miles with an elevation gain of 3,000 feet. Our camp at Honeymoon Lake (10,900') offers access to trails and other alpine lakes containing rainbow and brook trout. Set in a forest of lodgepole and whitebark pine, Honeymoon Lake provides an ideal location for fishing, photography, exploration, hiking, relaxation, and general family enjoyment of the High Sierra. No age limit.

[87161] Acadia Toddler Tromp, Acadia Park, Maine—July 25–August 1. *Leader, Ken Limmer, 3817 Logans Ferry Rd., Pittsburgh, PA 15239-2944.* With its unique combination of accessible ocean and mountains, Acadia National Park is perfect for parents wanting to share these wonders with their children at an early age. We can hike, bike, swim, play in the sand, and tour Acadia from a base camp within the park. The trip format is specially designed to meet the interests and considerations of families with toddlers.

[87162] Clair Tappaan Family Week, Sierra—July 29–August 4. *Leaders, Beth and Bob Flores, 2112 W. Portobello, Mesa, AZ 85202.* On the western slope of the Sierra Nevada, a few miles from Lake Tahoe, is the Sierra Club's own Clair Tappaan Lodge. This rustic lodge is situated near natural and historical areas, hiking trails, and lakes and streams. We've planned interpretive hikes, a naturalist visit, and nature-related activities for children. The comforts of the lodge with its spa, fireplace, great meals, family-style sleeping bunks, and much more make for a great family experience in the Sierra without giving up all the amenities. This trip is aimed at families with children four years and older.

[87163] Emerald Lake Basin, John Muir Wilderness, Sierra—August 1–8. *Leader, Carol Baker, 2328 33rd St., San Diego, CA 92104.* This family trip suitable for children six and older will start from a 9,000-foot trailhead at Sabrina Lake, climbing about 1,500 feet in five miles to an area of the Sabrina basin festooned with meadows, lakes, and snowy peaks. The rigor of daily ventures will depend on the preferences of trip participants. Options range from dayhikes to the area's many lakes to climbs of peaks and ridges around Mt. Darwin to just napping in camp.

FOREIGN TRIPS

Sierra Club foreign trips take you to some of the most beautiful and interesting places in the world. Unlike ordinary tour groups, we want our trip members to have the same kind of outdoor experience in other countries that we have found so rewarding in our own.

To do this, we try to live close to the land and its people—camping out where we can, staying in hostels, huts, or villagers' homes—having as little impact as possible. We try to learn about the country and its conservation problems and policies by talking with local conservationists or mountaineers who share our environmental concerns. We try to adopt the way of life of the country we are visiting, living by its sense of time and giving up many of the conveniences and amenities we usually regard as essential. All this requires fortitude and a sense of humor.

Trips are planned and led by experienced Sierra Club leaders who are dedicated to helping trip members enjoy, explore, and learn how to protect the natural environment. Many leaders have specialized skills and knowledge, but not all of them can be highly trained specialists with complete information on each country visited.

To fully enjoy the trip, you should be in good physical condition, be willing to share your experience and knowledge, and bring with you a spirit of adventure.

Foreign trip participants are covered by limited medical, accident, and repatriation insurance while on the trip.

Karyn Freedman

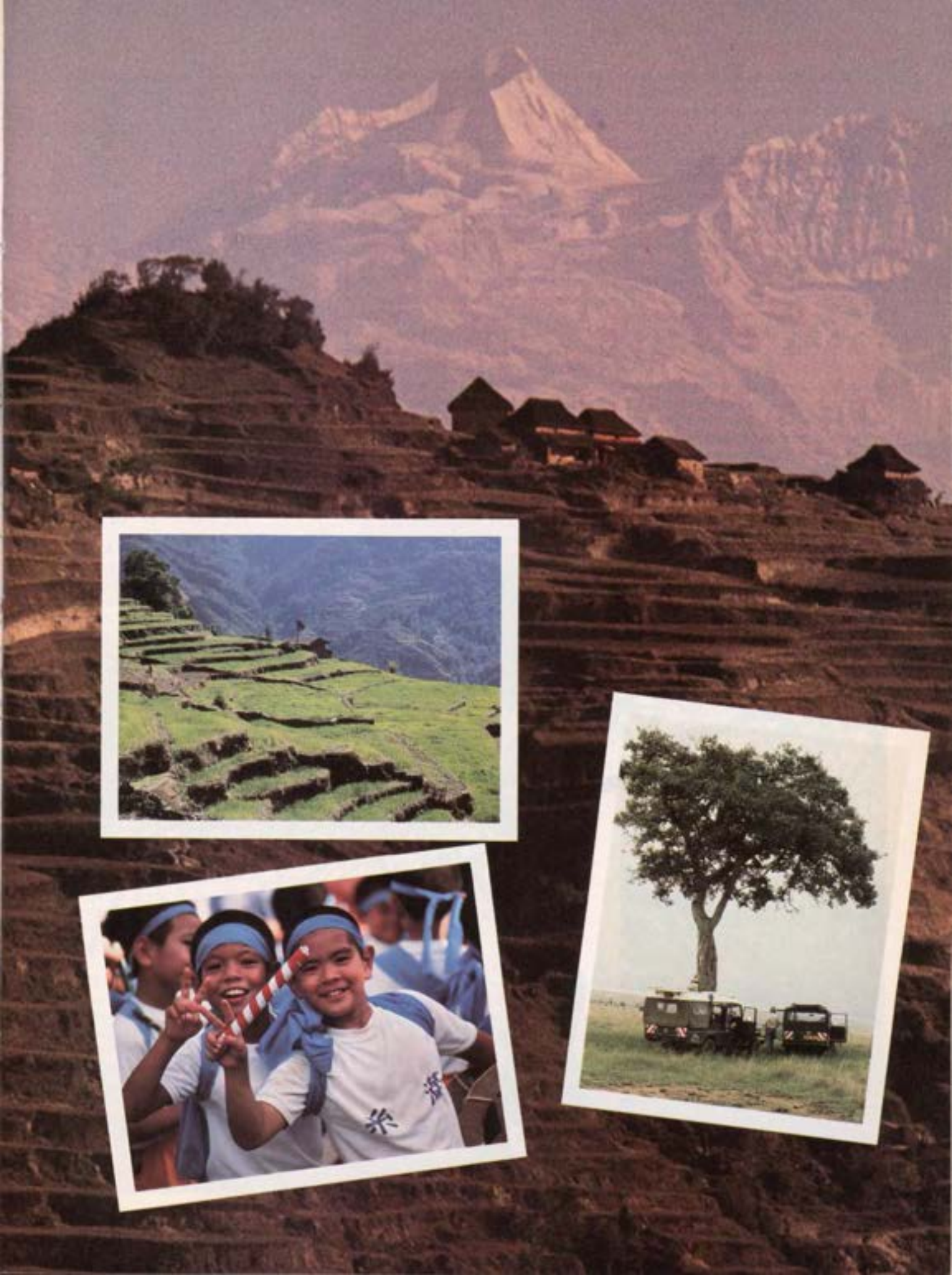
[87895] Ski Touring in Norway—March 21–April 5. *Leader, Bob Paul, 13017 Caminito Mar Villa, Del Mar, CA 92014.* This trip offers ski touring for novice and/or expert skiers in the land where Nordic skiing began. We will stay overnight in rustic lodges and subsist on hearty Norsk food while daytouring in Norway's majestic mountains. Starting in Oslo, we will ski in Nordmarka, Rondane National Park, the Jutunheimen Mountains, and on the Hardanger Plateau, ending our trip in the picturesque port city of Bergen.

[87905] Costa Rica Natural History—March 12–27. *Leader, Richard Taylor, 2550 W Calle Padilla, Tucson, AZ 85745.* Explore Costa Rica's scenic network of national parks and wildlife preserves, from sea-level tropical rainforest to dwarf cloudforest at nearly 11,000 feet on the shoulder of a volcano. The resplendent quetzal, keel-billed toucan, and flights of scarlet macaws are just a few examples of the richness of bird life in this Central American democracy. Mammals we will look for include coatis, agoutis, peccaries, sloths, four kinds of monkeys, and possibly tapirs. Lodging will vary from dormitory-style screened porches at remote research stations to modern hotels with full amenities.

[87910] Annapurna Sanctuary and Jungle Safari, Nepal—March 23–April 11. *Leader, John Garcia, 124 Romero Circle, Alamo, CA 94507.* The trip starts in Kathmandu. A short distance away we will begin our trek to the Annapurna Sanctuary, where we will be surrounded by towering peaks ranging in elevation from 20,000 to 26,545 feet. The trail takes us through the interesting Gurung villages of Dhampus, Ghandrung, and Chomrong. We will climb to two base camps, Mt. Annapurna and Mt. Machhapuchhare (Fish Tail), at about 14,000 feet. After the trek we will spend three days and two nights at Chitwan National Park, where we hope to see tigers in their natural habitat.

[87915] A Hiker's View of China—April 16–May 5. *Leader, Bud Bollock, 1906 Edgewood Dr., Palo Alto, CA 94303.* This exciting, never-before-offered hiking trip takes us through rural eastern China, highlighted by exploration of Beijing, Shanghai, and other cultural and historic centers. Experience a commune, exotic temples, a Grand Canal trip, and overnight ascents of Tai Shan (5,000') and Lotus Flower Peak (6,000') in the Huang

Background Photo: Betty Pollock, Insets (clockwise): Louise A. Taylor, Stephen Kasper, Stephen Kasper



Shan (Yellow Mountains). Transportation will be by plane, train, and bus as well as on foot. We will stay in the best available hotels or guest houses.

[87920] Kangchenjunga, Nepal—"The Five Treasuries of the Great Snow"—April 18–May 24. *Leader, Peter Owens, c/o Frances Colgan, P.O. Box 325, La Honda, CA 94020.* Kangchenjunga resembles a frozen jewel gleaming in cold, bright light. At 28,200 feet, the third-highest peak in the world saddles the Nepal/Sikkim border. Inaccessible to foreigners for many years, today the remote, little-traveled Kangchenjunga Massif offers some of the finest trekking in Nepal. To attain our objective—the western flank—we negotiate a route through rugged canyons knifed by turbulent rivers, steep ridges, and high, lonely yak pastures. This will be an easy-paced, moderate trek, with porters carrying dunnage. There will be ample time to photograph the mountains, the rhododendron forests, and the people who live there. We mingle with the local inhabitants in little tea houses, and on layover days enjoy optional nontechnical climbs, side hikes, or snoozing. *The starting date of this trip has been changed from what was previously published.*

[87927] Snorkling and Birdwatching in Las Islas Tres Marias, Baja California, Mexico—May 30–June 6. *Leader, Victor Monke, 9033 Wilshire Blvd., #403, Beverly Hills, CA 90211.* Las Tres Marias Islands off the coast of Mexico are unique in their isolation. For thousands of years they were beyond the reaches of coastal natives, too far for dugout canoes to venture. This trip is one of the first to receive permission to visit these tropical islands, which have been called a Mexican Galápagos. Along the rocky coasts, fish and other sea life have not learned to fear humans, making for spectacular snorkling and birdwatching. We travel aboard a 120-foot vessel designed for natural history expeditions, with comfortable two- and four-person rooms, indulging in delectable food and scenery. Our route includes visits to La Paz, Isla Isabel, a marine refuge in the Mexican national park system, San Blas, a coastal town famous for spectacular birdwatching, and romantic Puerto Vallarta.

[87930] North of England Walking Tour—June 4–20. *Leader, Robin Brooks, 920 Kennedy Dr., Capitola, CA 95010.* June is the best month to visit the three major national parks that lie a few hours apart across the north of England. Starting from historic York, we will walk the moors, valleys, and rugged North Sea coast of the North York Moors National Park. Then we explore Herriot's Yorkshire Dales National Park, including the scenic Pennine Way. Our trip climaxes in the Lake District, England's largest park, made famous by poets, painters, and hikers. While we emphasize hiking, we will also find time to visit cathedrals, castles and great houses, museums, gardens,

Louise A. Taylor

David Ames

and nature sanctuaries. A historic inn will serve as our center in each park.

[87935] Adventure in Eastern Turkey—June 15–July 8. *Leader, Ray Des Camp, 510 Tyndall St., Los Altos, CA 94022.* Turkey is a new country in an ancient land. Known as Asia Minor, it has a recorded history since the Hittite Empire some 4,000 years ago. Our journey will take us to four of the five natural regions of Turkey. From Istanbul we'll travel to Ankara on the Central Plateau, where we'll see the Hittite capital, Hatusha, and Cappadocia, then across the Taurus range to touch the Mediterranean area at Tarsus, the home of Paul. We then visit some of the most neglected and primitive parts of Turkey, approaching the borders of Syria and Iraq, visiting Harran, home town of Abraham, and crossing the Euphrates and Tigris to enter the Eastern Highland area, where we'll see Ararat near the borders of Iran and the Soviet Union. Lastly we'll cross the Pontos range to Trepizond and skirt the Black Sea before returning to Istanbul and home.

[87940] Highlands and Islands of Scotland—June 10–July 6. *Leaders, Mildred and Tony Look, 411 Los Ninos Way, Los Altos, CA 94022.* The Scottish Highlands captivate visitors with early summer blooms of rhododendrons and azaleas, rugged mountains like the Torridons and Cairngorms, and lochs made famous in literature. Our meeting point will be Edinburgh, where we will visit the Royal Botanical Gardens and the 200-year-old New Town. Two van-buses will take us to mountain areas of the western and northern Highlands and the islands of Skye, Harris, and Lewis in the company of a Scottish naturalist. Walking, hiking, photography, and nature study can be as moderate or strenuous as you desire.

[87945] The South of France—Biking Provence—June 16–28. *Leaders, Lynne Simpson and Richard Weiss, 1300 Carter Rd., Sacramento, CA 95864.* Perhaps you seek a moderate bike journey combining exercise with a unique scenic area, Roman ruins, and specialized local cookery. Provence offers these attributes—and much more! Since Roman times, people have been captivated by this land—the quality of light, the undulating green hills, and the bounteous crops. Transporting water for irrigation has been a goal of each succeeding group of inhabitants. Today's residents rank among France's friendliest and most independent. Our route will begin close to Orange; we'll then meander south exploring both small villages and historic cities before ending our journey close to Aix-en-Provence. Bicycles will be provided, a sag wagon will transport gear, and nights will be spent in country inns and hotels. Plan on picnics with beautiful views and well-flavored dinners. *La vie provençale* at its best!

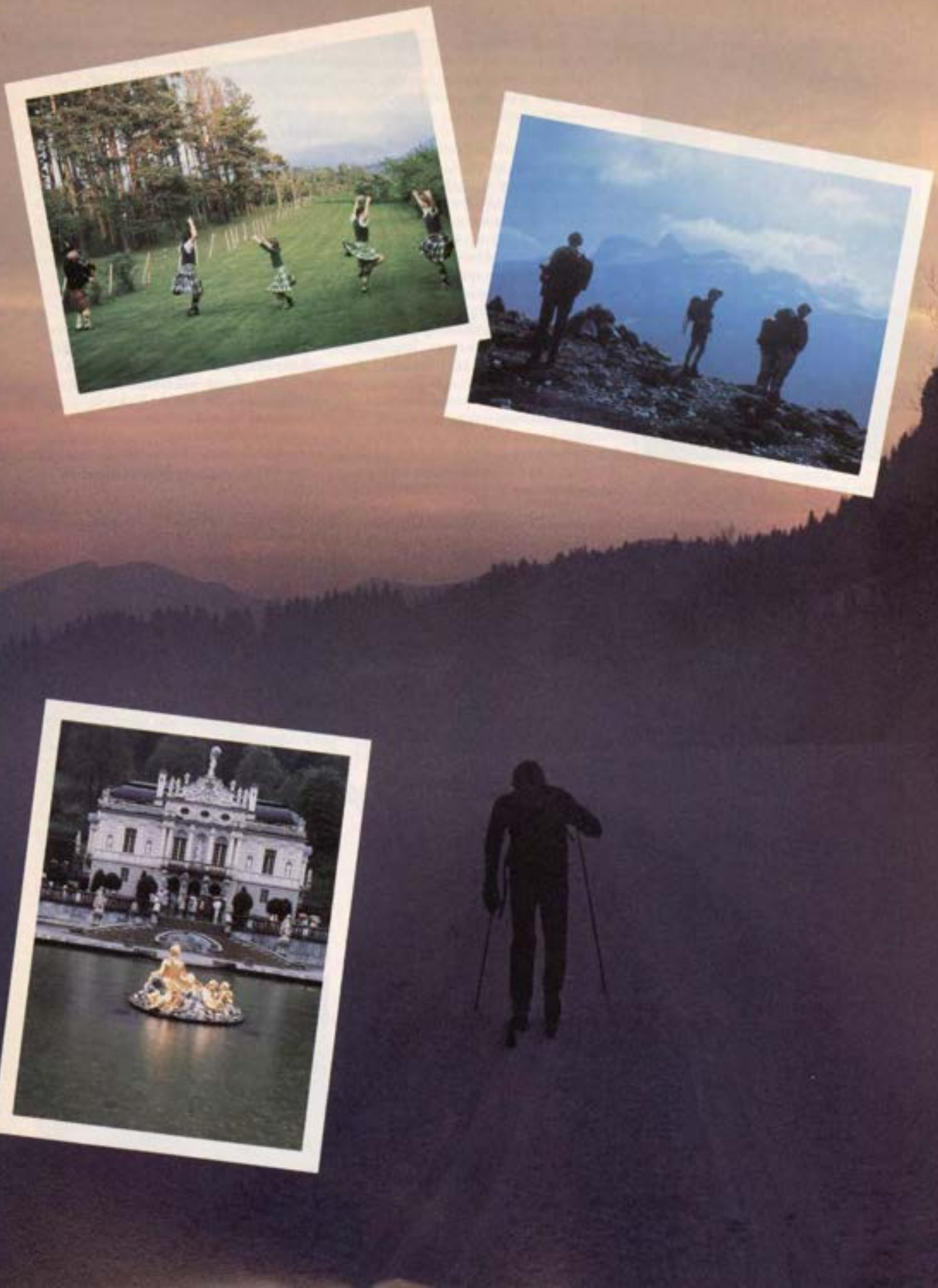
[87947] The Unknown Pyrénées, Spain—June 20–July 3. *Leader, Joe Lee Brown, 1323 Brandy Ln., Carmichael, CA 95608.* Starting in Madrid, we bus and train to Torla, Viella, Benasque, Tahull, and other seldom-visited villages of the spectacular Pyrénées. We will walk through Spain's most beautiful national parks, Aigues Tortes and Ordessa, attend an ancient ceremony in an abandoned village, and sleep in mountain *refugios* or small hotels that provide fine meals. Weather permitting, we may have the opportunity to climb several 11,000-foot peaks before ending our trip in the cosmopolitan seaport of Barcelona. While some of our days are geared for hardy hikers, many options are planned for those who prefer a more leisurely pace.

[87950] African Wildlife Safari: Northern Tanzania—June 27–July 13. *Leader, Mary O'Connor, 2504 Webster St., Palo Alto, CA 94301.* Northern Tanzania represents the best of Africa's wildlife areas. Our safari includes camping on the limitless expanse of the Serengeti, where vast herds of wildlife roam, and in Ngorongoro Crater, which has the world's largest concentration of game. Lake Manyara is famous for its elephant herds and tree-climbing lions. Traveling by Land Rover, we'll also visit Olduvai Gorge, site of the Leakeys' fossil discoveries. Included is a flight to Lake Victoria to enjoy a new and little-visited national park on Rubondo Island. Come visit some of the finest, least-spoiled places left on Earth. *The dates of this trip have been changed from what was previously published.*

[87955] Unspoiled France—The Massif Central—July 2–15. *Leader, John Doering, 6435 Freedom Blvd., Aptos, CA 95003.* This little-known part of France has 500 châteaux, lush green fields, numerous volcanoes (one higher than Vesuvius), blue lakes, gorgeous flowers, pine forests, granite crags, and fantastic gorges and rivers. We will hike from Clermont-Ferrand through the Parc Naturel des Volcans d'Auvergne to the source of the Loire. We will explore the Monts du Cantal, Doré, and Dômes. A van will take us through the Gorges du Tarn and the Vallée de l'Auvergne. We will sample wines and cheeses, visit Romanesque churches and medieval villages, and view wildflowers in this romantic part of France famous for its thermal baths.

[87960] Bike and Hike in Ireland—July 7–20. *Leader, Len Lewis, 140 Stacy Ln, Grass Valley, CA 95945.* Come to the wild and scenic western part of Ireland for two weeks of leisurely-to-moderate biking and hiking. Our route will take us over the highways and byways, through the bogs and burrens, from the mountains to the seashore, and through counties Clare, Galway, Mayo, Sligo, and Donegal. We will stay in bed-and-breakfast establishments and feast on the best of Ireland. We will visit castles, keeps, and ruins, setting a pace that will allow us to enjoy it all.

Donald L. Gibbon



[87965] Swat-Hunza-Kashgar Trek, Pakistan and China—July 12–August 10. *Leader, Bud Bollock, 1906 Edgewood Dr., Palo Alto, CA 94303.* Entry into this rare and exciting realm of alpine vistas and high mountain passes starts with a ten-day trek through the ancient kingdom of Swat. We then jeep westward through Gilgit into fable Hunza, populated by centenarians who dwell among the Karakorams, "an ultimate manifestation of mountain grandeur." Here we include a five-day exploration of the mighty Batura Glacier, followed by a crossing into China's Xinjiang Province over Khunjerab Pass (15,600'). In Kashgar, a silk trade outpost, we will mingle in an exotic Sunday bazaar.

[87970] Kenya Expedition Adventure—On Horseback, On Foot, and By Land Rover, Africa—July 13–August 2. *Leader, Lynn Dyche, 2747 Kring Dr., San Jose, CA 95125.* This trip is for those who wish to experience Kenya on a more active and involved level. We will begin this exciting and diverse expedition on horseback followed by game drives in Land Rovers, concluding with a camel-assisted walking safari. This trip is scheduled to coincide with the migration of great herds of animals, and we will have the opportunity to view large concentrations of game. We will also visit many native people in their villages. Nights will be spent in comfortable camps set up by our camp staff. We will travel 15 to 20 miles a day on good saddle animals that are accustomed to wild animals and cross-country treks. Trip members should be in good physical condition for riding and walking through wild country. You need not be a long-established equestrian, but you should be familiar with and comfortable around horses.

[87972] Second Annual British Service Trip, England/Wales—July 18–August 8. *Leader, David Brown, 1657 Somerset Pl., Antioch, CA 94509.* Last year's service trip in England and Wales was a wonderful experience; this year's trip promises to be equally so. We will begin in England's Peak District, where we will work on footpaths with British volunteers and explore the countryside on days off. Next we'll move to Snowdonia National Park in Wales and learn conservation techniques "Welsh-style." During our days off we will visit nearby castles and hike the mountains, including Mt. Snowdon, the highest mountain in England and Wales.

[87975] Hut-Hopping in the Dolomites, Italy—July 19–August 1. *Leader, Fred Gooding, 8915 Montgomery Ave., N. Chevy Chase, MD 20815.* We will spend a week in each of two of the most spectacular ranges of the Dolomites, the Brenta and Lavaredo groups. The excellent trails and huts maintained by the Club Alpino Italiano will enable us to understand why the area is so popular among alpine trekkers. We will travel as the Europeans do, carrying only our personal belongings on our backs. We'll have a break in hotels between the two hiking segments as well as a trip over the Dolomites Highway to Cortina d'Ampezzo and the Lavaredo group.

[87980] Appenzell and the Lötschental, Switzerland—July 20–31. *Leader, Ray Simpson, 1300 Carter Rd., Sacramento, CA 95864.* This trip will explore two very different Swiss mountain regions. We will begin in Appenzell, the "pre-Alps" near the Austrian border. Two dayhikes and one overnight have been planned for this lovely area of rolling grass-covered hills and small secluded villages. We then journey a historic train route on the Glacier Express down the Rhone Valley to Brig and up to the Lötschental, an alpine valley surrounded by glaciers and snow-covered peaks. Three days will be set aside for hiking in the Lötschental before crossing the 2,700-meter Restipass to Leukerbad. Two layover days are scheduled—one to explore the Lötschen glacier and one to enjoy the thermal baths at Leukerbad. Accommodations will be in small, family-run hotels. Participants will carry personal gear.

[87982] Peruvian Adventure—Machu Picchu, the Inca Trail, and the Amazon—July 26–August 16. *Leader, David Horsley, 4285 Gilbert St., Oakland, CA 94611.* This 22-day adventure is designed to give us a full experience of the Peruvian people and their country. From Lima we will start our trip with a flight over the mysterious archaeological Nazca lines and drawings. Next we'll fly southeast to Lake Titicaca on the Peru/Bolivia border, the highest navigable lake in the world, and visit the famous weavers on Ticali Island. After seeing the Incan ruins outside Puno and enjoying the marketplace, we'll take a long but inspiring train journey through the high Andes to Cuzco, capital of the Incan empire, where we'll visit the magnificent ruins of Sacsayhuaman, hike the famous Inca trail through the Cordillera Vilcabamba, explore Machu Picchu, the most famous Incan ruins of all, and visit Ollantaytambo and the Sacred Valley of the Inca. Before culminating our visit, we'll fly north to Iquitos and explore the jungle and tropical rainforest of the Amazon River.

[87985] Hiking in the Rondane Mountains, Norway—August 4–14. *Leader, Bert Gibbs, P.O. Box 1076, Jackson, CA 95642.* Our trip takes us by bus from Oslo to the town of Hjerkinn. Here our hike begins, traveling from one staffed hut to the next, except on the sixth night, when we'll prepare our meals at a self-service hut. We will hike three to five hours each day over moderately easy terrain at about 5,000 feet. Along the way we'll enjoy the marvelous scenery of the Rondane Mountains, including part of Rondane National Park. The cost of the trip includes round-trip bus fare from Oslo, meals, lodging, an English-speaking guide, and membership in Den Norske Turistforening. This beautiful country promises to offer a hike you'll always remember.

[87986] Scottish Service Trip, I—August 14–25. *Leader, Don Coppock, 1485A Church St., San Francisco, CA 94131.*

[87987] Scottish Service Trip, II—August 25–September 4. *Leader, Don Coppock, 1485A Church St., San Francisco, CA 94131.* Work your way around Scotland! Trip members will receive training in practical conservation techniques, then apply those skills at specific sites, working alongside experienced British volunteers. There will be free time to explore the Isle of Skye, the central Highlands, the Scottish coastline, and John Muir's birthplace.

[87990] Victoria Falls and the National Parks of Zimbabwe, Africa—September 6–18. *Leader, Pete Nelson, 5906 Dirac St., San Diego, CA 92122.* This outing visits the best of Zimbabwe's national parks: Mana Pools, Matusadona, and Hwange, as well as Victoria Falls. There will be wildlife-watching from blinds, on Land Rover outings, and on optional walks with an armed ranger. The end of the dry season allows good wildlife viewing when grass has been grazed short. We stay at comfortable camps, two of them overlooking waterholes. Moving between parks by air, we avoid long drives on bad roads. Our last day is at beautiful Victoria Falls.

[88995] Exploring Israel—September 12–October 1. *Leader, Ray Des Camp, 510 Tyndall St., Los Altos, CA 94022.* Our trip through Israel will give us an intimate view of this tiny land—its people, its landscapes, and its political, religious, and natural history. Driving, hiking, camel-trekking, and flying will allow us the broadest possible experience of the country. Our itinerary will include the coastal area and the headwaters of the Jordan in

Background Photo: Stephen Kasper
Insets (clockwise): Bob Paul, Linda Christy, Claude A. Look

Galilee to the north, through the Judean Desert and the Negev to Elat, the Gulf of Aqaba, and the Sinai to the south. We'll travel with an English-speaking Israeli guide to a Crusader castle, a Druze village, Jericho, Qumran, Ein Gedi, Masada, and the Dead Sea. We'll sample kibbutz life; visit the Monastery of St. Catherine, where we'll climb Jabal Musa (Mt. Sinai); swim in the Gulf of Aqaba; and have time to explore and enjoy Jerusalem. While on tour we'll overnight in hotels and kibbutzim or camp out.

[87997] Montafon Valley and the Stubai Alps, Austria—September 17–29. *Leader, Walt Goggin, 18836 Lenross Ct., Castro Valley, CA 94546.* Come sample two varieties of the alpine experience. During the first week of this two-part trip we will be dayhiking in the mountains around the Montafon Valley of western Austria. Nights will be spent in a small but *gemütlich* mountain hotel in the town of Schruns. Views are long and spectacular, but the walking will be relatively undemanding. After overnighting in Innsbruck, we move south to encounter the sterner challenges and splendors of the Stubai Alps. We will travel from hut to hut carrying our necessities on our backs, relying on the huts for meals and spartan lodgings. The September trip date suggests (but cannot guarantee) settled weather and reduced visitation.

[88500] Touring the Mosel Valley, West Germany—September 27–October 10. *Leader, Lynne McClellan Loots, 147 Spring Cove Dr., Cary, NC 27511.* Bicycling among the forests, vineyards, and farms by day and staying in quaint village inns by night make this moderate trip ideal for any bicyclist pedaling a ten-speed. German comfort and cuisine coupled with a leisurely 20 to 33 miles of bicycling each day give you a superb picture of Germany. Time to sightsee and relax adds to the enjoyment of your two-week tour.

[88501] Autumn in the Alps of Japan—September 27–October 14. *Leaders, Emily, Gus, and Alan Benner, 155 Tamalpais Rd., Berkeley, CA 94708.* Exploring the highest mountains of Japan in their autumn splendor will be the goal of this trip. We plan climbs of Fuji and Hakusan plus six days of hiking in the alps of northern Japan. Here a series of huts allow for extended hiking with light packs. Between climbs we will visit the temples of Nikko, the fall festival at Takeyama, and the gardens at Kanazawa. We will live in traditional fashion, staying in Japanese inns and eating local foods. The trip ends in Kyoto, where trip members may continue touring on their own.

[88502] Sea-Kayaking in Baja California, Mexico—October 24–30. *Leader, Hunter Owens, 4320 Stevens Creek Blvd., #185, San Jose, CA 95129.* Kayak the Sea of Cortez along the Baja Peninsula between La Paz and Loreto, visiting offshore islands, isolated beaches, and remote *ranchos*. Opportunities for hiking, beachcombing, birdwatching, and exploring abound. We will paddle along Espritu Santo Island, dotted with deep coves and sandy beaches for camping. Snorkling is excellent here, and the trip includes a day snorkling at a sea lion rookery. The trip is designed for beginning as well as experienced paddlers. Expert instruction will be given and we will be accompanied by a safety support boat. This trip offers an ideal experience with the sea kayak, unique in its agility and closeness to the sea.

[88505] Ganesh Sanctuary, Nepal—October 24–November 16. *Leader, Bob Madsen, 3950 Fernwood Way, Pleasanton, CA 94566.* To reach the beautiful sanctuary of the Ganesh Range, we will start from Gurkha, trek along ridges, through Gurung villages, up to the top of Darchya peak (10,000'), then drop down into the valley of the Buri Gandaki. When we leave the river valley on our final approach to the sanctuary, we will enter a wild, remote area that has seen very few trekkers. Our highest camp will be at about 12,000 feet. Elevation gains and losses are considerable, as are the rewards of reaching the Ganesh Sanctuary. *The dates and location of this trip have been changed from what was previously published.*

[88510] Lamjung Himal Trek, Nepal—November 21–December 7. *Leader, John DeCock, 53 Landers St., Apt. 2, San Francisco, CA 94114.* The Lamjung Himal contains the easternmost peaks of the Annapurna Range. Starting from Pokhara, we will follow a circular route, mainly along ridges, offering many fine views of the Annapurnas and several other impressive Himalayan peaks. At times we will be right under Annapurna IV and Lamjung. We may not see another westerner as we travel seldom-used trails in a rarely trekked area. This is a moderate trek with a maximum elevation of about 13,000 feet. *The dates and location of this trip have been changed from what was previously published.*

[88512] Summertime Trek in the National Parks of Australia and Tasmania—December 15, 1987–January 2, 1988. *Leader, Pete Nelson, 5906 Dirac St., San Diego, CA 92122.* On this trip we will explore three scenic national parks. At Kosciusko National Park in the Snowy Mountains we will hike between lodges, enjoying wildflowers and grand vistas. There will be an optional walk to Mt. Kosciusko (7,316'), Australia's highest. Cradle Mountain–Lake St. Clair National Park, at the top of Tasmania offers high peaks, deep gorges, and alpine meadows. From a base camp in Australia we have a choice of walks and ascents to Mt. Ossa (5,305'), along the Overland Track, or to other peaks, meadows, and streams. In Flinders Range National Park near Adelaide we will walk and ride camels along gum tree–lined dry creeks in deep red-walled canyons of the moun-

tainous outback while watching for Australia's unusual wildlife. Camping gear is furnished.

[88515] Gorkha Christmas Trek, Nepal—December 19, 1987–January 2, 1988. *Leader, Peter Owens, c/o Sierra Club Outing Dept., 730 Polk St., San Francisco, CA 94109.* Come spend the Christmas holidays on our annual culturally oriented trek to the villages near Himalchuli and Bauda peaks in Nepal. This moderate 12-day trek will have a high camp at about 11,000 feet. Great views and many new Nepali friends await you.

[88517] Cross-Country Skiing in the Austrian and Swiss Alps—December 19, 1987–January 3, 1988. *Leader, Wayne Woodruff, P.O. Box 614, Livermore, CA 94550.* Spend the Christmas holidays cross-country skiing in the "Heart of Europe." Christmas Day will be spent skiing in western Austria in the Vorarlberg region, and New Year's Day will be spent in the Grisons region of Switzerland in the upper Engadine. This trip is designed especially for beginning and intermediate skiers; previous ski experience is not necessary. Accommodations will be in comfortable hotels. The trip price includes equipment rental and cross-country ski instruction by a certified Nordic ski instructor.

[88520] South China Hike, Hong Kong—December 20, 1987–January 2, 1988. *Leader, Phil Gowing, 2730 Mabury Sq., San Jose, CA 95133.* There is a Hong Kong rarely seen by westerners. We will hike the Lantau Trail on Lantau Island, the MacLehose Trail in the New Territories, and the scenic and rugged countryside surrounding the Shenzhen Special Economic Zone in China. The dramatic and spectacular coastline and beaches of the South China Sea will be constantly in sight. We will spend our evenings in youth hostels, guest houses, and monasteries, where we will enjoy Chinese, continental, or American style meals. There will be ample time for visiting the remote fishing villages, along with an in-depth tour of newly modernized Shenzhen City. We have been asked to participate in a trinational summit meeting with the Hong Kong Chinese and a group from the People's Republic of China on January 1, 1988. This qualifies as a summit meeting because it will take place on the summit of Mt. Wutung in Shenzhen Territory.

[88525] Patagonia Overland Expedition, Argentina/Chile—January 31–February 23, 1988. *Leader, Bill Evans, P.O. Box 2834, Novato, CA 94948.* Patagonia, one of the world's remaining awesome wilderness areas, offers a pristine collection of granite towers and spires, lush forests and coastal fjords, an array of wildlife from Andean condors to penguins, and a sparse population. The name itself has a distant mystique all its own. Our experiences will include travel by bus, boat, hiking, and base camp backpacking. Isolated by the vast pampas to the north and the Andes to the west, the many wonders of a place insulated from time await us.

[88530] Cross-Country Skiing in the Austrian Tyrol—February 7–22, 1988. *Leader, Carolyn Steinmetz, 96 Hawthorne Ave., Los Altos, CA 94022.* Experience the thrill of the Tyrol in winter, gliding silently over alpine meadows covered with glistening fields of crisp white snow. We will discover the heart of the Tyrolean Alps on this trip designed for both novice and experienced skiers. Morning cross-country ski lessons and afternoon excursions for all skill levels will be led by licensed Austrian ski instructors. We will spend the weekend in enchanting Salzburg, where we will enjoy a Mozart concert. Accommodations will be in quaint, comfortable family-run inns. There will also be time for historic tours, shopping, and other après-ski attractions in this legendary winter wonderland. Trip price includes ski equipment rental and instruction.

[88535] Wander Down Under, New Zealand—February 24–March 18, 1988. *Leader, Vicky Hoover, 735 Geary St., #501, San Francisco, CA 94109.* The spectacular varied scenery and friendly people of New Zealand make for thrilling, joyous traveling. Optimum value for your 24-day tour is provided by alternating the intensive experience of three separate, four-day segments of backpacking with extensive intervals of car-camping. We'll visit both North and South islands of this far-away paradise of snowy mountains, deep-cut fjords and lakes, lush rainforests, unspoiled beaches, and unique native birds. The Milford Track will be one of our "tramping" ventures.

[88540] Arlberg Ski Adventure, Austria—March 19–26, 1988. *Leader, Ann Hildebrand, 1615 Lincoln Rd., Stockton, CA 95207.* Experience skiing where it all began—the renowned Arlberg area of Austria. With the expertise of local guide-instructors we can perfect our "off-piste" technique using the convenience of ski lifts. The possibilities for unforgetable descents are nearly limitless as we ski from village to village. The group will be divided into two eight-person sections for the most advantageous instructor/skier contact. Accommodations will be in a comfortable hotel in Lech. The trip is designed for intermediate to advanced downhill skiers who wish to experience the thrill and challenge of off-piste skiing. On-piste possibilities are available for the less adventurous.

Mildred Loos

HAWAII

The Hawaiian archipelago offers a unique mid-Pacific setting for a number of interesting Sierra Club trips. Hawaii trips are designed to let participants enjoy the natural splendor of the islands as few other tourist groups do. Campsites are usually in county, state, national, or private parks, often within sight and sound of the Pacific. On most trips, travel from camp to camp is by car.

Dayhikes are scheduled on Hawaii outings, and although there will be overnight hikes on some, none are mandatory. Whether you join a hiking trip, spend a day on the beach, or read a book in camp is up to you.

[87029] Easter on Maui—April 18–26. *Leaders, Carolyn and Joe Braun, 1323 Brandy Ln., Carmichael, CA 95608.* Sunrise at the edge of Haleakala is always awe-inspiring; to be there on Easter morning will be doubly so. Some will walk down the mountain, some will ride, and we will all meet in Hana. Daily excursions from our base camps will allow participants to satisfy their own whims based on their desires and abilities. Whether it be dayhiking, swimming, exploring, sunning, overnight camping, shopping, or leisurely drives in our rental cars to experience the upcountry, Easter on Maui will be a memorable and pleasurable outing.

[87165] Bicycle Tour of Kauai—June 21–July 4. *Leader, John Ruzek, 756 Hilton Rd., Walnut Creek, CA 94595.* We will bicycle virtually all of the Garden Isle of Kauai and visit the Hanalei and Hanakapiai valleys, Waimea Canyon, and the Alakai Swamp. Six riding days of about 25 to 40 miles will be interspersed with seven layover days to swim, visit museums, snorkel, and hike. We will tent-camp on local beaches and stay in cabins at Kokee State Park (3,600'). A support vehicle will carry our camping gear and luggage on this moderately difficult trip suitable for the intermediate cyclist.

[87166] Volcanoes and Beaches, Big Island of Hawaii—August 1–9. *Leaders, Karen and Stan Johnsen, 3842 LaDonna, Palo Alto, CA 94306.* Families as well as individuals are welcome on this car-camping trip to the Big Island. We will sample the island's varied habitats, from the tree fern forests surrounding the craters of Kilauea volcano to the palm-fringed, white sandy beaches of the Kona Coast. An optional overnight backpacking trip as well as dayhikes and many cultural and musical activities are planned. Rental vehicles will allow a variety of options each day.

Paul Sjoberg

Bob Fiore

HIGHLIGHT TRIPS

Highlight trips offer a flexible format for those who enjoy the wilderness but want to hike without a full pack. Packstock or motor vehicles carry each person's 20-pound duffel bag plus all the food and commissary equipment from camp to camp. On moving days participants are free to hike to the next camp at their own pace, provided travel is by trail. On some trips travel from camp to camp is by van, enabling participants to visit a wider range of environments.

Routes and mileages are usually within the ability of the average person who has done a reasonable amount of pre-trip conditioning and acclimatization. Families with children nine or older are welcome.

Group sizes vary from 12 to 25 plus a small staff. Routes are chosen to provide maximum enjoyment with minimum wilderness impact. Travel between camps often provides unencumbered opportunities to fish, climb, hike to isolated viewpoints, or pursue other individual activities. Leaders emphasize conservation issues and interpret the natural history of the areas visited.

[87030] Cedar Mesa Geology/Archaeology, Utah—May 3–8. *Leader, Serge Puchert, 11025 Bondshire Dr., Reno, NV 89511. Instructor, Gene Foushee.* Starting from Bluff, this trip accompanied by a geologist and supported by jeeps will be in a high (6,500′) remote tableland south of Canyonlands National Park, in the famous Four Corners country. Making short cross-country moves, we will explore and investigate Anasazi ruins, deep canyons, geological formations, and long ridges offering spectacular views. The trip will end with a visit to Maley Point, overlooking the vast panorama of San Juan canyon country, where we will hear stories and lectures about the area by our instructor. All participants must be sure-footed hikers.

[87031] Canyonlands, Bridges, and Arches of Southern Utah—May 22–31. *Leader, Carolyn Downey, 1931 E. Duke Dr., Tempe, AZ 85283.* On this unique van-camp/hiking trek we will experience what some have called the world's most colorful trip. Originating in Phoenix, we will drive north to Navajo National Monument and Monument Valley, where we can hear the echoes of the ages in the prehistoric ruins. We then plunge into the wilderness of southern Utah and experience the weird and fantastic rock sculptures in Bridges and Arches national parks. Most of our time will be spent in Canyonlands National Park, where we will hike extensively in the Needles District as well as Island in the Sky. This is a big and mostly empty land where rainbows have turned to stone.

[87168] Oregon's High Desert: Llama Trek and Natural History Field Seminar—May 30–June 6. *Leader/Instructor, Stosh Thompson, Box 999, Sisters, OR 97759.* The high desert of southeastern Oregon is a little-known area with a great diversity of natural environments that are particularly alluring in late spring. Llamas will carry our loads on the relatively easy hikes. The leader/instructor, an expert on the area's natural history, will take you to roadless wilderness areas that encompass mountains, deserts, marshlands, and hot springs. You'll study volcanic and glacial geology as well as wildflowers at the peak of their bloom. Wildlife will include antelope and bighorn sheep, along with the great profusion of migratory birds that use this area in spring.

[87169] Birds of the Arizona Borderlands—July 18–26. *Leader, Richard Taylor, 2550 W Calle Padilla, Tucson, AZ 85745.* Southeastern Arizona is where Mexico's Sierra Madre mountains and the Sonoran and Chihuahuan deserts spill across the international boundary, bringing with them a community of plants, birds, and wildlife found nowhere else north of the border, as well as the richest diversity of species of any land-locked area in the United States. During our nine-day trip we will look for zone-tailed hawks, elegant trogons, 15 species of hummingbirds, rose-throated becares, vermilion flycatchers, painted redstarts, red-faced warblers, and jazzy purple and red varied buntings. Altogether, more than 300 species of birds can be found in an area roughly the size of Rhode Island. Other wildlife we will watch for include collared peccary (locally called javelina), pronghorn antelope, coyote, apache fox squirrel, coati, and one of the smallest white-tail deer in the nation. The scenery ranges from magnificent stands of tree-size saguaro cactus near Tucson to Engelmann spruce in the Chiricahua Mountains. Transportation is by 15-passenger vans, and we lodge in comfortable hotels adjacent to national monuments and forests, nature preserves, and research areas.

[87170] Llama Trek/Photography Seminar, Three Sisters Wilderness, Cascade Range, Oregon—August 3–12. *Leader/Instructor, To Be Announced.* The photogenic Three Sisters area of central Oregon offers the most concentrated scenic beauty of any area in the state; it is a volcanic wonderland of tremendous diversity. Deep forests, stark lava flows, active glaciers, gushing springs, and expansive alpine views grace our route. Agile, dependable, unflappable llamas, the ideal pack animal, enable us to carry delicate equipment across almost any terrain. (They're also just plain fun to be around.) A leisurely itinerary allows plenty of time to enjoy the company of our dignified llamas and to take advantage of the area's many photographic opportunities. Expert photo instruction will be available for both the novice and experienced photographer.

[87171] Sawtooth Wilderness, Sawtooth Forest, Idaho—August 9–17. *Leader, Jerry Clegg, 9910 Mills College, Oakland, CA 94613.* The Sawtooth is a sea of granite crags and spires that loom over glacial troughs, broad piedmont lakes, hanging cirques, azure tarns, timbered slopes, and open meadows atop the Idaho batholith. Mountain goat, elk, deer, black bear, and trout abound in what has long been proposed as a national park. Four days of moderate hiking along the headwaters of the Payette and Salmon rivers will take us through the heart of the range. Four layover days may be spent relaxing, fishing, swimming, or climbing. Our roadhead at Mt. Village Lodge in Stanley is an 80-minute drive north from Sun Valley.

[87172] A Leisurely Hike Through the Grand Tetons, Targhee Forest, Wyoming—August 13–22. *Leader, Len Lewis, 140 Stacy Ln., Grass Valley, CA 95945.* Thrusting majestically skyward from the Wyoming plain, the Grand Tetons form the backdrop for our leisurely paced hike through the Targhee Forest. We will camp

MEMBERSHIP NO.	TRIP NO.	TRIP NAME	DEPARTURE DATE

YOUR NAME	HAVE YOU RECEIVED THE TRIP SUPPLEMENT? YES ☐ NO ☐
STREET ADDRESS	YOUR HOME PHONE ( )
CITY STATE ZIP	YOUR WORK PHONE ( )

PLEASE PRINT YOUR NAME AND THE NAMES OF OTHER PEOPLE IN YOUR PARTY	MEMBERSHIP NO.	AGE	RELATIONSHIP	NO. OF OUTINGS YOU'VE BEEN ON: CHAPTER	NATIONAL	YEAR OF LAST NATIONAL OUTING
1.			SELF			
2.						
3.						
4.						

PER PERSON COST OF OUTING:	TOTAL COST THIS APPLICATION:	DEPOSIT ENCLOSED:	FOR OFFICE USE ONLY:

I WOULD LIKE TO HELP THE SIERRA CLUB CONTINUE ITS WORK! HERE IS MY CONTRIBUTION OF: M001

☐ $15 ☐ $25 ☐ $50 ☐ $100 ☐ OTHER $ _____

PLEASE MAKE CHECK PAYABLE TO SIERRA CLUB
MAIL TO: SIERRA CLUB OUTING DEPT., DEPT. #05618, SAN FRANCISCO, CA 94139

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IMPORTANT INFORMATION

1. Refer to the Reservation/Cancellation policy page for important payment information and instructions for filling out this application.
2. Deposits are nonrefundable, from a confirmed trip space.
3. All participants age 12 and over must be Sierra Club members to attend an outing.
4. Your address may be released to other trip participants for purposes of ride-sharing or other trip-related purposes.
5. Not all trips can accommodate special dietary needs or preferences. Contact the leader for this information before applying.
6. Applications for trip space will be accepted in the order that they are received at the following address:

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Roger Hawkinson

in glaciated valleys and high granite basins near lakes and streams offering a challenge to the fishing enthusiast. Our four layover days will feature peak climbs within the capabilities of first-time trippers in good shape. Layover-day activities are optional; trip members are free to pursue their own interests. A wonderful experience awaits the young at heart.

[87173] Eagle Cap Wilderness Llama Trek, Wallowa-Whitman Forest, Oregon—August 27–September 5. *Leader, Bill Gifford, 3512 NE Davis, Portland, OR 97232.* The high Wallowa Mountains of northeastern Oregon are one of the more beautiful areas in a state filled with beautiful scenery. Granite mountains shaped by glaciers, the Wallowas feature majestic peaks, deeply scoured canyons, fast-flowing snow-fed streams, and many lakes. Our relaxed itinerary will offer plenty of time to enjoy the area at will. You can lead your own llama; its leisurely pace will most likely match yours. Come learn why these magical beasts captivate nearly everyone who has the opportunity of hiking with them.

[87174] North Rim, Grand Canyon, Arizona—September 3–12. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* Follow the Colorado River as it cuts its way into the Kaibab Plateau, and view the formation of the Grand Canyon from seldom-visited locations in the cool high country of the North Rim. Spectacular vistas will create magic moments and unexcelled photographic opportunities. Frequent campsite changes will allow us to visit historic Lee's Ferry, East Rim Viewpoint, Point Imperial, Cape Royal, the North Rim, Point Sublime, Swamp Point, Kanab Point, Toroweap Overlook, and much more. Hiking of varying difficulty will be available each day on rim trails, abandoned canyon trails, the North Kaibab Trail, and the Old Bright Angel Trail, allowing more extensive exploration for the adventurous. All commissary and personal equipment will be carried by van.

[87175] Northern Yosemite Llama Trek—September 6–12. *Leader, Joan Laue, 142 Race St., Grass Valley, CA 95945.* Come explore the lake-studded peaks and canyons of this spectacular scenic area with a friendly, gentle llama to carry your dunnage. From Green Creek we will travel up Glines Canyon into Yosemite's magnificent Virginia, Spiller, and Matterhorn canyons. Hiking at elevations from 9,000 to 10,000 feet, we will average six to seven miles daily with a layover day for fishing, photography, climbing, or relaxing.

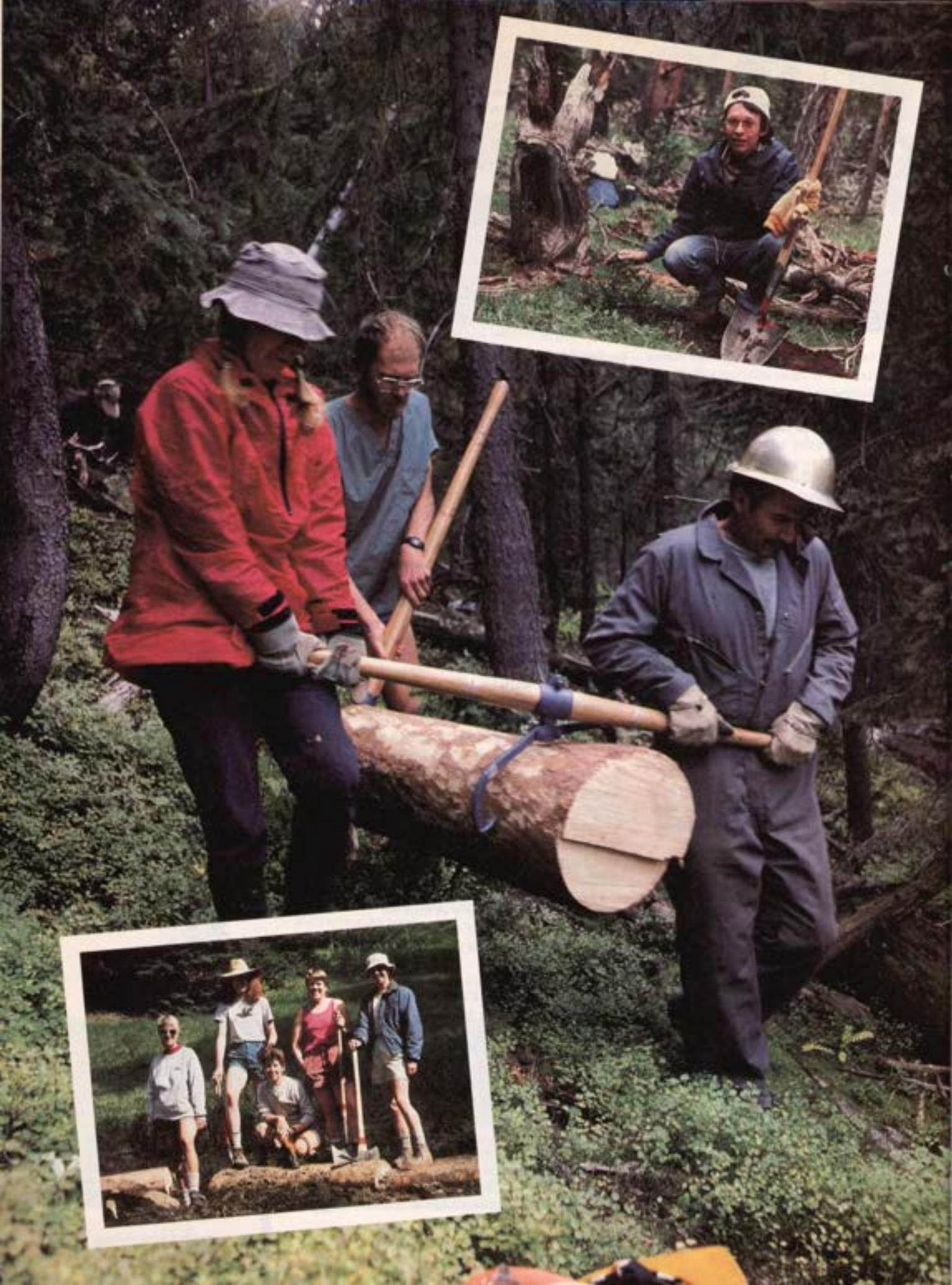
[87176] Three Sisters Wilderness Llama Trek, Willamette Forest, Oregon—September 13–18. *Leader, Marilyn Gifford, 3512 NE Davis, Portland, OR 97232.* The rugged western flank of the Three Sisters Wilderness is a volcanic wonderland offering a great diversity of sights: deep forests, stark lava flows, and glacier-clad mountains and streams that spring from solid rock cliffs. Agile, dependable, and unflappable, llamas are the ideal high-country pack animal; they will allow us to carry equipment across almost any terrain. A leisurely itinerary of less than 30 miles allows plenty of time for enjoying the company of our llamas and the many scenic beauties of this lovely wilderness area.

[88360] Barranca del Cobre (Copper Canyon), Northwest Mexico—October 1–10. *Leader, Carolyn Downey, 1931 E. Duke Dr., Tempe, AZ 85283.* The Chihuahua al Pacifico Railway begins our trip into the spectacular Sierra Madre country of the Tarahumara Indians. Rumbling across 39 bridges and through 84 tunnels, this railroad has been called the "world's most dramatic train ride." Accommodations on the rim of the canyon will be in comfortable hotels. Each day we will explore and experience new areas within the canyon via vans and optional dayhikes. Four times the size of the Grand Canyon, these canyons of the Sierra Madre have been called the unopened treasure chest of Mexico—a treasure chest that, with few exceptions, remains untouched by modern civilization. The trip price does not include two lunches (while traveling by train) or any breakfasts.

[88361] Big Bend Park, Texas—October 18–24. *Leader, George Mader, 8704 Catalpa, El Paso, TX 79925.* Lying on the Mexican border, Big Bend National Park has more than a thousand square miles of scenery to explore. With more than a hundred miles of the Rio Grande within the park, Big Bend has not only deep river canyons but also vast desert areas topped by the 7,500-foot Chisos Mountains providing a forest environment. The trip starts and ends in El Paso, where we will meet to travel to the park by van. We will car-camp at three campgrounds and take dayhikes to experience the river, desert, and mountain areas. This trip can be as easy or strenuous as you desire.

[88362] Anza-Borrego Park, California—December 27, 1987–January 1, 1988. *Leader, Blaine LeCheminant, 1857 Via Barrett, San Lorenzo, CA 94580.* Situated in classic Southwest desert, California's largest state park provides the location for this unusual winter adventure. This is the habitat of specialized flora and fauna, such as the rarely seen desert bighorn sheep, kit fox, native fan palm, Mojave yucca, jumping cholla, and the elephant tree, a rare botanical enigma. Anza-Borrego provides the gripping, austere beauty characteristic of these alleged "wastelands." Avoiding the intense summer heat, we hike into the desert's more remote areas at a very opportune time.

Robin J. Davis



OUR 30TH SEASON

SERVICE TRIPS

Service trips combine the enjoyment of a backcountry outing with the satisfaction that comes from doing something positive for the environment. Half the days are left free to enjoy the wilderness; half are work days to accomplish something worthwhile. Our trips are fun and spontaneous and the participants energetic and enthusiastic. You'll come back healthier and happier, having learned about the work that's necessary to keep the wilderness in shape.

Pick a trip that's the right pace for you. Some of our trips are in backcountry base camps and some are at roadheads. Many are supported by pack animals to carry food and tools. Several are at cabins or lodges. On all trips, work experience is not necessary; we will train you.

Choose a trip that suits you. Our trips run through the spring, summer, and early fall, and take place in areas all across the country. Some cater to a particular clientele, such as families, beginning backpackers, or teens.

Service trip fees are low because the program is subsidized by the Sierra Club and tax-deductible donations from corporations and individuals.

All service trips require leader approval. Trip applicants will receive a questionnaire to fill out and send to the trip leader, who will let you know whether the particular trip is suitable for you. Members younger than 16 must contact the leader for special approval.

If you have been looking for a chance to contribute something to the wilderness, a service trip is surely the answer.

Please refer to the foreign trip section for additional service trips.

The Sierra Club's Service Trip Program wants Club members to know about river cleanup trips in the Pacific Northwest sponsored by Oregon River Experiences, Inc. (ORE).

Because the Sierra Club is now unable to obtain insurance for such trips, we cannot sponsor or endorse these trips nor suggest that you attend, but we do support the need for them, and ORE has been a long-time outfitter to us. For information about their trips, contact ORE directly.

Oregon River Experiences, Inc.
30493 Lone Pine Dr.
Junction City, OR 97448
(503) 689-6198

[87044] Haleakala Crater, Hawaii, I—February 1–8. *Leader, C. E. Vollum, Route 5, Box 66, Albert Lea, MN 56007.*

[87045] Haleakala Crater, Hawaii, II—February 15–22. *Leader, C. E. Vollum, Route 5, Box 66, Albert Lea, MN 56007.* Enjoy trail maintenance in Haleakala National Park in Maui. Although the park is only 22 square miles, conditions within its boundaries range from tropical to near desert. The work and hike in will be physically demanding, and we will be at an altitude of 6,000 to 7,000 feet. Our lodging will be in Park Service cabins for the duration of both trips.

[87046] Alder Creek Trail Maintenance, Four Peaks Wilderness Area, Arizona—March 8–15. *Leader, Vance Green, 437 E. Pierce, Tempe, AZ 85281.* Alder Creek lies in the central and southern parts of the Four Peaks Wilderness, approximately 50 miles northeast of Phoenix. Participants will be working the central portion of the trail, the opposite ends having been cleaned up by crews in previous years. We will alternate work and play days to allow plenty of time to explore the narrow canyons cut through the Painted Cliffs or climb nearby Browns Peak (7,657').

Wayne Ranz

[87178] Kanab Creek Trail Maintenance, Kaibab Forest, Arizona—March 14–23. *Leader, Tim Wernette, 7461 E. Calle Managua, Tucson, AZ 85710. Cook, Muir Matteson.* Kanab Creek, one of the major drainages on the North Rim of the Grand Canyon, offers spectacular sandstone cliffs, side canyons, cottonwood and oak thickets, and wide sandy benches. During the first half of the trip we will build trail tread, construct rock cairns to mark the trail, and brush along a sandstone bench above Kanab Creek. During the latter half we will hike down to Kanab Creek and its beautiful side canyons. This trip is strenuous.

Background Photo: Steve Ottinger
Insets (clockwise): Laurie-Ann Barbour, Laurie-Ann Barbour

Susan Gath

[87047] Muleshoe Ranch Preserve, Galiuro Mountains, Arizona—March 22–28. *Leader, Ginger Harmon, RR #1, Box 1542, Willcox, AZ 85643.* Springtime at The Nature Conservancy's 55,000-acre Muleshoe Ranch Preserve, tucked away in the rugged reaches of the Galiuro Mountains, is a bird and wildflower paradise. From our headquarters at Hooker's Hot Springs we will undertake trail building, fence removal, and backcountry cleanup. On hikes up lush rimrock canyons we may see coatimundi, javelina, or even bighorn sheep.

[87048] Superstition Wilderness Trail Maintenance, Arizona—April 4–11. *Leader, John Ricker, 2610 N. 3rd St., Phoenix, AZ 85004.* The Superstition Wilderness is a 450-square-mile area situated 40 miles east of Phoenix. It is made up of rugged mountains, running streams, and desert vegetation on the west turning to juniper, pinyon, and some ponderosa pine on the east. Our trip will be in the southeast corner, along the west fork of Pinto Creek. There will be a short backpack to base camp. The elevation will be at 4,000 to 4,500 feet. Time will be available to explore the streams and climb a peak or two nearby.

[87049] Red Rock Trail Maintenance, Coconino Forest, Arizona—April 26–May 2. *Leader, Jim Ricker, 1532 47th St., Sacramento, CA 95819.* Red Rock Country is a beautiful land of deep canyons, forested plateaus, and colorful rock formations. Located on the southern, eroding edge of the Colorado Plateau, it is home to several new wilderness areas. This year we will be in the Munds Mountain Wilderness constructing a trail along the rim of Woods Canyon. Work consists of brush clearing, rock removal, and tread building. We will work alternate days so there will be ample time to explore or take photographs. Expect warm days and cool nights; elevations will range from 5,000 to 6,400 feet.

[87179] C. & O. Canal, Maryland—May 9–16. *Leader, Chuck Cotter, 1803 Townsend Forest Ln., Brown Summit, NC 27214.* In November 1985, floodwaters from the Potomac River damaged much of the Chesapeake & Ohio Barge Canal. Much of the damage occurred near Harpers Ferry, W. Va. This trip will repair some of the damage and explore nearby historical Civil War sites. Bring a bicycle, as the towpath provides an easy way to get to and from our worksite.

[87180] Blue Range Primitive Area, Apache Forest, Arizona—June 6–13. *Leader, Rod Ricker, P.O. Box 807, Cottonwood, AZ 86326.* One of the largest and oldest primitive areas in the Southwest, the Blue Range has been considered several times for wilderness designation. Situated in the White Mountains of eastern Arizona and partly in New Mexico, the area encompasses much of the Blue River and surrounding high country. It also includes the eastern end of the Mogollon Rim and many steep canyons. There are deer, elk, bear, and other wildlife in a forest that goes from spruce, aspen, and white fir to ponderosa pine, Douglas fir, and then down to chaparral. We will backpack into our base camp and reroute and repair one of the trails.

[87181] Sucia Island Whalewatch/Service Trip, San Juan Islands, Washington—June 14–21. *Leader, Fredric Kropp, 3633 13th Ave. W., Seattle, WA 98119.* The beautiful San Juan Islands lie between Washington and Vancouver Island. Reaching Orcas Island by ferry, we will travel north by Park Service boat to our work site on Sucia Island, where we will be doing mostly trail renovation and maintenance. When not working, we can hike and explore the island, accessible only by boat. A whalewatch trip is included; we will spend one day aboard a chartered boat looking for orcas (killer whales) that frequent surrounding waters.

[87182] Le Conte Lodge Repair and Trail Maintenance, Yosemite Park, Sierra—June 14–24. *Leader, Dave Bachman, 857 Sonoma Ave., #16, Santa Rosa, CA 95404. Cook, To Be Announced.* Yosemite in June is a wonderland of flowers and waterfalls. Part of our trip will involve planting trees and shrubs around Le Conte Lodge, an interpretive center operated by the Sierra Club and the National Park Service. We will also perform repairs on the natural theater connected to the lodge, and work on connecting trails and walkways. The entire valley and surrounding peaks will be available for free-day activities. Half Dome, anyone?

[87183] Spruce Knob, Monongahela Forest, West Virginia—June 15–26. *Leader, Dick Williams, 609 S. Taylor St., Arlington, VA 22204.* The eastern edge of West Virginia largely consists of low but rugged, heavily wooded mountains. Our work project will consist of cleanup, trail maintenance, and relocation in an area recently damaged by floods. We'll camp at about 3,600 feet in an area that offers hiking, trout fishing, abundant wildlife, and beautiful rugged country of forest, meadow, beaver ponds, and wildflowers.

[87184] Clear Creek Trail Maintenance, Klamath Forest, California—June 23–July 3. *Leader, Scott Larson, 1200 27th Ave., Sacramento, CA 95822. Cook, Kathy Mastrini.* Clear Creek drains the western slope of Preston Peak, the center of this newly created wilderness area. We will be performing routine trail maintenance on the upper ten miles of the Clear Creek National Scenic Trail. We will move camp several times during this rov-

ing project and hike the entire 20-mile trail, with ample opportunity to explore the area's natural wonders and swim in the best little swimming hole in California.

[87185] Sierra Club's Own Trail Maintenance Project, Sierra Forest, Sierra —June 26–July 6. *Leader, Flint Ellsworth, 304 Mott St., Santa Cruz, CA 95062. Cook, Deborah Northcutt.* Join this early-season maintenance trip in the heart of the Sierra to prepare the Goodale Pass Trail for summer use. The Sierra Club adopted this trail several years ago and has done all maintenance on it ever since. The area is surrounded by 12,000-foot peaks and numerous lakes. Our base camp will be at 8,500 feet, an eight-mile hike in from the trailhead. This is a moderately strenuous trip.

[87186] Pecos Wilderness, Sangre de Cristo Mountains, New Mexico—July 5–12. *Leader, Gail Bryant, General Delivery, Glorieta, NM 87535.* Over millions of years, fire, water, mud, snow, and sand have made the Pecos Wilderness an area of great diversity. The area's geologic variations and proximity to Santa Fe attract many visitors. Trail maintenance, rerouting, and stream crossing are ongoing projects here. Climbing, fishing, and lazy time are also scheduled on this moderately strenuous trip.

[87187] Cloud Peak, Big Horn Forest, Wyoming—July 6–16. *Leader, John Albrecht, 3550 Willamette St., Eugene, OR 97405. Cook, Carla Moreno.* We will be camping at Gunboat Lake, just a mile from Florence Pass (10,800'). Our work will consist of finishing trail across a talus slope, connecting new trail with existing trail, and repairing the deeply rutted old trail. Hikes to Cloud Peak (13,125'), Bomber Mountain, and numerous lakes in the area provide many opportunities for enjoying our off days. The fishing should be excellent.

[87188] Sky High Lakes Women's Trip, Marble Mountain Wilderness, Klamath Forest, California—July 6–16. *Leader, Didi Toaspern, 851 Lindo Ln., Chico, CA 95926. Cook, Maggie Pruchnicki.* This is the fourth summer the Sierra Club is offering an all-women's service project. We will be returning to the Marble Mountain Wilderness in northwestern California. Most of our work will be constructing a causeway across an erosion-prone section of trail. The hard but satisfying work will give us a definite finished product to show for our effort. Our base camp in the Sky High Basin lies at the heart of the wilderness area. Three nearby lakes—Upper and Lower Sky High and Frying Pan—offer swimming, fishing, and relaxation after work and on our off days. Just one ridge separates us from the Marble Valley and the base of Marble Mountain. Dayhike possibilities are limitless.

[87189] Meteor Lake, Marble Mountain Wilderness, Klamath Forest, California—July 7–17. *Leader, Tom Gefell, 1261 12th Ave., San Francisco, CA 94122. Cook, Gretchen Muller.* Meteor Lake is one of a seven-lake cluster near Somes Bar in Northern California. After a nine-mile hike in, we will work and play at 5,500 feet within view of Marble Mountain, the thousand-foot black and white limestone cliff for which the area is named. Our work project involves building trail to two of the lakes. We will have plenty of free time to enjoy the California sunshine, the view from Pigeon Roost, and nearby lakes. The trip will feature dutch oven cooking.

Susan Shen

[87190] High Uintas Wilderness Avalanche Cleanup, Wasatch Forest, Utah —July 15–25. *Leader, Jon Nichols, 338 W Elvira, Tucson, AZ 85706. Cook, Kathy Bomais.* Northeast of Salt Lake City lie the High Uintas Mountains, the most prominent east-west mountain range in the continental United States. Last winter a huge avalanche knocked down hundreds of trees, closing the Duchesne River Trail about five miles from Mirror Lake. Our project will be to chop, saw, and clear a trail through the debris. We may also remove an airplane engine and an old phone line marring this beautiful wilderness. Base camp will be at 8,800 feet; we will work at between 8,000 and 12,500 feet. On our free days there will be time for fishing, dayhiking, and relaxing.

[87191] Targhee Teton Trail Maintenance, Targhee Forest, Wyoming—July 17–27. *Leader, Bruce Horn, 2720 Shady Ave., #14, Pittsburgh, PA 15217. Cook, To Be Announced.* The Green Lakes and Granite Basins will be the site of this year's work project repairing damage from heavy snowfalls. On days off we can hike to Little's Peak, "Sierra Club Lake," or other nearby lakes. Abundant wildflowers and the Tetons provide the scenic backdrop for this moderate trip.

[87192] Clair Tappaan Lodge Family Trip, Sierra—July 18–26. *Leader, Vince White-Pettenati, 320 S. Maple, Oak Park, IL 60302.* Experiencing the wilderness with our children is a parent's joy; preserving that same wilderness for them is our responsibility. In that spirit, the first family service trip will be hosted by the Sierra Club's Clair Tappaan Lodge in the Tahoe National Forest. Adult participants will work on reconstruction of the Pacific Crest Trail while the children help with meadow restoration (planting flowers). Free-day family activities include dayhikes to Capital Peak, Sand Ridge Lake, or Warren Lakes. An overnight hut stay is also possible. Limited to two children per family.

Service Trip Doctors Wanted

Service trips attempt to include a doctor as a staff member on each trip. These are individuals who donate their time and skill for a waiver of the trip price. They are not required to work on the trip project, but many do so out of the same concern for wilderness that regular participants share.

All trip leaders have the Advanced Red Cross First-Aid Card, and the Club provides a first-aid kit. Although our accident record with projects requiring the use of tools has been extremely minimal, we try to provide a staff doctor just in case.

What better way to spend ten days of your summer vacation than in the great outdoors, sharing companionship with environmentally concerned citizens and putting some work back into the wilderness in exchange for the joys received from it?

If you feel you might be interested in such a rewarding experience, please contact:

Dr. Bob Majors
3508 Williamsborough Ct.
Raleigh, NC 27609

[87193] White Mountain Service Trip—Appalachian Mountain Club Collaboration, New Hampshire—July 19–26. *Leader, Hilary Erf, 319 Highland Rd., #5-2B, Ithaca, NY 14850.* Once again we'll join the hardworking AMC for trail repair in the Pemigewasset Wilderness. We'll be making waterbars for much-needed drainage control, clearing some brush, and building stone steps. There also may be a trail relocation project. The woods are amazingly lush and green in July, and our base camp will be near Ethan Pond for swimming and fishing after work. We may even find a good raspberry patch. At the end of the trip we'll have time to climb one or more of the Presidentials—Mt. Washington, anyone? The work will be hard and satisfying, and trip menus will include a macrobiotic component for those who desire it.

[87194] Pine Creek Meadow Restoration and Trail Repair, Inyo Forest, Sierra—July 19–29. *Leader, Rob Dorival, P.O. Box 357, Empire, CO 80438. Cook, Laurie-Ann Barbour.* Join us as we repair meadow ruts and build raised trail on the Pine Creek Pass Trail just below the pass. On days off we can visit Honeymoon Lake, Humphreys Basin, and Granite Park. The ambitious can climb Mt. Julius Caesar, almost 13,000 feet, as well as other local peaks. Fishing, botany, photography, and just relaxing are also possible. The work and hike in make this trip moderately strenuous.

[87195] Snowmass Lake Trail Construction, White River Forest, Colorado—July 21–31. *Leader, Bill Weinberg, 1465 Hayes St., San Francisco, CA 94117. Cook, Dave Simon.* Located in the Maroon Bells–Snowmass Wilderness, Snowmass Lake (11,000') provides good fishing and beautiful scenery. From our base camp near the lake, we'll do a variety of work projects: building rock turnpikes and a log bridge, obliterating duplicate trails, and revegetating an overused area. Climbing opportunities abound, including nearby 14,092-foot Snowmass Mountain. Buckskin and Willow passes are both within dayhike range, and we might take a three-day backpack loop on our way out. Both the work and eight-and-a-half mile hike in with 3,000 feet of elevation gain make this a very strenuous trip.

[87196] Grand Canyon Trail Maintenance, Kaibab Forest, Arizona—July 23–August 1. *Leader, Peter Curia, 1334 W. Willetta, Phoenix, AZ 85007.* Our work will be on the more isolated North Rim of the Grand Canyon in a Canadian coniferous-type forest. We will work on the Ken Patrick Trail and continue the maintenance we started last year. This is hard and demanding work, but we will have plenty of time to explore the area.

[87197] Mt. Rainier Park, Washington—July 25–August 4. *Leader, Karen Johnson, 258 India Pt., Providence, RI 02903. Cook, To Be Announced.* Come see the wonders of Mt. Rainier National Park. Past trips into this area have built trail, repaired meadows, and cleaned up trash, and they have been visited by the Park Service botanist and geologist. More details about this trip will be available as the snow begins to melt in the spring.

[87198] Fifth Annual Beginning Campers' Trail Maintenance and Restoration, Washakie Wilderness, Wyoming—July 28–August 7. *Leader, Ed Thomas, 1215 Cleveland St., Wilmette, IL 60091. Cook, Sasha Ennik.* Beginning and less-experienced backpackers are invited to develop new skills and sharpen old ones, do meaningful work, and enjoy the unusual Brown Basin wilderness area. Ranging from low-lying moose habitat (9,000') to fragile high meadow (11,000'), Brown Basin contains the abandoned mining town of Kirwan. Work days will be spent improving trails and clearing out an abandoned sheep camp. Free days can be spent fishing, observing elk, moose, antelope, and bighorn sheep, collecting interesting mineral specimens from the abandoned mines, scrambling up nearby 12,000-foot peaks, or relaxing. The short, steep hike in to camp makes this a moderately strenuous trip. *Note: Although this is the only service trip offered specifically for beginning campers, most service trips welcome beginners in good physical condition.*

[87199] Green River Row-It-Yourself Raft and Trail Maintenance, Utah—July 29–August 6. *Leader, Kelly Runyon, 475 Crofton Ave., Oakland, CA 94610.* This ambitious nine-day trip co-sponsored by the Bureau of Land Management includes two or three days of trail maintenance in the heart of Utah's Desolation and Gray canyons. Participants will learn boat-handling skills while guiding their two-person rafts down 80 miles of river with occasional easy to moderate (Class II and III) rapids. Most trail work will be done on layover days. We will share kitchen chores, scenery, and perhaps a water fight or two as we follow the path of Major Powell's first expedition to the Grand Canyon. Previous rafting experience is not necessary. *If a large number of applications is received in January, a lottery may be held to allocate available space.*

[87200] Upper Pine Creek, John Muir Wilderness, Sierra—July 30–August 9. *Leaders, Deborah Northcutt and Ann Stork, 1109 S. Plaza Way, Flagstaff, AZ 86001.* Join us as we build a causeway on a high alpine trail in the John Muir Wilderness. This vast roadless area cut by the Sierra Crest encompasses hundreds of lakes, with 17 summits exceeding 13,000 feet. After our work is completed we will

Steve Ottinger

move over the crest into French Canyon, where we can dayhike, fish, swim, and relax in this wild area.

[87201] Trout Lake Trail Maintenance, Selkirk Mountains, Panhandle Forest, Idaho—August 1–11. *Leader, Bob Wolf, 2145 Bonnie Ln., Minneapolis, MN 55422. Cook, To Be Announced.* Nestled below Pyramid Peak, Trout Lake is the site of our base camp. From nearby Parker Ridge we will have panoramic views of the Selkirk range and an overlook of Long Canyon, the region's proposed wilderness area. Our work project will involve new trail construction and general trail maintenance, such as installing waterbars and cutting brush. Free days offer hikes to nearby peaks or lakes for fishing and swimming. Wildlife in the area includes moose, eagle, and marmot. This is a moderate to strenuous trip.

[87202] Joulious Creek Trail Maintenance, Wasatch Forest, Utah—August 3–13. *Leader, John Fischer, 1312 Orange Ave., Menlo Park, CA 94025. Cook, Rob Dorival.* The Uintas Wilderness 100 miles northeast of Salt Lake City contains the highest east-west mountain range in the United States, with elevations from 8,000 feet to 13,442-foot Gilbert Peak, the second highest in Utah. Our work project will include general trail repair and possibly some fence building. During our free time we can hike, climb peaks, fish, watch moose, or just relax. The changeable weather at this time of year and the high altitude make this a moderately strenuous trip.

[87203] Lost Man Trail Construction, White River Forest, Colorado—August 3–13. *Leader, John Stansfield, Box 588, Monument, CO 80132. Cook, Dave Frederick.* Most of this section of the Lost Man Trail in the Hunter Fryingpan Wilderness has been relocated to bypass the boggy floor of this beautiful, high (12,000') alpine valley. We will be reconstructing tread and building rock turnpikes through the rest of the wet areas. Dayhike opportunities abound, and fishing is good at Lost Man and Independence lakes, as well as in Lost Man Creek and the upper Roaring Fork River. A four-mile hike in from the 11,000-foot trailhead gives this trip a moderate rating.

[87204] Glacier Trail Eradication Project, Eagle Cap Wilderness, Oregon—August 9–19. *Leader, Bob Hayes, 1891 Happy Ln., Eugene, OR 97401. Cook, Louise McCracken.* A ten-mile hike will take us to our alpine base camp near Frazier Lake, high in the Eagle Cap Wilderness. We will be hiking up to two miles a day to reach our work project—eradicating the old trail to Glacier Lake through revegetation, rock removal, and installation of check dams and waterbars. On free days we can dayhike to ridges and peaks (including Eagle Cap at 9,600') or to the many glacially carved lakes for fishing and swimming. Join us for this enjoyable and rewarding, moderate to strenuous trip.

[87205] Teen's Trail Work Trip, Sierra Forest, Sierra—August 14–24. *Leaders, Brian Ilfeld and John Laguardia, C-14 E. Court, Pomona College, Claremont, CA 91711. Cook, Gretchen Muller.* Join the Sierra Club's first trail maintenance trip exclusively for teens ages 16 to 19. The John Muir/Pacific Crest Trail between Pocket Meadow and Silver Pass requires new erosion protection. Our base camp about five miles below Silver Pass will allow free-day visits to Silver Pass (10,900'), Goodale Pass (11,000'), and numerous lakes in the area. This trip is strenuous. *Note: Although this is the only service trip specifically for teens, all service trips welcome teens 16 to 19 years old.*

[87206] Baxter Park Canoe and Bog-Bridging, Maine—August 15–23. *Leader, Mike Blaschke, 8 Judith Pl., Longview, WA 98632.* On day one we'll paddle eight miles across Matagamon Lake and set up camp. We'll work with park personnel building cedar bog bridges and clearing old logging trash along the marshy last section of the Freezeout Trail. We may move camp once to stay close to our worksite. Baxter Park's 200,000 acres are a haven for wildlife; we should see moose, beaver, deer, and maybe bear. We may find blueberries as well. At trip's end we'll paddle back out and have time for bagging Baxter Peak and traversing the famous (infamous!) Knife Edge. This trip will be moderately strenuous.

[87207] Lost Creek Trail Construction, Pike Forest, Colorado—August 15–25. *Leader, Laura Shaw, 10002 Pescadero Rd., Loma Mar, CA 94021. Cook, Maggie Puchnicki.* Wildflowers in a rainbow carpet, the rustle of aspens, the rush of the creek, clear sunny days, and crisp cool nights: August in the Lost Creek Wilderness offers all this and more. This year's trip will go deep into the wilderness, re-routing and constructing new trail. From the isolation of our 11,000-foot base camp, surrounded by canyons, peaks, and trout-filled lakes, we may see elk, bighorn sheep, or mountain goats.

[87208] Fishhawk Creek Trail Construction, Washakie Wilderness, Wyoming—August 16–26. *Leader, Jack Brautigam, 3043 NW 62nd St., Seattle, WA 98107. Cook, To Be Announced.* A 1981 flood destroyed the Fishhawk Creek Trail, which provided foot and horse access to the remote Thoroughfare region southeast of Yellowstone Park. This will be our second year in the area reconstructing the obliterated portions of the 17-mile trail. The hiking and work will be strenuous. We will be surrounded by 11,000-foot ridges, large meadows, and deep, forested canyons containing glaciers and grizzly bears.

[87209] Teton Wilderness Trail Maintenance, Bridger-Teton Forest, Wyoming—August 18–28. *Leader, Conrad Smith, 838 Eddystone Ave., Columbus, OH 43224. Cook, Johnna Tipton.* Our project site will be across the Snake River Valley from the Teton range, about a day's walk south of Yellowstone Park. On free days we can explore, fish, photograph, swim, lounge in the sun, look for wildlife, or enjoy the solitude of the largest roadless area in the lower 48 states. The undulating meadows and lodgepole pine forests vary from 7,000 to 10,000 feet, with excellent views from the higher elevations. Wildlife in the area includes elk, deer, moose, black and grizzly bears, and perhaps a few timber wolves. Come join us in this truly remote wilderness.

[87210] Minarets Avalanche Cleanup, Ansel Adams Wilderness, Sierra—August 20–30. *Leader, Gwen Jarrel, 1043 Oxford St., Berkeley, CA 94707. Cook, Pam Robinson.* The Ansel Adams Wilderness (formerly the Minarets Wilderness) is known for its rugged country, but we'll be camping and working in a more gentle forested area on the west side. The Stevenson Meadow Trail was closed by a large avalanche; we will be cutting and hauling out the downed trees to reopen the trail. A ten-mile hike brings us to our camp on the edge of Stevenson Meadows (8,800'). The nearby North Fork of the San Joaquin River will provide good swimming and fishing opportunities. This trip will be moderate.

[87211] Lyle Canyon Trail Maintenance, Yosemite Park, Sierra—August 23–September 2. *Leader, Kevin Havlik, 1645 Princeton Ave., Salt Lake City, UT 84105. Cook, Jane Geddes.* The northern end of the John Muir Trail between Tuolumne Meadows and Donohue Pass was damaged by avalanches in the winter of 1985–86. We'll be removing and cutting off old tree stumps and repairing switchbacks in the spectacular Yosemite backcountry eight miles from the meadow. On free days, nearby Mt. Lyle (the highest in Yosemite) beckons, as do fishing, photography, botany, or just relaxing. Bear, eagle, snow, and frost are not unusual at this time of year. This trip will be moderate to strenuous.

[87212] Mt. Hood Timberline Trail Maintenance, Cascade Range, Oregon—August 23–September 2. *Leader, Rick Zenn, 1405 SW Park, Suite 21, Portland, OR 97201.* One of the premier hikes in the Pacific Northwest, the Timberline Trail circles Oregon's highest peak, Mt. Hood (11,245'), with a 40-mile wilderness sampler of alpine meadows, lush forests, glacial streams, and exceptional views. Beginning and ending at the famed Timberline Lodge, we will travel at an average elevation of 6,000 feet, backpacking for several days and then establishing base camps to work on various wilderness restoration projects. No previous experience is required, but packs and climbs make this a moderate to strenuous trip. Wildflower- and glacier-lovers welcome!

[87213] Sierra Club's Own Trail Construction Project, Sierra Forest, Sierra—August 27–September 6. *Leader, Dale Hekhuis, Box 3717, Carmel, CA 93921. Cook, To Be Announced.* The magnificent Lake of the Lone Indian is the setting for our base camp and work project performing meadow restoration and completing work on switchbacks and waterbars on the Goodale Pass Trail. We will be north of the pass, near the intersection with the Pacific Crest Trail, in one of the most scenic parts of the Sierra. Both the hike in and the work will be difficult. This will be a strenuous trip.

[87214] Boundary Waters Canoe Trip, Boundary Waters Canoe Area, Minnesota—September 4–14. *Leader, Willy Mah, 1301 W Eddy St., Chicago, IL 60657. Cook, Margery Lazarus.* The cries and wails of loons will accompany us as we repair portages, build trail, and revegetate campsites. We'll canoe portions of the early trade routes used by voyageurs to transport furs. Come experience the North Woods moving toward fall, and see and hear the wildlife from the vantage point of clear, sky-blue lakes.

[87215] Baxter Trail and Foliage, Maine—September 6–13. *Leader, Scott Whitcomb, 12 Shirley St., Lynn, MA 01904.* The first few maples along the water's edge should have just turned scarlet when we set up base camp at South Branch Pond Campground. On the North Traveler Trail and other trails in the area, we'll be clearing brush and blowdowns, improving the treadway, and continuing our work on the new connecting trail. Swimming and canoeing on the pond will be a welcome option after the day's hard work, and there should still be some blueberries in the area. At week's end we'll take a day to climb the Katahdin Peaks and the exhilarating Knife Edge. The trip will be moderately strenuous.

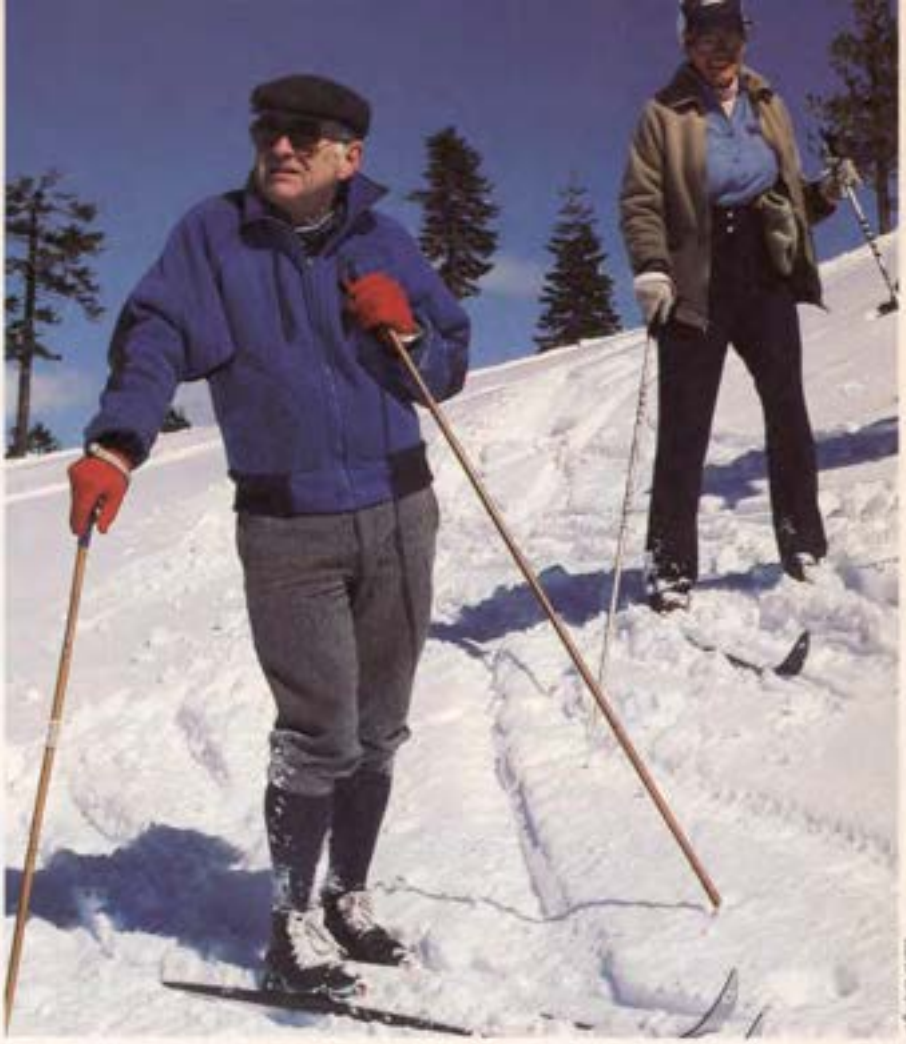
[87216] Mt. Whitney Trail Maintenance, Inyo Forest, Sierra—September 6–16. *Leaders, Dan Bittle and Stuart Swan, 3702 Pontiac St., La Crescenta, CA*

91214. We will base camp at Whitney Portal Campground in the Lone Pine Creek drainage below Mt. Whitney. We will work the first half of the trip repairing the main trail up the highest mountain in the continental United States. When our work is completed, we will climb 2,800 feet in five miles to camp at 10,800 feet. A side trip to the top of the mountain is possible. There will be time for dayhikes, fishing, and climbing the many peaks in the area for beautiful views into Sequoia National Park. This trip is moderate to strenuous.

[87217] Oswegatchie Wilderness, Adirondack Forest Preserve, New York—September 13–19. *Leader, John L. Kolp, 453 Warren St., Brooklyn, NY 11217.* The Oswegatchie Wild River flows through magnificent forests in the northwest quadrant of the Adirondack Forest Preserve. This popular canoeing area features numerous hiking trails that start at the river and penetrate the deep woods. These trails have been maintained only minimally during the last decade. We will canoe upriver and base camp at High Falls to build bog bridges and do other necessary trail maintenance under the supervision of forest rangers.

[87218] Ice Age Trail/Grandfather Falls Trail Construction Project, Lincoln County, Wisconsin—September 15–25. *Leader, Ann Diamond, 574 Santa Clara Ave., Berkeley, CA 94707. Cook, To Be Announced.* The thousand-mile Ice Age Trail traverses the varied post-glacial landscape of Wisconsin. We'll parallel the course of the Wisconsin River, removing brush and trees and installing signs to complete a four-mile gap in the existing system. We should see trees ablaze in fall colors from our base camp at the roadhead. Local naturalists will lead free-day trips to study the local geology. This trip will be moderate.

[88363] Ozark Trail, Arkansas—October 25–31. *Leader, Rick Rice, 1100 N. Sycamore, Creston, IA 50801.* Enjoy the fall colors of the Ozarks while building a section of the newly developed Ozark Trail. Our work will take place in the Buffalo River National Scenic River Area of northern Arkansas. This is some of the most beautiful country in the Ozarks, with hilly, rugged terrain heavily forested with hardwoods. We will work from a base camp, with time for dayhikes and exploration. Eventually the Ozark Trail will be a 500-mile path from northwestern Arkansas to the outskirts of St. Louis.



Carol Derwyn

SKI TRIPS

Sierra Club ski trips offer unique opportunities to experience winter wilderness in places even backpackers can't go.

Our trips usually follow one of two formats. Participants may stay in a central camp and take day or overnight trips from that location, or the trip may be a series of moves from camp to camp. Some trips combine both formats.

Trips vary in difficulty from those suitable for beginners to those requiring some ski-touring experience. Please see the Foreign Trip section for additional ski trips.

[87316] Adirondack Ski Tour, New York—February 1–6. *Leader, Walter Blank, RD 1, Box 85, Ghent, NY 12075.* This trip takes us through the heart of the Adirondack Forest Preserve with a different destination each night. We traverse hidden valleys, ski through high mountain passes, and cross frozen wilderness lakes. Some of the scenery is the most spectacular in the eastern United States. Your baggage will be transported for you from inn to inn. The trip leader is a certified Nordic instructor.

[87050] Wildriver-Jackson Area Ski Tour, White Mountains, New Hampshire—March 22–27. *Leader, John Rogers, 310 Monroe St., Ithaca, NY 14850.* North of Franconia and Crawford notches, old roads and trails provide outstanding cross-country touring. We may visit iced-over Thoreau Falls and ski to Hall's Ledge lookout for the long winter views. We'll ski over frozen ponds and through white birch groves, making our plans each day when we leave our comfortable farmhouse lodging. Some days will be long and some trails quite steep; the trip is moderate with strenuous options. Skiers should be of intermediate level with experience off groomed tracks.

WATER TRIPS

Water trips are a very special way of getting into wilderness physically and mentally. To become part of a river, going where it flows on a moving pathway through time and space, is an unforgettable experience. Whether it's a whitewater adrenaline rush or a slackwater canoe trip, closeness to nature is a constant.

Some of the rivers we run belong to the Wild and Scenic River System; others are threatened by dams and the battle for their preservation continues. A trip down any of them will show you how important it is to save the free-flowing waters that remain.

Involved volunteer trip leaders and coordinators, trained within the Sierra Club, add a meaningful dimension to the experience often missing on commercial trips.

RAFT

Raft trips combine the excitement of whitewater rapids with the natural wonders of wild river areas. Sierra Club leaders and coordinators are carefully selected to provide safe equipment and good food. Through their background, training, and interest, they bring to the job a knowledge of conservation problems and a better understanding and appreciation of the wilderness. Sierra Club trips are oar-powered with relatively small rafts—no motor fumes, no noise.

On paddle-raft trips, participants power the rafts themselves under the guidance of experienced boatmen. Participants quickly learn to read the river and maneuver their raft through whitewater, experiencing the power and serenity of the river. Trip members also participate fully in the chores of a river camp and feel the camaraderie and sense of teamwork that comes from playing and working together.

[87220] Trinity River Paddle Raft, California—July 6–10. *Leader, Gary Larsen, 13777 Lava Dome Way, Nevada City, CA 95959.* This paddle trip puts in at Douglas City in view of the Trinity for 40 miles of participatory paddling and fun. The area is rich with evidence of early human habitation and placer gold mining. The Trinity River is clear and fresh, and the rapids provide many thrills but are fairly safe. Participants will be trained to paddle, and will all be accomplished rafters by trip's end. Minimum age is 13 for mature, water-safe youngsters.

[87221] Noatak Paddle Raft, Alaska—July 20–August 1. *Leader, Jon Kangas, 10141 Bon Vista Ct., San Jose, CA 95127.* The Noatak is one of Alaska's most alluring rivers, and for good reason! Considered by some to be the finest wild river in the Arctic, the Noatak is in Eskimo country entirely north of the Arctic Circle. The broad, meandering river with occasional riffles, shallows, and standing waves is ideal for paddle rafts. Outstanding mountain scenery surrounds the wide river valley before it spreads out into the tundra. The region is rich in wildlife; sheep, caribou, moose, bear, fox, and wolf abound. Fishing is excellent for arctic char, whitefish, arctic grayling, lake trout, and chum salmon in season. Dayhikes to surrounding peaks and side valleys are planned for layover days. The cost of bush plane travel is not included in the trip price.

[87222] Klamath River Paddle Raft, California—August 3–7. *Leader, Kurt Menning, 997 Lakeshire Ct., San Jose, CA 95126.* On this trip we will traverse scenic canyon country offering abundant wildlife and moderate water temperatures ideal for swimming or just floating around in eddies after a day on the river. Spotting eagle, osprey, blue heron, river otter, deer, bear, and frogs is exciting for adults and children alike, making this an ideal family trip. Minimum age is 13 for mature, water-safe youngsters.

Karen Gans

Photo: Peter Forbes

SAILING

Sailing Trips add a new dimension to the Outing Program. There is nothing to compare with the thrill of traveling under sail in a fresh breeze, the contentment of drifting in light winds with the sun on your face, the discovery of new anchorages and fresh opportunities for activity and leisure. Emphasis will be on the natural history of the marine environment and on conservation issues.

[87224] Island Sailing, Canada's Galápagos—June 25–July 1. *Trip Coordinator, Tris Coffin, 2010 Yampa Dr., Prescott, AZ 86301.* British Columbia's Queen Charlotte Islands form an archipelago with a rare abundance of species. We will see tufted puffins, auklets, bald eagles, and thousands of sea birds. Aboard a luxurious 68-foot sailboat, we will visit the breeding beaches of stellar sea lions, lush intertidal pools, Indian villages, and hot springs. We also hope to spot some of the seven species of visiting whales.

[87225] Totems, Sails, and Orca Whales, A Northwest Sailing Odyssey, British Columbia—July 16–22. *Trip Coordinator, Bill Bricca, Box 159, Ross, CA 94957.*

[87226] Totems, Sails, and Orca Whales, A Northwest Sailing Odyssey, British Columbia—August 29–September 5. *Trip Coordinator, Ruth Dyche, 2747 Kring Dr., San Jose, CA 95125.* Orcas are beautiful, intelligent, predatory marine mammals. In a newly designated marine ecological reserve in Johnstone Strait off Robson Bight, we will observe and photograph at close range the largest number of Orca pods found anywhere. Knowledgeable naturalists will engage us in observation of other whales and porpoises, the habitats of birds (including bald and golden eagles), the fascinating flora and fauna found in intertidal zones, archaeological sites, and an old Indian village. Participatory sailing, hiking, swimming, and fishing complete our natural history excursion into this fascinating region. Our luxurious 60-foot vessel offers comfortable accommodations, a natural history library, and a fine galley offering excellent foods, including native salmon.

[87227] The Great Pacific Northwest Sailing and Natural History Adventure, Gulf/San Juan Islands Archipelago, British Columbia/Washington State—September 7–12. *Trip Coordinator, Karen Short, 826 14th St., San Francisco, CA 94114.*

[87228] The Great Pacific Northwest Sailing and Natural History Adventure, Gulf/San Juan Islands Archipelago, British Columbia/Washington State—September 13–18. *Trip Coordinator, Grace Hansen, 1114 Sutherland Ln., #3, Capitola, CA 95010.* Come join this naturalist-highlighted motor-sail trip through the Gulf Islands–San Juan Islands archipelago situated between Vancouver and Victoria. September is an ideal time of year to visit; summer crowds are gone and the weather is warm, mellow, and Mediterranean. Members will board a beautiful 68-foot, eight-bedroom schooner-rigged ship and sail among the sheltered, sometimes lushly vegetated islands. Observation of orca and minke whales, porpoises, seals, sea lions, many species of seabirds, and an extensive array of intertidal flora and fauna is expected. Hikes and walks will be through maritime parks, coastal villages, a whale museum, and the city of Victoria, with its world-class natural history museum and nearby Bouchart Gardens. There will be ample time for hiking, fishing, clamming, swimming, resting, reading from an onboard natural history library, and enjoying excellent meals.

CANOE

Michael Bisbiglia

Canoeing is a unique do-it-yourself way to reach pristine wilderness. Experience the tranquillity of paddling placid water or the exhilaration of running wild water; add to this beach camping, side canyon exploring, swimming, and just plain relaxing, and you have the ingredients for a great wilderness experience.

Trips are scheduled for most months of the year in many parts of the country and are planned to accommodate a wide range of skills.

Food, river equipment, and some instruction are generally provided. Canoes are not provided, but rental information will be supplied by the trip leader. Leader approval is required. You will be expected to share in the camp chores.

Participants must be in good health and, except where noted otherwise in the trip supplement, capable of paddling, kneeling, lifting, and swimming. Canoe trips are graded as follows:

Grade A: No canoeing experience required.

Grade B: Some canoeing experience required.

Grade C: Canoeing experience on moving water required.

Grade D: Canoeing experience on whitewater required.

[87028] Dismal Swamp Canoe Base Camp, Virginia/North Carolina—April 12–18. *Leader, Bob Holcomb, 819 Fairway Dr., Waynesboro, VA 22980.* Southward from Norfolk, Va., into North Carolina, the Great Dismal Swamp comprises an area of lowlands, lakes, and rivers fed by tributaries of swamp origin. The swamp isn't really "dismal," and we should see or hear spring warblers and other birds, frogs, snakes, and budding flora while beating the mosquito season. Our base camp will be near the Northwest River, where exploratory daytrips to tributaries and backwaters are planned, along with trips to Lake Drummond, Merchants Mill Pond (with moss-draped cypress and tupelo), and the Outer Banks. This is a flatwater trip, but the possibility of high winds on open stretches requires some previous canoe experience. (Grade B)

[87230] Wabakimi Provincial Park, Ontario, Canada—July 19–August 1. *Leader, Larry Ten Pas, 2413 S. 15th St., Sheboygan, WI 53081.* In the land of loons, yellow pickerel, and aurora borealis, a new provincial park with no road access has been designated approximately 200 miles north of Thunder Bay. This is typical Canadian shield country of rocky rivers and lakes. The canoe will serve as our transport for about 100 miles, with some portaging around rapids and falls. Time is planned along the way for swimming, fishing, photography, and berry-picking. (Grade C)

[87231] Maine Wilderness, West Grand Lake Chain of Lakes—August 9–15. *Leader, Bob Holcomb, 819 Fairway Dr., Waynesboro, VA 22980.* This trip includes flatwater canoeing in an exceptionally beautiful area of rolling hills in deep forest up to 1,100 feet. We will travel 55 miles through eight unspoiled lakes and connecting streams. It's great country to hone skills in canoe camping and long-distance paddling. On our layover day, we'll explore an intimate water system of tiny lakes, small streams, and a bog with moose tracks, pitcher plants, wild cranberries, and high bush blueberries. We might see moose, bald eagles, loons, blue herons, and small-mouth bass and perch. Our pace, though moderate, requires endurance and a willingness to portage up to half a mile. (Grade B)

[87232] Boundary Waters Canoe Area Wilderness, Minnesota—August 13–21. *Leader, Sharon Kaufman, RR #1, Box 124, Calamus, IA 52729.* Explore this wilderness of lakes and loons beneath the northern lights. This naturalist-led canoe trip includes an educational component for those who wish to learn more about this area as rich in cultural history as in natural beauty. A layover day and plenty of time for swimming, photography, and personal observations will highlight this wilderness adventure. (Grade B)

[87233] Adirondack Park, New York—August 16–22. *Leader, Connie Thomas, 128 Muriel St., Ithaca, NY 14850.* New York's Adirondack Park, the largest park in the Lower 48, is noted for its many lakes, rivers, mountains, and forests. We will explore the Saranac Lakes and part of the Racquette River in our week of mostly easy paddling, staying in wilderness campsites along the route. The trip is planned to avoid almost all portaging and allow ample time for swimming and enjoying the scenery. The possibility of strong winds on the lakes requires that participants have some prior canoe experience. (Grade B)

[87234] Upper Ottawa River, Parc de La Verendrye, Quebec, Canada—August 30–September 6. *Leader, George Neffinger, 207 Lexow Ave., Nyack, NY 10960.* The mighty Ottawa River begins in the tremendous pre-Cambrian Shield, the world's oldest land surface. The region is broken by a newer formation of small mountains blanketed by dense forests. It is not unusual to sight a moose or eagle as we paddle rivers and lakes noted for excellent fishing. There will be time for layovers on our moderate 75-mile circular route. (Grade B)

[88364] Scenic Suwannee, Florida—October 18–24. *Leader, Peter Bengtson, 8009 Chesterfield Dr., Knoxville, TN 37909.* Canoe through forests of cypress and live oak along the Suwannee River and enjoy the wildlife drawn to one of nature's great waterholes. Fall and low water should allow us to view abundant wildlife, white sand beaches, and high bluffs. The Suwannee is fed by the Okefenokee Swamp and many springs. Our trip will be leisurely to moderate, depending largely on the water level. Rental canoes are included in the trip price. (Grade C)

TRIP SCHEDULE

Trip Number	* = Leader approval required	Backpack Rating Key: L = Leisure Trip M = Moderate Trip S = Strenuous Trip	Date	Rating	Trip Fee (including Deposit)	Per Person Deposit	Leader

ALASKA TRIPS *(Also see raft trip #87221.) (Prices do not include airfare to Alaska or charter air costs on most trips.)*

87051	*Kenai Fjords Sea-Kayaking, AK	June 21-July 4		990	70	Carol & Howard Dienger
87052	*Kenai Highlight, AK	June 23-July 2		1020	70	Jerry Lobel
87053	*Alaska's Wildlife to Hawaii's Lush Greenery	June 25-July 10		790	70	Serge Puchert
87054	*Turquoise/Twin Lakes, Lake Clark Park, AK	July 6-15		620	70	Blaine LeCheminant
87055	*Valley of 10,000 Smokes, Katmai Park, AK	July 12-25		990	70	Dolph Amster
87056	*Noatak–Gates of the Arctic Backpack, AK	July 19-Aug. 1		890	70	Wilbur Mills
87057	*Brooks Range, Gates of the Arctic Park, AK	July 19-Aug. 2		890	70	Bob Hartman
87058	*Noatak River Canoe Exploration, Gates of the Arctic Park, AK	Aug. 3-15		1090	70	Sharon Wilkinson
87059	*Atlin Lake Backpack, British Columbia	Aug. 4-14		990	70	Sigrid Miles
87060	*Arctic Mountains and Rivers, Arctic Wildlife Refuge, AK	Aug. 7-15		930	70	Cal French

BACKPACK TRIPS *(See Alaska and Foreign Trips for other backpack outings.)*

87032	*Superstition Mountains—East End, Tonto Forest, AZ	Feb. 15-21	M	225	35	Michelle Bussiere
87033	*Superstition Wilderness Sampler, Tonto Forest, AZ	March 21-28	M-S	295	35	Dan Leeth
87062	*The Grand Canyon—South Rim to the Colorado River, AZ	April 4-11	L-M	315	35	Bob Posner
87034	*Salt Trail—South Rim, Grand Canyon, AZ	April 10-18	S	225	35	Bert Fingerhut
87035	*Galiuro Wilderness, Galiuro Mountains, AZ	April 5-11	M-S	220	35	Sid Hirsh
87036	*Kanab Canyon/Thunder River, Grand Canyon, AZ	April 25-May 2	S	235	35	Peter Curia
87063	*Slickrock Wilderness, Nantahala and Cherokee Forests, NC/TN	April 25-May 2	L-M	265	35	Bob Temple
87064	*Hells Canyon, OR	April 29-May 7	M	315	35	Tom Erwin
87037	*Painted Rocks Leisure Loop, San Rafael Wilderness, CA	May 8-15	L-M	180	35	Len Lewis
87038	*Navajo Mountain/Rainbow Bridge, AZ	May 9-16	M-S	280	35	Bob Marley
87039	*Paria Canyon—Vermilion Cliffs Wilderness Area, AZ/UT	May 17-23	M-S	315	35	Susan Groth
87040	*Sierra San Pedro Martir, Baja California, Mexico	May 20-29	L-M	450	35	Wes Reynolds
87041	*James River Crossing, Jefferson and George Washington Forests, VA	May 23-30	L-M	205	35	Chuck Cotter
87065	*California's Lost Coast and Redwoods	May 24-30	L-M	185	35	Bob Posner & Len Lewis
87042	*Dark Canyon, UT	May 24-31	L-M	340	35	Barry Morenz
87043	*Arch Canyon, Southeast UT	May 31-June 6	L-M	245	35	Belva Christensen
87066	*Black Elk Wilderness, Black Hills Forest, SD	June 7-13	L-M	285	35	Faye Sitzman
87067	*Vermont's Green Mountains	June 21-27	M-S	260	35	Dan Nelson
87068	*Zion Narrows, UT	June 28-July 4	M-S	210	35	Don McIver
87069	*Canyon Paradise, Yosemite Park, Sierra	July 6-14	L	275	35	Patty Biasca & Bill Walsh
87070	*Mt. of the Holy Cross Wilderness Area, White River Forest, CO	July 8-15	M-S	295	35	Carol Benson & Bill Myers
87071	*Alferd E. Packer Special, La Garita Wilderness, CO	July 8-17	M-S	265	35	Bob Berges
87072	*Mt. Hooper Looper, John Muir Wilderness, Sierra	July 11-19	M	210	35	Gary Swanson
87073	*Midway Pass, Hunter Fryingpan Wilderness, White River Forest, CO	July 12-18	L-M	290	35	Fred Gunckel
87074	*Garfield Grove Big Trees, Sequoia Park, Sierra	July 12-19	M	205	35	Ellen Howard

Trip Number	* = Leader approval required	Backpack Rating Key: L = Leisure Trip M = Moderate Trip S = Strenuous Trip	Date	Rating	Trip Fee (including Deposit)	Per Person Deposit	Leader
87075	*Cascade Valley–Fish Creek, Sierra		July 13-20	L	250	35	Wes Reynolds
87076	*Trinity Alps, Mines and Lakes, Trinity Alps Wilderness, CA		July 18-25	L-M	200	35	Jean Ridone
87077	*Lake George, NY		July 19-25	L	230	35	Sally Daly
87078	*Hemlock Crossing, Ansel Adams Wilderness, Sierra		July 19-27	M	210	35	Jim Watters
87079	*Wind River Peaks and Glaciers, Bridger Wilderness, WY		July 19-28	M-S	390	35	Dave Derrick
87080	*Rubicon River Loop, El Dorado Forest, CA		July 19-28	M	275	35	Modesto Piazza
87081	*Jewel of the Northern Rockies—Glacier Park/Bob Marshall Wilderness, MT		July 19-29	M	395	35	Bill Evans & Wayne Chamberlin
87082	*Silver Lake, Sequoia Park, Sierra		July 20-28	M	210	35	Andy Johnson
87083	*Dorothy Lake Leisure Loop, Yosemite Park/ Emigrant Wilderness, Sierra		July 25-Aug. 1	L	225	35	Jeff Mulligan
87084	*Five Acre Lake Leisure, Emigrant Basin, Sierra		July 25-Aug. 2	L	230	35	Helen & Ed Bodington
87085	*Sawatch Range of the Collegiate Peaks, CO		July 25-Aug. 5	M	395	35	Al Ossinger
87086	*Doubletop Mountain Loop, Bridger Wilderness, WY		July 26-Aug. 1	M	315	35	Barbara Beaumont & Eric Sieke
87087	*West Walker Natural History, Sierra		July 26-Aug. 1	L	225	35	Ann Hildebrand
87088	*Miter Basin, Sequoia Park, Sierra		July 26-Aug. 1	M	195	35	Tom Jones
87089	*Rosy Finch Lake, John Muir Wilderness, Sierra		July 26-Aug. 2	M	215	35	Jim Gilbreath
87090	*Big Game Ridge, Teton Wilderness, WY		July 26-Aug. 4	M-S	370	35	K. Patrick McClanahan
87091	*Yosemite Panoramic View, Sierra		July 30-Aug. 8	L	280	35	Joe Davis
87092	*Yosemite South Leisure, Sierra		July 30-Aug. 8	L	260	35	Phil Gowing
87093	*Yosemite's High Sierra–A Beginner's Backpack for Women		Aug. 1-8	L-M	215	35	Roz Bray
87094	*Rogue River Canyon, OR		Aug. 1-8	L-M	435	35	Carolyn Downey
87095	*Across the Mono Divide, John Muir Wilderness, Sierra		Aug. 2-9	M-S	255	35	Jack Wickel
87096	*North Fork Falls Leisure, Bridger-Teton Forest, WY		Aug. 3-10	L-M	340	35	Bill Bell
87097	*North Palisade Circuit, Inyo Forest, Sierra		Aug. 3-10	M-S	225	35	Chuck Schmidt
87098	*Lakes Plateau, Absaroka-Beartooth Wilderness, MT		Aug. 6-15	M	340	35	Dwight Taylor
87099	*Sequoia Redwoods and Lakes, Sequoia Park, Sierra		Aug. 7-15	M	210	35	Don Lackowski
87100	*Sonora Pass to Tuolumne Meadows, Yosemite Park, Sierra		Aug. 7-16	M-S	225	35	Jim Carson
87101	*Evolution–Mt. Goddard Loop, Kings Canyon Park, Sierra		Aug. 7-16	L-M	235	35	Diane Cook
87102	*Matterhorn Canyon Loop, Toiyabe Forest, Sierra		Aug. 8-18	M	290	35	Sy Gelman
87103	*Teton Backcountry, Grand Teton Park, WY		Aug. 9-15	M-S	360	35	E. Allan Blair & Caroline Hicks
87104	*Yosemite Beginner's Backpack		Aug. 9-15	L	195	35	Suzanne Swedo
87105	*Thunder Mountain, Kings Canyon and Sequoia Parks, Sierra		Aug. 11-20	M-S	270	35	Patrick Colgan
87106	*Absaroka-Beartooth Wilderness, MT		Aug. 11-21	M-S	395	35	Chuck Shinn
87107	*Women's Beginner Backpack, Ansel Adams Wilderness, Sierra		Aug. 15-22	L	225	35	Carol Hake
87108	*Mt. Ansel Adams Revisited, Yosemite Park, Sierra		Aug. 15-23	L-M	330	35	Don Donaldson
87109	*Ritter Range Leisure, Ansel Adams Wilderness, Sierra		Aug. 15-23	L	230	35	Hal Fisher
87110	*Red Devil Lake, Yosemite Park, Sierra		Aug. 15-23	L-M	265	35	Fred Schlachter
87111	*Hopkins Basin, John Muir Wilderness, Sierra		Aug. 16-23	L-M	260	35	Jim Gilbreath
87112	*Circumambulating the White Clouds, Sawtooth Recreation Area, ID		Aug. 17-28	L-M	430	35	Sheri Serna
87113	*French Canyon/Bear Lakes, John Muir Wilderness, Sierra		Aug. 19-26	M-S	220	35	Bill Engs
87114	*Ritter Range and Sierra Crest Peakbagging, Sierra		Aug. 20-29	S	285	35	Howard Drossman
87115	*Cartridge Pass Peakbagging, Kings Canyon Park, Sierra		Aug. 21-29	M-S	220	35	Vicky Hoover
87116	*Clark Range, Ansel Adams Wilderness/Yosemite Park, Sierra		Aug. 21-30	M-S	255	35	David Reneau
87117	*Baxter State Park, ME		Aug. 22-29	M	350	35	Leonard Frank

Trip Number	* = Leader approval required	Backpack Rating Key: L = Leisure Trip M = Moderate Trip S = Strenuous Trip	Date	Rating	Trip Fee (including Deposit)	Per Person Deposit	Leader
87118	*Kaweah Basin, Sequoia and Kings Canyon Parks, Sierra		Aug. 23-Sept. 1	M-S	250	35	Bob Madsen
87119	*Behind Mt. Whitney, Sierra		Aug. 24-Sept. 1	M	235	35	Letty & Cal French
87120	*Mt. Goddard Panorama, Kings Canyon Park, Sierra		Aug. 24-Sept. 2	M	235	35	Marilyn & Dan Smith
87121	*Yellowstone Waterfalls, Yellowstone Park, WY		Aug. 25-Sept. 3	L	330	35	Sue J. Estey
87122	*No Name Plateau, Sequoia Park, Sierra		Aug. 26-Sept. 5	S	255	35	Gordon Peterson
87123	*Sky Blue Loop, Cottonwood Lakes to Mt. Whitney, Sierra		Aug. 29-Sept. 6	M-S	225	35	Sandy Sans
87124	*Kings-Kern Divide, Kings Canyon and Sequoia Parks, Sierra		Aug. 29-Sept. 7	M-S	235	35	Joe Uzarski
87125	*Crawford to Kinsman Notch, White Mountain Forest, NH		Aug. 30-Sept. 6	S	315	35	Caroline Hicks
87126	*Ionian Basin, Kings Canyon Park, Sierra		Sept. 4-12	M-S	240	35	Frances French
87127	*Upper Basin, Kings Canyon Park, Sierra		Sept. 9-19	L-M	300	35	Mac Downing
87128	*"O Be Joyful," Gunnison Forest, CO		Sept. 13-19	L-M	290	35	John Lutz & Bill Myers
87129	*Bryce Canyon, Bryce Park, UT		Sept. 19-26	M-S	350	35	Michelle Bussiere
88350	*Adirondack Park—Long Lake to Algonquin, NY		Sept. 26-Oct. 4	L-M	300	35	Sally Daly
88351	*Tanner–Hance Trails, Grand Canyon, AZ		Sept. 27-Oct. 2	M-S	230	35	Bob Madsen
88352	*Canyon and Slickrock Hiking, Bureau of Land Management Wilderness Study Areas, UT		Oct. 3-10	S	240	35	Bert Fingerhut
88353	*Zion Backcountry, UT		Oct. 4-10	M-S	210	35	Don McIver
88354	*Escalante Wildlands, UT		Oct. 10-17	M	300	35	Bob Hartman
88355	*Thunder River/Deer Creek, Grand Canyon, AZ		Oct. 10-17	M-S	265	35	John Ricker
88356	*Pine Barrens Environmental Issue Excursion, Wharton State Forest, NJ		Oct. 11-17	L	275	35	E. Allan Blair & Joan Goldstein
88357	*Appalachian Trail, Nantahala Forest, NC		Oct. 18-24	M	260	35	Marjorie Richman & Rosemary Brinko
88358	*Ozark Highlands Trail, Ozark Forest, AR		Oct. 18-24	M	285	35	Larry Ten Pas

JUNIOR BACKPACK TRIP

87130	*Sawtooth Ridge, Yosemite Park, Sierra		July 26-Aug. 2	L-M	220	35	Rick McEwan

BASE CAMP TRIPS *(See Family, Foreign, Hawaii, and Canoe Trips for other base camp outings.)*

87025	Anza-Borrego Natural History, Anza Borrego Park, CA	March 21-28		205	35	Carol Baker
87027	East Mojave Scenic Area, CA	April 11-18		255	35	Joanne Barnes
87132	Scenic Golden Gate, Golden Gate National Recreation Area, CA	June 21-27		375	35	Betty Watters
87133	Donner-Tahoe Exploration, Sierra	July 12-19		330	35	George Appel
87134	Joe Crane Lake, Ansel Adams Wilderness, Sierra	July 18-30		460	35	Bill Davies
87135	Deer Creek, Trinity Alps Wilderness, CA	July 19-26		385	35	John Esterl
87136	Golden Trout Alpine Camp, John Muir Wilderness, Sierra	July 23-31		395	35	Sandy Sans
87137	Rangeley Lakes, ME	Aug. 2-8		340	35	Bob Holcomb
87138	Glacier Park Photography, MT	Aug. 9-16		485	35	Howard Drossman
87139	Historical Meadow Lake, Tahoe Forest, Sierra	Aug. 23-29		240	35	Bob Ruff
87140	Fall Alpine Camp, Clark Range, Sierra	Sept. 7-18		445	35	Mildred & Tony Look
87141	Havasu Canyon–Grand Canyon, AZ	Sept. 19-26		475	35	John Malarkey
87142	Monument Valley Photography, Navajo Tribal Park, UT	Sept. 20-27		415	35	Tom Roy
88359	Everglades Park, FL	Dec. 26-31		305	35	Vivian & Otto Spielbichler

Trip Number	* = Leader approval required	Date	Price Per Adult	Price Per Child	Trip Fee (including Deposit)	Per Person Deposit	Leader

BICYCLE TRIPS *(See Foreign Trips for other bicycle outings.)*

87144	*Chesapeake Bay, Eastern Shore, MD	June 7-13			335	35	Alice Van Deburg
87145	*Wisconsin Hills and Valleys	June 7-14			295	35	John Arthur & Diane Zelman
87146	*Vermont Bicycle Tour	June 14-20			335	35	Margaret L. O'Neil
87147	*Cycling Nova Scotia, Canada	June 21-28			340	35	Eileen M. O'Connor
87148	*Northern California Coast Bike Tour	July 25-Aug. 2			260	35	Debbie Sakarias
87149	*The Golden Triangle Bicycle Tour, Canada	Aug. 2-9			325	35	JoAnn & Paul Von Normann
87150	*Finger Lakes "Grand Tour," NY	Aug. 16-22			280	35	Frank Traficante
87151	*Cape Cod Bicycle and Island Tour, MA	Sept. 13-19			265	35	John Rogers
87152	*Yosemite Sampler—Bike and Hike, Sierra	Sept. 13-20			340	35	Bill Lande

BURRO TRIPS

87026	*Panamint Mountains, Death Valley, CA	April 4-11			420	35	Steve Akeson
			Price Per Adult	Price Per Child			
87154	*Peeler Lake Family Trip, Yosemite Park/Toiyabe Forest, Sierra	Aug. 1-8	390		260	35	Don White
87155	*Pancakes and Passes, Canyons and Asses, Yosemite Park, Sierra	Aug. 8-15			395	35	Robin Spencer
87156	*Across Northern Yosemite, Sierra	Aug. 15-22			395	35	Linda Coffin & Don Bain
			Price Per Adult	Price Per Child			
87157	*Ten Lakes Family Trip, Yosemite Park, Sierra	Aug. 22-29	390		260	35	Dan Holmes

FAMILY TRIPS *(See Base Camp, Burro, Hawaii, and Service Trips for other suitable family outings.)*

Wilderness Threshold Trips

			Price Per Adult	Price Per Child			
87159	*Little Harbor Wilderness Threshold, Channel Islands, CA	June 21-28	350	235	35	Wanda & Tom Roy
87160	*Golden-Honeymoon Lakes, John Muir Wilderness, Sierra	July 20-26	405	270	35	Beth & Bob Flores
87161	*Acadia Toddler Tromp, Acadia Park, ME	July 25-Aug. 1	195	130	35	Ken Limmer
87162	*Clair Tappaan Family Week, Sierra	July 29-Aug. 4	285	190	35	Beth & Bob Flores
87163	*Emerald Lake Basin, John Muir Wilderness, Sierra	Aug. 1-8	435	290	35	Carol Baker

The above five trips require a minimum reservation of one adult and one child.

FOREIGN TRIPS *(Prices do not include airfare.)*

87895	*Ski Touring in Norway	March 21-April 5	2135	100	Bob Paul
87905	Costa Rica Natural History	March 12-27	2100	100	Richard Taylor
87910	*Annapurna Sanctuary and Jungle Safari, Nepal	March 23-April 11	1485	100	John Garcia
87915	*A Hiker's View of China	April 16-May 5	2810	100	Bud Bollock
87920	*Kangchenjunga, Nepal—"The Five Treasuries of the Great Snow"	April 18-May 24	1560	100	Peter Owens
87927	*Snorkling and Birdwatching in Las Islas Tres Marias, Baja California, Mexico	May 30-June 6	1285	100	Victor Monke
87930	*North of England Walking Tour	June 4-20	1975	100	Robin Brooks

Trip Number	* = Leader approval required	Date	Trip Fee (including Deposit)	Per Person Deposit	Leader
87935	Adventure in Eastern Turkey	June 15-July 8	3070	100	Ray Des Camp
87940	*Highlands and Islands of Scotland	June 10-July 6	2805	100	Mildred & Tony Look
87945	*The South of France—Biking Provence	June 16-28	2005	100	Lynne Simpson & Richard Weiss
87947	*The Unknown Pyrénées, Spain	June 20-July 3	1590	100	Joe Lee Braun
87950	*African Wildlife Safari: Northern Tanzania	June 27-July 13	2520	100	Mary O'Connor
87955	*Unspoiled France—The Massif Central	July 2-15	1615	100	John Doering
87960	*Bike and Hike in Ireland	July 7-20	1380	100	Len Lewis
87965	*Swat-Hunza-Kashgar Trek, Pakistan and China	July 12-Aug. 10	2995	100	Bud Bollock
87970	*Kenya Expedition Adventure—On Horseback, On Foot, and by Land Rover, Africa	July 13-Aug. 2	TBA	100	Lynn Dyche
87972	*Second Annual British Service Trip, England/ Wales	July 18-Aug. 8	825	100	David Brown
87975	*Hut-Hopping in the Dolomites, Italy	July 19-Aug. 1	1495	100	Fred Gooding
87980	*Appenzell and the Lötschental, Switzerland	July 20-31	1690	100	Ray Simpson
87982	*Peruvian Adventure—Machu Picchu, the Inca Trail, and the Amazon	July 26-Aug. 16	2520	100	David Horsley
87985	*Hiking in the Rondane Mountains, Norway	Aug. 4-14	1035	100	Bert Gibbs
87986	*Scottish Service Trip, I	Aug. 14-25	550	100	Don Coppock
87987	*Scottish Service Trip, II	Aug. 25-Sept. 4	495	100	Don Coppock
87990	Victoria Falls and the National Parks of Zimbabwe, Africa	Sept. 6-18	2970	100	Pete Nelson
88995	*Exploring Israel	Sept. 12-Oct. 1	TBA	100	Ray Des Camp
87997	*Montafon Valley and the Stubai Alps, Austria	Sept. 17-29	1845	100	Walt Goggin
88500	*Touring the Mosel Valley, West Germany	Sept. 27-Oct. 10	2125	100	Lynne McClellan-Loots
88501	*Autumn in the Alps of Japan	Sept. 27-Oct. 14	3870	100	Emily, Gus, & Alan Benner
88502	*Sea-Kayaking in Baja California, Mexico	Oct. 24-30	780	100	Hunter Owens
88505	*Ganesh Sanctuary, Nepal	Oct. 24-Nov. 16	1390	100	Bob Madsen
88510	*Lamjung Himal Trek, Nepal	Nov. 21-Dec. 7	1175	100	John DeCock
88512	*Summertime Trek in the National Parks of Australia and Tasmania	Dec. 15, 1987-Jan. 2, 1988	2170	100	Pete Nelson
88515	*Gorkha Christmas Trek, Nepal	Dec. 19, 1987-Jan. 2, 1988	895	100	Peter Owens
88517	*Cross-Country Skiing in the Austrian and Swiss Alps	Dec. 19, 1987-Jan. 3, 1988	2300	100	Wayne Woodruff
88520	*South China Hike, Hong Kong	Dec. 20, 1987-Jan. 2, 1988	1260	100	Phil Gowing
88525	*Patagonia Overland Expedition, Argentina/Chile	Jan. 31-Feb. 23, 1988	TBA	100	Bill Evans
88530	*Cross-Country Skiing in the Austrian Tyrol	Feb. 7-22, 1988	TBA	100	Carolyn Steinmetz
88535	Wander Down Under, New Zealand	Feb. 24-March 18, 1988	TBA	100	Vicky Hoover
88540	*Arlberg Ski Adventure, Austria	March 19-26, 1988	1610	100	Ann Hildebrand

HAWAII TRIPS *(Also see Alaska trip #87053.) (Prices do not include airfare.)*

87029	Easter on Maui	April 18-26	540	70	Carolyn & Joe Braun
87165	*Bicycle Tour of Kauai	June 21-July 4	755	70	John Ruzek
		Price Per Adult	Price Per Child		
87166	Volcanoes and Beaches, Big Island of Hawaii	Aug. 1-9 460	305	35	Karen & Stan Johnsen

HIGHLIGHT TRIPS *(See Alaska and Base Camp Trips for other highlight-type outings.)*

87030	Cedar Mesa Geology/Archaeology, UT	May 3-8	475	35	Serge Puchert
87031	Canyonlands, Bridges, and Arches of Southern UT	May 22-31	465	35	Carolyn Downey
87168	Oregon's High Desert: Llama Trek and Natural History Field Seminar	May 30-June 6	610	70	Stosh Thompson

Trip Number	* = Leader approval required	Date	Trip Fee (including Deposit)	Deposit	Leader
87169	Birds of the Arizona Borderlands	July 18-26	850	70	Richard Taylor
87170	Llama Trek/Photography Seminar, Three Sisters Wilderness, Cascade Range, OR	Aug. 3-12	1020	70	To Be Announced
87171	Sawtooth Wilderness, Sawtooth Forest, ID	Aug. 9-17	775	70	Jerry Clegg
87172	A Leisurely Hike Through the Grand Tetons, Targhee Forest, WY	Aug. 13-22	780	70	Len Lewis
87173	Eagle Cap Wilderness Llama Trek, Wallowa–Whitman Forest, OR	Aug. 27-Sept. 5	1020	70	Bill Gifford
87174	North Rim, Grand Canyon, AZ	Sept. 3-12	450	35	Bob Marley
87175	Northern Yosemite Llama Trek	Sept. 6-12	715	70	Joan Laue
87176	Three Sisters Wilderness Llama Trek, Willamette Forest, OR	Sept. 13-18	590	70	Marilyn Gifford
88360	Barranca del Cobre (Copper Canyon), Northwest Mexico	Oct. 1-10	980	70	Carolyn Downey
88361	Big Bend Park, TX	Oct. 18-24	295	35	George Mader
88362	Anza-Borrego Park, CA	Dec. 27, 1987-Jan. 1, 1988	295	35	Blaine LeCheminant

SERVICE TRIPS *(Also see Foreign Trip #s 87972, 87986, and 87987.)*

87044	*Haleakala Crater, HI, I	Feb. 1-8	325	35	C. E. Vollum
87045	*Haleakala Crater, HI, II	Feb. 15-22	325	35	C. E. Vollum
87046	*Alder Creek Trail Maintenance, Four Peaks Wilderness Area, AZ	March 8-15	85	35	Vance Green
87178	*Kanab Creek Trail Maintenance, Kaibab Forest, AZ	March 14-23	120	35	Tim Wernette
87047	*Muleshoe Ranch Preserve, Galiuro Mountains, AZ	March 22-28	110	35	Ginger Harmon
87048	*Superstition Wilderness Trail Maintenance, AZ	April 4-11	95	35	John Ricker
87049	*Red Rock Trail Maintenance, Coconino Forest, AZ	April 26-May 2	115	35	Jim Ricker
87179	*C. & O. Canal, MD	May 9-16	115	35	Chuck Cotter
87180	*Blue Range Primitive Area, Apache Forest, AZ	June 6-13	80	35	Rod Ricker
87181	*Sucia Island Whalewatch/Service Trip, San Juan Islands, WA	June 14-21	150	35	Fredric Kropp
87182	*Le Conte Lodge Repair and Trail Maintenance, Yosemite Park, Sierra	June 14-24	120	35	Dave Bachman
87183	*Spruce Knob, Monongahela Forest, WV	June 15-26	160	35	Dick Williams
87184	*Clear Creek Trail Maintenance, Klamath Forest, CA	June 23-July 3	120	35	Scott Larson
87185	*Sierra Club's Own Trail Maintenance Project, Sierra Forest, Sierra	June 26-July 6	120	35	Flint Ellsworth
87186	*Pecos Wilderness, Sangre de Cristo Mountains, NM	July 5-12	110	35	Gail Bryant
87187	*Cloud Peak, Big Horn Forest, WY	July 6-16	120	35	John Albrecht
87188	*Sky High Lakes Women's Trip, Marble Mountain Wilderness, Klamath Forest, CA	July 6-16	120	35	Didi Toaspern
87189	*Meteor Lake, Marble Mountain Wilderness, Klamath Forest, CA	July 7-17	120	35	Tom Gefell
87190	*High Uintas Wilderness Avalanche Cleanup, Wasatch Forest, UT	July 15-25	120	35	Jon Nichols
87191	*Targhee Teton Trail Maintenance, Targhee Forest, WY	July 17-27	120	35	Bruce Horn
		Price Per Adult	Price Per Child		
87192	*Clair Tappaan Lodge Family Trip, Sierra	July 18-26 190	130	35	Vince White-Petteruti
87193	*White Mountain Service Trip—Appalachian Mountain Club Collaboration, NH	July 19-26	135	35	Hilary Erf
87194	*Pine Creek Meadow Restoration and Trail Repair, Inyo Forest, Sierra	July 19-29	120	35	Rob Dorival
87195	*Snowmass Lake Trail Construction, White River Forest, CO	July 21-31	120	35	Bill Weinberg
87196	*Grand Canyon Trail Maintenance, Kaibab Forest, AZ	July 23-Aug. 1	125	35	Peter Curia
87197	*Mt. Rainier Park, WA	July 25-Aug. 4	120	35	Karen Johnson

Trip Number	* = Leader approval required	Date	Trip Fee (including Deposit)	Per Person Deposit	Leader
87198	*Fifth Annual Beginning Campers' Trail Maintenance and Restoration, Washakie Wilderness, WY	July 28-Aug. 7	120	35	Ed Thomas
87199	*Green River Row-It-Yourself Raft and Trail Maintenance, UT	July 29-Aug. 6	485	35	Kelly Runyon
87200	*Upper Pine Creek, John Muir Wilderness, Sierra	July 30-Aug. 9	120	35	Deborah Northcutt & Ann Stork
87201	*Trout Lake Trail Maintenance, Selkirk Mountains, Panhandle Forest, ID	Aug. 1-11	120	35	Bob Wolf
87202	*Joulious Creek Trail Maintenance, Wasatch Forest, UT	Aug. 3-13	120	35	John Fischer
87203	*Lost Man Trail Construction, White River Forest, CO	Aug. 3-13	120	35	John Stansfield
87204	*Glacier Trail Eradication Project, Eagle Cap Wilderness, OR	Aug. 9-19	120	35	Bob Hayes
87205	*Teen's Trail Work Trip, Sierra Forest, Sierra	Aug. 14-24	120	35	Brian Ilfeld & John Laguardia
87206	*Baxter Park Canoe and Bog-Bridging, ME	Aug. 15-23	140	35	Mike Blaschke
87207	*Lost Creek Trail Construction, Pike Forest, CO	Aug. 15-25	120	35	Laura Shaw
87208	*Fishhawk Creek Trail Construction, Washakie Wilderness, WY	Aug. 16-26	120	35	Jack Brautigam
87209	*Teton Wilderness Trail Maintenance, Bridger-Teton Forest, WY	Aug. 18-28	120	35	Conrad Smith
87210	*Minarets Avalanche Cleanup, Ansel Adams Wilderness, Sierra	Aug. 20-30	120	35	Gwen Jarrel
87211	*Lyle Canyon Trail Maintenance, Yosemite Park, Sierra	Aug. 23-Sept. 2	120	35	Kevin Havlik
87212	*Mt. Hood Timberline Trail Maintenance, Cascade Range, OR	Aug. 23-Sept. 2	150	35	Rick Zenn
87213	*Sierra Club's Own Trail Construction Project, Sierra Forest, Sierra	Aug. 27-Sept. 6	120	35	Dale Hekhuis
87214	*Boundary Waters Canoe Trip, Boundary Waters Canoe Area, MN	Sept. 4-14	120	35	Wally Mah
87215	*Baxter Trail and Foliage, ME	Sept. 6-13	135	35	Scott Whitcomb
87216	*Mt. Whitney Trail Maintenance, Inyo Forest, Sierra	Sept. 6-16	120	35	Dan Bittle & Stuart Swan
87217	*Oswegatchie Wilderness, Adirondack Forest Preserve, NY	Sept. 13-19	130	35	John L. Kolp
87218	*Ice Age Trail/Grandfather Falls Trail Construction Project, Lincoln County, WI	Sept. 15-25	120	35	Ann Diamond
88363	*Ozark Trail, AR	Oct. 25-31	90	35	Rick Rice

SKI TRIPS *(See Foreign Trips for other ski outings.)*

87316	*Adirondack Ski Tour, NY	Feb. 1-6	430	35	Walter Blank
87050	*Wildriver-Jackson Area Ski Tour, White Mountains, NH	March 22-27	330	35	John Rogers

WATER TRIPS *(See Alaska, Foreign, and Service Trips for other water-oriented outings.)*

Raft Trips

87220	Trinity River Paddle Raft, CA	July 6-10	435	35	Gary Larsen
87221	Noatak Paddle Raft, AK	July 20-Aug. 1	990	70	Jon Kangas
87222	Klamath River Paddle Raft, CA	Aug. 3-7	450	35	Kurt Menning

Sailing Trips

87224	Island Sailing, Canada's Galápagos	June 25-July 1	1295	70	Tris Coffin
87225	Totems, Sails, and Orca Whales, A Northwest Sailing Odyssey, British Columbia	July 16-22	1150	70	Bill Bricca
87226	Totems, Sails, and Orca Whales, A Northwest Sailing Odyssey, British Columbia	Aug. 29-Sept. 5	1150	70	Ruth Dyche

Trip Number	* = Leader approval required	Date	Trip Fee (including Deposit)	Per Person Deposit	Leader
87227	The Great Pacific Northwest Sailing and Natural History Adventure, Gulf/San Juan Islands Archipelago, British Columbia/Washington State	Sept. 7-12	850	70	Karen Short
87228	The Great Pacific Northwest Sailing and Natural History Adventure, Gulf/San Juan Islands Archipelago, British Columbia/Washington State	Sept. 13-18	850	70	Grace Hansen
Canoe Trips					
87028	*Dismal Swamp Canoe Base Camp, VA/NC	April 12-18	240	35	Bob Holcomb
87230	*Wabakimi Provincial Park, Ontario, Canada	July 19-Aug. 1	465	35	Larry Ten Pas
87231	*Maine Wilderness, West Grand Lake Chain of Lakes	Aug. 9-15	350	35	Bob Holcomb
87232	*Boundary Waters Canoe Area Wilderness, MN	Aug. 13-21	395	35	Sharon Kaufman
87233	*Adirondack Park, NY	Aug. 16-22	265	35	Connie Thomas
87234	*Upper Ottawa River, Parc de La Verendrye, Quebec, Canada	Aug. 30-Sept. 6	380	35	George Neffinger
88364	*Scenic Suwannee, FL	Oct. 18-24	425	35	Peter Bengtson

LEADER PROFILES

Whether on flatwater or whitewater, canoeing is one of **Peter Bengtson's** favorite activities. His major canoeing achievements include the Yukon River in the Yukon Territories and the South Nahanni River in the Northwest Territories. He is looking forward to canoeing down the Suwannee River in Florida this fall (#88364). Peter has been on 20 national trips and led five. He has also been very active in his local chapter and group, leading outings and serving as outings chair.

Organizing a trip that both he and the participants greatly enjoy is what satisfies him most about Sierra Club trips, and why he has remained active in the program since 1974. Peter works as a systems analyst and contributes his time and energy to the Club as the Finance Officer of the National Outing Committee.

Betty Watters is a California native living in the San Francisco Bay Area. As leader of a base camp trip this year (#87132), she won't have to travel very far to the roadhead; her unique trip based near the Golden Gate Bridge will explore the many beautiful natural places within the Bay Area. Betty has been involved in the National Outing Program since 1960 as a participant, trainee, and assistant on family and backpack trips, a cook on Hawaii trips, and, since 1986, a leader for the Base Camp Program. Her interests include tennis and swimming (which she also teaches), knitting, cooking, and especially babysitting her two grandchildren. She has done extensive backpacking with her family in the Sierra Nevada and has traveled to Norway and Austria as an unofficial assistant leader on Sierra Club trips led by her husband, Jim.

Outing leadership in the Sierra Club's San Diego Chapter first brought **Bill Evans** into the National Outing Program, although he had early chapter leadership training and experience in Georgia and North Carolina. Bill's background in regional conservation issues allows him a unique perspective on his trips. His work to help establish wilderness protection areas in Georgia and North Carolina and his involvement in the formation of the Cumberland Island National Seashore and obtaining wilderness status for the Okefenokee Swamp have given him the opportunity to pass along vital conservation knowledge to trip participants. Bill enjoys leading Sierra Club backpack trips in Montana (#87081), and has done so since 1982. In 1988, he is looking forward to the new and exciting challenge of leading a trip in Patagonia, his first foreign outing (#88525). Bill's hobbies include mineral and gem collecting and photography.

A keen interest in the outdoors and the desire to meet new people motivated **Susan Groth** to become involved as

a leader with the Sierra Club Outing Program (#87039). Susan served as an assistant leader on two 1985 service trips, and was co-leader of a backpack trip in Utah in 1986. Jazz dance, raquetball, skiing, kayaking, and rock climbing help her stay in shape for leading trips with the Sierra Club and Arizona Mountaineering Club. Susan enjoys the challenge of exploring new areas in the Southwest and passing this enthusiasm on to trip participants.

On a Sierra Club high trip in 1952, **Don Coppock's** father carried a fresh peach over three passes in one day, then presented the peach to Don's mother when he proposed. Don was born three years later and went on his first Sierra Club outing six years after that. He led the first of many Sierra Club service trips in 1975 at the age of 20. Last year, he organized the first foreign service trip to England and Wales. This year Don will be leading two service trips to Scotland (#s 87986 & 87987), where he attended graduate school. Don works for the California State Coastal Conservancy as manager of the agricultural lands program. He finds service trip participants an interesting and enjoyable group of people willing to devote their precious vacation time to practical conservation work.

Vicky Hoover considers conservation her profession, and deservedly so. She is actively involved in the Club's San Francisco Bay Chapter, serving on the Wilderness Subcommittee and the Nominations Committee, writing articles for the chapter newsletter, and participating in the San Francisco Regional Group. Vicky began leading Sierra Club burro, backpack, and junior backpack trips with her family in the late 1960s. As a result of this early exposure, Vicky's daughter Frannie has also become involved in outing leadership, beginning with a backpack trip in 1986. Vicky and Frannie will be teaming up for a peakbagging trip in Kings Canyon Park in 1987 (#87115). Peakbagging is one of Vicky's favorite activities. She has climbed all the major peaks in the Sierra Nevada, some peaks in Austria and New Zealand, and the highest peaks in Australia, Bali, and England. Taking people to spots they wouldn't otherwise go to and feeding them better than they expect are aspects of her trips that she finds particularly satisfying. Vicky will be traveling to New Zealand again in 1988 (#88535).

The National Outing Program frequently draws from the pool of experienced and well-qualified leaders who are involved in chapter outings. **Larry Ten Pas** is one of these leaders. He joined the Club in the mid 1970s out of concern for environmental issues and interest in chapter outings. During his third year as a national outing leader he will be leading two trips (#s 87230 & 88358). A former National Park Service ranger who now specializes in home repairs, Larry has also led trips for American Youth Hostels and has been an instructor for the American Canoe Association.

After signing a petition to "Dump Watt" in 1981, **John Albrecht** decided to become

more involved in environmental issues and joined the Sierra Club. John has found his niche as a leader for his local Sierra Club group in Eugene, Ore., and as a service trip leader (#87187). Capitalizing on his experience as a farm and forest worker in his youth, John has been on service trips to Denali National Park in Alaska and to the Marble Mountains in California. What he enjoys most about these trips is the enthusiasm of the participants and their willingness to cooperate to get the job done. John, a high school librarian, enjoys woodworking and home and auto repair.

Carol Hake especially enjoys sharing her enthusiasm and knowledge of the outdoors with other women. The Sierra Club's beginning backpack trips for women have given her the chance to introduce newcomers to the increased confidence and self-reliance that backpacking can provide. In 1987 Carol will be leading her second all-women's trip (#87107). Although she is a relatively new national outing leader, Carol is by no means new to leadership. She has had 15 years of experience with the Girl Scout Council of Santa Clara, Calif., and for the past eight years has led weekend trips for the ski-touring section of the Club's San Francisco Bay Chapter. Carol's love of outdoor adventure complements her other favorite pastime, landscape painting and drawing.

Bob Holcomb is a very active Sierra Club national trip leader—and a relatively new one at that! Bob went on his first national outing in 1984. This year he will be leading three trips (#s 87028, 87137 & 87231). While new to the National Outing Program, Bob has extensive experience canoeing and backpacking in Alabama, Arkansas, Maine, and Canada. He has led trips for the Explorer Scouts as well as for groups of friends. Every now and then he enjoys solo canoe trips to explore possible locations for future Sierra Club trips. In addition to conducting outings, Bob, a retired engineer with General Electric, likes to design and evaluate outdoor equipment.

Ginger Harmon divides her time between the houseboat she built in Sausalito, Calif., and the Muleshoe Ranch Preserve in Arizona, where she is restoring adobe buildings for the Nature Conservancy. Ginger will be leading a service trip at the Muleshoe Ranch this spring (#87047). Since 1975, she has been sharing her leadership skills and her love of natural beauty with Sierra Club members on a variety of trips. She has led treks to Nepal, backpack and service trips in the Sierra and the Southwest, and river trips in Alaska and Utah. Ginger is co-author (with Susanna Margolis) of the recently published Sierra Club Book *Walking Europe From Top to Bottom*, which describes her 1,500-mile walk across Europe.

RESERVATION AND CANCELLATION POLICY

Eligibility: Our trips are open to Sierra Club members, applicants for membership, and members of organizations granting reciprocal privileges. You may include your membership application and fee with your reservation request.

Children must have their own memberships unless they are under 12 years of age.

Unless otherwise specified, a person under 18 years of age may join an outing only if accompanied by a parent or responsible adult or with the consent of the leader.

Applications: One reservation form should be filled out for each trip by each person; spouses and families (parents and children under 21) may use a single form. Mail your reservation together with the required deposit to the address below. No reservations will be accepted by telephone.

Reservations are confirmed on a first-come, first-served basis. However, when acceptance by the leader is required (based on applicant's experience, physical condition, etc.), the reservation is confirmed subject to the leader's approval, for which the member must apply promptly. When a trip is full, later applicants are put on a waitlist.

Give some thought to your real preferences. Some trips are moderate, some strenuous; a few are only for highly qualified participants. Be realistic about your physical condition and the degree of challenge you enjoy.

The Sierra Club reserves the right to conduct a lottery to determine priority for acceptance in the event that a trip is substantially oversubscribed shortly after publication.

Reservations are accepted subject to these general rules and to any specific conditions announced in the individual trip supplements.

Deposit: A deposit is required with every trip application. The amount of the deposit varies with the trip price, as follows:

Trip Price per person	*Deposit per person*
Up to $499	*$35 per individual (with a maximum of $100 per family on family trips)*
$500 and above (except Foreign Outings)	*$70 per individual*
All Foreign Trips	*$100 per individual*

The amount of a deposit is applied to the trip price when the reservation is confirmed. All deposits and payments should be in U.S. dollars.

Payments: Generally, adults and children pay the same price; some exceptions for family outings are noted. You will be billed upon receipt of your application. Full payment of trip fee is due 90 days prior to trip departure. Trips listed in the "Foreign" section require additional payment of $200 per person six months before departure. Payments for trips requiring the leader's acceptance are also due at the above times, regardless of your status. If payment is not received on time, the reservation may be cancelled and the deposit forfeited.

No payment (other than the required deposit) is necessary for those waitlisted. The applicant will be billed when placed on the trip.

The trip price does not include travel to and from the roadhead or specialized transportation on some trips (check trip supplement). Hawaii, Alaska, foreign, and sailing trip prices are all exclusive of airfare.

Transportation: Travel to and from the roadhead is your responsibility. To conserve resources, trip members are urged to form carpools on a shared-expense basis or to use public transportation. On North American trips the leader will try to match riders and drivers. On some overseas trips you may be asked to make your travel arrangements through a particular agency.

Confirmation: A reservation is held for a trip applicant, if there is space available, when the appropriate deposit has been received by the Outing Department. A written confirmation is sent to the applicant. Where leader approval is not required, there is an unconditional confirmation. Where leader approval is required, the reservation is confirmed, subject to the leader's approval. Where there is no space available when the application is received, the applicant is placed on the waitlist and the deposit is held pending an opening. When a leader-approval trip applicant is placed on the waitlist, the applicant should seek immediate leader approval, so that in the event of a vacancy we can confirm reservations of applicants who have leader approval. When a person with a confirmed reservation cancels, the person at the head of the waitlist will automatically be confirmed on the trip, subject to leader approval on leader-approval trips. The applicant will not be contacted prior to this automatic reservation confirmation, except in the three days before trip departure.

Refunds: You must notify the Outing Department directly during working

For More Details on Outings

Outings are described more fully in trip supplements, which are available from the Outing Department. Trips vary in size, cost, and the physical stamina and experience required. New members may have difficulty judging which trip is best suited to their own abilities and interests. Don't sign up for the wrong one! Ask for the trip supplement before you make your reservations, saving yourself the cost and inconvenience of changing or cancelling a reservation. The first three supplements are free. Please enclose 50 cents apiece for extras. Write or phone the trip leader if any further questions remain.

Clip coupon and mail to: **Sierra Club Outing Department** 730 Polk St., San Francisco, CA 94109

Sierra Club Member: Yes_____ No_____

Send supplements:

#_____ #_____ #_____

(BY TRIP NUMBER)

NAME_____

ADDRESS_____

CITY_____ STATE_____ ZIP_____

Enclosed is $_____ for extra supplements at 50 cents each. Please allow 2–4 weeks for delivery. **Please do not mail cash.**

hours (weekdays, 9–5) of cancellation from either the trip or the waitlist. The amount of the refund is determined by the date that the notice of cancellation by a trip applicant is received at the Outing Department. The refund amount may be applied to an already confirmed reservation on another trip.

A cancellation from a leader-approval trip, when the Outing Department has confirmed the reservation subject to leader approval, is treated exactly as a cancellation from any other type of trip, whether the leader has notified the applicant of approval or not.

The Cancellation Policy for River-Raft and Sailing Trips is separately stated.

The Outing Committee regrets that it cannot make exceptions to the Cancellation Policy for any reason, including personal emergencies.

Cancellations for medical reasons are often covered by traveler's insurance, and trip applicants will receive a brochure describing this type of coverage. You can also obtain information from your local travel or insurance agent.

Trip leaders have no authority to grant or promise refunds.

Time or Event of Cancellation	Amount forfeited per person	Amount refunded per person
1) Disapproval by leader (once leader-approval information has been received) on leader-approval trips	None	All amounts paid toward trip price
2) Cancellation from waitlist, or the person has not been confirmed three days prior to trip departure	None	All amounts paid toward trip price
3) Trip cancelled by Sierra Club	None	All amounts paid toward trip price
4) Cancellation from confirmed position or confirmed position subject to leader approval		
a) 60 days or more prior to trip departure date	$35	All amounts paid toward trip price exceeding forfeited amount
b) 14–59 days prior to trip departure date	10% of trip fee, but not less than $35	As above
c) 4–13 days prior to trip departure date if replacement can be obtained from waitlist	10% of trip fee, plus $35 processing fee, but in no event more than 50% of total trip fee	As above
d) 4–13 days prior to trip departure date if replacement *cannot* be obtained from waitlist (or if there is no waitlist at the time of cancellation processing)	40% of trip fee, plus $35 processing fee, but in no event more than 50% of total trip fee	As above
e) 0–3 days prior to trip departure date	Trip fee	No refund
f) "No-show" at the roadhead, or if participant leaves during trip	Trip fee	No refund

River-Raft, Sailing, & Whalewatching Cancellation Policy

In order to prevent loss to the Club of concessionaire cancellation fees, refunds on these trips might not be made until after the departure. On these trips, refunds will be made as follows:

No. of days prior to trip	Amount of trip cost refunded
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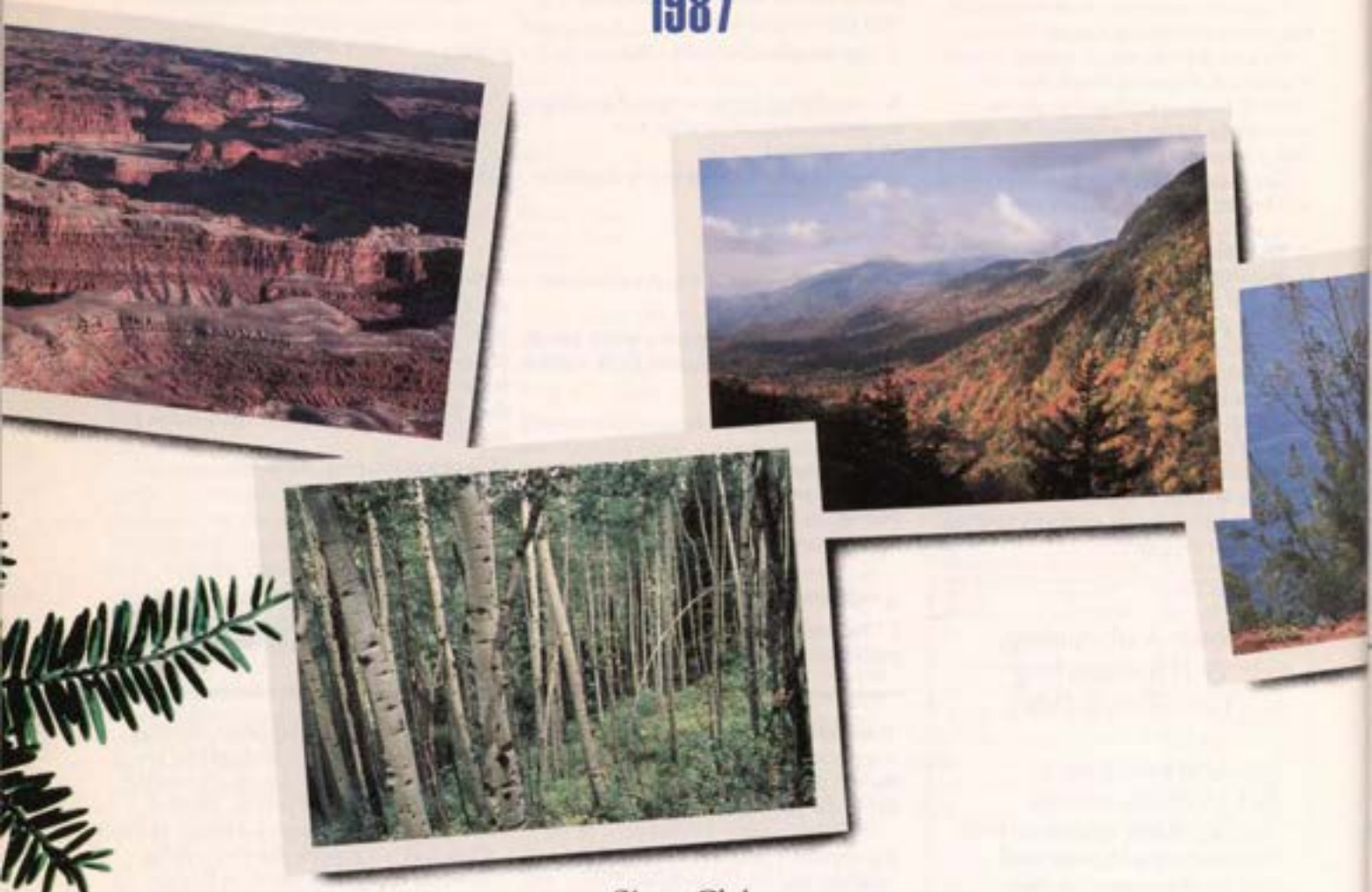

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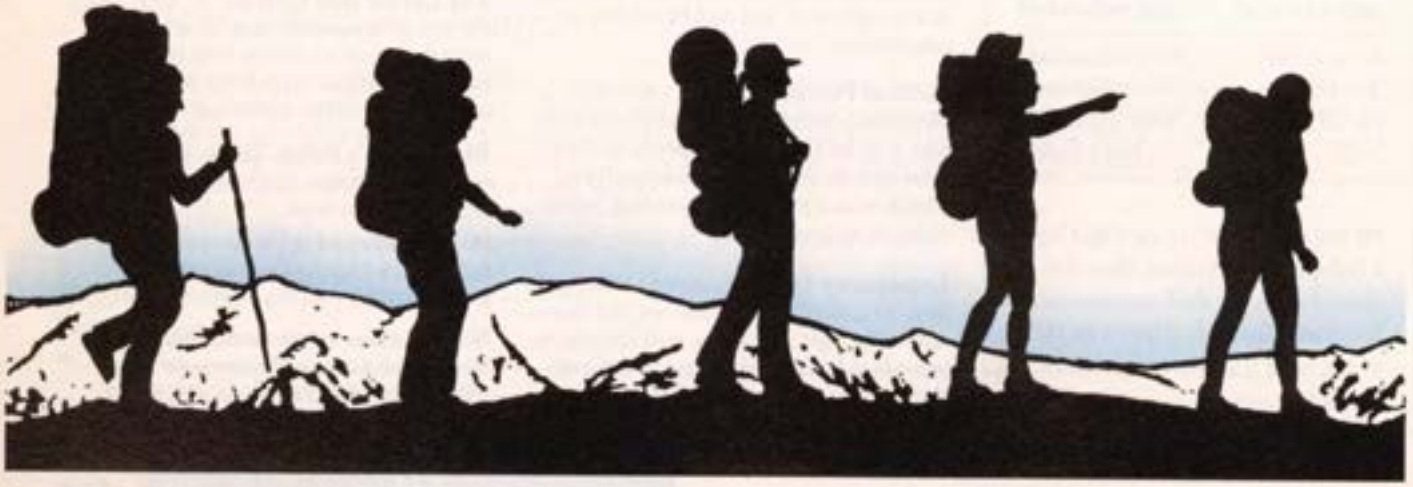

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Switzerland has been cashing in on its natural beauty since the first visitors arrived nearly a century ago. But in the rush for money, the mountains themselves—the tourist industry's stock in trade—are getting shortchanged.

Cracks Appear in the Magic Mountain

Ernest Beck

All signs of modern life slip away as the train slowly rattles up the steep slope from the valley town of Sierre. Terraced vineyards give way to a forest of spruce and pine; then a panorama of snowy fields stretches from Mont Blanc to the Matterhorn. Peace reigns, it seems, on the southern slope of the Bernese Alps in the Swiss canton of Valais.

Then the little train comes to a halt. First one sees a crescent-shaped skyscraper set on a slight rise against a slate-gray outcropping. Below it is a mammoth chalet-style housing block, and on the vast plateau a wasteland of suburban sprawl: concrete buildings, crowded commercial streets, noise and exhaust from cars and trucks. Welcome to Crans-Montana, an alpine community radically altered by the resort grafted onto its mountainside.

Crans-Montana wasn't always like this. A century ago, farmers and shepherds spent the short alpine summer working the high plateau. In spring and fall they tended the valley's vineyards. The first hotel at Crans-Montana was built in 1893; the guests arrived by donkey. A few years later a second hotel was constructed, and a toll road opened from Sierre. The sanatoriums came when doctors discovered that the dry mountain air and sunny climate of the Swiss Alps were beneficial to patients with lung ailments. A golf course was built in 1909, and sports addicts soon replaced tuberculosis victims. A hotel-building boom that began in the 1950s led to construction of privately owned condominiums in the 1970s.

Today Crans-Montana has 70 hotels with space for 5,000 guests, and condominiums with room for 25,000 more. The local population, which remains under 5,000, earns almost all its income from tourism-related businesses. Forests and mountainsides have been cleared for 150 kilometers of ski runs. Ice skating, tennis, horseback riding, hot-air balloon flights, and hang-gliding round out the area's recreational activities. Exclusive shops sell caviar, mink coats, even the land itself.

How did it all happen?

The desire to escape poverty was the main factor, according to Jean-Claude Bonvin, who inherited the Golf Hotel from his father, a mountain farmer turned hotelier. Desperately poor, the senior Bonvin left the region to find work, returning in 1914 with enough money to open the hotel.

"When people saw my father's success, they wanted to start too," says Bonvin. "All the stores were owned by village people, and they recognized the potential. There was no interference from anyone. When the villagers saw the money coming in, they weren't stupid enough to say they didn't want it."

Many of the families who originally owned long strips of land stretching from the valley to the plateau sold out or built hotels on their holdings. Bonvin says there were no controls on construction, although he and some others voiced fears that things were getting too big. "But nobody was listening," he recalls. "They were looking for money."

Mountain farmers have always been on the bottom rung of Switzerland's economic ladder. The rough terrain, short growing season, and severe climate make agricultural production more expensive and more difficult here than in the lowlands. Expanding urban industrialization after World War II led to a rural exodus as many young people were lured away from the fields, causing a shortage of labor.

"Under these circumstances, the growth in tourism was greeted almost euphorically," Heinz Hänni wrote in an essay for *The Transformation of Swiss Mountain Regions* (Paul Haupt, Bern & Stuttgart, 1984). "The citizens of mountain communities saw tourism as [a] bulwark against social and economic erosion. The negative side effects were either ignored or dismissed."

Between 1945 and 1975

Once visitors to Crans-Montana manage to find their hotel, still more signs direct them to the hot-air balloons and caviarteria. Ah, nature!

Switzerland's mountains, already dotted with 1,700 ski lifts, will sport 300 new ones by 2010. Tourism is transforming the natural scene.

Scenery and snow, not timber or coal deposits, are the resources that generate $7 billion for Switzerland each year.

almost 2,500 acres of farmland in and around Crans-Montana—half the space available for agriculture—were lost to tourism. As golf carts replaced goats, the urbanization of the landscape continued along with the destruction of traditional buildings. Instead of wooden farmhouses, square concrete housing

Prime Swiss agricultural acreage is on the block as the hills come alive to the sound of money.

was haphazardly strewn along a crowded central shopping strip. Holiday "chalets" now dot the hillsides next to highrises in a compressed hodgepodge.

The explosive boom in condominium construction has been particularly destructive. As available land was limited, architects created a bizarre set of rural skyscrapers that were nevertheless snapped up by foreigners eager to buy privacy, security, and status. This prompted further speculation and a rise in land prices—which led to even more building and aggressive marketing to lure additional foreigners.

"Most of the people come from surrounding countries," says Bonvin. "They put their money in a Swiss bank. They buy an apartment. If there are troubles at home, they can just come here." In Valais there are now 53,000 condominiums with 240,000 beds—one for every Valaisian.

Although new jobs were created, especially in the construction industry, the cost of living rose. Benefits to the local economy fell short of expectations, which didn't take into account the short, infrequent visits of condominium owners. At the same time, large capital outlays by municipal authorities were required to provide access roads, water and sewage facilities, and ski lifts for the part-time guests.

In Crans-Montana, this cycle has created a resort outfitted for peak use: The 30,000 guest beds are fully occupied only about ten days a year, during the year-end holidays. Most of the time, two thirds of the beds are empty—up to 80-percent vacant in summer.

This situation has prompted new schemes to fill the beds. The latest boost has come from the decision to award Crans-Montana the right to stage the 1987 World Alpine Ski Championships. The entire community is gearing up for the event, hoping it will garner enough worldwide media attention to fix the plateau's name in the minds of travel agents.

Predictably, Crans-Montana's existing infrastructure, incapable of handling the expected crush of visitors, had to be expanded. A conference center is being built, along with a luxury hotel, stadium, indoor ice rink, and riding hall. Snow-making machines are being brought in, two ski slopes enlarged, and two aerial cableways added to triple the existing capacity to haul skiers.

Walter Loser, Crans-Montana's director of tourist marketing, stresses that the facilities will continue to be used after the championships, and that the modernizations are vital to the resort's future. But Dr. Jost Krippendorf, head of the Tourism Research Institute at Bern University, contends that such an expansion is always a risk. "This is an example of endless quantitative growth," he says of Crans-Montana. "It's a Manhattan in the clouds."

Plans for the ski championships also call for what Loser described as cutting down "a few trees." In reality, the organizing committee was ready to fell 12 acres of prime forest before the World Wildlife Fund and the Swiss Association for the Protection of Nature took the matter to court. The groups charged that cutting down a forest for a two-week ski race was irresponsible, especially when almost half the canton's trees, which serve as natural protection against avalanches and rock slides, have been damaged by a combination of acid rain, bark beetles, and various forms of tree disease.

High in the Alps: bright lights, big city.

The Swiss Supreme Court unanimously rejected the environmentalists' plea. Its reasoning: "It is in the national interest to go ahead with the felling, because the championships will result in economic benefits for the local population and tourism development in Valais." Local boosters were "overjoyed"; if the environmentalists had won, Loser said, "it would have been a catastrophe for us."

Media coverage of the case aroused some indignation, however. In June, as loggers approached with their saws, a dozen members of the Swiss section of Greenpeace chained themselves to the trees in a last-minute attempt to save them. Although the protest failed to

Activists challenge the "national interest."

stop the cutting, Greenpeace managed to publicize a longer-range goal: to change Swiss forestry law so that the term "national interest" cannot be used to justify the destruction of a forest.

Valais' lost trees have been replaced by the metal pylons of ski lifts. Ski developments have created the pockmarked landscape that has become a common sight in Switzerland, according to biologist Hans Schwarzenbach of the Swiss Association for Alpine Research in Zurich. Schwarzenbach noted in a comprehensive 1979 study for the Swiss Forestry Office that what he calls "mecha-

"Correcting" slopes for ski runs results in erosion and a pockmarked landscape.

nized attacks" on the landscape for terrain correction and grading of slopes have caused advanced erosion of topsoil and humus layers, changes in water drainage patterns, and destruction of the vegetation cover. In addition, the use of chemicals to keep snow from melting at its natural rate has resulted in a shorter growing season and a decreased hay harvest.

Krippendorf believes that the decline in farming has had a marked effect on the environment, as traditional alpine agriculture contributes to ecological balance. The increase in fallow fields has exacerbated the problem of soil erosion, besides causing a bad case of "visual pollution" and eradicating farming as a viable profession. "Tourism always takes the best agricultural land—the flat and sunny locations such as Crans-Montana," he says. "This creates shadow farmers and shadow people."

Walter Kämpfen, a former director of the Swiss National Tourist Office, thinks the country's natural beauty—tourism's "capital"—is greatly endangered: "In other sectors of the economy, capital can be lost and gained again. In tourism, if the basic substance, the landscape, is lost, then it is lost forever. Unfortunately, it seems that the tourism industry does not know this or does not want to accept its most important responsibility, which is to preserve the environment."

Tourism officials in Crans-Montana are well aware of the problems of traffic and overcrowding. To their credit they admit that some mistakes have been made, and are taking small steps to rectify them. Officials point to a new zoning plan that has put limitations on building size, as well as to free bus service that now links surrounding regions, and garages that are helping to keep the streets clear of parked cars.

But an inherent dilemma remains: The Swiss have created an economic monostructure completely dependent on tourism, and have altered the landscape to support it. Voices from the federal government calling for change have not been heeded.

"It's difficult to tell local people what is good for them from here," says Madelaine Howald, an economist in the tourism department of the Federal Office for Industry, Trade, and Labor in Bern. "We can't convince them they don't need tourism if we cannot offer any alternatives. Unfortunately, they're often stuck with it."

Howald says the country's division of political power and its legacy of cantonal independence make centralized planning next to impossible. Federal authorities can influence land-use policy only indirectly through recommendations; they have direct jurisdiction only over the granting of concessions for

Paving paradise for the tourist traffic.

aerial cableways and limits on land sales to foreigners. "To have total control, we would need a planned economy, and we don't want that," Howald says. "Tourism is a private industry, and it is not easy for the government to influence it."

Projections of future trends based on a survey of Swiss tourism officials and tourism-related industries indicate that another 300 ski lifts and 750,000 guest beds may be in service by the year 2010. Add to that the attendant number of new roads, parking lots, restaurants, and other urban amenities, and the problem becomes formidable, especially in a nation where almost 30 percent of the land area is covered by uninhabitable (or, as some Swiss say, "unproductive") mountains.

Krippendorf has another idea: Replace the quantitative spiral with qualitative growth, and make local people more conscious of other options.

Indeed, unhindered development is no longer an accepted notion throughout the country, as illustrated by the divergence of opinion on plans to hold the 1996 Winter Olympics in Switzerland. While the city of Lausanne and the people of the Bernese Oberland region say they will go all-out for the right to host the games, voters in the renowned ski resorts of Davos and St. Moritz overwhelmingly rejected making a bid: They feared the negative aspects of what development would bring.

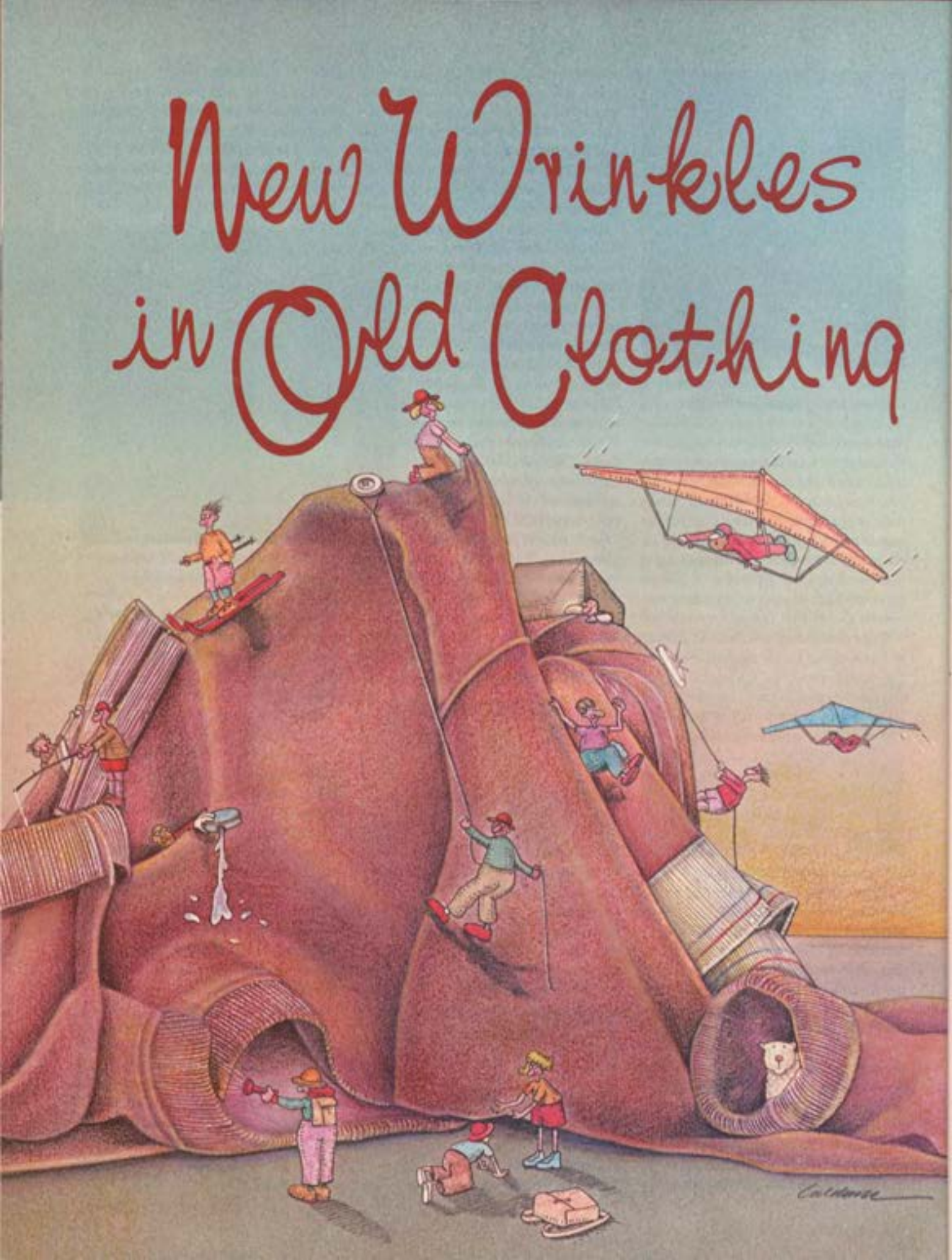
Crans-Montana plans to build additional ski lifts for this year's championships.

Krippendorf believes that things will change for the better. "Many new initiatives are coming from the local level," he says. "There are new private groups, many supported by young people, that are trying to redefine tourism. This doesn't solve the problem, but it is a sign—a movement of constructive opposition by the visited people."

Over the last century the Swiss have learned to package their mountains, lakes, and forests into a high-priced consumer product. But unless the visited people change course, Switzerland's fairytale image as a land of pristine natural beauty may soon become just that—a fairy tale. ■

ERNEST BECK *is an American journalist living in Switzerland.*

New Wrinkles in Old Clothing



by Mike Scherer

Buying outdoor clothing used to be a pretty simple exercise. You chose cotton if you were heading out in mild weather, wool if snow or a nor'easter were forecast, and some of both if you were between seasons. Shopping was a tactile experience. No need to read labels; smooth and soft meant cotton, rough and scratchy, wool. Only the well-heeled did more than dream of silk.

Would that it were still so easy. Luxurious (and warm) silk has become affordable, and an ever-growing number of synthetic fibers has appeared on the market, mimicking the look and feel of the old standbys while doing them one better in some critical performance categories.

Now, as then, there are reasons aplenty for the popularity of natural fibers—not the least of which is the fact that they are, well, natural. Cotton, wool, and silk have clothed the human race for thousands of years. There's something reassuring about that. More specifically, each has highly attractive qualities that make it ideally suited to different occasions.

Cotton, for instance, is readily made into lightweight and comfortable fabrics; it has what the textile folks call excellent "hand." Because it is highly absorbent, it feels cool in hot weather. It's as though the ages have spoken on this matter: For any activity protected enough from nature's discomforts to be considered civilized, cotton is king.

Not all human activities are so sheltered, however. While one could argue that sailing in heavy weather or climbing ice on half-frozen waterfalls are, in fact, civilized (if not decadent) activities, there is little doubt that such sports are no place for cotton clothing—beyond a bandanna for cleaning one's sunglasses. Demanding conditions such as these need fibers that are stronger, warmer when wet, and faster drying than cotton.

In cold weather, water is cotton's nemesis. The fibers in a cotton garment mat together as they absorb water, and the garment can no longer trap an insulating layer of air next to the skin. Wet cotton conducts heat away from the wearer at an alarming rate—great for hot weather, but dangerous in cold. And like it or not, every outdoorsperson must accept the risk of getting wet as the entrance fee to the unsheltered places of the world. Practically speaking, this usually means that would-be adventurers should carry a well-considered minimum of warm-when-wet clothing in addition to their fair-weather cotton togs. The natural answer is wool.

Sheep are not exactly revered among outdoorspeople. John Muir, himself once a sheepherder, referred to them as "hooved locusts" for the damage their unregulated grazing caused in the Sierra Nevada. Yet the sheep's fleece is responsible for saving the lives of countless fur-bearing animals that otherwise would have been killed for their hides.

Wool is a wholly renewable resource, and when woven into garments it functions quite well in wet and windy weather. Like cotton, it has its drawbacks: It takes a long time to dry, it makes some people itch, it's a relatively heavy fabric, and it needs special washing care (although Duofold's Superwash wool apparently has this problem licked). On the positive side, wool is a quiet fabric, it is much warmer than cotton when wet, it can be woven into tight, windproof fabrics, and it has a well-deserved reputation for lasting a long time. Indeed, wool has worked so well over the years that many of its most ardent supporters say "baa" to the new synthetic substitutes.

The mechanical properties of wool are easy to understand. Wool fibers are fairly thick, so they resist bending when wet. That means wool yarns retain their structure (they don't mat like cotton) and continue to trap insulating air next to the body. Furthermore, because wool fibers are strong and bulky, much thicker (and thus warmer) single-layer garments can be made of wool than is possible with silk or cotton (or even polypropylene). Such thick, warm clothing is the stock in trade of manufacturers such as Pendleton and Woolrich. Anyone familiar with this clothing knows something else about woolen garments: They're not just functional, they're very likely to be the most classic, tasteful clothing in any wardrobe.

When you're thinking about classic and tasteful, silk comes immediately to mind. Its pure luxuriousness will always earn it a place in the pampered halls (and tents) of its

Illustrations by Kris Caldwell

followers. But while silk may be warm and comfortable, it is not renowned for its technical excellence when damp. Rather, silk's smoothness, thinness, and lightness have made it a favorite among designers of civilized longjohns (made of Terramar's Thermasilk) as well as the antifriction socks (no blisters here) and superlight balaclavas used by hard-core mountain folk.

Times change, of course, and the old hand test simply won't suffice anymore to distinguish one fabric from another. During the last ten years, whole skeins of synthetic fibers have appeared that mimic the best qualities of natural fibers, down to the way they feel. More important, these new fibers have reshuffled the rules about what to wear when.

The first was a plastic fiber called polypropylene (the primary ingredient in indoor-outdoor carpeting) that took the long-underwear market by storm. The reason? Polypro's decidedly unnatural ability to transport moisture between fibers without absorbing it to any appreciable degree. This means that during heavy exercise polypro wicks sweat away from the body without getting wet itself. By moving perspiration across the garment's surfaces, polypro increases its rate of evaporation. This helps cool the wearer more efficiently and, because the fibers themselves stay dry, allows the wearer to keep warm once the sweat-causing activity ceases. As revolutionary as they seemed at the time, these properties are not unique to polypro. Any thin, non-water-absorbent fiber will do the same.

As we've come to expect with new developments, polypro does have some disadvantages. While any fiber that promotes the evaporation of sweat is going to broadcast some of the resulting odor, polypro seems to do so in spades. In fact, unless washed thoroughly in hot water, well-worn polypro can become positively gamey. The fiber's true bane, however, is a hot dryer: Exposed to high heat, polypro shrinks and becomes scratchy like—you guessed it—wool. Treated properly, polypro functions superbly. It's warm, stretchy, dries quickly, feels soft, and is generally the lightest fiber available for clothing.

The second synthetic fiber to challenge the naturals and—its producers hope—give polypro a run for its (considerable) money is polyester. First introduced in extreme-weather underwear, these fibers are typified by brand-name fabrics such as Termic by Odlo, Patagonia's Capilene, and DuPont's Thermax. Because they are made from polyester, these fabrics are extremely durable, yet they can be washed and dried with a regular load. They also resist pilling (a problem with some polypro) because their thinner fibers break off more readily.

Two of the new polyesters, Capilene and Thermax, boost their performance levels in specific ways. Capilene fibers are treated to promote faster transporting of moisture, providing a cooler and faster-drying garment. Thermax fibers are made hollow to reduce their weight, and are given a wavy crimp along their entire length so they'll trap more air for insulation.

There's little question that the two polys have changed the ground rules in outdoor clothing. What they haven't been able to do is completely replace

natural fibers, a fact not lost on a European company named Loffler, which has been combining cotton and polypropylene in an unusual manner.

In most blended fabrics, the component fibers are mixed equally on both sides of the fabric. Thanks to a technique called plate knitting, Loffler's Transtex has a 100-percent polypropylene interior and a 100-percent cotton exterior in a single layer of fabric. The polypro interior wicks perspiration to the tightly finished cotton exterior, where it can cause little discomfort. Nor is the cotton just another pretty facing: Because it is naturally absorbent, it helps draw moisture through the polypro and away from the wearer's skin. As the moisture evaporates, it cools the air next to the skin without cooling the skin itself. The result is a remarkably dry feeling, and cooling without chills.

Products like Duofold's Prolon 2000 and 3000 and Helly Hanson's Tioga and Sonora ProWool achieve a similar effect with double-layer and double-knit constructions. Each of these fabrics has a moisture-transporting fiber next to the skin and an absorbent-fiber blend on the outside. Like Transtex, these are thickish fabrics for colder weather and are perfect for hot-then-cold sports like skiing and biking.

While comfort is a subjective state, theoretically, plate-knit fabrics (also called bicomponents) should have the edge on two-layer fabrics during times of heavy exercise. Because plate knitting interweaves the two component yarns in the center of the fabric, it should promote a faster and more efficient "hand-off" of moisture from the inside to the outside of the garment.

A second generation of thinner bicomponent underwear has been delayed because of difficulties in making it retain its shape after stretching, but bicomponent fabrics are flooding the waterproof/breathable rainwear market as linings in jackets, pants, and gloves. The reason is simple enough. One of the more miserable aspects of standard rainwear is how awful the lining feels when it gets wet. As any foul-weather camper will tell you, a wet lining clings, feels cold, and takes a long time to dry.

The bicomponent linings used in most rainwear feel like cotton without

exhibiting any of cotton's cold-when-wet problems. A properly designed bicomponent lining actually enhances the performance of waterproof/breathable rainwear by being extremely breathable itself, by keeping a dry surface next to the wearer even if there is an appreciable amount of water in the garment, and by promoting the evaporation of water so it can pass through the waterproof/breathable layer.

While just about every manufacturer uses a nonabsorbent synthetic fiber for the interior side of its bicomponent fabric, the outer materials vary from synthetic to natural, and differ depending on how they spread moisture. Toray's Fieldsensor, The North Face's Vaporator, and Sierra Designs' Transper rely on the water-transporting properties of extrafine filament yarns (which may be made of the same material as the fatter interior fibers). Other bicomponents—Marmot's Drizone, Allied Fiber's Dryline, and, of course, Loffler's Transtex—use hydrophillic materials that aggressively "pull" moisture along their surfaces.

Not all the changes in fibers and fabrics have been limited to long underwear and rainwear linings. Shells and windbreakers too have become noticeably softer in the last year. By using ultrafine nylon fibers, such as Dupont's Supplex, ICI's Tactel, and Captiva and Capima from Allied Fibers, many outerwear fabrics have shattered forever the idea that strong, windproof garments have to be stiff and crinkly. These fabrics feel like fine cotton but are actually smoother, thinner, and lighter.

Similar superfine fibers, when tightly woven in trade-secret ways, are water-repellent yet breathable. Marmot's Hydropel, Teijin's Super Microft, and Burlington's Versatech retain their eerie ability to make water bead up and roll off even after extensive washing.

Where will it all end? Nobody really knows. Perhaps there will come a time when all these fabrics will strut the fashion stages of New York and Paris, and what is then *très chic* will be above-average rainwear to boot. ■

MIKE SCHERER, *an outdoor equipment designer, has contributed pieces on snow camping, cross-country skiing, and sleeping bag selection to past issues of* Sierra.

Moscow "Radicals" Stop a Nuclear Plant

James Lawless

TWENTY MILES EAST of Cincinnati in the rural bottomlands of the Ohio River, a giant cooling tower rises from the heart of Moscow, Ohio, population 326. Through the 1970s, Moscow's future loomed as promising as its William H. Zimmer Nuclear Power Station's 479-foot tower.

Once a profitable river town and commercial center for surrounding farmlands, Moscow by the late 1960s had withered into a seedy bedroom community for Cincinnati. The nuclear power plant—a joint venture of Cincinnati Gas & Electric (CG&E), Columbus & Southern Ohio Electric, and Dayton Power & Light—seemed a heaven-sent boon to the town. CG&E would employ 20 permanent workers at the plant, and Moscow would clean up in property taxes.

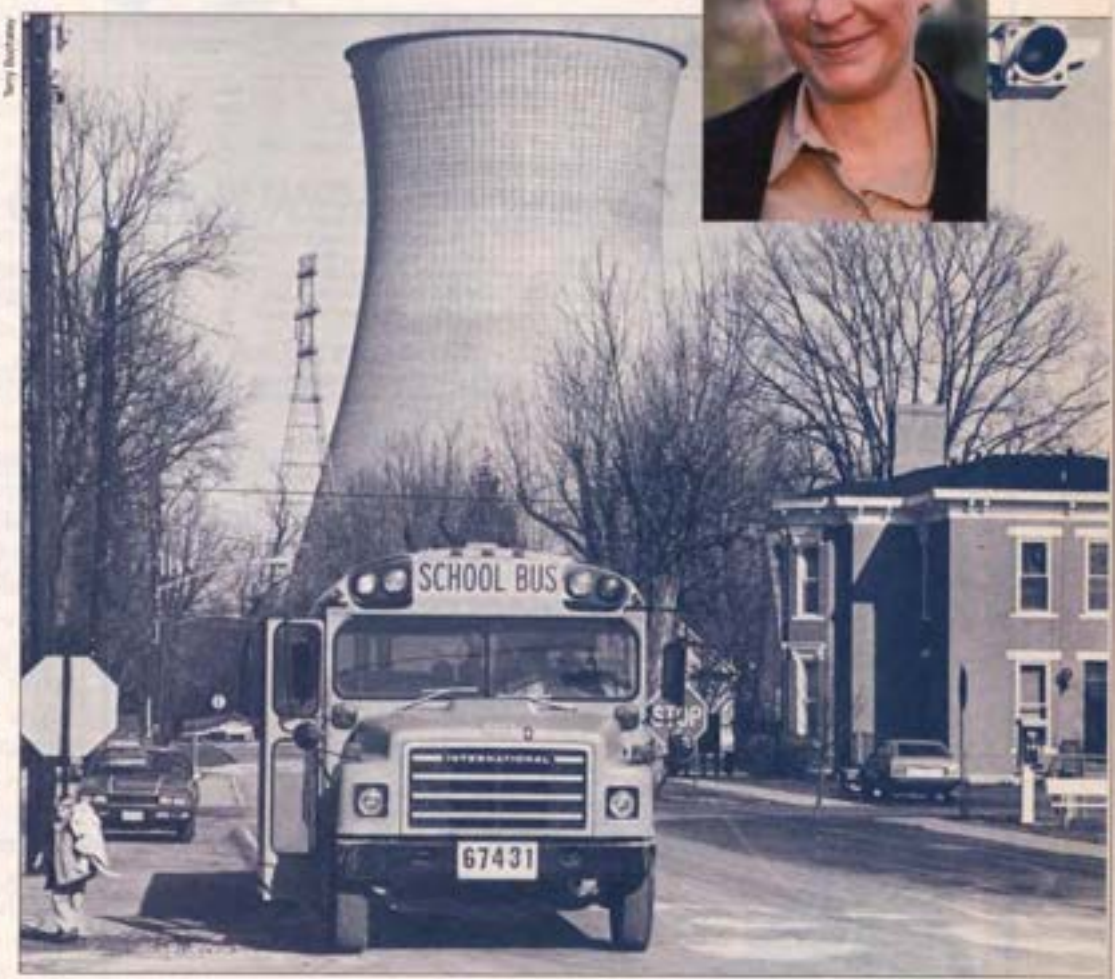
The town council quietly annexed the construction site in 1975 and levied an earnings tax of five ninths of a cent per dollar on the dozens of construction workers who came to build the plant. By 1976 the town's annual budget had risen from a scant $20,000 to nearly $500,000. With this newfound wealth, Moscow could afford to build a new town hall and a tennis court, repave its streets and even its alleys. The town's police force proudly added the nuclear symbol to their uniform patches.

Margaret A. (Maggie) Erbe remembers feeling uneasy as the plant's concrete tower began to dwarf her own three-story brick house. "Low-level radiation really scares me," says Erbe, a mother of ten. "Kids are terribly prone to the health effects of radiation. I didn't want my kids being guinea pigs."

Born in 1942, Erbe had been taught since childhood that "the government takes care of you." She believed that if she asked the right people she would get answers to her questions about the plant. As president of the Moscow Elementary School PTA, Erbe scheduled a meeting to which she invited state and local officials who might be able to address her concerns: Southwestern Ohio Air Pollution Control; the Clermont County and Ohio state disaster services agencies; the Ohio Environmental Protection Agency; Life Squad (an emergency evacuation team); members of the town council and police and fire departments, and those of neighboring communities; and officials from Cincinnati Gas & Electric.

"I told them I would like them to come to a public meeting and explain nuclear power," she says. "We held the meeting in June 1976, with about 150 people. CG&E sent out a slide show and their public relations department.

"We were scared the plant would be another Three Mile Island. I had nightmares that the kids would be irradiated."



Parents in Moscow, Ohio, feared for their children's safety as the Zimmer nuclear plant neared completion.

Everybody showed up but the dogs."

During the meeting Erbe became "appalled, really angry," she recalls. "They tried to placate us with a few long words and a couple of long sentences. Ohio Disaster Services and CG&E treated us like country bumpkins."

While many at the meeting were placated, Erbe and about 50 other parents were not. They knew little more about low-level radiation than when they'd arrived. But one thing they *had* learned disturbed them profoundly: neither Clermont County nor Ohio Disaster Services had worked out emergency evacuation plans for the communities surrounding the plant. When one skeptic suggested that there should be an evacuation plan for at least a 20-mile radius around the facility, Ohio Disaster Services Director Jim Williams laughed at him. At that time, the Nuclear Regulatory Commission (NRC) didn't require any emergency evacuation plans except for plant personnel.

The little band of dissidents got together in small coffee groups on a regular basis after that. Although they represented a cross section of the town's population—professionals and blue-collar workers, men and women, the employed and unemployed—they knew nothing about nuclear technology. Erbe recalls that "between 1976 and 1979 we stopped being the PTA and started doing a lot of research."

"We were like shadows," says Genny Dennison, who joined the effort in 1978. "We attended every meeting the utility had and became active in local government," joining the Clermont County commissioners at their Thursday morning sessions and showing up at town council meetings.

Erbe spent hours in the Clermont County Library reading the documents that comprised 35 volumes of information on the construction of the Zimmer plant. She researched the potential for extra releases of radiation into the atmosphere from breaches of containment, releases in addition to the routine "burping" of built-up gases during the normal course of plant operation. Because of the region's geography of bottomlands and surrounding hills, the area often experiences a swirling airflow pattern that could trap radiation releases

over the town. As far as emergency planning was concerned, Erbe says, "There was nothing. No coordination. Nothing at all had been done."

The coffee group often discussed strategy. Appearing to be "anti-nuke" wouldn't look good philosophically to the rest of Moscow, but they figured they could tie up licensing of the power station for years because of the lack of emergency planning. Meanwhile, they would pass on information about construction defects to other groups opposing the plant, such as the Cincinnati Alliance for Responsible Energy and Zimmer Area Citizens of Kentucky.

"We had to take the correct middle-class approach to the problem by working within the system," Erbe explains. "We wore our heels and dressed up when we went to meetings, dragging playpens and diapers along with us."

Maggie and her husband Eugene also took the personal step of putting their house up for sale in 1977, feeling they had to get their children away from the plant. The house remained on the market for months, and then years. The Erbes lowered their price from $60,000 to $50,000, then to $47,000, and later to $32,500. Because the house faced Zimmer, "No one would even look at it," Maggie says. "If they came out, they wouldn't even come up to the door."

Despite the dissidents' conservative approach to opposing the Zimmer plant, hardly anyone in Moscow would speak to Maggie Erbe when she walked through town. Other people in the group suffered the same problem. The coffee klatch dwindled as various members decided they could no longer take the stress. The handful of volunteers who remained active were worn out from waiting for something to happen.

Then, on March 29, 1979, something did happen—Unit 2 at Three Mile Island came within 60 minutes of a total meltdown. "That scared us," Erbe remembers. "We all called each other. None of us slept."

Three Mile Island showed the group that they "had to stop being nice little housewives," Erbe says. Within two days of the accident, most of the original group reassembled, formalizing their opposition to the Zimmer plant by calling themselves Zimmer Area Citizens (ZAC) of Ohio. For nearly three months they met every night and "strategized" on the telephone from 8 to 10 every morning, Erbe dragging her 30-foot phone cord around as she cleaned her kitchen. They had decided to intervene in the Nuclear Regulatory Commission's licensing hearing for Zimmer. Attorney Andrew Dennison, Genny's husband, agreed to represent them on a pro bono basis.

With the Zimmer plant nearing completion, Erbe called the Clermont County commissioners, her state legislators, and then-Gov. James A. Rhodes. "I met with energy, transportation, and health officials and asked where the emergency evacuation plan was," Erbe says. "During this period it seemed that licensing was always right on top of me. We were running scared that the plant would open and be another Three Mile Island. I had nightmares that the kids would be irradiated."

In the summer of 1979, CG&E brought nuclear fuel rods to Zimmer under a temporary, low-power license that allowed the utility to test the plant at 5 percent capacity. ZAC staged a week-

long, around-the-clock vigil at the plant entrance to protest the testing.

"Someone was there all the time, mostly mothers and a few kids," Erbe remembers, noting with some amusement that most of the men in the group didn't want to be without the comforts of home. "We asked permission from local officials to be there and permission to have a fire to cook hot dogs. We didn't lie down in front of the trucks or anything—although I sure would have liked to."

Construction workers frequently shouted at the protesting mothers ("Go home to your kids and do your dishes!") or diverted their attention while trucks brought the nuclear fuel into the plant at another gate. Erbe was run off the road on three different occasions by men who worked at the plant. "If you don't stop, we're going to kill you!" they threatened as Erbe wound up in the ditch again. Others bombarded Genny Dennison with urine-soaked newspapers.

Frustrated by their inability to block the deliveries, ZAC members wondered how they could demonstrate the plant's vulnerability. Then someone struck on the notion of canoeing down the Ohio River, which borders the backside of the power station, and sneaking into the facility to stick ZAC emblems on the walls. Erbe says that members of the group gained entry to the facility on more than one occasion.

The fact that ZAC members had trespassed on CG&E property angered Maggie's husband, Eugene, a Cincinnati teacher. The move was too "activist" for him, according to Maggie. "We were no longer middle-class, law-abiding citizens," she explains. Eugene threatened to lock Maggie out of the house if she participated in a planned three-mile march later that week. She marched anyway, along with several thousand people from all over Ohio and as far away as Pennsylvania. Though Eugene didn't lock her out of the house, her defiance "pretty much did in my marriage," Maggie says.

As the date approached for a federal hearing on the provisions that had been made at Zimmer for radiation monitoring and emergency evacuation planning, some 25 ZAC members surveyed the entire emergency planning zone.

Nature provided them with a "nice flood" about that time (the area often floods, Maggie says), and Eugene Erbe agreed to take pictures of one-lane roads and roads under water. The group also documented bridge weight restrictions to prove that the bridges wouldn't be able to support evacuation buses in case of an emergency.

"ZAC recognized it couldn't argue effectively in technical areas because of the group's lack of expertise," Andrew Dennison says. "But its members knew their own community and how to evacuate and get word out to the public. They knew the roads, the police, and the firemen."

In October 1981, Zimmer Area Citizens intervened in Zimmer's federal licensing hearing. In the wake of Three Mile Island, new NRC regulations required evacuation planning. The responsibility for formulating a plan had been turned over by Ohio Disaster Services to the Federal Emergency Management Agency (FEMA).

Andrew Dennison calls the agency's legal maneuvering at the hearing "ludicrous." Rather than produce viable evacuation plans, FEMA attacked Eugene Erbe's photographic credentials so the photographs that ZAC presented in defense of its safety concerns would be thrown out. The Nuclear Regulatory Commission chastised federal officials for knowing less about their own regulations than Erbe did. More important, the commission denied CG&E an operating license on the basis of inadequate emergency planning—an unprecedented decision.

"FEMA got hit with a baseball bat in the legal opinion," Dennison recalls. "It just points out the lie that if you give regulators responsibility they take care of their obligations."

Calling Maggie Erbe a pioneer, Dennison says it was her work and the combined efforts of other ZAC members

Thousands joined ZAC in protesting the bringing of nuclear fuel rods to the Zimmer plant.

that stopped the licensing process in its tracks. The group had been ridiculed as radicals, but Dennison says its members were "middle-aged, middle-class property owners," most of whom got involved out of fear of the plant, raising money by holding dances, canvassing for donations, and pursuing a variety of other strategies. Erbe paid for her phone bills, which were running $100 to $150 a month, with yard sales.

In 1980 the Erbes finally sold their house and relocated 12 miles north of the plant, but it was too late to save what had become a troubled marriage. "Eugene couldn't do battle with Zimmer," Maggie remembers. "The fight to stop Zimmer became a personal problem between us because I was driven to work on it. But if I had it to do all over again, I'd still be involved."

By then, the nuclear facility was besieged by problems on several fronts, including intimidation of quality-control workers and allegations of doctored records. (Former employees charged that thousands of the plant's safety records had been lost, improperly altered, or falsified, at times by the NRC itself.) CG&E was fined $200,000 after the first of some 15,000 quality assurance violations were uncovered.

Originally estimated to cost $230 million, the Zimmer plant had already cost the utilities $1.7 billion. Each day's delay in completing the plant added $500,000 to the tab. Though 97-percent complete, the plant would cost another $1.4 billion to finish properly, if that were possible at all. Finally, in 1982 the NRC decided to halt Zimmer's construction because of continuing safety concerns.

In a negotiated settlement with Ohio's Public Utilities Commission, the three utility companies agreed to absorb half the plant's construction costs—$861 million. If the commission approves a pending proposal to convert Zimmer to coal, consumers will be obliged to pay for the other half of a nuclear plant that never lit a single light bulb. Should the conversion proposal be denied, the utilities will absorb the total cost.

After her divorce, Erbe returned to school and got a technical degree in industrial laboratory technology to supplement her B.A. in fine arts from Xavier University. She now works for Proctor & Gamble as a pilot-plant engineer, overseeing manufacturing procedures and new-product testing.

Stopping Zimmer from becoming a nuclear hazard had cost Erbe time, money, and finally her marriage, but she says it helped her become stronger. "I still have eight kids at home," Erbe says, "and I still work 60 to 80 hours a week. Because of seven years of fighting Zimmer, I am more independent, and when I'm threatened, I just fight harder."

Looking back at her former hometown, Erbe thinks Moscow sold its soul to CG&E in exchange for the plant and the income it would bring. She also thinks that a lot of the money Moscow received in property taxes was wasted. "The whole town has only 300 people and ten dogs," she says. "But they built a tennis court downtown in an area so small there wasn't even room for a backcourt." As for the cooling tower, once a harbinger of such promise, it has instead become just another symbol of nuclear arrogance. ■

JAMES LAWLESS *covers environmental issues for the* Cleveland Plain Dealer.

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Jets to Invade a National Park

MIYAKE-JIMA, JAPAN

THE IDEA OF BUILDING a military airport in a national park would sound far-fetched to most Americans. Even the Defense Department wouldn't dare suggest it—at least not on U.S. soil.

But a military park raid in Japan is apparently not so unthinkable. The Japanese government has recently proposed building a 1.4-mile runway on a tiny volcanic island called Miyake-jima, which is located wholly within the Fuji-Hakone-Izu National Park.

The losers in the contest for Miyake-jima would be the island's abundant bird and marine species—and the people who visit the island to study and enjoy its wildlife. The winner would be the U.S. Navy. Its pilots now use the Atsugi Navy Base near Tokyo for nighttime landing practice, but complaints from local residents about noise have spurred the Japanese government to look for another site for a runway.

Jet fighters will not bother many residents at the Miyake-jima site; only a few thousand people live on the island. But they could create severe noise and pollution problems for the park.

With some 212 species, the island has the most diverse bird life of any area of comparable size in Japan. Two species that live on the island—the Izu Island thrush and Ijima's willow warbler—are found only in Miyake-jima's island group. Just offshore from the proposed airstrip is the world's most northerly coral reef, a unique ecosystem that contains six species of fish found nowhere else in the world.

Japanese and American environmentalists fear that the roar of military jets would disturb breeding birds, and that construction and maintenance activities would pollute the coral. They are also concerned about the precedent set by the runway: "It poses a serious threat to the basic spirit and philosophy of Japan's

National Park System," according to the Wild Bird Society of Japan.

Seven American and Japanese groups have joined the Wild Bird Society in opposing the project: the Sierra Club, the Environmental Defense Fund, the National Audubon Society, the National Wildlife Federation, Friends of the Earth, and the Japanese organizations the Citizens' Association for the Protection of Nature and Children and the Green Operation Center.

Military officials in the United States are leaving the decision to the Japanese. "They tell us that Miyake-jima is the best from their viewpoint," Defense Secretary Caspar Weinberger said in a July 1986 letter to Sierra Club Chairman Michael McCloskey. "We need a field urgently . . . so I hesitate to do anything that might slow the process even more."

At a September press conference in Washington, D.C., the eight environmental groups announced that they would band together to try to stop the project. They asked Weinberger and his Japanese counterpart, General Yuko Kurihara, to search for alternatives.

"No American would tolerate the destruction of a national park in this country for purposes such as these," McCloskey said. "And no American should tolerate our participation in the destruction of a Japanese national park."

—Joan Hamilton

A City Says No to Canyon Dams

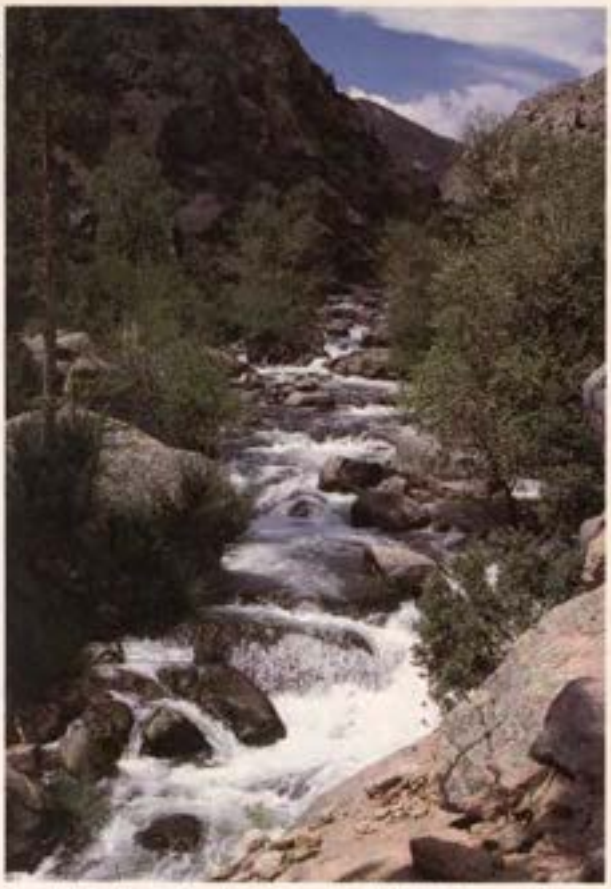
LONGMONT, COLORADO

"Colorado is crazy for water projects," says conservationist Gary Brenner. But Colorado dams are not approved without a fight. Sometimes the anti-dam forces even win.

In the most recent example, conservationists stopped proposals for two huge dams on North St. Vrain Creek near Rocky Mountain National Park. Brenner, conservation co-chair of the Sierra Club's Indian Peaks Group, helped per-

suade the Longmont City Council to request that Congress put the stream in the nation's Wild and Scenic River System. Then came an added push from the Sierra Club Legal Defense Fund. With that, the project proponents folded their tents and stole away.

North St. Vrain Creek rises on the flanks of Mt. Alice in Rocky Mountain National Park. According to Brenner, the canyon the creek has carved is the wildest left on the Colorado Front Range —and the only canyon without a paved road. The state has designated the stream Wild Trout Waters, meaning that its trout can sustain a healthy population without restocking.



Gary Brenner

North St. Vrain Creek canyon, the wild but threatened winter home of elk from nearby Rocky Mountain National Park. Conservationists won a key water battle here last year.

The canyon, which lies within the Roosevelt National Forest, is also an important winter refuge for the park's elk. Ironically, the U.S. Forest Service says it omitted the North St. Vrain canyon from consideration for wilderness designation because it is too fragile to withstand the crowds a wilderness might draw.

Last winter the St. Vrain/Left Hand Water Conservancy District and the city of Longmont proposed building two dams on North St. Vrain Creek, both within a few miles of the park's eastern boundary. The resulting reservoirs would have inundated much of the elk habitat and ruined the trout fishery. The reservoirs and the construction activity preceding them also would have been detrimental to the area's eagles, bighorn sheep, and one of the state's densest concentrations of mountain lions.

The Colorado Water Conservation Board holds water rights to maintain North St. Vrain's flows for fish, wildlife, and recreation. But the board refused to challenge the dam builders' applications, saying that it didn't want to stand in the way of a water project.

Conservationists were outraged. "The water board's rights were ostensibly obtained to protect the natural environment," says Lori Potter, an attorney for the Sierra Club Legal Defense Fund. "If it's not appropriate to use them when the environment is threatened, what good are the rights?"

After losing the water board battle, conservationists turned their attention to the city of Longmont, which also holds rights to the stream. At a May 1986 meeting before the city council, Brenner argued that the project was not only destructive but also far larger and more expensive than the town needed.

Council members were convinced. A week later they passed a resolution supporting Wild and Scenic protection for the creek. Subsequently, Boulder County (which includes Longmont) and the nearby cities of Boulder and

Louisville passed similar resolutions.

To cement the decision, Potter filed a request with the state water court to intervene should anyone suggest building dams on the creek again. The water district, seeing the writing on the wall, withdrew its application in August.

—Tom Turner

Cutting Through a Sacred Forest

JEMEZ MOUNTAINS, NEW MEXICO

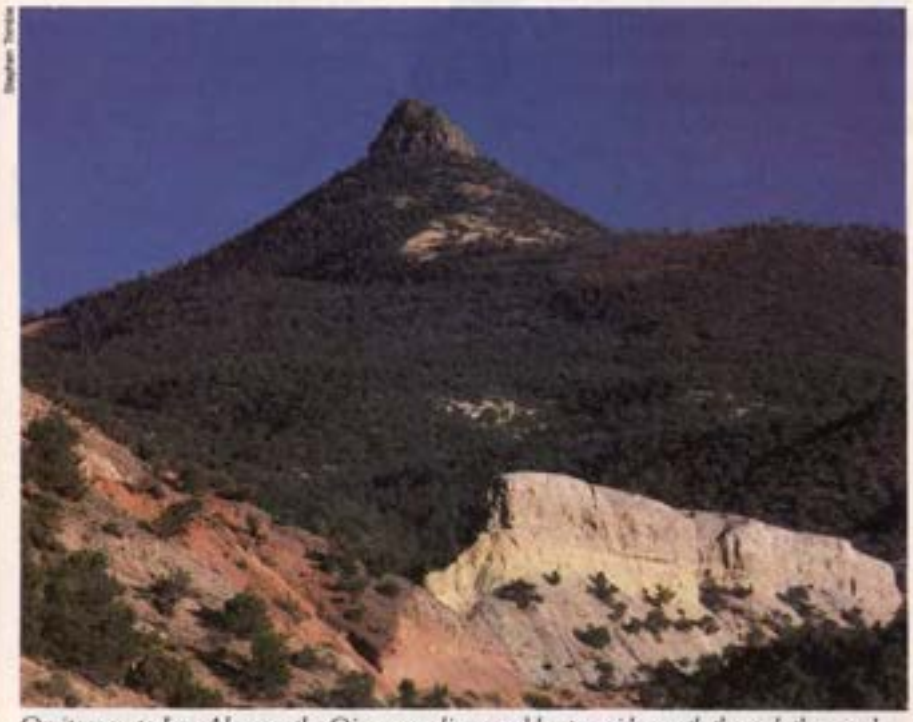
To the Pueblo Indians, the Jemez Mountains are sacred. To art buffs they are a land immortalized by Georgia O'Keefe. To many New Mexicans, they are a precious island of clean air, clear streams, and abundant wildlife.

But to the Public Service Company of New Mexico, the Jemez Mountains are a prime site for a high-voltage power line that will help convey additional power to the Los Alamos National Laboratories and the town of Los Alamos. The utility says that without this 350,000-volt line the community and the lab, which is involved in high-tech weapons research, will face brown-outs in the 1990s.

The project, called the Ojo Line Extension, threatens one of the state's richest repositories of animal and plant life. The Jemez provide habitat for at least five endangered species, including the peregrine falcon and bald eagle. The line could also disturb shrines belonging to the Pueblos, as well as important archaeological sites that have been protected by their isolation.

The 45-mile line would begin near the town of Coyote and head east and south near Cerro Pedernal, a mountain often depicted in O'Keefe's later works. From there its huge steel towers would march over the flanks of Chicoma, the range's tallest peak, and into Los Alamos. From Los Alamos a spur line would run southeast along the edge of Bandelier National Monument and across the spectacular White Rock Canyon of the Rio Grande to join other power lines northwest of Santa Fe.

Because the line will cross lands sacred to the Pueblo Indians, the Bureau of Indian Affairs (BIA) recently wrote an environmental impact statement on the power project. Indian and environmental groups—including Save the Jemez



Stephen Trimble

On its way to Los Alamos, the Ojo power line would cut a wide swath through the woodlands beneath Cerro Pedernal, the peak shown above, as well as sacred Indian lands.

and the Sierra Club's Santa Fe Group and Rio Grande Chapter—filed a formal appeal with the BIA in October, in which environmentalists argue that the document violates the National Environmental Policy Act by not properly considering alternatives. The state of New Mexico filed a separate appeal on similar grounds.

"We don't think the route the BIA chose was correct," says the Sierra Club's Rio Grande Chapter Chair Jack Kenney. "It would desecrate the forest, potential Wild and Scenic rivers, and a roadless area. For a little more money they could go around the mountains."

In the same appeal, four Pueblo governments and the All Indian Pueblo Council, which represents New Mexico's 19 Pueblo governments, offer a slightly different argument against the project. They say that, by desecrating sacred areas, construction of the Ojo Line Extension would violate the tribes' right to practice their religion, a right protected by the First Amendment.

"Some people look at a piece of vacant land and say it's being wasted," says Santa Clara Pueblo resident Jose Lucero. "Their vision is very narrow, like looking down a corridor. They don't see its true value."—***Daniel Gibson***

Swamps, Towns, and Football Downs

ST. LOUIS, MISSOURI

"A town is saved, not more by the righteous men in it than by the woods and swamps that surround it."

Henry David Thoreau, *Excursions*, 1862

Swamps are at the center of a controversy that has been raging through St. Louis like 1985's floodwaters. On one level it's a classic confrontation between old adversaries: environmentalists and the Army Corps of Engineers. On another level it's a political debate about growth in the St. Louis area and the fate of a lackluster major-league football franchise, the Cardinals.

St. Louis County, which is adjacent to the city of St. Louis, includes more than 20,000 acres of floodplain along the lower Missouri River. Much of this is farmland, interspersed with tracts too wet to plow. Since 1969 the county has looked to this area, the Missouri Bottoms, with an eye toward industrial, commercial, and residential expansion. The latest scheme is called Riverport, a commercial-industrial project of more than 500 acres that includes a 70,000-seat domed stadium for the Cardinals.

In 1984 the East Missouri Group of the Sierra Club told the Army Corps of Engineers that Riverport would cause serious

After a flood, the Riverport site looks like an unlikely place for a football stadium.

environmental problems, including diversion of floodwaters into new areas and loss of wetlands, prime agricultural land, and open space.

The U.S. Fish and Wildlife Service, the EPA, two state conservation agencies, the Sierra Club, and other groups asked the Corps to prepare an environmental impact statement on the project. The Corps decided that the project's impacts were not significant enough to require such an effort, and it handed the developers a permit in May 1985 to build a levee and fill in wetlands at the site.

At this point the new stadium was not even a part of the Riverport package. The Cardinals' owner had merely been talking about wanting something bigger than Busch Stadium in downtown St. Louis. But when the new stadium was added to the proposal, the controversy heated up. The original Riverport was damaging enough, environmentalists said; with the addition of the stadium and its parking lots, the project promised disaster for open space, agriculture, recreation, wildlife habitat, and flood control.

In June 1986 environmentalists and local citizens filed suit against the developers and the Corps in federal court, citing alleged violations of a number of federal laws, including the National Environmental Policy Act. The plaintiffs charged that the Corps was ignoring the secondary consequences of the project, which would affect lands far beyond the 500-acre development site.

Environmentalists see something much grander than a football stadium in the Missouri Bottoms' future. The Sierra Club's Midwest Regional Conservation Committee is soliciting suggestions and support for establishment of a Great Confluence Reserve to protect parts of the Missouri, Mississippi, and Illinois rivers and their floodplains from unsound development. Modeled after the Pine Barrens National Reserve in New Jersey, the congressionally designated area would be managed by a commission representing private interests and state and local governments.

Until such a reserve is established, environmentalists say, it will be necessary to fight every Missouri Bottom boondoggle that comes along.

—R. Roger Pryor

SIERRA NOTES

The annual election of the Board of Directors will be held April 11, 1987, the second Saturday in April, as prescribed by Sierra Club bylaws. Five directors will be elected to serve three-year terms. All Sierra Club members in good standing as of December 31, 1986, will be eligible to vote.

In November the Nominating Committee selected seven candidates: Carolyn Carr, Richard Cellarius, Ruth Frear, Hank Graddy, Robert Howard, Sally Reid, and Dan Sullivan. Individual members also had the opportunity to become candidates by submitting petitions signed by at least 200 members to the Club's principal office by 5 p.m. on December 30.

A ballot, election information, and return envelope (not postpaid) will be mailed to each eligible member in the March/April issue of *Sierra*. Election information will include photos of the candidates and a statement from each one giving pertinent background information and outlining individual views on the direction the Club should take.

If you do not receive a ballot by mid-March, write a note to the Inspectors of the Election, Sierra Club, Dept. E., 730 Polk St., San Francisco, CA 94109. Every effort will be made to send you a ballot in time for you to vote, but if your letter is addressed incorrectly, the response may be delayed.

Completed ballots must be received before April 11, 1987.

"Keep Tropical Forests Alive," an eight-page brochure explaining the value of and threats to tropical forests, is available free from the Tropical Forests Project, World Resources Institute, 1935 New York Ave. N.W., Washington, DC 20006; (202) 638-6300.

Ski Industries America and the National Ski Areas Association want America's skiers on the slopes during "Let's Go Skiing, America!" month, January 9 through February 8. "National Learn-to-Ski Day" kicks off the event Friday, January 9, with all-day free instruction offered at participating ski areas. Specially priced skiing packages will be available the rest of the month. Coupons and additional information can be obtained at many local ski retailers, or by calling 1-800-238-2300.

Want to work in the wilderness? Volunteer projects in the national parks and forests can provide you with training and experience while helping land management agencies strained by budget crunches and personnel cutbacks.

"Helping Out in the Outdoors" lists hundreds of volunteer jobs in state and national parks and forests. Many agencies will provide housing, trailer hookups, and/or stipends for positions lasting from one weekend to several months. Published in February and August, the booklet is a project of the Washington Trails Association and the American Hiking Society. Single copies are $3. Send checks, payable to Helping Out in the Outdoors, to 16812 36th Ave. W., Lynwood, WA 98037.

If you'd like to work in the wilderness but need an income, the *National Parks Trade Journal* may provide inspiration. National Park Service staffers volunteer their time to publish this guide to thousands of service-oriented positions in the national parks. The 1986–87 edition features 23 articles about working in the parks. Send $7.95 (postpaid) to Taverly-Churchill Publishing, P.O. Box 2221, Wawona Station, Yosemite National Park, CA 95389.

Environmental Internships: The National Society for Internships and Experiential Education has published a 48-page, step-by-step guide to creating an internship program, finding qualified applicants, and making the program work. Sierra Club chapters and groups interested in establishing their own internship programs can obtain a copy of "A Guide to Environmental Internships" for $5 plus $1.50 postage and handling from the NSIEE, 122 St. Mary's St., Raleigh, NC 27605; (919) 834-7536.

Nominations are being accepted for the Sierra Club's Denny and Ida

It's Like Sleeping on a Cloud

I received my wonderful featherbed queen last February and have enjoyed it so much I just had to write . . . Every time you roll over, it's like floating on a cloud. It reminds me of my grandma and the featherbed she used to have when I was a little girl.

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SIERRA CLUB COMMEMORATIVE GIFTS

IN HONOR

The Sierra Club and The Sierra Club Foundation wish to thank all of our members and friends who gave gifts between October 1, 1985 and September 30, 1986 in honor of the following:

Anderson, Mr. and Mrs. William C.
Cieslewicz, Lawrence and Allison
Clucas, George and Jan
Corneli, Pat and Howard
Cramer, Daniel Louis
Dodge, Farrar (Red)
Dubesta, Eleanora
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Van Straaten, Mr. and Mrs. Ray
Walker, Garg and Karen Miller
Walker, John David
Wernli, Marie
Wolff, Leona and Ernst
Wolfner, Mariana and James Rothenberg

IN MEMORIAM

The Sierra Club and The Sierra Club Foundation wish to thank all of our members and friends who gave gifts between October 1, 1985 and September 30, 1986 in memory of the following:

Anderson, Donald
Aranow, Dr. Henry
Argyle, Max L.
Auchincloss, Patty
Avery, Stuart B., Jr.
Baffico, Pastora
Baldwin, Bart
Barto, Leslie R.
Bates, Arthur
Bates, Dr. Talcott
Billings, Linda
Bloom, Mortimer
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Booth, Duff Wilson
Borkowski, Edward
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Braheny, Bill
Brock, William Valentine
Buongiorno, Paul
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Burgraff, Kim Elizabeth
Burk, Richard Lee
Burke, Cecil O. and Marguerite G.
Burke, Steve and Dotty
Burnham, Willis
Carey, Donald
Catron, Stephen Ellis
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Chaneles, Allan M.
Charloff, Gertrude
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Coors, Dr. Giles A.
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Crutchfield, Mary Jane
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Davidson, John
Davis, John
Debes, Valerie
DeLareuelle, R. R. (Bob)
DeSantis, Lori
Dobbs, Edna
Dodds, Kenneth
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Estes, Charles H., Sr.
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Freydberg, Jon Ward
Frost, David A.
Gaddis, Gordon Greenman

The wilderness, the grace and freedom of a wild creature, the sparkling purity of a stream, the companionship of friends on the trail, the stars in stark clarity through a clear night's air.

Preserve these shared memories by making a gift to the Sierra Club or The Sierra Club Foundation in the name of a friend, relative or associate.

Many opportunities for memorials are available. A special conservation project, perhaps. A visible memorial. An endowment fund. A project of special interest to the individual being memorialized. These are only a few. Gifts may be restricted or unrestricted. Donations to the Club are not deductible. Contact us for details on ways to provide a living memorial.

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Zorn, Martin E.

Wilcher Award, an annual $3,000 endowment in recognition of work in membership development or fundraising—particularly for conservation projects. Chapters, groups, sections, regional conservation committees, or other committees or task forces are eligible for the award.

Nominations and applications describing activities undertaken in 1986 should be sent to J. J. Werner, Chairman, The Denny and Ida Wilcher Award Committee, 2020 Chamberlain Ave., Madison, WI 53705. The deadline is March 1.

The Smithsonian Institution's Museum of Natural History opens an exhibit of nature paintings on January 17. "Portraits of Nature: Paintings by Robert Bateman" is a major retrospective of the well-known Canadian wildlife artist's *oeuvre*. The exhibit will run through May 17.

Sierra Club Books offers a diverse collection of titles to fill the long reading nights now upon us. Naturalist and *New Yorker* staff writer Alex Shoumatoff brings the largely unexplored Amazonian rainforest into your living room in a paperback edition of *The Rivers Amazon* ($8.95).

Those looking ahead to spring gardening will want a copy of *The Gardener's Handbook of Edible Plants* by Rosalind Creasy ($25, cloth; $12.95, paper). This alphabetically arranged reference book includes complete information on 130 edible plants that beautify your home landscape while providing bounty for your table.

Soil and Survival: Land Stewardship and the Future of American Agriculture by Nancy and Joe Paddock and Carol Bly ($19.95, cloth) takes a hard look at the loss of America's farmlands and the threat it poses to human survival. *Beyond Spaceship Earth: Environmental Ethics and the Solar System*, edited by Eugene C. Hargrove ($25, cloth), reflects on the ethical and environmental issues involved in space exploration.

Club members may order these books through the Sierra Club Catalog. Nonmembers may order them from Sierra Club Store Orders, 730 Polk St., San Francisco, CA 94109; (415) 776-2211. Please include $2.50 for postage and handling. Allow four weeks for delivery.

Ready to blow the whistle on water pollution but don't know whom to contact? The Izaak Walton League of America has published a list of numbers to call in each state to report pollution emergencies or obtain information about water quality.

"A Citizen's Directory for Water Quality Abuses" is a project of the IWLA's Save Our Streams program, founded more than a decade ago to encourage citizens to "adopt" a stream and monitor water quality for a year or more. "Most state and local agencies don't have the personnel or the money to monitor streams with any regularity, so the only way we are going to hear about problems before they get out of hand is if citizens let them know," says Cindy Shogan, the IWLA's Chesapeake Bay Coordinator. "We want to make it as easy as possible for people to report water quality abuses they may discover."

Copies of the booklet are available for $1 each from the IWLA, 1701 N. Fort Myer Dr., Suite 1100, Arlington, VA 22209; (703) 528-1818.

Statement required by the Act of Congress of August 24, 1912, amended by the Acts of March 3, 1933, July 2, 1946, June 11, 1960 (74STAT.208), and October 23, 1962, showing the OWNERSHIP, MANAGEMENT AND CIRCULATION of *Sierra*, published six times yearly at San Francisco, California—for September/October 1986.

1. The names and address of the publisher, editor and executive director are: Editor and Publisher: James Keough, 730 Polk Street, San Francisco, California; Executive Director: J. Michael McCloskey.

2. The owner is the Sierra Club, an incorporated nonprofit membership organization, not issuing stock; Larry Downing, President, 630 Fifth Street NW, Lake Shady, Oronoco, Minnesota 55960; Denny Shaffer, Treasurer, 2910 Skye Drive, Fayetteville, North Carolina 28303.

3. The known bondholders, mortgagees and other security holders owning or holding one percent or more of total amounts of bonds, mortgages or other securities are: NONE.

The average number of copies of each issue of the publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown was 301,408.

(signed) James Keough

Snow Shelters

Kathleen Bogan

Everyone has heard of igloos, the domed snow houses Eskimos build when they're on long hunting or fishing trips. As snow shelters go, igloos are pretty complicated. There are other kinds of shelters that are easier to make. You might want to try building one the next time there's a big snow. Then if you go skiing or snow camping with your family, you can show them how to build a house to sleep in!

You need two things to build a snow shelter: a shovel and, of course, snow—at least three feet of it. Different kinds of snowstorms bring different kinds of snow. Sometimes it's wet and heavy—perfect for making snowballs—while other times it's light and fluffy, and dissolves into powder when you try to throw it.

Unfortunately for snow sculptors, winter storms don't always leave perfect layers of the right kind of snow. Luckily, you can often work with what you have by compressing loose snow. You know from making snowballs that pressing on snow will make it hard and solid. The snowflakes' sharp points get shaved off as you press, and the rounded crystals of frozen water bond together. By compressing a lot of snow and letting it freeze, you can make a "quarry" of snow building blocks.

One of the easiest kinds of shelters to make is the one-person trench. There should be at least two and a half feet of snow on the ground for this one.

Start by digging a pit big enough to lie down in. Make the trench a little longer than you are tall, so you can get in and out of your sleeping bag without starting an avalanche. The trench should be wider at the bottom than at the top, so the walls lean in a little above you. This will help keep your body heat near you during the night.

Stomp down on the floor of the trench as you shovel, and pound the walls with the flat side of your shovel to compress the snow. It's not a good idea to dig all the way to the ground, though, because you could damage plants underneath the snow.

When you've dug the trench, lay a tarp or ground cloth over the top. The edges of the tarp should stick out a foot and a half past the edges of the trench—except at one end, where you'll get in. Bury the edges of the tarp in at least six inches of snow to hold them in place. You can also use skis and poles to hold up the tarp roof.

If you prefer, you can make a snow roof for your trench, using snow building blocks. These are the same kind of blocks used to build igloos. To cut them, you'll need a snow saw or pruning saw—something with jagged, hooked teeth. The blade should be 18 to 24 inches long. It's a good idea to have an older brother or sister help you use it.

First you need to make a snow quarry. Stomp all over a square area with skis, snowshoes, or boots to compress the snow. Shift your weight from one foot to the other all the way across the quarry, then turn and stomp again the other way. Keep stomping until the surface is hard and there's no snow above your skis or boots, only under them. To make enough blocks for your trench, stomp a square as long and wide as you

Illustrations by Randall Enos

are tall. Then wait half an hour for the snow to freeze.

If you haven't dug the trench yet, you can do that while you're waiting. You should make it close to the quarry, because you'll need to carry the blocks to it—but not too close or the trench walls will collapse. Ten feet is a good distance.

Cutting the blocks can be tricky, but it's good practice for building more complicated shelters. Begin by digging a wide, deep hole next to the quarry. The side of the hole facing the quarry should be flat instead of curved. This will be the quarry wall. With your shovel or saw, shave the wall perfectly flat. Measure eight to ten inches back from the face of the wall, parallel to it, and make a long cut all the way across. Cut as far down as your saw will reach. Then make several cuts down the wall, 16 to 24 inches apart. Finally, cut across the bottom, 12 to 18 inches down the face of the wall, and you'll have several blocks you can remove (gently!).

The first thing you'll notice about these blocks is that they're heavy. You may want to make them smaller so they're easier to carry, but keep them as large as possible. A friend can help lug them to the trench while you saw.

To build the roof, place two blocks on opposite sides of the trench. They should be standing on their short ends. Get inside the trench and gently push the tops of the blocks together until they meet. You may want to shave off the corners of the blocks so the roof forms an "A" instead of an "M."

Keep stacking blocks all the way down the trench until you've formed a roof. You can use extra blocks to seal the end. Fill in any gaps and holes with leftover snow, then toss a layer of snow over the roof with your shovel.

The finishing touches are up to you—maybe a little alcove in the wall for a candle, or shelves for your supplies. You can dig them right into the trench wall.

A snow roof takes more time to build than a tarp roof, but it will be warmer, because a thick layer of snow is better insulation than a thin layer of nylon. Plus you'll have more headroom.

A ONE-PERSON TRENCH is good for clear nights when you want to build a shelter in a hurry and get on to other things. You can poke your head out at night and stargaze. But if you're camping with others and want to talk, a trench can get a little lonesome.

Instead you could build a quinzhee (KWIN-zee), a domed snow house for several people to sleep in. This will take a couple of hours and at least three feet of snow on the ground. If you have two shovels, one with a flat bottom (the kind you probably use to shovel the driveway) and one with a round bottom (like a garden spade), the job will be easier.

Start by figuring out how big you want the shelter to be. A quinzhee for three people should be about 15 feet across. Stomp down a circle for the floor, then start piling lots of snow on it. The snow pile should reach well above your head, five to seven feet high. Get a friend to stomp down on the pile while you keep adding snow.

Once you've built the pile as high and wide as you need, take a half-hour break to let it harden. Meanwhile you can start planning the interior. Some people like to have the entrance facing east to get the early morning sun. No matter which way it faces, the entrance should be lower than the floor, because warm air is lighter than cold air and will naturally rise. If you make the entrance too high, some of the air warmed by your body heat may drift out.

Pick a spot a few feet from the edge of the quinzhee, dig deep, then turn and tunnel in, digging toward the center of the snow pile. Keep the tunnel low to save space for the room. The longer the entrance tunnel, the better the quinzhee will hold heat. After you've dug about three or four feet into the pile, you can start to hollow out the inner chamber.

Since an arched roof is stronger than a flat roof, you'll want to make the inside of the quinzhee a dome rather than a square. The walls of the dome should be thicker at the bottom than at the ceiling, but not less than a foot thick in

any spot. It's easy to tell if the walls are getting too thin because you'll begin to see light glowing brightly through from outside. If you cut through the wall by accident, it will be hard to fix, so keep watching for any light shining through. It helps to use a spade to dig out the room while a friend stands outside the entrance hauling snow with the flat-bottomed shovel. This snow can be tossed on top of the quinzhee to keep the walls thick.

You can design the inside any way you like—just make sure the roof is domed and you don't dig so deep that you see light coming through the walls. I like to have a little platform right at the entry, then a step up to the main room.

If you sleep in the quinzhee, during the night your body heat will make the walls and ceiling slightly glazed. Sometimes the room will get really warm, and the ceiling may sag a bit, but if you've made a good, round dome this shouldn't cause any problems.

Always sleep with a shovel inside the shelter, though, in case of a big snowstorm or sudden temperature change. You may have to dig your way out. I once spent a night in a quinzhee in 10° weather. During the night it warmed up to about 40°, which made the snow begin to melt. When I woke up, the ceiling was about three inches from my nose and I had to slither out like a snake.

Normally, after a night in a well-built quinzhee, the walls will be so hard that you can jump up and down on the shelter without collapsing it. Don't try this until you've decided to move out, though!

IGLOOS ARE THE MOST complicated snow shelters to build. To make one, you need a large block quarry, but sometimes the snow just won't cooperate. No matter how carefully you stomp, the blocks disintegrate in your hands. In this case, building a quinzhee will be easier and less frustrating. An igloo also takes a long time to build—at least three hours.

To begin, stomp down a floor for the igloo. Then stomp down your quarry nearby and let both areas harden.

When you cut the blocks, make them slanted instead of rectangular to help create the dome shape. If you're working with a friend, you can use two saws, one to cut blocks and another to shave them to the right size and shape at the building site.

Some people like to build their igloos in a spiral, stacking blocks around and around rather than making each level separately. By building in a spiral you can avoid the problem of getting the last block in each row to fit. For the first row, the blocks will have to start off very low, with each one getting a little higher until they start to overlap.

Whichever method you use, remember to angle the walls toward the center as you build. Be sure each block covers a seam below it, so the seams don't line up in a long crack.

As the walls get closer and closer, someone should stand inside the igloo to stack blocks. Placing the last few blocks is tricky. You may want to cut them a little smaller than the rest so they aren't as heavy. And always pay close attention to the shape of the blocks so they fit in tightly.

When the last block is placed, the person inside the igloo will be sealed in—so don't forget to give that person a shovel beforehand! You can begin to dig a tunnel toward the igloo while the person inside digs out. Remember to keep the entrance lower than the floor—as far below the igloo as possible.

Once it's finished, you can fill in the holes and thin spots with snow. If it's dark out, you can find thin spots easily by putting a candle inside the igloo. From the outside, the thin spots will glow more brightly. Finally, shovel snow over the top and sides. You'll still be able to see the candle glowing faintly through the walls, but your igloo should be strong and safe. ■

KATHLEEN BOGAN *is an artist and former design director for* High Country News *and* Northern Lights *magazine. She learned to build snow shelters while working as an instructor for the National Outdoor Leadership School in Lander, Wyo.*

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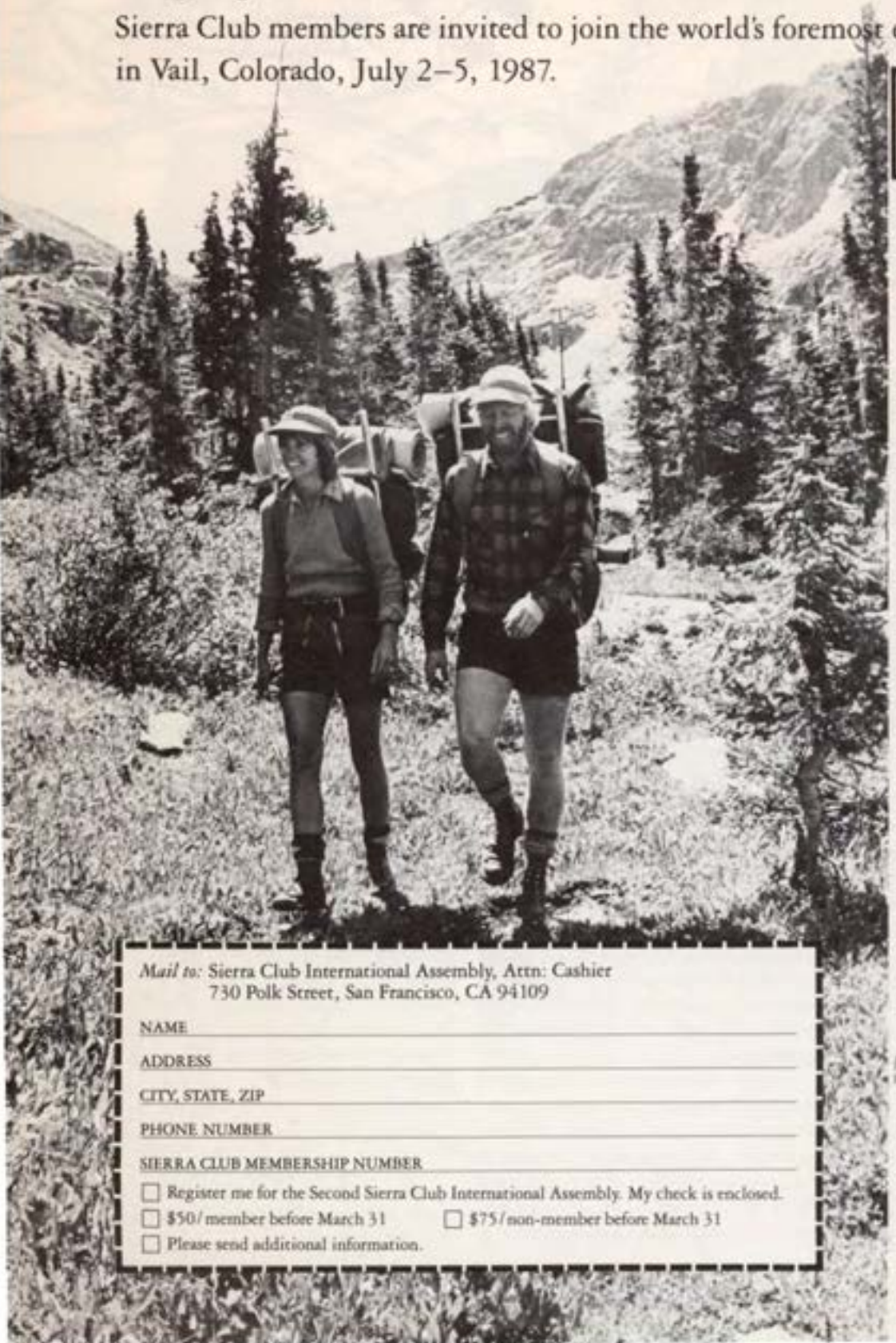

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The Post-Postwar Exodus

The New Heartland: America's Flight Beyond the Suburbs and How It's Changing Our Future
by John Herbers
Times Books, 1986. $19.95, cloth.

Seth Zuckerman

IT'S EASY TO GET mired in the reams of numbers, charts, and graphs that the Census Bureau produces on the demography of the United States. John Herbers, national correspondent for *The New York Times*, avoids that trap by capturing the human effects of population shifts as well as their quantitative dimension.

Herbers argues persuasively that the prominence of America's largest cities is being eclipsed by the rise of small, autonomous centers distant enough from the central cities that they are no longer suburbs or satellite communities. He documents in detail a deconcentration of the U.S. population as citizens move not just to the Sunbelt, as is conventional wisdom, but to places such as Concord, N.H.; Mountain Home, Ark.; and State College, Penn.

Herbers' America is moving out of city and suburb not so much to find affordable housing and cheaper living costs as to seek the amenities of the country—attractive natural settings, breathing room, and a sense of independence. Industry has also become footloose, moving out of the urban centers in search of nonunionized, low-wage workforces and settings that will appeal to their managerial and professional employees. These developments have left the metropolises and their older suburbs in the dust, and have wrought changes in the political landscape.

Unlike the post–World War II exodus from the central cities to the suburbs, this migration hasn't demolished everything in its path. The small towns and rural areas that people are moving to have retained much of their original character—which is one of the major attractions they hold for their new residents. "They are places of recent growth where it is possible to return after several decades and say, despite substantial change, 'This is a place I remember,' something that cannot be said of the suburbs or of much of the central cities," Herbers writes.

In describing this migration, the author interweaves a careful reading of census figures with colorful vignettes. Anyone who has driven through a rural area and seen lowrise development stretching along the highway for miles, or seen the burnt-out heart of a once-proud city, can fit his descriptions into their own understanding of the world.

Admittedly, there are exceptions: The author credits Asian and Latin American immigrants in New York and San Francisco with those cities' continued vitality, and he mentions urban ethnic neighborhoods in St. Louis, Boston, and Baltimore that have maintained their integrity. But even these cities are seeing the rise of small centers on the edges of town.

There is no assurance that the communities of the "new heartland"—which are supposedly imbued with traditional American values—will have the heart to care for their poor and elderly. Herbers acknowledges that people who move to the less dense areas of new growth do not support government assistance and regulation as much as urbanites do. It is doubtful that any institutions exist that resemble the parishes and strong extended families that formed the pre–New Deal safety net. Likewise, it is unclear whether the new heartland has room for the disadvantaged or unemployed, or whether they will simply be warehoused in the central cities' rotting cores.

The author's treatment of these issues is often ambiguous and superficial. Sure, service industries have grown up to cater to retirement communities and the professionals who live in the new heartland—but will the urban poor really move to Sandpoint, Idaho, to take

a minimum-wage job at McDonald's?

Herbers also neglects the possibility that migration out of the metropolitan areas could lead to environmental destruction, threatening the very amenities that led people to the country. Dangers to farmland and the environment merit a slim 12 pages. Herbers asserts that there is enough space for nature and people to coexist, as long as development is not permitted to get out of hand. But he holds out little hope that development will be regulated by the overlapping patchwork of jurisdictions in the places experiencing new growth. He ignores the environmental impacts of the upswing in long-distance commuting among new-heartland residents still tied to the large cities; he averts his eyes from the threats to groundwater brought by supposedly clean high-tech industries—a threat demonstrated graphically in California's Silicon Valley and other places where the electronics industry has made its home. He celebrates the accumulated wealth that has enabled Americans to move to the country, but fails to demonstrate convincingly that such patterns of settlement can be sustained when that accumulated wealth has been spent.

Despite these shortcomings, Herbers documents an important trend in America: the growth of the periphery while the old centers stagnate.

SETH ZUCKERMAN *wrote "What Ever Happened to Energy Conservation?" for the September/October 1986* Sierra.

Beyond the Heidi Complex

Mountain People
edited by Michael Tobias
University of Oklahoma Press, 1986.
$29.95, cloth

Keiko Ohnuma

DEVELOPMENT OF mountain wilderness is nothing new. What is new, since World War II, is the rate of change. Until recently most of the world's mountains were isolated and inaccessible, and the people who lived on them evolved for millennia outside the cultural mainstream. Improved health care, relentless population increase, growing national awareness in the Third World, and technological advancement have now brought many montane ecosystems to the brink of collapse—often hastened by the misguided efforts of governments and foreign-aid agencies.

Addressing itself to policymakers as well as the general public, this collection of essays is both a plea on behalf of those who have no voice in world politics and a call to arms to those who do. The 26 authors, many of them social scientists, make a case for including the experience and knowledge of mountain people in international planning efforts.

More than a question of suitable crops, environmental preservation, or equitable land distribution, development presents a cultural challenge—a confrontation with another time, a different world view; as art historian Hugh R. Downs puts it, another method of seeing. By allowing anthropological awareness to enlighten public policy, the authors hope to foster what *World Minorities* editor Georgina Ashworth calls a "widening of knowledge," a scientific approach to indigenous cultures that parallels the growing concern for ecology in land-use policy.

Just as ecology seeks to preserve not only the land itself but also the plant and animal species that are vital to it, so anthropology, says Gerald Berreman, must first preserve unique human species that may hold generations of specialized knowledge. In pursuing these concerns, social scientists must remember that "there is no freedom from values and politics in science," Berreman says. A scientist's first duty must be to the "truth"—namely, the truth of the people being studied, in contrast to the exigencies of realpolitik.

Indeed, the value system under which most governments operate measures well-being by balance of payments, wealth by the presence of modern conveniences, and progress in terms of technological advancement. Foreign-aid agencies, Berreman adds, typically undertake "reform" in the name of an ab-

stract entity—the nation—whose interests are rarely seen as congruent with those of the masses.

Opening the book with reflections on his life among the people of the Appalachian mountain range, psychology professor Robert Coles asks, "What possible connection can there be between the moral life of a given [people], on the one hand, and the particular terrain they happen to call their own?"

The Qollahuaya Indians of the Bolivian Andes provide one answer. The tribes live on nine peaks, each of which is divided into low, middle, and high communities. The Indians employ a system of vertical exchange characteristic of mountain economies that allows each community to specialize in the crops and techniques best suited to its ecological niche. Accordingly, the Kaatan community of Qollahuayans consider the mountain to be like a human body, and look to themselves to understand the mountain. All rituals center on this metaphor and the unity of the three parts, providing an important cosmological model for the vertical exchange and interdependence on which the economy is based.

Likewise, in many societies dependence on the land may give rise to a belief system that emphasizes the mountain's natural cycles, especially the soil and water cycles. Culturally speaking, these cycles correspond to a finely tuned agricultural calendar built on the techniques of slash-and-burn, seasonal use, and rotating a wide variety of crops on small, scattered plots to minimize risk and allow equitable distribution of terrain.

Human ecologist Kenneth Hewitt explains that for many indigenous societies the landscape is tied to a cosmological map that divides land into areas sacred and profane. This allows access to be regulated by time, conditions, age, and gender. "To recognize a pilgrimage spot in nature tends to restrain acts of pollution," writes Downs, "allowing the land to regain its significance as a reflection of oneself."

From this it follows that environmental disasters, thought to stem from violation of these rules, are perceived primarily as a loss of balance. Tribal conservatism, explains Daniel Feldman, often considered ignorant, simply sees the natural repercussions of losing touch with a sacred mode of conduct.

Turning a critical eye toward mountain studies themselves, several authors note the historic tension between "civilized" lowlanders and "barbaric" highlanders. Civilization always seeks to convert barbarians, Ashworth says, and in this sense mountain people share the same struggle across national, political, and cultural boundaries—just as lowlanders from East and West alike seek to wrest land and resources from the mountains.

"No one political system [has] truly evolved satisfactory responses to the existence of ethnic minorities within the frontiers of a state," Ashworth notes. "Ethnicity has subjective elements that are often underrated." One of these is the assumption by many policymakers that, where the ecosystem is in decline, natives are part of the problem. Indigenes are seen as stupid, driven to abuse the land through ignorance and need. Human ecologist Robert E. Rhoades contends that these are typically the views of uninformed lowlanders. The fact remains that mountain people are the only ones who have learned to live off the mountain without destroying it; centuries of survival show that these cultures are in fact highly evolved.

In his conclusion, Tobias ponders the extent to which our study of the mountains has been derived from our own mythology. Until recently, isolation helped to foster romanticism, the "Heidi complex." It is important to remember that the human beings who live up there have not engendered this imagery, Tobias warns, nor do they live by it. The photogenic, docile qualities of tribal people can mask the threat of extinction, and our need for romanticism may blind us to the very real problems of highland living.

Ultimately, lowlanders will have to take an interest in the health of mountain environments. Destabilization of the mountains can have disastrous effects as problems travel downslope. Ecology has never been a question of complete wilderness versus complete destruction, Rhoades reminds us, but one of balance. In this light, he adds, the demise of native wisdom is as great a loss to us as

the disappearance of the mountains' natural landscape.

With the spread of technology, International Mountain Society President Jack Ives points out, mountains will also become an increasingly important source of inspiration, creativity, escape, and peace. The mountains offer visitors a sense of the significance of the individual, says Downs, an expression of power that may compensate for a society in which, increasingly, individuals can be replaced by machines.

Working to preserve remote, forgotten societies is another expression of the power of the individual. By emphasizing human values over technical and political ones, photo-anthropologist John Nance says, we pay homage to our own human history. Separated from us by thousands of years of technological time, tribal people offer an intriguing reflection of our own humanity.

Today the ancient struggle between the sacred and profane takes place on the level of public policy. "How tragic," says Feldman, "that those who most suffer the loss of the land are those who would have been the last to allow it."

KEIKO OHNUMA *is* Sierra*'s copy editor.*

Henry Thoreau's Stoic Legacy

Henry David Thoreau: A Life of the Mind
by Robert D. Richardson, Jr.
University of California Press, 1986.
$25, cloth.

Dale Jacquette

AS HE DESCRIBES HIMSELF, and as he has come to be known in the popular imagination, Thoreau is the solitary inspector of snowstorms, a recluse who disdains polite society and even the newspapers from his sanctuary at Walden Pond, who walks evenings in the woods around Concord and confides his eccentric thoughts to the pages of his private journals. There is more than an element of truth in this caricature, but the portrait remains incomplete.

Thoreau was a master of classical and

modern European languages, widely read in literature, philosophy, political economy, and natural science. Deeply involved in family affairs and his father's pencil-manufacturing business, he was politically active in the abolitionist movement and the underground railroad, a frequent participant in vanguard intellectual circles and lecture/discussion groups. Thoreau was also an accomplished self-taught scientist. He collected and recorded valuable data on natural history and native Indian cultures, and conducted original botanical research on problems of seed dispersion, inspired by the controversies surrounding Charles Darwin's recently published account of natural selection.

This new biography skillfully weaves the many threads that contributed to Thoreau's complex intellectual development, from his graduation from Harvard in 1837 to his death in 1862. In a hundred chapters the story chronicles Thoreau's literary apprenticeship to and gradual independence from Ralph Waldo Emerson, his association with the New England Transcendentalists and founders of the Brook Farm commune, his thwarted romance, recurring illnesses, and personal triumphs and tragedies. The narrative is lively and absorbing, replete with drama and anecdote, the text elegantly complemented by Barry Moser's stark ink drawings of pine trees, branches, needles, and cones.

Richardson documents the seldom-appreciated influence of ancient Stoic philosophy on Thoreau's life and work. "Thoreau's life," he writes, "can be thought of as one long uninterrupted attempt to work out the practical concrete meaning of the Stoic idea that the laws ruling nature rule men as well." The Stoic turn toward nature rather than religion or the state as a source of ethical principles is reflected in Thoreau's plainspoken appeals for self-reliance and individual conscience as the foundations of moral and political authority. Thoreau felt a greater affinity for Greek and Roman paganism than for the Puritanism and stifling Calvinist Christianity of his New England upbringing, and he sought alternative holy texts among the writings of China and India, in the Vedas of "the Hindoos." Thoreau

AT A GLANCE

Our Voices, Our Land: Words by the Indian Peoples of the Southwest
Photographs by Stephen Trimble and Harvey Lloyd
Northland Books, 1986
$35 cloth, $19.95 paper.

"I belong to this place," a Hualapai man says of his arid home. Palpably, so do all the people whose images and words fill these pages, whether they are whirling at a rodeo, cradling a kachina doll, meditating at a ritual, or molding clay on a wheel.

On assignment from The Heard Museum in Phoenix, Ariz., Stephen Trimble and Harvey Lloyd traveled throughout the Southwest with their cameras and microphones. The result was an audio-visual program and, later, this impressive and unswerving look into the eyes and hearts of the first Americans.

admired Goethe's pronouncement that to know the anatomy and growth of a leaf is to understand all of botany, and carried the insight one step further in describing frost leaves on a windowpane as manifestations of the same universal law governing all the Earth, symbols of his conservation ethic.

Thoreau was sympathetic to the Stoic conception of life as a battle in which each individual must face new challenges with a soldier's courage. The analogy, immortalized by Epictetus and Marcus Aurelius, runs through his journals, and in times of trouble offered him a bastion of inner comfort and strength.

There is a touch of irony in this when we recall Thoreau's opposition to the Mexican War and his act of conscientious civil disobedience: Refusing to pay the poll tax that partly went to support the war, he spent a night in Concord jail. Yet he defended John Brown's violence at Harpers Ferry on the grounds that Brown was a brave soldier engaged in a noble war against slavery. It is the nameless gray masses of modern machine-warriors that Thoreau deplored, not the heroic man of action, and he shared with his contemporary Thomas Carlyle a fascination with the idea of the hero. Nearly everyone has heard his famous line from *Walden*: "If a man does not keep pace with his companions, perhaps it is because he hears a different drummer"; to which Richardson remarks, "In our interest to determine which drummer we ourselves are marching to, we forget that only soldiers march to drums at all."

Here is a detailed, well-researched study of Thoreau that is pleasurable, even exciting to read. Richardson has examined the man's immense literary output and shed new light on neglected manuscripts, the college essays, early poetry, lectures, correspondence with Harrison Blake, and Canadian notebooks. He traces the seven successive drafts of *Walden* from its original sketch written at the pond through its penultimate version, uncovering important events and experiences that shaped and reshaped Thoreau's masterpiece.

We learn that Thoreau's reading of Adam Smith, David Ricardo, and Jean-Baptiste Say powerfully influenced the long first chapter "Economy," in which

he parodies exact accounting methods and extols the countervirtues of self-reliance and austerity against industrial division of labor and assembly-line mass production. (Thoreau deliberately plants fewer beans in his bean field the second year to avoid the first harvest's unwanted surplus.) We discover in each revision how his exposure to the Hudson River School and American Luminist painters, and the aesthetic treatises of William Gilpin and John Ruskin, taught him the difficult art of describing season and landscape, and awakened in him an intense appreciation for color.

In Richardson we find Thoreau with family, friends, and disputants, in his library and in the field, picking up arrowheads and peering through his pocket microscope, struggling to perfect his craft, advance the science of his day, and live in harmony with nature according to the demands of his highly individual conscience.

DALE JACQUETTE *teaches philosophy at The Pennsylvania State University.*

Down on the Factory Farm

Agricide
by Dr. Michael W. Fox
Schocken Books, 1986. $7.95, paper.

Mary James

THE IRVINE RANCH Farmers Market, part of a huge shopping complex in California's Orange County, occupies an area the size of one and a half football fields. Counters filled with giant onions stretch for ten yards, followed by another five yards of gleaming, beefy tomatoes. The meat counter runs on for 30 yards with countless identical chickens and an array of innards from every conceivable animal. This abundant harvest pays tribute to the nation's successful farming and livestock industries. But behind the glistening products lies the story of an industry that may be killing itself with its own success.

In *Agricide*, Dr. Michael Fox scrutinizes today's changing methods of farming and meat production. As small family farms disappear, mechanized farms and factory-style livestock ranches take their place. Freely quoting from a jumble of statistics and academic studies, Fox details the health and economic costs associated with our increasingly industrialized approach to food production.

Some of these costs have received widespread publicity, while others are less well known. Fox jumps rapidly from the effects of heptachlor to malathion to DDT and a host of other pesticides. The uncritical use of these chemicals is just one aspect of farming that he places under the rubric "agricide." Soil erosion, destruction of the ozone layer, deforestation, and certain animal raising practices—all either examples or results of techniques geared toward short-term profits—contribute to the crisis. Of all these endeavors, animal farming comes in for the most criticism—not surprising, as Fox is the scientific director of the Humane Society of the United States.

Agricide is perilous reading for sensitive meat eaters. A steady sprinkling of statistics chronicling the nightmarish lives of poultry, pigs, and cattle raised in factory-like settings flavors the first half of the book. The stressful life these animals lead takes its toll: "An estimated 20 to 30 percent of all poultry and livestock die before they reach mature slaughter age," Fox says. The farmer can tolerate these losses so long as the overall operation still generates a profit.

Yet, in spite of mass-production techniques, most farmers' profits are shrinking. Since 1979, net farm income has fallen by 50 percent. Citing everything from agribusiness promotions to marketing price controls, Fox traces the path to bankruptcy trod by many farmers lured by the promise of higher yields—a competition that the larger, more mechanized farms are winning. The U.S. Department of Agriculture expects that by the year 2000 some 66 percent of all farm goods will be produced by 50,000 farms, compared to just 30 percent now. As farmers become increasingly absorbed in their roles as accountants and engineers, Fox fears, they will neglect

their role as caretakers of the Earth.

These changes are already affecting the quality of food that reaches consumers' tables. Factory-produced eggs from chickens stuffed with cheap feed, hormones, and antibiotics produce fewer nutrients than barnyard eggs. Vegetables grown with manure compost have not only shown higher levels of vitamin C, sugar, and protein than those fed on chemical fertilizers, they may be more resistant to pests than crops whose health has been weakened by pesticides or imbalanced levels of nitrogen.

With these nuggets of information, Fox builds his case against many of our current agricultural practices. Unfortunately, he supplies so many nuggets—some of which are just distracting—that his first few chapters resemble Rocky Road ice cream: In the clutter of excessive ingredients, it's easy to lose sight of the original intention.

In the second half of the book, Fox leaves many of his statistics behind and embarks on a more philosophical discussion of issues associated with factory farming. He traces the arguments of various camps in the animal care movement. Himself a vegetarian, Fox aims "to get the farm-animal industry to recognize that there are scientifically and ethically valid welfare issues that need to be addressed."

Not content just to criticize, Fox ends the book with strategies for change. Many of these center on the regrowth of regional agriculture and on consumer demands for non–factory farm products. Broadly speaking, a reorientation from technological fixes to ecologically sound stewardship will be needed, he says, to counter the trends of agricide.

The author has drawn a sweeping critique of an agriculture growing beyond control. The wealth of detail and numerous statistics make for rough going at times, but those who read with a critical eye will acquire a detailed understanding of the agricultural practices that have led to such problems as farm bankruptcies, soil erosion, and the growing populations of bacteria immune to available antibiotics. *Agricide* may not be the best-written exposé, but it is certainly comprehensive.

MARY JAMES *is* Sierra's *editorial intern.*

BRIEFLY NOTED

A four-color trail map of the Santa Monica Mountains is available for $2.50 from the California Coastal Trails Foundation (P.O. Box 20073, Santa Barbara, CA 93120). The map includes the stretches of trail developed and maintained by Ron Webster, the focus of *Sierra*'s July/August 1986 "Grassroots Profile." . . . For those lucky hikers who can take to other California trails all winter long, two new books may be of interest. ***Mt. Tam: A Hiking, Running, and Nature Guide*** ($10.95 from Martin Press, P.O. Box 2109, San Anselmo, CA 94960) features 32 loop trips on the San Francisco Bay Area's beloved mountain. Each trip is rated separately for hikers and runners; the hiking rating is based on aesthetics (important when you have to choose among ocean views, redwood groves, and stunning cityscapes), while the runners' rating considers footing conditions. An even wider range of options is presented by Ron Adkison in ***The Hiker's Guide to California*** ($9.95 from Falcon Press, P.O. Box 279, Billings, MT 59103). Eighty hikes in four regions are highlighted, from Death Valley to the Siskiyous, short lowland strolls to multiday Sierran backpacks. . . . Intermediate skiers may want to plan their backcountry travel with a copy of Rainer Burgdorfer's ***Backcountry Skiing in Washington's Cascades*** (The Mountaineers, $9.95). Nearly 80 backcountry tours are described for the region between the Mt. Baker Highway and Mt. Rainier; though most are recommended for the spring and summer months, a good number can be tackled as early as December. . . . ***Alpine Huts in the Rockies, Selkirks and Purcells*** ($17.95 from Karspring Enterprises, 615 Seymour Ave. S.W., Calgary, Alberta, Canada T2W 0N5) will appeal to an audience beyond the mountaineers and backcountry skiers who have long availed themselves of these sturdy structures. This informative guide, written by Herbert and Patricia Kariel for the Alpine Club of Canada, sketches the planning, construction, and history of some 64 huts and shelters, illustrated by maps, historical photos, and floor plans. . . . In ***Wilderness Visionaries*** (Stackpole Books, $19.95), Jim dale Vickery profiles John Muir, Sigurd Olson, Robert W. Service, Bob Marshall, Calvin Rutstrum, and Henry David Thoreau. A biographical sketch of Marshall was Vickery's contribution to *Sierra*'s November/December 1985 issue. . . . University of Arizona English professor Peter Wild, another frequent contributor to *Sierra*, has produced a natural, ecological, and social history of ***The Saguaro Forest*** (Northland Press, $11.95), illustrated with numerous color photographs. . . . ***The Wartville Wizard*** is an amusing children's story written and illustrated by Don Madden (Macmillan, $12.95) that tells how a town full of litterbugs learned its lesson. . . . As expenses associated with disposal of industrial wastes increase, waste reduction appears to be the most environmentally and fiscally sound management option. Case studies showing how waste levels have been reduced by industrial plants around the nation are detailed in a new book from the Institute for Local Self-Reliance, ***Proven Profits From Pollution Prevention*** ($26.50 from ILSR Publications, 2425 18th St., N.W., Washington, DC 20009). . . . Activists concerned about the effects of radiation from sources as diverse as nuclear explosions, microwave ovens, and high-voltage power lines will find much information of value in David W. Lillie's ***Our Radiant World*** (Iowa State University Press, $19.95). . . . Environmentalists, ethical investors, consumer advocates, and others will profit from ***Rating America's Corporate Conscience***, new from Addison-Wesley ($21.95 cloth, $14.95 paper). Produced in association with the Council on Economic Priorities, the book provides the social performance profiles of 131 companies and their product lines based on minority employment, involvement in South Africa and weapons contracts, and PAC contributions, among other factors. . . . Andrew Jackson Grayson's complete portfolio of 156 full-color 19th-century bird portraits has been painstakingly reproduced by the Arion Press (460 Bryant St., San Francisco, CA 94107). Although only 400 sets were produced, at the asking price of $4,500 each there may well be a few left. ■

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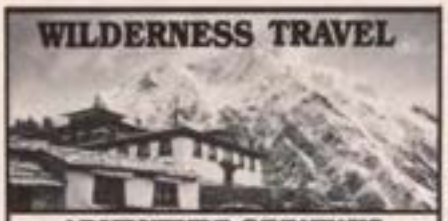

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How dependent are we in the United States on our groundwater resources? (Sara Escobar, Phoenix, Ariz.)

Groundwater, located in permeable underground strata of rock (such as sand or gravel), is an increasingly significant source of the nation's water. Nearly 90 billion gallons were withdrawn daily for all uses in 1980, compared to only 35 billion gallons in 1950.

Groundwater is the primary source of drinking water for nearly half the population. Those in rural areas are almost entirely dependent upon it. Furthermore, almost 40 percent of the water used in irrigation is supplied by groundwater, while 34 of the 100 largest U.S. cities are at least partially dependent on groundwater for all uses.

Just as our dependence on groundwater is increasing, so are threats to its purity posed by toxics and other contaminants. Until recently it was believed that groundwater was safe from pollution. Now it is recognized that natural soil processes have only a limited ability to neutralize the wide variety of pollutants that enter groundwater from numerous sources. These contaminants have been linked to such human woes as cancer, damage to the liver, kidney, and central nervous system, and eye and skin irritation.

One of the most beautiful sights in the mountains is alpenglow. What causes this phenomenon? Can I plan my trips to increase my chances of seeing it? (Steve Foster, Oakland, Calif.)

Alpenglow is a parade of colors occurring at both sunrise and sunset, when the sun is low on the horizon and light rays entering the Earth's atmosphere are bent (refracted).

As light is bent, alpenglow begins. The atmosphere, acting as a prism, separates sunlight into the colors of the spectrum: red, orange, yellow, green, blue, indigo, and violet. High-frequency colors—violet, indigo, and blue—scatter in the upper atmosphere, while short-frequency colors bathe the mountaintops, the highest masses on Earth, in a red-to-yellow sequence at sunrise, yellow to red at sunset.

Alpenglow is best observed in the crystalline air of winter. High mountains with broad west-facing flanks are best for sunset alpenglow; early risers should focus on an east-facing peak for the sunrise show.

Is there a sleeping bag I can use all year round? (Susan B. Thomson, Ft. Collins, Colo.)

Three-season bags, synthetic or down, for temperatures that range between 20 and 5 degrees Fahrenheit, can be used in spring, summer, fall, and even (by the hardy) in mild winter conditions. Although the owner of such a bag can continue using it in colder temperatures by placing a light summer bag or and weight must be taken into account.

If you're considering braving severe winter weather, you might as well abandon your dream of an all-in-one bag that will also serve you well in warm weather. Invest instead in a mantle inside for additional insulation (down to zero degrees in many cases), the disadvantages of increased bulk heavy-duty expedition bag; many of these are rated to as low as 40 degrees below zero.

What is the main ingredient in photochemical smog? How much of the United States is affected by it? (Martin Deaver, Los Angeles, Calif.)

The toxic gas ozone accounts for 95 percent of the noxious soup we call smog. Unlike ambient air pollutants emitted from specific sources (such as lead and carbon monoxide), ozone results from the interaction of hydrocarbons, nitrogen oxides, and sunlight.

Photochemical smog is a fact of life wherever there are large concentrations of automobiles, which contribute 66 percent of the hydrocarbons and 50 percent of the nitrogen oxides to the blend. When car-crowded cities are located in basins surrounded by hills and mountains—as in the case of Los Angeles—photochemical smog can be intensified as atmospheric inversion layers trap the chemical soup above the skyline.

The EPA estimates that one out of three Americans lives in an urban area plagued by ozone concentrations that often reach levels three times those allowed under current standards. Moreover, these standards may prove to be outdated: New EPA studies conclude that ozone produces detrimental health effects at lower concentrations than was previously believed, and that present "acceptable" levels do not adequately ensure public health and safety.

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