ELECTION ANALYSIS • 1985 OUTINGS • GENE SPLICING

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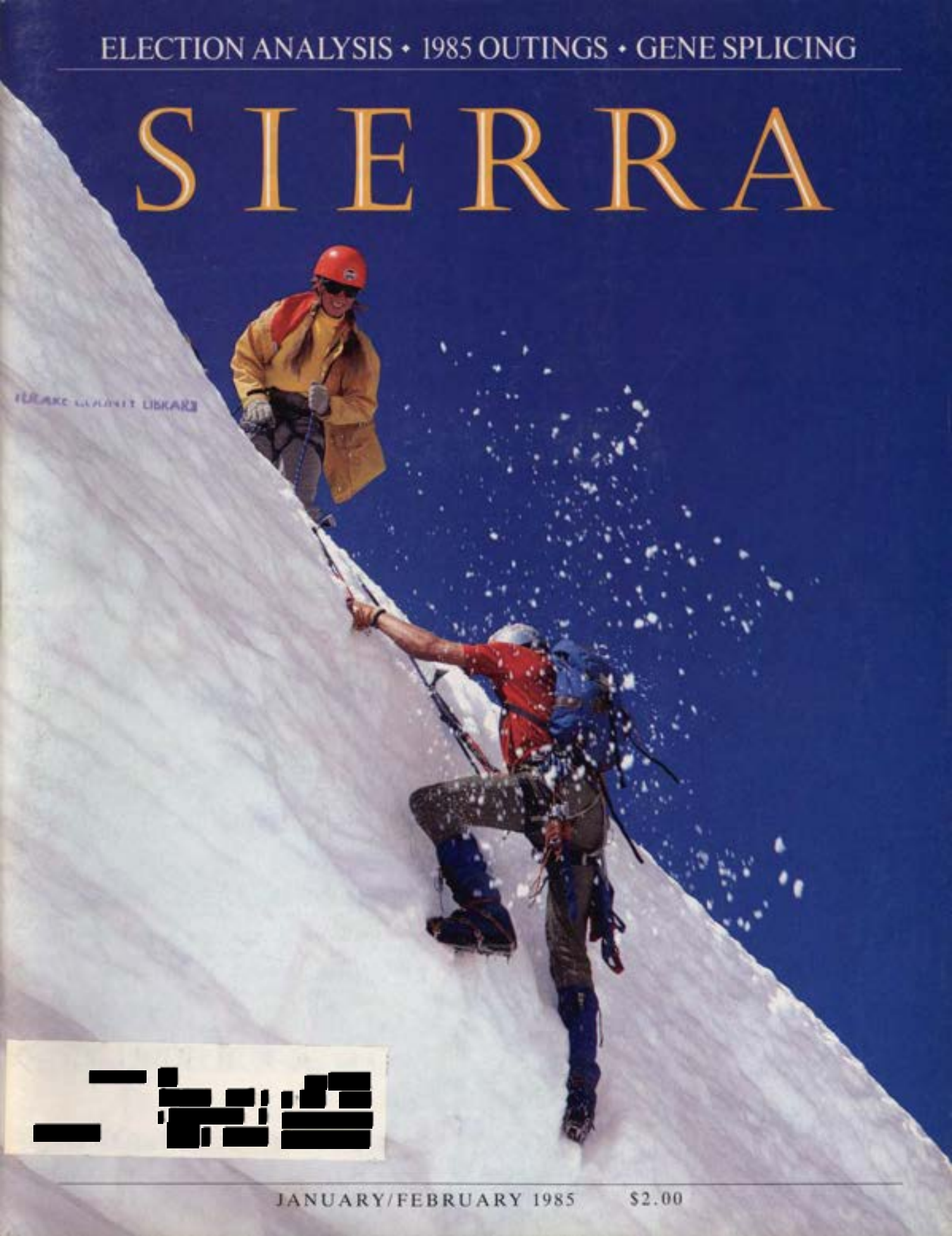

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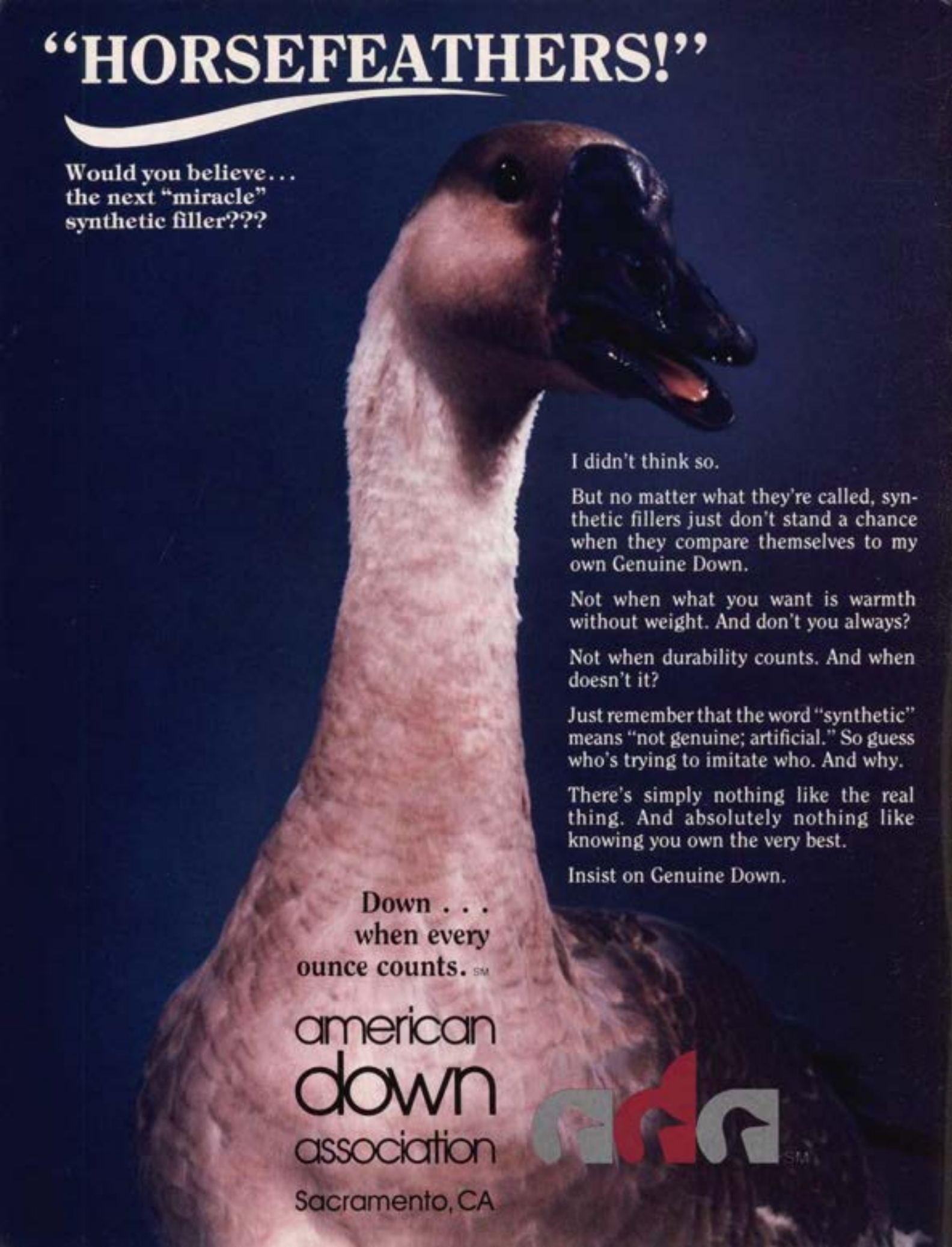

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THE SIERRA CLUB BULLETIN JANUARY/FEBRUARY 1985 VOLUME 70/NUMBER 1

FEATURES

DEPARTMENTS

cover: It's a clear winter's day, but the white stuff is flying as Marie Grayson belays her ice-climbing buddy, Mike Bishop. Tips for winter campers are the stuff of "At Home in the Cold," starting on page 110. Photo by Keith Gunnar.

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CHANGE OF ADDRESS should be sent to Sierra Club Member Services, 530 Bush St., San Francisco, CA 94108. Along with your old and new addresses, please include a *Sierra* address label. Phone (415) 980-8654 (voice); (415) 398-5384 (TDD).

Election Wrap-Up, page 34.

National-Forest Lands, page 40.

Winter Camping Tips, page 110.

How Animals Sleep, page 130.

Garden of Addin'

I read with great interest the brief news item in your November/December 1984 issue about the project to save a small "inner city oasis" in New York City by selling square-inch "deeds" for $5 each. The article listed the Clinton Community Garden as encompassing 15,000 square feet in area, and noted that there were some 185,000 such "deeds" remaining to be sold in order to raise the estimated $1 million purchase and maintenance sum.

Now this gives me pause to reflect. Although I'm no mathematical whiz kid, a little simple arithmetic leads to the startling observation that if this group has really sold the other almost 2 million available square inches, then it has already collected $10.8 million to purchase and maintain what costs a tenth of that! What gives?

Richard G. Sims
Gainesville, Fla.

According to the Trust for Public Land, only 200,000 square inches of the Clinton Community Garden were intended to be sold—enough to raise the $1 million needed to maintain the garden.

In November, the city of New York agreed to transfer Clinton Garden to the city's parks department in connection with the proposed Times Square redevelopment project. (See "The Times Square Affair," November/December 1984.) The million dollars raised by the Trust for Public Land will go toward a new maintenance fund for this and other city gardens.

Pig Pressure

Steven Yates writes in "Workers in the House of the Sun" (November/December 1984) that "goats—along with cattle, sheep, and pigs—were brought to the Hawaiian Islands at the end of the 18th century. . . ." He should have noted that pigs were already abundant in the islands at the time, having been introduced by the Polynesians many centuries before.

Today's increasing pig population in the Kipahulu Valley may be attributed to government agencies' prohibition of hunting in recent years. In other areas of East Maui, increased pig pressure on the forests also may be traceable to a decline in hunting as a result of the widespread cultivation of marijuana. Cultivators of "pakalolo" can be very discouraging to those who come near their scattered patches.

John C. Elliott
San Marino, Calif.

Election Fallout

Now that the election is over, we want to thank the Sierra Club for speaking out and supporting Mondale ("Sierra Club Endorses Mondale/Ferraro," September/October 1984). Just to know that the Sierra Club has the integrity to speak out for what is right and not be intimidated by members who threaten to cancel their membership is refreshing.

Still, it is a national disgrace that environmental issues have become political. Let's hope it doesn't become a national disaster.

Mr. and Mrs. Michael Szabo
West Covina, Calif.

The 1984 presidential election results have made obvious how unwise it was for the Sierra Club's directors to overturn the Club's nonpolitical tradition by endorsing the Mondale/Ferraro ticket. All that this decision accomplished was to introduce divisive politics into the membership of a unique organization that had avoided such political partisanship for 90 years. In addition, it undoubtedly turned off many potential donors who would otherwise have wanted to make contributions to worthy environmental causes. Let us hope that such a mistake will never be repeated in future national elections.

George R. Pfeiffer
Los Angeles, Calif.

Earth Calling Sierra

I'd like to correct a number of errors that were introduced into my article "Seasons

and the Sun" (November/December 1984).

The opening lines of the article read: "We all know that spring weather is different from winter weather, and that some days and nights are longer than others. This is because the sun is closer to the Earth at certain times of the year." I did not write that, and it is not correct. First of all, I would never write "the Mars" or "the Jupiter" any more than I would write "the Earth." Unfortunately, in many of the places where I said "Earth," it was replaced with "the Earth." Secondly, variations in the distance between Earth and the sun have virtually nothing to do with the seasons or the lengths of day and night. This is exactly the type of misconception I was trying to correct.

When I gave the mean distance between Earth and the sun as 92,870,000 miles, I deliberately put "mean" in quotes and defined the term in a few words so that it wouldn't be confused with "average." For some reason the words "or average" were added, making the statement incorrect. Because Earth moves much faster in the inner part of its orbit than it does in the outer, the average distance is considerably larger than the mean distance.

The illustrations by Ron Chan, from the laughing sun to the shading of blue, were a pleasure. I particularly appreciated the note explaining that the illustrations were not to scale. There is one factual error in the graphics, however. When Earth is farthest from the sun in July, the Northern Hemisphere is tilted 23.5 degrees *toward* the sun, not away from it as shown.

L.A.P. Moore
Gualala, Calif.

More Winter Photo Tips

With some trepidation, I'd like to comment on Galen Rowell's article, "The Ten Commandments of Winter Photography" (November/December 1984).

The article assumes that color slide film is being used, but many people use color negative film, because it directly yields prints that can be of very high quality if skillfully printed. Negative film has an almost incredible capacity for enduring overexposure and still producing good prints.

I agree with the author that many elec-

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tronically operated cameras will die if operated unthinkingly at low temperatures—but so will many mechanical ones! I think most people can get their cameras to work in winter provided they take precautions and it's not too shatteringly cold. It will help to use lithium batteries; to ensure that batteries are always new and to carry a new spare; to warm the camera if possible—but not so much as to risk high humidity and hence ice formation; and to warm the batteries out of the camera and insert them at the last moment—then there's a chance of getting at least a few good exposures.

Oliver Dalton
Portland, Ore.

The Dam Debate

As a touring Aussie in the USA, I was pleased to see *Sierra* taking an interest in Australia ("Furor Over the Franklin," September/October 1984). However, William Steffen's article was incorrect in several respects.

The Franklin dam issue did not sweep the Liberal federal government from power. The dam issue was only one of several factors in the strong ALP victory of March 1983. More significant factors were Malcolm Fraser's handling of unemployment and Bob Hawke's strong personal following.

The December 1981 referendum in Tasmania did not show that the majority of Tasmanians opposed the dam, as implied by Steffen. The referendum results were inconclusive, because the question "Do you favor a dam?" was not asked. The March election was more conclusive, because no ALP member was elected to the House of Representatives from Tasmania, usually an ALP state. This indicates that the majority of Tasmanians support Premier Robin Gray's stand on states' rights, and approve building the dam.

Tasmanians have witnessed the dam debate for several years. I, for one, am tired of the absurd statements being made by both sides, such as Steffen's claim that "the HEC has been the de facto government of Tasmania for years." These statements do not help the debate.

Michael Dudgeon
Bushy Park, Tasmania, Australia

Focus on Nukes

I was very happy to read the November/December 1984 "Observer." I would love to see the Club give the nuclear-weapons issue high priority, and would support a special fund set aside for it.

Joanne Vinton
Mountain View, Calif.

EPA Rules Promise Cleaner Smokestacks, Less Acid Rain

In November the EPA proposed new rules for power plants and smelters that could cut sulfur dioxide emissions by as much as 12 percent nationwide.

The move was forced by a Sierra Club lawsuit aimed at curbing the acid rain that is killing aquatic life and stunting forest and crop growth over large areas of the United States and Canada. The Sierra Club and the Natural Resources Defense Council were joined by several northeastern states in arguing that the EPA's rules about tall smokestacks were in violation of the Clean Air Act. In October 1983 the U.S. Court of Appeals for the District of Columbia ordered the EPA to rewrite the smokestack rules.


© Terrence Moore

Under the old rules, the EPA allowed industry to meet clean-air standards by dispersing pollutants through tall smokestacks rather than by actually reducing emissions with pollution-control equipment or cleaner fuels.

The proposed new rules would reduce sulfur dioxide emissions by between 800,000 and 2.8 million tons a year, according to the EPA. Currently, U.S. industry emits about 24 million tons of sulfur dioxide annually.

While the EPA's proposed rules limit the extent to which tall stacks can be used as a pollution-control measure, Sierra Club Legal Defense Fund attorney Howard Fox says they don't go far enough. "We want pollution to be reduced," he said, "not just shifted around to a different place."

In the past, the EPA gave industrial facilities air-pollution "credits" for installing a tall smokestack. The new proposal would eliminate some of those credits, reduce others, and leave some unaffected.

While these rules are an improvement, "the agency is still not on the straight and narrow path," Fox says.

The EPA's final rules on stacks are expected in January.

Two Courts Censure Strip Mine Agency

More eyes may be on coal strip miners in the future. At least, Congress and the courts are insisting on major changes in a federal agency they say has been "flouting the law," "abdicating responsibility," and "failing miserably" to catch and punish violators of strip-mining laws.

The federal Office of Strip Mining (OSM) has allowed the mining industry to avoid some $150 million in fines for land reclamation failures, according to a recent congressional subcommittee report. The report says that former Interior Secretary James Watt simply abolished the agency's penalty assessment office in 1982. In addition, the report claims the OSM never enforced some 1,700 cease-and-desist orders.

Two nonprofit Appalachian citizens' groups, Save Our Cumberland Mountains and the Council of the Southern Mountains, took the OSM to court over these issues. In an out-of-court settlement signed in October, Interior Secretary William P. Clark rolled back this and a number of Watt's other efforts to deregulate strip mining.

In a ruling on a separate suit in October, Federal District Court Judge Thomas A. Flannery upheld 29 of 45 complaints filed by environmental groups (including the Sierra Club) against OSM's standards and operating regulations.

"Ever since President Reagan came in, the Sierra Club, along with other groups, has been fighting to preserve the integrity of the Surface Mining Act," said Wyona Coleman of


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the Club's National Energy Committee. "We are jubilant that we have been successful."

States Take Charge of Environment

States must pick up the environmental ball where Congress and the Reagan administration have dropped it, according to the Conference on Alternative State and Local Policies. The Washington-based research group says that "at a time when state and federal relationships are being redefined and many state policymakers are just beginning to understand the full extent of their increased responsibilities, there is an urgent need for states to act."

In a report entitled "An Environmental Agenda for the States," the group briefly describes the tools some states are already using to address environmental problems. It also outlines an action plan for state officials—and for citizens who want to prod them.

The report says that states have protected twice as many miles of rivers as the federal government. "Through a combination of federal enabling legislation and local initiative, states have become the front line of defense in protecting rivers and streams from environmental degradation."

In a chapter on river protection, the report recommends that states look at the Oregon Riparian Tax Incentive Program. Through this measure, Oregon amended its codes to forgive taxes on the value of easements donated for conservation purposes on land adjacent to protected rivers and natural areas.

The report also states that federal laws provide extremely poor protection against groundwater contamination, citing inadequate controls on settling ponds, tailings ponds, brine pits from oil and gas operations, and farm fertilizer and pesticide application. Here, too, the group sees an urgent need for states to step in.

The state of Washington is commended in the report for its regulation of timber harvesting on private lands. The state's code encourages minimal use of machinery and limits tree-felling along streams. It also requires that a 50-foot-wide buffer strip be left when chemicals are sprayed from the air near bodies of water.

California has a law banning the construction of new nuclear reactors until a solution to the problem of waste disposal is found. The state also has developed an "investment balancing test," which requires a utility to compare the economic benefits of building a nuclear power plant with those of alternative measures, such as loaning money to customers to make conservation improvements. If the nuclear plant wins approval in this test, the utility is allowed to charge its customers only for the inflation-corrected construction cost it assumed when comparing the proposed plant with alternatives.

On the topic of farmland protection, the report recommends that states develop inventories of their choicest agricultural lands, using the new federal Soil Conservation Service maps or their own surveys. "The maps for Minnesota, Texas, and Ohio are complete and especially noteworthy," according to the report. Once a state's key lands are identified, the report suggests, the protection of threatened and highly productive lands should be made an explicit state policy. The report says states should also give soil- and water-conservation districts the power of eminent domain.

The group's 86-page report discusses a number of other environmental topics that can be addressed by state officials, including air, oceans and coasts, open space, recycling, toxics, mining, and endangered species. It is available for $8.95 plus $1 postage and handling from the Conference on Alternative State and Local Policies, 2000 Florida Ave. N.W., Washington, DC 20009.

Stephen J. Krasemann/DRK Photo

Alaska Hunts Wolves to Enlarge Moose, Caribou Herds

In November the state of Alaska resumed its controversial aerial wolf hunt.

The Alaska Wildlife Alliance had temporarily grounded the hunt with a lawsuit last year. But the procedural issues that led to the granting of an injunction have since been resolved, and the state has gone ahead in its attempt to increase the numbers of moose and caribou by killing wolves.

While the wolf is not endangered in Alaska, conservationists see the hunt as a misguided effort to increase the population of one species at the expense of another. Conflicts with humans have led to the wolf's elimination from 99 percent of its original range in North America.

Minnesota is the only other state in the country with a significant population of wolves. At press time, an appeals-court ruling concerning a plan to allow sport-hunting and trapping of Minnesota wolves had not been issued. (See "Reprieve for Minnesota's Wolves," March/April 1984.)

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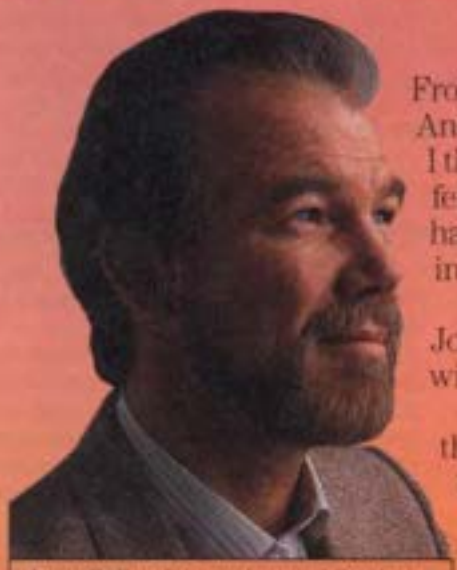

Jerry Fuller, Songwriter and Producer, Sherman Oaks, California

You just can't put a place like Alaska out of your mind. From the moment you step off your boat or plane, Alaska's got you. And it's not about to let go. Even when you get back home. I think that's true because for most of the world, history is fenced in little areas or parks. But in Alaska, history happens right in front of you. It's in the land and in the people. And it gets to be a part of you.

I felt like the first explorer. I felt like John Glenn. I felt like I was more in touch with my place in the natural order of things.

I can still see those rivers and inlets running thick with salmon and trout. The wildlife was just always there, always so close at hand.

As a writer of songs, I've often thought it would be hard to write a song about Alaska. Even if you could describe it, unless people had been there, they just wouldn't believe you. And, of course, if they had been to Alaska, they wouldn't need your song. They'd be writing one of their own.

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A L A S K A

Warheads & Wood Storks

The Reagan administration's rush to boost nuclear weapons production could damage an unintended target—the tall, white-feathered, and already endangered wood stork.

MIKE TIDWELL

THE SITUATION, according to the Reagan administration, is urgent. Because nuclear warheads are being built at the stepped-up rate of 1,500 a year, the administration says it needs more plutonium—as soon as possible.

To get the warhead fuel, the administration has been fighting since 1981 to reopen a plutonium-producing reactor at the Savannah River Plant (SRP) near Aiken, S.C. The reactor, mothballed since 1968, would boost the plant's plutonium output by one third. Environmentalists have been fighting the plan, claiming the 30-year-old reactor would needlessly destroy a thousand acres of wetlands and gamble with the future of one of the most successful wood stork colonies in America.

Since first announcing plans to restart the reactor, the U.S. Department of Energy (DOE) has weathered a deluge of public hearings, court-ordered delays, and negative publicity surrounding the 1983 arrest and trial of 50 antinuclear demonstrators.

The wood stork, an endangered species, faces yet another threat—a nuclear reactor in South Carolina that would flood one of its key feeding areas.

Now the DOE says it can't wait any longer. Unless Congress intervenes, the agency will restart the reactor in September, flooding nearby Steel Creek with discharged cooling water and destroying a key feeding area for 250 wood storks.

The battle over the wood stork, a tall white-feathered bird whose numbers have decreased by at least 80 percent since the 1930s, has kept environmentalists at bitter odds with the DOE, drawing the official attention of all three branches of the federal government. The bird was once found in the southern United States from Texas to North Carolina. Last March, with the species' population down to about 4,500 pairs, the U.S. Fish & Wildlife Service (FWS) officially declared the wood stork endangered. The agency stated that if present trends continue, the species will be extinct in the United States by the year 2000.

Critics of the reactor startup argue that the DOE should build a contained system of water-cooling towers to protect the storks, a project that would cost little more than the $40 to $45 million the government must otherwise spend mitigating environmental damage. The DOE claims construction of such a system would delay operation of the reactor for roughly two years at the expense of national security.

Instead, the DOE has begun building a multimillion-dollar network of artificial stork-feeding ponds adjacent to SRP property and near the birds' rookery 30 miles away. The ponds will be modeled on a similar, moderately successful project for storks implemented at the Audubon Society's bird sanctuary near Everglades National Park in Florida. Although DOE officials admit there is no guarantee of success, they argue that the ponds should compensate for the loss of wetland feeding areas along Steel Creek.

"We're looking at what we feel is a reasonable alternative," says Bill Wisenbaker, branch chief of the plant's environmental division. "We're going to simulate the storks' natural feeding needs, and it should work."

Most conservationists are less sanguine, however. They warn that the storks may not find the alternative ponds soon enough, or that if they do locate the ponds, the birds may not use them. Moreover, according to the FWS, the primary reason for the wood storks' decline has been the widespread destruction of natural wetland feeding areas. It is exactly this type of habitat that would be destroyed by the reactor.

"The whole thing just doesn't make much sense," laments wildlife biologist David Jennings, a lobbyist for the Georgia Chapter of the Sierra Club who is leading the wood stork fight. "If the DOE had simply built cooling towers from the start, it could have started the reactor on schedule and left the storks alone. Now it is spending millions of dollars on a gamble."

The debate also begs a more fundamental question: Why can't the agency postpone reactor startup for the two years it would take to protect Steel Creek and an endangered species? The answer, the DOE says, is classified.

Since taking office in 1981, President Reagan has diligently pursued a plan to more than double the 1979 production level of domestic bomb-grade plutonium. The administration will say only that the huge increase in fissionable material, almost all of which will be produced by the new reactor and the Savannah River Plant's three operational reactors, is needed now "to satisfy projected requirements" for nuclear arms.

"It's hard to defend environmental protection against a confidential argument," says attorney Jacob Scherr. Scherr is on the staff of the Natural Resources Defense Council, which in 1983 obtained a federal court order requiring the government to release an environmental impact statement on the reactor restart.

Critics of the reactor think the need for plutonium is less urgent than the administration claims. In 1982 President Reagan directed the DOE to go ahead with the reactor no later than October 1983. The scheduled restart has since been delayed until the fall of 1985, primarily for environmental reasons, without forcing a national security crisis or a reduction in the arms buildup. And Congress has cut back or delayed production of the MX missile and neutron bomb, reducing the demand for plutonium. These developments, combined with the fact that most plutonium used in new warheads is retrieved from retired weapons, has kept critics wondering why the DOE needs so much new plutonium, so desperately, so soon.

Some nuclear arms experts believe the DOE has plans to produce a 5-ton reserve of plutonium to meet future bursts in warhead production. If this is the case, environmentalists argue, then surely the stockpile could wait the 18 to 27 months it would take to build cooling towers, thus preventing harm to the storks. While refusing to deny the stockpile theory, the DOE has stuck to its "urgency" argument, warning that further delays are a risk to national security.

The Sierra Club petitioned the FWS to declare Steel Creek a wood stork habitat under the Endangered Species Act, a move that (had it worked) would have compelled the DOE to build cooling towers. But once again, time was the principal enemy. The FWS was in an "unusual and difficult" position on this issue, according to Warren Parker, mid-Atlantic FWS field supervisor for

endangered species. Because the wood stork was only recently declared endangered, scant data have been collected on the species' feeding and nesting habits. As a result, the FWS has decided not to designate any critical habitat areas.

"We just don't know enough about the wood stork to make Steel Creek or anywhere else a critical habitat," says Parker. "The timing of the [reactor] restart, as far as the storks are concerned, couldn't be worse. In a few years, it might have been different."

Yet Jennings and other conservationists have questioned FWS fidelity to the Endangered Species Act. They point out that studies conducted by the DOE, the FWS, and University of Georgia researchers have all concluded that Steel Creek is a principal feeding area for wood storks. Thus, these critics argue, the area should be considered critical habitat, and protected as long as the birds use the area.

The dispute may now wind up in Congress. At the Sierra Club's request, Georgia Rep. Lindsay Thomas (D), a member of the House Fisheries and Wildlife Conservation & the Environment Subcommittee, has pledged to seek hearings on the way the FWS has handled the wood stork situation.

"If the Fish and Wildlife Service is dancing around this issue, for political reasons or otherwise, then I think you'll definitely see some action by the [House] subcommittee," says Thomas aide Bob Hurt.

Environmentalists have also asked the South Carolina Department of Health and Environmental Control, which regulates industrial-water discharges, to consider several other ways of handling the hot water from the reactor.

But environmentalists concede that it is unlikely Congress or the state will hold up the reactor this late in the game. The DOE, under White House orders to push ahead, has already begun spending millions of dollars preparing for the scheduled restart. These measures include construction of 30 acres of wood-stork feeding ponds and a $35-million outdoor holding pond designed to cool discharged reactor water before it is dumped into Steel Creek. Now that so much money has been invested, the prospect of delaying the reactor may prove unsavory on Capitol Hill.

Consequently, the Reagan administration will likely get its reactor, its plutonium, and its warheads. The wood storks, already disappearing at an annual rate of 5 percent, will lose a thousand more acres of wetland habitat in their struggle to survive into the next century.

Mike Tidwell is a freelance writer and former reporter for the Atlanta Journal-Constitution. *He has a special interest in Georgia's wood storks.*

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Exxon Waits in the Woods

The land and lakes of northern Wisconsin are underlain with deposits of valuable minerals. And, yes, multinational corporations have already moved in.

PINE AND FIR FORESTS are spread over rolling hills and glacial gouges. In every depression is water—small ponds, lakes, swamps, and creeks. This is America's North Woods, home of the Sokaogan Chippewa.

The tribe's esthetic riches contrast sharply with its economic poverty. Tin shacks, tiny trailers, and prefab houses line Wisconsin State Highway 55. In addition, the Sokaogan Chippewa and other Wisconsin Indians have given up increasing amounts of their land over the years—first to lumber companies, then to farmers, and finally to mineral companies.

Today a new kind of developer has arrived, pitting traditionalists in the tribes against some of the world's largest conglomerates. This time the attraction is the copper, zinc, nickel, vanadium, and industrial diamonds that are said to lie beneath the North Woods' soil. Twenty multinational corporations, including Exxon, Kerr-McGee, Kennecott, Phelps Dodge, and Uranerz, have combined holdings of more than 500,000 acres in Wisconsin. Similar acreages are being bought or leased by these companies in Minnesota and upper Michigan.

Even with unemployment levels that approach 80 percent on some reservations, North Woods Indians are wary of the new developers. "We're not saying there should never be mining here," says one Sokaogan Chippewa. "But you have to remember that this is our reservation. We can't move from here. They've got to prove to us that mining can be done safely. This is our land, our water, our life. You can't put a price tag on life."

On December 21, 1982, Exxon asked the Wisconsin Department of Natural Resources (DNR) for a permit to mine a deposit of zinc, lead, and copper projected to yield more than 125 million tons of ore near Crandon, Wis. The ore body lies on private land near the headwaters of the Wolf River, a nationally designated scenic waterway that is famous for its river rafting and trout fishing. It is also just 2 miles west of Mole Lake Reservation, where the Sokaogan Chippewa live. State, county, and township officials, Indians, and others are still discussing Exxon's 2,000-page environmental impact report to find out just what this mine would mean to the Indians and their land.

For the Indians at Mole Lake and other reservations, as well as for the non-Indian rural population, the problems associated with the mine are enormous. The prospect of ground- and surface-water pollution, air pollution, the drawdown of groundwater, and socioeconomic problems associated with a major influx of job-seeking people to an economically depressed area have overwhelmed many locals. What sounded like a bonanza for the downtrodden North now begins to look like another environmental and social weight for an already burdened population.

Nevertheless, residents of the reservation are divided over the issue. Some hope for much-needed jobs. Exxon has said the $900-million project would employ, at its peak, some 800 people. Others are more concerned about the preservation of their environment and social structure.

Each year the Sokaogan Chippewa harvest wild rice from Rice Lake, a 300-acre body of water on the reservation. As with many Wisconsin Indian communities, the gathering of wild rice is more than an economic endeavor—it is an annual religious rite. Tribal leaders fear the Exxon mine could jeopardize the lake, the cultivation of rice, and ultimately the tribe.

Mine-dewatering operations are one of their major concerns. When a mine shaft is sunk into the earth, pumps must run constantly to remove the groundwater that flows into the hole. "When water is pumped at a certain rate, you eventually reach a lowering of the water table," says Gordon Reinke of the DNR. Studies done by tribal consultants show that water removed from the mine could drop the water level of Rice Lake—which is now only 5 or 6 feet deep—and endanger the rice beds.

But it is the disposal of mine wastes that may be the biggest problem associated with the Exxon project. According to the company, the mine is expected to produce more than 46 million cubic meters of tailings laced with heavy metals. It plans to store these wastes in a series of tailings ponds, which

Al Gedicks

Winnowing wild rice is an annual Sokaogan Chippewa ritual that may be threatened by a new mining project (below).

Al Gedicks

critics say won't provide adequate protection against leakage.

Water taken off the top of the tailings ponds will be treated and discharged into Swamp Creek, a tributary of the Wolf River that feeds Rice Lake and runs diagonally through Mole Lake Reservation. Although the discharge point for the wastewater is downstream from the lake, the area is swampy, and contamination of the rice beds may be possible.

Tribal solidarity is as important to Wisconsin's Indian people as environmental protection, if not more so. Indian leaders see the influx of a large white population with

money to spend as a threat to the social fabric of the tribes. While Exxon estimates that 60 percent of the mine's work force will be hired locally, state government officials put the figure closer to 20 percent. Tribe leaders from Mole Lake concur with state estimates, but think that almost none of the workers will be from the tribe. Wayne La Bine, a former council member at Mole Lake Reservation who spent two years studying the mine's impact, believes "Exxon will want the most experienced help available, and they have union contracts to fulfill. I don't think many tribal people will get jobs."

Other reservations are also threatened by the project. On the Forest County Potawatomie Reservation, just a few miles northeast of the mine site, J. R. Holmes fears the worst for his land and his people. A tall, broad-shouldered man who represents the Potawatomie in mining negotiations, Holmes speaks with a soft but determined voice. "Already our reservation is feeling the effects," he says. "More than a hundred people have moved here looking for jobs at the mine. There are no jobs for them. We have no houses here for them. Problems with drinking and family quarrels are up."

Indian and non-Indian landowners have formed the Wisconsin Resources Protection Council, a three-year-old environmental organization that has been going over the massive Exxon environmental impact report with a fine-tooth comb. With this information, the group has testified at public hearings and sponsored public forums and debate.

In addition, Mole Lake tribal attorneys are researching the validity of an 1854 treaty that set aside a much larger reservation. Their hope is that it will provide a legal card to play in the tribe's dealings with Exxon.

Wisconsin's Native Americans appear determined to hold their own in the tussle with Exxon. But it won't be easy. As Mole Lake chairman Arlyn Ackley puts it, "We have the world's largest corporation next to us, which wants to dig up the land and pollute our water to give the state money and the world minerals."

Indeed, mineral development in Wisconsin's North Woods is shaping up as a battle over priorities. The outcome of Exxon's plans at Crandon may well set the pace and precedent for mining projects in the entire Lake Superior region, from Minnesota to upper Michigan. Like other North Woods residents, the Indians of northern Wisconsin want to be sure they aren't mortgaging their people's future for a 26-year harvest of minerals.

Chris Kalka, a freelance writer who lives on 60 wooded acres in northern Wisconsin, specializes in rural environmental issues.

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DAVID GARDINER

Victory and Vacillation

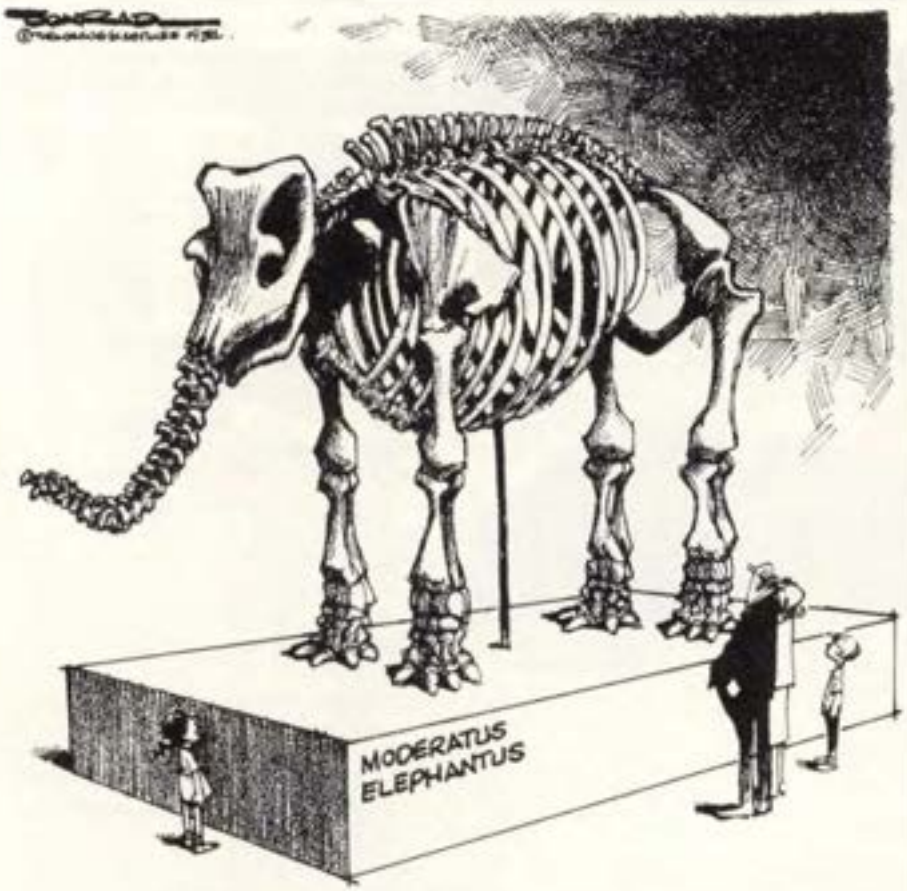
From an environmental standpoint, the 98th Congress was a mixed bag. It passed a bonanza of wilderness laws, but stalled miserably on antipollution efforts.

ENVIRONMENTALISTS WILL remember the 98th Congress as a group that held great promise, but that also suffered grave problems in the Senate. The promise was bountifully delivered in the millions of acres that were added to the National Wilderness Preservation System. Unfortunately, the problems proved to be the death of most of conservationists' efforts to promote sound energy and pollution-control legislation.

The congressional logjam on wilderness legislation broke on April 11, 1984. On that day, all eyes in room 316 of the Dirksen Senate Office Building were focused on Sen. Mark Hatfield (D-Ore.), the powerful chair of the Senate Appropriations Committee. Hatfield demanded that Energy Committee Chair James McClure (R-Idaho), a strong wilderness opponent, end the roadblock on wilderness legislation and permit the committee to approve the Oregon and Washington wilderness bills.

Left unstated, though barely, was Hatfield's threat of withholding millions of dollars in federal spending in the states of senators who would not support passage of the Oregon and Washington wilderness bills.

The logjam had been growing for more than a year. House-passed state wilderness bills had piled up behind McClure's insistence that roadless lands rejected by Congress should not be reconsidered for wilderness status until the year 2000. But Hatfield knew that if the Senate added such language, its versions of wilderness bills would



"Are you better off today than you were four years ago?"

not be acceptable to conservationists or to the House. He was convinced that to give in to McClure would be, in effect, to kill his Oregon wilderness bill.

No wilderness bills passed that day. But Hatfield had created a temporary coalition of Democrats and moderate Republicans that had outflanked McClure and could defeat him if they tried. This threat forced McClure's hand. Within two weeks he resolved his differences with the House on a major stumbling block: how to handle the "release" of nonwilderness lands.

This compromise opened the way for the passage of 20 statewide wilderness bills in the 98th Congress, adding 8.5 million acres to the national wilderness system. Despite the opposition of powerful senators such as McClure, 1984 became "the best year for wilderness since the Wilderness Act was enacted in 1964," according to Sierra Club Executive Director J. Michael McCloskey.

In contrast to wilderness, where the letter if not the spirit of compromise prevailed, environmentalists and the administration battled to a draw on energy and pollution legislation in the 98th Congress. Environmentalists stymied Reagan's attempts to weaken basic pollution laws and give away public energy resources. But they were unable to force the aggressive expansion of key pollution laws, and it remains in doubt whether they can win the battle to reform the Interior Department's energy leasing programs. Much of this unfinished business will be addressed by the 99th Congress.

President Reagan helped to defeat a bill that would have required federal offshore oil leasing activities to be consistent with state coastline protection plans. But environmentalists killed the controversial Clinch River Breeder Reactor, the flagship of Reagan's energy policy, and bottled up legislation to weaken the safety and licensing requirements for nuclear reactors. Environmentalists also limited the most environmentally damaging portions of the administration's offshore oil leasing program.

The House of Representatives churned out tough new environmental legislation at a record pace while blocking the worst of President Reagan's proposals to squander the nation's public land resources. In the Senate Environment & Public Works Committee, a bipartisan coalition also reported a host of tough new bills. But of the five major antipollution bills reported by the committee, only one made it to the floor of the Senate.

In the House, rewritten versions of the Clean Water and Safe Drinking Water acts, the Superfund (toxic cleanup) legislation, and the Resource Conservation and Recovery Act (RCRA) all passed by overwhelming margins.

The Senate became the burial ground for most of these proposals. The bill reauthorizing and amending RCRA reached the floor only after President Reagan indicated to the Senate leadership that he wanted to sign one piece of pollution legislation prior to the election. It then passed unanimously, getting even the votes of such antienvironment senators as Jesse Helms (R-N.C.) and Roger Jepsen (R-Iowa).

The Clean Water Act was killed when Alaska's two Republican senators, Ted Stevens and Frank Murkowski, held out for special exemptions for two pulp mills in their state. This made the bill unacceptable to its sponsors, who included Republican Senators Robert Stafford (Vt.) and John Chafee (R.I.) The Reagan administration offered no help, and the act died in the final hours of Congress.

Republicans were also at odds over the legislation to expand the nation's toxic cleanup program, the Superfund. Senator Robert Dole (R-Kan.), chair of the Senate Finance Committee, refused to schedule committee consideration of the taxing proposal to finance the Superfund, effectively blocking the legislation in the 98th Congress. Stafford, whose committee had reported the bill, tried to get around Dole's maneuver, but failed.

Senators Alan Simpson (R-Wyo.) and

SIGHTINGS

The Sierra Club's two Regional Conservation Committees for California and Nevada met in September to celebrate passage of the California Wilderness Act. From left: Lillian Wilson; Russ Shay, Northern California/Nevada Regional Representative; Jim Pachl, NCRCC Vice-Chair; Helen K. Burke, San Francisco Bay Chapter staff; Liz Meyer, former San Diego Chapter Chair; Sally Reid, a Club Director and Southern California Wilderness Coordinator; John Moore, NCRCC Biregional Coordinator for Forests and Wilderness; and (behind Moore) Alvin Greenberg, NCRCC Biregional Coordinator for Water.

Steve Symms (R-Ida.) delivered a behind-the-scenes one-two punch to a bill to reauthorize the Safe Drinking Water Act. First, Simpson delayed consideration of the bill on the floor by demanding additional weakening of the bill's judicial review provision. After sponsor Sen. David Durenberger (R-Minn.) bent over backward to address Simpson's concerns, Symms delivered the knockout punch by threatening to filibuster. (The Office of Management and Budget may try to repeal the Safe Drinking Water Act in the 99th Congress. The EPA is resisting this effort, however.)

The fifth bill reported from the Senate Environment Committee, amendments to and reauthorization of the Clean Air Act, died when the House Subcommittee on Health and Environment, chaired by Rep. Henry Waxman (D-Calif.), failed to report its version of the clean air bill. In this case, a bipartisan coalition killed the bill when the subcommittee's differences over the acid-rain section—particularly the questions of how much to clean up and who should pay—became unresolvable.

So the Senate's antienvironment forces won in the end—on every issue except RCRA and wilderness. The environment will win only when the drama of the Energy Committee on April 11, 1984, is repeated. On that day, Hatfield played his trump card against McClure largely because of the enormous behind-the-scenes efforts of conservationists. First, citizen groups in each state with a wilderness bill had helped create a political climate in which their senators were eager to pass the bills. Second, the Sierra Club and other national organizations had worked closely with Rep. John Seiberling (D-Ohio) and other wilderness leaders in the House to ensure that they would not accept McClure's ideas about "releasing" nonwilderness lands for development.

The lesson of this episode can be generalized. Even in the face of obdurate opposition, a broad-based citizen movement can pursue a strategy that will ultimately force legislative action. Fundamental to that strategy is the work of grassroots entities, such as Sierra Club chapters and groups, to persuade more and more members of Congress to step forward, speak out, and insist upon action.

It will be up to environmentalists to break the antienvironment coalition that has defeated efforts to clean up toxic waste dumps, to stop acid rain, and to protect clean-water programs. Our tools must be the same ones that forced the Oregon wilderness bill to a resolution on April 11—grassroots activism and electoral clout.

David Gardiner is Legislative Director of the Sierra Club's Washington, D.C., office.

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MICHAEL BOWKER

The Hawkers of Heredity

As gene-splicing technology moves out of the lab and into the marketplace, the changes it begets could force a fundamental reconception of nature.

BIOTECHNOLOGISTS MAY be guilty of only slight hyperbole when they predict that the phenomenon of genetic engineering will usher in a new age. After all, the science of gene-splicing—implanting genetic elements from one organism into another—promises more synthetic miracles in the next few years than have been witnessed since the beginning of time. The possibilities are staggering: from the control of malaria and hepatitis B to the creation of "clean" crops that glean nitrogen from the air, eliminating the need for petrochemical fertilizers.

But a number of concerned groups and individuals insist that the gene-splicing (or recombinant DNA) industry has a dark side—that it is a scientific Jekyll and Hyde. The industry's critics range from leftist environmentalist Jeremy Rifkin to conservative religious leader Jerry Falwell. The battle lines between the critics and the biotech industry were sketched in two important lawsuits in 1984. Final decisions in the suits, which are both expected to wind up in the U.S. Supreme Court in 1985, may well determine the future direction of the biotechnical industry in the United States.

The more significant of the two suits was filed in the U.S. District Court in Washington, D.C., this October. The Foundation on Economic Trends (headed by Rifkin) and the Humane Society of the United States are seeking an end to efforts by the U.S. Department of Agriculture (USDA) to raise sheep and pigs that are up to twice the size of regular livestock by injecting them with human growth hormones. They have asked the courts to rule on whether scientists may use genetic technology to cross different species. "These tests by our own government are ethically wrong," says Rifkin. "There is nothing we can do to animals that is more cruel than to rob them of their genetic uniqueness. . . . It is a violation of the moral and ethical canons of civilization."

Biotech scientists point out that we have been altering the genetic structure of plants and animals for thousands of years by cross-breeding. "I don't think most scientists have strong ideas about crossing species lines," claims Dr. Louis Reichardt, a neuroscientist at the University of California at San Francisco whose research includes gene-splicing experiments. "Just look at the changes people have created in dogs by selective breeding. I don't think there is anything wrong with crossing species lines. It really won't be ethically different from intensive selective breeding."

Besides, researchers argue, the tangible benefits from cross-species gene-splicing far outweigh the philosophical and theoretical problems raised by Rifkin and others. "If we could modify a species to produce meat cheaper and faster for the benefit of people, I see no reason not to do it," says Dr. Harold Hawk, director of the USDA's animal reproduction laboratory in Beltsville, Md., where the controversial sheep and pig experiments are being conducted.

In May 1984, Rifkin won a preliminary injunction (issued by U.S. District Court Judge John J. Sirica) to halt the first-ever release of a synthetic organism into the environment. The decision barred scientist Steven E. Lindlow, of the University of California at Berkeley, from spraying a 200-foot row of potato vines with "ice-minus," a genetically altered bacterium created to prevent frost from damaging plants. The decision also barred the National Institutes of Health from approving any release of genetically engineered life forms until a decision is made on a 1983 lawsuit concerning the dangers of such experiments. Sirica's decision has stimulated debate over the balance of benefits and dangers in gene-splicing.

"The potential benefits are enormous—almost endless," according to Winston J. Brill, vice-president of research and development for the Madison, Wis., biotechnical company Agracetus. "In the near future we may perfect a strain of corn, for example, that resists most known pests—thus doing away with the need for chemical fertilizers and pesticides. As an environmentalist I find that possibility terribly exciting."

In medicine, recombinant DNA has allowed researchers to work on the creation of disease-fighting drugs such as interferon and insulin. Vaccines to combat AIDS and other diseases may also be created in the future.

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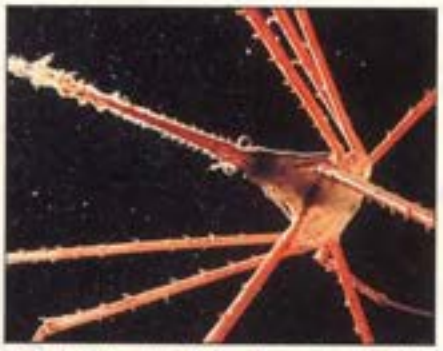

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to transform industrial processes. Eric Drexler of the Massachusetts Institute of Technology's Space Systems Laboratory foresees cell-like machines that not only reproduce, but also synthesize materials of super strength. Drexler speculates that one such material could be a diamond fiber 50 times stronger than structural steel. The influence of substances such as these could be enormous. Silent, organic processes may bring a startling change to our current methods of producing goods, and put an end to the practice of stripping resources from the earth and noisily pounding, melting, and molding them into useful products.

"When you consider all the experiments that can be done, you can see why I was distressed by Judge Sirica's decision," says Lindow. "The entire scientific community unanimously agreed our experiment was safe. All we were trying to do was test an ecological principle."

Rifkin disagrees. "It seems safe enough on the surface, but there are a number of potential dangers. First, the whole gene-splicing approach is based on a central myth that you can get something for nothing. What [the biotech industry] is ignoring is the fact that living resources are as finite as nonrenewables." Rifkin says that by allowing cross-species experiments we run a real risk of creating a species popular enough or vigorous enough to establish a monoculture and cause the collapse of the original species.

And once loosed on the environment, genetically altered organisms might be impossible to control. "Once they are out, you can't put them back in the barrel," says Rifkin. "The problem is, we are still using petrochemical thinking in a biogenetic world. We still think of chemicals as evil and of green, living things as good. In a biogenetic world the green, living things may well be a bigger threat. We would be forced into a fundamental reconception of nature."

Few believe that scientists face the danger of creating a so-called Andromeda strain—an organism that would multiply rapidly and push out all other life forms—but long-term cumulative dangers may exist. Rifkin claims that widespread use of "ice-minus," for example, could significantly alter a region's climate and induce insects from more-tropical climes to invade frost-free areas. "This is just one experiment among thousands that are planned," he says. "The potential changes these experiments could cause boggles the mind."

Brill and other scientists scoff at Rifkin's fears. "It's very easy to gain the media's attention by crying 'the sky is falling,'" says Brill, an adjunct professor of ecology at the University of Wisconsin. "But the fact is, I couldn't make an organism that could cause a significant problem even if I wanted to. And to create one by accident is virtually impossible."

In addition to the controversial battles being waged in the courts, regulation of the biotech industry poses a significant problem for the U.S. government. "There is no simple way to test these experiments," says Frances E. Sharples, a recent appointee to the National Institutes of Health DNA Advisory Committee. "Out of a thousand experiments, maybe one is worth looking at, but it would be nice if we had some way to spot that one."

An even more urgent task is to determine

"Sure, the technology's great, but what about the ethical questions involved?"

which agency will regulate the burgeoning industry. "It appears the EPA will have some jurisdiction," says Sharples, "but a number of White House and congressional committees are still looking into the matter." Some scientists note that since the EPA has shown itself to be woefully inept at dealing with problems such as toxic wastes, which have been around for a decade or more, the agency may be incapable of dealing with a new technical problem such as gene-splicing.

Others warn that allowing market forces to direct the industry without some governmental regulation could stunt its positive potential. For example, long-range health care projects might be ignored in favor of more-profitable short-range projects, and the flow of information could be stifled by companies anxious to protect their processes under patents. In a book called *Broken Code* (Sierra Club Books, 1985), University of California adjunct associate professor Marc Lappé offers a number of regulatory options, including government incentives for health and other long-range projects.

Regardless of the future of biotechnology in the United States, biogenetic engineering in other industrialized countries will probably continue. France is spending $145 million over the next three years in an effort to claim up to 10 percent of the world biotechnology market; Japan's Ministry of Trade and Industry is working closely with the giant Takeda, Mitsubishi, and Ajinomoto companies to keep its worldwide lead in gene-splicing experiments; and other countries, such as England and Germany, are spending millions to promote their biotech industries.

Before Sirica's decision the American market for recombinant DNA products was expected to reach $1 billion by 1990. But according to industry representatives, excessive governmental regulation in this country could allow unregulated foreign competition to squeeze out American companies. Alan Goldhammer, associate for technical affairs at the Industrial Biotechnology Association, has said that since the Sirica decision the prospect of a foreign exodus of U.S. biotech industries "has been mentioned in almost every discussion on this subject I've been in."

Rifkin calls talk of such an exodus "a shadow-whip the industry uses whenever it doesn't get its way. There is a question that has to be answered here before we do anything else. We must determine just what our responsibility to future generations is regarding genetic engineering."

It appears the task of answering that question has now been left to the courts.

Michael Bowker is a freelance writer living in Placerville, Calif.

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POLITICS

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Another Toxic Time Bomb

The job of cleaning up the federal government's hazardous waste is complicated by appeals to national security, the extent of the problem, and interagency haggling.

Because of loopholes in federal laws, hazardous wastes produced by the military and by defense contractors have become a toxic time bomb, threatening our highways, homes, and drinking water.

One explosion has already occurred. Last winter, 562 truckloads of hazardous wastes were shipped from the Army's arsenal in Pine Bluff, Ark., to a privately owned waste dump south of Lake Charles, La., 350 miles away. On February 28, 1984, a drum containing spent and rejected smoke bombs and canisters of a dye-and-smoke mix containing hexachloroethane, granular aluminum, and potassium chlorate exploded at the dump, igniting flammable liquids stored in a nearby pit. A toxic fire raged for 45 minutes. Although the local volunteer fire department was called, its members refused to enter the site when company officials could not identify the chemicals that were burning.

An inspection conducted by the Louisiana Department of Environmental Quality revealed that Pine Bluff Arsenal personnel had not properly completed the manifest listing the drums' contents. Nor had they removed the detonating devices of seven smoke bombs. Worst of all, they had packed the drums without material to absorb free liquids. Rick Hunter, the Army's inspector, theorized that because of the empty space within the drum and the lack of filler material, a spark was formed. Luckily, the spark ignited at the waste facility, where experienced workers in full protective clothing could contain the fire, rather than en route through Alexandria, one of Louisiana's largest cities.

Because of the Reagan administration's military buildup, defense contractors are becoming major sources of hazardous wastes. Grumman Aerospace on Long Island generated more than 215,000 tons of hazardous wastes during 1982: That amounts to 85 percent of the hazardous wastes produced in Nassau County and almost one quarter of all wastes produced in New York state that year. Most of those wastes, including 189 tons of flammable material, 101 tons of polychlorinated biphenyls (PCBs), 3,176 tons of corrosive wastes, and more than 210,000 tons of toxic chromium were probably shipped through New York City. Let's hope Grumman packs its drums better than the Army does.

Heavy metals like chromium are typical of wastes generated by the defense industry. Like radioactive wastes, the poisoning they cause can result in mutations, cancer, and

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birth defects. Unlike radioactive wastes, which decay over thousands of years, heavy metals remain toxic forever. Grumman sends most of its toxic chromium wastes to an out-of-state landfill. The rest are sent to a treatment facility. That course of action is preferable to burial, but recycling would be even better. That, however, is a more expensive process.

Mercury, another toxic heavy metal, was used during the 1950s in producing components for thermonuclear warheads. Over the years, illegal discharges and unreported spills of up to 2.4 million pounds of mercury occurred at the Y-12 plant in Oak Ridge, Tenn., a facility now owned by the U.S. Department of Energy (DOE). Federal and state environmental officials did not learn of those events until May 1983, when the DOE declassified the information after a staff scientist reported the contamination and complained that nothing was being done about it. The state of Tennessee contends that some of the discharges reached levels 3,000 times higher than the legal limit. Nearly 500,000 pounds of the toxic metal had been discharged directly into East Fork Poplar Creek. Union Carbide Corporation operated the facility when that contamination took place and continued to make the components until this year, when Martin Marietta took over the contract.

A DOE report contends that fish contaminated by the mercury pose little threat to people in the area because Oak Ridge is a "relatively affluent city for East Tennessee, populated by scientists and engineers who have other life pursuits than habitual sports fishing." Yet barely 2 miles downstream from Y-12 the 1,500 residents of Scarboro fish and swim in the creek.

Less than one year after the DOE revealed information about the illegal discharges, the state of Tennessee and the Natural Resources Defense Council sued the federal government to force Y-12 to comply with regulations concerning hazardous wastes. They won the suit.

Other examples of federal pollution abound. As many as 4,000 individual military dumps, including sites at 100 overseas bases, contain toxic wastes that are environmentally threatening. In September the U.S. Navy submarine base in Groton, Conn., accidentally spilled 30 gallons of nearly pure PCBs and an unknown concentration of PCBs in 400 gallons of water and oil into the Thames River, and has not yet cleaned it up. An Air Force missile plant in Tucson, Ariz., routinely dumped thousands of tons of heavy metals, toxic solvents, and paint residues into unlined pits, threatening Tucson's sole source of drinking water. In 1981 soil samples showed amounts of trichloroethylene, a degreasing agent, at a level 2,000 times higher than that considered safe by the Environmental Protection Agency. The Pentagon and the EPA continue to haggle over what remedial action should be taken.

The enforcement of standards for managing hazardous wastes in the defense industry is compromised by considerations of national security. On that ground, EPA inspectors can be barred from federal weapons facilities, and information about management procedures and even potential contamination can be withheld from the public. Gene Lucero, an EPA enforcement official, admits that the Pentagon determines cleanup standards, withholds information, and works "according to its own internal time frame."

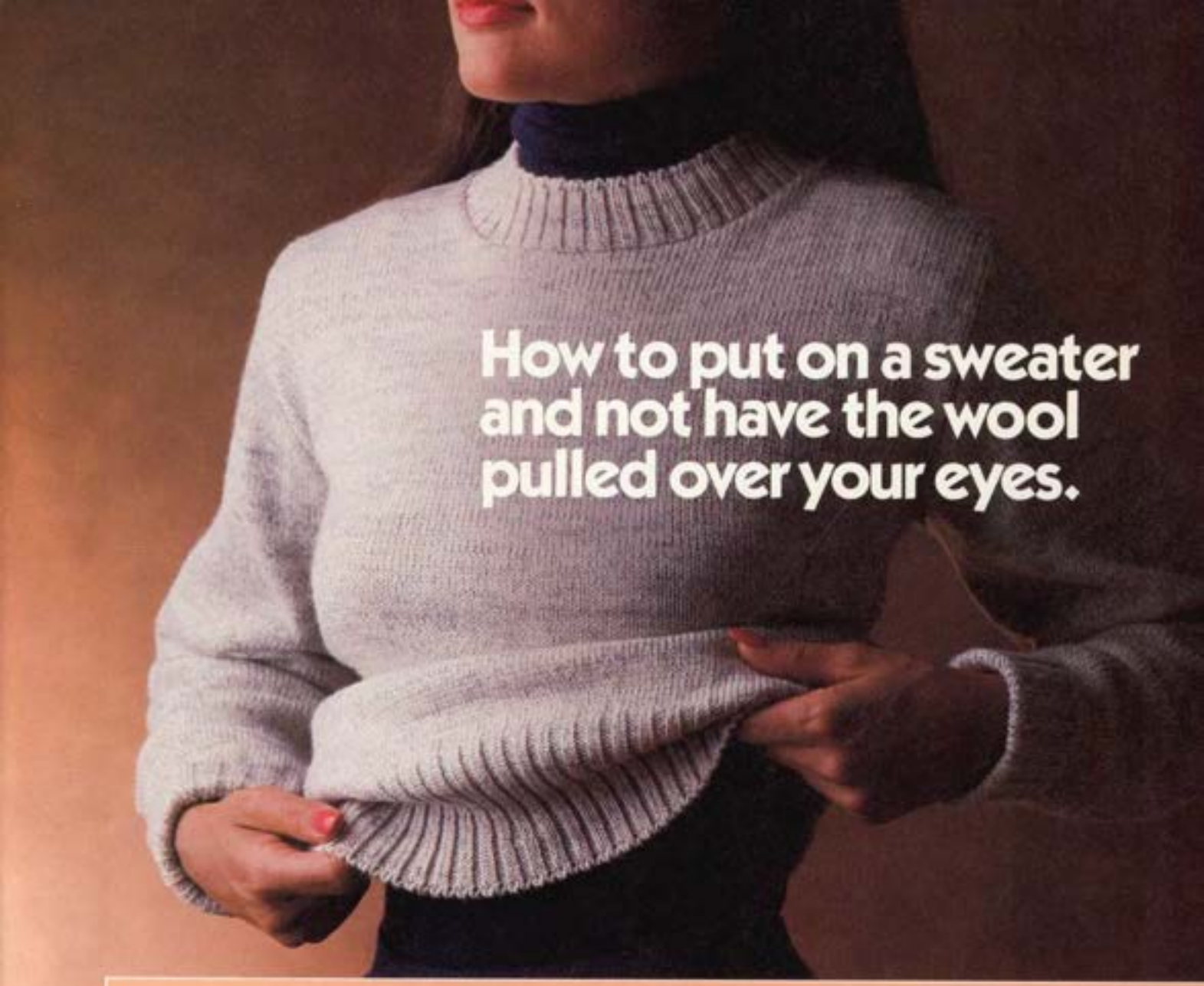
The EPA has recently added more than 30 military facilities to its proposed list of toxic waste sites requiring priority cleanup. Previously, the list did not name Defense Department sites, although it did include three plants owned by military contractors: Teledyne's Wah Chang plant in Albany, Ore.; Martin Marietta's Sodyeco plant in Charlotte, N.C.; and Monsanto's plant in Augusta, Ga.

The millions of dollars for the cleanup of the government-owned sites will probably come from the Pentagon's budget rather than the EPA's Superfund. Either way, the public pays, though if the Pentagon does the job, the money will come directly out of income taxes, whereas the Superfund is financed largely by a special tax on corporations. The Defense Department decided long ago that it would assume financial liablity for mistakes by corporate operators of government-owned plants and machinery.

Last year the Pentagon estimated 450 installations could be cleaned up by 1993 for $500 million. Now it concedes that action will not even begin at the sites until 2003 and that the bill will come to billions of dollars. New estimates for decontaminating just one site, the Army's Rocky Mountain Arsenal near Denver, where nerve gas, pesticides, and munitions were produced during World War II, total $357 million—though that amount could increase 40 percent by the time the project is completed.

Stepped-up military production has increased the costs and risks associated with waste management at federal and private facilities. In the end, we will have to pay the price for it, either in dollars or in sickness and death. Ultimately, the problem is not technical or economic but political and moral. □

Benjamin A. Goldman is project director at the Council on Economic Priorities, a public-policy research organization in New York City. *This article is reprinted with permission from* The Nation *magazine, Nation Associates Inc., Vol. 239, No. 17, pp. 550–552.*



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ELECTION 1984

GREENING THE CAPITOL

President Reagan's victory notwithstanding, most pundits agree that environmentalists more than held their own in Congress.

RICHARD MUNSON

The 1984 election is finally over, and most Americans welcome the relief from constant political advertisements and speeches. One cartoonist depicted an exhausted viewer blasting his television set with a shotgun after the newscaster announced that the next congressional primary was only 14 months away. But for political activists, the work continues. Environmentalists must translate their election victories into lobbying muscle and begin preparing for congressional contests in 1986.

Despite President Reagan's sweeping 49-state victory, environmentalists actually gained ground in Congress, thanks to the effects of what several analysts have described as a hedge-your-bet election, in which voters felt personally comfortable with Ronald Reagan but had enough reservations about his policies to elect congressional candidates who would check his excesses. Jeff Garin,

Illustrations by William Cone

vice-president of Peter Hart Research, says his polling data show that most voters, including many who endorsed President Reagan, disagree strongly with the administration's environmental policies.

Environmental victories in Congress also demonstrate that well-informed grassroots activists can make a big difference in local races, and subsequently score big gains on important legislation. According to political professionals in both parties, environmentalists successfully organized media events and trained effective door-to-door canvassers and other volunteers for campaigns across the country in 1984.

The five major environmental political-action committees—the Sierra Club, the League of Conservation Voters (LCV), Friends of the Earth, Environmental Action, and the Solar Lobby—often made substantial contributions to the races. Members of the Sierra Club's North Carolina Chapter went door-to-door in carefully selected precincts distributing 310,000 copies of their "Environmental Report," contrasting the records of Sen. Jesse Helms (R) and his opponent, Gov. James Hunt (D). In Connecticut, 450 Club members organized get-out-the-vote efforts and phone banks for House candidate Bruce Morrison (D). In Pennsylvania, the LCV canvass reached 48,000 voters with literature promoting Democratic Reps. Bob Edgar and Peter Kostmayer.

The Sierra Club reported that 74 percent of the House candidates and 59 percent of the Senate candidates it endorsed won election in November. Behind these numbers lie some significant victories and agonizing defeats. Democrats James Clarke of North Carolina, Jerry Patterson of California, James McNulty of Arizona, William Ratchford of Connecticut, Clarence Long of Maryland, and Elliott Levitas of Georgia—all environmental supporters on key House committees—lost their races; also defeated were several challengers for the Senate, including Democrats Jim Hunt of North Carolina and Lloyd Doggett of Texas.

On the other hand, environmental activists clearly helped Democratic Reps. Edgar and Kostmayer of Pennsylvania, Les AuCoin of Oregon, Phil Sharp of Indiana, Gerry Sikorski of Minnesota, and Bruce Morrison of Connecticut to succeed, and played a significant role in the successful campaign of Iowa Sen. Tom Harkin (D). According to Holly Schadler, the Sierra Club's Associate Political Director, "In many close races, environmental action on the grassroots level proved to be the decisive factor that pushed strong environmental candidates over the top." (See "The Sierra Club Tally," page 38.)

The national media have reported that Democrats gained three seats in the Senate and lost 14 in the House of Representatives. But equating Democratic losses with environmental losses does not present an accurate picture of the results, because support for conservation cuts across party lines. Environmentalists supported three of the new Republican House members: Paul Henry of Michigan, Howard Coble of North Carolina, and Jan Meyers of Kansas. "All in all, there was a net loss of about five votes for environmentalists in the House," concludes Marion Edey, executive director of the LCV. "And that's not enough to change the [proenvironment] balance of power."

Gains in the Senate may prevent the renewed destruction of major pollution-control legislation. In this light, Rep. Tom Harkin's victory over Iowa Sen. Roger Jepsen (R) is a real plus for conservationists. Harkin, considered a "rural populist," opposed the Clinch River Breeder Reactor and tried to put muscle into the federal pesticide-control law. Jepsen, in contrast, charged that "environmentalists would have us put on a loincloth and a club and close down everything." In Illinois, Rep. Paul Simon (D), who received a 100-percent rating from the LCV in 1983, defeated Sen. Charles Percy (R), who tended to vote with the Reagan administration. In Tennessee, Democratic Rep. Albert Gore successfully campaigned against toxic waste dumps to win the seat of retiring Republican Sen. Howard Baker. And in Massachusetts, John Kerry (D), who put together an impressive environmental record as the state's lieutenant governor, beat back a well-financed challenge from conservative businessman Ray Shamie (R) in his bid to replace retiring Democratic Sen. Paul Tsongas.

Beyond the election victories, environmentalists had less tangible but equally significant triumphs. According to Mark Johnson of the Democratic Congressional Campaign Committee, key decisionmakers now perceive environmentalists as major actors in the political process who must be consulted on policy issues. Even in races where environmentalist support did not affect the outcome, the Sierra Club and other groups have gained easier access to elected officials; John McComb, the Club's Conservation Director, calls this a "valuable resource in our efforts to win victories on clean air and other issues."

Battle for the White House

For many environmentalists, 1984 was their first year of active participation in presidential politics. Their forays into the Democratic Party met with good success. Anne Lewis, the party's political director, says that "environmentalists won much respect for their substantial contribution." An acid-rain conference held in New Hampshire just before the February 1984 primary attracted most Democratic presidential contenders, each proposing to strengthen the Clean Air Act. At a dozen workshops across the country, national environmental groups trained local activists to run for or elect delegates to the national convention. Such efforts resulted in a series of victories in the Democratic Party platform, including the addition of language supporting acid-rain controls and wilderness legislation. Environmentalists also sponsored a spirited caucus at the San Francisco convention last July that attracted more than 600 delegates, alternates, and other party leaders.

Efforts within the Republican Party were less productive, partly because tightly controlled party rules restricted debate on controversial issues, and partly because the Republican standard-bearer, Ronald Reagan, consistently opposed environmental protection throughout his first term. But Sierra Club Vice-President Bob Howard testified before the Republican platform committee, and Club volunteers and staff organized a series of meetings with party officials at the Dallas convention. These activities helped improve platform planks that endorsed the principles of clean air and water.

Despite environmentalists' attempts to remain bipartisan, the differences between the policies of Ronald Reagan and Walter Mondale appeared so stark that the Sierra

Club's Board of Directors, which includes both Democrats and Republicans, unanimously decided to support the Democratic candidate, making this the Club's first presidential endorsement. Club President Michele Perrault presented Mondale with a symbolic redwood sapling at a massive San Francisco rally in October that the former vice-president considered one of his campaign's most enthusiastic and well-organized events. Mondale later visited a toxic waste site near St. Louis, Mo., where he vowed to clean up the nation's hazardous wastes.

President Reagan's strategists did their best to deflect criticism of the administration's policies. After Reagan's ill-timed appointment of Anne Burford to head the National Advisory Committee on Oceans and Atmosphere, the President spent almost a full week touring wildlife refuges and national parks around the country in search of photo opportunities.

The final Gallup poll before the election identified the environment as the only issue on which the public thought Mondale would do a better job than Reagan. Although pollster Patrick Caddell calculated that 6 percent of the voters would switch their votes on the basis of environmental issues alone, this was clearly not enough to turn the race around. According to John Brennan, who directed exit polling for ABC News: "Pocketbook issues were more important than James Watt."

What's Ahead?

THROUGHOUT THE CAMPAIGN, President Reagan offered few specifics about his policies for a second term, claiming that voters should expect "more of the same." Some environmentalists fear Reagan will interpret his victory as a mandate and return to the confrontational style of James Watt and Anne Burford. They argue that because the GOP could lose control of the Senate after the 1986 elections (in which 22 incumbent Republicans but only 12 Democrats are up for reelection), Reagan will try to push his antienvironmental agenda early and aggressively. Others, noting that Democratic action in Congress could block Reagan's efforts, hope for more conciliation from the second-term administration.

The makeup of Reagan's 1985 environmental team is not yet settled. EPA Administrator William Ruckelshaus has left, and will probably be replaced by Lee Thomas, EPA's hazardous waste chief, who plans to adopt the agency's current policies and agenda. At the Interior Department, three assistant secretaries from the James Watt era have already announced their retirements. Environmentalists are hoping for more moderate replacements in these key policymaking positions. At the same time they worry that President Reagan may have the opportunity to appoint Supreme Court justices who have a history of opposition to environmental protection.

The Reagan administration is already making efforts to weaken virtually every major pollution-control bill to be introduced in the next Congress, including the Clean Air and Clean Water acts and the Superfund bill to control toxic wastes. The Office of Management and Budget wants to repeal the Safe Drinking Water Act, but the EPA is resisting this effort. Environmental lobbyists, who want these laws reauthorized and strengthened during the 99th Congress, feel the 1984 elections have made their jobs slightly harder in some House committees but a bit easier in the Senate.

The biggest setbacks in the House occurred in the makeup of the Interior Committee, where environmentalists lost key supporters in Jerry Patterson (D-Calif.), James Clarke (D-N.C.), and James McNulty (D-Ariz.). The Interior Committee, which oversees public-lands legislation, will have between four and six vacancies to be filled by party caucuses in January. A similar number of vacancies will be available on the House Public Works & Transportation Committee, which will consider the Clean Water Act and Superfund as well as dam and highway projects. While the House remains supportive (on the whole) of most environmental legislation, the makeup of these committees will have a significant impact on specific bills.

Also hurt will be efforts to expose the environmental damage caused by international development projects (such as dams and nuclear power plants) financed by the World Bank and other agencies supported by the United States. Defeated Maryland Rep. Clarence Long (D), who chaired the Appropriations Subcommittee on Foreign Aid, had pushed the Agency for International Development to subsidize appropriate technologies and to help curtail the massive destruction of tropical forests. Defeated California Rep. Jerry Patterson (D) attempted similar actions as chairman of the Banking Committee's International Development Subcommittee. On the bright side, Rep. Bruce Morrison (D-Conn.) has promised to concentrate on how international banking affects the environment.

The addition of several proenvironmental Democrats to the Senate may allow Republican moderates such as Robert Stafford of Vermont, Mark Hatfield of Oregon, and John Chafee of Rhode Island to check their antienvironmental colleagues, including Ted Stevens of Alaska and Energy Committee Chair James McClure of Idaho. Some of the 22 Republicans who face reelection in 1986 may also be less inclined to take unpopular positions against environmental legislation. Congress should therefore be more willing and able to oppose the Reagan administration's policies in this area, making battles with the White House even more heated.

Electioneering: Another Tool

ENVIRONMENTAL organizations have been lobbying Congress and state legislatures for many years, but participating in election campaigns is a relatively new activity. (The Sierra Club first endorsed congressional candidates in 1982; the LCV began in 1970.) Although lobbying and electioneering are closely related, they have important differences.

Lobbyists are sometimes willing to fight for an issue against tremendous odds, believing they can build public support incrementally over several years before a piece of legislation will be approved. But supporting a proenvironment candidate who stands to be a clear loser presents problems. Some observers suggest that environmental organizations stick to their principles and endorse the candidate with the best record or platform. But more pragmatic environmentalists ask why they should waste their resources on "hopeless" races where defeat seems assured. Such efforts, they claim, only anger and alienate the victor.

Despite the tactical differences between

electioneering and lobbying, they are complementary tools for winning policy changes. Public officials have one major concern: to get reelected. By aligning their cause with a politician's desire, environmentalists can make tremendous political strides. In this sense electioneering is a full-time tool for influencing public policy, similar in its impact to grassroots organizing and media outreach.

At times electioneering directly supports lobbying. "The best lobbyists are those who are from a congressman's district and who have worked closely on that election campaign," says David Gardiner, Director of the Sierra Club's Washington, D.C., office. He maintains that, to capitalize on electioneering efforts, the Club and other groups must organize grassroots pressure in specific districts to ensure that environmental issues remain popular. Local activists must translate national issues (such as the Superfund) into local issues (such as a neighborhood toxic waste dump).

Filling the Vacuum

THE TWO PARTIES are already beginning the rituals of selecting new leaders. In the House of Representatives, many young liberals and southern conservatives want a larger voice in the Democratic hierarchy. Liberal Speaker Tip O'Neill plans to retire in 1986, and conservative Jim Wright of Texas appears to be his likely successor. In the Senate, Robert Dole of Kansas deflected an array of Republican hopefuls to become majority leader. The selection of Bob Packwood of Oregon to succeed Dole as chair of the Finance Committee and of Richard Lugar of Indiana to take over Foreign Relations further signals the rise of moderates in that chamber and may point to greater Senate independence from the White House.

Democratic Party Chair Charles Manatt is retiring in January, and an array of applicants—including retired Sen. Paul Tsongas of Massachusetts—have thrown their hats into the ring. Colorado Sen. Gary Hart, who has a strong environmental record, will continue to push "new ideas" in his effort to become the party's standard-bearer. On the Republican front, Vice-President George Bush, New York Rep. Jack Kemp, Robert Dole, and other hopefuls will try to position themselves to replace Reagan.

Senator Hart maintains that environmentalists "must do all they can to restore the environmental mainstream to the Congress and the White House. The consensus throughout the 1970s among Democrats and Republicans to pass sound legislation was shattered in 1980 with Ronald Reagan's election, and has not been fully restored." While the Democratic senator feels his party is the "natural home for environmentalists," he hopes conservationists will also be involved in Republican activities, to help prevent polarization of the issue.

Sierra Club Vice-President Howard, a Republican from New Mexico, feels that environmentalists must go out of their way to talk with conservative leaders and find common ground. Because Republicans since Teddy Roosevelt have been stalwart conservationists, and because a large number of Sierra Club members are Republicans, environmentalists hope to redirect the party away from those right-wing politicians who express a knee-jerk opposition to health-and-safety regulations and land preservation. In an attempt to hammer out bipartisan initiatives, the LCV plans to begin recruiting Republican challengers and to work closely with the Ripon Society and other moderate Republican groups.

The leadership vacuums in both parties provide political opportunities for environmentalists. Traditionally, public-interest organizations have focused their attention on Congress, federal agencies, and the courts. Within the past four years, environmentalists have become increasingly active in electoral politics, particularly in the six to nine months before elections are held. But the real political opportunities, according to Anne Lewis of the Democratic Party, occur in the "off seasons," when leadership positions are assigned and party positions formulated. The challenge confronting the Sierra Club and other environmental groups is to begin promoting environmentalists early to run for local, state, and party office. The 1984 election may be over, but for environmentalists interested in sound national policies, the real work has just begun. □

Richard Munson is former director of the Solar Lobby in Washington, D.C. His book The Powermakers *will be published by Rodale Press in 1985.*

THE SIERRA CLUB TALLY

HOLLY SCHADLER

SIERRA CLUB MEMBERS endorsed and worked for more than 200 House and Senate candidates around the country in the 1984 elections. "This year has been a political turning point for us," observed Richard Fiddler, chair of the Sierra Club Committee on Political Education (SCCOPE). "Sierra Club volunteers have become the driving force in many races nationwide." In 45 states, Club chapters organized efforts to campaign for strong environmental candidates. To assist volunteers, SCCOPE spent almost $250,000 in direct and in-kind contributions.

On November 7, the Sierra Club emerged from the 1984 elections having won 74 percent of the House races and 59 percent of the Senate races in which endorsements had been made. Below are highlights from some of the most significant SCCOPE victories.

IOWA
Sen. Tom Harkin

In its first SCCOPE activity ever, the Iowa Chapter endorsed Rep. Tom Harkin (D) for senator. In preparation for his Senate campaign, the chapter organized a public education program on hazardous wastes that resulted in the passage of resolutions in 650 precinct caucuses to tighten enforcement of state and federal regulations concerning toxic waste dumps. Then the chapter produced and distributed 20,000 copies of a brochure on Harkin's strong environmental record. More than 200 volunteers worked at phone banks and

helped get out the vote on election day. Harkin told Iowa Club members, "You have done a tremendous job for me all across the state."

OREGON
Rep. Les AuCoin

For the second time, Rep. Les AuCoin (D), a key member of the House Appropriations Committee, successfully fought back a strong challenge by Bill Moshofsky. Making the AuCoin race one of their top priorities, chapter volunteers canvassed precincts and mailed position papers on AuCoin's environmental record. Earlier in the summer, Club members sponsored a shrimp boil that raised almost $7,000. In preparation for election day, environmentalists got out the vote and coordinated poll-watching in key precincts.

TENNESSEE
Sen. Albert Gore

The Tennessee Chapter made the first Sierra Club endorsement of the 1984 campaigns, supporting Rep. Albert Gore (D), a leader on toxic waste cleanup, in his bid for a Senate seat. To kick off their efforts, the chapter organized a statewide educational program on hazardous waste that laid the groundwork for Gore's campaign on toxics. Later, Club groups held a series of fundraising events that contributed more than $7,000 to the campaign. Members printed materials for election day and trained volunteers in a major get-out-the-vote effort. "By endorsing Gore we have furthered the cause of conservation," said Tennessee SCCOPE Chair Jim Derosiers. "Senator Gore let Tennesseans know how critical the toxics issue is by speaking out virtually every day of the campaign."

INDIANA
Rep. Phil Sharp

Hard work by Hoosier Chapter environmentalists paid off when Rep. Phil Sharp (D), a member of the Interior and Energy & Commerce committees, won reelection against a tough challenger. Club members distributed literature door-to-door and worked at the Sharp phone bank for four days. In addition, almost $2,500 came in response to Club fundraising mailings. A member of the Sharp campaign staff said, "the Sierra Club provided critical campaign support when we really needed it."

MICHIGAN
Rep. Paul Henry

The Sierra Club jumped into the congressional race early, supporting State Senator Paul Henry (R) in his primary campaign for the Republican House nomination in his district. Volunteers worked at phone banks and held a press conference to applaud Henry's fine environmental record. Mackinac Chapter members look forward to working with Henry on the national level.

MINNESOTA
Rep. Gerry Sikorski

After two years of leadership on acid rain as a first-term representative, Gerry Sikorski (D) made the issue one of the central themes of his successful bid for reelection. Club members played a prominent role in all aspects of the campaign, working at phone banks, recruiting volunteers, and holding publicity events.

CONNECTICUT
Rep. Bruce Morrison

In Connecticut, freshman Bruce Morrison (D) was reelected by a narrow margin with the help of Sierra Club volunteers. Members coordinated Morrison phone banks and helped to organize campaign rallies and meetings throughout Morrison's district. A few nights before the election, Morrison told volunteers, "the Sierra Club and the Nuclear Weapons Freeze Campaign have been the lungs and breath of this campaign." Connecticut Chapter SCCOPE Chair Barbara Uchino added, "that kind of praise made it a shorter day for the many Sierrans who were outside the polls at 6 a.m. handing out literature. Our hard work paid off and has helped to send one of Congress' finest environmentalists back to Washington."

Holly Schadler is Associate Political Director in the Sierra Club's Washington, D.C., office.

The Lands That Got Away

BRUCE HAMILTON

The 98th Congress made headlines when it designated 8.5 million acres of wilderness in 21 states. It was a grand accomplishment, but what about the areas that weren't chosen?

BY ALL ACCOUNTS, 1984 was a banner year for wilderness protection. Congress added more acreage to the National Wilderness Preservation System in the Lower 48 this year than in any year since passage of the 1964 Wilderness Act, expanding wilderness acreage outside of Alaska by one fourth.

But two weeks after Congress adjourned, wilderness advocates were still hard at work. In Wyoming, Sierra Club volunteers were organizing a community meeting on a national-forest plan. In Nevada they met to discuss ways to combat mining threats to roadless national-forest areas. In Idaho they were working to defeat antiwilderness politicians at the polls. All had a common goal: to keep important areas unimpaired while building a political climate ripe for the passage of more wilderness legislation.

"We are relieved to have passed a Wyoming wilderness bill," says Mike Massie, chair of the Club's Wyoming Chapter. "But for every acre in the bill, there are two more with wilderness values that still need protecting."

A similar story can be told in almost every state where there is still enough wild land to fight about. Despite the addition of more than 8.5 million acres to the wilderness system in 1984, the fate of millions of acres of potential wilderness remains to be determined. Some of these lands are among the nation's most scenic. Many are important for wildlife, watersheds, or recreation. All have qualities exciting enough to keep wilderness activists fighting, even now that the exhausting battles of the 98th Congress are over.

In some states Club leaders are working to revive and improve bills that didn't make it through the last Congress. In others they are shaping wilderness packages that Congress hasn't had a chance to look at yet. By the end of the next Congress, Club leaders hope new forest-wilderness laws will be enacted for several states, including Alabama, Idaho, Illinois, Kentucky, Michigan, Montana, Nebraska, Nevada, Oklahoma, and South Carolina. They also hope to see major gains in the amount of Bureau of Land Management (BLM) and National Wildlife Refuge acreage set aside as wilderness.

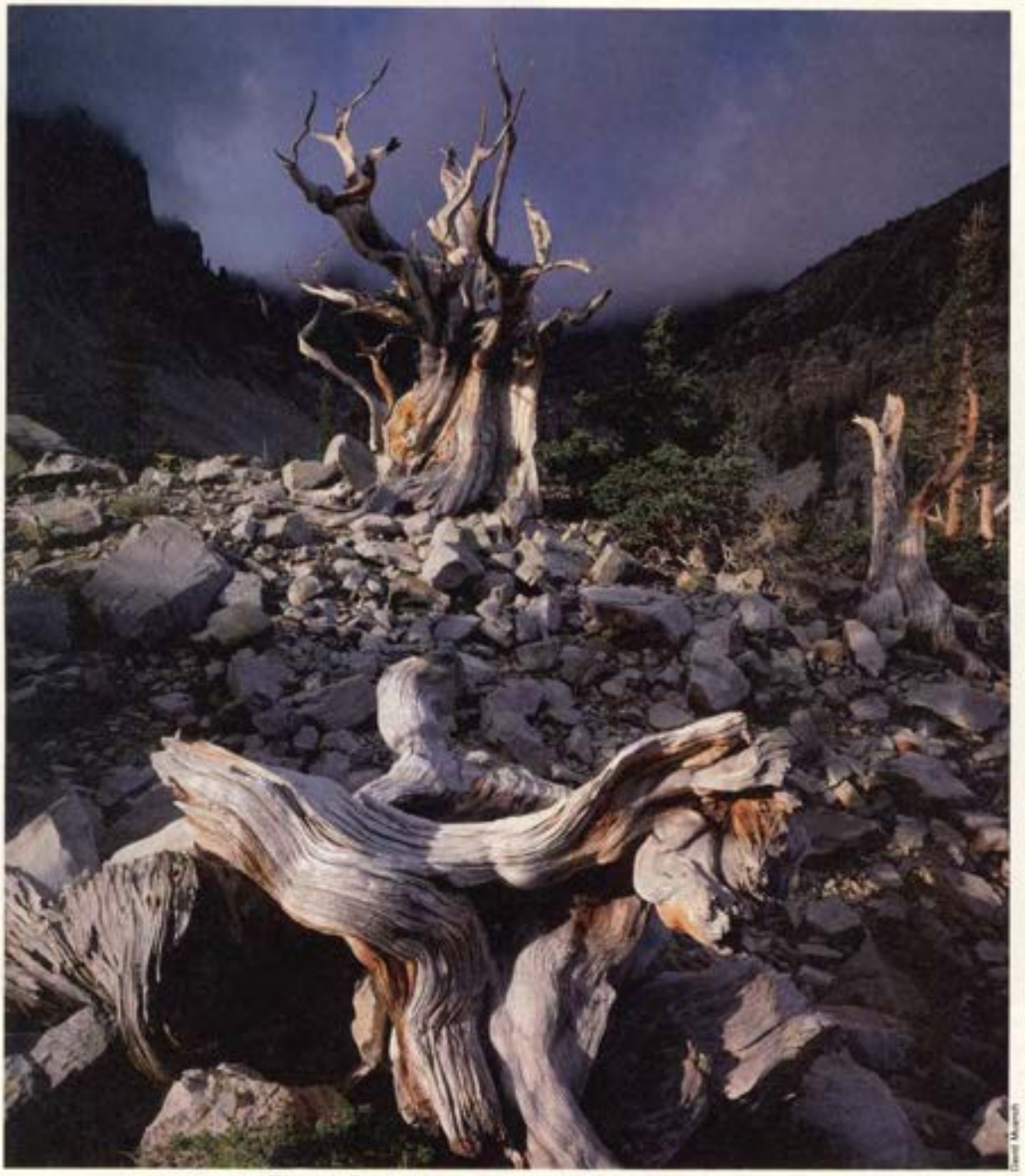
There is also the pressing matter of what to do in those states where a recently passed wilderness bill omitted key areas conservationists want protected. Plans for timber sales, roadbuilding, and mineral development hang over dozens of important roadless areas. But after the difficult campaigns of the 98th Congress, most politicians are reluctant to reconsider the wilderness issue so soon. The Forest Service is excused from reconsidering wilderness in its forest plans for 10 to 15 years, according to "release" language attached to most of the recent bills.

With no legislative relief on the immediate horizon, most conservationists are finding other ways to protect their favorite roadless areas. Some are working through the forest-planning process to encourage the Forest Service to designate an area for backcountry, roadless, or primitive-recreation management. Some are working with the Forest Service and the BLM to withdraw an area from mineral-development activities. Some have leaped into the electoral process to develop more friends of wilderness in Congress. Some are forced to take legal action to stop a mine, road, or timber sale. In each case the goal is to protect an area until Congress or the Forest Service can be convinced to reexamine its wilderness potential.

Last year, conservationists in Colorado demonstrated that legislating a second round of wilderness bills in states where conservationists are not satisfied with the first-round results may be possible if the politics are right. In 1980, Congress passed a Colorado wilderness bill that included release language. In 1984 conservationists convinced the Colorado delegation to introduce another statewide bill. The delegation nearly agreed to about 600,000 additional acres of wilderness, but the bill died when a disagreement over federal water rights could not be resolved. Conservationists plan to be back in early 1985 with a new bill.

For tireless workers such as these, the passage of a wilderness bill is only one battle won in a much larger war. It is a cause for celebration, but also a chance to prepare for new challenges. We may never see another Congress in which so much wilderness is designated at once, but we will no doubt see wilderness protection on the agendas of Congress and the Sierra Club for a long time to come. □

Bruce Hamilton is Director of Conservation Field Services for the Sierra Club.



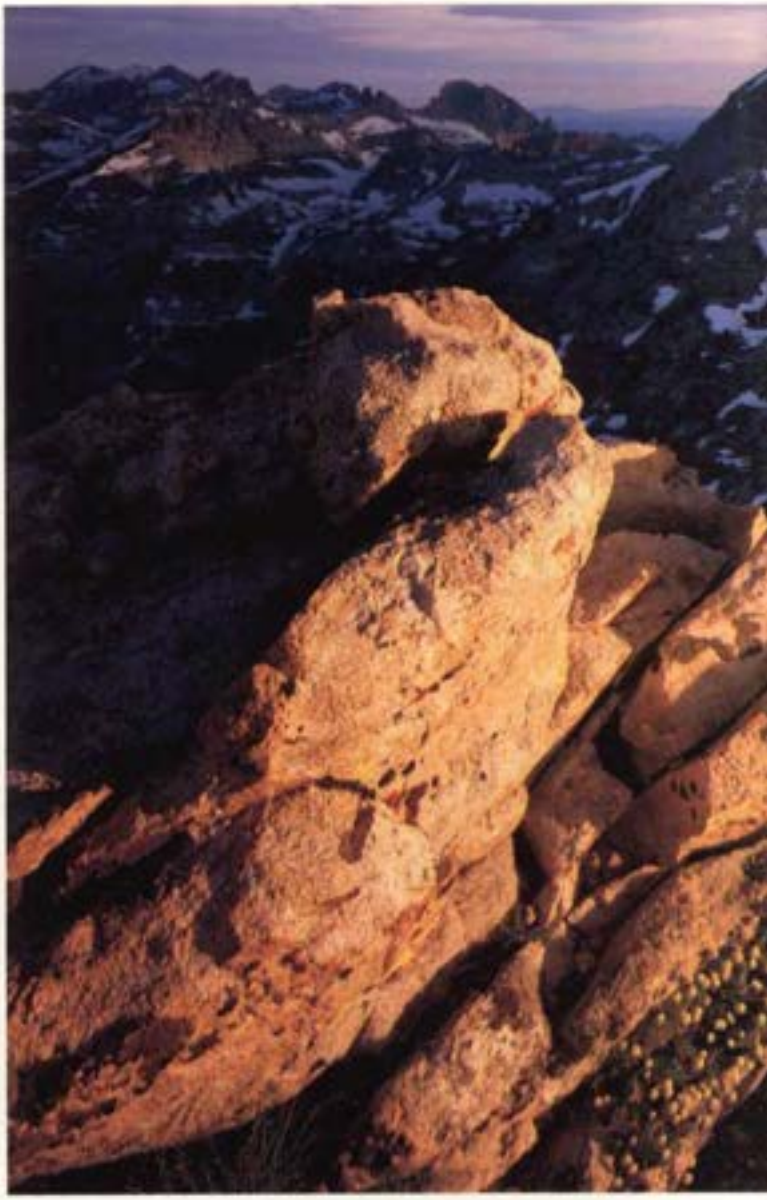
WHEELER PEAK, NEVADA *There are 107 national-forest roadless areas that qualify for wilderness designation in Nevada. Thirteen thousand–foot Wheeler Peak is one of 18 that Nevada conservationists are proposing for protection. But the state's influential mining interests oppose wilderness—even for well-explored areas where valuable minerals have never been found.*

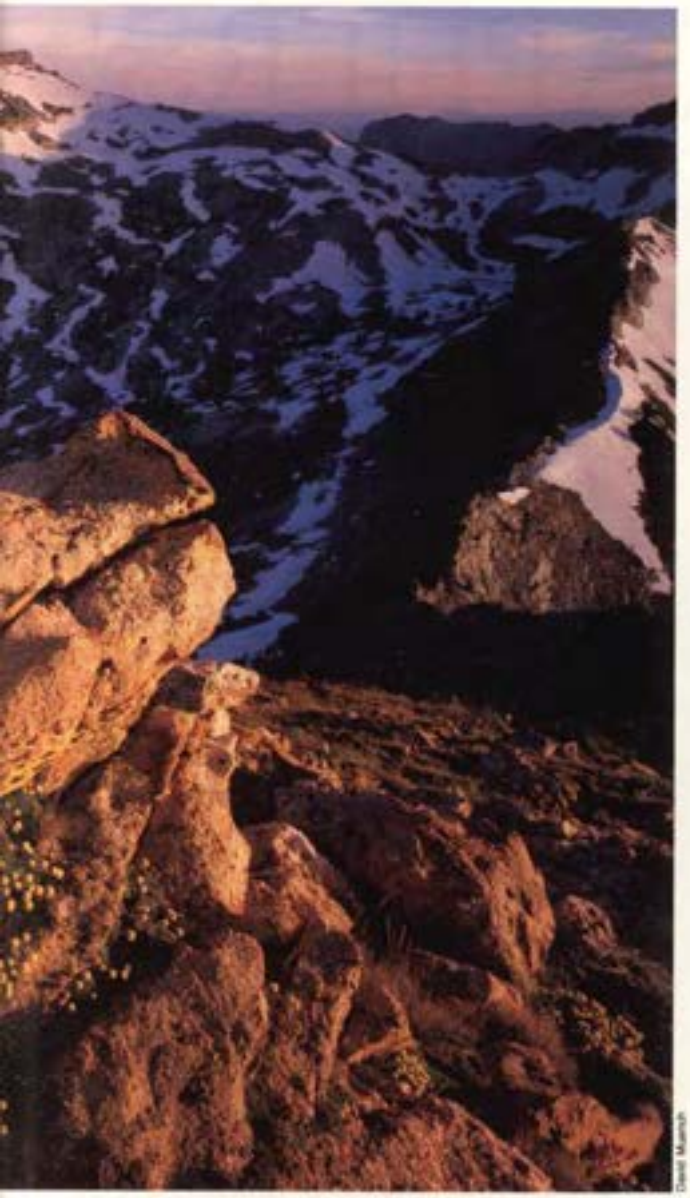
LARKINS PEAK, IDAHO *Only a small part of this area (below) was included in the statewide Idaho wilderness bill that died in the last Congress. Environmentalists opposed the bill, which would have committed about 8.5 million acres of potential national-forest wilderness to development. They are working to protect Idaho's roadless areas by participating in the U.S. Forest Service planning process and by working for passage of a greatly improved bill.*

Jon L. Crawford

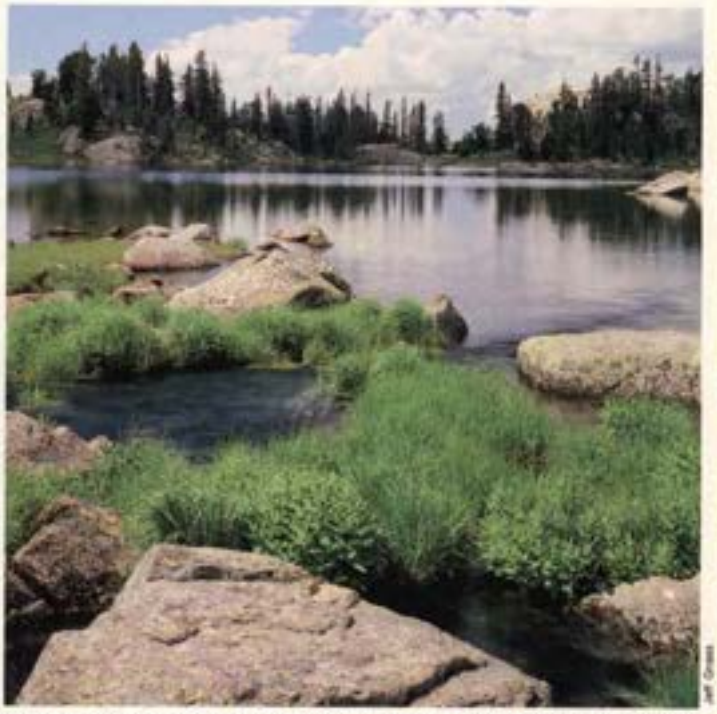
© Marie Mason

RED RIVER GORGE, KENTUCKY *Congress considered part of this important geologic area for wilderness status last year, but did not pass a law. In the 99th Congress, Kentucky conservationists plan to push for a broader bill, which will include both the gorge and the Troublesome Creek–Big South Fork area.*





THE RUBY MOUNTAINS, NEVADA *Nevada has less designated wilderness acreage than any other western state, but no shortage of spectacular candidates like the Ruby Mountains. The state's conservationists are urging their congressional delegation to protect such areas with wilderness legislation in 1985.*



THE HIGH LAKES, WYOMING *This wilderness study area is near the Montana-Wyoming border just east of Yellowstone National Park. In the last Congress, conservationists had hoped it would be added to the Absaroka-Beartooth Wilderness. Conflicts with snowmobiling interests led to its current status, which allows snowmobiling but is supposed to protect the area's wilderness characteristics until wilderness designation is reconsidered in 10 to 15 years.*

"These are things which other nations can never recover. Should we lose them, we could not recover them either. The generation now living may very well be that which will make the irrevocable decision whether or not America will continue to be for centuries to come the one great nation which had the foresight to preserve an important part of its heritage. If we do not preserve it, then we shall have diminished by just that much the unique privilege of being an American." —*Joseph Wood Krutch*

CALLING ALL PHOTOGRAPHERS!

Announcing Sierra's *Sixth Annual Photography Contest . . . sponsored by* **Nikon**

One of the liveliest competitions of its kind, the annual photo contest run by *Sierra* magazine—the national membership voice of the Sierra Club—draws entries from around the world. Any photographer can enter—amateur or professional, Sierra Club member or not. Creativity, originality, and imagination are the only real requirements.

This year there are four categories, with prizes awarded for the best color *and* black-and-white photos in each. Prizes include a pair of 9 × 25CF Nikon binoculars for the two first-prize winners (color and black-and-white) in each category, and a Peak 1 Convertible Travel Pack for the two second-prize winners in each category. The grand-prize winner will receive a Nikon FG 35mm SLR camera with a 50mm f/1.8 Nikon lens!

The winning photos will be published in the September/October 1985 issue of *Sierra*. The deadline for entries is April 1, 1985 . . . so read the complete contest rules and instructions carefully, and start shooting!

Second Prize, "People in Nature" category, 1984. Photo by Mike Connolly.

CATEGORIES

U.S. Parklands: Photos taken within the boundaries of areas administered by the National Park Service—including national parks, lakeshores, seashores, historic sites, and monuments.

The Wet Environment: Snow, rain, mist, ocean, lake, river, stream . . . including the meeting of any of these with the land. Underwater photos are most definitely appropriate in this category.

Deserts and Plains: From the Mojave to the Gobi, Kansas to the Kalihari . . . shots of sand dunes, cactus, tallgrass prairie, fields of wheat, and perhaps the people and creatures who inhabit these areas of subtle beauty.

International: Photos taken outside the United States and its possessions. The judges will be looking for photos that communicate the exotic flavor of foreign places through depiction of the landscapes, people, flora, and fauna found there.

HOW TO ENTER

Submissions: A contestant may, if desired, enter photos in each of the four categories. No more than two color slides (or transparencies) and/or two black-and-white prints may be submitted in any one category.

Either original or high-quality duplicate slides and transparencies are eligible as color entries. Contestants whose color entries are selected as prizewinners based on their submission of a duplicate slide or transparency agree to provide *Sierra* with their original(s) for publication. No color prints or color negatives from print film will be considered.

For black-and-white submissions, only glossy-finish prints will be accepted.

Every slide, transparency, or print must be marked clearly with the contestant's name and address, and should state the category in which the photo is being entered. On a separate piece of paper, explain where each photograph was taken, and describe the subject briefly; tell us also, if you can, the camera, lens, and film you used and what the shutter-speed and aperture settings were.

Careful packaging is important. Color slides (2" x 2") and color transparencies (4" x 5" and 2¼" x 2¼") should be placed in 8" x 10" plastic sleeves; these sleeves (available at any camera shop) have 20 pockets for holding 2" x 2" slides, 6 pockets for holding 2¼" x 2¼" transparencies, or 4 pockets for holding 4" x 5" transparencies.

Black-and-white photos should be *unmounted* prints no larger than 11" x 14", packaged between two pieces of stiff cardboard in a simple manila envelope.

Send your submissions to Sierra Photo Contest, 530 Bush Street, San Francisco, CA 94108. Each entrant's envelope must contain a self-addressed, stamped envelope for returning material *and* a check or money order for $2 made out to the Sierra Club. (This fee covers all submissions by an individual entrant received in one package.)

Eligibility: This contest is open to all amateur and professional photographers. Sierra Club staff, their immediate families, and suppliers to *Sierra* are not eligible. Photos must be taken and owned by the entrant. Previously published work, photographs pending publication, or photos that have won other contests are not eligible. Void where prohibited by law.

Deadline: All submissions must be postmarked by midnight, April 1, 1985. Please include a stamped, self-addressed postcard if you wish receipt of your photo(s) to be acknowledged. The judges' decisions will be made by July 15, 1985, and photos will be returned after that date.

Judging: All entries will be judged by a panel of experts that includes volunteers and Sierra Club staff.

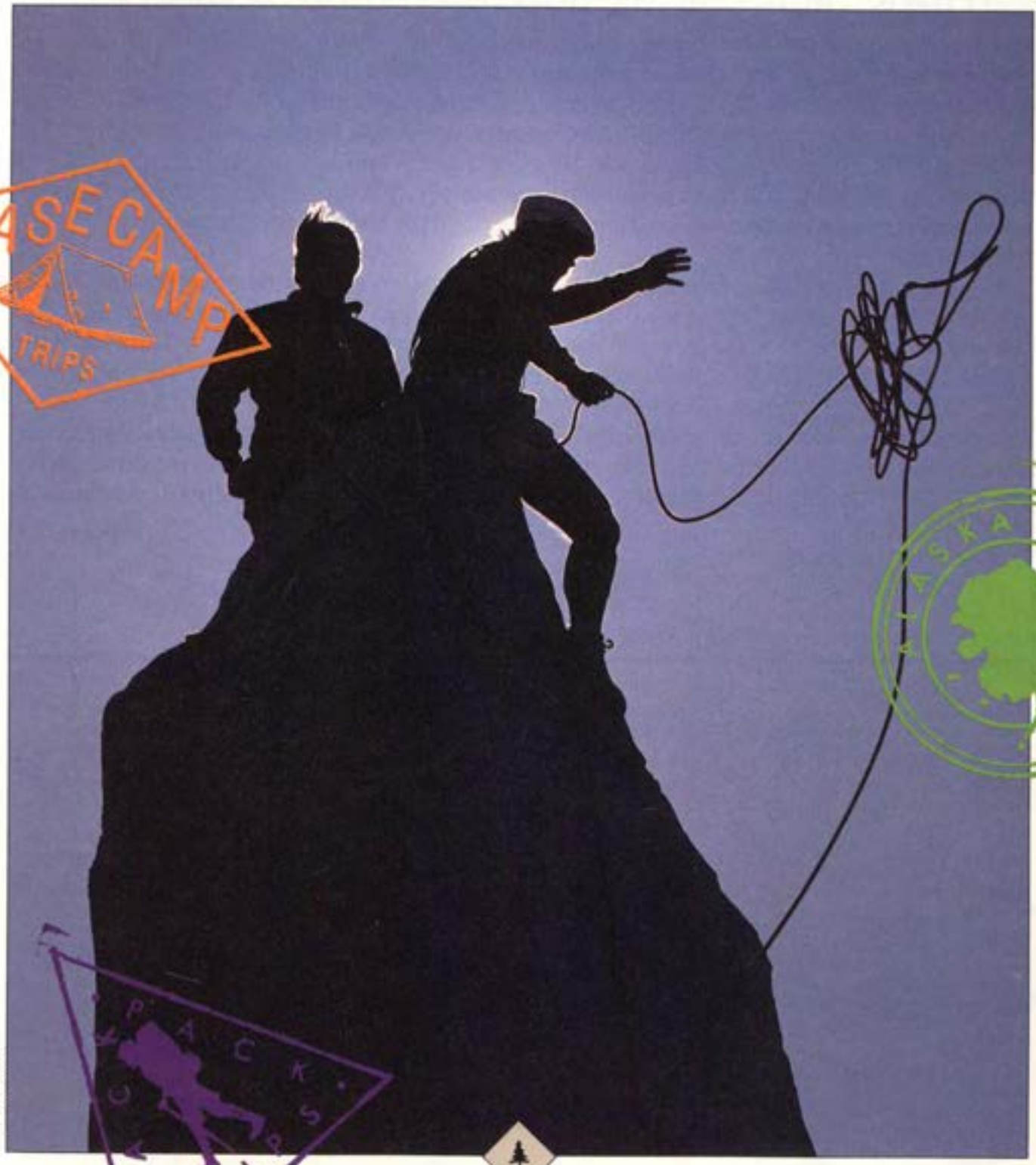
Prizes: First and second prizes for color and for black-and-white will be awarded according to merit in each category. In addition, a grand-prize winner will be chosen that will not be one of the prizewinners in a regular category; it may be either a color or a black-and-white photo. The judges reserve the right not to award a prize in one or more categories if no photograph(s) received meet their standards.

As in years past, prizewinning submissions will be enlarged, printed, mounted, and displayed in the Sierra Club's national headquarters in San Francisco.

Liability: *Sierra*'s responsibility for loss of or damage to any material shall not exceed the amount payable to the magazine under any insurance carried to cover its liability for such loss or damage. Information about the amount of coverage is available on request. We are not responsible for material lost or damaged in the mail.

1985

SIERRA CLUB OUTINGS



Gordon Wiltsie

Should I join a Sierra Club Outing? Last year almost 4,000 members answered yes to more than 270 trips. This year we hope even more will do so, and have planned more trips to more places than ever before. What you experience and what you remember will be determined by the trip you join. For a cultural experience you might try one of our foreign trips, or, closer to home, go to Canyon de Chelly. If high peaks are your thing, explore the Sierra, the North Cascades, or Alaska. For luxury you might try a base camp trip. For economy, backpack. We offer trips for families, singles, the physically impaired, youngsters, and beginners. Participants in over two dozen service trips will build or improve trails or clean up selected areas—something for almost every taste and pocketbook.

But some rewards are common to all of our outings: foremost, outings are planned for your enjoyment. You will be in the company of others who, like you, joined the Sierra Club because of their love of wilderness and their wish to preserve and protect it. Whatever the format, your trip will be planned to minimize lasting environmental impact. Your leader will be an experienced, trained volunteer with the skill to provide a safe and rich experience and the desire to share special knowledge. And because all our outings having an underlying conservation motif, we hope you will return with renewed determination to influence those processes which affect the quality of the world we must share with each other and bequeath to our children.

Won't you join us this year?

Dolph Amster
Outing Committee Chairman

OUTING COMMITTEE
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Vice Chairman *Jim Watters*
Finance Officer *Pete Bengston*
Secretary *Carol Dienger*
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The Outing Department thanks our photographers and requests that black-and-white photos and color slides for outing publication be sent to *Marla Riley, Sierra Club, 530 Bush St., San Francisco, CA 94108.* We especially need black-and-white photos.

This catalog is dedicated with affection to *Jane King*, who has served as Outing Department Director for the past four-and-a-half years. We appreciate her patience, guidance, and leadership, and wish her well in future endeavors.

Outing Department
Staff and Outing
Committee

Table of Contents

Important Notes—Please Read Carefully

- The Outing Department will begin processing reservations for summer and fall trips on January 7. Applications received before that date will be processed as if received on January 7. Supplements will be available after January 1.
- To order supplemental information on specific trips please see page 106.
- 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 regarding your specific situation.

Inner City Outings (ICO) is the Sierra Club's community outreach program. Our volunteers,

trained in recreational and safety skills, provide wilderness adventures for people who wouldn't otherwise have them—youth of diverse cultural and ethnic backgrounds, hearing or visually impaired individuals, and the elderly. ▲ To recruit participants for outings, ICO leaders work in cooperation with community agencies. Outings include dayhikes, backpacking, whitewater rafting, cross-country skiing, snowshoeing, adventure ropes courses, and rock climbing. In 1984, leaders provided 200 outings for more than 2,000 participants.

Cooperation in camp, San Francisco Bay ICO Trip (Philip Adam)

Inner City Outings is coordinated by the ICO National Outing Subcommittee. There are currently 17 ICO groups, each affiliated with a Sierra Club Chapter:

Boston, MA
Chicago, IL
Cincinnati, OH
Cleveland, OH
Denver, CO
El Paso, TX
Kingston, NY
Los Angeles, CA
Miami, FL
New Orleans, LA
New York, NY
Norman, OK
Philadelphia, PA
Sacramento, CA
San Francisco, CA
San Jose, CA
Washington, DC

In 1984, the subcommittee will sponsor the National Skills Sharing Conference for current leaders and Sierra Club members interested in starting new ICO groups. The subcommittee also plans to produce a new slide show and a new brochure.

A donation from you will help ICO meet these objectives. Contributions to the program should be made to **Inner City Outings, Sierra Club Foundation**, and are tax-deductible.

Many Sierra Club members find that they have rewarding experiences as ICO volunteers. Donations and requests for information should be sent to:

ICO Subcommittee
% Sierra Club
530 Bush St.
San Francisco, CA 94108

The subcommittee thanks all who contributed to Inner City Outings in 1984, in particular those who made contributions in memory of Tom Fleuret, Tom Pillsbury, Scott Ramsey, and Arthur W. (Bill) Taylor.

The subcommittee also thanks the following clubs, corporations, and foundations for their support:
Alpine Winter Foundation
California Alpine Club
The David and Lucile Packard Foundation
Edwin Gould Foundation for Children
James Starr Moore Memorial Foundation
Mary Horner Stuart Foundation
Robert Stewart Odell and Helen Pfeiffer Fund
Safeway Stores, Inc. (San Francisco)

The Hawaiian archipelago offers a unique mid-Pacific setting for a number of interesting

Sierra Club trips. Hawaiian 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 there will be overnight hikes on some, but 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. ▲ To lessen the impact on natural surroundings, the trips are limited to no more than 30 participants.

Coconut Palms, Kau Desert, Island of Hawaii (Dick Schmidt)

Kauai-Moloaa Bay, Kauai (Dick Schmidt)

[27] Easter Vacation on Maui—March 29–April 6. *Leaders, Eunice and Ned Dodds, 2013 Skycrest, Walnut Creek, CA 94595.* Old Hawaii or new, Maui offers a lot to the car camper. Those who choose may backpack 10,000-foot Haleakala Crater, departing from Baldwin Beach, while others may go to Wainapanapa on the wet side. Three nights later we'll move to west Maui to relax on Fleming Beach and explore old Lahaina. An easy second backpack will be available for hikers, or you may return to Baldwin Beach. Then it's home again with fond memories of a pleasant tropical interlude.

[28] April in Hawaii—March 29–April 6. *Leaders, Lynne and Ray Simpson, 1300 Carter Rd., Sacramento, CA 95825.* A celebration of the arrival of spring! This camping trip will explore the "Big Island" of Hawaii: the volcanic moonscapes, tropical forests, and the sandy palm beaches. Central commissary menus will feature Pacific Basin favorites. Day and overnight hikes are planned.

[193] Explore Kauai, Island of Kauai, Hawaii—June 22–30. *Leaders, Karen and Stan Johnsen, 3842 LaDonna Ave., Palo Alto, CA 94306.* Families are welcome on this camping trip, which begins near Haena on the beautiful north shore of Kauai. We will have ample opportunities to swim and snorkel. Dayhikes, bird-watching, and an overnight are offered. This is followed by a trip into the contrasting Kokee region filled with canyons, swamps, and beautiful overlooks. Choices between easy and more challenging hikes are offered and many cultural and musical activities are planned. Both cabin and tent camping are provided.

Alaska is about one fifth the size of ALL the lower 48 states put together! Yet it has a population less 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 rain forests of southeastern Alaska, most is essentially uninhabited. ▲ The Alaskan wilderness is almost beyond comprehension. The permafrost of the arctic slope, the magnificent 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 which 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 still a critical concern in Alaska. These trips involve areas where important decisions are being made that affect the future of Alaskan land. Beyond the pure wilderness experience, our trips provide a chance for active conservationists to study the 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.

[60] Southwest Alaska Bicycle Tour—June 16–26. *Leaders, Betty and Paul Tamm, 6828 Saroni Dr., Oakland, CA 94611.* Glaciers, mountains, wildlife, and ocean inlets will be the backdrop for this vehicle-supported tour for experienced cyclists. Leaving Anchorage, we'll pass through the fertile Matanuska Valley, circumnavigate the Chugach Mountains, and follow the pipeline to its Valdez terminus. After an all-day ferry crossing of Prince William Sound we will return by way of the lush Kenai Peninsula. Relatively dry weather, long hours of daylight, and a moderate pace should allow ample time for side excursions to explore, fish, or take photographs.

[61] Kenai Fjords Park Sea-Kayaking, Alaska—June 24–July 6. *Leaders, Carol and Howard Dienger, 3145 Bandera Dr., Palo Alto, CA 94304.* Come with us to explore by sea kayak the rugged, glaciated coastline of this incredible mountain-fjord system. On the Kenai Peninsula southwest of Anchorage are the Kenai Fjords, renowned for their abundant wildlife. Ice that once flowed downward from the mile-high Harding Icefield carved these deep-water fjords. Kayak on the bays where tidewater glaciers calve directly into salt-water, and on layover days hike up to view the icefield 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.

Bald Eagle spotted in Alaska (Mark Jenson)

[62] Romanzof Mountains, Arctic Wildlife Range, Alaska—June 24–July 10. *Leader, Cal French, 1690 N. 2nd Ave., Upland, CA 91786.* This cross-country backpacking trip will cover 80 miles in a seldom-visited region of the Brooks Range near the Canadian border. We'll cut through the Romanzof Mountains via the Aichilik River, and cross a pass at 4,000 feet to descend the upper Kongakut River. In this remote Arctic wilderness, we'll have abundant opportunities for wildlife observation, fishing, and photography in the 24-hour daylight. Members will need to be in superior condition and have the proper equipment. There will be an additional charge for air service in the "bush." Leader approval required.

[63] Admiralty Island Canoe Traverse—June 25–July 6. *Leader, John Ricker, 2610*

N. 3rd St., Phoenix, AZ 85004. Admiralty Island is one of the few places in southeastern Alaska saved from clearcutting. It is mountainous and heavily wooded, but a chain of lakes across its midsection permits a canoe traverse. There will be lake paddling, a few rapids, and some short portages. We will start in Juneau and fly to Seymour Canal on the east side of the island. There we will pick up canoes and spend four or five days on saltwater before crossing the island. The trip will end in Angoon, a historical Indian village on the west side. There will be ample time for fishing, viewing wildlife, and exploring. Canoes will be furnished. Whitewater experience is not necessary, but minimal paddling experience is desirable. Leader approval required.

[64] Alaska Wildlife to Hawaii's Volcanoes, Denali and Hawaii Volcanoes Parks, Alaska/Hawaii—June 30–July 13. *Leader, Pete Nelson, 5906 Dirac St., San Diego, CA 92122.* Denali National Park is noted for abundant, varied wildlife and Mt. McKinley, North America's highest peak (20,230). The first week we will explore and hike from a base camp in the park. Via a triangle flight, the second week will be spent on Hawaii. Hawaii Volcanoes National Park includes Hawaii's two active volcanoes, Kilauea and Mauna Loa, and is a refuge for Hawaiian native plants and animals. We will backpack trails to and along the ocean shore below Kilauea, and to the summit of Mauna Loa (13,677). This is a leisurely to moderate trip.

[66] Kenai Wildlife Refuge, Alaska—July 9–18. *Leader, Dolph Amster, P.O. Box 1106, Ridgecrest, CA 93555.* Join us and our professional guide on a ride across Tustemena Lake to Moose Creek. Our packer relieves us of dunnage and we move in leisurely stages to a camp above the Killey River and a grand view of the glacier. After one or more dayhikes, we return via a different route. There will be ample time for photography or loafing. Participants should be well-prepared for wet weather and should have some outdoor experience. Leader approval required.

[67] Lake Clark Tri-Lake Backpack, Alaska—July 26–August 4. *Leader, Serge Puchert, 1020 Koontz Ln., Carson City, NV 89701.* This challenging 11-day, all-cross-country loop will be in the most beautiful and remote area of Lake Clark National Park, 100 miles northwest of the Kenai Peninsula. Starting from the east end of Twin Lakes, we cross several giant glaciers and drop down to Turquoise Lake. We recross through low passes to the west end of Twin Lakes and hike to Snipe Lake for fabulous fishing and our plane pick-up. Stream crossings and glacier walking limits the trip to experienced, physically fit backpackers. On our one or two layover days we can rest, fish, or explore, while a local naturalist will greatly extend our knowledge of the animals and terrain of the area. Price of the plane shuttle from Homer is not included. Leader approval required.

Glacier Bay, Alaska (Carol Dienger)

[68] Mt. Hayes, Eastern Alaska Range—July 26–August 8. *Leader, Harry Reeves, P.O. Box 1571, Quincy, CA 95971.* Our flight by bush plane to a strip near the Trident Glacier provides a view of the multiple arms of ice descending from Mt. Hayes (13,832). We will explore the ridges and canyons of this ever-changing, always challenging steep tundra and glacier country, 60 miles east of Denali. Dall sheep and bands of caribou accent the richness of wildlife in this area. Our pace will be moderate, but coping with the uncertainties of this environment requires backpacking experience. Cost of bush plane is not included in trip price. Leader approval required.

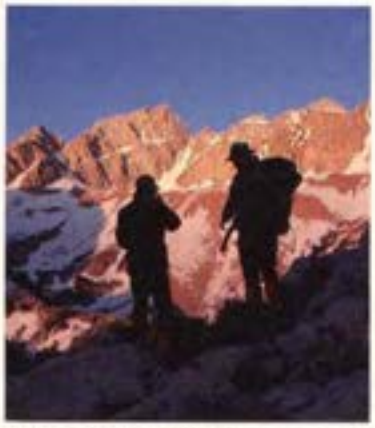
[69] Noatak River Float, Gates of the Arctic Park, Alaska—August 4–17. *Leader, Wilbur Mills, 3020 60th NW, Seattle, WA 98107.* The Noatak is one of the wildest rivers in the Arctic. We'll be floating the upper stretch, allowing ample opportunity for exploring the valley's spectacular limestone tributaries. The Noatak is rich in animal and bird life, and we'll have a good chance of viewing sheep, moose, bear, wolf, fox, and other wildlife. Late summer is a premium time to see the Arctic; bugs are minimal and the colors are already changing. Price does not include airfare from Fairbanks.

[70] Mt. Edziza Provincial Park, British Columbia, Canada—August 5–16. *Leaders, Sharon and Bob Hartman, 1988 Noble St., Lemon Grove, CA 92045.* This is the first Sierra Club outing to Mt. Edziza Provincial Park—a unique alpine wilderness area in northwestern British Columbia. The park covers much of the Tahltan Highlands, a high plateau with significant volcanic activity. This backpack trip covers 80 miles of cross-country—with opportunities for climbing peaks in the Spectrum Range and Mt. Edziza. Trout fishing in lakes below the plateau will round out this exploratory outing. Trip members need to be experienced backpackers; climbing and angling skills are useful. Cost of bush-plane travel is not included in trip price. Leader approval required.

[380] Dog Sled Ski Tour, Kenai Peninsula, Alaska—March 3–13, 1986. *Leaders, Beverly and Les Wilson, 570 Woodmont Ave., Berkeley, CA 94708.* The Kenai Peninsula juts into the Gulf of Alaska south of Anchorage and offers a relatively mild winter climate. The western part is a lake-covered plain supporting a large population of moose and several wolf packs. The Kenai Mountains rise on the eastern edge, their tops barely projecting through the Harding Icefield, from which icefalls tumble 5,000 feet into the sea. Two dog teams will pull our gear as we ski up onto the icecap, north among the peaks of the Kenai range, and then down the glaciers and westward across the moose range. Possible air charter expense not included in trip price. Leader approval required.

Backpack trips are an adventurous and rewarding way to experience the wilderness. Packing everything you need for the trip adds an extra dimension

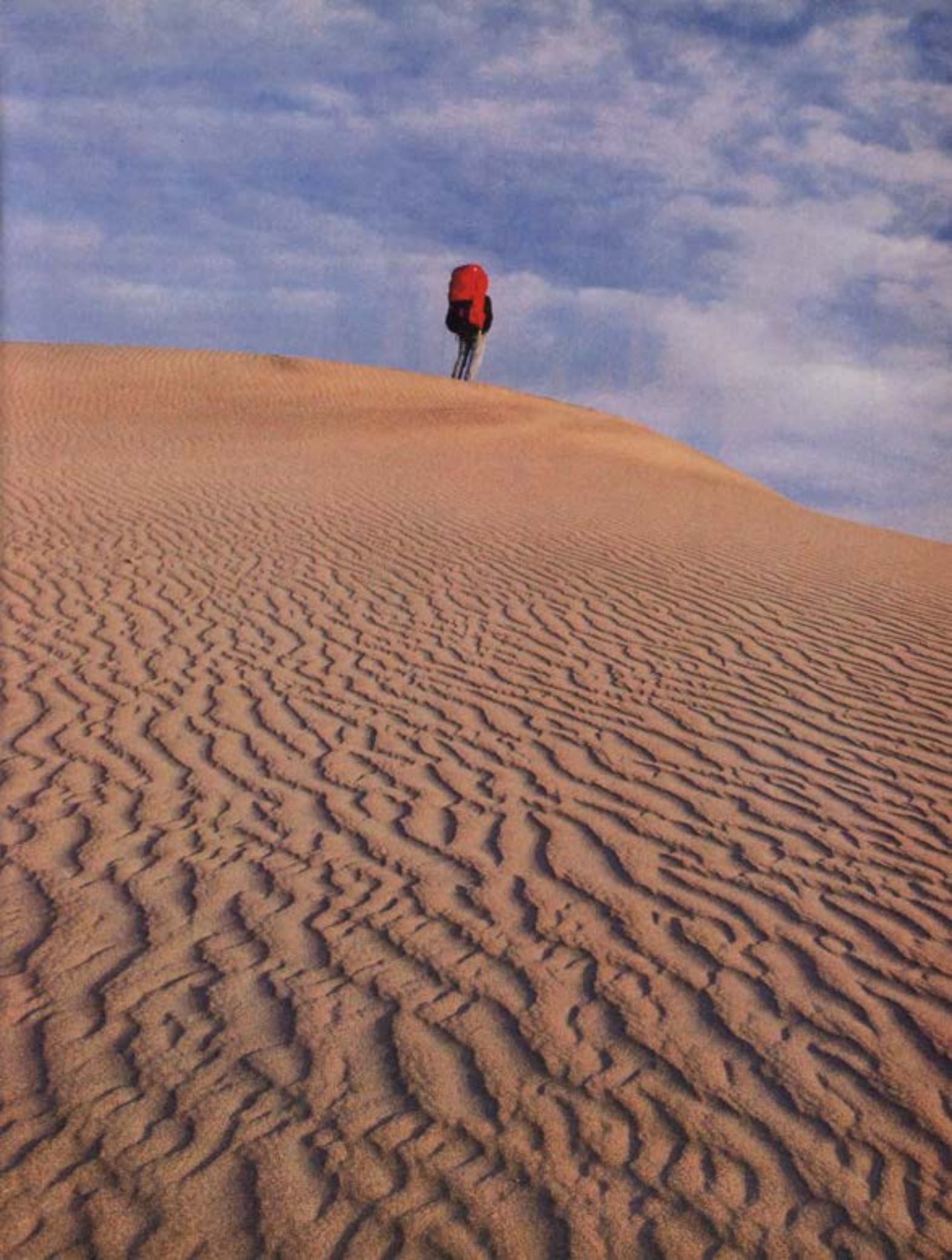
of freedom and satisfaction to your outing. And backpacking has another benefit: It is the least expensive way to go. ▲ Our trips are really small expeditions. Each is individually planned by its leader, who seeks challenging routes and attempts, wherever possible, to get off the trails and set up camp in untrampled, out-of-the-way places. The trips almost always provide one or more layover days for relaxing or exploring. ▲ Every trip is run with a central commissary in which 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 80 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 catagories: 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 route-finding. Strenuous (S) trips cover as many as 60–70 miles per week, with greater ups and downs and continual 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 otherwise specified, the minimum age for trips, excluding Junior Backpack Trips, is 16.



Mt. Humphreys, Sierra (Gordon Wiltsie)

Kings Canyon Park, Sierra (Madeleine Watters)
Hilton Basin, Sierra (Laurie-Ann Barbour)

(Gordon Wiltsie)



Backpacking in Alaska (Carol Dienger)

[35] Cone Peak—Ventana, Coast Ranges, California—March 23–31. *Leader, David Reneau, 410½ Pacific Ave., Paso Robles, CA 93446.* The Santa Lucia Mountains offer high ridges with ocean views, colorful wildflower displays, and rugged forested canyons. From the coast we hike through wildflower-filled meadows and climb through groves of the rare Santa Lucia fir to the open vistas atop Cone Peak (5,155). Hiking along the Coast Ridge and adjacent valleys will take us to the redwood forests of Big Sur. One layover day in Lost or Indian valleys will allow time for nature study, relaxation, or exploration. (Rated M)

[36] Canyons of Death Valley, Cottonwood Mountains, California—March 31–April 6. *Leader, Geoffrey Faraghan, 9 Bell Waver Way, Oakland, CA 94619.* In the spring, while the neighboring Sierra is still covered with snow, Death Valley is pleasantly warm. Starting below sea level near huge sand dunes, we will drive from Stovepipe Wells up alluvial fans to the mouth of Marble Canyon. Hiking up through the canyons, we will see complex geology, Indian petroglyphs, cactus, wildflowers, wild burros, and possibly desert bighorn sheep. In high valleys (4,000–6,000) we will find yucca trees and our two food and water caches. At 7,000 feet, along old sheep trails, there will be fantastic views of the Inyo, Panamint, Grapevine, and Funeral mountains. We then descend through Dry Bone Canyon to the floor of Death Valley. (Rated M-S)

[37] Lost Valley, Ventana Wilderness, Coast Range, California—April 5–13. *Leader, Bob Berges, 974 Post St., Alameda, CA 94501.* Tramp the ridges and explore the wooded valleys of Big Sur River country. Mid-April dates should provide a display of wildflowers to complement ocean views and pleasant walking. A 50-mile loop from Arroyo Seco includes Willow Springs, Pine Ridge, Indian Valley, and Lost Valley. Travel is alternately up and down in Ventana, but we will undertake it in moderate, daily bites. (Rated L-M)

[38] Pines to Palms Novice Backpack, California—April 8–13. *Leader, Louise French, 1690 N. 2nd Ave., Upland, CA 91786.* Mt. San Jacinto towers 10,000 feet above the brooding California desert, an island of cool forests in the sky. We will ride the Palm Springs tram to 8,000 feet and hike to the top for a nonpareil view from the desert to the sea. We'll then walk gradually downhill from alpine meadows to Sonoran desert, through a varied display of spring flowers. Beginners are welcome to learn the many skills of backpacking, and experienced individuals will find this a nice conditioning hike. (Rated L-M)

[39] Galiuro Wilderness, Galiuro Mountains, Arizona—April 14–20. *Leader, Sid Hirsh, 4322 E. 7th St., Tucson, AZ 85711.* Primeval, exceptionally rugged, and utterly beautiful—that's the Galiuro Mountains in southeastern Arizona. Our route takes us up and down steep slopes with brightly colored soils and oddly shaped rocks, on dry brushy ridges with magnificent vistas, and into forested canyons with flowing streams. Moving days range from 5 to 15 miles on good trails, seldom-used trails, and no trails. Campsites will be from 4,000 to 7,200 feet. One of the few signs of humanity that we will see is an old gold mine near Rattlesnake Canyon, site of a historic shootout in 1918. There will be a layover day in Redfield Canyon. (Rated M-S)

[40] Kanab Canyon/Thunder River, Grand Canyon, Arizona—April 27–May 4. *Leader, Peter Curia, 1334 W. Willetta, Phoenix, AZ 85007.* The scenery in this area is perhaps the best that the Grand Canyon offers to the off-trail adventurer. There are the expanse of the Esplanade, the redwall narrows of Jumpup, the usually muddy and 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)

[41] Rainbow Plateau, Utah/Arizona—April 27–May 4. *Leader, Jim De Veny, 5307 E. Hawthorne St., Tucson, AZ 85711.* Lying west of Navajo Mountain on the southern shore of Lake Powell, the Rainbow Plateau is sandstone-dome country laced with narrow canyons and separated by high mesas. The trip will begin and end by boat. Along the way we will visit Forbidding Canyon, Aztec Creek, Cummings Mesa, and Rainbow Bridge. This trek through the Navajo slickrock will consist mostly of cross-country hiking. (Rated M-S)

[42] Parunaweap Backpack, Zion Park, Utah—May 12–18. *Leaders, John Ricker and Lynn Krause, 2610 N. 3rd St., Phoenix, AZ 85004.* The Zion region, named by the Mormons and interpreted as "the heavenly city of God," has some of the most spectacular and interesting canyons in the Navajo sandstone formation. Parunaweap follows the east fork of the Virgin River into Zion National Park. Our first three days will be spent wading through a 1,000-foot-deep gorge, followed by a walk out by an old Mormon ranch. The second half of the trip will be from the 8,000-foot Kolob Plateau down La Verkin Creek for a view of the seldom-seen Kolob Arch. We will exit by way of the Kolob Fingers. This trip will be all downhill. (Rated M)

[43] Sierra San Pedro Mártir, Baja California, Mexico—May 13–22. *Leader, Wes Reynolds, 4317 Santa Monica Ave., San Diego, CA 92107.* Join us on a 31-mile hike in the highest mountain range in Baja California. From the pine-and-aspen wooded area of Vallecitos, we pass through rolling hills and arroyos, traverse the open alpine meadows of La Encantada and La Grulla, and visit oak woodlands. On a layover day it may be possible to see both the Pacific Ocean and the Gulf of Mexico from a nearby peak at 9,650 feet. The last night in Mexico we will stay at the Meling Guest Ranch in the chaparral-covered foothills of the Sierra San Pedro Mártir. (Rated L)

[46] Land of the Noonday Sun, Nantahala and Chattahoochee Forests, North Carolina/Georgia—May 25–June 1. *Leader, Chuck Cotter, 1803 Townsend Forest Ln., Brown Summit, NC 27214.* Tucked away in the southern Appalachians lie the Nantahala Mountains, which the Cherokee called the "Land of the Noonday Sun." Our hike follows the Appalachian Trail, which snakes its way through two exquisite roadless areas: the Southern Nantahala and Tray Mountain. The rock ledges at Albert Mountain, Standing Indian, and Tray Mountain will provide breathtaking views of the surrounding countryside. (Rated M)

Hair washing, Katmai National Park, Alaska (Carol Dienger)

[71] Grand Gulch Primitive Area, Utah—May 26–June 1. *Leaders, Marlo and Ron Miller, 13636 Durango Dr., Del Mar, CA 92014.* Exploring this isolated and colorful gorge in the southwest corner of Utah is a stimulating and rewarding experience. We will enter near the Kane Gulch Ranger Station and hike the loop trail of the Fish and Owl Creek canyons. There will be one layover day. Along the way we will explore the remains of the Anasazi dwellings, pottery, and pictographs, and many of the side canyons and natural arches of the area. The pace will be moderate to allow time for relaxing, viewing, and photography. (Rated M)

[47] Mt. Rogers Scenic Backpack, Jefferson Forest, Virginia—June 1–8. *Leader, Cliff Ham, 3729 Parkview Ave., Pittsburgh, PA 15213.* Mt. Rogers, Whitetop, and Pine Mountain, the three highest peaks in Virginia, are along the Appalachian Trail. Our section offers hikers the opportunity to climb mountain ridges, to wander along streams and gorges, and to roam through a variety of forest habitats. Wildflowers, redbud, and sourwood will bloom during our trek. Views from the high mountain meadows, many above 5,000 feet, can be spectacular. This trip will total 30 miles with two layover days and several climbs or descents over 1,000 feet. (Rated L-M)

[72] Kilmer Wilderness and Citico Wild Area, Nantahala and Cherokee Forests, North Carolina/Tennessee—June 1–8. *Leader, Dave Bennie, Box 9107, Wrightsville Beach, NC 28480.* Located just south of Great Smoky Mountains National Park, our trip takes us along swift-flowing mountain streams, over flame azalea–covered Bob Bald (5,300), and down through the virgin Joyce Kilmer Memorial Forest. The trip covers 28 trail miles, with daily elevation gains of up to 2,500 feet. A midweek food cache lightens our load, and one and a half layover days allow packless exploration time. This trip is suitable for novices as well as experienced backpackers desiring a leisurely outing. (Rated L-M)

Relaxing with a good book, Sierra (Carol Crews)

[48] Skyline Trail, Pecos Wilderness, New Mexico—June 2–8. *Leader, Joanne Sprenger, 2805 8th St., Las Vegas, NM 87701.* The first day in Porvenir Canyon (8,000) offers incredible views of towering cliffs. After reaching Skyline Trail on the third day (11,000) the trail is quite level with occasional gentle changes in elevation and scenic vistas. We will occasionally sight herds of elk. (Rated L-M)

[73] Black Elk Wilderness, Black Hills Forest, South Dakota—June 8–14. *Leader, Faye Sitzman, 903 Mercer Blvd., Omaha, NE 68131.* From our trailhead near Mt. Rushmore past the grand Cathedral Spires in the Needles and over Harney Peak (7,242), we will explore this area of granite ridges and forested canyons which exceeds the Appalachians in altitude and the Alps in age. Pine-covered mountains, wildflowers, butterflies, mushrooms, beavers, and mountain goats grace this historically rich area. This trip is suitable for well-conditioned beginners as well as experienced trekkers. (Rated L).

Zion National Park, Utah (John Gerty)

[74] Dark Canyon, Utah—June 9–15. *Leader, Norm Elliott, 2906 Clearview Dr., Austin, TX 78703.* Remote and relatively untouched, this beautiful canyon offers outstanding and varied scenery—from the forested and grassy slopes of Elk Ridge (8,000), to the desert vegetation and towering sandstone walls. The canyon empties into Lake Powell (3,700), our destination. A layover day is planned for exploration of some of the major side canyons. A boat will pick us up when we reach Lake Powell and deliver us to Hite Marina. Bus transportation is provided from Bluff, Utah, to the trailhead and back to Bluff from the marina. (Rated M)

[75] Rose's Gap Backpack, Tennessee/North Carolina—June 12–19. *Leader, Jim Absher, P.O. Box 3178, Athens, GA 30612.* This is the fourth annual spring "romp" through the Smokies. We will hike through a variety of habitats including (hopefully) a rhododendron bald in full bloom. Our goal will be to visit some of the more spectacular but less-frequented areas of the park. There will be one layover day, international cuisine, and afternoon swims. Trip size is limited to eight people, so we will be a small, congenial group. (Rated M)

[76] Black Forest Trail, Pennsylvania—June 15–22. *Leader, Len Frank, 205 Moore St., Hackettstown, NJ 07840.* The Black Forest Trail is a 42-mile loop located in Lycoming County. We start at Slate Run, 30 miles northwest of Williamsport. The altitude varies from 900 to 2,100 feet, and the terrain is often steep and rocky, with a delightful contrast between the deep shade of the coniferous forests and the sun spangled green of the hardwoods. The area is a geologist's paradise, a plateau of Paleozoic sedimentary rocks dissected by streams, forming canyons in the sandstone. The mountain laurel should be in full bloom and the wildflowers abundant. We will average less than 6 miles a day to allow ourselves opportunities for bird-watching and photography. This trip is suitable for beginners as well as for more experienced backpackers. (Rated L)

[77] Pink Beds of Pisgah Forest, North Carolina—June 15–22. *Leader, Martin Joyce, 4815 Roberta Dr., Pittsburgh, PA 15236.* The Pink Beds should be in full bloom with rhododendron, azalea, and wildflowers during this leisurely backpack trip. We will cover 31 miles over moderate terrain with one or two layover days and a food drop. Nonetheless, proper conditioning is essential. The pace will allow plenty of time for poking around, swimming, dayhiking, etc. This trip is suitable for beginners. (Rated L).

[78] Cruces Basin Wilderness Leisure, Carson Forest, New Mexico—June 19–26. *Leader, John Colburn, Box 37199, Albuquerque, NM 87176.* The narrow-gauge Cumbres and Toltec Scenic Railroad will carry us along the top of Toltec Gorge on the New Mexico/Colorado border to our trailhead and a leisurely exploration of the Cruces Basin Wilderness. The wildflowers in the high 10,000-foot rolling grassland should be at their best; elk, mule deer, and black bear may be seen, and native trout will test the wiles of fisherfolk. Short hikes and two layover days will give everyone a chance to enjoy this remote wilderness. A ride on the CATS will return us to the roadhead at Antonito, Colorado. (Rated L)

[79] Vermont's Green Mountains—June 23–29. *Leader, Robert Bingham, 1025 B Parnell Ave., Sault Ste. Marie, MI 49783.* 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 there are 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)

[80] Crest of the Inyos, Inyo Mountains, California—June 23–29. *Leader, Geoffrey Faraghan, 9 Bell Waver Way, Oakland, CA 94619.* Twenty miles east of the heavily traveled southern Sierra, across the Owens Valley from Mt. Whitney, lie the Inyo Mountains. Starting from the old mining town of Cerro Gordo, we will follow the 8,000- to 10,000-foot crest north toward New York Butte. From our food cache, we take a 100-year-old pack trail down a rugged canyon to the ghost mining camp of Beveridge. After a layover we return to the crest and descend Long John Canyon to the Owens Valley floor. (Rated M-S)

Zion National Park, Utah (John Gerty)

[81] Gila Wilderness High Country, New Mexico—June 25–July 1. *Leader, Richard Taylor, Box 122, Portal, AZ 85632.* Miles of aspen groves carpeted with ferns, deep forests of spruce and subalpine fir, flower-filled meadows, and vistas that sweep across vast tracts of New Mexico and Arizona: these characterize the trails of the Gila high country. Our trip through America's first wilderness features two layover days, a side hike to Whitewater Baldy (the highest point in the Gila), and the chance to share an icy brook with native trout. Other wildlife we may see include elk, turkey, blue grouse, and spruce squirrels. These are the mountains that inspired Aldo Leopold. (Rated L-M)

[82] Blossom Lake Leisure Loop, Sequoia Park, Sierra—July 4–14. *Leader, Len Lewis, 2106-A Clinton Ave., Alameda, CA 94501.* From fabled Mineral King in the Sierra our route will take us over Farewell Gap to an area of lakes and giant redwoods. Four layover days and easy moves make this trip suitable for well-conditioned first-trippers and interesting enough for blasé old-timers. Expect good fishing. (Rated L)

[83-E] Southern Yosemite Revisited/Photography, Sierra—July 5–13. *Leader, Wes Reynolds, 4317 Santa Monica Ave., San Diego, CA 92107. Instructor, Phil Binks.* This leisurely paced loop trip, over less-frequented trails and easy cross-country routes, will help backpackers improve their photographic skills while enjoying the southern boundary lake-country of Yosemite National Park. Three planned layover days and short moving days will give time for instruction by a professional photographer, with ample opportunity for trip members to practice. There will also be time for swimming, fishing, and relaxation at elevations between 7,000 and 9,100 feet. (Rated L)

[84] Adirondack Park–Long Lake to Algonquin, New York—July 6–14. *Leader, Edith Schell, 2671 Brown St., Collins, NY 14034.* Beginning on the Northville-Placid Trail near Long Lake village, we will travel first along sparkling Long Lake and then along the Cold River to a point from which we can dayhike up Algonquin (5,114), the second highest mountain in New York. In the first four days on the Northville-Placid Trail we will cover relatively easy terrain, moving into steeper ascents and descents as we reach the high peaks area. We culminate this 35-mile trip with the ascent of Algonquin (without full packs). (Rated L-M)

[85] Glacier Peak Wilderness, Stehekin Valley, Washington—July 13–21. *Leader, Rodger L. Faulkner, 645 Cedarberry Ln., San Rafael, CA 94903.* We enter the heart of the Washington North Cascade mountain range via ferry boat on 50-mile-long Lake Chelan. Our walk up Railroad Creek will introduce us to views of waterfalls, wildflowers, and lakes. At Lyman Lake, encircled by snow-covered peaks, we enjoy a sunset that will turn Lyman Glacier pink and the peaks bright rose. We travel to Cloudy and Suiattle passes on our way to the Image Lake basin for dramatic views of snow- and ice-covered Glacier Peak. Some cross-country travel takes us to the Agnes Creek drainage with its tall cedars, and to the Stehekin Valley. Nutritious gourmet backpacking food will be featured and we will allow time for baking pizza and fresh bread while on-trail. (Rated M-S)

[86] Pinnacles, John Muir Wilderness, Sierra—July 13–21. *Leader, Ed Shearin, 7745 25th Ave. NE, Seattle, WA 98115.* The East Pinnacles Basin, with its rugged backdrop, and the trailless terrain of Humphreys Basin provide the settings for this alternately relaxed and vigorous trip. After initial trail travel, mostly cross-country routes connect these future points. A total of three layover days with a smaller-than-average group size allow activities from peak-climbing to quiet solitude. A traditional cross-country exit over the Sierra Crest rounds out this varied outing. (Rated L-M)

[87] Whitney Lakes Loop, Sequoia Park, Sierra—July 15–23. *Leader, Scot Jamison, 400 N. Washington, Glendora, CA 91740.* There are several groups of lakes found behind the Mt. Whitney crest, some of which not only have superior fishing for golden, cutthroat, and rainbow trout, but also have access to nearby peaks. We will start from the Cottonwood Lakes Basin heading over New Army Pass and along the John Muir Trail, visiting, among others, Crabtree and Wright lakes, and possibly climbing mounts Langley, Hitchcock, Barnard, and Tyndall. Our two layover days can be spent fishing, climbing, or just enjoying it all. Shepherd Pass will be the exit for this trip. (Rated M)

[88] Elizabeth Pass, Sequoia and Kings Canyon Parks, Sierra—July 15–24. *Leader, Jim Watters, 600 Caldwell Rd., Oakland, CA 94611.* Three spectacular divides join at the boundary between Sequoia and Kings Canyon national parks: the Silliman Crest, Great Western Divide, and Kaweah Peaks Ridge. Their hub is the axis of this ten-day, 60-mile exploratory wandering. The route we've chosen promises extraordinary views from many "rooftop" vantage points and treats members to pleasant campsites in broad, glaciated canyons and open alpine bowls. Terrain runs from the "adventurous" to the serene. The greater part will be trail travel, but with a challenging mix of cross-country backpacking. This outing should appeal most to those who can be at ease on high fell fields. (Rated M-S).

Making dinner, Zion National Park, Utah (John Gerty)

Stream crossing, Alaska (Carol Dienger)

[89] Hidden Lakes Leisure Loop, Bridger Wilderness, Wyoming—July 20–27. *Leaders, Jon Nichols and Sherri Serna, 338 W. Elvira, Tucson, AZ 85706.* This 35-mile trip near Pinedale will explore the glaciated canyon of the New Fork River and part of its headwaters at elevations from 8,000 to 11,500 feet. Photographers will love the lakes, peaks, and views of the Continental Divide of the Wind River Range. A layover day will give you a choice to climb Glover Mountain or hike to Hidden Lakes. Nature lovers will enjoy the abundant flowers and some of the best fishing in the wilderness. (Rated L)

[90] Trinity Alps, Mines and Lakes, Salmon-Trinity Alps Primitive Area, California—July 20–27. *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 will 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)

[91] Huckleberry Leisure, Emigrant Basin, Sierra—July 20–28. *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 then cover a wide loop, camping at Hyatt, Huckleberry, and Long lakes. Layover days will allow for climbing nearby peaks, admiring the wildflowers, or fishing. Travel days will average 8 miles with 1,000 feet of climb. A leisurely trip for well-prepared newcomers and veterans alike. Canelo, our friendly llama, will help carry equipment on this trip. (Rated L)

[92] Lake Italy, John Muir Wilderness, Sierra—July 20–28. *Leader, Dwight Taylor, 2 Marston Rd., Orinda, CA 94563.* Pine Creek Pass is our entry into the alpine meadows and basins lying along the western face of the Sierra Crest. Most camps will be at the 11,000-foot level in the shadow of such 13,000-foot peaks as the Seven Gables and Mt. Gabb, and near the shores of streams and lakes famous for golden trout, including Merriam, Vee, and Sandpiper lakes. We'll travel 45 miles, sometimes cross-country, and have two layover days to fish, climb, or relax. We will leave over Italy Pass. (Rated M)

[93] Collegiate Peaks, San Isabel Forest, Colorado—July 20–August 1. *Leader, Al Ossinger, 12284 W. Exposition Dr., Lakewood, CO 80228.* The Collegiate Peaks Wilderness Area, in the heart of the Sawatch Range of the Colorado Rockies, includes several summits over 14,000 feet. A 30-mile loop will take us to high base camps for climbs of Mt. Oxford (14,153), Mt. Columbia (14,073), Mt. Harvard (14,420), Missouri Mountain (14,067), and Mt. Belford (14,197). Highlights of this area include remnants of mining activities dating from the 1880s, herds of elk, and wildflowers that cover the alpine meadows. By tradition, the trip culminates at the Mt. Princeton Hot Springs pool. (Rated M-S)

[94] Cranberry Rendezvous, Monongahela Forest, West Virginia—July 21–27. *Leader, Chuck Cotter, 1803 Townsend Forest Ln., Brown Summit, NC 27214.* About two hours east of Charleston in the Monongahela National Forest lies the newly created Cranberry Wilderness. The local terrain is typical of the Allegheny Plateau, containing broad mountains surrounding the deep, narrow stream valleys of the Williams and Cranberry rivers. At the southeast edge of the wilderness lies the Cranberry Glades Botanical Area, where a boardwalk winds its way through an extensive bog harboring flora and fauna common to the far north: a fitting conclusion to our hike. (Rated L)

[95] Sawtooth Sampler, Sawtooth Wilderness, Idaho—July 21–27. *Leader, Dave Neumann, Box 1288, Hailey, ID 83333.* This seven-day excursion into the remote Queens River area contains some of the wildest and most beautiful country in the Sawtooths. We will hike 41 miles in six moving days with plenty of time for fishing, photography, and additional hikes. Most camps will be at lakes, and although we will have several 7- to 9-mile hikes, the elevations are moderate by western standards. (Rated L-M)

[96] South Buffalo Fork, Teton Wilderness, Wyoming—July 21–29. *Leader, Kerry McClanahan, 500 Kerber Rd., West Lafayette, IN 47906.* The Teton Wilderness with its high plateaus and flower-filled meadows contrasts sharply with the rugged, rocky mountains of Grand Teton National Park, 50 miles west. Little-traveled by backpackers, the area is home to wapiti, beaver, moose, grizzly, and trumpeter swan. We will be hiking at 7,300 to 10,300 feet, crossing the Continental Divide twice. Special stops are planned at South Fork Falls and Parting of the Waters, where early huckleberries and strawberries may be in abundance. Planned layover days at Pendergraft Meadows and Bridger Lake will allow us time to relax, fish, swim, observe wildlife, or hike into a remote section of Yellowstone Park. (Rated M-S)

(Carol Dienger)

[97] Miter Basin—Crabtree Lakes, Sequoia Park, Sierra—July 25–August 1. *Leader, Bill Engs, Drawer 4248, Crestline, CA 92325.* Starting at Cottonwood Creek on the east side of the Sierra, we will make a 40-mile loop in Sequoia National Park and the Golden Trout Wilderness south of Mt. Whitney. We will follow chains of lakes and streams below 13,000-foot peaks. Four days of travel will be on established trails with two days on scouted cross-country routes. Two layover days, one in Miter Basin and one at Crabtree Lakes, will permit exploration, photography, and fishing. Most campsites will be at about 11,000 feet in wooded areas. (Rated M)

[98] Lakes of the LeConte and White Divides, Sierra—July 25–August 3. *Leader, Bill Lewis, 128 Locust Ave., Mill Valley, CA 94941.* With a shuttle between Courtright Reservoir (8,170) and Wishon Trailhead (6,139) we look for maximum enjoyment of high, uncrowded wilderness in these ten days. Gravity does some of the work for us and we do not retrace our steps. Our route visits Red Mountain Basin, Bench Valley, and Blackcap Basin, providing layovers for rest, household chores, and hikes to more remote lakes and vistas. Snow will have receded, trails will be open, and spring should be in full flower. The trip is mostly on-trail, but with some cross-country. (Rated M)

[99] Middle Fork Leisure Loop, Bridger Wilderness, Wyoming—July 27–August 3. *Leaders, Virgene and Charles Engberg, 6906 Birchton Ave., Canoga Park, CA 91307.* We will enter Bridger Wilderness at Scab Creek, and climb to one of the largest alpine plateaus of the Rockies for very special views of the Continental Divide around Mt. Bonneville and Raid Peak. Our route will take us past Toboggan, Cresent, Raid, South Fork, Rainbow, Middle Fork, Dream, and Sandpoint lakes. A layover day at Middle Fork Lake will permit a beautiful climb to the Continental Divide. Nature lovers will enjoy wildflowers, fishing in the many lakes and streams, and the natural beauty of this alpine plateau. This is an excellent trip for the novice backpacker, even with the 1,800-foot elevation gain the first day. (Rated L)

[100] Sequoia Park, Sierra—July 27–August 4. *Leader, Carol Shapiro, P.O. Box 1204, Davis, CA 95617.* In the center of this famous park, the Great Western Divide creates the three major watersheds of the Sierra—Kings, Kern, and Kaweah rivers. Timberline campsites, fishing, and wildflowers will highlight this fast-paced tour of granite, snow, and spectacular 12,000-foot peaks west of Mt. Whitney. Peak-climbing and ecology are priorities on our two layover days. Cross-country travel calls for physically fit intermediates. (Rated M-S)

[101] Backcountry Hot Springs Tour, River Of No Return Wilderness, Idaho—July 28–August 3. *Leader, Chuck Shinn, 7885 Vue Rd., Meridian, ID 83642.* If a long soak after a hard day's hike appeals to you, then this is your trip. Excellent fishing, Indian petroglyphs, and the deep canyons all add further points of interest. Starting at the Loon Creek trailhead, we will visit approximately ten hot springs on our way to the Indian Creek airfield along the Middle Fork of the Salmon River, where we will be flown out to the town of Challis. (Rated M)

[102] Ocean to Mountains, Olympic Park, Washington—July 28–August 6. *Leader, Rob Jacobs, 6131 Mayflower Ave., Cincinnati, OH 45237.* The first four days of our trip we will live with the surf along Olympic National Park's Wilderness Coast, exploring tidepools and watching the sun set among the offshore islands and seastacks of this rugged seashore. We will then make use of a quick shuttle to the interior, and for the next six days travel through Olympic's great rain forests to the snowy high country with its unique wildflowers and wildlife. One or two layover days will allow time to experience the wide variety of environments. (Rated M).

[103] Bench Valley, Sierra Forest, Sierra—August 2–11. *Leader, Ken Maas, 23 Laurel Rd, Swampscott, MA 01907.* This trip combines the dense forests of the western Sierra with the rugged alpine Sierra. Schoolmarm, Six Shooter, Roman Four, and Ambition lakes are a few of the places that we will visit on this ten-day loop around the LeConte Divide. We start at Courtright Reservoir and gradually climb through the forest, passing through Bench Valley and Blackcap Basin before crossing the LeConte Divide. A climb of Goddard is a definite possibility on one of our two layover days. We recross the Divide via Hell For Sure Pass and return to the low country via Red Mountain Basin and Post Corral Meadow. Daily travel will be in the 4- to 7-mile range, with one third of our 40 miles cross-country. (Rated M)

[104] Ritter Range, Minarets Wilderness, Sierra—August 3–10. *Leader, Mark Gordon, 1218 Middlefield Rd., Palo Alto, CA 94301.* The Ritter Range is a very unique part of the Sierra. While the bedrock of the Sierra is mostly granite, the geology of the Ritter area includes old metamorphic and granitic rocks, and some very recent volcanic rocks. We will start at Agnew Meadow, climb to Garnet Lake, cross the range at Glacier Lake Pass and Beck Lakes Pass before exiting via Devils Postpile National Monument. The hiking will be of moderate difficulty with some cross-country, and the more adventurous will have many opportunities for peakbagging. (Rated M)

Backpacking in Utah (John Gerty)

[105] Sierra Crossing, Yosemite Park/Minarets Wilderness—August 3–11. *Leader, Don Donaldson, 19 Tarabrook, Orinda, CA 94563.*

[106] Sierra Crossing, Yosemite Park/Minarets Wilderness—August 3–11. *Leader, Gary Swanson, P.O. Box 8551, Emeryville, CA 94662.* Our trans-Sierra hike will be in two groups of eight, one starting from Glacier Point in Yosemite and the other near Devils Postpile on the east side

Day after storm, Little Yosemite Valley (Anna Walker)

of the Sierra. Our 50-mile route, about half cross-country, will cross the magnificent Ritter Range and follow the Merced River in Yosemite. Highlights of the trip include Panorama Trail, Nevada Falls, Lyell Fork, Mt. Ansel Adams, Bench Canyon, Banner Peak, Thousand Island Lake, Garnet Lake, remote campsites, and a great layover day. (Rated M)

[107] Continental Divide, Weminuche Wilderness, Colorado—August 4–12. *Leaders, Myles Brown and E. J. Evangelos, 3321 Avenida De San Marcos, Santa Fe, NM 87505.* The Continental Divide forms the backbone of the Weminuche Wilderness for 80 miles through southern Colorado. We will follow the Divide amidst alpine flowers and past numerous lakes for about 50 miles, from Wolf Creek Pass to Weminuche Pass. The average 12,000-foot elevation will keep us almost continually above timberline, with constant vistas of the rugged San Juan Mountains and more distant ranges. A layover day is possible, allowing us time to fish, explore an alpine lake, or climb a peak. (Rated M-S)

[108] Two Ocean Leisure, Bridger-Teton Wilderness Area, Wyoming—August 5-11. *Leader, Bill Bell, 2431 N. 86th St., Kansas City, KS 66109.* The Bridger-Teton Wilderness Area, rarely used by backpackers, will provide some special experiences for those who join this seven-day trek. We will camp near the unique Parting of The Waters and North Fork Falls. Other trip highlights include a layover day at Enos Lake and a dayhike to Two Ocean Plateau (10,000). Abundant wildlife and the view from the plateau make this trip a photographer's delight. This leisure loop will cover approximately 46 miles. (Rated L-M)

[109] Red Peak Pass Leisure Loop, Southern Yosemite, Sierra—August 5–13. *Leader, Walt Goggin, 18836 Lenross Ct., Castro Valley, CA 94546.* An unhurried exploration of southern Yosemite will retrace John Muir's discovery of his first Sierra glacier and take us over Yosemite's highest pass at 11,180 feet. The trip will offer a variety of high-country environments and classic mountain scenery. Layover days will permit fishing, dayhikes, and peak climbs. (Rated L)

[110] Mono Creek Recesses, John Muir Wilderness, Sierra—August 8–17. *Leader, Phil Gowing, 2730 Mabury Sq., San Jose, CA 95133.* Short moving days, three or four layover days, and a packer-dropped food cache all combine to make this a leisure trip. The granite side canyons, the fish-filled lakes and streams, and the spectacular peaks available for exploration and climbing make this a fascinating and beautiful experience that will not be soon forgotten. There are no passes to cross; one of the tougher climbs will be up the gangway of the ferry boat that starts us on our way the first day. We will camp at elevations ranging from 8,500 to 10,000 feet. (Rated L)

[111] Union Peak Leisure Loop, Bridger-Teton Forest, Wyoming—August 10–16. *Leaders, Virgene and Charles Engberg, 6906 Birchton Ave., Canoga Park, CA 91307.* This trip will explore the high plateau between Union Peak and Three Waters Mountain at the northern end of the Wind River Range. Photographers will love the alpine tundra, lakes, peaks, and especially the sunset views of the Tetons above Flat and Granite lakes. Two layover days will permit dayhikes to Seven Sister, Simpson, and Pinto lakes. Nature lovers will enjoy the abundant flowers and some of the best fishing areas in the wilderness. The 20 miles of backpacking make this trip ideal for the novice and leisure backpacker. (Rated L)

[112] Yosemite Beginners Backpack, Sierra—August 11–17. *Leader, Melanie Feliz, 724 Hideaway Terrace, Vista, CA 92083.* The first of two introductory trips this year caters to all newcomers—men and women—who wish to get off to a guided start in backpacking. In the splendor of the Yosemite backcountry, participants will be shown the basic skills for independence in the wilderness: route selection, best choice of gear, map reading, food planning, and treading lightly on the land. The trip route is a loop from Lost Bear Meadow (Bridalveil Creek) around the Buena Vista Crest in the south of the park. Members can expect an easy pace and an average of 6 miles a day on-trail. A day will be left free for botanizing and total relaxation. Buena Vista Peak (9,709) may be climbed for the good views. (Rated L)

[113] Center Basin to Milestone Basin, Kings Canyon and Sequoia Parks, Sierra—August 11–20. *Leader, Bruce C. Straits, 3039 Lucinda Ln., Santa Barbara, CA*

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Katmai National Park, Alaska (Carol Dienger)

93105. Historical Kearsarge Pass is our doorway to the uncrowded, lake-studded, and glaciated region bounded and protected by the Sierra Crest, the Kings-Kern Divide, and the Great Western Divide. Three layover days in alpine basins (Center, Upper Kern, Milestone) nestled under 13,000- to 14,000-foot peaks offer opportunities for observing nature, climbing, fishing, and photography. Our 47-mile route visits a variety of ecological zones ranging from 13,200-foot Forester Pass to the sagebrush below Shepherd Pass. (Rated M)

[114] Granite Mountain Loop, Custer Beartooth Primitive Area, Montana—August 12–20. *Leader, Bob Madsen, 3950 Fernwood Way, Pleasanton, CA 94566.* Adjacent to Yellowstone National Park in southwestern Montana is a land of high peaks, plateaus, glaciers, and many lakes; this is the little-known and lightly traveled Beartooth Primitive Area. We will circle its central peak, Granite Mountain (12,799), on this ten-day, 55-mile loop trip with two layover days and two short hiking days to fish or explore. (Rated M)

[115] Pacific Crest Trail, Bishop Pass to Lake Edison, Kings Canyon Park and John Muir Wilderness, Sierra—August 16–24. *Leader, Jim Carson, 706 Wildcat Canyon Rd., Berkeley, CA 94708.* In this trans-Sierra venture we will cross the high alpine Evolution Valley on the combined Pacific Crest/John Muir Trail. Covering 62 miles and averaging over 8,000 feet in elevation, our group will top Muir (11,955) and Selden passes (11,073). Our planned layover will be near a natural hot spring where an optional climb of Ward Mountain (10,862) is possible. A modified natural-food diet will be featured. A prearranged car-shuttle will be available. (Rated M-S)

[116] Ionian Basin Peakbagging, Kings Canyon Park, Sierra—August 16–24. *Leader, Vicky Hoover, P.O. Box 723, Livermore, CA 94550.* This trans-Sierra tour moves from gentle western slopes to eastern heights, with a prearranged car-shuttle at the end of the trip. We concentrate on a stay in Ionian Basin, whose austere beauty is the dramatic essence of Sierra wilderness. Here three short hiking days and two layovers will permit ascents of peaks from Goddard to Duncan McDuffie. We backpack 45 miles, most on-trail, but peak-climbing adds strenuous moments. (Rated M)

[117] Mountain of the Holy Cross Wilderness Area, White River Forest, Colorado—August 17–23. *Leader, Bob Audretsch, P.O. Box 2228, Frisco, CO 80443.* This newly designated wilderness area in the Sawatch Range of the Rockies will offer the opportunity to view some of Colorado's beautiful high country. We plan to explore a deserted mining town and participate in nontechnical climbs of Mountain of the Holy Cross (14,005), Notch Mountain (13,224), Whitney Peak (13,271), and Mt. Jackson (13,670). Expect wonderful views as well as numerous wildflowers. All travel will be above 10,000 feet. The proposed site of the Homestake II Water Diversion Project is in the trip area. (Rated M-S)

[118] Chief Joseph Country, Eagle Cap Wilderness, Wallowa Mountains, Oregon—August 17–24. *Leader, Myron Hulen, 3100 SW 72nd Ave., Portland, OR 97225.* Hike through broad alpine meadows and glaciated valleys, climb over rugged mountain passes, and camp at lakes nestled beneath towering granite cliffs. From delicate flowers to alpine lakes to mountaintop panoramas, the scenery is varied and spectacular. Our 45-mile loop will take us through the scenic heart of the Wallowa Mountains, the ancient hunting grounds of the Nez Perce. This area is great for nature observation, taking photographs, and fishing. We will take time to smell the flowers. (Rated M-S)

Resting after a hard day, Yosemite Park, Sierra (Carol Dienger)

Hiking in Redfield Canyon, Arizona (Richard Cachor Taylor)

[119] Beginners Backpack for Women, South of Yosemite, Sierra—August 17–25. *Leader, Carol Dienger, 3145 Bandera Dr., Palo Alto, CA 94304.* How long have you waited for just the right time to begin backpacking? This is the trip for you to learn many of the skills needed to gain self-confidence in the wilderness: pack your own backpack, rig a tarp, cook on stoves, read a "topo" map, and camp leaving no trace. Leaders will emphasize natural history. An orientation day at Clover Meadow Campground starts this week in the Minarets Wilderness just south of Yosemite. Six nights on the trail include a layover day. Our short route combines trail and cross-country; elevations are from 7,000 to 10,000 feet. (Rated L-M)

[120] Icicle Ridge, Alpine Lakes Wilderness, Wenatchee Forest, Washington—August 17–25. *Leader, Mary Sutliff, 11326 2nd NW, Seattle, WA 98177.* The high alpine country of Icicle Ridge is located in the drier, eastern part of Washington's Alpine Lakes Wilderness. Our trip starts in the forest along Icicle Creek and follows the stream close to its headwaters. We then climb to the ridge and follow the ups and downs of the crest, past sharp summits and alpine lakes and across vast meadows. We'll have two layover days to climb peaks and explore hidden lakes. There will be time for other side trips as we hike 50 to 55 miles. Optional climbs of Big Chiwaukum and Grindstone Mountain are planned for the layover days. Experienced backpackers will find this trip a delight and a challenge. (Rated M-S)

[121] Wind River Wandering, Wyoming—August 18–24. *Leader, Chuck Shinn, 7885 Vue Rd., Meridian, ID 83642.* Located 60 miles southeast of Jackson Hole, the Wind River Range is famous for its alpine scenery. A seven-day loop trip from the Big Sandy Campground will allow us time to explore the southern end of this mountain range. An interesting route, photogenic scenery, and good fishing will all combine to make this trip highly enjoyable. (Rated M)

[122] Big Five Lakes, Sequoia Park, Sierra—August 18–25. *Leader, Andy Johnson, 415 Monticello, San Francisco, CA 94127.* This trip will be an eight-day sojourn into the heart of the backcountry above Mineral King. We will explore beautiful high places like Big Five Lakes and Amphitheater Lake, for the most part avoiding the overvisited areas. Days will average 6 miles, allowing us ample time to experience the tranquility of the High Sierra. Half our travel will be cross-country and we will hike over three passes, the highest being Franklin Pass (11,700). This fun, adventure-filled outing is for active and participatory people. (Rated M)

[123] Blue Canyon, Kings Canyon Park, Sierra—August 18–27. *Leader, John Ingvoldstad, 1675 Hollowcreek Ct., San Jose, CA 95121.* Beginning at Wishon Reservoir, this loop takes us over and along the White and LeConte divides. We will spend five days in the remote and trailless region stretching from Blue Canyon north to Martha Lake. Two layover days and one short moving day will provide opportunities for peak-climbing, exploring, fishing, or relaxing. Elevations will range from 6,700 to 11,900 feet, not including peak climbs. (Rated M)

[124] Russell/Carillon Col, Sequoia Park, Sierra—August 19–27. *Leader, Patrick Colgan, c/o 5839 Clover Dr., Oakland, CA 94618.* The object of this high-country backpack trip is to explore and enjoy the host of dramatic peaks that form the crest of the southern Sierra in Sequoia National Park. We hike on-trail and cross-country through beautiful vistas of lakes and glaciated peaks. Layover days are planned for optional climbs or sleeping in. Good physical conditioning and previous backpacking experience are desirable, but strong, spirited, and willing beginners are also welcome. (Rated M-S)

[125] Cirque Crest, Kings Canyon Park, Sierra—August 19–27. *Leader, Ann Peterson, 2921 Cowell Blvd., Davis, CA 95616.* Long mileage the first day through Paradise Valley (tempered by a packer and moderate elevation gain), will put us in a position to explore the seldom-visited lakes below Muro Blanco before we continue our loop over the Cirque Crest into Lake Basin. Our mixed cross-country and trail route will take us on to Glacier Lakes and Grouse Lake before returning us to our roadhead at Zumwalt Meadows. One layover day will allow time for relaxation

or peakbagging, but this trip will involve adventuresome cross-country travel and high-elevation camps. (Rated M-S)

[126] Evolution Basin, John Muir Wilderness and Kings Canyon Park, Sierra—August 22–September 1. *Leader, Gordon Peterson, 222 Royal Saint Ct., Danville, CA 94526.* The beauty of Evolution Basin inspired Theodore Solomons to name the peaks of the area in honor of great philosophers who had moved the world with their thoughts—Darwin, Wallace, Huxley, Haeckel, Spencer, and Fiske. This trip through Evolution will be moderate in length, but it will have some of the adventuresome cross-country travel that contributes so much toward a memorable experience. (Rated M-S)

[127] Kings-Kern Divide, Sequoia and Kings Canyon Parks, Sierra—August 24–31. *Leaders, Carolyn and Paul Roeder, Middlesex School, Concord, MA 01742.* Entering the Sierra near Cottonwood Lakes, our trip begins with an ascent of Mt. Whitney from the west, and then explores the high lake basin country from which the Kern River flows. Tracing the Kings-Kern Divide, we will camp at the base of Milestone Mountain and later in the Williamson-Tyndall saddle. Other highlights of our 75-mile high-country walk are the skyline view from Forester Pass and the 360 degree panorama of the southern Sierra from the Bighorn Plateau. (Rated S)

Kaweah Gap, Sequoia Park, Sierra (Dan Smith)

[128] Sangre de Cristo Peaks, San Isabel and Rio Grande Forests, Colorado—August 27–September 3. *Leader, Bob Audretsch, P.O. Box 2228, Frisco, CO 80443.* The Sangre de Cristo Range is one of the steepest and least-visited in Colorado. We will begin with a one-and-a-half-day training session in basic rock climbing, rappelling, and the use of an ice axe. We will climb Crestone Needle (14,197), Crestone Peak (14,294) (Needle-to-Peak traverse); Kit Carson (14,165), Humboldt (14,064), Blanca (14,345), Ellingwood (14,042) (Blanca-to-Ellingwood traverse), and Little Bear (14,037) peaks from our two base camps at South Colony Lakes and Lake Como. Climbs will often be difficult with much exposure. Some climbing while roped will be required. Demanding but exhilarating! (Rated S)

[129] Sequoia High Country, Sequoia Park, Sierra—August 27–September 4. *Leader, Don Lackowski, 2483 Caminito Venido, San Diego, CA 92107.* This outing tours three high alpine lake basins in eastern Sequoia National Park and includes a visit to the highest lake in the contiguous United States. Networks of lakes and streams in the basins, and views of peaks and divides dominated by the magnificent Whitney Crest provide unsurpassed scenery. Three full layover days allow unique opportunities for peak-climbing, fishing, photography, or scenic leisure. (Rated M)

[130] White Mountain Backpack, New Hampshire—September 2–7. *Leaders, Craig Caldwell and Jeanne Blauner, 12028 Gaylord Dr., Cincinnati, OH 45240.* The White Mountain National Forest contains some of the most beautiful and spectacular hiking in the Northeast. We will hike the Pemigewasset Wilderness and Franconia Ridge areas, which afford some of the finest views in the White Mountains. We will travel the well-known Wilderness Trail along the beautiful Pemigewasset River, ascend 12 peaks of 4,000 feet in six days, and traverse Franconia Ridge over mounts Lafayette and Lincoln. Fall colors will begin turning during our trip, and sightings of moose, deer, and lots of birds can be expected. (Rated S)

[131] Mt. Pinchot, Kings Canyon Park, Sierra—September 2–8. *Leader, Pete Nelson, 5906 Dirac St., San Diego, CA 92122.* This outing traverses two lightly used east-side passes (Baxter and Taboose), and a segment of the John Muir Trail where it stays close to the crest of the Sierra. Baxter Lakes, Twin Lakes, Lake Marjorie, and Bench Lake are high lake basins we will pass. We will travel through the Bighorn Sheep Zoological Area, so group size is limited. We will be within climbing range of several peaks: Mt. Baxter (13,125), Mt. Pinchot (13,495), and Striped Mountain (13,120). Distance covered will be 42 miles, on-trail, over three passes. (Rated M-S)

(Esther Kiviat)

[132] Mineral King Loop, Sequoia Park, Sierra—September 3–14. *Leader, Mac Downing, 2416 Grandview St., San Diego, CA 92110.* Twelve days along the Great Western Divide will provide diverse trails, camps, and scenery. Our route crosses Timber Gap, Black Rock, and Sawtooth passes, and visits several lakes, Chagoopa Plateau, and Big Arroyo. Three layover days allow time for peakbagging, easy walks, or relaxing. We will climb Mt. Kaweah and Sawtooth Peak and visit Kaweah Gap. Packer assistance will lighten our load on the first two days. Distance covered will be 59 miles; 10 are off-trail. (Rated L-M)

[133] Tahoe Rim Trail, South Section, El Dorado Forest, California—September 4–8. *Leader, Serge Puchert, 1020 Koontz Ln., Carson City, NV 89701.* We plan to

walk the southern segment of the developing Tahoe Rim Trail, starting from Luther Pass and extending around to Highway 207 in Nevada. This short, mini-backpack is mostly cross-country because the route, while marked, is not built. Sample a stretch of Tahoe's rim that is rich in history, but virtually left alone since the passing of the Indians, sheepherders, and early pioneers. Lake Tahoe will almost always be in view; from along the crest, Carson Valley and Nevada Ranges can be seen. Beginners in good hiking condition are welcome. (Rated M)

[134] "O Be Joyful," Gunnison Forest, Colorado—September 8–14. *Leader, John Lutz, 11563 Lillis Ln., Golden, CO 80403.* The aspen will be turning gold as we begin our trip up the east side of the Ruby Range. After a layover day at Blue Lake, O Be Joyful Pass (11,800) will be our gateway into the Ragged Wilderness. We will wander through Buck, Gold, and Silver basins on our way to Dark Canyon. Anthracite Creek, which flows through this high-walled canyon, will lead us to our trip's end. A moderate pace and daily distance combined with a layover day will allow us time for fishing, side trips, and quiet personal time. (Rated L-M)

[135] Land of Seven Gables, John Muir Wilderness, Sierra—September 9–17. *Leader, Frances French, SMOE San Francisco YMCA Camp, La Honda, CA 94020.* We will walk the high country where fairyland lakes and soaring spires meet. On this 42-mile loop, low mileages complement remote alpine campsites. Come enjoy natural history discussions, high mountains, and companionship around the fire. Four days involve cross-country travel; two are planned as layovers for fishing, swimming, and exploring. (Rated M)

[136] Alpine Col, John Muir Wilderness/ Kings Canyon Park, Sierra—September 14–22. *Leader, Paul Cavagnolo, 19170 Old Vineyard Rd., Los Gatos, CA 95030.* Alpine Col is a cross-country pass on the Glacier Divide that connects the lake-filled Humphreys Basin with views of the colossal Mt. Humphreys and famous Evolution Canyon with its dramatic peaks. Our open-ended loop starts at South Lake, crosses Bishop, Muir, and Piute passes as well as Alpine Col before ending at North Lake. There will be ample layover time to climb peaks such as mounts Goddard, Darwin, and Black Giant; fish for golden trout; explore the basins; and just relax. (Rated M)

Difficult stream crossing, Alaska (Carol Dienger)

[137] Salt Creek and The Needles, Canyonlands Park, Utah—September 14–22. *Leader, Barry Morenz, 1209 N. Stewart, Tucson, AZ 85716.* We will hike up Salt Creek Canyon with its red sandstone walls, desert wildflowers, and waterfalls. Time will be taken to inspect the many Anasazi ruins and pictographs, arches, and side canyons. After three days we will hike out of the canyon and be driven by four-wheel-drive vehicles to The Needles (named for the many spires in the area). Our slickrock hike will wind through a labyrinth of dry canyons, taking us to Chesler Park and Druid Arch. The hiking will be from 5,000 to 6,000 feet, with time for dayhiking (Rated L-M)

[381] Blue Range Primitive Area, Apache Forest, Arizona—October 5–13. *Leader, Bob Moore, P.O. Box 21481, Phoenix, AZ 85036.* Located along the New Mexico border, this remote region is unchanged from pioneer days. Javelina, turkey, bear, and antelope roam throughout the forest. Deep canyons and hot springs in the south give way to fall-colored peaks rising to more than 9,300 feet. We will hike on- and off-trail along the rivers in this area, camping mostly in the high meadows found throughout. Average distance will be 8 miles each day with one layover day. (Rated S)

[382] Paria Canyon, Vermilion Cliffs Wilderness, Arizona—October 6–12. *Leader, Don Lyngholm, Box 103, Flagstaff, AZ 86002.* This is a newly designated wilderness area of spectacular, colorful cliffs and canyons. Here the procession of geological strata continues above those of the Grand Canyon's rims, relating a fascinating history of the land. We hike down Paria Canyon at one point between walls only a few feet across. On our way we will observe desert and riparian plant and animal commu-

nities. Average elevation is around 4,000 feet. (Rated L)

[383] Gila Wilderness, New Mexico—October 6–12. *Leader, George Mader, 8704 Catalpa Ln., El Paso, TX 79925.* Located near Glenwood, this part of the Gila Wilderness is heavily forested and sparsely visited. We will backpack four days and follow Whitewater Creek downstream, starting at 8,000 feet and ending at nearly 6,000 feet. Before and after the backpack, we will car-camp for three days and visit old mining sites, a ghost town, and ancient Indian ruins. Those with at least some weekend backpack/camping experience will enjoy this taste of real wilderness combined with historical interest. (Rated M)

[384] Quehanna Trail, Black Moshannon Forest, Pennsylvania—October 6–12. *Leader, Connie Thomas, 128 Muriel St., Ithaca, NY 14850.* Our trip in northcentral Pennsylvania is timed to take advantage of crisp autumn hiking weather and colorful fall foliage. The trail is located partly in the Quehanna Wild Area and crosses a natural area containing stands of white birch at the southernmost end of their natural range. While some backpacking experience is required, trip members in good condition should be able to enjoy this leisurely trek over varied terrain, with a couple of moderately steep climbs and some stretches of poorly defined trail. (Rated L-M)

[385] Navajo Mountain, Rainbow Bridge, Arizona—October 6–12. *Leader, Nancy Wahl, 325 Oro Valley Dr., Tucson, AZ 85704.* On the Navajo reservation in northern Arizona, Navajo Mountain dominates the Rainbow Plateau landscape. Around its base are twisting sandstone canyons; sheer cliffs, arches, and natural bridges; and clear streams. We will visit Rainbow Bridge at the edge of Lake Powell. Magnificent vistas abound in all directions. This will be an opportunity for exploring one of the world's most colorful, unspoiled areas. (Rated M)

[386] Clear Creek, Grand Canyon, Arizona—December 15–20. *Leader, Bob Madsen, 3950 Fernwood Way, Pleasanton, CA 94566.* Come join this winter hiking trip on the sunny side of the canyon. We will have two layover days to explore narrow Clear Creek Canyon and Cheyava Falls. This 38-mile moderate trip will be entirely on traveled trails. (Rated M)

Share the wilderness with other young backpackers! Guided by competent and experienced leaders

who enjoy young people, participants hike the backcountry, climb 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. These trips vary in difficulty, and some specify younger or older teens. See the individual trip supplement.

[140] Great Western Divide, Sequoia Park, Sierra—July 7–16. *Leader, Sharon McEwan, 13781 Strubel's Ln., Grass Valley, CA 95945.* This 40-mile-long granite ridge slices north-south through Sequoia and Kings Canyon national parks. We will journey through a land of varied scenery, from lodgepole forests and lush meadows of wildflowers to high alpine lakes and starkly rising peaks. This region requires experienced backpackers or capable beginners age 14–17 to meet the challenge of a strenuous first day. Two layover days provide a dayhike to Precipice Lake and a peak climb. (Rated M)

Rock-climbing in the Sierra (Carol Dienger)

Learning new skills, Yosemite

[141] Gardiner Basin, Kings Canyon Park, Sierra—July 21–28. *Leader, Jenny Dienger, 137 W. F St., Benicia, CA 94510.* Our trek begins with a steep climb over Kearsarge Pass (11,823). Next we travel along Charlotte Creek and across Gardiner Pass (11,200) into Gardiner Basin—an isolated, truly alpine basin spotted with lakes and surrounded by sharp granite ridges and spurs. After a ramble through Sixty Lake Basin we head out over Baxter Pass (12,300). In eight days we will hike nearly 40 miles, all above 10,000 feet, including some cross-country travel and four passes. Spectacular views of jagged ridges and pinnacles are the highlight of this trip. Ages 13–15. (Rated M)

Base Camp trips offer a wide range of wilderness activity in an exciting variety of natural settings. Common to all trips is a camp that serves as the base

of operations for overnight backpacking, mountain climbing, fishing, photography, ecological study, or simple nature walks in the surrounding wilderness. Some activities are organized, but the choice of whether or not 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 stock nor packers are in camp. Members take turns performing camp chores, including meal preparation, with instructions and aid from the camp staff. ▲ Base camp trips vary with the locale of the trip. For example, in the Southeast, base camp trips never use mules, but set up after a short hike into the wilderness. Some trips stay in lodges or cabins instead of camping. 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, overnight backpacking, and mountain climbing 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 is more a do-it-yourself camp where 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 scenic and historic interest.

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

(29) Natural History of the Anza-Borrego Desert, California—March 30–April 6. *Leader, Bob Miller, 11713 NE 150th Pl., Bothell, WA 98011.* Join us on this week-long desert adventure in an area rich in scenery and in Indian and early Spanish history. Enjoy the flexibility of a base camp from which to explore the backcountry of California's largest state park, and to observe the flora and fauna of the living desert in the springtime.

Aftermath of a freezing rain (Philip Dangel)

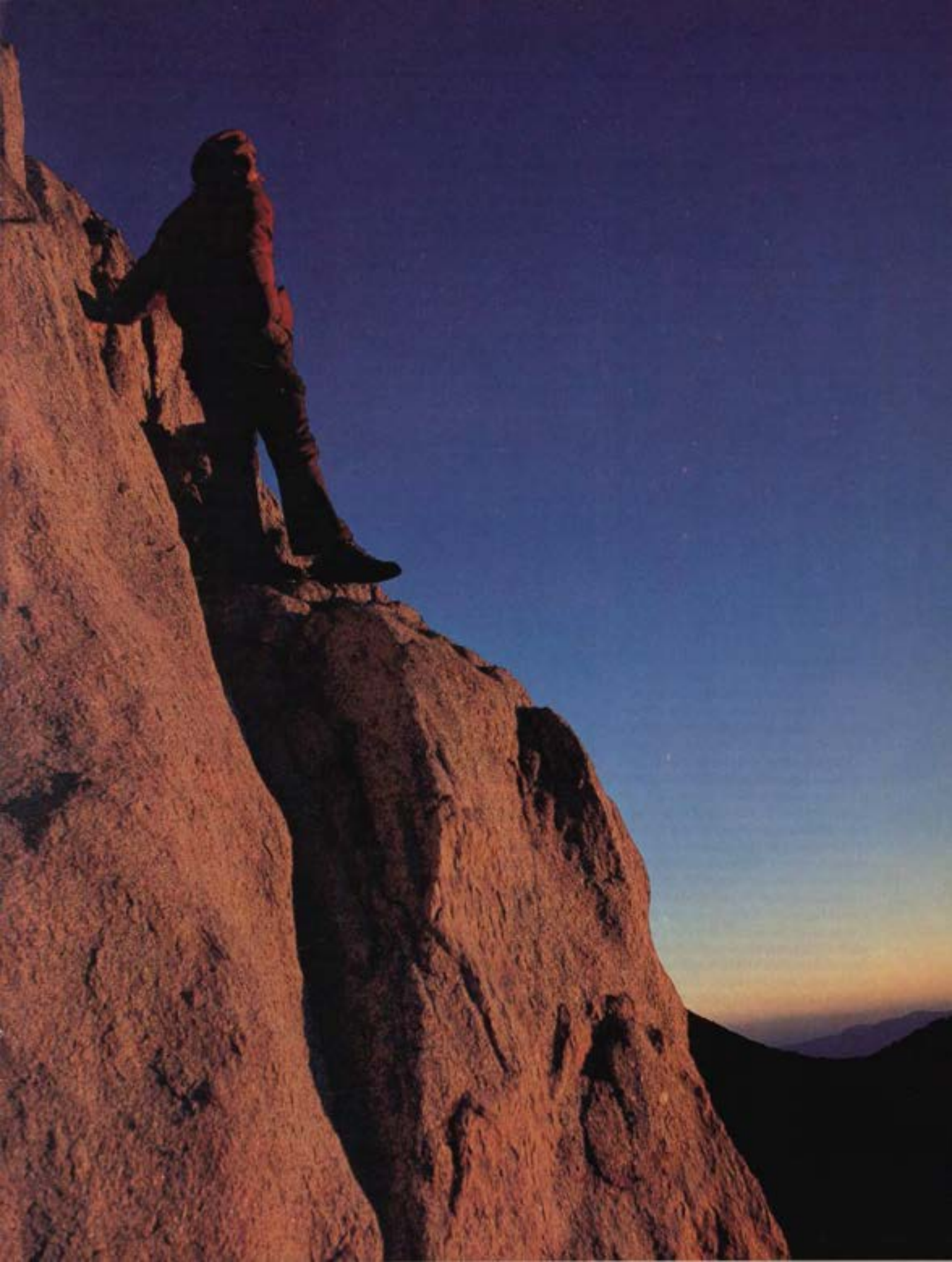
[32] Rogue River Trail Wilderness Lodges, Oregon—May 13–18. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.*

[33] Rogue River Trail Wilderness Lodges, Oregon—May 29–June 3. *Leaders, Susanna and Jim Owens, P.O. Box 5, Agness, OR 97406.*

[147] Rogue River Trail Wilderness Lodges, Oregon—June 5–10. *Leaders, Susanna and Jim Owens, P.O. Box 5, Agness, OR 97406.* Hike the historic Rogue River Trail through the Wild Rogue Wilderness carrying only a daypack. Other gear will be carried by raft, which will follow our trail along the river. We will stay in rustic wilderness lodges each night with clean beds, hot showers, and fabulous home-cooked meals. Two layover days will be spent at Half Moon Bar, where we can enjoy the beauties of spring and the abundant wildlife of the Rogue River Canyon.

[34] Zion Park Base Camp, Utah—May 25–June 1. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* Join us for this combination base camp and backpack trip in Zion National Park as we experience spring in the color-country of Utah. The foliage of the Virgin River, the rust-red towering sandstone walls, and desert skies create a brilliant color harmony.

Sunrise, Keeler Needle, Sierra (Gordon Wiltsie)



Anza-Borrego Desert (Esther Kiviat)

Dayhikes will be taken to Upper and Lower Emerald Pool, the West Rim Trail (including Angel's Landing), the East Rim Trail past Weeping Spring, and the Kolob section of the park. Weather permitting, a two- to three-day backpack will be scheduled in the Zion Narrows to explore the major tributaries. Outstanding western meals will be communally prepared by our group. Leader approval required.

[145-E] John Day Monument Base Camp, Oregon—June 1–9. *Leaders, Temma and Marvin Pistrang, 15603 36th Ave. NE, Seattle, WA 98155. Geologist/Naturalist, Marvin Pistrang and the staff of Handcock Field Station.* The Handcock Field Station, operated by the Oregon Museum of Science and Industry, is situated in the middle of the Clarno Unit of the John Day National Monument. Daily hikes will take us to areas of world-famous geology and paleontology, numerous archeological sites, and canyons and hilltops for mineral, wildflower, bird, and other wildlife sightings. Field trips will take us further afield in this magnificent ecological outdoor classroom. Evening lectures and slide shows will cover the natural history of Oregon's John Day country. Lapidary, folk dancing, and a variety of other activities will be available. Meals and lodging will be provided by the field station.

[146] Rogue River Trail Lodges Base Camp, Oregon—June 2–8. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.* Starting near Agness, we will hike two days along the Rogue River Trail, about 6 miles each day, staying overnight at a wilderness lodge. Our gear will be carried by boat. The second day we will reach Half Moon Bar Lodge, where we will spend the next four nights. Here we can relax, dayhike along the river, fish, and enjoy the peace of the wilderness and the lodge's marvelous food. The last two days we will hike back along the river trail, stopping again at a lodge. This trip features easy hiking and plenty of time for relaxation.

Anza-Borrego Desert (Esther Kiviat)

[148] Rogue River Wilderness Lodges, Oregon—June 16–21. *Leaders, Marilyn and Bill Gifford, 3512 NE Davis, Portland, OR 97232.*

[152] Rogue River Wilderness Lodges, Oregon—July 21–26. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.*

[158] Rogue River Wilderness Lodges, Oregon—August 11–16. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.* From Gold Beach on the Oregon coast, we will ride the Mail Boat about 50 miles up the Rogue River into the heart of the Wild Rogue Wilderness. We will spend three nights at Half Moon Bar Lodge, where we can dayhike, soak up the sun and peace of the wilderness, and enjoy fabulous home-cooked, garden-fresh food. We will hike back along the Rogue River Trail in easy stages, with a raft to carry gear, spending one night each at Clay Hill and Illahe lodges before taking the boat back to Gold Beach. During the August trip there should be excellent fishing, as the steelhead begin running up the river in mid-August.

[149-E] Donner-Tahoe Exploration, Sierra —June 22–29. *Leader, Bob Ruff, 3371 Longview Dr., San Bruno, CA 94066.*

[151-E] Donner-Tahoe Exploration, Sierra —July 13–20. *Leader, Howard Drossman, 507 Laurel Ave., Menlo Park, CA 94025.* Clair Tappan Lodge, 2 miles west of Donner Pass just off the old trans-Sierra highway, will be the base of our exploration into the pages of California mountain history. Daily hikes as well as an overnight trip to the Benson ski hut offer us a variety of both easy and moderate trips, some directly from the lodge, others at the end of short car shuttles. Sweeping vistas, hidden lakes, and granite outcroppings accent both the Donner and Tahoe Basin areas. One- and two-day instruction by guest experts will be available in photography, history, and geology. Basic rock-climbing will be offered on the July trip. This trip is suitable for families, couples, and singles of all ages.

[150-E] Natural History of Mono Basin, California—June 22–30. *Leader, Bob Mil-*

Stream crossing, New Hampshire (Philip Dangel)

ler, 11713 NE 150th Pl., Bothell, WA 98011.
[387-E] Natural History of Mono Basin, California—October 5–13. *Leader, Bob Miller, 11713 NE 150th Pl., Bothell, WA 98011.* About 16 miles east of Yosemite National Park lies the Mono Basin. From an old Basque camp, we overlook the most prominent feature of the basin, Mono Lake. Daily treks supported by car shuttles will take us into the Sierra Nevada and the desert for visits to old mines, hot springs, ghost towns, and the Mono craters. Our professional naturalist will tell us about the history and geology of this unique and fascinating region. Hikes are easy to moderate.

[153] Stehekin Valley Base Camp, North Cascades, Washington—July 21–27. *Leaders, Karen Short and Stephen Pozsgai, 826 14th St., San Francisco, CA 94114.*
[155] Stehekin Valley Base Camp, North Cascades, Washington—August 4–10. *Leaders, Vicki and Walt Mintkeski, 6815 SE 31st, Portland, OR 97202.* Stehekin, the "Enchanted Valley," is reached by a 50-mile ferry ride up the inland fjord of Lake Chelan, a 6,000-foot rift in the North Cascades. We will stay in rustic cabins on the Courtney Ranch, at the base of McGregor Mountain in the isolated Stehekin Valley. Each day we will have a choice of dayhikes, both easy and strenuous, from the hypnotically beautiful Agnes Gorge to spectacular Cascade Pass. Meals will be delicious, homemade, and family-style. Optional activities include horseback trail-rides and raft trips. This trip is suitable for families, couples, and singles of all ages.

[154] Rock Creek, Sequoia Park, Sierra—July 21–30. *Leader, Bill Davies, 2314 Bancroft Ave., Los Angeles, CA 90039.* From our trailhead at Last Chance Meadow (9,800), we will follow Cottonwood Creek to its headwaters at Cottonwood Lakes (11,000), then over New Army Pass (12,300). We drop into Sequoia National Park for a hiking distance of about 10 miles. Our base camp on a tributary of Rock Creek allows day trips and a possible overnight trek into Siberian Outpost to the south, and to peaks in the area including Mt. Pickering (13,485), The Miter (12,770), and Mt. Langley (14,027).

[156] Rangeley Lakes, Maine—August 4–10. *Leader, Kevin Walter, 307 Ridgewood Circle, Albany, NY 12203.* The Rangeley Lakes region, consisting of several large lakes, lies in a mountainous area near the New Hampshire border. Our camp will be located in a state park a few miles from the Appalachian Trail and we will hike several parts of the trail. Lake and whitewater canoe trips, swimming, and a museum visit will round out our stay in this wild and beautiful section of the state. Children are welcome; minimum age four.

[157] Palisades Mountaineering, Sierra—August 5–15. *Leader, Mel Wright, 655 9th Ave., Menlo Park, CA 94025.* Our base camp (10,500) lies just below timberline on the east slope of the Sierra Nevada, above Big Pine Lakes. We will practice general techniques of mountaineering, using rope, ice axe, and crampons. Palisades Basin provides mountains for all abilities, including the North Palisade (14,254). Our climbing approach will depend on snow conditions in relation to glacier level (12,400). This trip requires leader approval.

[159] French Creek, John Muir Wilderness, Sierra—August 15–23. *Leader, Bud Bollock, 1906 Edgewood Dr., Palo Alto, CA 94303.* We start our 10-mile hike to base camp (10,400) from the trailhead at Pine Creek Lake (7,500), crossing Pine Creek Pass (11,100). This lightly traveled area allows access to many alpine lakes such as Moon, Star, L, Elba, Steelhead, Puppet, Paris, French, and Alsace. An overnight hike is possible to more distant lakes, into Piute Canyon or upward into nearby alpine basins. Fishing is reputed to be good. For climbers, Four Gables offers a challenge.

[160] Rogue River Wilderness Lodges, Oregon—September 15–19. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.* We will ride the Mail Boat about 50 miles up the Rogue River from Gold Beach on the Oregon coast into the heart of the Wild Rogue Wilderness. We will spend three nights at Half Moon Bar Lodge, where we can dayhike, soak up the sun and peace of the wilderness, and enjoy fabulous home-cooked, garden-fresh food. We will hike back along the Rogue River Trail in easy stages with a raft to carry our gear, spending one night at Clay Hill Lodge before taking the boat back to Gold Beach. There should be excellent fishing, as the steelhead are usually at their best in September.

[161] Havasupai Base Camp, Grand Canyon, Arizona—September 21–28. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* Come hike with us to this Grand Canyon Shangri-la on a unique "gourmet" base camp trip. Our backpacks

Unruly tent, Alaska (Carol Dienger)

and supplies will be horse-packed to our camp by Supai Indians, thus enhancing our enjoyment of the Havasu scenery. Optional dayhikes will be led to the Colorado River, Esplanade Rim overlooks, the Beaver Trail, numerous side canyons, and many of the famous blue-green swimming 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.

[388] Death Valley at Christmas, California—December 18–28. *Leader, Bob Miller, 11713 NE 150th Pl., Bothell, WA 98011.* Warm days, blue skies, and holiday cheer await us in this fascinating, varied, desert environment. Day trips allow us to explore deep canyons, sand dunes, ghost towns, and snow-capped peaks. Daily excursions under the professional guidance of our naturalist will be tailored to the wishes of the group, using participants' vehicles to reach the trailheads. Hikes will be leisurely to moderate, allowing time for photography, nature study, or relaxation in the sun.

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; this usually involves questions about experience and equipment. Helmets are strongly recommended and sometimes required. Domestic bike trips camp along the way. See Foreign Trips section for additional bicycle trips.

[165] Cycling Cape Cod and the Islands, Massachusetts—May 5–11. *Leader, Eileen O'Connor, 422 E. Main St., Endicott, NY 13760.* The nearly endless sand beaches of the national seashore, the historic houses of Nantucket, an old-fashioned clambake, whales, and shore birds—we'll find these beauties and much more as we ride around Martha's Vineyard and Nantucket. We'll ferry back and take the newly completed Cape Cod bike trail from Bourne all the way to the dunes at Truro. Our packs will be light; we'll sleep at youth hostels and average 30–35 miles per day with gentle hills. A layover day is planned. Lunches are not included in trip fee.

[166] Delmarva Peninsula, Eastern Shore, Maryland—June 9–15. *Leader, John Arthur, 1125 Jenifer St., Madison, WI 53703.* Set between the nation's largest estuary and the Atlantic Ocean, the Eastern Shore is an ideal area for bicycle touring. The maritime culture and cuisine made famous by historians and novelists is ours to sample as we pedal along bays, inlets, and barrier islands. Camping and carrying our own gear, we will average 55 miles per day. Highlights include camping where the wild ponies roam, a layover day at Chincoteague National Wildlife Refuge, and a night's stay at a historic inn near St. Michaels.

[167] Coast to Mountains Bike Tour, Oregon—June 15–22. *Leader, Doris Allen, 1975 Tigertail Rd., Eugene, OR 97405.* This eight-day, self-contained bike tour will begin in Roseburg, head west over little-traveled roads, south along the Oregon coast, then east through redwoods, ending in the cultural center of Ashland. We will cover 60 to 80 miles per day, camp in state parks, and purchase fresh food as we go. There will be time to explore sandy beaches, fishing ports, lighthouses, and historic towns; visit rivers where prospectors still pan for gold; and attend a play at the Shakespeare Festival in Ashland on the last evening. Shuttles will be arranged as needed.

[168] Vermont's Country Inns—June 16–21. *Leader, Dixon Lamborn, 359 S. College Ave., Newark, DE 19711.* We will spend six days bicycle-touring central and southern Vermont, stopping each evening at a unique country inn. Using sparsely traveled roads, we will cycle through rolling countryside and open farmland with the Green Mountains in the distance. Along the way we'll pass small villages, historic sites, museums, numerous lakes, and covered bridges. The inns will provide excellent country-style meals and lodging. A sag wagon will transport gear. Moderate mileages most days should allow time to swim, picnic, relax, or go antiquing. Lunches are not included in trip fee.

[169] California Gold Rush Bicycle Tour, Lake Tahoe Region—June 16–23. *Leaders, JoAnn and Paul Von Normann, 732 S. Juniper St., Escondido, CA 92025.* Exploring the shoreline around Lake Tahoe begins our 300-mile, self-contained loop trip. Our route will be fairly strenuous with lots of hills, and we will follow the Truckee and Yuba rivers to the northern part of the Mother Lode country. Many historic sites await us as we pass through early mining towns, including Nevada City, Grass Valley, and Georgetown. We will stay at campgrounds and have one layover day.

[170] Wisconsin Northwoods—September 14–21. *Leader, Alice Van Deburg, 441 Virginia Terrace, Madison, WI 53705.* Northwestern Wisconsin offers the ultimate fall-color tour. Beginning across the river from Minneapolis, we will pedal on a network of paved rural roads through state and national forests and along the shores of quiet lakes. We will camp each night and carry our own gear. A ferry ride will precede a layover day on one of the Apostle islands in Lake Superior. There, we can observe and photograph wildlife and explore the rugged coastline and fine beaches. The trip will conclude with a view of Wisconsin's highest waterfall and a challenging ascent of the ridge overlooking Lake Superior at Duluth.

[389] White and Green Autumn Cycle Tour, Vermont/New Hampshire—September 29–October 6. *Leaders, JoAnn and Paul Von Normann, 732 S. Juniper St., Escondido, CA 92025.* The White and Green mountains of Vermont and New Hampshire offer the cyclist some of the most beautiful autumn scenery in New England. Our self-contained, moderately strenuous 315-mile tour will take us through the brilliantly colored mountainsides beginning at White River Junction, Vermont. We'll follow the Connecticut River and traverse the Kancamagus Highway, which provides many panoramas. We'll stay at campgrounds and have a layover stay in a hostel in Randolph, where we can explore Mt. Washington.

Sierra Club Burro trips are hiking trips where burros take most of the weight off your back. Enjoy the slower pace, and experience firsthand these gentle, surefooted animals that so often traveled with western explorers in the past. Trips are designed to accommodate people with little or no experience with burros or camping as well as experienced hikers who want to explore the high country without a backpack.

You will learn how to pack and work with these amiable animals, with two people usually assigned the handling of each burro. These trips last a week and cover about 25 miles at relatively high elevations (8,000 to 11,000 feet). Families with children age seven and older are welcome, as are senior hikers. Leader approval is required for all burro trips.

[175] Big Margaret Lakes, John Muir Wilderness, Sierra—July 20–27. *Leader, Jack Holmes, 1711 Cork Pl., Davis, CA 95616.* This trip will have a semi-base camp format with an easy to moderate two-day hike into the lakes basin. Three layover days are allowed for fishing, climbing, relaxing, and nature study. Families are welcome.

[176] Alger Lakes Family Trip, Minarets Wilderness, Sierra—July 27–August 3. *Leaders, Linda and Ted Bradfield, 5588 Oak Knoll Rd., El Sobrante, CA 94803.* This loop trip originating at Agnew Meadows will be an exciting family adventure. On moving days we will hike 5 to 8 miles and typically climb 1,500 feet. Alternate traveling and layover days in a wilderness setting provide opportunities for dayhikes, fishing, family togetherness, rest and relaxation. No previous burro experience is necessary. Children must be at least six years of age.

[177] Reds Meadow to McGee Creek, John Muir Wilderness, Sierra—August 3–10. *Leader, Doug Parr, 1019 Via Palma, San Lorenzo, CA 94580.* This trip is a sampler of the rich diversity and contrast of the High Sierra. We will camp near the crashing white waters of Cascade Valley, the chilly blue Big McGee Lake, and the warm, clear Fish Creek Hot Springs. We will hike through deep canyons and over high McGee Pass. You will never forget a soothing, refreshing dip in the hot springs, or the "I did it!" feeling at the top of the 12,000-foot pass. Beginners and families are sure to enjoy this introduction to the rugged and gentle features of the Sierra Nevada. Seasoned hikers will find challenging climbs and side trips on layover days. This is a moderate trip.

[178] McGee Creek to Rock Creek, John Muir Wilderness, Sierra—August 10–17. *Leader, Don White, c/o Jack Holmes, 1711 Cork Pl., Davis, CA 95616.* After ascending to Big McGee Lake, we will cross the scenic McGee Pass and descend into Tully Hole. We then climb through wild rock gardens into the forested Mono Valley. There will be time for fishing, photography, and day trips to explore the high basins. This is a moderate trip.

[179] Pioneer Basin, John Muir Wilderness, Sierra—August 17–24. *Leaders, Don Bain and Nora Weldon, 832 Marino Pines, Pacific Grove, CA 93950.* This trip offers a leisurely exploration of the headwaters of Mono Creek, with an emphasis on the natural history of the area. Approaching from the east over Mono Pass, we will sample the aspen-lined main canyon, the forest lakes of Fourth Recess and Hopkins Creek, and the spacious timberline meadows and lakes of Pioneer Basin. We will have three layover days, and 34 total trip miles.

[180] Humphreys Basin, Sierra—August 24–31. *Leader, John McClure, 75 Castlewood Dr., Pleasanton, CA 94566.* Our route will take us from Pine Creek through French and Piute canyons to Humphreys Basin, then out to North Lake. Both French and Piute canyons are like miniature Yosemite valleys with the same U-shape and sheer granite walls. This is high country: above timberline, strewn with boulders, and abundant in deep lakes. Although we go over two passes, the trip is considered moderate.

Bus trips have been a very successful enterprise in several Sierra Club chapters for many years. We think they're a trend of the future, particularly as fuel becomes scarcer and more expensive. Aside from the obvious advantages of saving fuel and decreasing smog and traffic congestion, they allow us to visit a number of areas beginning from a single location, skipping the time and trouble of searching for a ride or driving yourself to a remote trailhead: There is no need to set up lengthy car shuttles. You travel in relaxed air-conditioned comfort, with plenty of opportunity to get acquainted with your fellow trip members.

[31] Lake Powell by Houseboat/Arizona by Bus—May 5–18. *Leader, Margaret Malm, 1716 Maple St., Santa Monica, CA 90405.* This trip starts with a relaxing week exploring Lake Powell in houseboats. There should be spring wildflowers to contrast with the colorful canyon walls, and we'll spend as much time as possible exploring the side canyons, slickrock slopes, and other "targets of opportunity" in the area. Then we'll board our bus to enjoy Arizona's Mogollon Rim country, Chiricahua National Monument, and other areas. The trip begins and ends in Phoenix.

[182] Canadian Rockies, Canada—August 11–31. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* Experience the scenic mountain grandeur of the Canadian Rockies. Starting in Seattle, we will drive rental vans to visit Canadian national parks in Alberta and British Columbia, with stops at Banff, Jasper, Kootenay, and many more places. We will stay in group campgrounds, and sleep under the stars. An overnight horsepack trip to the high country in Banff and a two- to three-day raft trip on the mighty Thompson and Fraser rivers are also planned. Most of the trip will be spent van-camping, sightseeing, and dayhiking, but we will also spend two or three nights in hotels.

[25] Aztec-Mayan Tour, Mexico—October 27–November 16. *Leader, Bob Marley, 2601 E. Glenrosa, Phoenix, AZ 85016.* Would you like to learn about the pre-Cortez Aztec-Mayan civilization, encounter a non-English-speaking culture head-on, camp in primitive areas, and exercise control over the pace of your trip with companions of similar interests? Join us and tour southern Mexico by van, starting in Mexico City. As we travel to the tip of the Yucatan Peninsula and return, we will visit the magnificent archaeological sites of Tula, Teotihuacan, Tulum, Chichen Itza, Palenque, Monte Alban, Mitla, and many more. We will camp whenever possible on beaches or in the countryside, but up to seven nights will be spent in motels. *Please note new trip dates.*

Family trips have one specific goal in mind–to make it easy for families to enjoy the wilderness together. They range from Wilderness Threshold

camps for parents with children of any age to Canoe Trips designed especially for families with teenagers. Most trips are planned with the limits of the least-hardy member of the family in mind. ▲ All family trips involve learning to cope with the challenges of outdoor living. With the help of leader families who offer expert advice, encouragement, and entertainment, families whose only previous outdoor experience has been a visit to a city park quickly learn to enjoy all that the wilderness offers in the pleasurable atmosphere of an all-family trip. Ideas are shared, everyone encounters similar problems and obstacles, and the children experience the fun of outdoor living with others of their own age. ▲ Menus are designed to appeal to both adults and children. Exertion is generally mild, but some physical conditioning is advisable. Families going into the high country should try to spend a couple of days at high altitude before the trip for acclimatization.

(Carol Dienger)

Wilderness Threshold Trips

THE WILDERNESS THRESHOLD PROGRAM is designed to introduce families to the joys of backcountry camping in a cooperative atmosphere. In addition to helping less-experienced families with basic skills (camp selection, cooking with lightweight foods, proper use of equipment), the program also tries to increase awareness of an area's ecology and the importance of minimizing human impact on it. In addition to two-parent families, we welcome single parents, grandparents, or aunts and uncles.

An experienced and highly motivated family leads each wilderness threshold trip. The concept of leadership skills taught by an entire family is unique to Sierra Club family outings.

Threshold camps are usually located far enough from the road to give a taste of real wilderness, yet close enough so that even very young children can hike in comfortably on their own. Two- to four-year-olds may need help getting to camp, but will have a lot of fun once there. Packstock is usually used to transport food, dunnage, and equipment from roadhead to camp.

The area surrounding each campsite offers opportunities for varied activities: nature study, dayhikes, fishing, swimming, peak-climbing, or rock scrambling. The adults and teenagers of each participant family share commissary duties and other camp chores. The group meets for breakfast and dinner, with lunch packed at breakfast. Most activites are informal and unstructured. Evenings center around group activities.

Those with musical interests are encouraged to bring instruments. (They will not count as part of the dunnage limit, but no pianos, please.)

Before you choose a trip, be sure to read each description carefully. There are camps for families with teenagers, and others with varying age limits; some are more remote and therefore harder to reach. If you have any questions regarding the difficulty or age format of the trip, please contact trip leaders before submitting your application.

General good health is required; otherwise no special training or skills are necessary for these trips.

[185] McGee Basin, John Muir Wilderness, Sierra—July 26–August 2. *Leaders, Beth and Bob Flores, 2112 W. Portobello, Mesa, AZ 85202.* Without having to carry a heavy pack, we will hike 5 miles along upper McGee Creek past Horsetail Falls for an elevation gain of 2,200 feet. Our base camp at Steelhead Lake (10,400) offers easy access to hiking trails and other alpine lakes with great trout fishing. Set in a forest of lodgepole and whitebark pine and lush mountain meadows, Steelhead Lake provides opportunities for fishing, photography, exploration, nature study, and general family enjoyment in the High Sierra. No age limit.

[186] Navajo Cultural Experience, Canyon de Chelly Monument, Arizona—August 2–9. *Leaders, Wanda and Tom Roy, 9 Sunset Trail, Rockwall, TX 75087.* Brilliant cathedral cliffs define canyons replete with Anasazi ruins and rock art. Explore this corner of Indian country as we hike in leisurely fashion accompanied by an Indian guide, and camp within sight of hogans.

An excellent first family outing. Children must be eight years or older. Leader approval required.

[187] Lost Lakes Wilderness Threshold, Minarets Wilderness, Sierra—August 3–10. *Leaders, Ellen and Jim Absher, P.O. Box 3178, Athens, GA 30612.* Our camp will be in the basin below Lost Lakes, about 9,400 feet. From there we will be able to explore numerous other alpine basins, including the nearby Minarets region. There are good routes for dayhikes over Donahue Pass, to Thousand Island Lake, and to the 13,000-foot peaks of Davis, Ritter, and Banner. This setting is ideal for nature study, mountain climbing, fishing, photography, and relaxation. The walk in rises about 2,000 feet in 6 miles. This trip is especially suitable for families with children from 5–12 years of age.

[188] Santa Barbara Channel Islands, California—August 10–16. *Leaders, Ann and Tom Carlyle, P.O. Box 1313, Goleta, CA 93116.* A unique opportunity to experience and explore two of California's island sanctuaries. We begin with a channel crossing to tiny Anacapa Island for two days of camping, hiking, snorkeling, and exploring. We then sail for the largest and most diverse of the Channel Islands, Santa Cruz. From our base camp we will take day trips by foot and skiff to secluded coves and tidal pools, fertile inland valleys and swimming holes. We are sure to see seals, sea lions, brown pelicans, gulls, oystercatchers, and perhaps the rare island fox, or a school of porpoises. All trip members must be able to swim. Children must be nine years or older. A limited number of couples or individuals will also be accepted.

Yosemite Park Family Backpack, Sierra (Carol Dienger)

Wilderness Threshold trip in Yosemite Park, Sierra (Carol Dienger)

[189] Midnight Lake, John Muir Wilderness, Sierra—August 10–17. *Leaders, Mary and John Stanley, 4 Redwood Dr., Boulder Creek, CA 95006.* This High Sierra family adventure is specifically designed for parents with at least one young teen, age 12–15. Our 11,000-foot camp near Midnight Lake is surrounded by the 13,000-foot Evolution Peaks. This alpine lake basin, the headwaters of the Middle Fork of Bishop Creek, offers numerous opportunities for hiking, climbing, fishing, nature study, photography, relaxation, and friendship. The walk in rises 2,000 feet in 6 miles from our roadhead at Lake Sabrina.

Family Canoe Trips

THE PURPOSE of a family canoe trip is to provide the family with an opportunity to experience the joys of paddling on a river or lake, beach camping, side canyon exploration, swimming, and relaxation. These outings provide a unique opportunity to pass on to the next generation an appreciation and respectful concern for the wilderness and our earth's resources. Participants must be in good health and capable of effectively paddling, kneeling, lifting, and swimming.

Food, river equipment, safety instruction, and some paddling instruction are provided. All must share in camp chores. Leader approval is required. See the Canoe Trip section for an explanation of trip grades.

[190] Main Eel River Family Trip, California—June 16–22. *Leaders, Sally and Sandy Small, 39 Via Floreado, Orinda, CA 94563.* This trip provides families with the opportunity to enjoy an outstanding wilderness experience. The section of the Main Eel from Alderpoint to South Fork is surprisingly remote and outstandingly beautiful. The water is warm, the swimming great, and the beaches clean. Basic river techniques will be taught. All river gear will be provided. Leader approval is required. (Grade A)

[191] Huckleberry Finn Voyageur Canoeing, Mississippi River, Illinois/Missouri—June 23–29. *Leaders, Faye and Tom Sitzman, 903 Mercer Blvd., Omaha, NE 68131.* Relive the adventures of Huck Finn and Tom Sawyer as this historically rich area comes alive on Mark Twain's famous Mississippi River. We will visit the restored homes of Mark Twain and Becky Thatcher in Hannibal. Stops for swimming and camping will be on sandy beaches and forested islands. Tasty campfire meals will include traditional river fare. We will retrace the routes of the French fur traders in two ten-person, 26-foot "birchbark" canoes that are safe, stable, and easy to paddle. Canoes and paddles are provided. An ideal experience for teenagers and young children to share with their parents or grandparents. (Grade A)

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—making as little impact as possible. We try to learn about the country and study 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.

[510] In Quest of the Quetzal: Mexican Birds—February 15–28. *Leader, Richard Taylor, Box 122, Portal, AZ 85632.* The search for a Resplendent Quetzal, three feet of shimmering iridescence and the sacred bird of the Mayan and Aztec empires, will climax this natural-history excursion to Chiapas. While the accent will be on birds—more than 400 species are found here—we will also visit a deep barranca, hike through cloud forest, look for monkeys and iguanas, and explore the Classic ruins at Palenque. Accommodations will be in picturesque hotels.

[515] Serengeti Wildlife Walking Safari, Tanzania—February 16–March 2. *Leader, Pete Nelson, 5906 Dirac St., San Diego, CA 92122.* Vast herds of wildebeeste, zebra, and gazelle followed by predators migrate in February to the Serengeti Plains to bear their young. With a naturalist we will visit, by vehicle and on foot, the plains, volcanic highlands, Rift Valley, and archaeological sites at Olduvai Gorge. We will hike alpine moorland into Embakai Crater and drive to Ngorongoro Crater, two rich concentrations of wildlife. The people, terrain, and wildlife all will capture the attention of trip members.

Mexico (John DeCock)

[520] Egypt: Sailing the Nile, Trekking the High Sinai—February 24–March 16. *Leader, Ray Des Camp, 510 Tyndall St., Los Altos, CA 94022.* After Cairo and Giza we'll board a first-class train to Aswan. From there, a four-day cruise down the Nile in a traditional *felucca* will take us to Luxor. After Luxor we'll return to Cairo to prepare for our seven-day trek in the Sinai. We'll be supported by Bedouin guides on the trek, and our dunnage will be carried by camels. We'll see the pyramids, the Sphinx, the High Dam, Luxor, Thebes, Karnak, the Valley of the Kings, and other famous sites. In the Sinai we'll see mountains, streams, oases, and visit the Monastery of Santa Katarina.

[525] Kali Gandaki Trek, Nepal—March 23–April 13. *Leader, Mike Brandt, 10229 Variel, Unit 22, Chatsworth, CA 91311.* Starting in Pokhara, this 19-day moderate trek follows the mighty Kali Gandaki River through the deepest canyon in the world, with Annapurna (26,500) and Dhaulagiri (26,800) rising sharply on either side. Highest elevation reached will be at the sacred shrine of Muktinath (12,500). The return route, via the Gorapani Ridge, is noted for its beautiful rhododendron forests. Leader approval required.

[530] Ganesh Himal Trek, Nepal—April 20–May 11. *Leader, Kern Hildebrand, 228 Fairlawn Dr., Berkeley, CA 94708.* See the rhododendrons at their best on this 19-day moderate trek into an area rarely visited by other trekkers. Ascending the Mailung Khola from Trisuli Bazaar, we will traverse many ridges jutting out from the peaks of

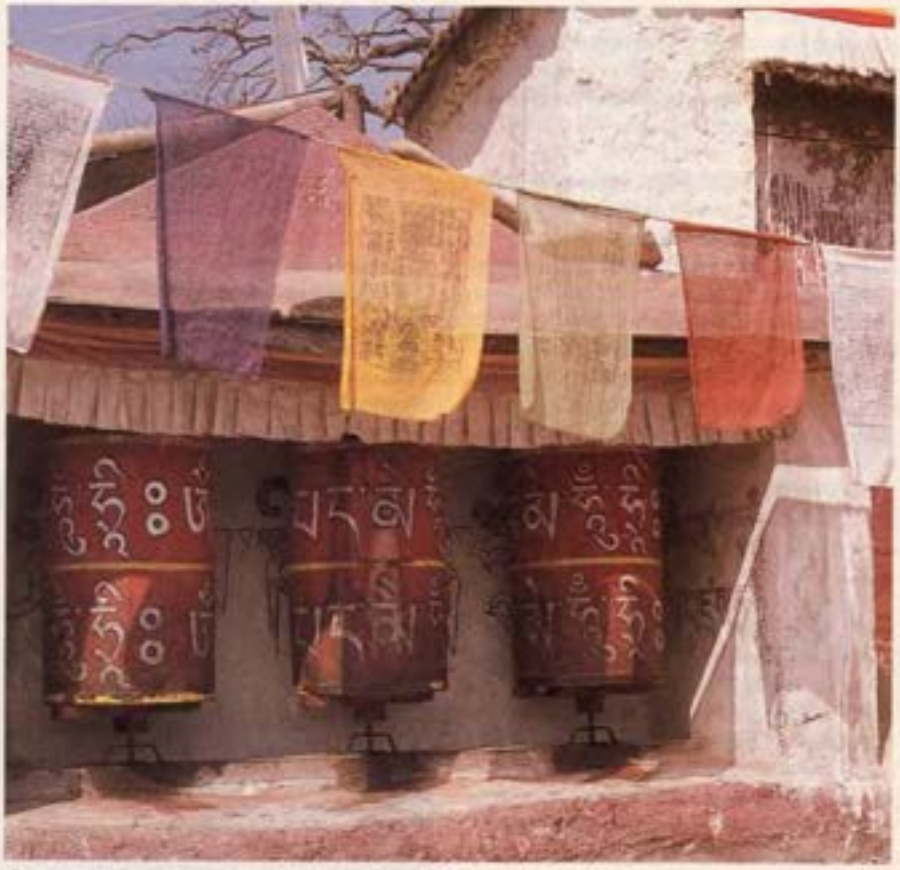
the Ganesh Himal, the highest of which is 24,100 feet. This circle trip will descend via the Buri Gandaki River, and our highest camp will be at about 13,000 feet. Leader approval required.

[535] Italia Centrale by Bike—May 8–23. *Leader, Ed McManus, 912 Cerrito St., Albany, CA 94706.* Enjoy the spring flowers and medieval hill towns of the rolling Tuscan and Umbrian countryside. Our figure-eight tour will take us south and east from Florence. Riding days will take us through farm and wine regions meticulously nurtured for more than 20 centuries. Nights and layover days will be spent in towns famous for art, history, and architecture. Accommodations will range from *pensiones* to a monastery. Continental breakfasts, picnic lunches, and dinners in local *trattorias* will be our daily fare. We will carry our own gear. Leader approval required.

[540] Hiking in the Lake District and Cotswold Hills, England—May 11–25. *Leader, Richard Terwilliger, 7339 Pinecastle Rd, Falls Church, VA 22043.* Staying in a different guest house for each of the two weeks, we will be dayhiking before the busy tourist season in two of England's most interesting walking/hiking regions. The first week will be spent hiking in the Cotswold Hills, 70 miles northwest of London. The Cotswolds provide a rich variety of walking over gently rolling hills, the highest of which rises to 1,085 feet. The second week we move to the Lake District, an area of moors, fells (mountains), lakes, and waterfalls in northwestern England. This area abounds with interesting and challenging hiking routes; ours lie in the Lake District National Park—ideal countryside for hikers of all calibers.

[542] Inland Waterways of England—June 1–15. *Leader, Marleen S. Van Horne, 423 S. 12th St., San Jose, CA 95112.* Meander through the heart of England as a passenger on a converted narrowboat, the traditional freight carrier of Britain's canal system. Drift peacefully past farm and village, or hike the towpath. Birdwatch or people-watch as the Gentle Highway flows through the industrial centers of England and into the countryside.

[545] Exploring the Unknown Switzerland—June 16–29. *Leader, Richard Weiss, 448 Wellesley St. E., Toronto, Ontario, Canada M4X1H7.* The first week of this leisurely to moderate trip will emphasize the many alpine delights in this subtropical pocket of Italian Switzerland. We will take dayhikes from our hotel base on Lago Maggiore, and there will be ample time to relax and enjoy this peak period of the magnificent late-spring wildflower season. In week two we move on to explore the remarkable Engadine valley. Inn-hopping through this more rugged region, we will have many opportunities to admire the unusual architecture and culture of the Romansch Swiss. *Please note new trip dates.*



Prayer wheels and flags, Nepal (Betty Pollock)

[550] Highlands and Islands of Scotland—June 17–July 13. *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 and lochs made famous in Scottish literature, and unique villages inhabited by hardy Scots. Our meeting point will be Edinburgh, where time is available to visit the historic Royal Mile, the famous Botanical Gardens, and the 200-year-old New Town. Two vanbuses 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.

[555] Gorilla and Wildlife Safari, Tanzania/Rwanda—July 1–16. *Leader, Patrick Colgan, P.O. Box 325, La Honda, CA 94020.* The remote, unimpacted wildlife preserves of central East Africa abound with the greatest concentration of large mammals and birds anywhere on earth. Hippo, lion, elephant, cheetah, wildebeest, gazelle, and mountain gorilla roam free in their natural surroundings. On this unique, overland, mostly tented safari, we travel mainly by off-road vehicle and, where possible, by foot. Our itinerary includes the Serengeti and Ngorongoro Cra-

ter national parks, and in Rwanda we will abandon the comforts of civilization to seek the domain of the elusive mountain gorilla. Leader approval required. *Please note new trip dates.*

[560] Tour du Mont Blanc, France—June 30–July 14. *Leader, Dick Williams, 609 S. Taylor St., Arlington, VA 22204.* We will walk around Mont Blanc, Europe's highest mountain, on classic alpine trails of moderate elevation through France, Italy, and Switzerland. The hike features splendid mountain scenery, close approaches to several large glaciers, varied wildlife, and outstanding wildflowers. Hiking is moderate to strenuous, with numerous layover days for loafing or dayhikes. We stay in comfortable small hotels, with one night in a mountain refuge. Leader approval required.

[562] Karakoram and Hindu Kush Trek, Pakistan—June 30–July 26. *Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401.* After an eight-year absence, the Sierra Club returns to Pakistan with an exciting trip that starts with a visit to fabled Hunza and a five-day moderate trek up the mighty Batura Glacier in the Karakorams. This is followed by a 13-day trek traversing the Hindu Kush from Gilgit to Chitral. The trip concludes with a visit to Peshawar, the "Paris of the Pathans" at the gateway to the Khyber Pass. Leader approval required.

[565] Pyrenees Trails, Spain—July 3–17. *Leader, Rosemary Stevens, 3700 Fairfax Way, South San Francisco, CA 94080.* Snowy peaks, rushing water, wildflowers, and green meadows await us as we travel by bus from Zaragoza to the Pyrenees of upper Aragon, then eastward in Catalonia. We will stay in village *hostales* and mountain *refugios*. There will be excursions for both dayhikers and backpackers. The terrain is difficult and the pace will be leisurely to moderate. We will say our farewell in the bustling Mediterranean port of Barcelona.

[570] Biking Alluring Alsace, France—July 4–15. *Leader, Lynne Simpson, 1300 Carter Rd., Sacramento, CA 95825.* Come bike the backroads of Alsace, journeying between the forested Vosges range to the west and the broad, well-traveled Rhine to the east. Come hear the mingling of French and German typical of this border region. Come taste Alsatian sauerkraut and famous Kugelhopf cake. From Alsace we will bike west into the Burgundy area, where we will join the French in celebrating their independence day. Bikes will be provided; daily distances will vary between 25 and 40 miles. Accommodations will be in small hotels and inns along our route.

[575] Inner Mongolia Bike Trek—July 13–August 6. *Leader, Brad Hogue, 3750 Long Ave., Beaumont, TX 77706.* Ten-speed trail bikes and the high, exotic, semi-arid plateau of the Inner Mongolian grasslands provide the setting for this moderately paced bicycle trek. Our first stop will

Buddhist temple, Nepal (Gordon Wiltsie)

be Beijing for a four-day whirlwind of sightseeing in one of the most fascinating cities on earth; then overland by train to Datong Hohhot; and finally the grasslands for two weeks of the most dynamic bicycle trekking you'll ever experience. We'll sleep in communal yurts and see magnificent displays of Mongolian horsemanship. Leader approval required. *Please note new trip dates.*

[580] Land of the Basques, France/Spain—July 15–28. *Leader, John Doering, 6435 Freedom Blvd., Aptos, CA 95003.* Besides the flashing rivers and twelfth century Romanesque churches, we will wonder at the prehistoric menhirs and circular tombstones that identify the rich Basque culture as we follow ancient trails through rolling green hills and above the fascinating Gorges of Kakouetta. We will admire the skill and strength of the *pelote* players in the village *fronton*, the touching voices of the balladeers, and the intricate footwork of the dancers as we join them in festivals celebrating ancient legends. Accommodations will be in *gites* and country *auberges*.

[582] Dalmatian Coast Bike and Hike, Yugoslavia—July 20–August 2. *Leaders, Frances and Patrick Colgan, P.O. Box 325, La Honda, CA 94020.* Yugoslavia's exotic Dalmatian Coast, with its islands, sun-drenched beaches, and dramatic lake-studded mountains, is the setting for this moderate biking and hiking experience. With a sag wagon to ferry dunnage between Pliticka and Dubrovnik, we'll average 40 miles a day. There will be layover days for music festivals, side trips to the islands, and dayhikes in the rugged karst mountains. We will sleep in creaking old guest houses and hotels, and the magic, the music, and the folklore of Croatia will fill our dreams.

[585] Backpacking in Southern Corsica—July 31–August 11. *Leader, Michele Ferrand, 2457 10th St., Boulder, CO 80302.* Snowcapped mountains surrounded by the azure Mediterranean—this is Corsica, a sparsely populated island 100 miles south of the Riviera. Along with the fragrance of the *maquis*, we will find a richness of scenery, culture, and history nicely isolated from mainland Europe. We plan a moderately paced backpack in the mountains with visits to small villages, a look at Napoleon's hometown, and a stay at a coastal resort. We will carry light loads and supplement our diet with local delicacies from *bergeries* along the way. *Please note new trip dates.*

[590] Black Forest and Bavarian Castles—August 1–10. *Leaders, Natasha and Carl Wood, 356 Bluff St., Alton, IL 62002.* Walk with German guides among the Black Forest's pine-clad mountains through quaint villages and medieval Freiburg, spending each night in a comfortable hotel. Dayhikes will be made in the spectacular alpine lake settings of the fantasy castles Neuschwanstein, Hohenschwangau, Herrenchiemsee, and Linderhof, built for Bavaria's King Ludwig II.

[595] Himalayan Passage—August 6–September 2. *Leader, Peter Overmire, 293 Union St., San Francisco, CA 94133.* This trans-Himalayan trip begins in Srinagar in the Moslem Vale of Kashmir. We travel north by bus to Leh in Ladakh ("Western Tibet") for several days of acclimatization while visiting the nearby Buddhist monasteries of the Indus Valley. We then start our moderately strenuous trek south, crossing six passes over 15,000 feet, to Padam, the capital of the Hidden Kingdom of Zanskar. We continue trekking southwest, crossing the Himalayan crest by another 15,000-foot pass and via one of the most sacred Hindu sites, Amarnath Cave; then back to Srinagar to relax in the comfort of the fabled Victorian houseboats. *Please note new trip dates.*

[600] Hiking in the Stubai Alps, Austria—August 15–28. *Leader, Bert Gibbs, P.O. Box 1076, Jackson, CA 95642.* The trip begins with a bus ride to Obernberg near the Brenner Pass. We will then follow a preplanned route each day, hiking from one picturesque village to the next and staying overnight in small guest houses or inns. Since your duffel will be transported to the next stop, you carry only the items needed for the day. The views of the Stubai Alps will be breathtaking as we hike from five to eight hours per day at altitudes from 5,000 to 7,000 feet. We will rest in the rustic comfort of alpine villages and sample the flavorful food of the people who live in these beautiful, majestic mountains.

[605] Bike and Hike in Ireland—August 29–September 11. *Leader, Len Lewis, 2106-A Clinton Ave., Alameda, CA 94501.* Come away with me to the "wild, wild West" of Ireland for two weeks of easy to moderate biking and occasional hiking. Our route will take us from the cities to the byways, past the bogs and maybe up the Burran, from the mountains to the seacoast, and through counties Clare, Galway, Mayo, Sligo, and Donegal. We will sleep in comfortable bed-and-breakfast inns, feast on the best of Ireland, and learn a little Gaelic. We'll set a pace that will allow us time to enjoy it all.

[610] Swiss Alps: Adelboden to Grindelwald—September 2–10. *Leader, Ann Hildebrand, 1615 Lincoln Rd., Stockton, CA 95207.* Hike and explore some of the world's most renowned landscape—the Berner Oberland. Beginning in pastoral Adelboden, we will hike through the green alps, past grazing cattle, up rocky slopes, and over dramatic passes. As we progress, the *ausblick* from each of the four passes will surpass the last. As the journey culminates we will be surrounded by glaciated peaks and wonderful deep valleys with hanging waterfalls. A trip on the cog railway through the Eiger to the Jungfraujoch will be included. We will lodge in Alpine Club huts and small mountain hotels.

[615] Mountains to the Sea Safari, Kenya—August 4–23. *Leaders, Emily and Gus Benner, 155 Tamalpais Rd., Berkeley, CA 94708.* This trip is designed to provide a

Namche Bazaar, Nepal (Gordon Wiltsie)

fascinating blend of Kenya's varied fauna, flora, and culture. We will be visiting some of the finest wildlife parks in East Africa: Samburu, Masai Mara, lakes Naivasha and Baringo, the Abardares, and the moorlands of Mt. Kenya. We will then journey by train (the famous "lunatic express") down to the white sand beaches of Mambasa and the ancient Arabic town of Lemu on the warm Indian Ocean. Traveling with our naturalist guide by Land Rover, foot, railway, small plane, canoe, and dhow, we will observe and photograph at close range a variety of game, exotic birds, and waterfowl, and visit native villages and tropical islands. An optional climb of Mt. Kenya is planned for the week following the trip. *Please note new trip dates.*

[620] Silvretta/Dolomites Rambles, Austria and Italy—September 12–26. *Leader, Walt Goggin, 18836 Lenross Ct., Castro Valley, CA 94546.* While based at comfortable mountain hotels, we will take dayhikes into these two quite different yet equally spectacular alpine regions. An overnight stay in Innsbruck will provide an introduction to this venerable crossroad of European cultures. The September trip date suggests settled weather, good visibility, and reduced visitation.

[625] The Omo Experience, Ethiopia—September 18–October 9. *Leader, Bill Bricca, P.O. Box 159, Ross, CA 94957.* Be one of a handful of travelers to raft the Omo River through the untouched wilderness of southwestern Ethiopia. Experience an unparalleled mixture of whitewater adventure, big game viewing, and a rare opportunity to observe people living as they have for centuries. The river voyage starts at Jimma Bridge near the village of Abelti, and ends 330 miles downstream at the confluence with the Mui River. Two days will be spent sightseeing in Addis Ababa, the famed capital of Ethiopia. Fortunately, the Omo flows in the southwest area, far from the politically unstable northern and southeastern borders, and in an area so remote that the people living along its banks have no idea that a country called Ethiopia exists. *Please note new trip dates.*

[630] Sacred Mountains of Japan—September 16–October 6. *Leader, Peter Overmire, 293 Union St., San Francisco, CA 94133.* The main goals of this autumn trip are the summits of the three most sacred mountains of Japan: Fujiyama, Tateyama, and Hakusan. The trip starts with a few days in Tokyo and ends in Kyoto, where trip members may participate in an optional extension to visit the many shrines and temples. We will live in the local fashion—staying in Japanese inns, eating the local diet, and visiting a number of Japanese national parks, with ample opportunity to climb other peaks and enjoy the beginning of the glorious fall colors.

[632] Mediterranean Adventure—September 20–October 2. *Leader, John Garcia, 124 Romero Circle, Alamo, CA 94507.* This year our "Aegean Odyssey" will sail from Rhodes to the Greek islands of Simi

China (Betty Pollock)

and Kos, then on along the shores and inlets of the Turkish Aegean coast. Nights and meals will be aboard our comfortable 65-foot motor-sailing ketch, with daily excursions to explore villages and archeological sites ranging in period from Carian through Greco-Roman, Crusader, and Byzantine. After visiting the charming seaside resort town of Marmaris, we return to Rhodes.

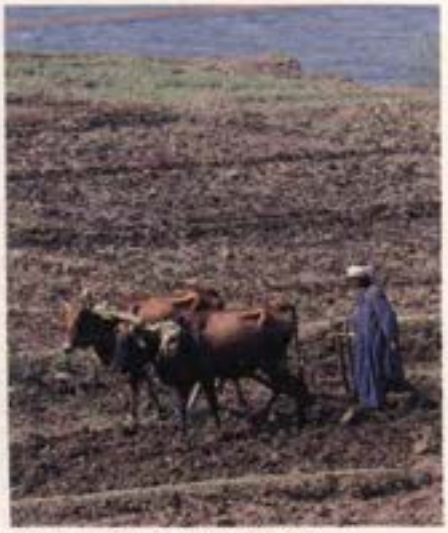
[635] Lamjung Himal Trek, Nepal—October 7–26. *Leader, Serge Puchert, 1020 Koontz Ln., Carson City, NV 89701.* This economy trip offers a 16-day trek into the Lamjung Himal just east of the main Annapurna Range. Starting from Pokhara, our circular route will visit many hill villages of the Gurungs, from whom the British recruit many of their famous Gurkha troops. Our mainly ridge route will offer many panoramic views of the whole Annapurna Range from Annapurna South to Lamjung, and 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. Our highest camp will be about 14,000 feet. Leader approval required.

[640] Tonga Sailing Adventure and Exploration of Fiji by Boat, A Polynesian Odyssey—October 24–November 13. *Leader, Ruth Dyche, 2747 Kring Dr., San Jose, CA 95125.* The focus of this trip will be the unspoiled places of ancient Polynesia. We will steep ourselves in the beauty of the islands and the people; their customs and history. We will spend nine idyllic days bareboat sailing among the lovely Vava'u Islands of Tonga, one of the best sailing areas in the world. Some time will be spent in the cultural and religious centers of this kingdom as well as on the island of Eua, described as a naturalist's paradise. In Fiji we'll visit by boat the fabled Yasawa Islands, where people still live as they have for centuries. There will be time for swimming, beachcombing, visiting native villages, and shopping for local handicrafts. Trip begins and ends in Honolulu.

[642] Trek in Tibet, China—September 30–November 3. *Leader, Mike Brandt, 10229 Variel Ave., Unit 22, Chatsworth, CA 91311.* The Sierra Club has been invited by the Chinese Mountaineering Association to trek in Tibet. The hike will begin in the Tibetan highlands and eventually reach Camp 3 on Mt. Everest (21,500). The walk offers unequalled views of the north slopes of the Himalaya and the magnificent Rongbuk glacier. There will be time to visit places of interest in Beijing (where the trip begins), Cheng Du, Lhasa, and Xigase en route. Mountaineering experience is not required, but the trip will be strenuous for all but those in superb condition.

[645] Annapurna Sanctuary, Nepal—November 2–23. *Leader, Dolph Amaer, P.O. Box 1106, Ridgecrest, CA 93555.* We will begin this 18-day economy circle trek in Kathmandu, and our pace will allow ample opportunity to enjoy the incredibly beautiful mountains and small villages through which we pass. With carefully chosen gear, our group will travel "light" to minimize impact as we move at a moderate rate through bamboo, rhododendron, and oak forests. We will return via the Gorapani Ridge, with views of Dhaulaghiri and adjacent peaks. The trip ends with personal sightseeing and a Newari dinner in Kathmandu. Our highest camp will be at 13,000 feet. Leader approval required.

[650] Helembu Trek, Nepal—December 2–20. *Leader, Phil Gowing, 2730 Mabury Sq., San Jose, CA 95133.* The focus of this moderate 15-day trek into Sherpa country will be the Sherpa and Tamang villages, monasteries, and, of course, spectacular views of some of the major Himalayan



Farming along the Nile (Betty Pollock)

peaks. But the highlight will be the wonderful Nepalese people we will meet—both our own Sherpas and porters, and the villagers along the way. This is a good trip for the first-time visitor to Nepal, with most of the trek between 6,000 and 9,000 feet in elevation. *Please note new trip dates.*

[655] Arun Valley Christmas Trek, Nepal—December 21, 1985–January 11, 1986. *Leader, Ginger Harmon, Berth 20, Issaquah Dock, Waldo Point Harbor, Sausalito, CA 94965.* Come spend your Christmas holiday in this seldom-traveled valley offering views of three of the four highest peaks in the world: Everest, Makalu, and Kanchenjunga. The Arun Valley, the deepest in the world, lies between Makalu and Kanchenjunga. Starting below 3,000 feet, we will eventually reach a maximum of 13,000 feet on a ridgetop high above the Arun. The relatively low altitude of this trek makes it an ideal winter trip. Leader approval required.

[660] Kenya-Tanzania Wildlife Safari—December 28, 1985–January 15, 1986. *Leaders, Ruth and Jim DeMartini, 947 Lochness Ct., Fort Collins, CO 80524.* Experience the natural wonders of East Africa by Land Rover and on foot during the finest season of the year. This adventure safari will explore the alpine beauty of Mt. Kenya, the birds of the Great Rift Valley, and the incredible numbers and diversity of plains game and their predators on the Serengeti Plains. We'll photograph wildlife in Ngorongoro Crater, view footsteps of ancient man at Olduvai Gorge, visit Masai villages, and tour the slopes of Mt. Kilimanjaro. We'll travel off the beaten path, spend a few days backpacking, and spend most nights in tented camps.

[665] Australia, Land of the Sun—December 30, 1985–January 19, 1986. *Leader, Kent Erskine, 272 Orange Ave., Ashland, OR 97520.* Escape from winter to the land of the Southern Cross, where warm oceans meet boundless land and unusual creatures hold sway. We'll experience Australia as others rarely do; from the islands of the Great Barrier Reef through lush coastal forests, along beautiful river valleys, and over the crest to the interior. This trip offers a range of exciting activities: a night at a sea turtle nesting beach, a tropical river trip, visits to critical habitats to see unusual wildlife, and sojourns in cities to experience the best of the Australian people. Travel by boat, train, plane, and most enjoyably, by foot, will bring us closer to this fabulous land.

[670] Bio-Bio River Run, Chile—December 21, 1985–January 3, 1986. *Leader, Blaine LeCheminant, 1857 Via Barrett, San Lorenzo, CA 94580.* A clear, crisp course that cascades almost continuously, the Bio-Bio is Chile's largest river. Tumbling down the steep western slope of the Andes through the "Switzerland of South America," it surpasses all American rivers in raw beauty and powerful rapids. It seems the dream river actualized: clear, clean water, hot springs, an active volcano, tributary waterfalls, glaciers, unbelievable panoramas, alpine lakes, and summer weather. Look south to the Bio-Bio.

[675] Cross-Country Skiing in the Austrian Alps—January 5–19, 1986. *Leader, Anneliese Lass-Roth, 712 Taylor Ave., Alameda, CA 94501.* We will spend 15 days cross-country skiing in the "Heart of Europe"—Austria. This trip is designed for beginners and intermediates. Previous ski experience is not necessary. Accommodations will be in comfortable hotels. Trip price also includes equipment rental and cross-country ski instruction by a certified nordic ski instructor.

[680] New Zealand Featuring Fiordland—March 7–30, 1986. *Leader, Vicky Hoover, P.O. Box 723, Livermore, CA 94550.* We will explore several of the South Island's spectacular fiords and mountain areas via three backpack jaunts between huts. Car-camping intervals plus auxiliary boat and air travel will help us sample the remarkable variety of "down under" scenery. The last week of this 23-day outing will take us by ferry to the North Island and will include tramping in remote Urewera National Park. Leader approval required.

[685] Langtang Trek, Nepal—March 17–April 12, 1986. *Leader, John Garcia, 124 Romero Circle, Alamo, CA 94507.* Just south of Tibet is Nepal's famous Langtang National Park, site of this moderate 22-day springtime trek. The trek will feature rhododendrons in bloom, Yosemite-like waterfalls and rock formations, glaciers, alpine lakes, yaks, local cheese factories, and of course, the very hospitable Nepalese people. Elevations will range from 2,000 to 15,000 feet. Leader approval required.

[690] Manaslu Circle Trek, Nepal—April 19–May 24, 1986. *Leader, Kern Hildebrand, 228 Fairlawn Dr., Berkeley, CA 94708.* Manaslu, one of the world's greatest peaks at 26,660 feet, can be circled to the north by crossing the 17,100-foot pass, Larkya La. Following the Buri Gandaki, the Dudh Khola, and the Marsyandi Khola, this extended trek passes very near the Tibetan border. We will travel through spectacular terrain and visit villages and gompas along the way.

Leventina Valley (Swiss National Tourist Office)

[695] Annapurna Circle Trek, Nepal—June 9–July 9, 1986. *Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401.* This moderate 27-day trek will circle the Annapurna Massif by a route that takes us up the Manang Valley and over 17,650-foot Thorung La Pass. We then descend to Muktinath, a sacred shrine for both Hindus and Buddhists, and proceed down the awesome Kali Gandaki gorge between Annapurna (26,540) and Dhaulaghiri (26,810). This monsoon-season trek will see some rain showers during the first and last week, but the middle two weeks will be in the "rain shadow" of the Himalaya where relatively arid conditions prevail. This is the time to see Nepal without hordes of other trekkers, when the wildflowers are at their best. Leader approval required.

Highlight trips offer a flexible format to those who enjoy the wilderness but want to hike without a full pack. Packstock or jeeps 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 the travel is by trail. ▲ Routes and mileages are usually within the ability of the average person who has done a reasonable amount of pretrip 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 to pursue other individual activities. ▲ Leaders emphasize conservation issues and interpret the natural history of the areas visited.

[30] Cedar Mesa Highlight, Utah—April 22–27. *Leader, Jerry Clegg, 9910 Mills College, Oakland, CA 94613.* The area: the high mesa southeast of Canyonlands National Park. The purpose: to explore all features of this tableland from its dark canyons and half-lit but airy Indian ruins to its bright summits. In homage to a night sky that displays more stars than any other, most camps will be fireless. Fit hikers who like cross-country trekking and who do not suffer unduly from acrophobia are welcome. Our last meal will be a Fellini-style dinner atop Muley Point—one of the planet's great viewpoints.

[195] Kalmiopsis Wilderness Llama Trek, Siskiyou Forest, Oregon—June 16–21. *Leader, Tom Landis, 29212 Lone Pine Rd., Brownsville, OR 97327.* The Illinois River carves its deep gorge through southern Oregon's Kalmiopsis, one of the nation's little-known wilderness areas. Rugged, heavily forested mountains are offset by the deep green pools and rushing whitewater of the river. Diligent, alert llamas carry our burdens over a good trail for 26 miles. Our relaxed itinerary will allow ample time for swimming, fishing, and loafing, as well as for observing the unique botanical and geological qualities that this area offers.

[196] Harriet Lake Basin, Yosemite Park, Sierra—July 22–31. *Leader, Bert Gibbs, P.O. Box 1076, Jackson, CA 95642.* We start our 40-mile loop from Granite Creek campground, hiking over Isberg Pass (10,560) to Harriet Lake Basin. Here we will explore the southern edge of Yosemite on three layover days by climbing peaks, dayhiking, swimming, and observing flora and fauna. Six hiking days will be moderate with elevations from 9,000 to 10,600 feet. Our return over Post Peak Pass (snow conditions allowing) will cap what is certain to be a scenic, memorable experience.

[197] Llama Trek, Three Sisters Wilderness, Willamette Forest, Oregon—July 28–August 2. *Leader, Tom Landis, 29212 Lone Pine Rd., Brownsville, OR 97327.* The rugged western flank of the Three Sisters Range is a volcanic wonderland that offers a great diversity of sights: deep forests, stark lava flows, glacier-clad slopes, and streams that spring forth from solid rock cliffs. Agile, dependable, and unflappable, llamas are the ideal pack animal, enabling us to carry equipment across almost any terrain. They're also just plain fun to be around. A leisurely itinerary of less than 30 miles allows plenty of time for enjoying the company of our dignified llamas and exploiting the many scenic opportunities of the area.

Packer with horses, Sierra (Joan R. Challinor)

[198] LeConte Divide, John Muir Wilderness, Sierra—July 28–August 9. *Leader, Bruce Gillies, 2950 Russell St., Berkeley, CA 94705.* Starting at Courtright Reservoir (8,200) we explore Blackcap Basin, Bench Valley, and Red Mountain Basin—three alpine basins at the 10,000-foot level below the western face of LeConte Divide. We hike up through the forests of the lower slopes to campsites near the many lakes at the base of the rugged divide. Spring in the Sierra is beautiful, challenging, and fun. This moderate trip (seven moving days and five layovers) is good for hikers of all ages. Families are welcome and should apply early to reserve sufficient space on the trip.

[199] Western Slope of the Tetons, Targhee Forest, Idaho—August 1–10. *Leader, Len*

Goodale Pass Trail, Sierra (Carol Crews)

Lewis, 2106-A Clinton Ave., Alameda, CA 94501. A 45-minute drive from Jackson Hole, Wyoming, will take you to our trailhead. The route we will take requires moderate hiking of 6 to 9 miles per day. Optional hikes to lakes and places of interest on layover days may be more strenuous but are not required. Our route lies immediately west of Grand Teton National Park and takes us through a system of limestone plateaus and granite basins. Beginners with *joie-de-vivre* will be warmly welcomed.

[200-E] Goat Rocks Llama Trek/Photography Seminar, Gifford Pinchot Forest, Washington—August 11–16. *Leader, Tom Landis, 29212 Lone Pine Rd., Brownsville, OR 97327. Instructor, Martha Murphy.* Goat Rocks and surrounding peaks, the heavily eroded remnants of ancient volcanoes, offer spectacularly photogenic scenery as well as sweeping views of their more recently formed cousins, Mt. Rainier to the north and Mt. Adams to the south. Agile, dignified, and fun, llamas will carry our burdens on a relatively relaxed trek of less than 30 miles along the Pacific Crest Trail. Photo instruction will offer information for the novice as well as challenge for the expert.

[201] Cirque Crest, Kings Canyon Park, Sierra—August 17–September 1. *Leaders, Jane and John Edginton, 2733 Buena Vista Way, Berkeley, CA 94708.* Join this spectacular loop trip out of Cedar Grove through the headwaters of the Kings River, highlighting alpine scenic areas such as Lake Basin and Palisade Lakes. This is a high-altitude trip with camps below grand peaks, several 12,000 foot passes, and two required cross-country backpacking days. Six layover days provide time for fishing, peakbagging, dayhiking, and botanizing in peak high-country flower season. The longest day's hike is about 14 miles, mostly downhill.

[202] Eagle Cap Wilderness Llama Trek, Wallowa-Whitman Forest, Oregon—September 2–7. *Leader, Tom Landis, 29212 Lone Pine Rd., Brownsville, OR 97327.* The high Wallowas of northeastern Oregon offer the most concentrated scenic beauty of any range in the state. Granite mountains shaped by glaciers, they feature majestic peaks, deeply scoured canyons, fast-flowing, snow-fed streams, and many lakes. Our relaxed 25-mile itinerary will offer plenty of time for individuals to enjoy the area in their own way. You will lead your own llama; its leisurely pace will most likely match yours. Come learn why these magical beasts captivate almost everyone lucky enough to have the opportunity of hiking with them.

[203] Humphreys Basin, Sierra—September 4–14. *Leader, Bob Miller, 11713 NE 150th Pl., Bothell, WA 98011.* Enjoy the golden, late summer weather in one of the range's most imposing areas. Hiking will be from Piute Pass to Pine Creek amidst 13,000-foot peaks. Campsites will be above 10,000 feet. Double layover days will allow for acclimatization or, for the already fit, bold climbs and long excursions. Fish abound, flies will be gone, and people scarce.

Taking time out for photographs (Cynthia Schneider)

Service trips combine the pure fun of a wilderness outing with the satisfaction that comes from doing something positive—on behalf of yourself and

all others who enjoy wilderness—to preserve and protect its unique qualities. Whether the job is rerouting a trail around a fragile meadow or removing unnecessary fire rings or an abandoned cabin, service trips mix the hard work of wilderness conservation with the pleasure of backpacking. These trips are noted for being fun, energetic outings with lots of enthusiasm and spontaneity. Now in their twenty-eighth year, service trips have evolved into three general types:

CLEANUP TRIPS range all the way from routine collection of trail litter to the removal of an airplane wreck.

TRAIL MAINTENANCE PROJECTS make trails safer or minimize their environmental impact on surrounding terrain. The work crews may backfill washouts, place waterbars for proper drainage, eliminate switchback cuts, or remove dangerous rocks from the trail. Occasionally the project involves construction of a brand-new trail.

WILDERNESS RESTORATION PROJECTS eliminate the signs of human impact and replant native vegetation. Their purpose is to assist the natural healing process of an ecosystem.

Some trips include two or all three of these types of projects. Most trips are in officially designated or de facto wilderness areas on U.S. Forest Service, National Park Service, or BLM land.

Although the work is hard, there is ample opportunity to enjoy the wilderness. About half the days are free, allowing plenty of leisure time to be spent with fellow trip members. As with most outings, participants share in communal chores.

Service trips are subsidized, which means fees charged to participants are comparatively low. Tax-deductible donations from corporations and individuals as well as funds raised from the National Outing Committee are used to subsidize service trip prices. Over the last few years, generous donations from the Atlantic Richfield Foundation have helped keep service trip prices low, and have helped establish a scholarship fund for those Club members who would otherwise be unable to participate on these trips.

Trip sizes vary from 12 to 25, including staff and a volunteer physician. Most trips have a cook and pack support to carry in food, so meals are generally plentiful. Applicants are considered on a first-come, first-served basis, provided the leader finds the applicant's experience level adequate for the trip. 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.

Trail Maintenance Projects

[49] Mazatzal Wilderness, Tonto Forest, Arizona—March 17–24. *Leader, Linda Dutcher, 606 Alto St., Santa Fe, NM 87501.* We will be clearing the lower portion of Alder Creek Trail, which runs from within a mile of Apache Lake (1,891) to near Browns Peak (7,657). This is a seldom-visited area with abundant wildlife. We will work every other day, leaving time for exploration of this rugged country where the vegetation ranges from saguaro cactus to pine and fir forests.

[50] Coyote Gulch, Glen Canyon Recreation Area, Utah—April 13–21. *Leader, Jim Bock, 1859 23rd St., Boulder, CO 80302.* A recent large increase in foot traffic has scarred this area with litter, fire rings, and overused trails. There are no more than two salaried backcountry rangers to handle these problems for this 250,000-acre district. We will work with them and also have time to explore the 13 miles of Coyote Gulch and part of the Escalante River. These sandstone canyons, up to 1,000 feet deep, are characterized by arches, alcoves, oases, and even some Indian ruins.

[51] Red Rock Trail Maintenance, Coconino Forest, Arizona—April 21–27. *Leader, Jim Ricker, 525 S. Elden, Flagstaff, AZ 86001.* Red Rock–Secret Mountain is one of the newest and most spectacular wilderness areas in Arizona. The trails in this beautiful country of sandstone canyons and pine-covered mountains are in much need of repair. This year's trip will be in Dry Creek Basin at elevations of 4,800 to 6,600 feet. We will work every other day and there will be ample time to explore, photograph, or just loaf. Expect warm days in the lower elevations and a chance of snow higher up.

[205] South Canyon Trail Maintenance, Kaibab Forest, Arizona—May 31–June 9. *Leader, Tim Wernette, 7461 E. Calle Managua, Tucson, AZ 85710.* South Canyon is on the Kaibab plateau on the north rim of the Grand Canyon. We will be working in the upper part of the canyon in aspen and pine forests, and near clear streams and pools. The canyons have spectacular red cliffs and a rich variety of flowers and birds. During the first portion of the trip, work will include brushing, building trail tread, and rebuilding stream crossings. The second half of the trip will be a strenuous but beautiful hike down one of the North Rim trails (perhaps primitive) into the Grand Canyon. Previous hiking experience required.

Lake of the Lone Indian, Goodale Pass Trail Construction (Carol Crews)

[206] Bear Wallow Wilderness, Apache Forest, Arizona—June 8–16. *Leader, Rod Ricker, Box 807, Cottonwood, AZ 86326.* Situated in the White Mountains of eastern Arizona, the new Bear Wallow Wilderness is bounded on the west by the San Carlos Apache Reservation and on the south by the Mogollon Rim. Starting near the 9,100-foot Reno Lookout we will backpack down into the canyon and camp at 7,000 feet near the confluence of the North and South forks of Bear Wallow Creek. Spruce, aspen, white fir, and Gambel's oak are the principal vegetation. Our work will consist of rerouting and repairing several washed-out and neglected trails.

[207] Cranberry Wilderness, Monongahela Forest, West Virginia—June 16–22. *Leader, Paul Torrence, 106 E. Deer Park Dr., Gaithersburg, MD 20877.* This 35,550-acre wilderness is the largest in West Virginia and is designated a black bear sanctuary. In terrain typical of the Appalachian plateau with broad massive mountains (4,600) and deep narrow valleys, we will be undertaking repair of the area's most popular and most degraded trail. Leisure days will permit dayhikes to nearby areas of scenic and/or botanical interest, or swimming and fishing in the nearby streams and rivers.

[208] San Juan Islands Service Trip, Washington—June 16–23. *Leader, Fredric Kropp, 606 53rd NW, Seattle, WA 98107.* The beautiful San Juan Islands lie between Washington state and Vancouver Island. Reaching Orcas Island by ferry, we will travel north by Park Service boat to Sucia Island, the site of our work project. Most of our work will be trail renovation and maintenance. When not working, we can hike and explore the island, accessible only by boat. The trip includes a whale-watch trip; we will spend one day aboard a chartered boat looking for *orcas* (killer whales) that frequent the waters around the San Juan Islands.

[209] Kalmiopsis Wilderness Trail Construction, Siskiyou Forest, Oregon—June 19–29. *Leader, Jerold Williams, 136 High St., Eugene, OR 97401.* The little-used Kalmiopsis Wilderness in southern Oregon is an area of great botanical and geologic interest, with a population of rare and unusual plants; pre–Ice Age relics. Our work will consist of brushing out and constructing new trail to link existing trails in the area of Chetco Peak or Heather Mountain. On our leisure days we will have opportunities for dayhikes or backpacking to explore this remote and little-known area.

[210] The Sierra Club's Own Trail Maintenance Project I, John Muir Wilderness, Sierra—June 20–30. *Leader To Be Announced.* The Goodale Pass Trail, which travels from Edison Lake over the pass (10,960) to Papoose Lake, is a special trail, as it runs through both the John Muir Wilderness and the newly created Ansel Adams Wilderness. The Sierra Club has "adopted" the trail and is responsible for rebuilding and maintaining it. Our trip will have a chance to explore both wilderness areas as we rove along the 12-mile trail repairing winter damages. General maintenance will include clearing the trail and repairing waterbars. This area is known for its abundance of lakes and meadows. On our free days the more ambitious can climb Mt. Izaak Walton (12,099) or Graveyard Peak (11,494). This moderate trip is suitable for anyone in good condition.

Goodale Pass Trail work, Sierra (Sandy Gimbal)

[211] Pecos Wilderness, Sangre de Cristo Mountains, New Mexico—June 23–July 2. *Leader, Gail Bryant, General Delivery, Glorieta, NM 87535.* Fire, water, mud, snow, and sand over millions of years have made the Pecos Wilderness an area of great diversity. Because of its geologic variations and proximity to Santa Fe, the area attracts many visitors. Trail maintenance, rerouting, and stream crossings are ongoing projects. Climbing, fishing, and lazy time are also scheduled on this moderately strenuous trip.

[212] Elk Creek Trail Construction, Klamath Forest, California—July 3–13. *Leader To Be Announced.* Steep granite slopes, old-growth cedar and douglas fir forests dominate the landscape in this area of the Marble Mountain Wilderness. The hike in is an easy 3 miles, but the work will include new trail construction in steep territory. After the work is done, we will move our base camp several miles further into the backcountry for even better views, wildflowers, and fishing.

[213] Hamilton Camp Trail Maintenance, Klamath Forest, California—July 9–19. *Leader To Be Announced.* Hamilton Camp is located at the headwaters of the North Fork of the Salmon River, one of the major drainages in the Marble Mountains and the gateway to one of the most historically significant and majestic wilderness areas. Our work project, replacing and rerouting roughly 3 miles of badly eroded and sometimes unidentifiable trail, is the second phase of a two- to three-year service trip project. Off days will be spent fishing and swimming at any of the 12 lakes within a 2-mile radius of our base camp, or hiking up to English Peak Lookout for a view of the wilderness.

[214] One-Mile Lake Trail Maintenance, Marble Mountain Wilderness, Klamath Forest, California—July 10–20. *Leader To Be Announced.* The Marble Mountain Wilderness provides spectacular scenery without the crowds one often finds elsewhere. A moderately strenuous 10-mile hike will bring us to One-Mile Lake, located in a beautiful forested valley. We will continue the project begun last year to create a gently sloping trail from Sandy Ridge to One-Mile Lake, replacing the steep, erosion-prone existing trail. The work will be varied, including brushing, rolling boulders, shoveling soil, and constructing waterbars. There are many nearby lakes to explore on nonwork days. Wildflowers abound, fishing is good, and the water warm enough for swimming.

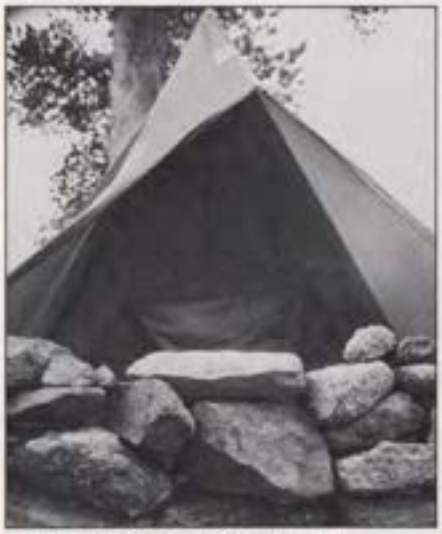
[215] Targhee Tetons, Targhee Forest, Idaho—July 15–25. *Leader, Bruce Horn,*

P.O. Box 9907, Stanford, CA 94305. Our trail project will be in the Alaska Basin area on the west slope of the Tetons in Wyoming. The trails in this area, having encountered the "highest energy snow in the West," will require repairing or rerouting due to the heavy winter snows. Grand Teton National Park is just over the crest for dayhiking and glissading with the Grand Tetons in the background. Our base camp will be at 10,000 feet, with Buck Mountain (11,900) to the east. This trip is rated moderate to strenuous; our dayhike to Lake Solitude (optional, 20 miles) will test even the triathletes among us.

[216] Sierra Club and Appalachian Mountain Club Collaboration, White Mountain Forest, New Hampshire—July 20–27. *Leader, Ken Limmer, 7-B Oliver Ct., Pittsburgh, PA 15239.* The Pemigewasset Valley, the largest roadless area in the east, offers steep, cascading streams, the highest peaks of the White Mountains, and deep conifer and softwood forests. We'll work with the AMC ditching, building waterbars, and making log or rock steps on Twin Brook Trail. In our free time we can climb Garfield or Mt. Galehead, or explore the Great Gulf of Mt. Washington. Then it's back to Camp Dodge for showers and a farewell dinner. This trip will be moderately strenuous and you must be 18 years or older.

[217] Beginning Campers Trail Maintenance, Mt. Rainier Park, Washington—July 23–August 2. *Leader, Laurie-Ann Barbour, 3131 Quintara St., San Francisco, CA 94116.* This trip to Hidden Lake in spectacular Mt. Rainier Park is the third service trip geared to inexperienced backpackers. Some degree of physical fitness and a little preparation are the only prerequisites for this relatively short and easy trip. We'll spend our time enjoying the scenery, walking up some of the local peaks for the views, and helping the local Park Service put waterbars into the trails. Please sign up early so you'll have time to get ready. Experienced campers who are willing to help the less-experienced are also welcome.

[218] The Sierra Club's Own Trail Construction Project II, John Muir Wilderness, Sierra—July 24–August 3. *Leader, Flint Ellsworth, 1770 Dean York Ln., St. Helena, CA 94574.* For five years, the Sierra Club has been dedicated to reconstructing its adopted trail from Upper Graveyard Meadows over Goodale Pass (10,960) and down to Papoose Lake. Our group will be working on the last stretch, creating a gently sloping trail out of a rocky hillside. The work is challenging and rewarding, and suitable for anyone in good condition. A moderately strenuous 11-mile hike will bring us to our campsite above Lake of the Lone Indian, which offers a splendid vantage point for sunrises and sunsets. Numerous nearby lakes offer fishing and swimming for our rest days, while Mt. Izaak Walton (12,099) and Graveyard Peak (11,494) issue the challenge to fight gravity! Join us for a fun and fulfilling vacation.



Dry wall built in camp (Carol Crews)

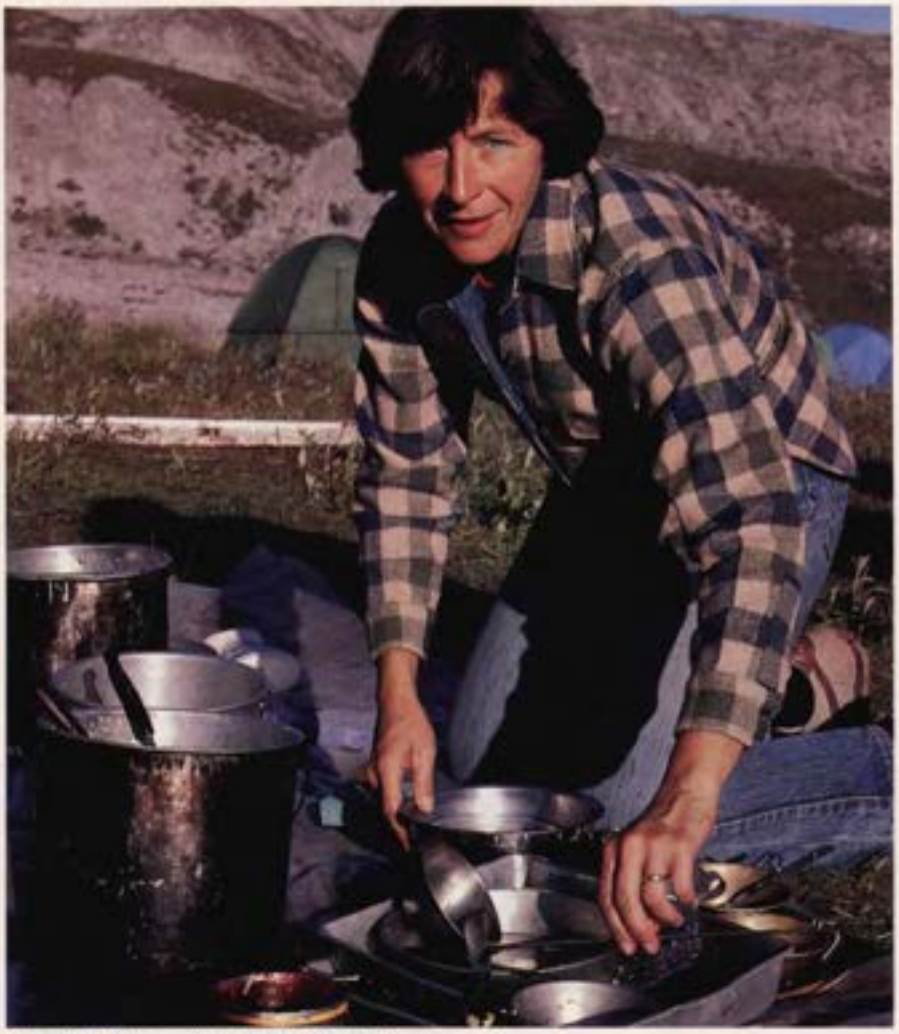
[219] Teton Wilderness Trail Project, Bridger-Teton Forest, Wyoming—July 28–August 7. *Leader, Jay Brooks, 700 New Hampshire Ave., NW, #812, Washington, DC 20037.* The Teton Wilderness offers a sharp contrast to the sheerness of the adjacent Teton Range. The wilderness consists primarily of gentle rolling mountains with large, green meadows. We will be doing trail maintenance—brushing and cutting downfall—which may require relocation of camp as we proceed. The area is well known for its abundant wildlife and wildflowers.

[220] Mt. Hood Timberline Trail Maintenance, Cascade Range, Oregon—July 31–August 10. *Leader, Rick Zenn, 2533 NE 64th, Portland, OR 97213.* One of the premier hikes in Oregon, the Timberline Trail circles Mt. Hood (11,245) passing alpine meadows, glacial streams, and dramatic ridges. The 40-mile trail and its stone shelters were built by the Civilian Conservation Corps in the 1930s. We will begin and end at Timberline Lodge, hiking around the mountain mostly at timberline (about 6,000 feet) sometimes dropping into deep woods or climbing over higher ridges. We will do brushing and trail maintenance work, mostly on the north side of the mountain. A food cache will lighten our loads. The wildflowers should be at their peak this time of year.

[221] Maroon Bells-Snowmass Wilderness, White River Forest, Colorado—August 1–11. *Leader, Bruce Horn, P.O. Box 9907, Stanford, CA 94305.* We will continue the work in the Maroon Bells area that we began two years ago. The area, just outside Aspen, Colorado, receives heavy use, and because of the wet winters, requires more maintenance than the Forest Service can provide. Our work will be mostly above timberline at 11,000 to 12,000 feet, and will consist of building "turnpikes" or rock causeways, installing waterbars, and other maintenance. Conundrum Hot Springs is a dayhike away, as are Copper Basin, Precarious Peak, and excellent views of the Maroon Bells.

[222] Burnt Fork Trail Reroute and Waterbar Brigade, High Uintas, Utah—August 3–13. *Leaders, Jon Nichols and Sherri Serna, 338 W. Elvira Rd., Tucson, AZ 85706.* This year's trip to the beautiful Uintas will be in a seldom-used area. We will be rerouting 6 miles of trail (to eliminate several stream crossings), constructing waterbars, and clearing brush and deadfalls. This newly designated wilderness area is well known for its great scenery and fishing. All ages are welcome.

[223] The Sierra Club's Own Trail Construction Project III, John Muir Wilderness, Sierra—August 7–17. *Leader, Connie Spangler, 210 N. Ash, Eugene, OR 97402.* The Goodale Pass trips are becoming a great service trip tradition. Our project will be to complete any work left unfinished by trip #218; we will then devote our efforts to connecting the Goodale Pass Trail to the Pacific Crest Trail a mile away. The work will involve setting waterbars and some dry wall, and building cor-



Denali Park Service Trip, Alaska (Roy L. Bergstrom)

duroy through fragile meadows to reduce human impact. Free time may be spent relaxing in a beautiful meadow, swimming or fishing in the many local lakes, or climbing the local peaks: Mt. Izaak Walton (12,099), Silver Peak (11,878), or Graveyard Peak (11,494).

[224] Cloud Peak Primitive Area, Big Horn Forest, Wyoming—August 13–23. *Leader To Be Announced.* This is our second trip to Cloud Peak Primitive Area in the Big Horn Wilderness in northeastern Wyoming. Because this area has recently been discovered by backpackers, many of the trails are becoming overused and undermaintained. Since together we can accomplish more work than the normal Forest Service crew, we will be helping them catch up on their trail maintenance projects: building waterbars, causeways, and rockwall, as well as handling other drainage problems on the trails. An optional hike to Cloud Peak (13,175), as well as hikes to nearby lakes will occupy our free days. This is a moderate to (optionally) strenuous trip.

[225] Santa Barbara Canyon, Pecos Wilderness, New Mexico—August 17–24. *Leader, Linda Dutcher, 606 Alto St., Santa Fe, NM 87501.* The Santa Barbara Canyon lies in the northernmost part of the 223,667-acre Pecos Wilderness near the Truchas Peaks (13,000). We will be camping by alpine meadows at 10,400 feet, improving drainage where the trail crosses wet areas, and replacing barriers on switchbacks. An every-other-day work schedule allows time to climb peaks or just hike and take in the views in this rugged, heavily forested area.

[226] Lost Creek Wilderness, Pike Forest, Colorado—August 18–28. *Leader, Jim Bock, 1859 23rd St. Boulder, CO 80302.* A 7-mile hike will take us 3,000 feet up to our base camp by the meadows of Lake Park (11,200). We will work on the trail to the north, which winds its way past granite cliffs to some of the highest elevations in the wilderness. On free days we may even go on multiday hikes following our 28-mile loop trail down through fern and aspen groves to explore the disappearing character of Lost Creek itself.

[227] Washakie Wilderness Trail Construction, Shoshone Forest, Wyoming—August 20–30. *Leader, Conrad Smith, 838 Eddystone Ave., Columbus, OH 43224.*

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 back into the wilderness some work 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

The Fishhawk Creek Trail, which provided foot and horse access to the remote Thorofare region southeast of Yellowstone Park, was destroyed in a 1981 flood. This will be the first year of an ongoing effort to reconstruct obliterated portions of this 17-mile trail. After five strenuous work days we will reward ourselves by backpacking deep into the wilderness. We will experience 11,000-foot ridges, large meadows, and deep, forested canyons that contain glaciers and grizzly bears. For adventurous hikers in excellent physical condition.

[228] Steelhead Lake Womens Trail Maintenance Project, Inyo Forest, Sierra—August 21–31. *Leader, Laura Shaw, 10002 Pescadero Rd., Loma Mar, CA 94021.* Join us on this women-only trip as we repair the Steelhead Lake Trail in the McGee Canyon on the east side of the Sierra. We'll work for about half the trip. Our free days can include hikes to the McGee Lakes and to McGee Pass, climbs of mounts Stanford and Crocker or of Red Slate Mountain. Of course, we can also fish, botanize, relax, or do whatever appeals when we get there.

[229] Long Mountain Lake Trail Maintenance Project, Panhandle Forest, Idaho—August 24–September 3. *Leader, Anne Bade, 2315 Russell St., Apt. A, Berkeley, CA 94705.* Long Mountain Lake is the site of our camp, nestled below Pyramid Peak. From nearby Parker Ridge, we will have a panoramic view of the Selkirk Range and an overlook of Long Canyon, the proposed wilderness area in the region. Long Canyon is currently accessible by a very steep trail; we will work on a new trail with a gentler slope. On free days, nearby peaks provide climbing for the energetic, while numerous lakes provide fishing and swimming opportunities. We may see moose, eagle, and other wildlife. Join us for a strenuous, challenging, and rewarding trip.

[230] Baxter Park Trail Improvement, Maine—August 25–September 2. *Leader, Irwin Rosman, 293 Greve Dr., New Milford, NJ 07646.* This will be our third year revamping the Webster Lake and Freezeout trails. We'll camp at Webster Lake (a great place to watch loons) and have a canoe for our use. Work will consist of constructing bog bridges, removing about 2 miles of phone cable, and cleaning up an old logging camp. We'll backpack in and out, so this is a fairly strenuous trip. At the end we'll climb Baxter Peak (weather permitting) and further explore this fine park of 200,000 acres of forest, streams, and lakes. This area is home to otter, beaver, fox, deer, bear, and moose.

[231] Grand Canyon Trail Maintenance and Cleanup, Kaibab Forest, Arizona—August 29–September 7. *Leader, Peter Curia, 1334 W. Willetta, Phoenix, AZ 85007.* The North Rim of the Grand Canyon is more isolated and less frequented than the South Rim and contains a Canadian coniferous-type forest. We will have alternate work days and plenty of time to explore the area.

[232] Boundary Waters Canoe Area, Minnesota—September 1–8. *Leaders, Mary Louise and Vince White-Petteruti, 320 S. Maple, Oak Park, IL 60302.* This will be the first backpack-canoe service trip in the BWCA. Our project involves hiking part of the Kekekabic Trail and base camping at scenic Bingshick Lake. We will be creating a new loop trail around Jap Lake. One third of this new trail was cleared by a 1983 trip. Our well-earned free days will be spent canoeing the northern portion of the park. Canoeing experience is required and good physical conditioning is necessary.

[233] Baxter Park Trail and Fall Foliage Project, Maine—September 21–29. *Leader, Maggie Seeger, 60 Beacon St., Arlington, MA 02174.* Baxter's forests will be a blaze of orange, red, and yellow—fall colors at their peak. This is an ideal season in the park, with clear days, crisp nights, and few bugs. We'll base camp near South Branch Pond and work on new trail construction and/or clearing and erosion control on existing trail. In our free time we can canoe, watch for moose, or just relax and enjoy the beauty. Weather permitting, we'll climb Baxter Peak and do the Knife Edge at the end of this moderately strenuous trip. All over 18 are welcome.

[391] Wild and Scenic River, Missouri—October 20–26. *Leader, Rick Rice, 1100 N. Sycamore, Creston, IA 50801.* Enjoy the fall colors of the Ozarks while building and upgrading trails in the scenic and rugged Mark Twain National Forest. We will be working along and near the Eleven Point River, which is a Wild and Scenic river. This is a hilly, isolated area heavily forested with hardwoods. We will work from a base camp, with time for dayhikes and exploration. Southern Missouri at this time of year is truly unique and beautiful.

Packstock with gear, Sierra (Carol Crews)

Cleanup Projects

[234] Big Pine Creek Cleanup, Inyo Forest, Sierra—August 6–16. *Leader, Karen Johnson, 1060 Monterey Ave, Berkeley, CA 94707.* Join us in the Palisades for a week of picking up trash, dayhiking, revegetating campsites, restoring the natural beauty of the area, and admiring the flowers, lakes, and meadows. The weather in the Sierra is reliably sunny and warm at this time of year, and the mosquitos will have died off. The area is dominated by Mt. Agassiz and the Palisades; a hike to Jigsaw Pass rewards the dayhiker with a good view into Dusy Basin.

[235] Lower Minam Cleanup, Eagle Cap Wilderness, Oregon—August 24–September 3. *Leader, Bob Hayes, 1891 Happy Ln., Eugene, OR 97401.* Celebrate a conservation victory! Northeastern Oregon's Lower Minam Valley contains a magical river, excellent fishing, scenic meadows, and is now a 34,000-acre addition to the Eagle Cap Wilderness. This strenuous trip combines four days spent removing man-made scars from the Lower Minam (4,500–6,000) with a looping backpack

Building trail, Sierra (Carol Crews)

through the high Wallowa Mountains (6,000–7,500) to inspect previous wilderness revegetation efforts.

Wilderness Restoration Projects

[236] Yosemite Valley Restoration Project, Yosemite Park, Sierra—June 11–21. *Leader To Be Announced.* This year's trip will complete the final of our three objectives in Yosemite Valley: tree removal in traditionally open meadowland. In addition, we will hike to Little Yosemite Valley for repair of the Half Dome trail. We will also work a day at the Sierra Club's LeConte Lodge. Altitude ranges from 3,500 to 9,000 feet. This trip is rated moderate. Free days give us access to Merced Lake, Glacier Point, and Half Dome. Fishing and sunbathing optional. Everyone welcome!

[237] Denali Park Restoration Project, Alaska—July 30–August 9. *Leader, David Simon, 4017 Villa Vera, Palo Alto, CA 94306.* Come join us in spectacular Denali Park, land of caribou, grizzly bear, and Mt. McKinley. The Park Service will fly us to the work site, where we will be eradicating evidence of past mining activities. The trip will end with a moderately strenuous, cross-country backpack over 25 miles of tundra. *Due to the anticipated demand for spaces on this trip, a lottery will be held to allocate available spaces.*

[238] Indian Henry's Meadow Restoration Project, Mt. Rainier Park, Washington—August 6–16. *Leader, Ira Golub, 49 Remsen Ave., Roslyn, NY 11576.* Come see the wonders of Mt. Rainier Park on this trail eradication trip. In addition to the scenery, we may be joined by a botanist and geologist from the park. Our work will include repairing old trail scars and replanting areas denuded during recent trail repair.

[239] Tuolumne Meadow Restoration Project, Yosemite Park, Sierra—September 4–14. *Leader, C. E. Vollum, Rt. 5, Box 66A, Albert Lea, MN 56007.* Tuolumne Meadow is the largest subalpine meadow in the Sierra. We will take on the task of removing trees where they are encroaching on the meadow. This project involves cutting, limbing, and chopping up logs to load them onto a waiting Park Service truck. Free days offer the best of the park, with Tenaya Lake and Cloud's Rest close by. Altitude ranges from 8,600 to 10,000 feet; all ages are welcome. This trip is moderately strenuous.

(Carol Crews)

River Projects

[52] Owyhee River Cleanup, Oregon—June 2–6. *Leader, Jim Gifford, 7434 SE 36th, Portland, OR 97202.* We will help maintain the pristine beauty of this remote area as we follow the Owyhee through a series of dramatic canyons. The river offers superb whitewater and geography that will remind you of the Grand Canyon. Our work will consist primarily of removing trash, debris, and excess fire circles. No prior rafting experience is necessary, only a willingness to work and a love of the wilderness. Our guides will provide all river gear and instruction in rowing.

[241] Salmon River Work and Raft, Klamath Forest, California—June 3–13. *Leader, Bill Weinberg, 1465 Hayes St., San Francisco, CA 94117.* Considered by some to be one of the most technically difficult river runs in the country, the Salmon River does not have an adequate trail system for scouting rapids or emergency rescues. We will be building a trail down a steep slope to Cascade Rapids and roughing-in next year's trail at Last Chance/Freight Train; both Class V whitewater. Off days will be spent rafting the Salmon with a possible two-day hike into the nearby Marble Mountain Wilderness. Applicants must be able to swim and previous rafting experience is necessary.

[242] Lower Salmon "Row-It-Yourself" Cleanup Trip, Idaho—August 25–29. *Leader, % Bill Gifford, 3512 NE Davis, Portland, OR 97232.* Our float will cover the lower 50 miles of the Salmon River and 15 miles of the Snake River below its confluence with the Salmon. We will be running late in the season at low water levels, so more debris and trash will be exposed. Removal of tires, large debris, and any trash left behind by the season's rafters will be our goal. The lower Salmon offers both outstanding canyon scenery and exciting whitewater. This is a "participatory" trip—our outfitter provides smaller two- to three-person rafts, offering those who are interested the opportunity to row their own raft. Participation in the full work project and commissary chores is required.

[243] Rogue River "Row-It-Yourself" Cleanup Trip, Oregon—September 22–26. *Leader, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.* The Rogue alternates quiet stretches of peaceful floating with fast-moving whitewater rapids. We will be running late in the season at low water levels, so more debris and trash will be exposed. Removal of any trash left behind by the season's rafters will be our goal. Wildlife and wilderness scenery are abundant in this section of Zane Grey country, located in the Siskiyou Mountains. This is a "participatory" trip—our outfitter provides smaller two- to three-person rafts, offering those who are interested the opportunity to row their own raft. Participation in the full work project and commissary chores is required.

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.

Setting up camp in Tuolomne Meadows, Sierra (Carol Dienger)

[375] Adirondack Ski Tour, New York—January 13–18. *Leader, Walter Blank, RD #1, Box 85, West Ghent, NY 12075.* While staying in an AMC lodge we will take numerous day tours in the High Peaks region of the Adirondacks. There will be one overnight trip to a wilderness cabin high in the Johns Brook Valley. One day will be devoted to intensive instruction in telemark skiing techniques by a certified nordic instructor.

[376] Long Pond, Moosehead Lake Region, Maine—February 3–9. *Leader, Fred Anders, 117 Leverett Rd., Shutesbury, MA 01072.* East of Greenville is a large wilderness tract containing numerous mountains in the 2,000- to 3,000-foot range. Our log cabins are nestled along the shore of Long Pond, 6 miles from the nearest paved road. All personal equipment must be skied in via old logging roads. Once the wood stoves are blazing, the trip will assume a relaxed pace. Optional day trips include The Hermitage, Trout Pond, Slugundy Gorge, and Monument Ledges. Expect cold days, lots of snow, and good skiing.

Cross-country skiing, Sierra (Carol Dienger)

[377] Zealand Valley Cross-Country Ski, White Mountains, New Hampshire—March 3–8. *Leader, Maggie Seeger, 60 Beacon St., Arlington, MA 02174.* North of Franconia and Crawford notches, the Zealand Valley provides outstanding cross-country touring. We can visit iced-over Thoreau Falls, climb Mt. Hale or Zeacliffs for the long winter views, and ski across the beaver ponds and through groves of white birches. We'll make our plans each day when we leave our lodging at AMC's Zealand Hut. Day one is tough: 7 miles with full packs. Thereafter the trip is moderate with strenuous options. Skiers should be of intermediate level with experience off groomed tracks.

[53] Crater Lake Cross-Country Ski Tour, Oregon—April 14–20. *Leader, Tim Odell, 750 W. Broadway, Eugene, OR 94702.* Crater Lake National Park has an average yearly snowfall of 50 feet and offers outstanding spring ski touring with views of the lake, cornice-topped cliffs on the crater's rim, and the mountains of southern Oregon. The first three days will be spent touring from a base camp. We will come out for a night in a lodge, and then spend four days on the 38-mile tour around the lake. The trip will be moderate to strenuous. Skiers should have intermediate skills and backpacking or snowcamping experience.

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 adrenalin rush or a slack-water canoe trip at a much slower pace, the closeness to nature is a constant. ▲ Some of the rivers we run belong to the Wild and Scenic Rivers 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 meaningful dimensions to the experience of a water trip often missing on commercial trips.

Raft Trips

RAFT TRIPS combine the excitement of whitewater rapids with the natural wonders of wild-river areas. Our outfitters are carefully selected to provide safe equipment and good food. Boatmen are experienced and happy to pass on some of their knowledge of the river and the area through which it passes. Sierra Club trips are oar-powered with relatively small rafts —no motor fumes, no noise.

Paddle-raft trips where participants power the raft themselves are also offered under the guidance of an experienced boatman. This is an exhilarating experience in which participants quickly learn to read the river and maneuver their raft through whitewater, thus experiencing for themselves the power and serenity of the river. Trip members also have the opportunity to participate fully in the chores of a river camp, and to experience the camaraderie and sense of teamwork that comes from playing and working together.

All Sierra Club raft trips include a Club trip coordinator who, through background, training and interests, brings to the job a knowledge of conservation problems and a better understanding and appreciation of the wilderness than is found on most commercial trips.

[379] River of Ruins Raft Trip, Mexico—February 25–March 8. *Trip Coordinator, John Garcia, 124 Romero Circle, Alamo, CA 94507.* This trip offers rafting and ancient Mayan ruins in a tropical jungle setting. Our trip begins in Villahermosa, where we will see the ancient Olmec heads. We then travel to Palenque and Bonampak, where we can explore the Mayan ruins. We will board our rafts on the Usamacinta River, which forms the boundary between northern Guatemala and Mexico, and which will be our road through the lush jungle. Highlights will include visits to the Mayan city-states of Yaxchilan and Piedras Negras, and there will be opportunities to observe a large variety of exotic plants, animals, and birds.

[56] Owyhee River "Row-It-Yourself" Raft Trip, Oregon—May 12–16. *Trip Coordinator, Doris Allen, 1975 Tigertail Rd., Eugene, OR 97405.* Flowing through a series of dramatic high-desert canyons in southeast Oregon, the Owyhee offers superb whitewater and continually changing geography reminiscent of the Grand Canyon. This is true wilderness; perhaps the most remote river trip in Oregon. The river is on the Pacific flyway and is a bird-watcher's paradise. This trip is ideal for the beginning or intermediate rafter, and no rafting experience is necessary. Instruction in rowing and all river gear are provided. A geologist who has studied the area will accompany us.

[57] Rogue River Raft and Lodges, Oregon—May 20–24. *Trip Coordinator, Mark Minnis, 14900 Galice Rd., Merlin, OR 97532.* Raft the Wild and Scenic Rogue River while staying in wilderness lodges with all the comforts of home. We will spend five days on the Rogue in oar boats led by experienced river guides. Each night will be spent in a wilderness lodge with home-cooked, family-style meals, clean beds, and hot showers. We will layover at Half Moon Bar and enjoy the awakening of spring. A naturalist will lead field trips to discuss the flora and fauna of the canyon. We hope to have a chance to hear the drumming of the ruffed grouse in the splendor of the Wild Rogue Wilderness.

[58] Grand Canyon Oar, Arizona—May 26–June 6. *Trip Coordinator, Kurt Menning, 997 Lakeshire Ct., San Jose, CA 95126.*

[252] Grand Canyon Oar, Arizona—June 21–July 2. *Trip Coordinator, Harry Neal, 25015 Mt. Charlie Rd., Los Gatos, CA 95030.*

Cactus near Saddle Canyon, Grand Canyon (Nancy Dagle)

[259] Grand Canyon Oar, Arizona—August 9–20. *Trip Coordinator, Lynn Dyche, 2747 Kring Dr., San Jose, CA 95125.*
[264] Grand Canyon Oar, Arizona—September 6–17. *Trip Coordinator, Victor Monke, 9033 Wilshire, #403, Beverly Hills, CA 90211.*
The Colorado River, one of the greatest whitewater rivers in the world, provides an unforgettable experience for those who travel its 225 miles by oar-powered raft. Each of our rafts will carry three or four passengers and a professional oarsman. The quiet and natural flow of the rafts will allow us to fully appreciate the character and solitude of the canyon. We will stop frequently to study and explore features and creatures often missed on commercial trips. Minimum age 15 (18 solo). Cost includes round-trip transportation from Flagstaff, Arizona.

[245] Rogue River Raft Trip, Oregon—June 10–14. *Trip Coordinator, Ruth Dyche, 2747 Kring Dr., San Jose, CA 95125.*
[253] Rogue River Raft Trip for the Hearing Impaired, Oregon—June 24–28. *Trip Coordinators, Meg Levine and Steve Griffiths, 150 Beau Forest Dr., Oakland, CA 94611.*
[256] Rogue River Raft Trip, Oregon—July 8–12. *Trip Coordinator, John DeCock, 53 Landers St., Apt. 2, San Francisco, CA 94114.*
[258] Rogue River Raft Trip, Oregon—August 5–9. *Trip Coordinator, Jon Kangas, 10141 Bon Vista Ct., San Jose, CA 95127.*
The Rogue River provides a perfect river-running experience. Rapids of varying intensity provide fun and excitement while calm stretches allow time for reflection and appreciation of the natural beauty of the Rogue River Canyon. This area is rich in the relics and history of Indians, settlers, and early miners. Wildlife sightings are common. An inflatable kayak and a paddle raft will be available for those who seek the thrill of paddling their own raft. There will be ample time for swimming, hiking, and exploring. This is a great trip for families as well as singles. Minimum age is eight.

[246] North Fork John Day River "Row-It-Yourself" Raft Trip, Oregon—June 12–15. *Trip Coordinator, John Griffiths, 9564 SE Tenino Ct., Portland, OR 97266.*
This is a beautiful river with fun yet easy whitewater. We will run the section from above Dale down to Monument. Little-known and little-run, this high-forest river was proposed for inclusion in the Wild and Scenic Rivers System for its beauty, fishing, and wildlife. No rafting experience is necessary; this trip is suitable for beginners or experienced rafters, and for families with children age ten and older. Instruction in rowing and all river gear are provided. Our outfitter is noted for quality of instruction and good food. Trip price includes car shuttle.

Little Colorado, Grand Canyon, Arizona (Mark Larson)

[247-E] John Day River "Row-It-Yourself" Raft Trip, Oregon—June 16–20. *Trip Coordinator, c/o Bill Gifford, 3512 NE Davis, Portland, OR 97232. Naturalist, Dr. William Orr.* We will float 70 miles of isolated wilderness on the beautiful and peaceful John Day, exploring fossil beds and formations with Dr. Orr. The river is a haven for birds and wildlife, with ample swimming and gorgeous backcountry to hike. The rapids are mild (Class II), the current smooth and even, and the weather should be hot and sunny. This will be a relaxed trip suitable for beginners, families, and children eight years or older. Instruction in rowing and all river gear are provided. Trip price includes car shuttle.

[248] Green River Dory Trip, Utah—June 16–21. *Trip Coordinator, Sallie Menning, 997 Lakeshire Ct., San Jose, CA 95126.*
Many veteran river tourers say this stretch of the Green River approaches the grandeur of the Colorado, with colorful steep cliffs, alcoves, amphitheaters, and dashing sidestreams to beckon hikers. In addition, the area is steeped in the history of Butch Cassidy (including his real hideout), other settlers, and Indians with their ancient dwellings, petroglyphs, and giant groves of cottonwoods. There are 40 rapids, beginning mildly and gradually increasing in size, allowing a few of the more adventurous to take a turn at paddling inflatable kayaks, while others ride in oar-powered, wooden dories. This trip begins and ends

at Green River, Utah. Minimum age is seven (18 solo).

[249] Trinity River Paddle Trip, California—June 17–20. *Trip Coordinator, Wheaton Smith, 243 Ely Pl., Palto Alto, CA 94306.*

[262] Trinity River Paddle Trip, California—August 19–22. *Trip Coordinator, Harry Neal, 25015 Mt. Charlie Rd., Los Gatos, CA 95030.*

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 yet are fairly safe. Participants will be trained to paddle effectively, and by trip's end all will be accomplished rafters. Minimum age is 12.

[250] Yampa/Dinosaur Paddle Raft Trip, Utah—June 19–23. *Trip Coordinator, Mary O'Connor, 2504 Webster St., Palto Alto, CA 94301.* Join forces with fellow paddlers as you maneuver your raft with the help of an experienced river guide through the 75 miles of deep, colorful sandstone canyons of Dinosaur National Park. This is an excellent trip for families, offering a beginning to intermediate challenge (the maximum rating is Class IV). There will be time to explore historic pioneer and Indian sites, swim, fish, and observe the abundant geological formations and wildlife. Trip begins and ends in Vernal, Utah.

[251] Canyonlands Rafting-Hiking-Jeeping Trip, Utah—June 21–July 1. *Trip Coordinator, Chuck Fisk, Box 67, Blairsden, CA 96103.* This trip is an extraordinary, and varied introduction to the magnificent and colorful canyonland country of southern Utah. Ride the rapids through Cataract Canyon of the Colorado River in oar-powered rafts; float through colorful labyrinth and the Stillwater Canyons of the Green River; jeep and hike through remote sections of Arches and Canyonlands national parks. We will explore remote Anasazi cliff dwellings, examine ancient petroglyphs and pictographs, and camp along the rivers. Our rafting, hiking, and jeeping are uniquely intertwined to introduce variety and activity into this rafting trip. The trip begins and ends in Green River, Utah. Minimum age 12 (18 Solo).

Grand Canyon (Nancy Dagle)

[254] Kongakut River Expedition, Arctic Wildlife Refuge, Alaska—June 24–July 5. *Trip Coordinator, Ruth Dyche, 2747 Kring Dr., San Jose, CA 95125.* We will enjoy undisturbed wilderness beauty on a grand scale and light shows put on by the midnight sun as we float through a region of prolific arctic-alpine animal life and a summertime floral explosion. The Kongakut passes towering peaks, luxuriant valleys, and colorful tundra as it flows north to the Arctic Ocean. Continuous sunlight allows plenty of time for hiking and photography, as well as excellent fishing opportunities. We hope to witness the migration of the Porcupine caribou herd, said to number in the tens of thousands. The trip begins and ends in Fairbanks, Alaska.

[255] Grande Ronde Rafting and Horseback Trip, Oregon—June 26–30. *Trip Coordinator, Tony Strano, Berth D-3, Waldo Point Harbor, Sausalito, CA 94966.* What could be more fortunate for the enthusiastic river rafter and the dedicated equestrian than a combination of both sports in one glorious five-day trip! We will enjoy the clear, cold waters of the Grande Ronde for two days, then cross into the Wenaha River canyon for three days in the saddle. There will be plenty of time for leisurely side-canyon and ridge hikes, excellent trout fishing, photography, painting or relaxing. This is an excellent family trip; the river flows swiftly, but there are no difficult rapids.

[257] Grand Canyon Alumni Trip, Arizona—July 16–27. *Trip Coordinator, Gary Larsen, 11871 Sunrise Ln., Grass Valley, CA 95945.* A very special experience for those who have been on many Grand Canyon trips. Harvey Butchart, the person who best knows the trails in the Grand Canyon, a chosen leader, and a chosen crew will lead you into new side hikes not experienced on former trips. Leader approval required.

[260] Salmon Paddle and Raft Trip, Idaho—August 11–15. *Trip Coordinator, Karen Short, 826 14th St., San Francisco, CA 94114.* Whether you are rowing your own 12-foot raft or enjoying the river as a passenger, this Lower Salmon raft trip will be an exhilarating experience filled with churning whitewater, colorful canyons, and a countryside that will take you back in time to the old mining west. A row-it-yourself option is a feature that makes this trip particularly attractive to many. For those who want to row their own two-person raft, instruction will be provided by experienced guides; you may never be satisfied with being just a passenger again. Give this trip strong consideration as a family trip. Nothing compares with the satisfaction of seeing your children learn river skills in a natural environment. The trip begins and ends in Lewiston, Idaho.

[261] Klamath River Paddle and Raft Trip, California—August 12–16. *Trip Coordinator, Bruce Macpherson, 6263 Montecito Blvd., #6, Santa Rosa, CA 95405.* Challenge the river in your own boat on this unique adventure in a stable, maneuverable, light inflatable kayak that is easy for novices to master. The trip will have raft support and will accommodate raft passengers as well. We will traverse scenic canyon country with abundant wildlife and moderate water temperatures ideal for swimming or just floating around in eddies after a day on the river. Spotting eagles, osprey, blue heron, river otters, deer, bear, and frogs is exciting for adults and children alike, making this an ideal family trip.

[263] Chilcotin River Raft Trip, British Columbia, Canada—August 26–30. *Trip Coordinator, Tris Coffin, 2010 Yampa Dr., Prescott, AZ 86301.* We run the entire turquoise, glacier-fed Chilcotin River on its 100-mile journey to join the larger Fraser River. Roller coaster rapids with fast-mov-

YOUR NAME		HAVE YOU RECEIVED TRIP SUPPLEMENT? ☐ YES ☐ NO	TRIP NO.:	TRIP LEADER:
STREET ADDRESS			TRIP NAME:	
			DEPARTURE DATE:	
CITY	STATE	ZIP	YOUR HOME PHONE:	
			YOUR WORK PHONE:	

PLEASE PRINT YOUR NAME AND THE NAMES OF OTHER FAMILY MEMBERS GOING ON THE TRIP	AGE	RELATIONSHIP	MEMBERSHIP NO.	HOW MANY OUTINGS HAVE YOU BEEN ON? Chapter	National
		SELF			

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

MAIL TO: SIERRA CLUB OUTING DEPT., DEPT. #05618, SAN FRANCISCO, CA 94139

YOUR NAME		HAVE YOU RECEIVED TRIP SUPPLEMENT? ☐ YES ☐ NO	TRIP NO.:	TRIP LEADER:
STREET ADDRESS			TRIP NAME:	
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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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Please note that this is a new address.

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ing water, deep canyons with sandstone spires, abandoned homesteads and gold sluices, heavy forests, grassy mountainsides, and abundant wildlife are all a part of this wilderness experience. This seldom-traveled river usually has few mosquitoes. Gourmet dinners include salmon, steak, and other delicacies, plus select Canadian wines. All campsites are very comfortable with fire pits surrounded by log or plank seats. This oar-powered trip allows time for paddling in easier stretches. Minimum age is 14.

Sailing Trips

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 placed on the natural history of the marine environment and on conservation issues.

[44] Blue Whale Expedition, Sea of Cortez, Mexico—March 24–31. *Trip Coordinator, Grace Hansen, 20990 Valley Green Dr., #717, Cupertino, CA 95014.* This is an exciting trip on the earth's youngest and richest sea. We'll travel aboard a comfortable vessel, the *Don Jose*, and our goal will be to observe the magnificent blue whale, the largest living creature on earth. We will drift with them, listening to their sounds and observing their behavior. We will also see many other species of whale and dolphin, as well as visit a sea lion rookery, local islands, and fishing villages. The birdlife in the area is spectacular, with many tropical seabirds including brown and blue-footed boobies, frigates, and pelicans. There will be time for hiking, beachcombing, birdwatching, and exploring. Trip price is from La Paz, Baja.

[265] Nova Scotia Sailing Adventure I—June 23–29. *Leader, Connie Thomas, 128 Muriel St., Ithaca, NY 14850.* From Halifax we'll cruise the Eastern Shore, visiting the sandy beaches, quiet coves, and pretty fishing villages of this picturesque province. Bras d'Or Lake, our destination, will come into view all too soon. *Windigo*, our 73-foot yawl, offers comfortable accommodations, hearty fare, and optional participatory sailing. We can enjoy the many birds, watch for whales, dig for clams and mussels, swim, relax, or go ashore for hiking or a taste of provincial history. Ability to swim is required. See also the description of trip #268.

[266-E] Inside Passage Sailing Trip, British Columbia, Canada—June 25–July 3. *Trip Coordinator, Linda Macpherson, 4443 Montecito Ave., Santa Rosa, CA 95404.* Cruise the Inside Passage off the coast of British Columbia in our beautiful 68-foot sailing vessel. A multitude of islands offers secluded anchorages, sandy beaches, and lush green forests. We will sail down fjord-like sounds and may spot whales, seals, otter, eagles, heron, and other coastal wildlife. There will be opportunities for fishing, clamming, sampling oysters, sailing the dinghy, exploring ashore, or simply relaxing in the sun. Emphasis will be on the natural history of the marine environment; a marine biologist will accompany us. The trip will begin in Vancouver, British Columbia.

[267-E] Sails, Whales, and Indians, British Columbia, Canada—July 17–26. *Leader, Mark Larson, 1265 Grant Ave., Arcata, CA 95521.* Motor and sail the waters of northern Vancouver Island aboard the new 68-foot *Island Roamer*. The trip offers very comfortable accommodations, excellent food, hiking, swimming, fishing, participatory sailing, and time to relax. A naturalist will accompany us as we watch *Orcinus orca* (killer whale) off Robson Bight, a new marine ecological reserve. We will also visit old Indian villages and archeological sites, go tidepooling and birdwatching, and learn more about the natural history of this fascinating region.

[268] Nova Scotia Sailing Adventure II—September 1–7. *Leader, Len Frank, 205 Moore St., Hackettstown, NJ 07840.* This trip is the mirror image of trip #265, with *Windigo* now homeward bound. We'll embark at Bras d'Or Lake and sail to Halifax. Please see the description of trip #265.

Rainey Falls, Rogue River, Oregon (Mark Larson)

[269] San Juan–Gulf Island Orca Sailing Adventure, British Columbia—September 8–13. *Trip Coordinator, Martin Friedman, 353 Montford Ave., Mill Valley, CA 94941.* This sailing adventure takes place at an ideal time when the summer crowds have left and the weather is still warm and mellow. We will board our vessel in Vancouver, and motor-sail among the lush Gulf Islands of Canada and the San Juan Islands of the United States. The sea is alive with orca and minke whales, porpoises, and sea lions. Many species of sea birds will also be seen. Among our stops will be a visit to Friday Harbor with its Orca Whale Museum; Sydney Spit, abounding with deer and pheasant; and Victoria, British Columbia, where we'll tour the magnificent provincial museum. There will be ample time to hike, fish, swim, and relax. The trip ends in Victoria.

[392] Baja Base Camp Sailing Adventure, Mexico—November 23–December 1. *Trip Coordinator, Hunter Owens, 4320 Stevens Creek Blvd., #185, San Jose, CA 95129.* Baja's coast is one of the most interesting in the world. It is a breeding ground for much sea life, including whales, seals, porpoises, and manta rays. The coastline provides a wealth of plant, animal, and bird life. We will use a base camp format and sail out daily to various places of interest. We will visit the remote coastline and many islands that are otherwise inaccessible. Our boats will be 18-foot yawl-rigged Drascombes, fully equipped and skippered by a sailing master. Sailing experience is not necessary, but you should be in good physical health and be able to swim. The trip will begin and end in Loretto, Mexico.

Canoe Trips

CANOEING is a unique do-it-yourself way to reach pristine wilderness: experience the tranquility 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. 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.

[54] Dismal Swamp Canoe Base Camp, Virginia/North Carolina—March 31–April 6. *Leader, Connie Thomas, 128 Muriel St., Ithaca, NY 14850.* Extending south from Norfolk, Virginia, into North Carolina, the Dismal Swamp comprises an area of lowlands, lakes, and the Northwest River, fed by tributaries of swamp origin. The swamp isn't really "dismal"; we should be able to observe spring warblers and other birds; frogs, snakes, and budding flora; with luck before mosquito season. (Grade A)

Canoeing in a California bay (Carol Dienger)

[55] Pine Barrens Canoe and Backpack, Pinelands Reserve, New Jersey—May 5–11. *Leader, Herb Schwartz, 2203 St. James Pl., Philadelphia, PA 19103.* Located surprisingly near New York and Philadelphia, this 2,000-square-mile wilderness remains a sand-bedded forest with cedar swamps and canoeable rivers. Once a colonial industrial area, its bog-iron furnaces supplied Washington with cannonballs. This vanished society is re-created in the restored town of Batsto, where our trip begins. We'll circle the heart of the Pine Barrens, hiking through ghost towns, cedar swamps, and dwarf-pine forests, then canoeing on winding, dark, cedar-water rivers. (Grade B)

[275] Main Eel River, California—June 3–8. *Leader, Jenny Dienger, 137 W. F St., Benicia, CA 94510.* This is a beginner's trip on moving water. The stretch from Alderpoint to South Fork takes us through surprisingly remote and outstandingly beautiful country. The water is clear and warm, and the flow exciting but not too demanding. Basic canoeing techniques will be taught, and canoes, paddles, and life jackets will be provided. This will be an outstanding river run and a great wilderness experience. (Grade A)

[276] John Day Whitewater, Oregon—June 9–14. *Leaders, Iila and Chuck Wild, 3862 Rosetta Ct., San Diego, CA 92111.* Join an exciting adventure and slip away (solo or tandem) on a favorite run for open canoeists. The 45 miles from Service Creek to Clarno Bridge includes areas designated as Wild and Scenic, with deep canyon walls. The flow is fast and strong, with many Class II and some Class III rapids. Some whitewater experience is required. Soloists should provide their own river gear. (Grade D)

[277] Southern Appalachian Whitewater, Georgia/North Carolina/South Carolina—June 16–22. *Leaders, Andrea and Bill Timpone, Rt. 2, Box 2306A, Clayton, GA 30525.* Experience some of the finest whitewater in the Southeast, including the Wild and Scenic Chattooga River. A small, private campground near Clayton, Georgia, will serve as our base camp at the edge of the Chattahoochee National Forest. Beginning with a river of Class II difficulty, we will drive to a different river each day, working up to Class IV or V on our final run. Participants must have prior whitewater canoeing experience. (Grade D)

[278] Vancouver Island Ocean Canoe, British Columbia, Canada—July 9–19. *Leader, c/o Bill Gifford, 3512 NE Davis, Portland, OR 97232.* We will explore the coastal wilderness of Nootka Sound and Esperanza Inlet on Vancouver Island's west coast. Steep mountains rise above glacier-carved inlets; an intricate maze of

offshore islands and reefs breaks the force of the open Pacific, providing protected canoe passages for exploration and discovery. Traveling in double-cockpit canoes, we will camp on uninhabited islands and beaches, with time for tidepooling, birdwatching, beachcombing, and observing wildlife. No prior canoe experience is necessary; instruction will be provided for beginners. Canoes and all water gear provided. (Grade A)

[279] Trinity River Touring, California—July 15–20. *Leader, Sharon Cupp, 4771 Granada Dr., Santa Rosa, CA 95405.* From Hawkins Bar to Weitchpec, we will tour an exciting stretch of this truly beautiful river. We'll run challenging rapids, camp on clean beaches, swim in clear, warm water, and enjoy the ideal climate. Basic river-touring and whitewater canoeing will be taught. All river gear provided. (Grade C)

[280] Trinity River Whitewater, California—July 22–27. *Leaders, Molly and Bill Bricca, P.O. Box 159, Ross, CA 94957.* This is a base camp trip, which means that we canoe with flotation and without gear. The put-in is near Big Bar; we will run selected stretches from there to Weitchpec. Most rapids are Class II, with one Class III. The area is scenic and the river clear, warm, and beautiful. The weather should be ideal. This trip will advance your river-reading and whitewater skills. Instruction and all river gear are provided. (Grade C)

[281] Upper Albany River Wilderness, Ontario, Canada—July 27–August 9. *Leaders, Larry Ten Pas and Anne Knott, 2413 S. 15th St., Sheboygan, WI 53081.* Savor the paddling, scenery, and fishing of the crown lands of northern Ontario. Located 250 miles northwest of Thunder Bay, the Albany offers unusual variety, including swampy meanders, waterfalls, whitewater, and large lakes. Inhabitants include moose, bear, and timber wolf. This will be a strenuous trip averaging 15–20 miles per day with Class II and III whitewater and portages up to a half mile. One or two layover days are planned. We will fly out from Ft. Hope to Pickle Lake. Whitewater experience is necessary; rentals are available. (Grade D)

[282-E] Boundary Waters Canoe Area Wilderness, Minnesota—August 11–16. *Leader, Paul Regnier, Rt. 1, Indianola, IA 50125.* Experience the loon's eerie laughter, the breathtaking natural beauty of the north woods, and the crystal clear waters of upper Minnesota. This six-day canoe trip led by a naturalist includes an educational component for those who wish to learn more about wilderness and the natural world; a layover day; and plenty of time for fishing, swimming, and personal observations. Basic canoeing skills are required. (Grade B)

[283] Bighole and Jefferson Rivers Canoe, Montana—August 11–17. *Leader, Chuck Schultz, 1024-C Los Gamos Rd., San Rafael, CA 94903.* Moving water and trout are the drawing cards for this trip on the headwaters of the Missouri River. The

Rogue River Raft Trip, Oregon (Tad Wesson)

Bighole and Jefferson are touted for their brown and rainbow trout (a catch-and-release philosophy will be encouraged) while wildlife and waterfowl abound along the more isolated stretches. After honing our paddling skills on the lower Jefferson, we move to the Bighole to begin our 100-mile trip. Canoes are not provided, but rental is available in Montana. (Grade C)

[284] Rogue River, Oregon—August 12–17. *Leader, Winnie Heppler, 18 Columbia Circle, Berkeley, CA 94708.* We commence with a jet-boat ride upriver from Gold Beach to Agness. After a practice session on the crystal-clear Illinois River, we start our leisurely descent of the Rogue. This stretch is big and powerful yet reasonably easy to navigate. It runs through a forested canyon—scenic, remote, rich in tradition, and abundant in wildlife. Basic canoeing will be taught and all river gear provided. (Grade B)

[285] Adirondacks Canoe Cruise, New York—August 17–25. *Leader, E. Allan Blair, 20 Linden Ln., Plainsboro, NJ 08536.* Adirondack Park in northern New York State, one of the largest protected wilderness areas in the east, was once the summer playground of the richest people in the country. We will paddle about 90 miles on rivers and lakes from Old Forge to Saranac Lake, camping eight nights in wilderness campsites with the water on one side and the mountains on the other. Following the route of the fabled Adirondack guides, the pace will be easy, with occasional portages. This area offers fishing, swimming, waterfalls, and beautiful scenery. (Grade B)

[393] Green/Colorado Rivers, Utah—September 22–October 1. *Leaders, Iila and Chuck Wild, 3862 Rosetta Ct., San Diego, CA 92111.* From the town of Green River to the Green's confluence with the Colorado, we will leisurely canoe the Green River through the gentle, pristine wilderness into Canyonlands National Park. The twisting river winds its way between sheer, colorful sandstone walls hundreds of feet high. Swimming, exploring remote canyons, and viewing ruins are possible on layover days. After a 120-mile canoeing adventure, we will rendezvous with jet boats at the confluence for a refreshing 50-mile cruise up the Colorado River to Moab. Canoeing skills will be taught; beginners of good spirit are welcome. River gear is provided. (Grade A)

[394] Southern Winter on the Suwannee, Florida—January 4–11, 1986. *Leader, Rick Egedi, 117 Hawkins Ave., Somerset, KY 42501.* Canoe through the foreboding forests of cypress and live oak along the Suwannee River, enjoying the wildlife drawn to one of nature's giant waterholes. Bring your camera and take advantage of winter's low water level to take pictures of the teeming wildlife and architectural wonders of nature. Enjoy the mirrored water surfaces and picturesque sunsets. The Suwannee is fed by the Okefenokee Swamp and many springs, large and small. During the latter part of the week we will cruise by white sand beaches, reminding us of warm snow. Travel will be leisurely, with time to relax and reflect. (Grade A)

Trip Number	E = Educational Outing • = Leader approval required	Date	Rating	Trip Fee (including Deposit)	Deposit	Leader
Alaska Trips (See Service and Water Trips for other Alaska outings.)						
60	•Southwest Alaska Bicycle Tour	June 16-26		600	70	Betty & Paul Tamm
61	Kenai Fjords Park Sea-Kayaking, Alaska	June 24-July 6		965	70	Carol & Howard Dienger
62	•Romanzof Mountains, Arctic Wildlife Range, Alaska	June 24-July 10		820	70	Cal French
63	•Admiralty Island Canoe Traverse	June 25-July 6		1295	70	John Ricker
64	•Alaska Wildlife to Hawaii's Volcanoes, Denali and Hawaii Volcanoes Parks	June 30-July 13		620	70	Pete Nelson
66	•Kenai Wildlife Refuge, Alaska	July 9-18		965	70	Dolph Amster
67	•Lake Clark Tri-Lake Backpack, Alaska	July 26-Aug. 4		645	70	Serge Puchert
68	•Mt. Hayes, Eastern Alaska Range	July 26-Aug. 8		660	70	Harry Reeves
69	Noatak River Float, Gates of the Arctic Park, Alaska	Aug. 4-17		700	70	Wilbur Mills
70	•Mt. Edziza Provincial Park, British Columbia	Aug. 5-16		495	35	Sharon & Bob Hartman
380	•Dog Sled Ski Tour, Kenai Peninsula, Alaska	March 3-13, 1986		890	70	Beverly & Les Wilson
Backpack Trips (See Alaska, Base Camp, Canoe, Foreign, and Highlight Trips for other Backpack outings.)						
35	•Cone Peak-Ventana, Coast Ranges, California	March 23-31	M	170	35	David Reneau
36	•Canyons of Death Valley, Cottonwood Mountains, California	March 31-April 6	M-S	200	35	Geoffrey Faraghan
37	•Lost Valley, Ventana Wilderness, Coast Range, California	April 5-13	L-M	160	35	Bob Berges
38	•Pines to Palms Novice Backpack, California	April 8-13	L-M	170	35	Louise French
39	•Galiuro Wilderness, Galiuro Mountains, Arizona	April 14-20	M-S	160	35	Sid Hirsh
40	•Kanab Canyon/Thunder River, Grand Canyon, Arizona	April 27-May 4	S	185	35	Peter Curia
41	•Rainbow Plateau, Utah/Arizona	April 27-May 4	M-S	270	35	Jim De Veny
42	•Parunaweap Backpack, Zion Park, Utah	May 12-18	M	220	35	John Ricker & Lynn Krause
43	•Sierra San Pedro Mártir, Baja California, Mexico	May 13-22	L	280	35	Wes Reynolds
46	•Land of the Noonday Sun, Nantahala and Chattahoochee Forests, North Carolina/Georgia	May 25-June 1	M	200	35	Chuck Cotter
71	•Grand Gulch Primitive Area, Utah	May 26-June 1	M	205	35	Marlo & Ron Miller
47	•Mt. Rogers Scenic Backpack, Jefferson Forest, Virginia	June 1-8	L-M	205	35	Cliff Ham
72	•Kilmer Wilderness and Citico Wild Area, Nantahala and Cherokee Forests, North Carolina/Tennessee	June 1-8	L-M	245	35	Dave Bennie
48	•Skyline Trail, Pecos Wilderness, New Mexico	June 2-8	L-M	160	35	Joanne Sprenger
73	•Black Elk Wilderness, Black Hills Forest, South Dakota	June 8-14	L	245	35	Faye Sitzman
74	•Dark Canyon, Utah	June 9-15	M	280	35	Norm Elliott
75	•Rose's Gap, Tennessee/North Carolina	June 12-19	M	225	35	Jim Absher
76	•Black Forest Trail, Pennsylvania	June 15-22	L	240	35	Len Frank
77	•Pink Beds of Pisgah Forest, North Carolina	June 15-22	L	275	35	Martin Joyce
78	•Cruces Basin Wilderness, Carson Forest, New Mexico	June 19-26	L	240	35	John Colburn
79	•Vermont's Green Mountains	June 23-29	M-S	245	35	Robert Bingham
80	•Crest of the Inyos, Inyo Mountains, California	June 23-29	M-S	185	35	Geoffrey Faraghan
81	•Gila Wilderness High Country, New Mexico	June 25-July 1	L-M	290	35	Richard Taylor
82	•Blossom Lake Leisure Loop, Sequoia Park, Sierra	July 4-14	L	240	35	Len Lewis
83-E	•Southern Yosemite Revisited/Photography, Sierra	July 5-13	L	280	35	Wes Reynolds
84	•Adirondack Park–Long Lake to Algonquin, New York	July 6-14	L-M	225	35	Edith Schell
85	•Glacier Peak Wilderness–Stehekin Valley, Washington	July 13-21	M-S	280	35	Rodger L. Faulkner
86	•Pinnacles, John Muir Wilderness, Sierra	July 13-21	L-M	220	35	Ed Shearin
87	•Whitney Lakes Loop, Sequoia Park, Sierra	July 15-23	M	200	35	Scot Jamison
88	•Elizabeth Pass, Sequoia and Kings Canyon Parks, Sierra	July 15-24	M-S	200	35	Jim Watters
89	•Hidden Lakes Leisure Loop, Bridger Wilderness, Wyoming	July 20-27	L	285	35	Jon Nichols & Sherri Serna

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90	•Trinity Alps, Mines and Lakes, Salmon-Trinity Alps Primitive Area, California	July 20-27	L-M	180	35	Jean Ridone
91	•Huckleberry Leisure, Emigrant Basin, Sierra	July 20-28	L	200	35	Helen & Ed Bodington
92	•Lake Italy, John Muir Wilderness, Sierra	July 20-28	M	200	35	Dwight Taylor
93	•Collegiate Peaks, San Isabel Forest, Colorado	July 20-Aug. 1	M-S	320	35	Al Ossinger
94	•Cranberry Rendezvous, Monongahela Forest, West Virginia	July 21-27	L	195	35	Chuck Cotter
95	•Sawtooth Sampler, Sawtooth Wilderness, Idaho	July 21-27	L-M	190	35	Dave Neumann
96	•South Buffalo Fork, Teton Wilderness, Wyoming	July 21-29	M-S	315	35	Kerry McClanahan
97	•Miter Basin–Crabtree Lakes, Sequoia Park, Sierra	July 25-Aug. 1	M	190	35	Bill Engs
98	•Lakes of the LeConte and White Divides, Sierra	July 25-Aug. 3	M	200	35	Bill Lewis
99	•Middle Fork Leisure Loop, Bridger Wilderness, Wyoming	July 27-Aug. 3	L	245	35	Virgene & Charles Engberg
100	•Sequoia Park, Sierra	July 27-Aug. 4	M-S	200	35	Carol Shapiro
101	•Backcountry Hot Springs Tour, River Of No Return Wilderness, Idaho	July 28-Aug. 3	M	300	35	Chuck Shinn
102	•Ocean to Mountains, Olympic Park, Washington	July 28-Aug. 6	M	275	35	Rob Jacobs
103	•Bench Valley, Sierra Forest, Sierra	Aug. 2-11	M	215	35	Ken Maas
104	•Ritter Range, Minarets Wilderness, Sierra	Aug. 3-10	M	185	35	Mark Gordon
105	•Sierra Crossing, Yosemite Park/Minarets Wilderness	Aug. 3-11	M	215	35	Don Donaldson
106	•Sierra Crossing, Yosemite Park/Minarets Wilderness	Aug. 3-11	M	215	35	Gary Swanson
107	•Continental Divide, Weminuche Wilderness, Colorado	Aug. 4-12	M-S	275	35	Myles Brown & E. J. Evangelos
108	•Two Ocean Leisure, Bridger-Teton Wilderness Area, Wyoming	Aug. 5-11	L-M	275	35	Bill Bell
109	•Red Peak Pass Leisure Loop, Southern Yosemite, Sierra	Aug. 5-13	L	220	35	Walt Goggin
110	•Mono Creek Recesses, John Muir Wilderness, Sierra	Aug. 8-17	L	250	35	Phil Gowing
111	•Union Peak Leisure Loop, Bridger-Teton Forest, Wyoming	Aug. 10-16	L	240	35	Virgene & Charles Engberg
112	•Yosemite Beginners Backpack, Sierra	Aug. 11-17	L	200	35	Melanie Feliz
113	•Center Basin to Milestone Basin, Kings Canyon and Sequoia Parks, Sierra	Aug. 11-20	M	200	35	Bruce C. Straits
114	•Granite Mountain Loop, Custer Beartooth Primitive Area, Montana	Aug. 12-20	M	295	35	Bob Madsen
115	•Pacific Crest Trail, Kings Canyon Park and John Muir Wilderness, Sierra	Aug. 16-24	M-S	200	35	Jim Carson
116	•Ionian Basin Peakbagging, Kings Canyon Park, Sierra	Aug. 16-24	M	195	35	Vicky Hoover
117	•Mountain of the Holy Cross Wilderness Area, White River Forest, Colorado	Aug. 17-23	M-S	275	35	Bob Audretsch
118	•Chief Joseph Country, Eagle Cap Wilderness, Wallowa Mountains, Oregon	Aug. 17-24	M-S	170	35	Myron Hulen
119	•Beginners Backpack for Women, South of Yosemite, Sierra	Aug. 17-25	L-M	210	35	Carol Dienger
120	•Icicle Ridge, Alpine Lakes Wilderness, Wenatchee Forest, Washington	Aug. 17-25	M-S	190	35	Mary Sutliff
121	•Wind River Wandering, Wyoming	Aug. 18-24	M	245	35	Chuck Shinn
122	•Big Five Lakes, Sequoia Park, Sierra	Aug. 18-25	M	185	35	Andy Johnson
123	•Blue Canyon, Kings Canyon Park, Sierra	Aug. 18-27	M	205	35	John Ingvoldstad
124	•Russell/Carillon Col, Sequoia Park, Sierra	Aug. 19-27	M-S	205	35	Patrick Colgan
125	•Cirque Crest, Kings Canyon Park, Sierra	Aug. 19-27	M-S	220	35	Ann Peterson
126	•Evolution Basin, John Muir Wilderness and Kings Canyon Park, Sierra	Aug. 22-Sept. 1	M-S	230	35	Gordon Peterson
127	•Kings-Kern Divide, Sequoia and Kings Canyon Parks, Sierra	Aug. 24-31	S	190	35	Carolyn & Paul Roeder
128	•Sangre de Cristo Peaks, San Isabel and Rio Grande Forests, Colorado	Aug. 27-Sept. 3	S	315	35	Bob Audretsch
129	•Sequoia High Country, Sequoia Park, Sierra	Aug. 27-Sept. 4	M	195	35	Don Lackowski

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130	•White Mountain Backpack, New Hampshire	Sept. 2-7	S	275	35	Craig Caldwell & Jeanne Blauner
131	•Mt. Pinchot, Kings Canyon Park, Sierra	Sept. 2-8	M-S	180	35	Pete Nelson
132	•Mineral King Loop, Sequoia Park, Sierra	Sept. 3-14	L-M	260	35	Mac Downing
133	•Tahoe Rim Trail–South Section, El Dorado Forest, California	Sept. 4-8	M	130	35	Serge Puchert
134	•"O Be Joyful," Gunnison Forest, Colorado	Sept. 8-14	L-M	245	35	John Lutz
135	•Land of Seven Gables, John Muir Wilderness, Sierra	Sept. 9-17	M	195	35	Frances French
136	•Alpine Col, John Muir Wilderness/Kings Canyon Park, Sierra	Sept. 14-22	M	195	35	Paul Cavagnolo
137	•Salt Creek and The Needles, Canyonlands Park, Utah	Sept. 14-22	L-M	375	35	Barry Morenz
381	•Blue Range Primitive Area, Apache Forest, Arizona	Oct. 5-13	S	200	35	Bob Moore
382	•Paria Canyon–Vermilion Cliffs Wilderness, Arizona	Oct. 6-12	L	195	35	Don Lyngholm
383	•Gila Wilderness, New Mexico	Oct. 6-12	M	210	35	George Mader
384	•Quehanna Trail, Black Moshannon Forest, Pennsylvania	Oct. 6-12	L-M	215	35	Connie Thomas
385	•Navajo Mountain–Rainbow Bridge, Arizona	Oct. 6-12	M	230	35	Nancy Wahl
386	•Clear Creek, Grand Canyon, Arizona	Dec. 15-20	M	225	35	Bob Madsen

Junior Backpack Trips

140	•Great Western Divide, Sequoia Park, Sierra	July 7-16	M	210	35	Sharon McEwan
141	•Gardiner Basin, Kings Canyon Park, Sierra	July 21-28	M	180	35	Jenny Dienger

Base Camp Trips (See Canoe, Hawaii, and Sailing Trips for other Base Camp outings.)

29	Natural History of Anza-Borrego Desert, California	March 30-April 6	335	35	Bob Miller
32	Rogue River Trail Wilderness Lodges, Oregon	May 13-18	455	35	Mark Minnis
33	Rogue River Trail Wilderness Lodges, Oregon	May 29-June 3	455	35	Susanna & Jim Owens
34	•Zion Park Base Camp, Utah	May 25-June 1	230	35	Bob Marley
145-E	John Day Monument Base Camp, Oregon	June 1-9	240	35	Temma & Marvin Pistrang
146	Rogue River Trail Lodges Base Camp, Oregon	June 2-8	565	70	Mark Minnis
147	Rogue River Trail Wilderness Lodges, Oregon	June 5-10	455	35	Susanna & Jim Owens
148	Rogue River Wilderness Lodges, Oregon	June 16-21	495	35	Marilyn & Bill Gifford
149-E	Donner-Tahoe Exploration, Sierra	June 22-29	330	35	Bob Ruff
150-E	Natural History of Mono Basin, California	June 22-30	295	35	Bob Miller
151-E	Donner-Tahoe Exploration, Sierra	July 13-20	330	35	Howard Drossman
152	Rogue River Wilderness Lodges, Oregon	July 21-26	495	35	Mark Minnis
153	Stehekin Valley Base Camp, North Cascades, Washington	July 21-27	345	35	Karen Short & Stephen Pozsgai
154	Rock Creek, Sequoia Park, Sierra	July 21-30	345	35	Bill Davies
155	Stehekin Valley Base Camp, North Cascades, Washington	Aug. 4-10	345	35	Vicki & Walt Mintkeski
156	Rangeley Lakes, Maine	Aug. 4-10	200	35	Kevin Walter
157	•Palisades Mountaineering, Sierra	Aug. 5-15	335	35	Mel Wright
158	Rogue River Wilderness Lodges, Oregon	Aug. 11-16	495	35	Mark Minnis
159	French Creek, John Muir Wilderness, Sierra	Aug. 15-23	345	35	Bud Bullock
160	Rogue River Wilderness Lodges, Oregon	Sept. 15-19	435	35	Mark Minnis
161	Havasupai Base Camp, Grand Canyon, Arizona	Sept. 21-28	335	35	Bob Marley
387-E	Natural History of Mono Basin, California	Oct. 5-13	295	35	Bob Miller
388	Death Valley at Christmas, California	Dec. 18-28	335	35	Bob Miller

Trip Number	E = Educational Outing • = Leader approval required	Date	Trip Fee (including Deposit)	Deposit	Leader

Bicycle Trips (See Alaska and Foreign Trips for other Bicycle outings.)

165	•Cycling Cape Cod and the Islands, Massachusetts	May 5-11	320	35	Eileen O'Connor
166	•Delmarva Peninsula, Eastern Shore, Maryland	June 9-15	280	35	John Arthur
167	•Coast to Mountains Bike Tour, Oregon	June 15-22	235	35	Doris Allen
168	•Vermont's Country Inns	June 16-21	490	35	Dixon Lamborn
169	•California Gold Rush Bicycle Tour, Lake Tahoe Region	June 16-23	195	35	JoAnn & Paul Von Normann
170	•Wisconsin Northwoods	Sept. 14-21	280	35	Alice Van Deburg
389	•White and Green Autumn Cycle Tour, Vermont/New Hampshire	Sept. 29-Oct. 6	265	35	JoAnn & Paul Von Normann

Burro Trips

			Parents and one child	Each addl. child		
175	•Big Margaret Lakes, John Muir Wilderness, Sierra	July 20-27		345*	35	Jack Holmes
176	•Alger Lakes Family Trip, Minarets Wilderness, Sierra	July 27-Aug. 3	905	225	35	Linda & Ted Bradfield
177	•Reds Meadow to McGee Creek, John Muir Wilderness, Sierra	Aug. 3-10		345	35	Doug Parr
178	•McGee Creek to Rock Creek, John Muir Wilderness, Sierra	Aug. 10-17		345	35	Don White
179	•Pioneer Basin, John Muir Wilderness, Sierra	Aug. 17-24		345	35	Don Bain & Nora Weldon
180	•Humphreys Basin, Sierra	Aug. 24-31		345	35	John McClure

*Children under 18 traveling with parents, $260.

Bus Trips

31	Lake Powell by Houseboat/Arizona by Bus	May 5-18	990	70	Margaret Malm
182	Canadian Rockies, Canada	Aug. 11-31	1200	70	Bob Marley
25	Aztec-Mayan Tour, Mexico	Oct. 27-Nov. 16	1300	70	Bob Marley

Family Trips (See Base Camp, Burro, Hawaii, and Water Trips for other suitable Family outings.)

			Parents and one child	Each addl. child		
	Wilderness Threshold					
185	•McGee Basin, John Muir Wilderness, Sierra	July 26-Aug. 2	870	220	35	Beth & Bob Flores
186	•Navajo Cultural Experience, Canyon de Chelly Monument, Arizona	Aug. 2-9	935	235	35	Wanda & Tom Roy
187	•Lost Lakes, Minarets Wilderness, Sierra	Aug. 3-10	750	195	35	Ellen & Jim Absher
188	•Santa Barbara Channel Islands, California	Aug. 10-16	1255	315	35	Ann & Tom Carlyle
189	•Midnight Lake, John Muir Wilderness, Sierra	Aug. 10-17	760	195	35	Mary & John Stanley
	Family Canoe					
190	•Main Eel River Family Trip, California	June 16-22	695	175	35	Sally & Sandy Small
191	•Huckleberry Finn Voyageur Canoeing, Mississippi River, Illinois/Missouri	June 23-29	940	240	35	Faye & Tom Sitzman

Trip Number	E. = Educational Outing • = Leader approval required	Date	Trip Fee (including Deposit)	Deposit	Leader
Foreign Trips					
510	In Quest of the Quetzal: Mexican Birds	Feb. 15-28	1310	100	Richard Taylor
515	Serengeti Wildlife Walking Safari, Tanzania	Feb. 16-March 2	1920	100	Pete Nelson
520	•Egypt: Sailing the Nile, Trekking the High Sinai	Feb. 24-March 16	1750	100	Ray Des Camp
525	•Kali Gandaki Trek, Nepal	March 23-April 13	805	100	Mike Brandt
530	•Ganesh Himal Trek, Nepal	April 20-May 11	800	100	Kern Hildebrand
535	•Italia Centrale By Bike	May 8-23	995	100	Ed McManus
540	•Hiking in the Lake District and Cotswold Hills, England	May 11-25	1000	100	Richard Terwilliger
542	•Inland Waterways of England	June 1-15	1370	100	Marleen Van Horne
545	•Exploring the Unknown Switzerland	June 16-29	1475	100	Richard Weiss
550	•Highlands and Islands of Scotland	June 17-July 13	2325	100	Mildred & Tony Look
555	•Gorilla and Wildlife Safari, Tanzania/Rwanda	July 1-16	2800	100	Patrick Colgan
560	•Tour du Mont Blanc, France	June 30-July 14	1065	100	Dick Williams
562	•Karakoram and Hindu Kush Trek, Pakistan	June 30-July 26	1450	100	Peter Owens
565	Pyrenees Trails, Spain	July 3-17	995	100	Rosemary Stevens
570	•Biking Alluring Alsace, France	July 4-15	1000	100	Lynne Simpson
575	•Inner Mongolia Bike Trek	July 13-Aug. 6	2600	100	Brad Hogue
580	•Land of the Basques, France/Spain	July 15-28	950	100	John Doering
582	•Dalmatian Coast Bike and Hike, Yugoslavia	July 20-Aug. 2	1285	100	Frances & Patrick Colgan
585	•Backpacking in Southern Corsica	July 31-Aug. 11	780	100	Michele Ferrand
590	•Black Forest and Bavarian Castles	Aug. 1-10	935	100	Natasha & Carl Wood
595	•Himalayan Passage	Aug. 6-Sept. 2	1410	100	Peter Overmire
600	•Hiking in the Stubai Alps, Austria	Aug. 15-28	1075	100	Bert Gibbs
605	Bike and Hike in Ireland	Aug. 29-Sept. 11	1475	100	Len Lewis
610	•Swiss Alps: Adelboden to Grindelwald	Sept. 2-10	810	100	Ann Hildebrand
615	•Mountains to the Sea Safari, Kenya	Aug. 4-23	2725	100	Emily & Gus Benner
620	•Silvretta/Dolomites Rambles, Austria and Italy	Sept. 12-26	1130	100	Walt Goggin
625	The Omo Experience, Ethiopia	Sept. 18-Oct. 9	2585	100	Bill Bricca
630	•Sacred Mountains of Japan	Sept. 16-Oct. 6	1900	100	Peter Overmire
632	Mediterranean Adventure	Sept. 20-Oct. 2	1650	100	John Garcia
635	•Lamjung Himal Trek, Nepal	Oct. 7-26	750	100	Serge Puchert
640	Tonga Sailing Adventure and Exploration of Fiji by Boat	Oct. 24-Nov. 13	1990	100	Ruth Dyche
642	•Trek in Tibet, China	Sept. 30-Nov. 3	4300	100	Mike Brandt
645	•Annapurna Sanctuary, Nepal	Nov. 2-23	800	100	Dolph Amster
650	Helembu Trek, Nepal	Dec. 2-20	750	100	Phil Gowing
655	•Arun Valley Christmas Trek, Nepal	Dec. 21, 1985-Jan. 11, 1986	1150	100	Ginger Harmon
660	Kenya-Tanzania Wildlife Safari	Dec. 28, 1985-Jan. 15, 1986	2525	100	Ruth & Jim De Martini
665	Australia, Land of the Sun	Dec. 30, 1985-Jan. 19, 1986	TBA	100	Kent Erskine
670	Bio-Bio River Run, Chile	Dec. 21, 1985-Jan. 3, 1986	2280	100	Blaine LeCheminant
675	Cross-Country Skiing in the Austrian Alps	Jan. 5-19, 1986	1000	100	Anneliese Lass-Roth
680	•New Zealand Featuring Fiordland	March 7-30,1986	TBA	100	Vicky Hoover
685	•Langtang Trek, Nepal	March 17-April 12, 1986	1235	100	John Garcia
690	Manaslu Circle Trek, Nepal	April 19-May 24, 1986	TBA	100	Kern Hildebrand
695	•Annapurna Circle Trek, Nepal	June 9-July 9, 1986	1100	100	Peter Owens
Hawaii Trips (See Alaska Trips for a combination Alaska/Hawaii trip.) (Trip prices do not include airfare.)					
27	Easter Vacation on Maui	March 29-April 6	430	35	Eunice & Ned Dodds
28	April in Hawaii	March 29-April 6	430	35	Lynne & Ray Simpson

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193	Explore Kauai, Island of Kauai, Hawaii	June 22-30	490*	35	Karen & Stan Johnsen

* Parents and one child, $1295
Each additional child, $315

Highlight Trips (See Base Camp and Alaska Trips for other Highlight-type outings.)

30	Cedar Mesa Highlight, Utah	April 22-27	375	35	Jerry Clegg
195	Kalmiopsis Wilderness Llama Trek, Siskiyou Forest, Oregon	June 16-21	475	35	Tom Landis
196	Harriet Lake Basin, Yosemite Park, Sierra	July 22-31	570	70	Bert Gibbs
197	Llama Trek, Three Sisters Wilderness, Willamette Forest, Oregon	July 28-August 2	475	35	Tom Landis
198	LeConte Divide, John Muir Wilderness, Sierra	July 28-Aug. 9	625	70	Bruce Gillies
199	Western Slope of the Tetons, Targhee Forest, Idaho	Aug. 1-10	710	70	Len Lewis
200-E	Goat Rocks Llama Trek/Photography Seminar, Gifford Pinchot Forest, Washington	Aug. 11-16	475	35	Tom Landis
201	Cirque Crest, Kings Canyon Park, Sierra	Aug. 17-Sept. 1	680	70	Jane & John Edginton
202	Eagle Cap Wilderness Llama Trek, Wallowa-Whitman Forest, Oregon	Sept. 2-7	475	35	Tom Landis
203	Humphreys Basin, Sierra	Sept. 4-14	710	70	Bob Miller

Service Trips

	Trail Maintenance Projects				
49	•Mazatzal Wilderness, Tonto Forest, Arizona	March 17-24	70	35	Linda Dutcher
50	•Coyote Gulch, Glen Canyon Recreation Area, Utah	April 13-21	70	35	Jim Bock
51	•Red Rock Trail Maintenance, Coconino Forest, Arizona	April 21-27	70	35	Jim Ricker
205	•South Canyon Trail Maintenance, Kaibab Forest, Arizona	May 31-June 9	85	35	Tim Wernette
206	•Bear Wallow Wilderness, Apache Forest, Arizona	June 8-16	85	35	Rod Ricker
207	•Cranberry Wilderness, Monongahela Forest, West Virginia	June 16-22	85	35	Paul Torrence
208	•San Juan Islands, Washington	June 16-23	110	35	Fredric Kropp
209	•Kalmiopsis Wilderness Trail Construction, Siskiyou Forest, Oregon	June 19-29	85	35	Jerold Williams
210	•The Sierra Club's Own Trail Maintenance Project I, John Muir Wilderness, Sierra	June 20-30	85	35	To Be Announced
211	•Pecos Wilderness, Sangre de Cristo Mountains, New Mexico	June 23-July 2	85	35	Gail Bryant
212	•Elk Creek Trail Construction, Klamath Forest, California	July 3-13	85	35	To Be Announced
213	•Hamilton Camp Trail Maintenance, Klamath Forest, California	July 9-19	85	35	To Be Announced
214	•One-Mile Lake Trail Maintenance, Marble Mountain Wilderness, Klamath Forest, California	July 10-20	85	35	To Be Announced
215	•Targhee Tetons, Targhee Forest, Idaho	July 15-25	85	35	Bruce Horn
216	•Sierra Club and Appalachian Mountain Club Collaboration, White Mountain Forest, New Hampshire	July 20-27	95	35	Ken Limmer
217	•Beginning Campers Trail Maintenance, Mt. Rainier Park, Washington	July 23-Aug. 2	85	35	Laurie-Ann Barbour
218	•The Sierra Club's Own Trail Construction Project II, John Muir Wilderness, Sierra	July 24-Aug. 3	85	35	Flint Ellsworth
219	•Teton Wilderness Trail Project, Bridger-Teton Forest, Wyoming	July 28-Aug. 7	85	35	Jay Brooks
220	•Mt. Hood Timberline Trail Maintenance, Cascade Range, Oregon	July 31-Aug. 10	85	35	Rick Zenn

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221	•Maroon Bells-Snowmass Wilderness, White River Forest, Colorado	Aug. 1-11	85	35	Bruce Horn
222	•Burnt Fork Trail Reroute and Waterbar Brigade, High Uintas, Utah	Aug. 3-13	85	35	Jon Nichols & Sherri Serna
223	•The Sierra Club's Own Trail Construction Project III, John Muir Wilderness, Sierra	Aug. 7-17	85	35	Connie Spangler
224	•Cloud Peak Primitive Area, Big Horn Forest, Wyoming	Aug. 13-23	85	35	To Be Announced
225	•Santa Barbara Canyon, Pecos Wilderness, New Mexico	Aug. 17-24	85	35	Linda Dutcher
226	•Lost Creek Wilderness, Pike Forest, Colorado	Aug. 18-28	85	35	Jim Bock
227	•Washakie Wilderness Trail Construction, Shoshone Forest, Wyoming	Aug. 20-30	85	35	Conrad Smith
228	•Steelhead Lake Women's Trail Maintenance Project, Inyo Forest, Sierra	Aug. 21-31	85	35	Laura Shaw
229	•Long Mountain Lake Trail Maintenance Project, Panhandle Forest, Idaho	Aug. 24-Sept. 3	85	35	Anne Bade
230	•Baxter Park Trail Improvement, Maine	Aug. 25-Sept. 2	95	35	Irwin Rosman
231	•Grand Canyon Trail Maintenance and Cleanup, Kaibab Forest, Arizona	Aug. 29-Sept. 7	85	35	Peter Curia
232	•Boundary Waters Canoe Area, Minnesota	Sept. 1-8	155	35	Mary Louise & Vince White-Petteruti
233	•Baxter Park Trail and Fall Foliage Project, Maine	Sept. 21-29	95	35	Maggie Seeger
391	•Wild and Scenic River, Missouri	Oct. 20-26	85	35	Rick Rice
	Cleanup Projects				
234	•Big Pine Creek Cleanup, Inyo Forest, Sierra	Aug. 6-16	85	35	Karen Johnson
235	•Lower Minam Cleanup, Eagle Cap Wilderness, Oregon	Aug. 24-Sept. 3	85	35	Bob Hayes
	Wilderness Restoration Projects				
236	•Yosemite Valley Restoration Project, Yosemite Park, Sierra	June 11-21	85	35	To Be Announced
237	•Denali Park Restoration Project, Alaska	July 30-Aug. 9	225	35	David Simon
238	•Indian Henry's Meadow Restoration Project, Mt. Rainier Park, Washington	Aug. 6-16	85	35	Ira Golub
239	•Tuolumne Meadow Restoration Project, Yosemite Park, Sierra	Sept. 4-14	85	35	C. E. Vollum
	River Projects				
52	•Owyhee River Cleanup, Oregon	June 2-6	200	35	Jim Gifford
241	•Salmon River Work and Raft, Klamath Forest, California	June 3-13	115	35	Bill Weinberg
242	•Lower Salmon "Row-It-Yourself" Cleanup Trip, Idaho	Aug. 25-29	200	35	c/o Bill Gifford
243	•Rogue River "Row-It-Yourself" Cleanup Trip, Oregon	Sept. 22-26	200	35	Mark Minnis

Ski Trips (See Alaska and Foreign Trips for other Ski outings.)

375	•Adirondack Ski Tour, New York	Jan. 13-18	335	35	Walter Blank
376	•Long Pond, Moosehead Lake Region, Maine	Feb. 3-9	235	35	Fred Anders
377	•Zealand Valley Cross-Country Ski, White Mountains, New Hampshire	March 3-8	230	35	Maggie Seeger
53	•Crater Lake Cross-Country Ski Tour, Oregon	April 14-20	200	35	Tim Odell

Water Trips

Raft Trips (See Alaska, Service, and Foreign Trips for other Raft outings.)

379	River of Ruins Raft Trip, Mexico	Feb. 25-March 8	1145	70	John Garcia
56	Owyhee River "Row-It-Yourself" Raft Trip, Oregon	May 12-16	385	35	Doris Allen

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57	Rogue River Raft and Lodges, Oregon	May 20-24	515	70	Mark Minnis
58	Grand Canyon Oar, Arizona	May 26-June 6	1240	70	Kurt Menning
245	Rogue River Raft Trip, Oregon	June 10-14	385	35	Ruth Dyche
246	North Fork John Day River "Row-It-Yourself" Raft Trip, Oregon	June 12-15	365	35	John Griffiths
247-E	John Day River "Row-It-Yourself" Raft Trip, Oregon	June 16-20	435	35	c/o Bill Gifford
248	Green River Dory Trip, Utah	June 16-21	580	70	Sallie Menning
249	Trinity River Paddle Trip, California	June 17-20	260	35	Wheaton Smith
250	Yampa/Dinosaur Paddle Raft Trip, Utah	June 19-23	405	35	Mary O'Connor
251	Canyonlands Rafting-Hiking-Jeeping, Utah	June 21-July 1	1190	70	Chuck Fisk
252	Grand Canyon Oar, Arizona	June 21-July 2	1295	70	Harry Neal
253	Rogue River Raft Trip for the Hearing Impaired, Oregon	June 24-28	225	35	Meg Levine & Steve Griffiths
254	Kongakut River Expedition, Arctic Wildlife Refuge, Alaska	June 24-July 5	2020	70	Ruth Dyche
255	Grand Ronde Rafting and Horseback Trip, Oregon	June 26-30	720	70	Tony Strano
256	Rogue River Raft Trip, Oregon	July 8-12	385	35	John DeCock
257	•Grand Canyon Alumni Trip, Arizona	July 16-27	1295	70	Gary Larsen
258	Rogue River Raft Trip, Oregon	Aug. 5-9	385	35	Jon Kangas
259	Grand Canyon Oar, Arizona	Aug. 9-20	1295	70	Lynn Dyche
260	Salmon Paddle and Raft Trip, Idaho	Aug. 11-15	510	70	Karen Short
261	Klamath River Paddle and Raft Trip, California	Aug. 12-16	460	35	Bruce Macpherson
262	Trinity River Paddle Trip, California	Aug. 19-22	260	35	Harry Neal
263	Chilcotin River Raft Trip, British Columbia, Canada	Aug. 26-30	685	70	Tris Coffin
264	Grand Canyon Oar, Arizona	Sept. 6-17	1295	70	Victor Monke
	Sailing Trips (See Foreign Trips for other Sailing outings.)				
44	Blue Whale Expedition, Sea of Cortez, Mexico	March 24-31	995	70	Grace Hansen
265	Nova Scotia Sailing Adventure I	June 23-29	835	70	Connie Thomas
266-E	Inside Passage Sailing Trip, British Columbia, Canada	June 25-July 3	1110	70	Linda Macpherson
267-E	Sails, Whales, and Indians, British Columbia, Canada	July 17-26	1275	70	Mark Larson
268	Nova Scotia Sailing Adventure II	Sept. 1-7	835	70	Len Frank
269	San Juan–Gulf Island Orca Sailing Adventure, British Columbia, Canada	Sept. 8-13	630	70	Martin Friedman
392	Baja Base Camp Sailing Adventure, Mexico	Nov. 23-Dec. 1	745	70	Hunter Owens
	Canoe Trips (See Alaska, Family, and Trail Maintenance Trips for other Canoe outings.)				
54	•Dismal Swamp Canoe Base Camp, Virginia/North Carolina	March 31-April 6	185	35	Connie Thomas
55	•Pine Barrens Canoe and Backpack, Pinelands Reserve, New Jersey	May 5-11	235	35	Herb Schwartz
275	•Main Eel River, California	June 3-8	260	35	Jenny Dienger
276	•John Day Whitewater, Oregon	June 9-14	365	35	Iila & Chuck Wild
277	•Southern Appalachian Whitewater, Georgia/North Carolina/South Carolina	June 16-22	305	35	Andrea & Bill Timpone
278	•Vancouver Island Ocean Canoe, British Columbia, Canada	July 9-19	775	70	c/o Bill Gifford
279	•Trinity River Touring, California	July 15-20	275	35	Sharon Cupp
280	•Trinity River Whitewater, California	July 22-27	275	35	Molly & Bill Bricca
281	•Upper Albany River Wilderness, Ontario, Canada	July 27-Aug. 9	655	70	Larry Ten Pass & Anne Knott
282-E	•Boundary Waters Canoe Area Wilderness, Minnesota	Aug. 11-16	350	35	Paul Regnier
283	•Bighole and Jefferson Rivers Canoe, Montana	Aug. 11-17	290	35	Chuck Schultz
284	•Rogue River, Oregon	Aug. 12-17	310	35	Winnie Hepler
285	•Adirondacks Canoe Cruise, New York	Aug. 17-25	245	35	E. Allan Blair
393	•Green/Colorado Rivers, Utah	Sept. 22-Oct. 1	585	70	Iila & Chuck Wild
394	•Southern Winter on the Suwannee, Florida	Jan. 4-11, 1986	220	35	Rick Egedi

Tim Wernette

Tim Wernette has led six trips in the past seven years for the Service Trips program, and trip #205 is the third trip he's led in the Grand Canyon area. He has hiked and camped extensively in the Rocky Mountains, and spent six months hiking and camping in the western United States. He has also traveled in the New England and Great Lakes areas and in Europe. Tim works as a counselor/educator for Planned Parenthood in Arizona, and is involved in feminist activities.

Since joining the Club six years ago, **Jeanne Blauner** has participated in various capacities, as chair of her local group in Cincinnati, founder of their backpack school, and canoe teacher. She has been leading or co-leading for the Outing Program since 1981. This year she will be co-leading backpack trip #130 with Craig Caldwell. Jeanne's outdoor experience includes completion of the National Outdoor Leadership Training Program, leading for the Appalachian Mountain Club, and serving as president of Smith College Outing Club. She works as marketing manager for Pepperidge Farm, Inc.

Jeanne Blauner

Tim Odell (trip #53) got started with the Club as a youngster through his family's involvement. Hiking extensively with the Boy Scouts was also a big part of his youth. An active member since 1965, he goes on trips and attends local meetings. Tim, an attorney, backpacks, skis, and runs rivers regularly, and still manages to do some marathon running. Tim's interest in the outdoors has taken him to Mexico, Canada, Alaska, Hawaii, Europe, and Greece.

Len Frank (trip #'s 76 & 268), a long-time Club member, has been camping and backpacking for many years. Professionally he is an engineer, but in his spare time has managed to take an African safari, a 50-mile Lake Superior hike, and climbs in California. His activities as a national and chapter outing leader demonstrate his interest in the environment and the outdoors.

John Garcia

John Garcia, a pharmacist living in the San Francisco Bay Area, leads river-raft (trip #379) and foreign trips (trip #'s 685 & 632). In 1973, he joined the Sierra Club and rafted the Colorado River through the Grand Canyon. He enjoyed the experience so much that he became involved with the River-Raft Subcommittee that same year. Next year John will be taking over as chairman. John has traveled extensively, making a round-the-world trip in 1967, and exploring Central and South America and Europe in the 1970s. Sierra Club trips give him a perfect opportunity to share his appreciation of natural beauty with others. He has many interests related to outdoor activities and athletics, and is said to stir a mean wok.

Jenny Dienger

Jenny Dienger's first trip with the Sierra Club was a base camp trip when she was four years old. Since then she has gone on many family backpack trips, and has been assisting on Club canoe trips since she was 15. Jenny led her first backpack trip in 1984—a Juniors trip in Sierra National Forest. She will be leading a Junior Backpack Trip again in 1985 (trip #141), as well as a canoe trip (trip #275). Jenny has led backpack trips for the Girl Scouts, worked as a whitewater raft guide, and has participated on numerous personal trips in the Southwest and Northeast. She is currently studying geology at University of California at Davis.

Frances French (trip #135) is the daughter of two very experienced outing leaders who took her along on many chapter outings as a child. Last year Frances led the second section of the Yosemite Women's Beginning Backpack trip. She is currently a student and working as an intern naturalist at the San Francisco YMCA Camp in La Honda, California. Her travel experience includes many trips with friends in the Sierra, the California coastal range, and the Southwest. She also enjoys mountaineering, swimming, singing, and biking.

Hunter Owens (trip #392) has been a leader for the River-Raft Subcommittee for 18 years, as well as leading canoe trips and a trip to Kenya. He has also participated in many chapter and national kayak trips. Hunter once took a year off from work to travel around the world, and has worked in the Middle East and for a PBS television station. About ten years ago he started working for himself as an accountant in seasonal tax work in order to have more time for outdoor summer activities.

Not all national outing leaders are long-time Sierra Club members. **Mark Larson** (trip #267-E) has been with the Club only a couple of years, but he has brought to the Outing Program great experience as a backpacker, photographer, and fly fisherman. The life of John Muir is a special interest of Mark's. During most of the year, Mark is a professor of journalism at Humboldt State University, and he takes full advantage of this Northern California locale to pursue his outdoor interests.

Robert Bingham (trip #79) started his travels with the U.S. Navy, and managed to see a good part of the world before switching to a career in municipal planning. Along the way he accumulated practical experience in forest planning and management, and insight into forest ecosystems. He has been active in local Club trips and has done other trips to the Trinity Alps and Teton National Park.

This will be the second year **Ann and Tom Carlyle** lead a Wilderness Threshold trip to the Santa Barbara Channel Islands off the California coast (trip #188). They became involved with the Sierra Club ten years ago, and took their first family outing with their teenage children to Canyon de Chelly Monument in Arizona. Ann works as a teacher and has taken school groups on camping trips concentrating on marine ecology, water conservation, and Southern California plant communities. Tom, who works as a graphic designer, has been a Boy Scout leader for many years. They have led trips in British Columbia, Arizona, and Idaho, and have camped throughout the western United States, Canada, and Mexico. Their interests include the culture of the Southwest, rock art, and native American crafts.

Tom Carlyle & Ann Carlyle

Joanne Sprenger

Joanne Sprenger (trip #48), a physical education teacher in New Mexico, has been active in the Sierra Club since 1968. Besides being a long-time outing leader, she has been newsletter editor as well as chair of the Palouse Group; she also chaired the Austin Regional Group and the Rio Grande Chapter. In her spare time she teaches canoeing, backpacking, cross-country skiing, and archery.

Linda Dutcher will be leading two service trips in 1985 (trip #'s 49 & 225). She joined the Sierra Club in 1965 because she wanted to contribute to the preservation of wilderness. Since then she has been on four trail maintenance trips and has helped her local chapter publish *Day Hikes in the Santa Fe Area*. Linda is a former graduate student in archaeology, but now works as a clinical psychologist. Her wilderness experience includes many private backpack trips and raft trips down the San Juan and Colorado rivers. She also enjoys collecting wild mushrooms (very carefully).

Carl Wood will be co-leading trip #590 in southern Germany with his wife Natasha. Carl, a professor of world literature at Principia College near St. Louis, has lived in Germany on and off for four years since 1965. He learned about the Club in the 1960s and began participating in Club activities soon after. Carl has traveled all over northern and central Europe, especially England, France, Germany, and Switzerland, as well as throughout most of the United States. Besides playing the violin and the viola, Carl is fluent in German and has good knowledge of French and Russian.

Gary Swanson (trip #106) got started with the Club on weekend backpack trips with his local chapter. This led him to become a dayhike leader for the Singles section of the chapter and to assist on a national trip in 1983. Last year Gary led a backpack trip in the John Muir Wilderness, and the Outing Office received numerous compliments from trip participants on his leadership skills. Gary has backpacked in the North Cascades, the Canadian Rockies, the Tetons, and the Gila Wilderness, as well as climbing Mt. Baker, Mt. Rainier, and Mt. Shasta. He is self-employed as a furniture maker and enjoys boardsailing in his free time.

Peter Curia (trip #'s 40 & 231) enjoys chess, bicycling, sports of all kinds, and, of course, hiking. He joined the Sierra Club after taking several dayhikes with the Palo Verde Group. Having participated on various Sierra Club trips and in the Knapsack Leader Training Trip, he began leading national trips in 1981. Peter's trip to Kanab Canyon/Thunder River in the Grand Canyon is one of the more popular spring trips.

Peter Curia

ALLEN HAMES

Jon Nichols (trip #'s 89 & 222) got started with the Club through his interest in the Service Trips program, which he has been actively involved with for the past seven years. He has been on three service trips as a paying member, one as an assistant, one as a cook, and two as a trip leader. He has also led two backpack trips. Jon works as a home remodeler, but he spent part of 1984 driving from London to Nairobi via Istanbul and Cairo, then moving on to India and Nepal. He has traveled and camped in 13 African countries as well as over most of North and South America. Jon's greatest interest, though, is the Grand Canyon.

Reservation & 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. When a trip is full, later applicants are put on a wait list.

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 deposit 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 under "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 nor specialized transportation on some trips. 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 car pools 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 at 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 hours (weekdays, 9-5) of cancellation from either the trip or the waitlist. The amount of the refund is determined as of the date that the notice of cancellation by a trip applicant is received at the Outing Department.

For more details on Outings

Outings are described more fully in trip supplements available from the Outing Department. **Supplements for summer and fall trips will be available after January 1.** For more detailed information on a trip, request the specific supplement for that outing. Trips vary in size and cost, and in the physical stamina and experience required. New members may have difficulty judging which trip is best suited to their own abilities or interests. Don't be lured into the wrong one! Ask for the trip supplement before you make your reservations, and save yourself the cost and inconvenience of changing OR cancelling a reservation. The first three supplements are free. Please enclose 50 cents each for extras. Write or phone the trip leader if you have any further questions.

SIERRA CLUB OUTING DEPARTMENT
530 Bush Street, San Francisco, CA 94108

Sierra Club Member ☐ Yes ☐ No

Send supplements: # _____ # _____ # _____
(by trip number)

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Enclosed is $_____ for each supplement requested over 3, at 50 cents apiece. Allow 2 to 4 weeks for delivery.

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.

Note: For foreign trips, the days before departure are counted in the time zone of the trip departure point.

The Cancellation Policy for River-Raft-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.

Transfers: For transfers from a confirmed reservation, made 14 or more days prior to the trip departure date, a transfer fee of $35 is charged.

Time or Event of Cancellation	Amount forfeited per person	Amounted refunded per person
1) disapproval by leader 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 departure date	$35	All amounts paid toward trip price exceeding forfeited amount.
b) 14-59 days prior to the 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

Trips listed on pages 90 to 94 (except canoe trips) have the following refund 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
45	90% refunded
30-44	75% refunded*
14-29	50% refunded*
0-13	No refund*

*If the trip place can be filled by a full-paying member, then the cancellation fee shall amount to the nonrefundable deposit or 10% of the total trip cost, whichever is greater.

Transfers made 1-13 days prior to the trip departure date will be treated as a cancellation, and the Cancellation Policy will apply. No transfer fee is charged if you transfer from a waiting list.

Medical Precautions: On a few trips, a physician's statement of your physical fitness may be needed, and special inoculations may be required for foreign travel. Check with a physician regarding immunization against tetanus.

Emergency Care: In case of accident, illness, or a missing trip member, the Sierra Club, through its leaders, will attempt to provide aid and arrange search and evacuation assistance when the leader determines it is necessary or desirable. Cost of specialized means of evacuation or search (helicopter, etc.) and of medical care beyond first-aid are the financial responsibility of the ill or injured person. Medical and evacuation insurance is advised, as the Club does not provide this coverage. Professional medical assistance is not ordinarily available on trips.

The Leader Is In Charge: At the leader's discretion, a member may be asked to leave the trip if the leader feels the person's further participation may be determental to the trip or to the individual.

Please Don't Bring These: Radios, sound equipment, firearms, and pets are not allowed on trips.

Mail Checks and Applications to:
Sierra Club Outing Department
Dept. #05618
San Francisco, CA 94139

Mail All Other Correspondence to:
Sierrra Club Outing Department
530 Bush Street
San Francisco, CA 94108
(415) 981-8634

PLEASE NOTE: The Outing Department will begin processing reservations for summer and fall trips on January 7. Applications received before that date will be processed as if received on January 7. Supplements will be available after January 1.

Sierra Club Outings 1985
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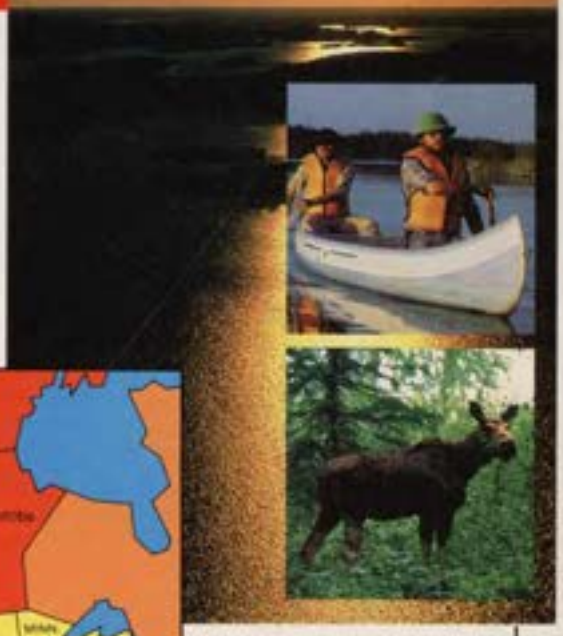

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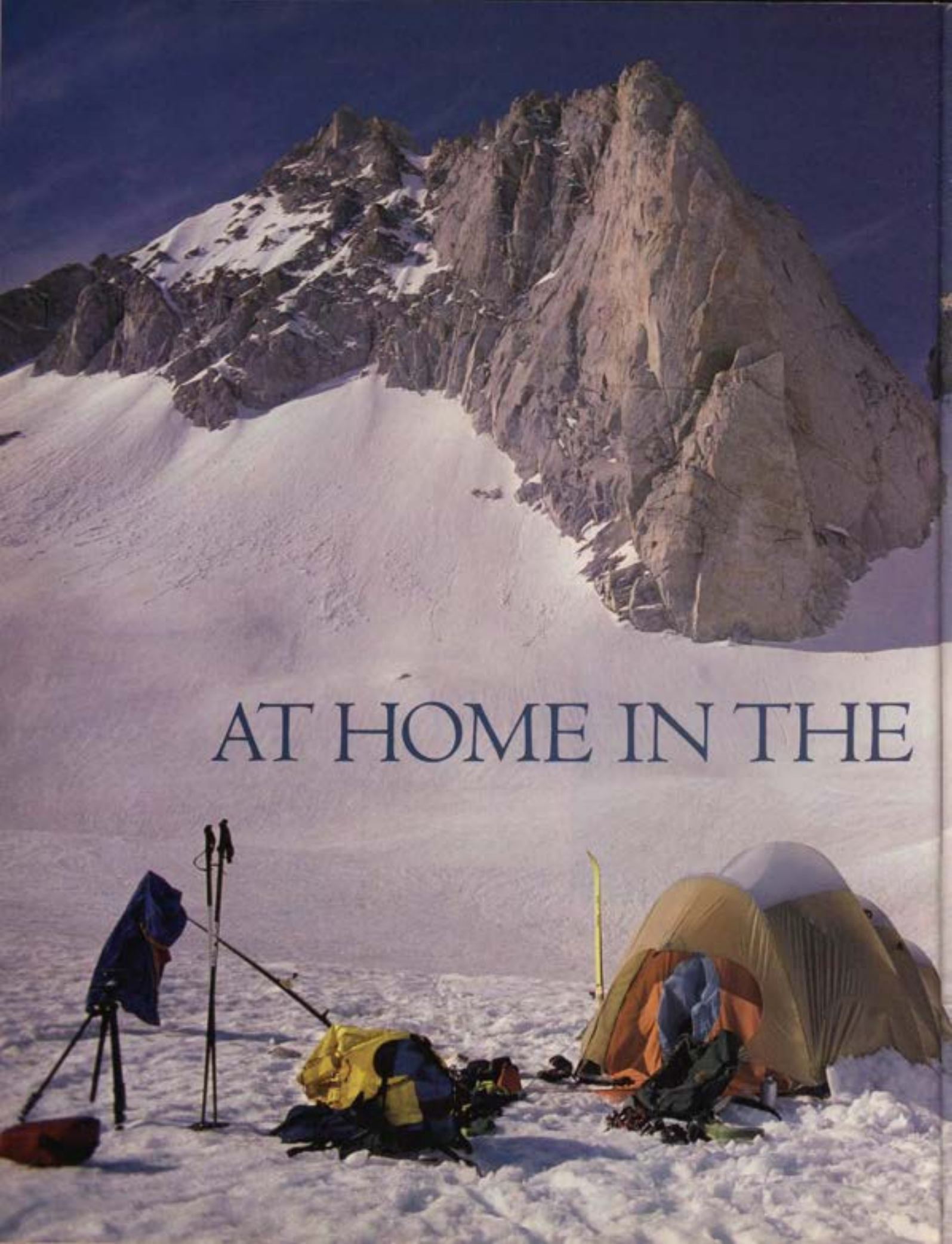

AT HOME IN THE

COLD

Mike Scherer

Cold.
Bitterly cold.
Freezing cold.
Cold, wet, and miserable.
Frigid, pitiless, relentless, ruthless cold!

The words used by the general public to describe winter are something awful! You can see why it's tough to convince a resident of blizzard-bleary Buffalo—or a sun-loving Southern Californian, for that matter—that many people eagerly travel great distances for the express purpose of locating large, uninhabited tracts of snow to wander around in. Often such people remain out there in the cold amidst the white stuff for days at a time—for fun, no less.

But cold-weather campers are not masochists. They're just well-informed and intelligently outfitted. Ice and snow are fun, and if you've already mastered the techniques of summer camping, it's only a short step to enjoying snowcamping.

Much of the pleasure of snowcamping comes from what I call the hide-and-seek factor. On snow one wanders freely over enormous amounts of terrain. The land becomes an infinitely varied playground, without underbrush or other surface features that can hinder passage or inhibit exploration. The object of cold-weather camping is to maximize the enjoyment this environment affords—to appreciate the shapes and textures of the surrounding terrain, to enjoy your own (and your friends') athletic skills, and to do all this at the highest sustainable level of comfort.

I don't mean to minimize the difficulties and dangers. You *will* get tired and sweaty. You may get cold. Avalanche hazards must be recognized and avoided. Yet it is fair to say that, with forethought, most people can satisfy their comfort requirements most of the time. And if you remain near the beaten track in stable snow areas, you need not fear avalanches.

Ice, snow, and cold, then, can be enjoyed on your terms. Long trips into remote areas are unnecessary. Your first expedition will be fairly comfortable if base camp is within minutes of your car. That way, if harsh weather hits, you can return to civilization quickly and safely (although not checking the weather report beforehand is inexcusable). Once you become familiar with the requirements of cold-weather camping, a good second trip might be to the vicinity of an established hut.

Don't set out in midwinter; conditions are often too severe for first-time snowcampers. But spring promises long days and generally superb weather. (The typical spring snowcamping trip entails a surprising first priority: One strives to avoid getting sunburned to a crisp.) By springtime the winter's snow will have consolidated and metamorphosed into the skier's most ego-boosting

MIKE SCHERER

surface: just-so thawed corn snow—fast, smooth, and predictable.

What follows are some pointers—a handful of highlights to help you get started as a snowcamper.

SHELTER: *PACK IT IN OR DIG IT OUT*

Digging out a snow cave can mean moving up to 500 pounds of frozen flakes—which is why a shovel is the winter camper's best friend. The shaft should be about 18 to 24 inches long, and must have a handle on the end. An aluminum blade should be anodized; if it isn't, it can ice up quickly. Lubricate a nonanodized blade with silicone or Maxiglide.

Snow caves are the five-star hotels of the wilderness. They are warm, can be brightly lit by a candle, and are secure against bad weather. In fact, inside your snow cave you'll have almost no idea what's going on outside. (So take along your alarm clock!)

Given cooperative terrain (not too flat) and perfect snow (not too icy), it may take you only half an hour to build a snow cave. If the snow is run-of-the-mill, though, or if you harbor architectural tendencies, you had better plan on a couple of hours of wet work, maybe more.

Here are some tips to bear in mind when you construct your first snow cave:

- The sides of hills are best for the excavation of a snow cave, because extra snow can easily be ejected out the door. Tunneling slightly upward will enhance this advantage, and the cave will be warmer because cold air will not be trapped inside.
- Wear full Gore-Tex battle armor when creating your snowy home. Making a snow cave is wet work.
- Snow caves rarely collapse of their own accord, and when they do, it's usually only the center that goes. As a matter of principle, though, keep your shovel inside the cave and near you.
- Ventilate your cave by poking a hole in the wall with a ski pole. Because falling or blowing snow can sift in through your vent, you will probably want to arrange a snow trap under the opening.
- Warm snow caves drip—so don't fire up that stove inside or you'll end up in a chilly sort of sauna. Caves in warmer areas will probably need a dome-shaped roof; that way, melting snow will run down the sides of the cave rather than on your party.
- Home improvements are easy in a snow cave. A quick but deft motion of the shovel will provide you with a pantry, shelves, and (of course) a refrigerator. Farsighted designers can even integrate bunks and benches into their homey scheme.

Snow caves are best used as base camps, whereas tents come in handiest when camp is in a different place every night. Most of today's "winter" tents are a far cry from the pup tent of yore. They boast herculean strength, high-tech (and high-priced) designs, and are usually big and heavy. Here are four essential guidelines to follow when buying a tent for snowcamping:

- A winter tent must be rigid as well as strong. That way buffeting by the wind won't keep you awake at night, and burial by heavy snow won't reduce your floor space. Test the strength of candidate tents by pushing on them with your hand when you're shopping.
- A cold-weather tent should be large enough for you, your group, and all your gear. Leaving the packs outside will only contribute to morning lethargy.

HOW TO CHOOSE SNOWSHOES

CARL E. HEILMAN II

MANY PEOPLE REMEMBER their first attempts at snowshoeing on Pop's old pair of bearpaws—the ones that seemed to be 2 feet wide and 5 feet long. More time was spent getting up out of the snow than walking across it!

The new breed of snowshoes is much lighter and more maneuverable, making the sport easier for novice and veteran alike. And snowshoes can now be readily packed along with skis for a day's—or a week's—"skishoeing" expedition. By combining the two techniques, you can take advantage of what skiing and snowshoeing each has to offer.

Snowshoes are made in just two basic styles: bearpaws, which have a rounded heel section, and a style that has a "tail." The tails help old-style, loose-binding snowshoes "track": The tails drag in the snow and keep the shoes moving in a fairly straight line. Today's mountaineering bindings are taut, however, and there is little if any need for tracking aid, even on a pair of shoes 5 feet long. Snowshoes with tails are still nice for level and gently rolling areas, but for climbing, the smaller "Western" style bearpaws are best. Bearpaws have a few drawbacks—like kicking snow on your backside—but their maneuverability far outweighs the inconveniences. Snowshoes of either type should have the toes well turned up to permit easier walking in different snow conditions.

Sizes commonly available today range from 8" × 25" bearpaws to 11" × 60" Ojib-

A selection of snowshoes (from left): a pair of Sherpa Featherweights; a lone Sherpa Lightfoot; a pair of Vermont Tubbs Snow Spyders; one each of two models from Gene Prater—an Ellensburg and a Cle Elum; and a pair of all-aluminum Polarpaw Sno-Hikers, with serrated teeth.

• Because water tends to condense and freeze on the tent wall and rainfly in cold weather, your tent should come equipped with some means of venting warm, moist air out through the rainfly. The higher up the vent is, the more effective it will be. A good vent will greatly lessen the tent's morning weight while keeping you and your gear drier.

• An increasing number of experienced snowcampers use only a tent's rainfly and poles for their winter shelter. Typically, the snow floor is excavated to a depth of a couple of feet (or more), and the rainfly is pitched as a roof. Snow is then used to seal the bottom edge against drafts and blowing snow. This arrangement takes longer to pitch than a full tent, and results in significantly more condensation. On the other hand, there's plenty of room, weight is reduced, and specially made "tarp tents" are less expensive than complete tents.

PACKS: *STABILITY & COMFORT*

Look for a "load lifter" strap when you shop for a winter pack. You'll find it attached to a buckle positioned on the pack above the shoulders. The load-lifter strap, which connects to the shoulder straps at about clavicle level, can lift them up off the top of your shoulders while it pulls the pack closer to your back.

There you lie, sprawled on the ground, your face pressed into deep soft snow. You flail your arms and legs in helpless motions, but it does no good: You're securely pinned down by your pack.

Have you been laid low by an avalanche? No. This ungainly maneuver, a popular classic on the winter tour, is the infamous face-plant pack-pin. Is this fun? Well . . . um . . . no, but *avoiding* this maneuver is extremely satisfying.

When selecting a backpack for snowcamping, then, your goal should be to find one that is stable as well as comfortable. If the pack is stable and the weight inside it is manageable, any face-plants you execute won't be the fault of the pack. For maximum stability:

• Get an internal-frame pack, and be sure its stays are custom-bent to your back.

• The belt should fit closely, without gaps, from your spine all the way to the front of your hipbone. It should be substantial enough—and attached to the pack firmly enough—that the pack won't wobble or slosh its contents about.

• The shoulder straps should fit flat against your back, so that no buckles or edges poke into you. They must also be well secured to the pack to effectively minimize sway.

• Additional sway control can come from a sternum strap, which connects the shoulder straps at breastbone level. Be sure such a strap is fastened high enough on your body to allow you to breathe comfortably.

CLOTHING: *WARMTH & FLEXIBILITY*

Winter wandering puts great demands on every article of clothing. All but the thickest clothes need to be warm when wet. Why? Because you're going to sweat, and will either fall into snow or have it fall on you. While warm and dry may be the sacred goal, you should be prepared to settle for warm and damp. Toward that end:

• Wear only wool or synthetic clothing (except for your down jacket). Polypropylene may be the material of choice for close-

wa trail shoes. In general, the smaller sizes (ranging from 8" × 25" to 10" × 36") are best for the mountaineer and skishoer. Larger sizes are necessary only for walking over deep, dry powder or when carrying a very heavy load. Because snow conditions vary so much, it's tough to say which type of snowshoe is best for each person all the time. In many areas of North America there is seldom more than 18 inches of fresh snow on top of a stable snow base. For conditions such as these, choose snowshoes having one square inch of "flotation" (per snowshoe) for each pound of body weight. Add in the average weight of your pack if you do much bushwacking.

Larger styles of snowshoe will float a bit higher, but sometimes the extra weight and size can be more cumbersome than helpful. The ideal is to have two or more pairs of snowshoes, to match varying conditions. If, like most people, you can own only one pair, it's best to choose the smallest style that will suit the conditions you'll encounter most often.

Today's snowshoes are commonly made from a combination of two or more popular materials, including plastic, aluminum, neoprene/nylon, the traditional wood-frame, and rawhide lacing. Each material has its advantages and disadvantages.

Plastic snowshoes are okay for occasional use. They're fairly durable and maintenance-free, but aren't as well-suited to mountaineering as some other shoes.

Aluminum-frame shoes are practically indestructible. For the most part they are available in the Western bearclaw style. Toes are turned up nice and high, and the shoes are fairly lightweight, making them a good choice for skishoeing and mountaineering. Their only drawback is that most of them use a solid decking for flotation; this can get slippery, which tends to make the showshoe act more like a ski. Crampons or cleats will provide excellent traction on packed snow and ice, but they won't help much in fresh snow, where they make climbing both slippery and tedious.

Wood-frame shoes with traditional lacing are available primarily in older and larger styles, although some styles are available in sizes comparable to aluminum-frame models. Properly manufactured and maintained, wood-frame shoes will match their aluminum cousins in quality and durability, and make excellent skishoeing or mountaineering shoes.

Neoprene/nylon and rawhide are the two materials generally used for lacing. When dry, rawhide is a little lighter in weight than neoprene, and is very good in cold, dry conditions. However, neoprene is a much better all-condition lacing. Unlike rawhide, it doesn't stretch, sag, or soak up moisture in wet snow, and it isn't particularly appetizing to little critters. (Also, because it doesn't stretch or freeze up, neoprene is superior to leather for snowshoe bindings.) No matter which material is used, a good, tight lacing in the toe and heel ensures maximum flotation.

Bindings are made in several styles, but two basic designs are best for all conditions. One features a toe "cup" or flap in front of the foot to minimize forward sliding when going downhill. The other is the "A" (Western) style binding, which has a toe piece that comes up on either side of the foot and lashes or straps across the top. Both have a heel strap to hold the foot securely in the bindings. Most any winter boot ("moon" boots excepted) will fit well in a pair of good bindings.

For more information on snowshoeing, contact the United States Snowshoe Association, Box 170, Corinth, NY 12822.

Carl E. Heilman II lives in Brant Lake, N.Y., where he hand-crafts wooden snowshoes.

fitting layers, but any wool or synthetic garment worn as a middle or inner layer—or even as an outer shell—will be far warmer than cotton when the weather turns cool. (By the way, those tacky polyesters and Hawaiian-print rayons you're reluctant to wear to the office make superb winter wear.)

- Bring clothes selected to work together without duplication. For instance, you should always pack a rain suit to wear over other clothes in windy or wet conditions. (Ponchos won't do the the job in snow.) No other layers need be waterproof or windproof.
- Investigate vapor-barrier clothing. The advantages in weight and warmth-efficiency of nonbreathable inner layers in cold weather are well established. It is a rare individual who is not rewarded by finding out where and under what circumstances vapor barriers suit personal requirements.

Your comfort in cold weather is not guaranteed merely because you've secured possession of all the right *material*. Here are some guidelines for using it:

- Take the time to regulate your temperature. If you are quite warm, you should ventilate, or else shed a layer. If you are chilled, stop for a moment and add a layer.
- Don't overdress in good weather. If you are sure that rewarming will not be difficult, wear clothes that help keep you cool. With this in mind, use the thinnest possible layer next to your skin. The innermost layer is what you will strip down to if the weather warms up. However, in conditions that make it difficult to warm back up, less-experienced snowfolks should err on the side of clothes that are a little too warm.
- Don' forget to i sulate your legs! Though they can take a good deal of abuse without complaint, cool legs mean cooled blood—and that can mean a too-cool you (especially your feet).
- If you don't have double boots, bring booties to wear in camp.
- Take single boots into bed with you to keep them from freezing at night. Your toe temperature for the next morning is at stake.
- An important note: Use lots of sun-protection factor (SPF) 15 suntan lotion. You *will* tan through it. Your skin doesn't need the abuse winter air and spring sun can dish out.

SKIS & SNOWSHOES

For what are essentially long, flat, skinny sticks that attach to one's feet, skis sure have a lot of technical fuss made over them. Rather than get caught up in minutiae, let's explore some general ideas:

- Don't try to digest masses of information before venturing out on a cross-country trip, and don't worry about whether your equipment is state-of-the art. Provided your ski gear is durable and you're in the right frame of mind, you'll have fun.
- Many skiers think a steel edge helps a ski to turn. In fact, a steel edge merely allows the ski to hold its edge on icy terrain; it does not help in turning *per se*. Many steel-edged skis are quite unstable on ice. Given the strengths of modern climbing skins (see below), many skiers would do well to buy nonmetal-edged skis and a pair of climbing skins.
- No backcountry skier should be without modern climbing skins, period. These convenient and durable items resemble their prototype, the seal skin, in that they look like fur and provide incredible traction (though they slide forward with ease). Because modern skins are backed with a long-lasting adhesive, they may be reapplied many times before the glue needs rejuvenation.

Climbing skins will get you to the top of any large hill with the least possible effort. This is nice; but what makes these things truly indispensible is their ability to grip the ice going either up or down. Steep, icy, rutted trails are no longer pathways to catastrophe. Leave your nylon skins on and descend in the breezy and controlled manner befitting a skier.

- Downhill skiers who would like to snowcamp can carry their lift-area skills into the backcountry with alpine-touring equipment. Alpine-touring bindings have a safety-release feature that lets you pivot at the toe so you can walk with your skis. Alpine-touring boots are downhill boots with vibram soles and hinged ankles. This unique design allows the skier to release a forward lean and to flex at the ankle. These systems, though somewhat heavy and expensive, give the backcountry skier uncompromised downhill control.

Snowshoeing is the transportation method most preferred by nonskiers. While it can take you a full season to become a reasonably proficient skier, 15 minutes on snowshoes will make you an expert! (Well, almost.)

Snowshoes are pretty simple. If you're looking for a pair to buy or rent, you'll want to digest the information in "How to Choose Snowshoes," page 112.

SNOOZING & LOAFING

Day's end brings the enveloping roar of the stove. Animation and conversation will come later: For now the task is to doze quietly, letting the warm glow suffuse your face and spread to the rest of your body.

Loafing around by candlelight, half-covered by the sleeping bag, waiting for snow to melt or food to cook, is a way of life for the snowcamper. Steps taken to ensure your comfort now will go a long way toward erasing any of the day's ills—and will get the night off to a cozy start.

- Have a good foam pad to sit and sleep on. A softer pad won't restrict circulation to the parts of the body you're lying on (and won't cause the snow underneath to melt into odd shapes). Two pads are outstanding: a covered combination of 1½" open-cell foam with ¼" closed-cell foam, and the full-thickness Therm-a-Rest pad.
- If your down bag doesn't have a Gore-Tex exterior, you need some kind of cover to protect it from tent condensation or snow-cave drippings.
- Drink lots of fluids—as much as a gallon a day. A typical snowcamping cycle is to drink large amounts of water in the morning, become dehydrated during the day, and then catch up on fluids in the evening.
- Winter nights are long, lending themselves to silliness and repeated raiding of the food bag. You can take all kinds of exceptional edibles on a snow trip because food keeps so well in the cold. Bring along a wheel of brie, some previously sautéed shrimp or crab for the morning's omelette, real butter for the mashed potatoes, sausages, cream for your coffee or hot chocolate. . . .
- If you bring a dry premium wine along—a supple cabernet sauvignon, let's say, or a buttery chardonnay—make sure you (shudder) warm it up slightly before serving. If the very thought appalls, perhaps a generic blend of little pretension and less finesse would be more convenient. Of course, drink alcohol *only* when you are warm, secure, and feeling well. Alcohol can hasten hypothermia if you are cold and getting colder.
- Bring an insulated cup.

* * *

Snowcamping technique, like skiing technique, is something that can always be improved. Experience is the greatest teacher. There's no way to learn to appreciate all of winter's variety from books, and there's no need to try. The essential tactics for dealing with snow are simple: Check your gear; check the weather; learn to visualize yourself in the alien world of snow . . . then go out there and have a blast!

The winter environment is one with complex as well as simple secrets. Therein lies winter's onus—and its charm. □

Mike Scherer often reports on outdoor equipment for Sierra. *He wrote "Choosing Your Dream Sleeping Bag" in the March/April 1984 issue.*

Understanding how the body reacts to environmental stress is a big part of preparing for outdoor emergencies

BLOOD, SWEAT, & CHILL

STEVE DONELAN

STUDENTS OF FIRST AID begin by relearning their ABCs: Airway, Breathing, Circulation, serious bleeding. In other words, they are trained to check immediately for catastrophic failure of the body's vital systems. Further first aid (before the ambulance arrives) is aimed at minimizing the damage of injury or sudden illness. To those who spend time in the wilderness, far from help, a slow failure of the vital systems can be just as fatal, especially if the signs are not recognized in time.

There are two ways in which you can prepare yourself to function in a wilderness emergency. One is to enroll in a first-aid course that allows you to participate in various simulated emergencies, acted out as realistically as possible. Such courses can condition you to respond to emergencies in an organized and effective way. This in turn will start your mind working, and will enable you to use what knowledge you may have.

The second approach relates directly to the first. If you learn something about how the body works, you will understand what can go wrong with it and how to assist a victim when something *does* go wrong.

Too much heat, too much chill, too much water loss—all put stress on the body's vital systems. Different stresses evoke different bodily reactions under varying circumstances, and many early signs of trouble are the results of the body's responses to stress. If you can read the signs and understand these responses, you may be able to use your knowledge to help stabilize a victim before the problem gets out of control.

Practical skills for handling emergencies, including the mundane skills of bandaging and splinting, cannot be learned from a book or magazine article. First-aid training is essential preparation for the backcountry. (See "Wilderness First-Aid Courses," May/June 1984.) But given that training, a subtler understanding of how your body interacts with its environment means that, when a wilderness emergency arises, you'll know exactly what to do without having to sort through a jumble of half-remembered facts and folklore.

Regulating Temperature

In order to remain stable under changing conditions and at varying levels of exertion, the body needs to maintain its core temperature within a narrow range. When body temperature rises above 106 degrees Fahrenheit, tissues of the brain and other organs can suffer irreversible damage within minutes. Below 95°F, the body core is in danger of losing its ability to maintain enough heat and of sinking into hypothermia. Shell tissues (muscle, fat, and skin) act as a temperature buffer for the more sensitive vital organs underneath. In cool weather, 91°F is a healthy skin temperature, though it may drop as low as 70°F in cold weather without causing problems. Skeletal muscles that are not being used may be nearly as cool, which is why the recommendation to "warm up" before exercise is not just a figure of speech.

On a small scale, our vital functions are chemical reactions, all of which produce heat, and each of which depends on critical temperature variables. If too much heat is generated, these chemical reactions can accelerate out of control, producing even more heat. If this cycle is not halted, and then reversed, permanent (and possibly fatal) tissue damage will result.

At rest, an adult body produces from 60 to 85 kilocalories per hour. (One kcal is the measure of heat required to raise one kilogram of water one degree centigrade.) During strenuous activity the body can produce six to ten times as much heat as at rest; during periods of extreme exertion the body

Heat-Related Stresses

In warm weather, unless you dissipate heat as fast as you gain it, your body's core temperature may rise out of control—causing irremediable damage to brain and other sensitive tissues.

Sweating helps to cool you off in hot weather—but there's a limit to how much you can perspire, and if you or the surrounding air are already saturated, the beneficial effect is reduced.

A person suffering from minor or moderate heat illness needs to be sheltered from direct sunlight and promptly rehydrated. Heat stroke is a far more serious affair, requiring that the victim's dangerously elevated core temperature be lowered immediately.

Signs and symptoms of moderate heat illness (heat exhaustion) may include pale skin, weakness, a rapid but weak pulse, and (sometimes) nausea. Belligerent and irrational behavior are signs of serious heat illness (heat stroke).

Cold-Related Stresses

If the body's core temperature starts dropping below normal, hypothermia can follow, as the body then may not be able to maintain sufficient warmth in the vital organs.

If you're warmly dressed in cold weather, intense exercise can actually cause you to overheat. The problem can be compounded by sunlight reflected from snow and ice, which can greatly increase your temperature.

Surprisingly, dehydration is a problem in winter as well as in summer—because the thirst mechanism is very vulnerable in cold weather. This can place heavy stress on the circulatory system.

A marked decrease in mental acuity is an early sign of hypothermia, because the brain is the first organ affected by changes in temperature. Loss of fine coordination—as in slurred speech—is another early sign.

You can lose body heat through your feet (by conduction) and through your head (by radiation).

Illustrations by Marcia Stieger

may be putting out heat at the rate of 850 kcal per hour. Even at rest the body produces enough heat to raise its own temperature by one degree centigrade (1.8°F) per hour; during strenuous activity, your body can produce enough heat to raise its temperature by 6°–10°C (11°–18°F) per hour. Unless your body loses heat at the same rate as it gains heat, its core temperature will soon go out of control.

Dissipating Heat

Your body has four methods of dissipating heat: radiation, convection, conduction, and evaporation. Any warm body in colder surroundings loses heat through the first method, radiation (of infrared "heat" waves). In the open, when the air is still and you are reasonably dry, radiation can account for two thirds of your heat loss. However, reflecting surfaces (snow, ice, polished granite) can greatly increase the amount of sunlight focused on you and affect the rate at which you radiate heat. Even at high altitudes or in snowy landscapes, you can sometimes gain more heat than you lose by radiation, which may cause you to overheat.

Convection occurs in a different way. Cooler air surrounding the body is continually being warmed by body heat. Because of surface drag and turbulence, the warmed air closest to the skin is displaced more slowly than the air farther away. Wind velocity actually decreases as air approaches the skin. However, the stronger the wind originally, the lower the rate at which it slows down. In even moderate wind the insulating layer of warmed, slow-moving air next to your skin becomes negligibly thin, causing more heat to be lost as natural convection currents draw it away from the skin.

If radiation, convection, and conduction (loss of heat by direct contact with something cooler) do not lower your body temperature enough to keep you from overheating, your body's only recourse is to sweat. One liter of sweat that evaporates on your skin (as opposed to just dripping off) removes 580 kcal of heat from its surroundings —about as much as a person produces in an hour of strenuous activity. Because the average person can produce up to 1½ liters of sweat per hour (and up to three liters after acclimatization), it's logical to assume that sweating alone would cool one off under almost any circumstances.

But there are limits. Sweat glands cannot flow at full capacity indefinitely. At maximum sweating rates, 12 liters is about the most they can secrete without a rest. Second, once all of your skin becomes wet, all available evaporation surface is occupied, and additional sweat will just drip off without effect. (Even in dry air, with all your skin exposed, you cannot evaporate much more than one liter per hour—perhaps 700 kcal worth at most.) Third, the more water vapor already present in the air, the slower the rate of evaporation. At humidity levels of 75 percent or more, sweating has little effect except to dehydrate you.

None of the body's means of dissipating heat from its surface will be very effective unless the circulatory system shunts heat from the body core and working muscles to the skin, where it can escape. Conduction of heat through the body's tissues is a slow process. If you become dehydrated enough to reduce blood volume, the heat-shunt mechanism may shut down, to maintain enough circulation in the vital organs—which will also retain heat in the body core.

The head, however, experiences the reverse phenomenon—great volumes of blood pass just under the skin with little or no natural insulation. So the blood picks up (or loses) heat very quickly, carrying the heat (or chill) back to the body core—which is why smart cold-weather hikers always wear hats, and why hot-weather trekkers are not ashamed to carry parasols!

Water Loss and Heat Stress

Signs and symptoms of heat exhaustion—pale skin; weakness; nausea (sometimes); and a rapid, weak pulse—indicate what is happening to the circulation. Reduced blood volume resulting from dehydration makes the pulse weak, and the heart speeds up to compensate. With barely enough capacity left to service vital organs in the body core, circulation withdraws from skin and skeletal muscles and (sometimes) from the digestive system. The body is simply setting priorities. Cooling, by shunting blood from core and working muscle to the skin, is important; but supplying oxygen, fluid, and nutrients to vital organs is much more important. Under the double handicap of dehydration and heat stress the circulatory system cannot long do both.

Treatment for heat cramps or heat exhaustion—after taking the victim's temperature, preferably with a rectal thermometer—is rehydration, at rest, in the shade. Stretching out a heat-cramped muscle may help a little, but primarily you want to remove the

source of stress on the individual's circulatory system (heat, in this case) and restore the balance of fluids in the body. This will help clear out accumulated lactic acid from the muscle fibers as well, which will help relieve cramping.

What about sodium loss through perspiration? Folklore tells us that we ought to take salt (sodium chloride) tablets when we sweat, to forestall the possibility of sodium deficiency. Only in extreme conditions of heat and exertion, however, can you lose as much sodium as the average American consumes in a day (perhaps 8 to 12 grams), which is several times as much as you need in more moderate conditions. Moreover, becoming acclimated to heat (or altitude) reduces the loss of sodium tenfold. A potassium deficiency is more likely, from heavy sweating and exertion, because the kidneys do not retain this element nearly as well as they do sodium. But frequent snacks of potassium-rich foods such as banana chips and nuts should prevent this problem.

When the body is so heated that cooling systems fail, the core temperature is forced up, which is the one sure sign of heat stroke. Unlike heat exhaustion, heat stroke is immediately life-threatening. Reflecting the body's priorities, the circulatory system will occasionally resume shunting blood to the surface, producing a rapid, bounding pulse and flushed skin, but little cooling effect if the temperature of the surrounding air is high. Sometimes the sweat glands will fail, allowing the skin to become dry. An altered mental state is also common in cases of severe heat illness; the victim will become irrational and often belligerent before sinking into a stupor.

Whether or not all these signs and symptoms are present, one thing is certain: If heat stress is forcing the body's core temperature up, you must cool the victim *quickly* by every available means. Immersion in cool water is best; otherwise, move the victim to shade and try fanning and sponging with wet cloths. Remember, once the body's core temperature goes above 106°F, delicate tissues may suffer irreversible damage.

Water, Food, and Cold

When you're active in cold weather, circulation to the skeletal muscles increases greatly to supply them with oxygen, fluid, and nutrients. Even in freezing weather the heat production from intense muscular activity

may be so great that you can overheat, if you are warmly dressed. Dissipation of heat is made easier in cold weather, however, by dilation of arteries near the surface and in the muscles, which reduces the body's natural insulation by about 25 percent and exposes warm blood to the chill. One consequence of this is that in cold weather (as in hot), stress is placed on the circulatory system, which must maintain the vital organs no matter what other demands are made on it. If dehydration—from insufficient fluid intake, say— reduces blood volume, stress on the circulatory system is greatly increased, reducing its capacity to deliver oxygen and nutrients to both working muscles and vital organs. It is therefore essential to keep fluid intake up in cold weather.

You must also replace the fuel you are burning. If, in strenuous mountain climbing, you generate 580 kcal of heat per hour while expending a lot of energy in the form of useful work (climbing), you will quickly go through your store of ready fuel—about 1,500 kcal of glucose, at most.

What happens when the body runs out of glucose? It can use stored fat for energy—after all, that's what fat is for—but metabolizing fat is much less efficient than metabolizing carbohydrates; it requires more energy and produces more waste products. Sometimes these waste products emit a recognizable smell. Acetone breath, an odor often described as fruity, is a possible sign that energy reserves are gone and that collapse is near. (It can also be an indicator of diabetes.)

A further consequence of insufficient intake of fuel and fluid is that when you stop moving (or even before then) you may no longer have enough reserves to stay warm. Even a hearty backcountry breakfast will probably not yield more than 1,000 kcal, a third of what is required daily by a sedentary adult. An active person will need far more. Because the body cannot put huge quantities of potential energy into a readily accessible reserve, it is important to eat as well as drink frequently on a strenuous trip.

How much water do you lose in the dry air of cold or high environments? You should not be losing too much by perspiration if you are dressed properly. (See "How to Choose Outdoor Clothing," *Sierra*, March/April 1983.) But the drier the air you breathe, the more water your body must add to it to keep the lungs from drying out. Just under the surface of the upper breathing passages is a network of small blood vessels from which water is diffused to humidify inhaled air. Most of this water is lost when you exhale. At high altitudes the rate of respiration increases greatly, so the rate of water loss from breathing increases even more—up to one liter per hour during strenuous exercise. (Water loss through urination may also increase greatly.) Because thirst is not a reliable signal in either cold or hot weather (or at high altitudes), you must keep drinking.

Resist the temptation to eat snow, however. Melting ice in your mouth takes heat from your body and can contribute to hypothermia. And the average water content of mountain snow is only between 7 and 10 percent; the rest is air. So carry a water bottle made of dark (heat-absorbing) plastic instead; keep putting ice and snow in it, and let the sun do the work!

Hypothermia

So long as your system has enough fuel to burn and enough water to utilize and distribute that fuel, you can maintain your body's core temperature in very cold surroundings. A nude man, if he stays active in dry air, can survive at 32°F for as long as 24 hours, though he'd die in 5 minutes if immersed in freezing water (which conducts heat 25 to 30 times faster than air). For long-term survival without clothing or shelter, an air temperature of 70°F is about the lower limit of what can be endured.

If you keep pushing on when you're running low on fuel and water, you may force your body to maintain heavy circulation in the skeletal muscles at the expense of the vital organs, lowering your core temperature past the danger point. Collapse will follow. Or, like many hypothermia victims, you may be idling in 50° weather without protecting yourself (because it doesn't feel cold), and thus lose a critical amount of heat without becoming aware of the danger. In either case, the brain, which is very sensitive to temperature change, is usually the first organ affected. Hence the first thing most hypothermic victims lose is the ability to recognize their condition.

Slurred speech is an important early sign of hypothermia ("too little heat"). Controlling tongue, lips, and palate to produce intelligible sounds requires very fine coordination, which is lost as the brain is chilled. You may also notice poor hand coordination as the victim's core temperature drops toward 95°F. Higher functions of the brain are affected first, of course, but if you're concentrating on moving your body from one place to another, you may not notice a victim's impaired judgment or inability to do arithmetic. And don't count on a victim *telling* you about (or even recognizing) symptoms such as chilliness and numb skin, because his brain will be getting numb too. If

muscles are engaged in strenuous activity, shivering usually will be suppressed; and though shivering can produce up to four or five times the heat produced at rest, lavish expenditure of vanishing fuel reserves is not a good survival technique.

At this stage, shelter, dry clothes, or a prewarmed sleeping bag and consumption of hot drinks followed by some "energy food" are usually enough. Swallowing a few cups of hot liquid won't raise core temperature significantly (remember, a 150-pound person contains about 40 liters of water), but it will rehydrate the system without further chilling—and most hypothermia victims are dehydrated, because people rarely drink enough fluids in cold weather.

Serious loss of coordination, weakness, and (especially) a stumbling gait indicates that the core temperature has probably dropped below 95°F (though oxygen deficiency at high altitudes can produce similar effects). Usually, victims get too confused and apathetic to help themselves, which means that you can't just *tell* a victim to do something: You have to do it for her.

As the core temperature drops toward 90°F, coordination fails, especially in the hands (which may become almost useless), and the victim will become very sluggish. At this point, to counteract heat loss it is necessary to *add* heat to the victim's body core. Bundling the victim between warm bodies, skin-to-skin in prewarmed sleeping bags, is often the only technique available in the field.

Unless you have a low-reading rectal thermometer with you in the field, you won't be able to measure temperature in the body core. But if the victim, however lethargic and uncoordinated, is conscious (responsive) and able to move, his core temperature is probably above 90°F, which means that you still have a good chance of rewarming him without complications.

As core temperature drops toward 86°F, the victim will become stiff and incoherent; below that, rigid and unconscious. Rewarming of a stiff or rigid victim will probably cause severe complications that cannot be managed in the field. Blood in the extremities will be much colder and more acidotic than in the core. As the body is rewarmed, circulation will be revived, bringing that cold blood back to the heart, which will have two dangerous effects. First, the body core, already cold, can be chilled even more. Second, the cold returning blood will chill the inside of the heart more than the outside. At cold temperatures, the heart tissues become very sensitve and irritable, so that temperature differences can disrupt the electrical signals controlling heart rhythm, sending the heart into random twitching (ventricular fibrillation), which in virtually all cases leads to death.

A victim in deep hypothermia may appear to be dead. She may be as stiff as a board and have no audible heart sounds, no palpable pulse, no apparent breathing, and no light response in the pupils—yet she may still be alive. So it is extremely important to check carefully for vital signs. Check the pulse in the neck (the carotid arteries) and in the femoral artery near the groin—and check for at least one full minute! Put your ear right down near the victim's mouth to listen and feel for breath, and put your hand under the victim's bulky clothing to feel for any chest movement, however slight.

So long as you can detect breathing, you know that the heart is beating (whether or not you can find a pulse). If respiration falls below about six breaths per minute, however, you should start artificial respiration.

If you cannot find any signs of circulation *or* breathing, and you are trained in cardiopulmonary resuscitation (CPR), then you should attempt it. Chances of restarting a hypothermia victim's heart in the field with manual CPR are very small, but if you can simultaneously evacuate the victim, revival in the hospital may be possible. Being in a metabolic icebox can protect the brain and other vital organs from deterioration far longer than the 4 to 6 minutes they would have at normal body temperature. *Hypothermia victims are never dead until they are warm and dead*, and must never be abandoned.

Whether or not a victim in deep hypothermia (stiff and unresponsive) has any vital signs you can detect, evacuation to a hospital offers the best chance of survival. Body temperature should be maintained (by wrapping the victim in plastic or nylon), not raised; and even if you are not trained in CPR, you can keep the airway open (tilt the head back if breathing stops) and give mouth-to-mouth respiration if necessary.

Remember that patients are deliberately chilled into moderate hypothermia for open-heart surgery, which they could never survive at normal body temperature. Hypothermia slows down metabolism—and oxygen demand—drastically. Rewarming the deeply hypothermic patient without causing death—in particular, without shocking the heart into ventricular fibrillation—is the main problem. With the sophisticated rewarming and life-support equipment of an emergency department, it is possible that rewarming shock can be managed and that hypothermia victims can be revived.

Prevention, however, is the best guarantee against hypothermia. Failing that, those who go into the backcountry should at least be able to recognize the condition in its early stages, when rewarming can usually be done in the field without complications.

Frostbite

Feet and hands have little heat-producing tissue, and little insulating volume distributed over their surfaces. For these reasons, they depend on the continual circulation of heated blood from the body's core to keep them warm. Reduction of blood volume by dehydration may force the body to sacrifice the extremities to maintain circulation and temperature in the core. Hence frostbite often follows hypothermia, or an injury (such as a fracture) that interferes with circulation to the affected part. But in freezing weather, everyone is vulnerable.

For most people, feet are the extremities most likely to be frostbitten. They quickly lose heat by conduction to cold ground or snow, especially if they are wet. And footwear often restricts circulation, especially if you try to wear too many pairs of socks.

Less commonly, people who handle metal objects will get frostbitten hands, again through conduction. Everyone who takes cold-weather trips can be forewarned: Never touch skin to bare metal. Use polypropylene glove liners; wrap metal fuel bottles and ice-ax handles with tape.

Ears, nose, and even cheeks may be frostbitten, but much less easily than extremities. For all their apparent vulnerability, they benefit from efficient circulation of blood to the head. Direct exposure of these surfaces to cold wind, however, can overcome that advantage.

Cooling tissues will usually feel cold, then painful, and will gradually become numb. The body's first response is to shunt blood to the affected area to warm it—if enough blood can be spared from the body core. Blood will flush the skin and revive nerves. (The victim may even feel a burning sensation.) When pain turns to numbness or a pleasant sensation of false warmth, you know that the body is withdrawing circulation from the affected area—sacrificing it—to minimize heat loss. Unless something is done quickly to rewarm and protect the chilled tissues, they will freeze. The victim can place his hands in his own armpits, and his feet against a friend's warm belly. He should then be provided with dry socks or gloves. If hands or feet become pale and numb *without* passing through the flushed stage, the victim may be sinking into hypothermia, in which the body shuts down all peripheral circulation to conserve heat in the vital organs.

As tissues freeze, ice crystals form between the cells, dehydrating them by drawing water out through the membranes. Fluid within the cells, with a higher saline concentration, is slower to freeze. Once ice crystals have formed, whether superficially or deeply, the tissues cannot be rewarmed without great pain (not immediately perceived by the victim) and loss of function. Deep frostbite, of course, is unmistakable: The victim's flesh feels like wood to the touch. In superficial frostbite the underlying tissues are still resilient, but the skin (which is frozen) has little elasticity. If you press in with a fingernail (say, on the pads of the fingers), the indentations will remain. Frozen skin is often described as waxy, and may be white or gray-white; but for superficial as for deep frostbite, the touch test is decisive.

It is possible to walk out of the wilderness on frozen feet, but once frostbitten tissues are thawed, the pain and (usually within hours) swelling and blistering may virtually disable the victim. And because circulation will be seriously impaired in the damaged tissues, refreezing is almost inevitable in the field.

The essential point to remember is this: Never try to thaw frostbite (superficial or deep) until you've removed the victim to a place where you can rewarm the frozen part rapidly and keep the victim warm.

The technique that works best for frozen hands or feet—immersion in a large container of warm water (100°–110°F)—will rewarm the frozen part and restore circulation as fast as possible, until color and sensation (mostly pain) return, usually in 30 to 60 minutes. Water hotter than 112°F will burn the tissues—although the victim won't feel it—so test the temperature constantly. When the limb is nearly thawed, add a mild antiseptic to the water. Afterward, treat the damaged part as gently as possible. Pat it dry with sterile dressings, bandage it loosely (with gauze beween fingers or toes), and leave it alone. In the hospital, frostbite victims have a good chance of recovery if circulation can be maintained and infection avoided. But the process is long and painful (months for deep frostbite), and tissues once frostbitten will be more vulnerable to freezing again.

* * *

Heat production and loss. Water intake and loss. Transport of oxygen and nutrients to the cells by blood circulation. All these vital processes are affected by the environmental stresses of heat, cold, and dehydration. Understanding how these processes work—and how they can go wrong—will greatly increase your chances of enjoying, and surviving, the wilderness experience. □

Steve Donelan, an instructor in wilderness first aid, lives in Berkeley, Calif.

The OBSERVER

Clair Tappaan Lodge

For 50 Years the Sierra Club's Mountain Retreat

We think Clair Tappaan Lodge is a little different. Like all Sierra Club lodges it has a special meaning for the many members who have worked to make it what it is, who laid a stone, nailed a shake, fitted a pipe, puttied a pane, or who washed a dish, swept a floor or cleared a table, in the years of the volunteer work which built it and which carried it on. Through this wide and wonderful cooperation, we have a lodge where members . . . can learn to ski, and incidentally find out about the mountains. Here they can hike, and here they can begin to understand what the Sierra Club stands for and what it means by "explore, enjoy, and protect the natural mountain scene. . . ."

High in the Sierra, Clair Tappaan Lodge peeps through snow-laden trees in this photo from a long-ago winter. In the foreground, the first caretaker's hand-crafted cabin. Facing page: Sierra Club volunteers contributed labor and expertise at every stage in CTL's development.

Skiing in winter, hiking in summer, and helping to keep things running smoothly year-round with a cheerful smile and a willing hand . . . that's been the tradition at Clair Tappaan Lodge for half a century now. It was a tradition already well established in 1953, when the above sentiments were published in the *Sierra Club Bulletin*, and no one expects that the spirit of friendly cooperation that keeps CTL going will diminish anytime soon.

Clair Tappaan Lodge is the Sierra Club's primary accommodation for members and guests in the Sierra Nevada. It's located at 7,000 feet elevation, west of Donner Summit on old Highway 40, two miles from Interstate 80 in the ski-resort village of Norden. There's space for 140 overnighters in two-person cubicles, family bunk rooms, and large dormitories. Full-time managerial staff attend to basic administration and food service, but because the lodge operates on a cooperative basis, each guest pitches in a few minutes every day to make sure housekeeping chores are taken care of. This is one of the ways in which costs are kept below those charged by the area's commercial lodges and ski resorts.

Most of the lodge's space is booked well in advance on winter weekends, when it sometimes seems that half of Northern California is looking for somewhere to stay in the mountains. The place pretty well empties

out after breakfast, as people set off for a day of skiing, ski touring, or snowshoeing. But most return in time for a hot dinner, knowing that generous servings of delicious food are a CTL tradition. A full round of evening activities is usually planned, including music, films, lectures, a hot tub, and more.

It's not quite so crowded in the summertime, and the already-low lodging rates drop even further then. It's a great time of year for a visit: Scenic spots abound for hiking, swimming, or just lazing. Small, sheltered Maiden's Retreat nestles near Signal Hill, close to Donner Summit. Crater Lake shimmers at the very top of Boreal Ridge, while natural granite shelves at Lake Flora invite divers and sunbathers alike.

Winter or summer, longer excursions from the lodge precincts are possible by making use of the four Sierra Club huts in the area, including Peter Grubb (5 miles away, in a sheltered bowl at the foot of Castle Peak) and Benson. The former sleeps 20, the latter, 12—so overnight trips for small groups are easily arranged.

While many long-time Sierra Clubbers have years of CTL memories stored away, newer members may be discovering only now the convenience and conviviality of the old lodge. For information about rates and reservations, write to Clair Tappaan Reservations, P.O. Box 36, Norden, CA 95724 or telephone (916) 426-3632 during the day.

There's much more to be said about Clair Tappaan Lodge, for it figures prominently in the history of the Sierra Club. A celebration was held at the lodge last year on the occasion of its 50th anniversary. Lewis Clark—a former President of the Sierra Club who has been intimately involved with CTL since its inception—took time that evening to answer some of the questions most often asked about the lodge and its history.

Why was the lodge built where it is? In the early 1930s the San Francisco Bay Chapter of the Sierra Club sponsored several ski trips to areas in the Sierra Nevada: Cisco, the Soda Springs railroad station, a Boy Scout camp. On one charter-bus trip to the Soda Springs area, there was a spontaneous sentiment on the return trip that we ought to have our own ski hut, independent of railroad stations and scout camps.

Bestor Robinson, recently appointed chair of the Winter Sports Committee, spoke strongly in favor of the suggestion. His brother-in-law, Horace Breed, said that he and several friends had a cabin site on Forest Service land near Norden, and he thought his friends could be persuaded to give the site to the Club, as all were members.

Everyone in our bus group was enthusiastic. Professor Joel Hildebrand said he would pledge $100 to the building fund out of royalties from the chemistry textbook he was then writing. Franklin Banker, a teacher at Piedmont High School, said he would contribute a kitchen cook stove. Neill C. Wilson, a writer, volunteered to put together an announcement for the *Sierra Club Bulletin*, and I collaborated with him on this. Finally, Bestor Robinson got the Board of Directors to agree to our volunteer efforts so long as the Club would not be under any financial obligation.

Some other site suggestions were proposed. Wendell Robie, president of the Auburn Ski Club, suggested that we build on land the ASC would grant us near Cisco, about 18 miles below Donner Summit, where the ASC had its headquarters. But Professor Joseph N. LeConte, former Club President, said that Cisco was too low and its snow too unreliable. He said the Sierra Ski Club, of which he and Dr. Hildebrand were members, had built its lodge (now the Sierra Club's Hutchinson Lodge) near Norden because records showed more snowfall there than anywhere else along U.S. 40, then the only through highway across the Tahoe Sierra. It was ultimately decided to build a ski hut on the Forest Service lot offered by Horace Breed and his friends.

Who was Clair Sprague Tappaan? He was an attorney in Los Angeles who became acquainted with William E. Colby on the Club's second High Trip outing, which Colby led into Kings Canyon. Clair Tappaan, camping alone, went over to the Club encampment to see what was going on. Colby and Tappaan quickly became friends, and together they teamed up on many subsequent High Trip outings. Tappaan took care of logistics while Colby took care of the routes and climbs. Tappaan came to be well loved by High Trippers. After John Muir's death in 1914, Clair Tappaan—by then a superior-court judge in Los Angeles—became the Sierra Club's fifth President, following William F. Badè.

Why was the lodge named for him? Judge Tappaan died after suffering a heart attack on a Los Angeles street. The year was 1932, I believe. Our ardent skier, Maren Aune, suggested we name the proposed ski lodge in his memory. That idea was later approved by the Board of Directors, and in fact did much to help raise funds for the project. So although Judge Tappaan was not a skier, and probably never saw the site, the lodge built at Norden was dedicated to his memory.

Did Sierra Club members volunteer their services in building the lodge? Many volunteers, some professionally skilled and some just enthusiastic, helped in planning and on work parties. The work-party system actually originated through the spontaneous enthusiasm, carefully nurtured, of many volunteers. Although some $4,400 came in through the appeal memorializing Judge Tappaan, we couldn't have afforded in those Great Depression days to build the lodge from scratch without volunteers.

The first work party was on a sunny day in June 1933. Five of us drove to Norden from Oakland in Bestor Robinson's Chevrolet. When we got there, we laid out the site and began cutting down lodgepole pine and fir trees so we could erect the building according to plans made by Walter Ratcliff. He was an architect and a member of the Sierra Club and the Sierra Ski Club.

Lewis Clark

In that first work party were, besides Bestor and me, Horace Breed, Adrian Wehlander, and Joseph Staudinger. Staunch Mr. Staudinger—an experienced High Tripper and a teacher of mechanical engineering at Lick-Wilmerding, a technical high school in San Francisco—although never a skier, was a strong, professional craftsman and our plumbing specialist. Another such specialist was Bill Horsfall.

Other members on 1933 work parties included the Hildebrand family (Joel, wife Emily, Louise, Alex, Milton, and Roger); Dick Leonard, now the Club's Honorary

President, and his wife, Doris; my brother Nate (who later served the Club as President); my neighbor Glenn Weber and his young son; mechanical engineer Ed Yeazell; Einar Nilsson and his wife, Annie; and Harold Paige and his wife, Mary. (He was a building contractor who brought several carpenters to help frame the main building.)

Who has chaired the Sierra Club's Clair Tappaan Lodge Committee? Bestor Robinson, as chair of the Winter Sports Committee (which was charged with the original building project), suggested that the President of the Club appoint a separate operating committee for the lodge. I was appointed as first chair of that committee. After eight years I began my wartime service in the Navy, and Dick Burnley took over. Dick was a tall, powerful skier and a good organizer. After World War II he moved to Texas, and I became chair again.

There followed ten people who chaired the committee for varying lengths of time: Jim Clifford; Jim Mulholland, a professional photographer who once claimed to have made 48 visits to the lodge in 52 weeks; James McGillicuddy ("McGoo"), during whose term the new warming hut was built near Lytton Lake; Frank Shoemaker, a long-time ski-patrol leader; David Horne of Oakland; Ted Malm, a professor at U.C. Berkeley; Darrell Southwell, long-time skier and computer professional; Darrell's son Bob Morey; Tom Parkinson; and now Rick Johns.

Who are the people who have served as lodge manager? In its first season the lodge was opened each weekend by a rotation of volunteer leaders, then locked up during the week. The following summer, along came a lanky Dartmouth chap who asked our work party if we had a job for him as custodian. He said he would build his own log cabin to live in. I hired Johnny Ellis, and he built his cabin from local trees. He was a great axeman.

Since Johnny we've hired 12 managers. (Early on we called them custodians, but soon the title was upgraded to "manager," accompanied, of course, by increased responsibilities.) They are, in approximate order: Bill Klein (and brother Fred), Haven Jorgenson, George Todoroff, Henry Cam, Lloyd Davis, Mike Curtis, Keith Lummis (who later served a second term), Rudy Talso, Kent (and Pat) Williams, Mark Shapiro, Michael Jeneid, and currently Rick Smith.

Who have been CTL's ski instructors? In the beginning, Professor Joel Hildebrand, who managed the U.S. Olympic ski team in 1936, was our skiing mentor, coach, and judge. He had a special ski badge with a "J" on it, which stood for both Joel and Judge.

Our first employed ski instructors were the Klein brothers, Bill and Fred. Following in approximate order were Peter Picard, Roger Paris, Jim Niclos, and Michael Jeneid (a cross-country advocate).

How have the lodge's domestic facilities evolved? Water originally came from the pump house over a well in the meadow east of the lodge. Long after the pump house was removed, we referred to the slope used for beginner ski instruction as Pump House Hill. We developed several springs near the "warming hut," and installed large wood tanks at the top of Pump House Hill. Now there is a tri-lodge water entity—comprised of CTL, the U.C. Berkeley lodge, and the TVN "German" lodge—that uses springs near Lytton Lake, reserve tanks, and associated pipelines. We are considering joining the Donner Summit water district, which relies on Lake Angela (a former Southern Pacific water supply).

For sewage disposal, initially we had a septic tank, which was replaced by a big buried tank that drained into a leach field. Recently this was replaced—at great cost—by a new holding tank and improved leach field above the lodge.

At first we used kerosene lamps and bottled gas for lighting, with all their inherent fire hazards. Then came electricity—much safer, although it can have its risks, too. For cooking, we relied at first on Mr. Banker's coal- and wood-fired stove, later modified with an oil burner. Banker's stove was taken to the Peter Grubb Hut when we acquired a used oil-burning range for the lodge. For a while there was an iron "coffin" stove in the south end of the living room, but it was removed. Now, besides fuel oil in the steam boiler and cooking range, we use bottled gas in the kitchen.

What of the future? Times do change, and who knows what the future may bring? However, I believe that the love, devotion, and dedication of countless volunteers and visitors over 50 years have been amply rewarded by the convenience and camaraderie Clair Tappaan Lodge provides.

I.C.O. SKI TRIPS
FEELING THE OPEN SPACE

BOB HARE

When Betsy Hannon started showing up for Sierra Club cross-country ski trips in the Sierra Nevada, some members thought she

shouldn't be there. Betsy, who is legally blind, wanted to learn to ski.

"The first few times out I was awful," Betsy told me. "But then I heard through the grapevine what was being said. Things like, 'Oh my God, she'll kill herself! She's got no business out there.'" Well that made me mad and that made me determined. I was going to go out there and ski if I had to break my body into ten pieces to do it."

Betsy not only kept showing up for Sierra Club ski trips, she began an Inner City Outings (ICO) program at the Sacramento Group to get other visually impaired and blind Sacramentans in the tracks. "They were telling me I couldn't do it," Betsy continued. "Then when I got this program going, they were saying, 'Oh my God, now she's got others out there on those hills.' I wish they would just come out and see how well these people do."

I met Betsy on a Sierra Club hike a few years ago. Before I knew it, I had volunteered as a driver and hiking guide for an overnight trek with her blind group, which she informally calls "the Blinks."

When Betsy asked me to help out on an ICO cross-country ski trip to Lake Tahoe's north shore last February, I quickly said yes. She asked me to pick up Linda Jones and Erwin Weist, whom I knew from earlier outings.

On our way to the Tahoe Nordic Ski Center, I asked my two sightless companions what they liked most about the program. Erwin answered quickly, "It's an escape from the city, getting away from everybody. Letting nature let you feel what it has in front of you. I like feeling the open space."

Linda was equally enthusiastic. "I'll keep my skis on as long as I can," she said. "It makes me feel younger, freer, and happy."

At Tahoe Nordic I met David Waite, who coordinates ICO special programs and has trained ski guides for the blind for eight years. David has worked with Ski for Light (now HEALTHsports, Inc.) and currently works with Shared Adventures. Both programs promote outdoor recreation for people with disabilities or special needs.

David talked about the advantages of cross-country skiing as a sport for people with visual impairment. "There's not as much fear as with some other sports, and the neat thing about it is that you have a partnership with a guide, so there's some social contact to it, too. All of a sudden you become partners on a wilderness trip." Betsy feels that the greatest benefit of this kind of program is the sense of freedom blind skiers feel, the call to meet a challenge, to be able to say, "I can do it."

Ski guides for the blind say they gain more than the feeling of being of service while

enjoying a day's skiing. They begin to see things differently.

"Verbally, you are their eyes," said instructor Waite, "so it makes you become more aware of what's around you. I often tell people that blind people taught me to see. They've made me much more aware of what's going on around me. It's a two-way street: I always feel like I get 60 percent."

Ski guide Monte Rowell says guiding has given him "better insight into the feelings of other people. It forced me to think in terms not of myself, but of how another person is experiencing what's going on."

ICO's success hinges on the relationship between participant and guide. Mutual respect, trust, and good communication play important roles here as in any partnership. "I like to think of it as something shared," says Linda Jones. "They are our eyes, and we can be something else to them that maybe isn't always visible."

"A good guide is a person who can project what's coming up," says Betsy. "For example: 'There's a little mogul halfway down, you're going to go between two trees and then you'll drop so many feet.'" Linda Jones agrees. "I don't want someone to hover too much over me."

I found guiding both enjoyable and challenging: talking with my companion, describing the scenery, and, of course, the skiing itself. Ski guiding calls for concentration, observation, judging distances and slopes, making decisions, and communicating quickly and clearly. Occasionally I felt the inadequacy of words and the slowness of the tongue when trying to describe rapidly changing situations on slopes and crowded parts of the trail. Needless to say, both guides and participants occasionally found themselves sprawled over the generally forgiving snow—but that's part of the sport and the fun. There were rumors that Erwin once found himself hanging upside down from his ski tips in a snow gully after one pileup, but he was no worse for the wear.

The vision of participants on our trip ranged from total blindness to partial sight with the help of corrective lenses. Some saw light or shapes; others could recognize faces and read. "We've got people who are out there holding down good jobs," says Betsy. "We have lawyers, cafeteria managers, people making their own way in the sighted world. Their only limitation is that they can't drive a car. Partially blind people probably use their vision much more than fully sighted people do. They work their eyeballs overtime."

"I can see the trail pretty well," says participant David Parker. "It's helpful that they make the signs different colors." David, who has one-fifth vision, also enjoys waterskiing and horseback riding. "I can see everything perfectly clear for me," David continued. "Does that make sense?" I wasn't sure until he added, "If you took your glasses off long enough, what you'd see would be clear." I recalled my amazement when I was fitted for my first pair of glasses and saw what I didn't know I'd been missing. David was obviously having no trouble skiing by himself. He compared cross-country skiing to waxing the floor in his socks as a kid: "You just glide your feet."

I glided next to Valerie Ries, whom I had met on an earlier ICO trip, and who, like David, needed no assistance. Valerie is legally blind, but has vision in her right eye with the help of glasses. "It's a lot easier than I thought," she told me. "It's a lot of fun, sort of like ice skating or roller skating. I ride a bike and read some small print, but I have no depth perception; it's all learned. It's amazing how much a person can do with their available sight. When I go to the ophthalmologist, he can't believe the things I do. I was raised in a family that encouraged that."

I tried skiing with my eyes closed to sense what it was like to ski by feel alone. The tracks were reassuring, but I found myself peeking to make sure I was still in them.

"The main thing is having a good track," said visually impaired skier Henry Negrete. "A blind guy could almost ski by himself if he

A well-groomed track helps visually impaired skiers enjoy the glide.

had a good track." With eyes closed, my greatest fear was running into something, an overhanging branch or a tree next to the track. Worse, I thought, would be going out of control on a slope and falling who knows where.

I asked Linda Jones, who has been totally blind since birth, if she had much fear of falling. "Not me. I've fallen over chairs and things all my life," she answered. "I take that chance every day when I cross the street, so I wouldn't let something like that stop me. If I get hurt, I get hurt. You could die in your kitchen or sitting in your front room reading a book." More than anything else about this group, I am impressed by this willingness to take risks in order to engage life more fully. I keep hoping that some of this courage will rub off on me by association.

"The long-term goal," Betsy explained, "is to get blind and visually impaired skiers into the mainstream of the skiing community. It's a matter of educating the sighted world to accept it. If you announced an outing in the Mother Lode Chapter's *Bonanza* that read 'Ski Trip: Visually impaired will be included,' how many sighted people would show up for that trip? Very few.

"This group isn't for everybody," Betsy continued. "Not everyone can be relaxed and feel comfortable talking to blind people. Would you be willing to go out with a blind person on a scheduled Sierra Club trip? This is the kind of person we'd like to tap into. A program like this couldn't be done without the volunteers."

What has Betsy herself gotten out of this program? "My reward is to see other people enjoy something," she answers simply. "To see the thrill they get from an outing, which they might not have had if a group like this didn't exist."

It's a good thing Betsy gets determined when she gets mad.

Bob Hare is an exhibit planner for California State Parks.

THE WILCHER AWARD

A fund within the Sierra Club Foundation enables the Sierra Club to present an annual $3,000 award in recognition of work in either membership development or fundraising—particularly for conservation projects. All volunteer entities of the Club are eligible: chapters, groups, sections, regional conservation committees or other committees or task forces. *Please note that this award is given to volunteer entities of the Club, not to individuals.* If you think your unit might qualify, please apply. Judges will consider several criteria, especially: success in recruitment and retention of members; efficiency in fundraising; the use of techniques that can be broadly applied to other Club activities; and original initiatives.

Nominations and applications are due by March 15, 1985; they should designate activities undertaken in 1984. Each nomination or application should include a description of accomplishments and an explanation of how they meet the judges' criteria. A list of people or Club entities endorsing the nomination should also be enclosed.

Nominations and applications should be sent in *triplicate* to: The Denny and Ida Wilcher Award Committee, J. J. Werner, Chairman, 2020 Chamberlain Ave., Madison, WI 53705. The award will be presented at the May meeting of the Board of Directors. Nominations will be judged by a special committee of the Sierra Club Council and the Committee on Honors and Awards.

SIERRA CLUB ANNUAL ELECTION

As prescribed by the Sierra Club bylaws, the annual election of officers to the Board of Directors will be held on the second Saturday in April. On April 13, 1985, Club members will elect five Directors to serve three-year terms. All Sierra Club members in good standing as of January 31 will be eligible to vote.

In December, the Nominating Committee selected eight candidates for the Board of Directors: Sue Merrow, Shirley Taylor, Brock Evans, Denny Shaffer, Dick Fiddler, Marty Fluharty, Phil Berry, and Joe Fontaine. Individual Club members also had the

opportunity to become candidates by submitting petitions, signed by at least 175 members, to the Club's principal office by 5 p.m. on December 31.

Before March 1, 1985, a ballot, election information, and a return envelope (not postpaid) will be mailed to each eligible member. 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 Inspector of Elections, Sierra Club, Dept. E., 530 Bush St., San Francisco, CA 94108. 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.

If, after marking your ballot, you realize you've made a mistake or voted for too many candidates, indicate clearly on the ballot who you are voting for and the Inspector of Elections will see that your vote is properly counted. All election procedures are under the control of the Inspector of Elections.

Ballots should be mailed to the National Elections Committee, Sierra Club, P.O. Box 2178, Oakland, CA 94621, prior to April 13.

Lewis Clark
Inspector of Elections

SIERRA NOTES

• As a tribute to one of its founders, the University of Arizona's Center for Creative Photography will name its new building addition the Ansel Adams Memorial Gallery. The Center houses Adams's archives (some 3,200 photographs, 10,000 negatives, his camera equipment, personal library, papers, and correspondence) as well as the complete archives of 18 other major photographers.

Construction of the new gallery will take place in 1985 and 1986. The Center for Creative Photography is located at 843 E. University Blvd., Tucson, AZ 85719.

• The Natural Resources Defense Council has published *A Citizen's Handbook on Groundwater Protection*, by NRDC scientist Wendy Gordon. The 200-page handbook gives basic information about groundwater, water contamination, and the agencies responsible for permits and enforcement. It also lays the groundwork for getting in-

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SIERRA CLUB

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Contributing	☐ $100	☐ $104	*Spouse of Life Member (Annual Dues)*	☐ $15	
Life	☐ $750	*per person*			

All dues include subscription to Sierra ($4) and chapter publications ($1).

Sierra Club *Dept. J-125, P.O. Box 7959, San Francisco, CA 94120*

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volved in local and federal decisions about water quality. For a copy of the handbook, send a check for $7.50 (payable to NRDC) to NRDC Groundwater Handbook, 122 E. 42nd St., 45th floor, New York, NY 10168.

• Sierra Club Books has announced the publication of two new titles. Smoke Blanchard's *Walking Up and Down in the World* ($14.95; $13.45 for Club members) is the instructive and humorous account of the life of this 70-year-old mountaineer and guide. David Rains Wallace's *The Turquoise Dragon* ($12.95; $11.65) is an "environmental thriller," the first mystery novel to be published by Sierra Club Books. Both books are available through the Sierra Club Catalogue; nonmembers may order *books only* from Sierra Club Books, P.O. Box 3886, Rincon Annex, San Francisco, CA 94119.

• The Potomac Chapter of the Sierra Club has established the Walter Wells Environmental Award, which it hopes to present annually for work in support of environmental causes. Maryland Governor Harry R. Hughes (D) was the first to receive the award. Hughes, who brought the governors of Virginia and Pennsylvania together to discuss efforts to protect Chesapeake Bay, was presented with the award in October.

• The Rock Creek Group of the Potomac Chapter has collected its favorite suggestions for visitors to the District of Columbia in *The Sierra Club Guidebook to Washington, D.C.*, available for $2.75 from Sierra Club, 330 Pennsylvania Ave. S.E., Washington, DC 20003. The 32-page newsprint guide is designed to help the out-of-town lobbyist or tourist find cheap, convenient places to eat and sleep, navigate metropolitan transit, and have fun in the nation's capital. Proceeds go toward conservation projects.

• PBS has announced the creation of a new series called *Discover: The World of Science*, which will premiere on February 6 and continue on the the first Wednesday of the following three months. Hosted by actor Peter Graves, the magazine-style series (created by former *Nova* producers) covers topics in science, medicine, and nature. The first of the four one-hour programs will feature segments on sea turtle researcher Archie Carr and on the Santa Cruz Predatory Bird Research Group's efforts to save the peregrine falcon from extinction.

• The Ozark Chapter of the Sierra Club has announced the passage of a .5-percent Missouri sales tax, the proceeds of which (estimated at $30 million a year) will be divided between Missouri state parks and a soil conservation program. Ozark Chapter Chair Fran Early and other Missouri Sierrans raised money and rallied support for the legislative amendment, which barely passed by referendum at the August 6 primary election. Campaign organizer Charles Callison estimates that the vote would have been lost without the strong urban vote of St. Louis, Jackson, and Springfield, Mo., where the Sierra Club did its most effective campaigning.

This is the second time Missouri voters have levied a sales tax on themselves for the sake of conservation. An earlier decision to institute a .125-percent sales tax for conservation purposes is still in effect.

• The Canadian National Committee of the Sierra Club (which represents the Western Canada and Ontario chapters) changed its name to the Sierra Club of Canada at its October 1984 meeting. It is hoped that the name change will more clearly identify the entity with the Sierra Club.

The Sierra Club of Canada plans a major forestry conference for October 1985. Entitled "Woodshock," the Toronto convention will bring together concerned citizens, industry representatives, and government officials to propose solutions to forestry problems in Canada. For more information, write Tony Whittingham, Conference Coordinator, 191 College St. #6, Toronto, Ontario M5T 1P9.

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, The Sierra Club Bulletin*, published six times yearly at San Francisco, California—for September/October, 1984.

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(signed) James Keough

FOR YOUNGER READERS

How Animals Sleep

Picture your favorite animal. I bet it's doing something. If it's a lion, I bet it's roaring. An eagle? It's soaring. A monkey will be swinging; a songbird singing. One thing's for sure: No matter what kind of animal you think of, it won't be asleep. And that's kind of funny, because all animals sleep. In fact, most of them spend more time sleeping each day than we humans do.

Unlike most of us, animals sleep when they feel like it. Some sleep mostly at night and then doze throughout the day. Others, like the desert rat, sleep during the day, when it's too hot or dangerous for them to look for food. They venture out only at night. Owls, too, sleep during the day. They spend the twilight hours hunting for desert rats and other night-feeding animals.

Many animals spend most of the winter sleeping because that's the best way for them to stay alive when food is scarce and it's bitterly cold outside. Chipmunks, for instance, sleep for long periods during cold weather, waking up only occasionally to munch on some seeds stored the previous fall. Bears, too, drop off into a deep, almost winterlong sleep to keep from burning up their summer fat too quickly. This kind of sleep shouldn't be confused with hibernation, which is what cold-blooded animals such as snakes, frogs, and turtles do to wait out the winter.

But no matter where, how, or how long wild animals sleep, they can strike some pretty funny poses. If you've ever seen a cat asleep on its back with its paws in the air, or a dog chase a rabbit while dreaming, you'll know what I mean. If you don't believe me, just look at the pictures on these pages, and be glad you don't have to sleep head down in the water like a manatee or wrapped up in a seaweed blanket like a sea otter!

Photographs by Jeff Foott

During the winter, thousands of monarch butterflies can be found sleeping together in a single tree. Like many birds, the monarchs migrate to warmer parts of the world each fall. Those west of the Rocky Mountains fly to California to spend the winter; those east of the Continental Divide migrate to the mountains north of Mexico City, Mexico. Come late spring they fly north again and resume their solitary ways.

The gentle and defenseless manatee sleeps underwater, often with other manatees. It usually balances on its muzzle, stomach, and tail, or, in this case, on the back of its head! How does it keep from drowning and still get some sleep? Every ten minutes or so the large mammal pops to the surface like a cork and takes a deep breath. Then, with a lungful of air, its nostril flaps shut tightly and the manatee sinks down to its napping place—without ever waking up!

The young of many animals sleep together to stay warm. They snuggle up, around, and on top of one another to get comfortable. Sometimes the one farthest from the middle doesn't stay very warm. One of the mice here could only get cozy by sucking its big toe!

Sea otters seldom come ashore, not even to sleep. They prefer to do their snoozing in the ocean. To keep from drifting onto the beach as they drift off to sleep, the otters drape themselves in kelp. The long piece of seaweed is attached to the ocean floor, and acts as the sea otter's anchor. Momma sea otters hold their babies under the chin with a forepaw to keep them from drifting off.

Great gray owls often sleep during daytime. This one, in fact, seems bored by it all. Perhaps it can't wait for the early evening twilight, when it will start hunting for food. Owls seldom stay up all night, however. Instead they like to take long naps after dinner and then wake up before sunrise to look for a tasty breakfast morsel.

You won't be surprised to learn that sea lions often sleep at sea. Unlike the manatee, they hold their heads above water so they can breathe. And if it's sunny, they hold up their big flipper, too. The blood vessels close to the animal's skin are warmed by the heat of the sun, which helps to keep the rest of the sea lion's body warm. On land, sea lions tend to sleep very close to one another to keep from getting cold.

Almost all animals like to bask in the sun whenever they get the chance. The sun's warming rays help animals conserve energy by cutting down on the amount of heat their internal "furnaces" need to produce. That also means they need less food to eat. This bighorn sheep is lazing away a summer morning on a mountain slope. Its horns weigh between 20 and 30 pounds, so the sheep is using the hillside as a much-needed pillow.

Jeff Foott is a writer and photographer living in Wyoming. He has shot wildlife films for National Geographic, Time/Life, World of Survival, *and* Nova.

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BOOKS

Tropical Forests

Can We Preserve the Key to Global Vitality?

PETER WILD

Photo by Paul Schmidt

Mountain Coconuts *by Dick Obenchain (56" square, oil on canvas; ca. 1983).*

The Primary Source: Tropical Forests and Our Future, by Norman Myers. W. W. Norton, 1984. $17.95, cloth.

In two previous books, *The Sinking Ark* and *A Wealth of Wild Species*, Norman Myers performed yeoman's service in making us aware of the potential benefits lost to humankind as endangered and often little-studied flora and fauna careen over the edge into extinction.

Barely a quarter-century ago, for instance, a child suffering from leukemia had but a one-in-five chance of remission. Today, thanks to the work of sharp-eyed scientists who've opened the pharmacopoeia of the outback, an extract from the rosy periwinkle increases the odds in favor of the leukemia victim to four out of five. Less dramatically but of wider benefit, primitive species of plants provide essential genetic material to "inoculate" modern food crops against the ravages of disease. Yet we are losing scores of unexamined wild plants to extinction each year. No one knows what cancers cured, what crops and economies saved, go with them.

In *The Primary Source*, Myers makes similar points, but this recent study is at once broader and deeper. It should be especially welcomed by activists striving to focus international attention on the rapid depletion of tropical woodlands.

Tropical forests are those "that occur in areas that have a mean annual temperature of at least 75 degrees Fahrenheit and are essentially frost-free." They receive steady, year-round rainfall and are characterized by a continuous canopy of interlocking tree crowns. This region of insistent, soaring growth girdles the world, from New Guinea to Malaysia, India, central Africa, and South America. Though the green band comprises only one sixteenth of the earth's land surface, it absorbs about half the planet's rainfall and receives twice as much solar energy as the temperate zones. To use a mechanical metaphor, tropical forests represent the major machinery that drives the earth's energy systems, lushly outproducing the flora and fauna of other regions while moderating the climates of the entire globe. No wonder Myers urges us to view them as the primary source of the planet's welfare.

Yet if tropical forests constitute a world-encircling belt, that belt is rapidly coming undone. Myers is pained by what he calls the "hamburgerization" of tropical forests: the reduction of vast, verdant areas to permanent wastelands by the export cattle industry. To add insult to injury, such holdings often suffer from lackadaisical management. Some are kept as prestige ranches by Latin American bureaucrats who come out from the cities on weekends to romp across their spreads on horseback while their malnourished peasant employees wonder at their antics. And as an exercise in futility halfway around the globe, try to shame the government of Thailand or Nigeria because one of their loggers can chainsaw down a noble patriarch of the most ancient ecosystem on earth in ten minutes. In their rush to cram hard cash into their treasuries, Myers observes, "Third World countries are inclined to treat their forests as an oil well, to be drained with all due dispatch." Another way of putting it is to say that they treat their forests much as we in America ravished our woodlands a hundred years ago.

This reference to our own forest history is Myers's, and it is not a casual one. For when we ran out of our own hardwoods, we reached for the untapped resources of the tropical belt. Since 1950 the developed world's consumption of tropical hardwoods has increased some sixteenfold. It hardly needs to be emphasized that no resource can sustain that rate of exploitation. Lest we wax self-righteous about the shortsightedness of struggling Third World governments, Myers asks, "Whose hand is on the chainsaw?"

Though he also probes into the destructive slash-and-burn agriculture of native populations, the answer to his question attributes to the developed world much of the responsibility for knocking the most important of the earth's ecosystems out of whack.

Myers is not so naive as to suppose, however, that a stern sermon will either lead us to mend our ways or inspire the tropical nations to forego badly needed infusions of hard dollars. Rather, as a long-time student of both world forestry and politics, he's hardheaded enough to approach solutions on the basis of profit and loss. He emphasizes that present practices are grossly inefficient—committing large acreages to low-yield grazing enterprises, for example, that not only fail to maximize the land's potential but contribute in myriad ways to its destruction. Third World governments stand to earn far more dollars by managing their forest resources on a sustained-yield basis, while suffering, as Myers puts it, "only trifling disruption of forest ecosystems." The details of how such silviculture might operate occupy critical chapters in *The Primary Source*. Already, some Third World countries are listening, moving toward more cautious and ecologically sane plans for resource development.

As it stands now, however, scientists know more about some areas of the moon than they do about the workings of many tropical systems. Any plans for the future must include setting aside large areas as parks or preserves to ensure that we maintain undisturbed baselines for research. But Myers cautions that we must adjust our thinking to biological realities. Such parks would be far different from those typical of the United States, which are primarily scenic areas with straight boundary lines cutting across nature. For one thing, the parks must be large: Individual plant and animal species tend to occur in low densities in the tropics, so a good deal of room must be preserved to guarantee the survival of adequate gene pools. Furthermore, no single formula applies: Tropical forests display great diversity around the world. The lines of each preserve need to be drawn not with a ruler but with a mind to the elevations, watersheds, soil conditions, and other factors that determine viable biotic communities.

Although one of the more jolting messages of *The Primary Source* is that the degradation of some tropical forests is reaching crisis proportions, Myers sees reason to hope. In most cases we still have time to act. Some countries, participating in what he describes as "a splurge of new parks," are already acting. Costa Rica, the Congo, and Malaysia have impressive park systems in place. The countries of the Amazon region have set aside reserves equivalent in area to the state of Mississippi, while Indonesia is aiming to protect 6 percent of its considerable territory.

As nations take on additional responsibility for saving a vital world resource, they need more than our applause; they need our financial help. One leading researcher proposes that the community of nations collectively fund a network of 1,000 tropical parks averaging 1,000 square kilometers each. The million square kilometers thus preserved would represent 10 percent of the worldwide tropical-forest biome—"a minimum that we need to safeguard," Myers estimates, "if we are to assist most (not even all) species in tropical forests."

The cost of such an ambitious scheme? Three billion dollars over ten years. For critics who might whistle at that figure, Myers compares it to the billion dollars the world now spends on armaments every 12 hours.

Peter Wild is a frequent contributor to Sierra.

Streams of Consciousness

CATHIE CUSH

River Reflections: An Anthology, edited by Verne Huser. The East Woods Press, 1984. $14.95, cloth.

One of the latest in a long line of offbeat scientific theories contends that moving water generates a certain type of magnetic field, which has a soothing effect on those nearby. Supposedly, standing in the shower for a long time can help your frame of mind. The more moving water involved, the greater the effect. If this is true, it might help explain why rivers hold such fascination for so many people.

We Americans in particular seem to have a special place in our hearts for swiftly flowing bodies of water. Take a look at our literature: Twain, Steinbeck, Hemingway . . . they all wrote memorably about rivers.

Verne Huser has put a great body of this writing about rivers between two covers. Through his selection and annotation, this English teacher turned public relations director turned professional river guide gives these natural formations an almost metaphysical significance. Huser's rivers teach lessons—about beauty and hardship, about change, about mortality. They stand for the wilderness itself.

Huser, whose occupations have included naturalist, Park Service ranger, and free-

lance writer and photographer, has gathered together more than 40 selections for this anthology. They fall into three broad categories: "The Pioneers—Before the Twentieth Century"; "The Adventurers, The Seekers, The Observers"; and "Modern Times—The Past Fifteen Years."

Some of the authors will be readily familiar, although the passages selected may not be the most obvious first choices. Rather than a chapter from Mark Twain's *Huckleberry Finn*, for example, Huser gives us a passage from the less-familiar *Life on the Mississippi*, in which Twain wryly comments on the River Commission's attempts to "bully the Mississippi into right and reasonable conduct."

Ernie Pyle, who earned his fame as a war correspondent, is represented by "Home Country," the account of a short run down Utah's San Juan River written during the Depression. Choices like these keep the anthology from being the prototypical high-school lit text with a wilderness theme.

Some of the authors' names aren't found on best-seller lists or in literature classes. Some are well-known environmentalists and outdoor writers. Others, like Amelia Steward Knight, whose 1853 diary tells of the hardships her pioneer family encountered while crossing the Elkhorn, Sweetwater, and Snake, are people confronted with rivers by necessity rather than choice. Still other names are familiar from other walks of life. Newscaster Tom Brokaw's gripping contribution, "That River Swallows People," tells of a whitewater rafting trip on the Middle Fork of Idaho's Salmon River. The trip proved fatal to two members of the rafting party, a Southern California lawyer and an experienced river guide.

It is just these wild, unforgiving rivers that Huser seeks to preserve. In his own contribution, "Alive But Not Well," Huser discusses the current state of the U.S. Wild and Scenic Rivers System and the need for stronger support. "Even as a river constantly seeks equilibrium," he writes, "so the nation may respond to the current circumstances and continue to protect selected rivers. The present problems may be merely another rapid to negotiate, an eddy in the gravity-induced flow toward completion of the System, a rock garden that high-water flows will obviate as the System returns to health."

In a sense, this anthology is Huser's call to action. The rivers featured in this collection have many things in common, but the most important is that they have touched people's lives.

Another trait these waterways share is their location. With very few exceptions, the emphasis is on rivers west of (and including) the Mississippi. There is no mention of the whitewater rivers of West Virginia and Pennsylvania, or the quiet canoeing waters of New Jersey's Pine Barrens. None of the selections pay homage to the cypress-hung rivers of the South. But Huser is a Texan now living in Washington state, so eastern readers will have to forgive his oversight.

Most of the selections are short—many only a page or two—so *River Reflections* is a great book to pick up when you've only got a few minutes to read before drifting off to dream about your next whitewater trip. On the other hand, real river lovers will want to linger over this anthology.

Cathie Cush's work has appeared in Scuba Times, Skin Diver, *and* New Jersey Outdoors.

Frugality and Restraint

RICHARD DILLON

The Simple Life: Plain Living and High Thinking in American Culture, by David Shi. Oxford University Press, 1984. $19.95, cloth.

IF THE SEEDS BROADCAST by this work do not germinate and produce others, there truly "ain't no justice." For the subject is an important one, and its treatment by Professor Shi is exemplary.

The first comprehensive study of its kind, this book is reminiscent of Kevin Starr's *Americans and the California Dream* and Henry Nash Smith's *Virgin Land*, but it is broader in scope. Shi surveys the motives, attempts, and methods of those who have tried to subordinate the material to the spiritual and ideal in American life and culture. The geography of the book's subject matter ranges from the Atlantic seaboard to the Pacific coast, its chronology from colonial times to the post-industrial age.

The conservation/environmentalism/ecology ethic so distinctive in American life is but the exposed tip of the iceberg, one that the author examines from its original calving to its present wobbly course. For want of a more specific term, we call this larger philosophy "the simple life." So many are its components and variables—nostalgia, pas-

toralism, reverence for nature, preference for cooperatives and tasteful handicrafts to industry and big business—that no more-specific phrase is applicable.

The simple life is basically antimaterialist and antiphilistine, its taproot descending to the pious disciplines of colonial-era Puritans and Quakers. These beliefs had become so secularized by the time of American independence that the discipline of the Massachusetts Bay colonists was transformed into a harsh work ethic, while that of the Friends came to be symbolized by pacifism and plainness of dress and manner. But the fundamental ethic lived on, and assumed new dimensions and characteristics.

Thomas Jefferson politicized the idea of the simple life, in the best sense of the word: He made it an integral part of his concept of New World republicanism, practically synonymous with civic virtue. The idea has persisted in its secular form, with the religious aspects de-emphasized except where Nature has been substituted for God in matters of moral guidance.

Shi does not mean to suggest that advocacy of the simple life has been the exclusive province of politicians or churchmen, however. Its heroes have come from all walks of life. But it is undeniable that they have come for the most part from the educated, literate, articulate, and visionary middle and upper classes. This has always been a weakness of the movement. Proponents of the simple life have been easy targets for accusations of elitism and paternalism; working people have traditionally been more concerned with survival than with esthetics or environmental quality.

Thus the call to the simple life has always been the appeal of a minority, and may be destined to remain so in a land inhabited by people seemingly mesmerized by technology. Still, it has proved itself an essential counterbalance to the excesses of speculation, conspicuous consumption, and other manifestations of rampant materialism. It has acted as the conscience of the country, keeping our aging republic on its laudable democratic course despite a few yaws, proceeding toward greater liberty, equality, and the pursuit of (genuine) happiness.

Some of the heroes in this fight for reason and balance have been larger-than-life figures of the conservation movement. These include Emerson, Thoreau, Muir, Burroughs, and Leopold. The roll of distinguished crusaders also includes Jane Addams, Lewis Mumford, Ernest Seton Thompson, and members of FDR's New Deal brain trust. But others in Shi's cast of characters are lesser-known individuals who have been equally important to the cause. (A surprising name in this regard is that of Edward Bok, the editor of *Ladies Home*

Journal, who appealed to women because he recognized that men were much too busy worshipping the dollar to concern themselves with matters of the spirit.)

The simple life has always fared less well as a societal ethic than as a *vade mecum* for personal conduct. Because America is traditionally the land of plenty, recent cries of "less is more" and "small is beautiful" have tended to fall on deaf ears. But certainly these sentiments are held more widely today than ever before by those who seek to balance vulgar opportunism and wasteful greed with more elevating priorities, such as conservation, ethics, and even civility or compassion in place of selfishness—if only out of long-term, enlightened self-interest.

No one can be entirely blind to the drift of modern-day affairs—not in the face of smog alerts, astronomical cost overruns, corrupt politics, toxic-waste pollution, near-meltdowns, highway gridlock, and the laundry list of other complex problems that make up the core of the daily news. All of these blights are on the postponed agenda of crises we must eventually face up to. If we then must fall back, it should not be in panicky retreat from an unsustainable level of resource consumption. Rather, we will be able to execute an orderly withdrawal to already-prepared positions of strength based on the wise frugality of the simple life. Shi's study can serve as a handbook to guide us in facing the insistent and inevitable challenges of the future.

Richard Dillon is an author and librarian. His books include Delta Country, North American Indian Wars, *and* San Francisco: Adventurers and Visionaries.

Our Love of Living Things

LISA MIGHETTO

Biophilia, by Edward O. Wilson. Harvard University Press, 1984. $15, cloth.

Wilderness preservation is not a luxury; it is a means to ensure biological diversity, essential to the human spirit. Edward O. Wilson's book presents a series of essays joined by this common theme: that our deep-seated preference for living things over inanimate objects—here termed "biophilia"—requires the preservation of complex and extensive natural habitats.

It is Wilson's hope that we will recognize that life is always more interesting than any

artifact. Almost no one, he asserts, would value a pile of dead leaves more than the tree from which they came; inanimate matter is appealing only insofar as it resembles or evokes life.

Putting forward the notion that "every species is a magic well," Wilson links the exploration of wild places with mental development. The natural world offers limitless opportunities for investigation, and the more we learn, the more we seek. He points to our inborn desire for continual discovery, which over the centuries has prompted exploration of areas both exotic and remote. Appropriately, the jungles and savannas of South America serve as the backdrop for several of his essays. We need wilderness—replete with a great variety of species—because we are attached to the possibility of finding something extraordinary. On a single day's expedition through a Surinam woodland, Wilson, an entomologist, discovered in the open an ant believed to live only in caves; the same day he became one of the first to record a colony of another unusual insect.

Though he talks of distant, unknown lands, Wilson assures us that we need not travel far for adventure. One could spend decades, he says, "in a magellanic voyage around the trunk of a single tree." Even when discussing seemingly ordinary, familiar topics, Wilson conveys a sense of wonder. A close look at ants in the forest reveals that these creatures are capable of spectacular feats: If their proportions were converted to human scale, they would be running along at a speed of 16 miles per hour, often carrying burdens of 750 pounds each. Wilson marvels at the complexity of life manifested in a handful of soil; there is more to investigate here, he notes, than is offered by all the other planets combined.

Nor should we dismiss those creatures that traditionally have been considered repulsive. Of course, Wilson finds insects particularly intriguing. Deadly animals are also portrayed as fascinating; an entire chapter of his book is devoted to snakes.

The natural world thus develops the imagination and nurtures the spirit. But neither can we deny our need for the machines that make exploration feasible. Humans are not "natural creatures torn from a sylvan niche and imprisoned within a world of artifacts"; the noble savage is in truth "a biological impossibility." Without technology, Wilson could not have survived the "miniature horrors" of the South American wilderness, capable of reducing "visiting biologists to their constituent amino acids in quick time."

Yet we seem to have gone too far in our attempt to control nature. Degradation of habitat has brought the extinction rate up to a thousand species per year. Wilson considers the clearcutting of the rainforest in the Amazon basin especially lamentable. Defended by shortsighted economic arguments, this practice "is like burning a Renaissance painting to cook dinner."

Such wholesale destruction points to the need for a greater appreciation of biological diversity. While conceding that alteration of natural systems is unavoidable, Wilson reminds us, echoing Aldo Leopold, that the first rule of the tinkerer is to save all the pieces. So delicate is the symbiosis that binds some species together that the elimination of one will doom the rest. Natural reserves must therefore be of sufficient size to sustain the life they are designed to protect.

Other than the threat of nuclear war, Wilson sees no crisis more urgent than the loss of species diversity. Human ingenuity alone will not rescue us from the destruction of our planet; Wilson places little faith in space stations and other technological schemes, for they not only pose physical problems but also risk our spiritual health. Although it is theoretically possible to recreate stable ecosystems, we will never be able to transplant the complexity of our biosphere to another location. Our affinity for life—our biophilia—makes successful space colonization an impossibility. Wilson warns that "the tedium in such a reduced world" would be oppressive enough to have "eventually fatal consequences." In space as on earth, we are dependent on other organisms—and "lawn grass, potted plants, caged parakeets, puppies, and rubber snakes are not enough."

For this reason, a strong conservation ethic is needed. Wilson points out that while the environmental movement is growing in appeal, its philosophical foundations must be fortified, and that it is time for an advance in moral reasoning. Traditionally, conservation has been based on what he calls "surface ethics." Certain "desirable" animals are protected simply because their kinship with humans is obvious; preservation of ecosystems is defended on practical and economic grounds.

In the long run these motivations will prove to be insufficient. Humans are capable of destroying their kin, and might withdraw their protection of natural areas should it become economically unprofitable. Wilson's alternative—a conservation ethic committed to biological diversity—is founded on an awareness of our biophilia. Our drive toward exploration must be tempered with "the most delicate, knowing stewardship of the living world that can be devised."

Despite the gravity of his warnings, the tone of Wilson's book is optimistic. He suggests that as our understanding of other organisms increases, we will value them more, for we will value ourselves more.

Biophilia will be of particular interest to environmentalists, who may appreciate Wilson's attempt to regenerate in his readers an affinity for life.

Lisa Mighetto is a Ph.D. candidate and lecturer in American environmental history at the University of Washington, where she is researching the history of human attitudes toward animals.

Two of the People's Rivers

PATRICK CARR

Stanislaus: The Struggle for a River, by Tim Palmer. University of California Press, 1984. $8.95, paper.
Youghiogheny: Appalachian River, by Tim Palmer. University of Pittsburgh Press, 1984. $19.95, cloth; $8.95, paper.

THE TWO RIVERS that are the focus of these books share the distinction of having been the two most popular whitewater rivers in the nation. The Youghiogheny (pronounced Yock-a-*gain*-ee) in Pennsylvania's Ohiopyle State Park floated 150,000 people in 1982. Two thousand miles west, the Camp Nine stretch of California's Stanislaus River sustained 90,000 boaters a year in the 1970s, until it was flooded behind New Melones Dam in 1981, shortly after the first edition of Tim Palmer's book on the river was released.

But popularity is not the only similarity between the two rivers. While most of the Youghiogheny, unlike the Stanislaus, remains free-flowing, the river continues to be threatened by abandoned coal mines believed to be leaking acids and other toxic wastes. Most of the mines were sealed in the late 1960s, with the result that trout have reappeared in a river that for 50 years could not support fish life. But the mine seals have since weakened, and water-quality officials fear that a heavy rainfall in the watershed could erode the seals and make the river a toxic soup. Meanwhile, the protection of a stretch of the river included in Maryland's State Scenic Rivers System may be tested by a proposal to build a hydroelectric dam on the Youghiogheny.

In tracing their histories, Palmer manages to convey the physical, almost sensuous beauty of these rivers. In the process, he communicates how it came about that a group of environmentalists and whitewater fans formed Friends of the River, working for nine years (and earning as little as $70 a month each) to try to stop the flooding of the Stanislaus. Nor does it seem unusual that Jim Prothero worked two full-time jobs and sacrificed his marriage in the struggle to keep his outfitting business on the Youghiogheny alive.

An avid whitewater canoeist and no stranger to such experiences, Palmer knows well the thrill of dropping down a small waterfall and booming through the "hole" at the bottom, the whoops of excitement and relief at surviving a big rapid intact, and the strong feelings that develop for a river and the people with whom it is shared, all of which make whitewater boating one of the most social and physically exciting forms of outdoor recreation.

"This is a people's river, a people's wilderness," Palmer writes of the Stanislaus, where forgiving rapids were popular among novices, the physically disabled, and advanced boaters alike, while the wildly scenic, roadless canyon and an amazing degree of harmony among river enthusiasts kept it from becoming a glorified water slide.

It is not hard to understand, then, that people who had rafted the Stanislaus for only a day or two were prepared to fight for its life when they discovered the river was targeted for a dam first authorized by Congress in 1944.

Palmer traces thoroughly the tactics used by Friends of the River to try to save the Stanislaus. The campaign included two statewide initiatives, attempts at national

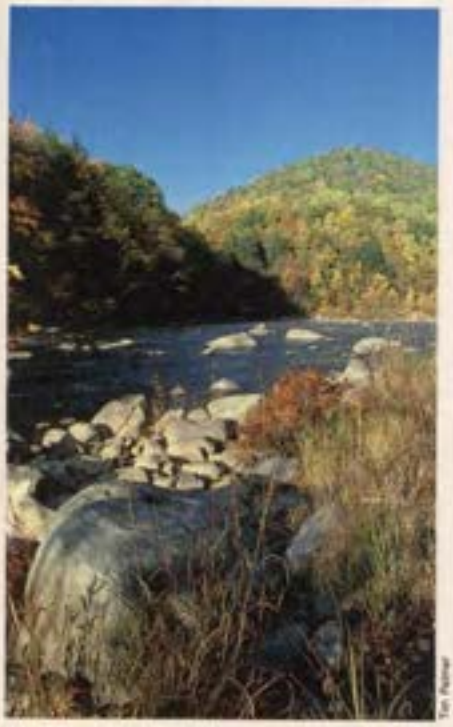
Tim Palmer

The Stanislaus: a special place that people fought to keep free. Its rapids have been stilled by the New Melones Dam.

and state legislation and national-monument status, lawsuits, and Friends of the River leader Mark Dubois's personal effort to stop the flooding by chaining himself into the canyon. Dubois's dramatic act of civil disobedience delayed the flooding of the river for three years, and finally brought the Stanislaus the national attention that earlier might have saved it. It also polarized people on both sides of the issue as never before. Rowdy local dam supporters soon took up their own form of disobedience, harassing boaters and seriously injuring one in an assault.

Friends of the River made numerous mistakes in those years, but came closer to success than many thought possible, with the late California Rep. Phillip Burton's bill to include the Stanislaus in the U.S. Wild and Scenic River System going down to the narrowest of defeats in the House Interior Committee. There were also less-obvious successes. "Every time we help one more person to better understand land and water issues," says Mark Dubois, "we win a small victory." The long struggle for the Stanislaus led to many such victories.

While *Stanislaus* focuses on the political and personal battles involved in the struggle to save a river, the story told in *Youghiogheny* is not so confined. With more license to roam, the author recreates the beauty of this mostly free-flowing Appalachian river as well as can be done in words.



Tim Palmer

The Youghiogheny: The upper river, enjoyed by millions, is not yet safe from the dual threats of pollution and development.

The book follows the Youghiogheny River from its headwaters high on a ridge along the West Virginia/Maryland border to its confluence with the Monongahela River at McKeesport, Penn. Palmer, who spent the summers of his youth along the Yough, hiked, canoed, and rafted the 132 miles of the river in preparation for his book. The philosophy developed during that field work flavors the narration of *Youghiogheny*. "It seems that few people take journeys anymore," Palmer writes; "instead, people simply go places. . . . Not for me. For me, the going is the thing. Look around. Talk to people. Go slowly. Enjoy it. The place will never be the same, and will probably never again be this good."

We can only hope that the Youghiogheny stays this good. Two hundred years of intensive human use have been relatively kind to this river: Its boaters run rapids first scouted and portaged by George Washington in 1754, and so far only one sizable stretch of the river has been stilled by a dam. If water-quality problems from the coal mines and from municipal and industrial sewage can be solved, and if the river remains safe from the proposed dam, most of the Youghiogheny will be little worse for the wear than when Washington first saw it.

Yet problems do surface along the Youghiogheny, and complicated feelings abound in what seem to be simple places. There is Rusty Thomas, for example, a conservative farmer living in the backwoods gorge known by boaters as the "upper" Youghiogheny. Thomas rails against Maryland's Wild and Scenic Rivers Act for placing restrictions on his activities, and threatens to shoot boaters who trespass on "his" river. Yet he later admits that he is opposed to the new dam being considered for the upper Youghiogheny, and expresses his concern about herbicides and acid rain.

The author, a skillful interviewer, allows the reader to learn much about Rusty Thomas without giving in to the temptation to portray the farmer as a one-dimensional redneck. The connecting thread between Thomas's anger at the state Wild and Scenic act and his opposition to the dam is his perception, right or wrong, that both are threats to his lifestyle initiated by the big-city powers of Baltimore and Pittsburgh, and other entities beyond his reach. In fact, both the demand for hydropower, which may threaten the Youghiogheny, and the demand for wild rivers, which led to state Wild and Scenic designation for the canyon that is his home, are rooted largely in the lifestyles of urbanites living far from the river.

Preserving parts of the Youghiogheny has also led to problems. The sheer volume of recreational use at Ohiopyle State Park (which received 1.7 million visitors in 1982)

has required management practices that would be considered dictatorial on most rivers. To accommodate the 2,000 boaters who may float the 7-mile Ohiopyle stretch each day, passengers on commercial trips are allowed exactly 30 minutes for lunch, with no stops for hikes or napping on the beach. As far as recreation goes, Ohiopyle stands in marked contrast to the Stanislaus, and may be closer to a water slide than a wild river.

Times have changed since Friends of the River first set out to save the Stanislaus in the early 1970s. Today, free-flowing rivers are given a higher value, at least enough to create controversy when a destructive dam is proposed. But whether the Youghiogheny continues to flow with clean water (and whether the upper river continues to flow at all) depends on the public's commitment to its protection. Taken together, *Stanislaus* and *Youghiogheny* are powerful reminders of what we could have had, and of what we stand to lose.

Patrick Carr is managing editor of the Sierra Club's National News Report *and editor of* Headwaters, *a newsletter of Friends of the River.*

Brief Reviews

Passages of a Stream: Chronicle of the Meramec, by James P. Jackson. University of Missouri Press, 1984. $14.95, paper.

In August 1978, voters in eastern Missouri rejected the proposed Meramec Dam project, ending a long and bitter battle between environmentalists and the Meramec Basin Association, a group of dam proponents. James P. Jackson places this debate at the center of *Passages of a Stream*, recalling significant aspects of the dispute and illustrating the procedures that led to the dam's defeat. Beginning in the 1940s as a grassroots movement involving local farmers, river enthusiasts, and concerned citizens, the Meramec campaign grew into a full-fledged preservation struggle involving the Sierra Club and other conservationist organizations. Its story is one that all defenders of wild streams should be aware of.

—*Martin C. Miller*

In God's Countries, by Bill Gilbert. University of Nebraska Press, 1984. $14.95, cloth.

Almost all of these essays appeared in *Sports Illustrated* during the 1970s and early 1980s. If you missed them, *In God's Countries* is an excellent way to discover nature writer Bill Gilbert. By his use of humor, dialogue, and varying tones of narrative, Gilbert manages to capture the reader's interest in such things as earthworms ("They Crawl by Night"), deer hunting

("The Rites of Autumn"), and an adventurous moose ("The Missouri Kid").

Of the dozen essays that make up this book, some are straight reportorial accounts. The reader learns about the physical and psychological thrills of spelunking ("Going Under") or the endless beauty of paddling down a river ("Journey Into Spring"). Some of the essays stand up to "acclaimed" literary writing in mood, drama, and satisfying conclusions. The opening essay, "The Devil in Tasmania," illuminates the best of Bill Gilbert. He is warm, witty, and knowledgeable about his subjects. —*Raj Khadka*

Water in Nebraska: Use, Politics, Policies, by James Aucoin. University of Nebraska Press, 1984; $15.95, cloth.

James Aucoin, a natural resources specialist who has written frequently for *Sierra*, deftly examines the history and current conditions of water use in Nebraska, where planning decisions to be made in the near future will be of extreme importance to other western states. Having consulted people on all sides of the issue, Aucoin winnows away the emotional rhetoric that often has impeded a rational discussion of water policy. In the process, he leads the reader to a full, intelligent understanding of this vital subject. He also provides sound options for developing a workable, balanced water policy for the future. —*Al Buchanan*

Skyline Press has this year initiated a series that will grow, over four years, to 100 titles, each highlighting the work of a leading photographer in expressing the diversity of natural and urban areas within the United States. The text of these books is generally forgettable, but the photos are often remarkable. My favorites to date include the eroded stone pillars of Goblin Valley, captured by Floyd Holdman in *Utah*; Craig Aurness' wide-angle view of downtown Los Angeles, backed by the snow-capped expanse of the San Gabriel Mountains (in *Los Angeles*); the reflection of red cliffs in the clear water of Oak Creek, near Sedona, as photographed by Gill Kenny in *Arizona*; and a number of shots by David Muench, including a stunning view of Morro Rock (in *Big Sur and the Central Coast*) and the gentle cascades of Nojoqui Falls (in *Santa Barbara*).

Other 1984 releases in this series include books devoted to Manhattan, the Olympic Peninsula, the Finger Lakes, and the seacoasts of Maine and Massachusetts. Each volume costs $15. For information about Skyline Press (an imprint of Oxford University Press), contact Independent Publishers Group, One Pleasant Ave., Port Washington, NY 11050. —*Jonathan F. King* □

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QUESTIONS ? ANSWERS

Sierra encourages its readers to take this opportunity to learn more about the Sierra Club and its activities. If you have a question you'd like answered, send it along with your chapter affiliation and address to *Sierra* Q & A, 530 Bush St., San Francisco, CA 94108. We will respond to as many questions as space allows.

Illustration by Kirk Caldwell

Q: How many trees does it take to build the average house? (Mark Dial, Tacoma, Wash.)

A: About 17 trees per house—a rough estimate that deserves qualification. It would take 9,726 board feet of lumber to construct the "typical" house, a single-family dwelling covering 1,700 feet. Finding the average tree was difficult (despite what Ronald Reagan may believe), but we settled on a 100-foot Douglas fir 20 inches in diameter. Such a tree would yield approximately 582.38 board feet of lumber.

Q: How about some expert advice for a winter hiker caught in a snowstorm several miles from home? (Richard Korry, Seattle, Wash.)

A: We'll assume you've already provided yourself with the most important resources: a knowledge of the area and winter weather conditions; proper clothing (it isn't adequate if you're cold when standing still); emergency supplies of water and food (heavy on the glucose and protein to minimize loss of fats), and possibly a small tarp and some first-aid items. (See "At Home in the Cold" and "Blood, Sweat, and Chill" on pages 110 and 115, respectively.)

With these givens, your most difficult decision once the storm begins will be whether to stay put or try to walk out. The unpredictable nature of winter storms would warrant preparing a temporary shelter and conserving energy. Don't emulate Frank Lloyd Wright by trying to design an elaborate snow cave or igloo. Look for natural shelter first—caves, alcoves under overhangs or large fallen trees—but if none are available, you can survive by constructing a makeshift snow tunnel or trench. You may also opt for the proven Eskimo method of sitting with your back to the wind, slipping your arms out of your parka sleeves, and folding your arms across your chest. Sounds odd, but it works.

Remember, though, that none of the previous suggestions will help unless you possess the proper mental attributes: faith, positive thinking, and the will to survive.

Q: I'm an avid skier, and I'd love to tackle the steepest ski runs in the United States. Can you provide me with a list? (Larry Delverne, New York, N.Y.)

A: Do we have some verticals for you! Telluride, Colo., boasts the Spiral Staircase, a run pitched at 45 degrees at its steepest, and a frequent culprit in cases of chondromalacia of the patella (look it up). Jackson Hole, Wyo., has more steep chutes than anywhere, including Corbett's Couloir, Spacewalk, Twice Is Nice, Zero G., and Hourglass. At Snowbird, Utah, the Pipeline has a vertical drop of 600 feet and is about 100 yards long. And if you're skiing on Mt. Washington in New Hampshire and you miss the first right turn at the Headwall, you'll drop 60 feet toward a waterfall. Ouch!

Q: Can drinking the water from a clear high-mountain stream cause sickness? (Dennis Hafen, Salt Lake City, Utah)

A: Contrary to what some people think, there is nothing prophylactic in glacial snow and ice. Extreme cold does not inhibit the growth of certain microorganisms, and *Giardia lamblia* cysts may be present in the most frigid running water. One ought to apply the same restraint here as elsewhere in the backcountry. In general, small streams and springs descending from high, uninhabited areas at right angles to a main valley are more likely to be safe than large meandering streams and rivers on the valley floor. But this is only a rule of thumb. It's far wiser always to assume the worst about a water source, and to treat water with appropriate techniques, such as boiling, filtering, or purifying with chemicals. (For a complete summary of these techniques, see "Purifying Water in the Wild," *Sierra*, July/August 1983.)

Giardia is nothing to fool around with: It can cause diarrhea, dehydration, cramps, and other assorted miseries. It's better not to tempt fate, even when you've found what appears for all the world to be a pristine high-country stream.

Q: What is the Sierra Club's policy on permanent disposal versus "short-term" containment of radioactive waste? (Randy Webb, Bloomington, Ind.)

A: The Sierra Club believes that the only real solution to the problem of nuclear waste disposal must be a permanent solution—particularly in cases where the waste has a radioactive life of up to 250,000 years. The Club also supports the adoption of additional guidelines: first, that the federal government assume responsibility for the long-term, least-hazardous isolation of spent nuclear fuel and high-level wastes; and second, that Congress or the administration correct deficiencies in and enhance implementation of the Nuclear Waste Policy Act of 1982.

Q: Are Sierra Club calendars and publications available in foreign-language editions? I'd love to be able to share them with my friends abroad. (Bob Murphy, Walpole, Mass.)

A: Sierra Club Books does not publish foreign-language editions, but it does license foreign-language world rights to foreign publishers. Random House, publisher of the Sierra Club calendars, licensed the French world rights to France-Amérique of Quebec, Canada. At present, this is the only foreign-language edition of any Sierra Club publication.

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