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MARCH/APRIL 1983

VOLUME 68/NUMBER 2

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COVER: The Bromo-Semeru Complex, largest of East Java's five volcanic regions. Volcanoes in foreground have erupted in an ancient caldera 6¼ miles in diameter. The World Congress on National Parks, held in Bali, visited these and other Indonesian National Parks. Photo by Alan Robinson.

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BLM Wilderness Review, page 50.



Choosing Outdoor Clothing, page 71.



Painter as Naturalist, page 88.

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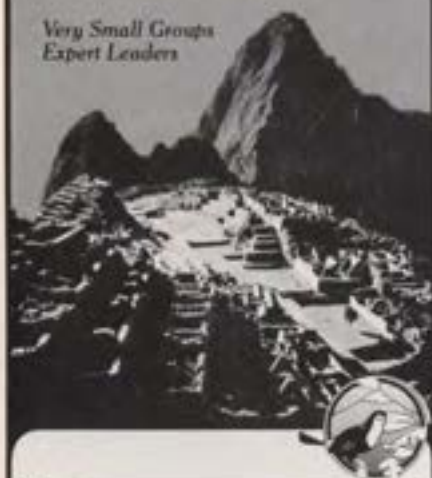
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JOHN MUIR DAY

On January 20, 1983, the executive committee of the San Diego Chapter of the Sierra Club passed the following resolution:

Resolved that the San Diego Chapter commemorate the birthdate of John Muir, on an annual basis, on the Saturday closest to that date, April 21. The chapter will sponsor, promote and publicize club and other related activities on that date throughout the city, county and state for the purpose of celebrating the memory of John Muir and his legacy.

The executive committee also appointed me chairman of the John Muir task force and gave me the job of coordinating the many activities planned for this day: hikes, nature walks, bike rides, lectures and Scottish country dancing to the music of local bagpipers. Anyone interested in helping us launch what we hope will become a nationwide event can contact the San Diego chapter at 1549 El Prado, San Diego, CA 92101, or call (714) 233-7144.

Alex Sandie
San Diego, Calif.

MINING THE MOJAVE TRIANGLE

I'd like to correct a misimpression your readers may have received from Mike McWherter, Jim Dodson and Linda Wade's article "The California Desert Plan: Visions and Revisions" (January/February, 1983).

First, the addition of Amendment 18 to the California Desert Plan does not weaken the intent of the original plan. The goal of the Desert Plan, as McWherter acknowledges, is to promote multiple use, sustained yield and maintenance of environmental quality. The inclusion of certain lands in the East Mojave National Scenic Area was a distinct flaw in the plan, since too little consideration was given to prior mining activities existing there, private ownership of some of the lands, or the fact that Interstate 15 runs through this particular area.

Further, a Desert Plan appendix docu-

ments the district excluded from the Scenic Area by Amendment 18 as having perhaps the highest mineral potential in the entire California Desert Conservation Area. An industrial development within this district provides half of the world's supply of rare earth mineral products.

Finally, although the proposed boundary change also excludes the Clark Mountain area, the mountain has for nearly a decade been withdrawn from mechanized entry, and was designated an Area of Critical Environmental Concern in the Desert Plan as well. Its further designation as a scenic area is unnecessary to ensure its preservation.

Warren N. Warhol
Vice President Manufacturing
Union Molycorp
Los Angeles, Calif.

Jim Dodson replies:

Union Oil's Molycorp and environmentalists have consistently disagreed about the compatibility of mineral extraction and national scenic area status for the East Mojave Desert. The Sierra Club believes that mineral extraction, if carefully and responsibly undertaken, can proceed in a national scenic area. The American Borate Company, for example, already conducts extensive mining operations in Death Valley National Monument. It can be done. In the case of the East Mojave, the Club participated in drawing up a management philosophy for the NSA that would accommodate current and probable future levels of mining.

As for the status of Clark Mountain, the Club believes that existing protection is not strong enough for this valuable area. If, as Mr. Warhol claims, the area is indeed safe from mechanized entry, then what is the objection to its designation as a scenic area?

GUARD DOGS FOR SHEEP

I was pleased to read the timely "Compound 1080—Poison Returns to the Range" (November/December, 1982). Unfortunately, although the author notes that there exist "effective and safer alternatives," he

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makes no mention of the use of livestock-guarding dogs.

Sheep dogs have been more thoroughly tested in the field by both government and private researchers than 1080—either in single lethal dose baits or in livestock collars. Coyotes avoid sheep protected by large breeds such as the Great Pyrenees, the Komondor and the Kuvasz. The dogs have proven both cost-effective and environmentally sound.

Over 300 dogs are currently being used successfully by ranchers in a variety of operations including those on the open range. In contrast, the government's chief 1080 researcher testified at recent EPA hearings that the collars would be useless on the open range where the majority of the predator problems exist. About all the reintroduction of 1080 can accomplish is the indiscriminate poisoning of all canids, including those sheep dogs already in use.

*Terry Callahan
Redding, Conn.*

PRAISE FOR URBAN PARKS

Thank you for the fine article "Revitalizing Urban Parks" (November/December, 1982). It's good to see *Sierra* focus attention on a critical conservation problem that has nothing to do with the large remote wilderness areas of the West. Dealing with issues that affect a broad range of citizens can help dispel the myth that Sierra Club groups are made up of young elitist backpackers interested only in a few exotic issues.

If *Sierra* would publish more articles about such things as outdoor recreation for the poor and the physically less active, conservation education centers, farmland preservation, guiding industrial growth, and coalition building, the individual groups and chapters might realize they don't have to abandon their present efforts in order to recognize other issues and conservation groups. We'd have a healthier Club and garner more respect and understanding in the community.

*H. A. Henderson
Florence, Ala.*

AFFORDABLE HOUSING FOR SENIORS

I found Bruce Stoke's article on the environmental issues of housing (September/October, 1982) enlightening, but I wish he had included one more topic. Special attention should be given to the urgent need for housing for senior citizens. Local and federal governments would do well to subsidize share-community developments with nearby amenities for middle and lower income people.

*Annemarie Mayer
Jamestown, N.C.*

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ADMINISTRATION SCRAPS RARE II

AFTER YEARS OF PLANNING, negotiating and litigating by environmentalists and agencies, the Reagan administration has decided to reconsider the fate of roadless areas within national forests. Citing a court decision that the RARE II program was biased against wilderness, Forest Service head John Crowell announced that the entire forest wilderness "Roadless Area Review and Evaluation" (RARE II) program will be abandoned. This decision will negate the Carter administration's wilderness proposals for national forests and will throw into question the status of millions of acres of forest service lands nationwide. According to Crowell, the federal government will start a new wilderness review with completion targeted for 1985.

Environmentalists are dismayed by the Reagan administration's move. They consider it an attempt to create a crisis that will pressure Congress into passing special legislation to accept RARE II—despite the court's decisions—and into releasing other roadless lands from wilderness consideration. Sierra Club President Denny Shaffer described Crowell's move as "an awesome display of backward logic. . . . The administration is using this court decision to disallow the RARE II wilderness recommendations and to allow the development of RARE II nonwilderness recommendations."

The Sierra Club has been working with other conservation groups to promote state-by-state congressional wilderness packages that include provisions to prevent suits under RARE II and to allow the Forest Service to go ahead with management activity on most roadless lands not designated as wilderness.

The cancellation of RARE II will doubtless provoke a strong reaction from mem-

bers of Congress and concerned citizens. The result will be further confusion and delay in the development of forest lands, even those whose disposition is not controversial.

CLUB SUES TO PROTECT ARANSAS

The Sierra Club and Defenders of Wildlife have joined in filing a lawsuit against the Interior Department to preserve federal management of 19,000 acres of Aransas National Wildlife Refuge lands on Texas' Matagorda Island. The lawsuit, filed in December, seeks to nullify an agreement between the Interior Department and the State of Texas that would allow the Texas Parks and Wildlife Department to administer federal refuge lands on the island for the next 100 years. The state would then have the authority to permit grazing, mineral exploration, hunting, fishing and other recreational uses on these lands, which serve as crucial wintering ground for the endangered whooping crane and other rare wildlife.

REAGAN BUDGET SLIGHTS ENVIRONMENT—AGAIN

The President's budget for Fiscal Year (FY) 1984 has been sent to Congress, and it comes as little surprise that environmental programs would not fare well under it. In his State of the Union Message, which preceded the budget's submission, President Reagan implied that the FY 1984 budget would be frozen at the 1983 level. In reality, however, his FY 1984 budget would raise defense spending by 14% and reduce domestic programs by about 10% across the board.

The administration's budget request would spend \$65 million from the Land and Water Conservation Fund to acquire new parkland, in contrast to the FY 1983 appropriation of \$227 million. No money would be

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spent on historic preservation or on the Urban Parks Recovery Program.

EPA programs would receive \$948 million, down from the FY 1983 appropriation of \$1.04 billion; the "Superfund" program for cleaning up toxic wastes would receive \$310 million, about \$100 million more than the amount budgeted for FY 1983.

Research on solar and renewable energy would receive \$86 million, down from \$252 million in the 1983 appropriation, and the energy conservation budget would plummet from \$367 million to \$74 million. The Solar and Energy Conservation Bank would receive no money at all.

CLUB SUES ON WATER AND WETLANDS

The Sierra Club and two other environmental groups have brought six suits in federal courts in New York against major corporations, charging repeated violations of the Clean Water Act. The act allows affected citizens to sue violators after giving 60 days' notice.

The corporations include Alcoa, U.S. Gypsum, GTE/Sylvania, and Hannah Furnace. The pollutants involved are cyanide, lead, chromium, oil and grease.

In another legal action, sixteen environmental organizations, including the Sierra Club, have filed suit against the Reagan administration to revoke new Army Corps of Engineers rules that weaken protection of the nation's wetlands under Section 404 of the Clean Water Act.

The "404" program is credited with saving several hundred thousand acres of wetlands each year. Even with this protection, however, some 300,000 acres of wetlands are lost annually in the U.S. to filling, dredging and development.

The new regulations weaken protection by allowing the issuance of "nationwide permits" that do not take into account local conditions. The new regulations also grant too much authority to state governments, which are often more susceptible to pressure from development interests. "With 40% of the nation's wetlands already lost forever, we cannot allow this administration to gut the 404 check-and-balance system," says Shirley Taylor, a Club director who has been active on this issue for several years.

REAGAN VETOES FLORIDA WILDERNESS

The Florida Wilderness bill, H.R. 9, passed during the lame-duck session of the 97th Congress, was vetoed by the President on January 14. It was the first wilderness bill vetoed since the passage of the Wilderness

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Act 18 years ago. The bill would have designated 49,150 acres of wilderness in Florida's Osceola National Forest. The bill would have compensated four mining companies for the value of their claims to phosphate deposits in the Osceola by granting the companies credits on future leases. The President claimed that this provision established an appraisal formula that might value the deposits more highly than their current worth.

Anticipating the possibility of a veto, the House sponsors of H.R. 9, representatives Don Fuqua (D-Fla.) and Bill Chappell (D-Fla.), introduced identical legislation on the first day of the 98th Congress.

OIL-RICH TAR SANDS THREATEN PARKLANDS

Three oil companies have announced plans to explore and possibly develop the "Tar Sands Triangle," a 66,000-acre tract located three miles west of Canyonlands National Park in Utah. The tract is believed to contain 12.5 billion to 16 billion barrels of oil in tar sands 1300 feet below the surface. Half the area lies in the Glen Canyon National Recreation Area and half in the Bureau of Land Management's French Springs/Happy Canyon Wilderness Study Area.

The National Park Service will require a rigorous environmental impact statement for the project; no work will begin until the park service's regional director determines that operations will cause "no significant impact" on either Glen Canyon or Canyonlands. The legislation establishing Glen Canyon NRA does, however, specifically permit tar sands development within the area's borders.

Environmentalists point out that while the Tar Sands Triangle is a significant oil deposit—the largest in Utah—other sites with beds of tar sands exist in the region. These include deposits near Vernal, Utah, and in western Colorado. Neither area is currently slated for development by oil companies—and neither entails the serious land-use conflicts found in the Tar Sands Triangle.

STATES WITHDRAW MIREX APPLICATIONS

The states of Texas, Mississippi and Arkansas have withdrawn their emergency-use petitions to the EPA to allow spraying of the pesticide Ferriamicide. The state's requests would have allowed spraying a total of 14 million pounds of the chemical, which is carcinogenic and contains Mirex. The states' action followed on the heels of a lawsuit filed against the EPA by the Sierra Club and three



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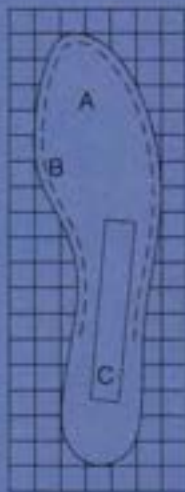
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other environmental groups. EPA Administrator Anne Gorsuch had recently decided to permit new uses of Mirex; there was, however, no notice of such intention in the *Federal Register*, no request for public comments, no demonstration that alternatives were not available and no determination that an emergency existed.

Mirex was applied on 230 million acres in the South from 1962 to 1978 to control fire ants, but it proved ineffective. The EPA cancelled the pesticide's registration after three years of hearings demonstrated that Mirex is highly persistent and mobile, builds up in food chains and readily pervades aquatic environments. Evidence suggests that it is carcinogenic, and it definitely produces birth defects in mice.

The states' withdrawal of their petitions amounts to a victory for environmentalists—at least for now. It is expected that the states will re-petition the EPA with an eye to avoiding procedural errors.

SIERRA CLUB BOARD CALLS FOR WEAPONS FREEZE

At its January meeting, the Sierra Club's board of directors adopted a set of eight conservation priorities for 1983-84 (see page 35). In addition, the board also passed two important policy resolutions regarding nuclear weapons.

One resolution expresses the Sierra Club's support for a general bilateral nuclear weapons freeze. The second opposes the appropriation or expenditure of public funds for any further testing, production or deployment of destabilizing nuclear weapons systems. This would include such weapons as the MX, the Pershing II and Cruise missiles.

EPA TAKES NEW TACK ON CLEAN AIR ACT

The Environmental Protection Agency announced on February 1 that it intends to impose severe sanctions on 150 counties nationwide that fail to meet standards imposed by the Clean Air Act. Environmentalists believe that the EPA's policy is too aggressive and is unfair in many cases. They have suggested that the EPA's actual intention is not to enforce the law but to goad Congress into weakening the act through legislation.

Some areas slated for sanctions have failed to adopt or to carry out clean air plans. But other communities have implemented plans that were approved by the EPA—but have been unable to achieve their goals. Claiming that the law "forces her to do so," EPA Administrator Anne Gorsuch intends

to ban construction and cut federal highway funds in such areas, even though the Clean Air Act does not require the imposition of sanctions in such cases.

PRESIDENTIAL CONTENDERS AIR VIEWS AT CONVENTION

Seven potential candidates for the Democratic presidential nomination appeared at California's state Democratic convention in January. Most stressed environmental issues as part of their platforms. Herewith, some of their comments:

- Senator Dale Bumpers (D-Ark.). "This would-be destroyer of the wilderness [Watt] who would savage our forests, who vows that not one more national park shall be designated, who hopes to commit every acre possible to development before he leaves office, is perhaps the personification of what this administration believes."
- Senator Alan Cranston (D-Calif.). "Our responsibility—the Democratic responsibility—is to use government to stop pollution and to protect our environment from the likes of James Watt."
- Senator Gary Hart (D-Colo.) "The next Democratic president must make this country truly energy independent by conservation and improved energy use and wisely developing new, alternative sources of domestic energy."
- Walter Mondale. "Right now, today, I would fire James Watt and Anne Gorsuch. And I'd call Mo Udall and take his choice and put him in charge of that department. Right now, today as president, I would cancel the Clinch River Breeder Reactor and would take the \$5 billion that we saved and I would invest it in the great centers of research in our country . . . and give them . . . the things that they need to move this nation out front and keep America number one in basic science."

TOM McCALL

Tom McCall, former governor of Oregon, died January 8 after a long struggle against cancer. While he was governor from 1967 to 1975, McCall earned a well-deserved reputation as one of the nation's most effective conservationists. Under his leadership, Oregon passed the nation's first "bottle bill," one of the best land-use planning measures and other environmental programs.

He remained politically active after he left office; during his last months, he campaigned actively to save Oregon's landmark land-use law and in California for a bottle-bill. Tom McCall was a hero to environmentalists and to all Americans; he will be missed. □

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WORLD PARKS CONFERENCE

Preservation, Development and the Third World

PEGGY WAYBURN

IT IS UNLIKELY that the founders of Yellowstone National Park knew what they were starting. Certainly they never dreamed that the idea of national parks would spread worldwide, or that 110 years after Yellowstone National Park was established, a World Congress on National Parks would be held in Bali, Indonesia. Yet today, 124 countries have national parks and protected areas. During the past ten years alone, the number of such areas worldwide has jumped from 1500 to 2611 (not counting certain areas in the United States). In this same period, their acreage has increased by an amazing 82% to a total area that now covers some 5% of the earth's surface.

The Bali World Congress on National Parks was another milestone in the evolution of national parks worldwide. Running from October 11 through 21 at the Bali Beach Hotel, this was the third such decennial event held under the auspices of the International Union for the Conservation of Nature and Natural Resources (IUCN). (The earlier two took place in the United States, in 1962 and in 1972.)

This congress was particularly noteworthy for being the first to take place in a developing nation. As Lee M. Talbot, then director general of the IUCN, remarked, the event was widely identified as the "Third World National Parks Congress" in "interesting if unintentional symbolism." The congress attracted some 450 registered participants representing 68 countries, of which

the majority were indeed developing nations—Asian, Latin American and African. Most congress participants were representatives of international organizations or professional park personnel. However, there were a number of volunteer citizens' groups and nongovernmental organizations (NGOs) as well. Although sparsely represented in the planning of the congress and in presentations, they took a notably active role in the procedures. Women were con-

spicuously absent; a final congress resolution called for much greater involvement of both NGOs and women in future congresses.

Indonesia played a highly important role in the congress. Cochairing the congress with Lee M. Talbot was Dr. Soedjarwo, director general of the Indonesian Directorate-General of Forestry.

A highlight of the gathering was the announcement by Dr. Soedjarwo of the proposed enlargement of the Indonesian national park system from five to sixteen representative areas, totalling some 9% of the area of the republic. "These parks will give benefit because of their scientific, educational and recreational values," said Wurtono Kadri, cosecretary-general of the congress (with Kenton Miller, chair of the IUCN commission on national parks and protected areas) and head of the Indonesian Directorate of Nature Conservation. "They will also help Indonesia keep its forests, maintain good water and provide new jobs for its people." On the final day of the congress it was also announced that the Indonesian government had agreed to join the IUCN.

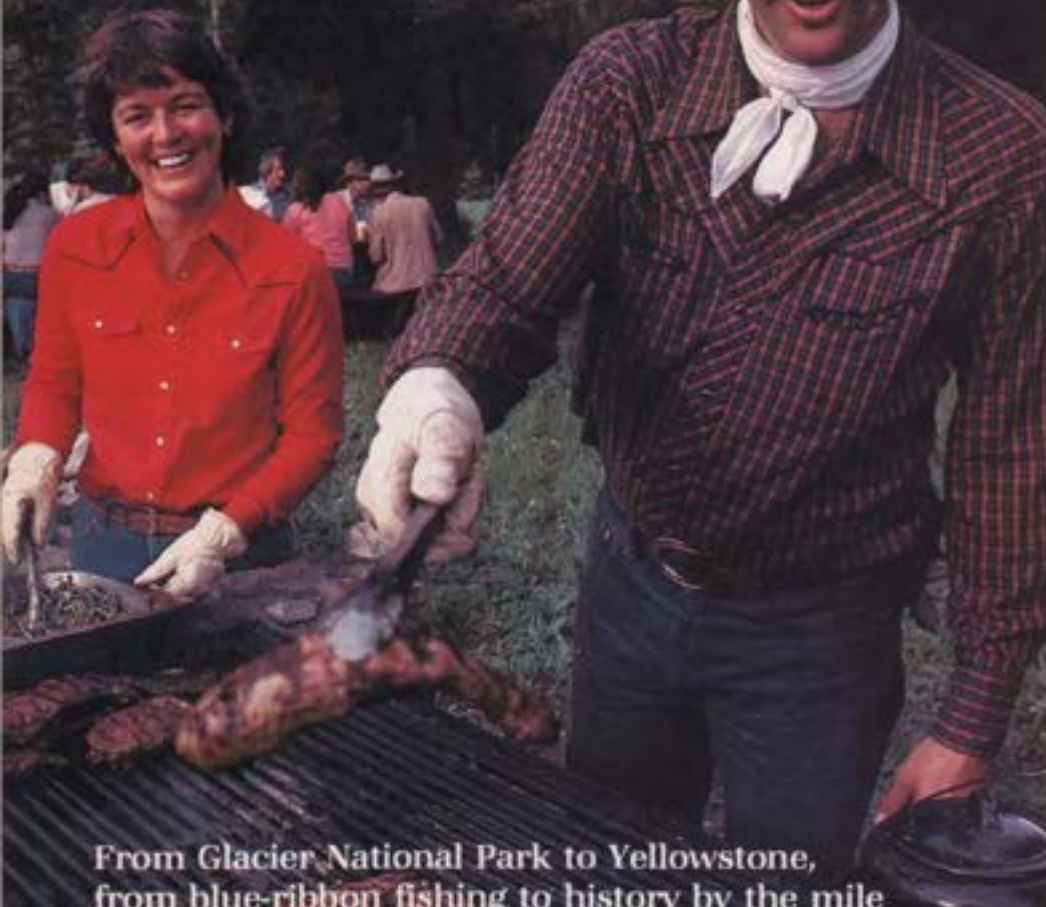
The official theme of the Bali congress was "Parks for Sustainable Development," and these provocative words were emblazoned in bright yellow on an immense, green banner that hung above the stage of the meeting room. The slogan inspired a controversy. To those who had planned the congress, the phrase had a meaning that had grown out of numerous meetings, a great deal of discussion and delicate negotiation. The phrase was an extension of the notion of "sustainable development" that had been affirmed during the meetings that produced

Centuries-old systems of terraced rice fields cover the hillsides of Bali.



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Bali's endangered white starling, *Louspar rothschildi*, is protected at Bali Barat Reserve.

the 1980 World Conservation Strategy.

To many attending the congress, however, the theme was obviously susceptible to different interpretation. Were parks themselves to be developed? Was commercial development within parks to be encouraged? Was the tradition of protecting parks being challenged? In fact, what did the term "parks" mean? And which of the many meanings of "development" was intended? These problems bothered participants from a number of nations—particularly those where parks are threatened by environmentally destructive development. The ongoing discussions made it clear that parks mean different things to different people. The idea of national parks seems to be very flexible; for example, the national parks of Great Britain and Japan largely comprise private property. Many countries allow certain types of development and activities within their national parks—ranging from resort hotels to subsistence hunting. The concept of protection inherent in the word, however, is widely and strongly accepted.

The congress emphasized early on the fact that a nation's parks must, of necessity, reflect that nation's circumstances. At the same time, it reaffirmed the integrity of the national park ideal.

As Sierra Club Executive Director Mike McCloskey, who played a major role on the congress's Recommendations Committee, later summed it up: "Despite initial confusion at the congress over the implications of the slogan—Parks for Sustainable Development—everyone left knowing that the world parks movement continues to be firmly committed to protecting national parks from commercial exploitation."

Discussions of how parks are faring and developing worldwide provided, in fact, the subject of the congress meetings.

Russell Dickenson, director of the United

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States National Park Service, chaired the session on the Nearectic, which includes the United States. Those discussing America's parks included notable NGO spokesmen: the Audubon Society's Robert Cahn, the Save-the-Redwoods League's Bruce Howard and the Sierra Club's Edgar Wayburn. In a later session, U.S. Assistant Secretary for Fish and Wildlife Ray Arnett also addressed the congress.

A number of common themes ran through many of the reports presented at the congress. Protecting natural areas and wildlife, for example, reinforces the culture and religious ideals of native peoples in many parts of the world, from the United States to Fiji to Sri Lanka. Parks, it became ever more clear, provide the last refuge for many species of plants and wildlife (this latter is especially true in East Africa). Parks are also enabling such threatened species as the vicuna and the Bengal tiger to recover. Park protection of coastal and marine areas all over the world is becoming of critical interest and importance. Intensified, widespread logging activities are endangering many species and cultures; in fact, the devastation of tropical forests holds the threat of planetary disaster. As Maria Teresa Jorge Padua, Brazil's noted conservationist, put it, heedless, uncontrolled cutting of tropical forests is "a crime."

Early in the congress, discussion of population was ruled "taboo." (The rule was later withdrawn.) But the increasing pressures of population and human activities on parks was expressed so repeatedly that it dominated much of the congress. Too many tourists, for example, are seriously threatening the parks of Greece. Local people are loving their parks to death in many other countries as well; Great Britain is a prime example.

"Agriculturation" and "industrialization" are increasingly affecting the planet's fragile environments. Mangroves are being turned into wood chips; forests are being cleared for rangeland to raise cattle. Dr. Gerardo Budowski, the internationally renowned forester, explained the replacement of tropical forests by pastures as the conversion of trees into hamburgers. Human encroachment into limited and irreplaceable wildlife habitat is occurring on a widespread scale. Human use (often traditional) of park resources increases as populations grow. The list goes on and on. Indonesia's Dr. Soedjarwo stated that the republic's gravest problem was its growing population, which has doubled in the past ten years.

Poaching is one of the most serious widespread threats to parks. When new parks and protected areas are established, local people understandably resent "locking up" resources that have been traditionally "free." Dr. Emanuel Asibey, head of Gha-

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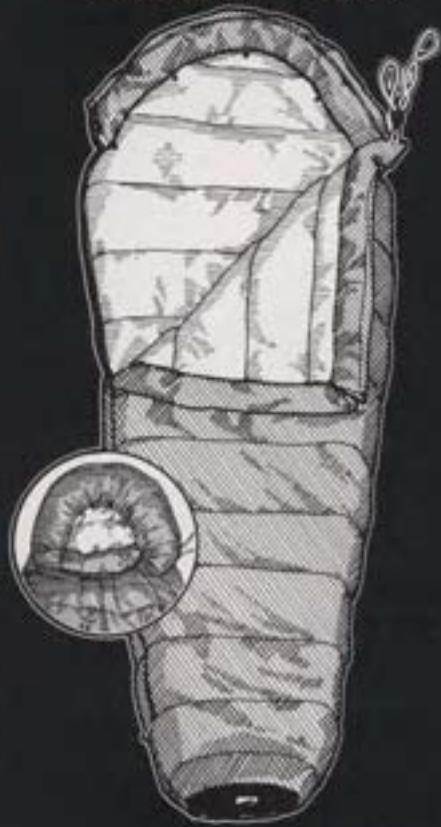
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na's forestry commission, pointed out that poaching is frequently more than subsistence hunting; it is often a business. "In Ghana," he said, "people shoot the game to eat themselves, but just as often to sell it to the local chop houses where it is the preferred item on the menu." In most of Africa south of the Sahara, according to Asibey, 70% or more of the population eats "bushmeat" by preference. "Bushmeat," incidentally, in much of the world includes not only such animal species as deer, but also monkeys, mongooses, lizards, crocodiles, rodents, insects and even snails. In some African parks, poaching constitutes such a grave threat to animals that rangers must defend them with firearms.

On another somber note, Uganda's Professor I. B. Kayanja described in a quiet voice to an even quieter audience the slaughter of Uganda's wildlife during the regime of Idi Amin and the revolution that overthrew him. Many wildlife species were reduced to fractions of their former numbers, and heroic rangers gave their lives in their efforts to save them. (The congress later honored several of these men in award ceremonies.)

On a more positive note, the speaker from Burma reported that protected areas and wildlife reserves are now used to protect and produce elephants used in local logging. "Elephants," he said, "are better and a great deal cheaper than machines; they carry larger loads, and they last longer. Furthermore, they are amphibious, weatherproof, and good in boggy soils and on steep topography."

A new and exciting role for parks was also advanced by Robert Prescott-Allen. He proposed that certain protected areas be set aside as "in situ banks for genetic diversity." This concept involves more than setting aside areas to preserve a species. He felt we must look at the variation within a species and identify habitats for many varieties and strains of each species. This goal would lead toward a richer and more varied system of habitat protection. He stressed that protecting the genetic diversity of key species must become a matter of deliberate policy rather than simply being left to chance. As the University of California's Michael Soule pointed out, "In our fisheries, we harvest the most desirable members of the species and leave for the gene pool the less desirable members of the species." If this process continues indefinitely, the degradation of the species will inevitably result.

Another major consideration of the congress was the preservation of the remarkable character and resources of Antarctica. Many participants would have liked to see a recommendation urging a "world-park" designation for this unique part of the planet, but the potential of mineral development

there sparked controversy over this idea. Instead, the congress called for the designation of an "internationally protected area" that would not challenge the present multiple jurisdictions but would allow for effective zoning and for protection for areas of great sensitivity. It was further urged that environmental risks be fully explored and evaluated before development occurred in Antarctica.

By the close of the congress, certain conclusions were evident:

First, this decennial event is a valuable forum for reviewing the world park situation, for influencing future trends and for reminding the world of the importance of parks and protected areas.

Second, it became ever more clear that the leadership momentum is shifting from the developed nations that initiated the parks movement to the developing nations. As Jeff McNeeley, staff director of the IUCN's commission on national parks and protection areas, sees it, the new ideas in developing ways to establish and use protected areas are springing from Third World countries, and so is the governmental support. The United States government, in contrast, is reducing its financial support and commitment to the international agencies concerned with parks and protected areas. In its most recent budget-paring efforts, for example, the State Department has withdrawn entirely its contribution, which has averaged around \$300,000 annually, to the World Heritage Fund. McNeeley views this lack of U.S. government support as an abrogation of its leadership responsibilities. "This is particularly sad," he noted, "because of the clear need of the developing nations for professional and experienced technical assistance in such areas as park management."

Third, as leadership within the parks movement shifts, there is a great opportunity for NGOs, particularly as governments fail to provide needed support. There is currently no single, ongoing international coalition of NGOs in the parks field. But such an organization could play a vital role in the growth of the worldwide parks movement.

Parks are a great universal common denominator. Countries that have parks have many common problems, but they have common benefits as well; these are a unifying factor in a world that is increasingly divided. This idea was one of the most important that participants carried away from the World Congress on National Parks.

*Peggy Waybom has contributed to Sierra for many years and has traveled in Alaska often since 1967. Her latest book is *Adventuring in Alaska*, published by Sierra Club Books.*

New Hope for MONO LAKE

EUGENE A. ROSE

THE STORMS THAT SWEEP the Sierra Nevada in 1982 left not only a lot of snow, but also considerable moisture from heavy summer thunderstorms. For the first time in years, some of the storm waters reached Mono Lake, raising the lake's level by eighteen inches—as well as conservationists' hopes for some solution to the Mono Lake issue. For decades, the Los Angeles Department of Water and Power (DWP) has diverted four of the five streams that feed Mono Lake; the result has been a gradually diminishing lake and a faltering ecosystem. In 1982, for the first time in recent years, precipitation was even greater than the DWP's diversions—and Mono Lake was given a brief new lease on life.

The November elections produced some additional runoff, bringing new faces and forces into the controversy over the vast



Mono Lake's tufa formations bear stark testimony to the lake's receding water line. Tufa is formed when calcium-rich spring water comes into contact with the carbonate-laden brine of the lake. The two combine to form a shell-like casing around algae found in the lake.

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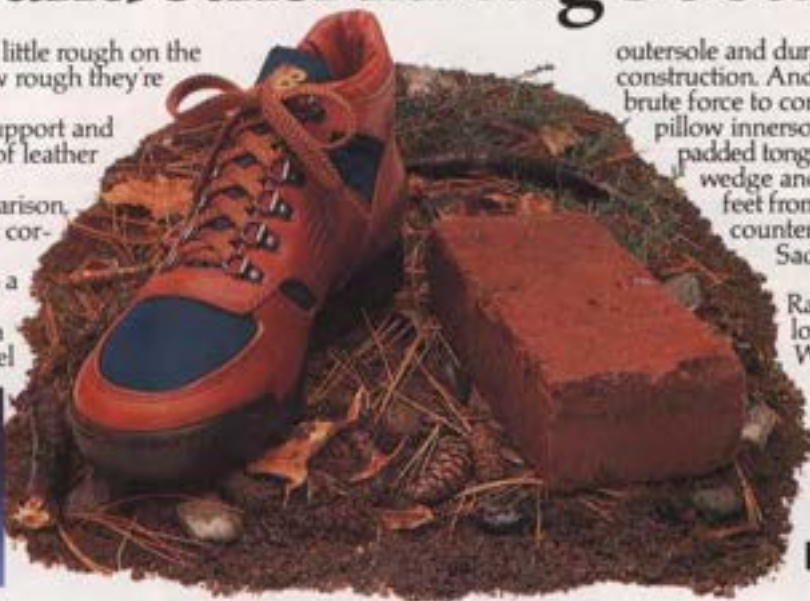
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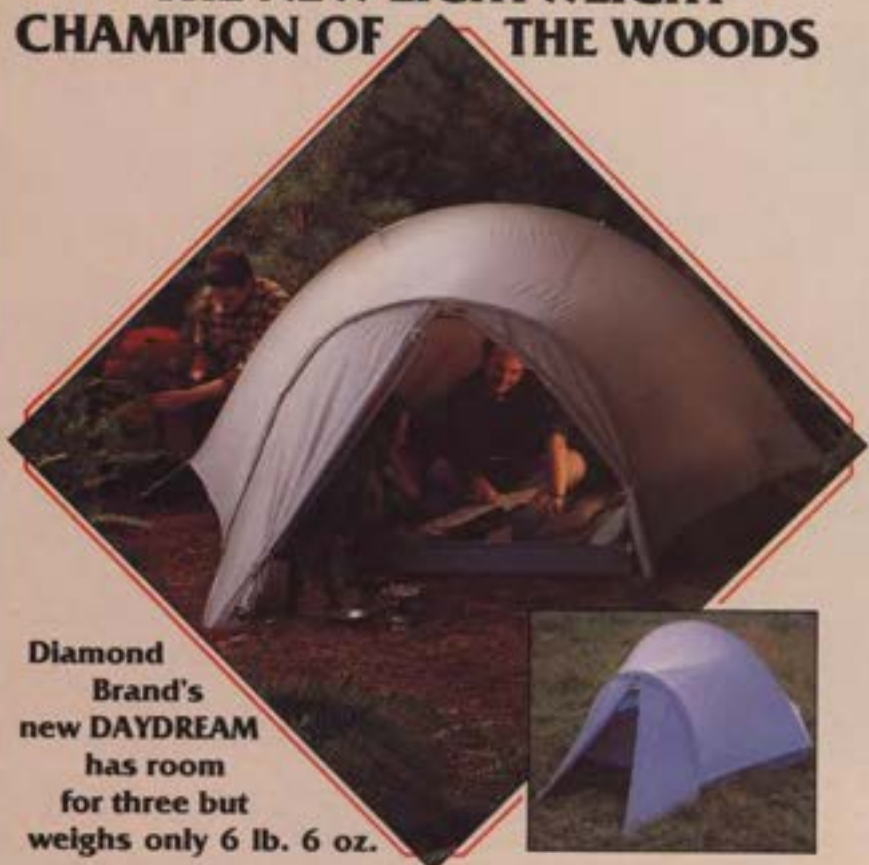
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RICHARD MENT



A Los Angeles Department of Water and Power diversion gate rechannels the water of Walker Creek to southern California. Walker Creek and four other streams once replenished Mono Lake; only Mill Creek remains undiverted.

alkaline lake fifteen miles east of Yosemite National Park.

Two weeks after the elections, a congressional field tour heard Representative John Seiberling (D-Ohio), chairman of the House Interior Committee's subcommittee on public lands and national parks, urge federal protection for the basin—along with a reduction in water diversions by the Los Angeles DWP.

But Seiberling is experienced and forthright enough to realize that it's difficult to predict what political winds may blow over the lake. Still, the issue has gained importance over the years; Congress will, Seiberling feels, finally have to face it. In the 97th Congress, Representatives Norm Shumway (R-Calif.) and Jim Santini (D-Nev.) introduced legislation to make Mono Lake a national monument managed by the National Park Service. This was the initial volley in current congressional action to protect Mono Lake. In the 98th Congress, the new representative for the 18th congressional district, which includes Mono Lake, is Rick Lehman. Lehman is also a new member of the powerful House Interior Committee.

The 34-year-old former state assemblyman campaigned for Congress on the issue of saving Mono Lake. "Mono Lake is my mission," he claims. The son of a San Joaquin Valley farmer—an area where water rights are of paramount concern—Lehman

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appreciates the sensitivity of the issues surrounding state water rights as opposed to federal control. Indeed, the question of water rights is central to the Mono Lake issue. Lehman is quick to point out that the DWP's water rights are not the only consideration: "They may have a legal right to that water, but they do not have a moral right to destroy the lake. The city has an obligation to use those waters responsibly and reasonably; and if they don't they will undermine everyone's water rights in California. That is something the nation's number-one agricultural state can't afford."

A February 17, 1983, state Supreme Court decision will create even greater impetus for a congressional settlement of the Mono Lake problem. In a major victory for environmentalists, the court held that the state can modify existing water rights in order to protect the environment. In an affirmation of the doctrine of "public trust," the court said, "The state is not confined by past allocations decisions which may be incorrect in light of current knowledge or inconsistent with current needs." The ruling will not, in itself, stop Los Angeles from diverting water from the streams that feed Mono Lake. The probable final solution was outlined some time ago.

After years of controversy, a group of federal, state and local agencies met to study Mono Lake's problems. Out of this inter-agency task force came a series of recommendations in 1979, which, Lehman feels, could form the basis for a solution.

Basically, the proposals call for reducing DWP diversions enough to maintain the lake's surface at 6388 feet, a level that should protect the integrity of the basin's ecosystem. Other provisions would compensate the city for loss of hydroelectric revenue and still preserve its title to the water.

In early February, Representative Lehman introduced new Mono Lake legislation, H.R. 1341, cosponsored by Norm Shumway and 19 other representatives, establishes a Mono Lake National Monument to be managed by the Forest Service. The establishment of a national monument will not, in itself, protect the lake's ecosystem from the effects of water diversions, but the bill addresses these concerns in another way. The Lehman bill authorizes two studies. The first, to be conducted by the Secretary of Agriculture, the state of California, the Secretary of the Interior, the city of Los Angeles and the supervisors of Mono County, will focus on the use of Mono Lake water by the city of Los Angeles and on alternatives. The second, to be conducted by the National Academy of Sciences, will produce a technical evaluation of the water level needed to sustain current wildlife populations at Mono Lake.

Ultimately, public pressure rather than political maneuvering will determine the fate of the lake. Public awareness of the issue is still mounting, and the DWP has begun, at long last, to respond. Over the past three years, the agency has hired its own scientists to examine seagull populations, the lake's salinity and other factors. During 1982, an estimated 100,000 visitors detoured off state Highway 395 to visit the new Mono Lake State Tufa Reserve. David Gaines, of the Mono Lake Committee, feels that the reserve has been an "excellent vehicle" for

public understanding and appreciation of the problem. "People can see what the diversions are doing, and they realize that something needs to be done," Gaines explains. It is perhaps ironic that very little actually needs to be done to solve the problem. As Gaines told Seiberling, modest water conservation measures and wastewater reclamation in Los Angeles would provide enough relief to save Mono Lake.

Eugene A. Rose covers park, forest and public lands issues for the Fresno Bee.

CHATTAHOOCHEE NRA How Much Is Enough?

WILLIAM E. MANKIN

ON JUNE 25, 1982, the Southeast regional office of the National Park Service (NPS) announced that it was going to cut a national park in half. The park was the Chattahoochee River National Recreation Area (CRNRA) near Atlanta, Georgia. Along with other national recreation areas—Santa Monica Mountains, Gateway, Cuyahoga, Indiana Dunes and Golden Gate—the Chattahoochee is one of America's urban parks, heavily used and widely appreciated.

As established by Congress in 1978, the CRNRA was to include 6300 acres in 14 separate units along a 48-mile stretch of river. A ceiling of \$72.9 million was authorized for land acquisition.

By the summer of 1982, all but \$6 million had been spent, but only 3600 acres had so far been purchased. According to the Park Service, once this \$6 million is gone, no more money will be requested from Congress (a practice hitherto routine); land acquisition will cease.

Moreover, some lands already acquired will be deleted from the park, and the original purpose of the park will be reinterpreted to focus almost exclusively on more intensive recreation.

This proposal is at odds with the Park Service's own Draft General Management Plan (GMP) for the CRNRA. This plan describes a 12,000-acre park as "optimal" to meet the requirements of the establishing legislation (which directed the NPS to identify additional lands for the park), and to protect significant resources. The GMP cautions that limiting the park to 6300 acres

would be harmful to the very values the CRNRA was established to protect. The plan ominously warns that if the park were further limited to only the lands already purchased (3600 acres), the Park Service "would recommend that management of the CRNRA be handled by another agency."

The 12,000-acre proposal was not a pie-in-the-sky proposal; it had been developed by local park planners and a broad-based citizens' Planning Assistance Committee that represented landowners and developers, user groups, local and state governments and the Chattahoochee River Coalition, an alliance of a dozen Georgia environmental groups. The proposal also had the support of the park's superintendent and the NPS regional director. No one, however, anticipated the turn of events the Reagan administration had in mind.

Late in 1980, three days after Reagan's election, the CRNRA planning team flew to Washington, D.C., to present its proposal for a 12,000-acre park to NPS Director Russell Dickenson for his approval. Citing his opinion that it would never fly with the incoming administration, Dickenson summarily rejected the plan and sent the planners back to the drawing board with instructions to stick to 6300 acres.

Although Dickenson's personal lack of enthusiasm for urban parks may have influenced his decision, he was certainly correct about the Reagan administration. Within two months of his appointment, Interior Secretary Watt announced a moratorium on parkland acquisition and stated his

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belief that urban parks should not be part of the National Park System. Equally disturbing was his oft-quoted threat to "use the budget system to be the excuse to make major policy decisions."

Sure enough, when the Park Service finally released its revised draft GMP, "current economic conditions" were cited to justify limiting the CRNRA to 6300 acres. The same document, oddly, contains a ringing endorsement of the 12,000-acre park.

During this same period, Secretary Watt began speaking directly about the Chattahoochee issue, warning that money for land acquisition would not come from the federal treasury. Another Interior Department official, Special Assistant Rick Davidge, joked to NPS staffers that the CRNRA was "the first one we're going to get rid of."

Nevertheless, even the CRNRA planning team didn't expect the next step. The team had developed a new plan for a park, as Dickenson had directed, just under 6300 acres with boundaries carefully adjusted to protect a few new areas proposed by conservationists. Armed with a videotape presentation to sell their new plan, the park's planning team and superintendent again went to Washington.

Dickenson politely viewed the presentation and announced that he was no longer interested in acreage—just money. And since the money was nearly gone, the park was not going to be completed. (Dickenson later told a House subcommittee that the decisions to cut back the CRNRA were made on a local level by the planning team and regional director.) Shortly after their meeting, the news hit the street.

When the axe fell on the Chattahoochee, Georgia's environmental community reacted on many fronts. The executive director of the Georgia Conservancy flew to Washington to confer with Georgia's congressional delegation. The Sierra Club's Atlanta Group held a news conference to call for a congressional hearing. By late fall, environmental groups had organized a campaign to prevent the Park Service from carrying out its plans.

The efforts of each organization were designed to increase general awareness of the issue and to mobilize widespread support. Leaflets were distributed at the park; letters-to-the-editor were written; and numerous meetings were held with media representatives, Congress and other citizen organizations. Members of the Sierra Club and Trout Unlimited produced two 30-second TV public service announcements (PSAs) about the issue, one of which featured actor Ned Beatty in a canoe on the river. Both PSAs received extensive airplay, and callers responding to them were sent action-oriented materials.

Soon editorials, cartoons and features began to appear in newspapers and magazines; general news coverage of the issue increased. Political candidates having the backing of environmental groups in the 1982 campaign pledged their support to save the park.

One of those candidates, incumbent Representative Elliott Levitas (D), has led the fight for the Georgia delegation in the House. He has made a number of public statements about the issue, and he directed the preparation of the delegation's letter of protest to Watt. Levitas also worked with Sierra Club members to place the CRNRA on the already-crowded agenda of a House Interior subcommittee hearing last September. He has vowed to do all he can to block the NPS plan.

In the Senate, Georgia's Mack Mattingly (R) has been working with Watt and other Interior Department officials on alternative methods of protecting a 6300-acre CRNRA. Mattingly apparently succeeded in delaying Park Service preparation of a final GMP for the park until he could get certain agreements and commitments. Details of these negotiations have been sketchy, and conservationists are reserving judgment.

State support for the CRNRA is strong. Outgoing Governor George Busbee (D) sent a letter to Georgia's congressional delegation urging action to oppose the NPS proposal. Shortly thereafter, to emphasize its commitment to the CRNRA, the state deeded 700 acres of state parklands along the river to the Park Service. During his campaign, incoming Governor Joe Frank Harris (D) also expressed his support for the park.

In the meantime, the river coalition put together a compromise legislative counterproposal to head off the NPS plan in Congress. The coalition's counterproposal would alter the CRNRA's boundaries to include a number of critical areas. With various additions, deletions and exchanges, a park of approximately 7200 federally owned acres would be created. The coalition plan would also raise the funding ceiling for land acquisition and would facilitate cooperative management and protection of the river; the plan includes congressional recognition of a 4000-foot-wide river corridor as an Area of National Concern. The coalition hopes for an early introduction of its bill by Georgia's delegation.

Sometime this spring a new organization, the Chattahoochee River Foundation, will launch a series of major public events along the river. Their goal is to raise money to purchase options on possible parkland.

Like most urban parks, the CRNRA is threatened by rapidly encroaching development from all sides. In fact, the primary

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focus of residential and commercial growth in the Atlanta area is north of the city, along the Chattahoochee River corridor. The implications of this encroachment have been acknowledged for years by environmentalists, congressional committees and the Park Service alike. Since the park itself can protect only a limited number of key areas, close partnership with state and local governments is essential to effective, whole-corridor management.

The state of Georgia is committed to protecting the Chattahoochee, but state agencies are in no position to purchase or manage the CRNRA if the federal government pulls out. At present, the state has limited authority to protect the river's many resources. State water-quality and erosion-control laws are helpful, but the ultimate authority for regulating zoning and development along the river corridor is in the hands of county governments. The state's 1972 Metropolitan River Protection Act (MRPA), designed primarily to protect water quality, has no teeth and has been generally unenforceable. The Atlanta Regional Commission (ARC), which oversees MRPA's implementation, is only an advisory board. County governments can, and frequently do, override ARC's recommendations.

Members of the River Coalition have long advocated strengthening MRPA, and legislation to do so will be introduced in the 1983 session of the Georgia General Assembly. But even if this effort is successful, federal protection of key areas along the river is still essential.

A 1982 Park Service study explored various methods of protecting the remaining, unacquired units of the CRNRA, as well as certain other proposed additions. The findings indicate that while a combination of techniques and strategies is necessary, direct federal, fee-simple purchase of specific pieces of property is the most effective way to secure "insurable protection." But complete reliance on that particular method—simply buying the property—precipitated the current dilemma.

Inflation, escalating property values, bureaucratic delays and land speculation have caused the price of land to skyrocket. Rezoning and rising property taxes have placed pressure on remaining landowners, some of whom have held out and tried for years to sell their land to the Park Service. Unfortunately, they have all but given up, especially in view of the Park Service's avowed refusal to buy more land.

Even if the money were there, new legislation is needed to alter the boundaries of the CRNRA to permit inclusion of prime areas. The three areas considered most valuable by the coalition are also the most threatened. Significant parts of all three



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The battle for the Chattahoochee NRA involves much media work. Here, film crew members Tom Arcuragi and Laura Bafford flank actor Ned Beatty, who is taking a break during the making of a television advertisement about the river, a glimpse of which can be seen in the background.

tracts have already been sold or optioned for development, with rezonings and development plans already approved. The areas, which encompass nearly 1000 acres, contain scenic, wildlife, recreational and educational values unsurpassed by anything else on the river.

According to the 1982 NPS case study, if these areas are lost "the park cannot fully meet its intended mission." What's worse, if options or purchases are not arranged soon, all remaining unacquired units could be lost to development within the next one to three years. With a price tag of \$12 million to \$37 million, private rescue attempts will not be easy.

Time is not on the park's side. Each month's delay in resolving the issue will ultimately mean less and less undeveloped land left to be added to the park.

James Watt is waging a war of attrition on the Chattahoochee River. However he does it, whether by design or delay, he may yet succeed. If he does, few Georgians believe a leftover "half a park" can survive for long. Sooner or later, they theorize, the Park Service will pull out because, as one NPS planner put it, at that point "it's just not a viable park."

The CRNRA is not the only park in trouble under the Reagan administration, but it is a major test case for the National Park System. A park that dies at the hands of its own chief steward is more than a shameful legacy. If the Chattahoochee falls, which park is next? What about wildlife refuges? Wild and scenic rivers? Potential additions to individual parks? Proposals for new parks?

Perhaps the most disturbing aspect of the

entire Chattahoochee controversy is the process by which the decisions were made to cut the park in half. They were based on specious "economic conditions," not on sound, long-term natural-resource considerations. They were made completely outside the normal planning process and basically outside the agency itself—disregarding public and professional input alike. Essentially, these decisions constitute a politically motivated circumvention of Congress's intent.

This is a devastating way to run a National Park System.

William E. Mankin, a full-time environmental activist since 1977, chairs the Georgia League of Conservation Voters.

BOARD SETS NEW CLUB PRIORITIES

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Accordingly, the board of directors periodically adopts national conservation issues for top-priority campaigns. Meeting in Washington, D.C., on January 28-30, the board selected the following:

- **Wilderness.** There will be strong pressure for a "nationwide" forest wilderness bill that may include provisions to foreclose future consideration of many areas for wilderness designation. The Sierra Club believes that the traditional state-by-state approach is better. Club activists will work to prepare individual state bills and to ensure their passage in the 98th Congress.

- **Clean air.** Overwhelming public support for a strong Clean Air Act has made a real impact on Congress—lessening chances that industry and President Reagan can weaken the law. Indeed, the 98th Congress may be able to pass strengthening amendments on acid rain, toxic substances and protection of clean-air areas.

- **Clean water.** Recent opinion polls show very strong public support for protection of clean water, and the Sierra Club will be deeply involved in the development and passage of a new strong Clean Water Act and related legislative measures concerning toxic substances.

- **Public land defense.** The threat of "privatization," the selling or giving away of public lands to private companies, is still very real. In addition, the Reagan administration may propose legislation that gives the Forest Service new authority to sell off national forest land. The Sierra Club will strongly oppose these measures while remaining wary of attempts by the mining industry to

gain an extension of the 1984 cutoff deadline for new mining claims in wilderness.

- **Energy leasing and conservation.** The energy-related legislation and administrative actions the Club will follow involve such disparate issues as nuclear waste, oil, gas and coal leasing and various plans to encourage energy conservation. The Reagan administration has encountered strong public opposition to leasing policies that are little more than giveaways of public resources. The Sierra Club will continue to oppose Interior Secretary Watt's proposals to lease America's energy resources for mere fractions of their true value and without adequate planning and environmental consideration. Legislation involving nuclear waste reprocessing and safety will be carefully monitored.

- **Community energy.** This ongoing Club program involves community-based planning for local self-sufficiency and energy conservation.

- **Forest and BLM planning.** Both the Forest Service and the Bureau of Land Management are engaged in major land-use planning programs that will result in development plans and the review of potential wilderness areas. The Club's campaign will focus on volunteer involvement with these plans and studies. The goal is to ensure better forest plans, protection for roadless areas and better wilderness proposals. This campaign is so large and diverse that it must be addressed on a local and regional basis.

- **Agricultural soil and water conservation.** These issues mark a new beginning for Sierra Club involvement. Problems involving



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agricultural soil are severe; addressing them will require broadening traditional Sierra Club interests and involvement. Club activists must find legislative approaches to soil conservation and farmland preservation as the Club enters the politics of agriculture. The question of water conservation is especially important in the West, where water is a key resource. Water conservation is essential in places where such massive public-works projects as the Peripheral Canal would threaten environmental quality. Both campaigns underline the importance of America's most basic resource—its land—to its environmental quality.

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But improving crop yields by expanding irrigation will prove increasingly difficult—many of the best irrigation sites have already been developed and the growing competition for existing water supplies means that irrigation water must be transported over ever-greater distances. A purely supply-oriented approach to this problem is unlikely to succeed. It will take a shift in emphasis, with greater attention paid to managing the demand for water.

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population growth. At least a small portion of the money governments now intend to spend on irrigation development could be invested in effective family-planning programs. Second and more important, wherever and whenever efforts are made to increase food production, the first concern should be a similar demand-oriented effort to improve the efficiency of existing irrigation systems. Shifting objectives from water development to water conservation will be the most prudent way to ensure suitable increases in agricultural productivity.

Upgrading irrigation methods often offers agriculture the best opportunity to save water. Traditional furrow and flood irrigation techniques allow from one third to one half of the water applied to a field to flow unused back into the canal or river from which it was pumped. Recycling water by capturing runoff and pumping it back into the furrows or over the fields reduces water loss to 20% or less. Lining dirt-walled canals with concrete, asphalt or brick could save 60% to 80% of the water that percolates out of unlined canals, according to FAO estimates. Research suggests plastic liners may be equally effective and far less expensive.

Sprinkler irrigation systems generally use water even more efficiently than flood or furrow methods and are often appropriate for uneven terrain or for soils that readily absorb water. New systems have been developed that apply water close to the ground, which reduces the amount lost to evaporation. Where water must be pumped great distances along the surface or from deep underground, the water savings of sprinkler systems often compensate for their higher energy use.

Watering the plant and not the soil, however, is ultimately the most water-efficient irrigation method. In the early 1960s, Israeli scientists found that by installing plastic perforated pipes on or directly beneath the ground, they could deliver a steady flow of water drop by drop to the immediate area around a plant's roots. Called drip irrigation, this method consumes less water than traditional systems. Moreover, water with a high salt content can be used, stretching available water resources in arid regions. Hilly lands that could never be irrigated before can be intensely cropped without fear of erosion. The high cost of installing the pipes, however, makes drip irrigation unsuitable for raising closely planted crops such as wheat and other grains. To date, the system's usefulness is limited to row crops such as corn, fruits and vegetables.

In almost every country, it will be cheaper to save an acre-foot of water by upgrading irrigation methods than it will be to build the dams, reservoirs and canals necessary to add an additional acre-foot to the supply avail-

able for irrigation. A U.S. government study estimates that a \$5-billion investment in simple water conservation measures at the local level could save 2 million to 5 million acre-feet of water. Nevertheless, such investments are not always feasible. While governments pick up the bill for massive water-diversion projects, the burden of improving existing irrigation systems is likely to fall on the farmer. In the United States, farm indebtedness is already at unprecedented levels. In many developing countries, the estimated cost of upgrading and rehabilitating one hectare is often greater than the per capita income. Improving irrigation systems will be more than an engineering challenge, it will involve creating a rural credit system that will enable small farmers to borrow the capital they need. One method of providing credit for water-conservation investments involves plowing water-user fees from existing irrigation projects into water conservation programs rather than into new construction—even though user fees cannot possibly underwrite these programs completely.

Unfortunately, because water is currently underpriced, there is little incentive to improve irrigation efficiency. Farmers in the United States, for example, pay only about one fifth of the cost of the water they use because it generally comes from heavily subsidized government projects. As competing users vie for water, prices that reflect the water's true cost are needed to help society determine how it should allocate and

use its limited supply. An Iowa State University study recently estimated that a quadrupling of prices for ground and surface water would cut total irrigation and livestock water use by 50%. In many Asian, African and Latin American countries, however, water pricing may have to be postponed until their agricultural sectors become better organized. Today, even assessing how much water their farmers use would often cost more than the water-user fees would generate.

Legal reforms are also necessary to ensure that water pricing encourages conservation. In most parts of the world a farmer's right to use water is based solely on the quantity he has used beneficially in the past. Conservation is rarely defined as a beneficial use, so when a farmer cuts back on consumption he risks losing future access to the water. In a time of growing water scarcity, this legal principle is counterproductive. Conservation should be legally defined as a beneficial use. Moreover, the right to use water should include the obligation to use it as efficiently as is technically and economically feasible. Failure to practice conservation should forfeit one's right to water.

Ultimately, intensifying irrigation will depend on better irrigation management, especially in the Third World countries. All too often the failure of government engineers to involve farmers in irrigation planning and the execution of water projects results in costly mistaken assumptions about topography, rainfall and land use. Little attention is paid to the farmers' particular

SIGHTINGS



Representative Morris Udall (D-Ariz.) recently visited Club headquarters with his friend, actor Cliff Robertson, on a political tour of the western states. Here, they meet with Carl Pope, director of SCOPE (in shirtsleeves), and Doug Scott, director of federal affairs.

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water needs or their ability to manage water use. Most important, government ownership of irrigation systems means no single individual has ultimate responsibility for conserving and maintaining water supplies. Without individual accountability, those at the head of the canal often draw more than their share of water, adversely affecting the rest of the farmers in the system. Unless water management improves at the farm level, efforts to increase food production rapidly by expanding irrigation will founder.

For centuries groups of farmers have joined together to build communal irrigation systems. Studies of these small groups demonstrate their capacity to mobilize labor for irrigation maintenance, to coordinate crop schedules and water allocation and to resolve local conflicts over water supplies. This success arises out of the manageable

scale of water-user organizations, the peer pressure that makes individual farmers accountable to the group and the sense of responsibility that comes with shared ownership of the irrigation system. Much of the success of Taiwan's irrigation program can be attributed to its water-user associations. Pakistan, the Philippines, Sri Lanka and Thailand have all created incentives and legal backing for similar village-level irrigation groups.

Much is yet to be learned about improving irrigation management, however. There is little documentation of the potential for increasing the efficiency of water use and improving crop yields through managerial reforms. Experience in Sri Lanka with Sinhalese and Tamil farmers suggests that water-user organizations can work effectively even in villages rent by ethnic factionalism. Nevertheless, disparities in the local distribution of economic power and social status and in the legacy of traditional methods of allocating water remain formidable obstacles. Finally, many observers argue that addressing farm-level management issues is ir-

relevant until better management of central irrigation systems can ensure well-timed delivery of adequate supplies of water. While internal reform is undoubtedly necessary, water-user associations could apply effective outside pressure and hold the managers of irrigation systems accountable for their actions.

Irrigation research has long been the stepchild of agricultural research budgets, a shortcoming that may impair efforts to improve the technical efficiency and management of irrigated land. In the United States, for example, research on irrigation and drainage accounts for only 1.8% of federal expenditures for agricultural research. Moreover, there is no single international research institute whose work is devoted solely to increasing food production through irrigation. This gap should be filled either by existing agricultural institutions or by a new facility. The Canadian International Development Research Center estimates that such efforts would cost no more than \$11 million a year, a scant investment compared to the billions that may soon be invested to construct new irrigation systems.

At the same time, the problems facing irrigation development suggest the need to improve crop yields on land that is watered only by rainfall. In the United States about 90% of the wheat, by acreage, and 60% of the corn are rainfed. In African and Latin American countries unirrigated farms produce the vast majority of all food. If agri-

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Field hand (left) adjusts the flow of irrigation water to a sugar cane field on the island of Kauai, Hawaii. Portable, diesel-powered irrigation pump (below) drives a sprinkler irrigation system in the San Joaquin Valley in California. The U.S. General Accounting Office estimates that half the irrigation water used in American agriculture evaporates or replenishes the water table without ever reaching the crops for which it is intended.



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Compound of farm houses sits amid irrigated fields in Kuangtung, China. In an effort to irrigate more land, the Chinese government has begun building two canals to divert water 750 miles from the Chang Jiang (Yangtze) to the North China Plain, at an estimated cost of \$13.2 billion; as many as 250,000 people may be forced to relocate.

cultural scientists can manipulate the way plants use water, it may be possible to improve the productivity of rainfed agriculture significantly.

Cutting transpiration losses in half, for example, would save an average of half an acre-foot of water per hectare of cultivated land. Minimum-tillage farming and greater use of mulches would retard evaporation and further reduce water needs. The development of hybrids that are more water-efficient would enable farmers to shift to dry-land farming without fear of substantially lower crop yields.

Despite the urgent need to increase food production worldwide and the proven benefits of irrigation on crop yields, not all farmers should shift to irrigation. Studies in the United States suggest that moderate levels of both domestic and export demands for food could be met economically with less irrigation. Comparable studies have not been done in the Third World, but an Agency for International Development study in the Philippines indicates that farm income can be maximized by limiting irrigation. As competition for water intensifies and the cost of groundwater extraction increases, the portion of total food-production costs attributable to irrigation will rise. If food prices do not increase commensurately, dry-land farming will become more and more attractive to many farmers.

Decisions about suitable approaches to water management, irrigation techniques, water pricing and where and when to irrigate have traditionally been made along narrow political lines to fulfill the objectives of politicians, not farmers and consumers. The political manipulation historically associated with water projects has frequently led to suggestions that such decisions be taken out of politics. But any activity that affects the well-being of millions of farmers and consumers is inherently political. The challenge is to make sure that those most affected by irrigation development—water-user associations and consumer groups—take part in the decision-making process.

A grass-roots approach would minimize the inequities that often result from irrigation development. If organizations of small farmers help determine the scale of irrigation projects, then both the rich and the poor are likely to benefit. Such groups can bring pressure on banks and governments to make adequate credit available for the extension and rehabilitation of communal irrigation systems. And by working for land reform these groups can ensure that water development benefits the largest number of farmers. The role consumers can play is less direct but no less important. As taxpayers and voters they can influence decisions about irrigation investment likely to involve billions of dollars. And by lobbying for rapid but efficient

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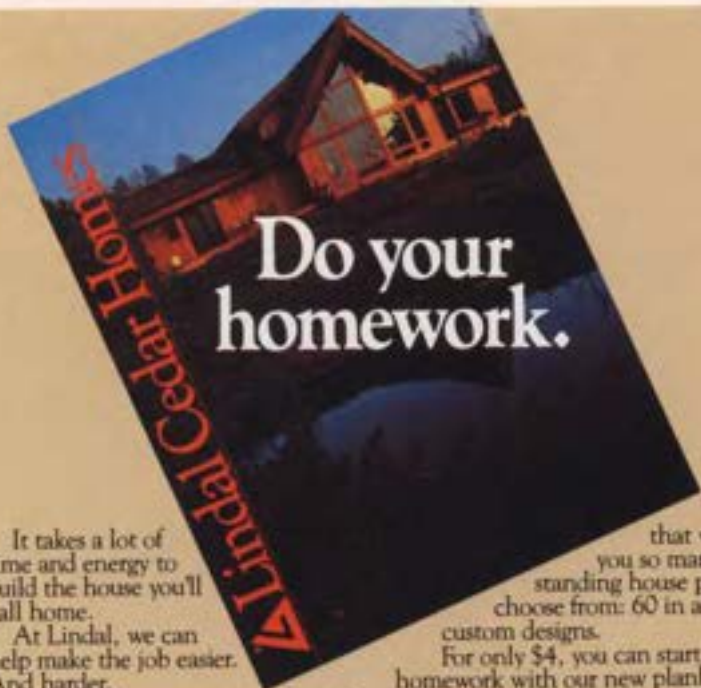
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irrigation development wherever feasible, they will help produce adequate supplies of reasonably priced food in the future.

To be successful in the long run, the technical, managerial and, ultimately, the political processes of irrigation development require a new water ethic to help balance the complex interests involved in developing water resources for agriculture. With any irrigation project there is constant tension generated by attempts to maximize both individual and societal benefits. The individual farmer has every reason to expand irrigation and increase water use to improve his harvest. If every farmer pursues this strategy, however, competition for limited water supplies may undermine everyone's production.

Similarly, there is a conflict between current and future water users. It is often in farmers' short-run interest to pump as much groundwater as necessary to produce as much food as possible. With no one to protect the water interest of future generations, the constituency for water conservation is muted. A new water ethic must evolve before irrigation planners can strike a balance between extensive and intensive water development. That ethic must place proportionate value on the current and future needs of a wider range of water users.

Bruce Stokes is associate producer for All Things Considered, a National Public Radio program. He previously was a senior researcher with the Worldwatch Institute.

Reprieve for POINT CONCEPTION

MICHAEL PAPARIAN

A MAJOR VICTORY for environmentalists. A stinging defeat for the California legislature. An embarrassment to the state's Public Utilities Commission. Welcome news for California ratepayers.

That's the best summary of the recent announcement from Pacific Gas and Electric (PG&E) and Southern California Gas Company that they have postponed and may abandon plans for a liquefied natural gas (LNG) plant at Point Conception on the southern California coast.

The LNG saga began in the early 1970s when California utilities sought to acquire new natural gas supplies by building a \$5-billion LNG facility to import gas from Indonesia and Alaska. The project has been consistently opposed by the Sierra Club be-

cause the technology is dangerous, the site is environmentally sensitive, the gas is not needed and the costs are not justified.

Some have speculated that the utilities hoped to build this capital-intensive project, rather than seek cheaper domestic, Canadian or Mexican gas, because their profits are based on the amount of money invested in large facilities. The LNG plant would have boosted both utilities' profits by as much as \$300 million a year.

Initially, Los Angeles Harbor and Oxnard were considered as sites for the plant. But the resulting public outcry over the safety hazards of LNG prompted the utilities to turn their attention to Point Conception, north of Santa Barbara.

Facing strong opposition from local groups and the Sierra Club, the utilities took their proposal for an LNG facility to the state legislature in Sacramento. They managed to persuade the California legislature and the governor to pass an expedited siting bill, giving sole permit authority to the Public Utilities Commission. Many people tried to convince the Sierra Club to withdraw its opposition—the governor even spoke personally to Club leaders, urging them to “bite the bullet” and accept the LNG project. But the Sierra Club stood fast and, joined by consumer groups, vociferously continued to oppose the plant.

The legislature was perhaps influenced by utility claims that natural gas shortages would put 700,000 Californians out of work by the winter of 1980-81—unless the LNG terminal were built. The LNG legislation was described by Assemblyman Tom Bates as “the Utility Giveaway Act of 1977.”

Five years after the utilities forecast massive economic disruption for a gas-starved California, the current abundance of natural gas supplies calls into serious question the



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accuracy of their prediction. The California Public Utilities Commission, despite opportunities to do so, did not stop the LNG project. In 1978, the California Energy Commission produced evidence that California could get by without LNG, but the PUC failed to accept their findings. The evidence continued to mount, however. Eventually, the PUC itself forecast that twice as much gas was available than the gas companies had predicted in 1977. By 1980, it appeared that only the PUC and the gas companies believed LNG would ever be brought to California. Even PG&E scaled back its commitment in 1980.

The gas companies finally did what the PUC or the legislature wouldn't: They ended the project. Two days after the utilities announced their decision, the PUC stated belatedly that the LNG project couldn't be built without further review.

If allowed to go forward, the LNG project would have forced on customers a supply of natural gas at a cost up to four times greater than they now pay. Even though the project seems doomed, there is a strong possibility that the public will still be big losers because of LNG.

In September 1981, the Sierra Club and other groups had suggested that the project be terminated immediately and no more expenditures allowed. The PUC, however, continued to allow more than \$5 million a month to be spent—right up until the day the utilities announced the plant's suspension.

By November 1982, the gas companies had spent more than \$400 million on the project without even breaking ground. The LNG Siting Act directed the PUC to "monitor" these costs, but the commission interpreted this to mean simply receiving periodic reports of expenditures, with closer monitoring to begin with construction. The PUC never scrutinized the reports submitted by the applicants.

Who eventually pays the \$400 million will be a major issue over the next few months. The applicants are expected to ask that ratepayers be charged for the expenses. The PUC staff has given preliminary indication that this may be allowed. With gas prices expected to rise substantially even without LNG, the LNG issue will continue to be politically important. At least one legislator has already indicated his opposition to charging consumers for LNG expenses. "Ratepayers should not be forced to bear the burden of speculation by the utility companies," says Assemblyman Richard Katz of Los Angeles. □

Michael Paparian is an assistant legislative representative in the Sierra Club's Sacramento, California office.

GUEST OPINION

THE LAW OF THE SEA TREATY: THE U.S. SHOULD RECONSIDER

ELLIOT L. RICHARDSON

Elliot L. Richardson was ambassador-at-large and special representative of the President to the Law of the Sea Conference from February 1977 to October 1980.

ALTHOUGH PRESIDENT REAGAN is unlikely to reverse his July 9, 1982, decision not to sign the Law of the Sea Treaty (LOS) in the near future, the breadth and depth of this nation's oceanic interests will eventually force him to reconsider. In an unprecedented demonstration of international concord, 119 delegations signed LOS in Jamaica on December 10, 1982. In doing so, they launched efforts to bring these new rules into force over two thirds of the planet—but without U.S. participation. President Reagan has, in fact, acknowledged that the treaty's myriad provisions on marine boundaries, vessel transit rights, fishery management and conservation, marine research, protection of marine mammals and their environment, and dispute settlement are "consistent with U.S. interests and, in our view, serve well the interests of all nations."

The difficulty for the United States lies in the treaty's formulation of a regulatory system for minerals development in the seabed beyond traditional territorial limits. Though the treaty itself is not as good as it might have been and far from perfect, it has good features. For instance, its system of regulation for deep-seabed mining is not unworkable. In brief, it sets up a global authority that would decide who can mine where—instead of rejecting this system out of hand, the United States should avail itself of remaining opportunities to improve this part of the treaty, since there are no near-term prospects of an alternative to LOS that would secure investors' legal rights to explore a defined area of the deep seabed for the 20-year duration of a mining project.

The United States claims that various rights codified in LOS already exist on the basis of customary international law, but this position is arguable at best. Even if this were the case, however, inevitable controversies with coastal countries, who take the position



Ambassador Richardson and Anita Yurchyshyn, Sierra Club Marine Environment Chair, at the Law of the Sea signing ceremony.

that the United States cannot benefit from LOS provisions without signing the treaty, could prove more costly than choosing to adhere to it. So the question then becomes, shouldn't we, as a hedge against the possibility that U.S. mining companies may one day operate under the treaty, try to influence the content of the seabed mining regulations that will be drafted by the Preparatory Commission this spring?

I now believe the administration should "stay the course" and contribute considerable U.S. expertise—not least in sound environmental assessment and monitoring—to the formulation of workable regulations for seabed mining. In the unlikely event that U.S. influence fails to produce pragmatic and workable guidelines for mining, we can always withdraw from the commission. If the outcome is unsatisfactory, the United States need not sign and ratify the treaty. But deciding not to participate at all would indeed be shortsighted.

U.S. allies have already chosen to work through the rule-making process before they reach a final decision about ratifying the treaty. This leaves the United States in limbo, unable to secure U.S. interests through alternative bilateral and multilateral agreements. Legislation currently before Congress proposes enactment of a 200-mile exclusive economic zone (EEZ) and encourages reciprocity with foreign nations. Yet because this measure redefines the scope of coastal states' rights and obliga-

tions within the EEZ—contrary to what was agreed after nine years of negotiation and compromise in the U.N. conference—the United States is not likely to find any takers for offers of reciprocity among the nations that remain committed to LOS. A hasty and ill-considered unilateral initiative could jeopardize our national interest in maintaining the treaty's delicate balance between the rights of coastal nations to protect their offshore areas from pollution and the international rights of passage for ships and airplanes.

It seems wise to avoid calling into question the international consensus on ocean law represented by LOS's non-seabeds provisions, if for no other reason than the damage such action might do to the treaty's comprehensive and hard-won framework of obligations to prevent, reduce and control pollution of the marine environment and to further the development of international law to protect marine and coastal areas. These obligations were accepted by participating nations as part of the package deal of rights and obligations; left to their own devices, few countries would voluntarily impose uniform, minimum environmental standards on their ocean activities.

If the President persists in his present course, he risks being told by the rest of the world that he cannot expect to benefit from the parts of the treaty he likes but reject parts he finds offensive. Instead of strengthening the rule of law as envisioned over ten years ago, that would make a mess of it—at least for the United States.

The real importance of LOS cannot be found in the sum of its parts or in its extraordinarily comprehensive whole. It is important because it demonstrates the capacity of 119 sovereign nations to work out rational accommodations among vital competing interests. As the world finds itself forced increasingly to come to grips with its own inseparability—and nowhere is this interconnectedness more evident than in the global marine environment that nurtures our continents—the significance of this achievement will loom even larger. □

BLM WILDERNESS REVIEW

New Beginning, Same Old Story?

JAMES BAKER

IF YOU MARKED OFF on a map of the United States all privately owned land; if you crossed out the tracts now held by state and local governments; and if you then blocked out the federally owned acreage devoted to national parks, forests and wildlife refuges, Indian reservations, military installations and public works projects, your map of the nation, believe it or not, would still have open spaces—roughly 341 million acres of federal property.

These "leftover" lands used to be the lands that nobody wanted, but now everyone does. They are administered by the Bureau of Land Management (BLM), part of the Interior Department. The holdings vary considerably; some are tiny, one in Illinois is just 29 acres, but others are huge. Tracts in Alaska contain more than 168 million acres. The BLM lands are not evenly distributed nationally. Most eastern states have few or none, while better than half the

land mass of Utah and Nevada are BLM lands.

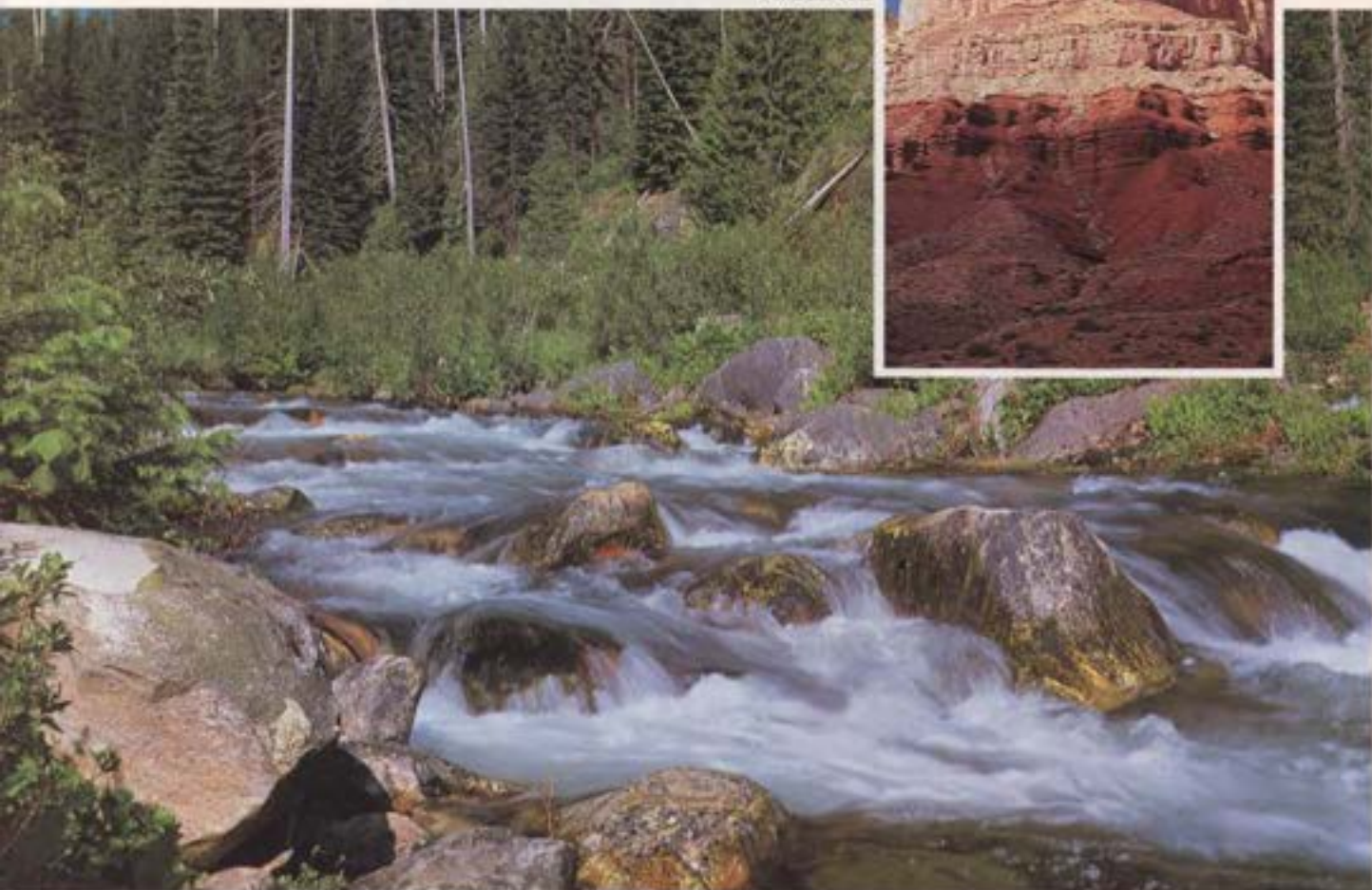
Although throughout most of American history, no one wanted BLM lands, today there is lively competition for them. Conservationists are eager to preserve some of these lands as wilderness or as additions to other recreational land systems. Developers, too, see vast potential for these lands. Many areas may contain major deposits of coal, oil and other minerals. Other areas can be used for livestock grazing or for off-road-vehicle trail riding.

For decades, decisions regarding these lands were made on an *ad hoc*, improvisational basis. But now, BLM is deciding which of its many acres will be preserved as wilderness and which will be made available for development. By order of the Reagan administration, the BLM will complete a wilderness review of almost all its holdings by 1984.

Most environmentalists expected BLM

BETH FREAR

DOYLE CRAMPFORD



strenuously to resist designating its lands as wilderness. Unlike the National Park Service or the Forest Service, whose own records of support for wilderness are not unblemished, BLM has never earned much of a reputation for conservation. For the first three decades after its creation in 1946 (by combining the General Land Office and the National Grazing Service), BLM did essentially what its parent bureaucracies had done: handed out land parcels, grazing leases and mineral claims. It became a standard joke that BLM actually stood for "Bureau of Livestock and Mining."

Then in 1976, the Federal Land Policy and Management Act (FLPMA—pronounced "Flip-ma") reorganized BLM along the lines of the Forest Service. Henceforth professionals would run the agency under a new mandate to retain and manage federally owned lands and resources on the principle of multiple use for the public benefit.

With FLPMA, Congress directed the

BLM to review its entire holdings under the Wilderness Act to select areas suitable for wilderness designation. The law allowed fifteen years, until 1991, to complete this gargantuan task. That distant deadline soon became the target of political opposition; development interests and their allies argued that delay would cripple development plans. During the Carter administration, BLM staffers resisted pressure to accelerate the review but agreed that, if properly funded, the program could conceivably be completed by 1987.

Then came the presidential election of 1980 and the subsequent appointment of Robert F. Burford as BLM director. Burford is a rancher, a former Colorado state legislator and self-proclaimed "Sagebrush Rebel," who promised to end "paralysis by analysis." Accordingly, he ordered state and district offices of BLM to "streamline" procedures. He accelerated the wilderness review so that almost every one of his agency's

Marble Creek (above) east of Clarkia, Idaho, and a stark sandstone tower in Utah's Muddy River area (inset) represent the tremendous variety of the roadless areas among the Bureau of Land Management holdings throughout the West. A wholesale review of BLM wilderness holdings is now underway.

eventual recommendations would be on Interior Secretary Watt's desk before the end of 1984.

That deadline clearly forecloses the possibility of an adequate, much less a thorough, review program. BLM has always been known as the "landlord" agency administering the largest holdings with the smallest staff and annual budget. Even as Burford set the impossibly optimistic deadline of 1984, he drastically cut the budget for the wilderness review.

The Alaska Lands Act of 1980 resolved

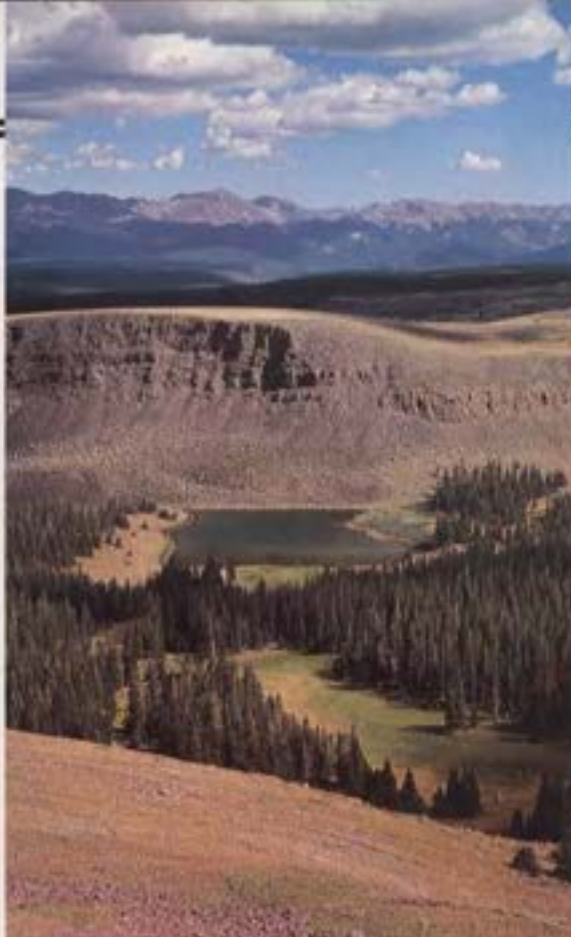
the wilderness issue for the acreage BLM administered in the 49th state. The bureau's piecemeal tracts in the East were largely excluded from review by FLPMA. So the BLM wilderness review is basically an examination of 173.5 million acres in the 11 westernmost of the lower 48 states.

However, just because these lands lie west of Denver does not mean that BLM wilderness is something less than a national issue. The lands belong to all Americans; everyone has a vital stake in what happens to this property. Now that the National Park, Forest and Fish and Wildlife services have completed their own wilderness reviews, the BLM program may be the last chance to save some of the nation's best remaining unprotected wilderness.

As established by FLPMA and agency regulations, the wilderness-review process was divided into two phases: inventory and study. During the inventory phase, now completed, BLM identified specific units with the wilderness characteristics defined in the Wilderness Act. Each unit so identified in the inventory became a wilderness study area (WSA) and is somewhat protected by an Interim Management Policy designed to prevent degradation of the area's wilderness characteristics before a more permanent decision can be made by Congress.

During the study phase, which is now in progress, the WSAs are to be examined for the quality of their wilderness values, for conflicts with such other resource uses as mining or timbering, and for management problems that might prevent BLM from administering the units as wilderness areas.

Based upon these analyses, BLM makes wilderness-suitability recommendations to the Interior Secretary, who makes his proposals to the President, who in turn delivers the administration's official rec-



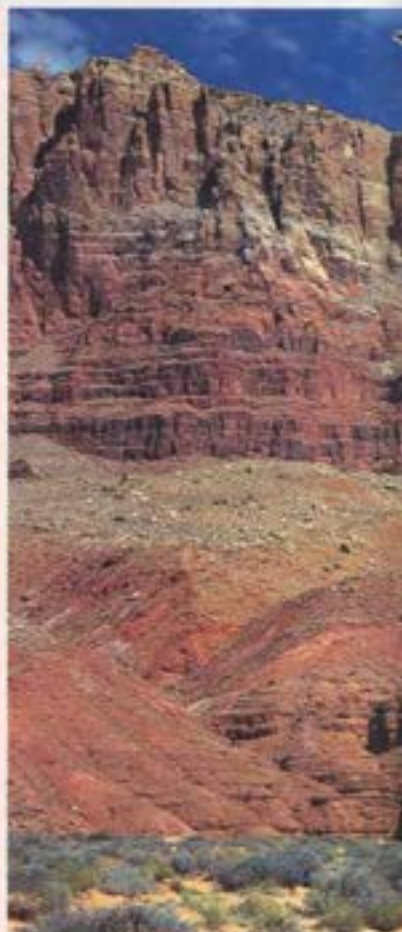
Historian and critic Bernard DeVoto once lamented the West's "historic willingness to sell out." Environmentalists see the BLM wilderness review as a chance to halt this process of loss. At stake are such areas as Lower Powderhorn Lake in Colorado (left) and the Vermillion Cliffs in Arizona (below).

BLM WILDERNESS INVENTORY RESULTS

State	Acreage Subject to Inventory	Number of WSAs	WSA Acreage	Percent of Total
Arizona	12,663,000	132	3,038,000	24
California	16,585,000	243	6,777,000	41
Colorado	7,996,000	64	808,000	10
Idaho	11,949,000	69	1,732,000	14
Montana	8,140,000	46	468,000	6
Nevada	49,118,000	100	4,593,000	9
New Mexico	12,847,000	52	999,000	8
Oregon	13,965,000	94	2,652,000	19
Utah	22,076,000	87	2,705,000	12
Washington	310,000	1	5,000	2
Wyoming	17,793,000	46	582,000	3
SURTOTAL	173,442,000	934	24,359,000	14
Michigan	1,200	0	0	0
Wisconsin	3,500	0	0	0
Minnesota	45,000	0	0	0
North Dakota	68,000	0	0	0
South Dakota	277,000	0	0	0
Oklahoma	7,000	0	0	0
TOTAL	173,843,700	934	24,359,000	14

NOTE: Figures do not include appeals pending before the Interior Board of Land Appeals or reflect areas later withdrawn by Interior Secretary Watt.

Source: Federal Register, July 8, 1982.



ommendations to Congress. A 1984 deadline would guarantee a BLM wilderness package authored by BLM Director Burford, Interior Secretary Watt and President Reagan—and not by a more environmentally sensitive administration.

In this context, one ground rule is especially menacing. The review program will be conducted once and only once. Moreover, the process lacks a safety valve such as the "further study" category in the Forest Service's RARE II program. Either a unit of land is recommended for congressional designation as wilderness after this review, or that tract will be consigned to other uses.

Congress (in FLPMA) and BLM (in its regulations) carefully designed the wilderness review process to learn from and steer clear of the pitfalls and controversies of the Forest Service's RARE programs. But, says Debbie Sease, Washington representative for the Sierra Club, "BLM has made all the same mistakes anyway."

The first step in the wilderness review, the inventory phase, ended in the fall of 1981. All BLM holdings in six states and more than 90% of the acreage in five other states were eliminated from further consideration. Nationally only 14% of the BLM's total available roadless land was designated as 934 WSAs (see page 52).

According to FLPMA, any roadless area larger than 5000 acres must be designated a WSA. Smaller areas can be designated as WSAs if warranted. A WSA, furthermore, must be natural, with no roads or other significant impacts by man, and must be characterized, in the words of the Wilderness Act, by "outstanding opportunities for solitude or a primitive and unconfined type of recreation." With a map, a ruler and a few calculations, anyone can objectively determine the exact size of any given unit. But whether or not an area remains substantially natural and offers "outstanding opportunities for solitude" is ultimately an un-

quantifiable and subjective judgment.

Although objective field observations were supposed to support specific judgments, the agency's regulations have often been interpreted narrowly or just plain erroneously in order to exclude areas from wilderness consideration.

For example, in the Great Basin and the deserts of the Southwest there are huge expanses of uninhabited, rolling, treeless plains where the only signs of man might be the fading ruts of long-gone pioneer wagons. Nonetheless, with a few noteworthy exceptions, BLM dropped these flat desert tracts because they lack "outstanding opportunities for solitude." In the absence of what BLM terms "topographic or vegetative screening," visitors might be able to see one another and, though miles apart, lose their statutory solitude. In the regulations, though, "topographic and vegetative screening" is only one of many considerations for assessing solitude.

Disputes broke out between BLM state offices and wilderness advocates across the West, especially in New Mexico, Wyoming, northern Arizona and Montana. But in one state, BLM perpetrated a thoroughgoing outrage. "In Utah," says Sease, "the inventory [phase] process was prostituted by BLM."

With its bright, colorful sandstone canyons, cliffs, arches, mesas and natural sculptures baked under a desert sun, the rugged Colorado Plateau is rich with national parks: Grand Canyon, Mesa Verde, Zion, Bryce Canyon, Canyonlands. Much of this stunningly beautiful region lies in southern Utah, and most of its unspoiled terrain is not part of any national park but lies in BLM's domain.

Instead of striking a wilderness bonanza during the inventory, Utah's state BLM office rejected whole units and lopped big pieces from others. WSA boundaries were drawn very peculiarly: up the sides of sheer cliffs, across the yawning maws of deep, serpentine canyons and through blocks of solid rock. BLM claimed that naturalness had been compromised by roads that did not exist or that opportunities for solitude just weren't outstanding.

It is not surprising that Utah conservationists filed a batch of appeals—30 in all, covering 1 million acres—to the Interior Board of Land Appeals (IBLA), which is the administrative court of the Interior De-



JEFF GUNN

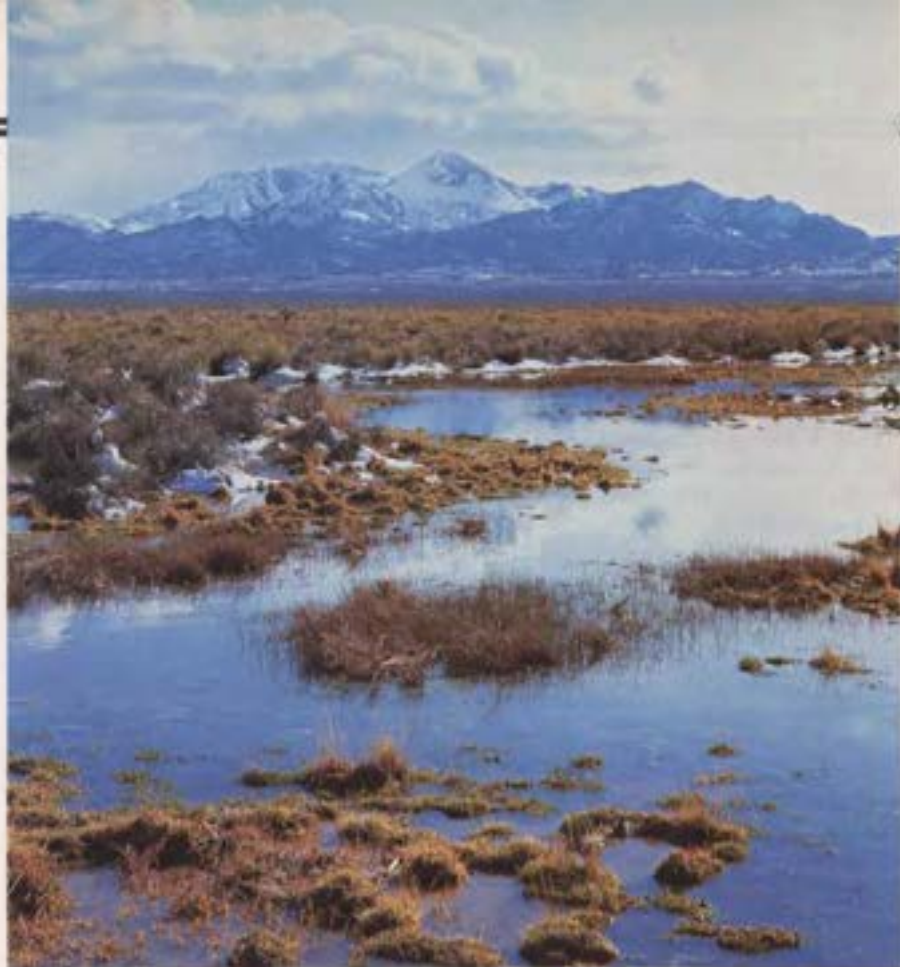
partment. "If we had had the time and people," says Jim Catlin, conservation chair for the Sierra Club's Utah Chapter, "we would have filed 57 more appeals to IBLA on 3.8 million more acres." BLM's case against Negro Bill Canyon near Moab was so insubstantial that IBLA remanded the unit for WSA status and restudy; it was the first instance throughout the entire BLM wilderness review in which an IBLA ruling favored conservationists.

But Utah conservationists still felt perplexed and hired Clive Kincaid to investigate. A former BLM wilderness coordinator in Arizona, Kincaid spent an entire year searching agency files and inspecting disputed territories. He slowly pieced together what had gone wrong.

During the inventory phase, BLM state offices were supposed, under federal law and regulations, to review *solely* the wilderness characteristics of a unit and *not* any development opportunities, such as mining potential. But the boundaries of suspect inventory deletions corresponded strikingly, Kincaid found, with oil and gas leases, mineral claims or other development plans filed with the BLM. He studied 50 units or portions thereof, containing hundreds of thousands of acres that have been eliminated with dubious rationales. He discovered a resource conflict behind each and every case. He concluded that the BLM in Utah had illegally injected development plans into its wilderness inventory decisions.

BLM denies any violations. But Utah BLM Director Roland G. Robison recently told a Utah television news program, "We have approached the wilderness situation in Utah from the standpoint that, to the extent possible, we would like to leave those mineral-bearing lands that are susceptible to development open for that purpose." From such statements and from the evidence in Kincaid's study, it's apparent that the inventory decisions in Utah are suspect.

Why would the BLM in Utah resort to illegal actions? The answer is simple. The WSAs identified during the inventory phase enter "interim management," for which BLM already has an elaborate policy with a precise intent. As mandated under FLPMA, the agency *must* manage all WSAs to preserve their wilderness values until Congress decides which will receive wilderness designation. Presumably Utah BLM officials were doing their best to keep hun-



dreds of thousands of acres that should have qualified out of WSA status and interim management protection, and therefore available for immediate development.

In fact, BLM's failure to enforce its interim management policy is already evident throughout the West. At the Kanab Creek WSA in northern Arizona, Energy Fuels Nuclear plowed up ten acres installing uranium extraction operations. Exxon recently built a road and an oil well in southern Utah's Mt. Ellen WSA. Idaho and Oregon conservationists have been opposing BLM proposals for such "improvements" as chaining and irrigating grazing range within WSAs. Carrying out seismic testing in the extinct volcanic cones of the West Potrillo Mountains of New Mexico, Exxon machinery chewed up wide swathes three to seven miles long. BLM has approved permits for various intrusions into five WSAs in western Colorado. To install an oil rig in the Little Bookcliffs Wildhorse WSA, one of those study areas, Coors Energy Company bulldozed a road through a ridge, opening a cut some 40 feet deep.

The interim management policy allows temporary developments, provided that intrusions can be and are reclaimed by operators. But conservationists have noted that many activities have been permitted that result in the destruction of wilderness val-

March snow-melt pool reflects Antelope Peak in Nevada's Monitor Range. The BLM refers to the area as the Shoshone-Eureka Resource Area, Battle Mountain District.

ues. One related problem is that the BLM does not provide a central information file at either the national or state level on interim management activities. BLM's failure to enforce its own policies has far-reaching consequences; there is a real danger that bulldozers, not Congress, will determine which lands remain natural and which do not.

The BLM wilderness review is now entering its final study phase, during which the agency is supposed to analyze and weigh resource conflicts and management obstacles against a WSA's value as wilderness. It is at this crucial stage that BLM field personnel will feel the pressure of Burford's accelerated deadline. If preliminary scoping sessions and draft documents are any indication, it is at this stage that units and acreages will disappear en masse. In late December, Watt announced a set of proposed policies to delete 800,000 acres. The Sierra Club responded with a lawsuit (see page 55).

The study phase for the California Desert Conservation Area was completed in 1980 under a special congressionally required deadline; 5 million acres in WSAs were reduced to 2 million recommended for wil-

dermess. And in Arizona, just 26,000 of some 775,000 inventoried acres of the "Arizona Strip," the wedge of magnificent desert bounded by the Grand Canyon and the Utah and Nevada state lines, have gained preliminary agency support. In New Mexico, half the WSAs are threatened. Plans are being discussed to eliminate Washington's sole WSA, Chopaka Mountain, with merely a perfunctory environmental assessment. Nevada's remarkable Black Rock Desert, one of the few flat plains to survive the inventory phase, is likely to be found unsuitable for designation, as are most of the mountain ranges in nearby WSAs.

Overall, study-phase proposals and decisions to date reveal, Debbie Sease contends, "a clear bias against wilderness." BLM seems to ignore the multiple-use benefits of wilderness status: the protection of wildlife (including rare and endangered species), critical habitat, recreation, watershed, scientific and historical research, and so forth.

Conservationists are particularly nettled by BLM's claims of manageability problems. Regulations require such claims to be supported by documented resource conflicts, present or future, that create an insurmountable obstacle to BLM's management of an area as wilderness.

But once again, interpretations of agency guidelines are running from inaccurate to grotesque. If minerals might exist in a unit, whether documented or not, whether extractable or not, BLM feels compelled to rule out wilderness designation. This violates the law: FLPMA requires a full mineral assessment only after BLM has recommended a unit for wilderness designation. The recommendation itself is intended to be based solely on the wilderness qualities of the area—and not on the possible presence of mineral resources.

Another management problem involves off-road vehicles. BLM seems to make the assumption that if off-road vehicles are able to enter a wilderness area, they will—thereby rendering the area unsuitable for wilderness because it might be spoiled. The possibility that BLM might be able to stop trespassing is not considered. In some extreme but not infrequent cases, WSAs are being dropped because BLM cannot stop "outside sights and sounds" from entering particular units.

The proposals mentioned earlier for massive deletions of WSAs in the Arizona Strip

illustrate some of the agency's feeble excuses. Many WSAs, including the four that cover the stunning Grand Wash Cliffs, would be discarded because of their proximity and supposed "similarity" to another wilderness area: the Grand Canyon. To local experts, this is nonsensical. The Grand Canyon and the Arizona Strip are indeed located side by side; beyond that (and a common scarcity of annual precipitation), they bear little likeness to each other.

In another tortured twist of logic, BLM broke the Vermillion Cliffs area in two, recommended the eastern half for congressional designation as wilderness and proposed dropping the western half. In justifying this, BLM reports stated that the western half of the cliffs does possess "outstanding wilderness characteristics"—just not outstanding enough. This is exactly the sort of decision that ought to be left to Congress.

Conservationists have countered BLM blunders and attacks during the wilderness review with grassroots efforts. The Sierra Club and the Wilderness Society have organized an "Adopt-a-Wilderness" program in which volunteers monitor BLM actions on WSAs of their choice. For example, when BLM recommended too little of the Jerry Peak WSA, Idaho conservationists came up with their own plan: a 420,000-acre White Clouds-Boulder Mountains Wilderness Area. A Public Lands Defense Network has been set up within the Sierra Club, and the Club has just published *Saving the Solitude: A Guide to the BLM Wilderness Study Process* by Jim Catlin, conservation chair of the Utah Chapter. The booklet is available for \$3.00 (plus \$0.25 for handling) from Information Services, Sierra Club, 530 Bush St., San Francisco, CA 94108.

Finally, it is important to realize that BLM is not a monolithic bureaucracy dedicated to stamping out wilderness. Many career professionals in the agency, like conservationists, are frustrated by the policies established by Burford and Watt, policies intended to eviscerate the BLM wilderness program.

But if those in charge stay on course, the BLM wilderness review could go down as one of the greatest mistakes in the history of the wilderness movement. □

Freelance writer James Baker chairs the national BLM Wilderness Subcommittee of the Sierra Club and the Utah Chapter's Salt Lake Group.

Watt Deletes 800,000 Acres, Sierra Club Sues

ON DECEMBER 28, 1982, Secretary Watt deleted from wilderness inventory 173 Wilderness Study Areas (WSAs) that had been part of the BLM wilderness review process; these areas total 800,000 acres. Moreover, Watt's decision could affect the eventual fate of an additional 5.7 million acres of uninventoried public land.

In short, Watt's decision embodies two new policies: Areas smaller than 5000 acres cannot be studied for possible designation as wilderness; nor can areas where the subsurface rights (or "mineral estate") are not owned by the federal government. In a related move, Watt also directed state BLM offices to review all WSAs that are adjacent to existing or proposed wilderness areas.

The Sierra Club, five other conservation organizations and Representative Phillip Burton (D-Calif.) filed suit in U.S. District Court for the Eastern District of California, asking that the deleted areas be returned to study status and that Watt be prevented from permitting development in these areas. Sierra Club Legal Defense Fund attorney Rick Middleton said, "Secretary Watt is in clear violation of the Federal Land Policy and Management Act of 1976 and the National Environmental Policy Act." In reference to the areas affected, Middleton pointed out that "Virtually all of the WSAs deleted because they are less than 5000 acres had been previously determined by BLM to have outstanding recreational and natural qualities." Debbie Sease, public lands representative for the Sierra Club, added a political note: "Watt inherited 24 million acres of BLM land in the wilderness review—lands that were identified and designated as WSAs under the Carter administration. He has been trying to find a way to whittle down that acreage since his first day at Interior." □

A Family Pedals the Great Divide at Monarch Pass

ROCKY

GLEND A WILHELM

MOM! DAD! LOOK!" Kirsten stopped her bicycle at the top of a rise and pointed ahead. We pulled up beside her, and there they were. From a distance of 60 miles we could see the snow-capped peaks. The Rocky Mountains weren't something we could ignore; they filled the horizon, waiting for us.

There are easier ways to cross mountains than on bicycles pulling heavily loaded trailers. But the Bugger was a necessity for our two-year-old son Erik. It was safer than a bike seat above the rear wheel, a good deal more comfortable in that he could change positions frequently, and it allowed us to carry additional gear—not easily done with the rear child carriers. Yet my trailer weighed 30 pounds with its fiberglass seat, and Tim's with its unloaded backpack weighed just under 30 pounds. With his bicycle loaded, Tim was pulling close to 90 pounds—more when the extra water bag was filled—and I was pulling about 80 pounds with Erik.

Insanity? No, priority. If we wanted to make a lightweight, fast and freewheeling crossing of the country, we would have left the children with grandma and used a credit card—the lightest piece of touring equipment yet developed. But that wasn't our purpose, and having the kids along added a lot more to the trip than pounds.

No amount of rationalizing lightened our loads, however, as we began the gradual approach to the Continental Divide. We entered Colorado on the last lap of a 92-mile day, spurred by promises of a motel and a hot restaurant meal. The sun had set as we pedaled into the small town of Fruita, just eight miles short of Grand Junction. None of us missed camping out that night as we sank into soft beds after hot showers.

The desert was behind us, and we decided to stay over a day to service the bikes, shift mental gears for the terrain ahead, and recover from the day before. Mountain climbing on loaded bicycles is a physical challenge to anybody, but for me it was a greater mental struggle. I had been mentally laboring over the Rockies since we started



planning the trip months before we saw that long jagged line on the horizon.

Actually, the cross-country bike trip was my idea. It grew partially from the total frustration of three months' inactivity while Tim's broken leg healed and mostly from some restless center of myself that lies awake listening to train whistles in the night. In order to convince first Tim, then grandparents and finally bosses that we really could do it, I built up a thin layer of bravado, a convincing crust that covered a vacillating resolve. The Rocky Mountains alone penetrated that crust. You can get through 100-degree deserts with planning, timing and flexibility, but it takes muscle to climb a mountain. I wasn't sure I had what it took.

While in Grand Junction we haunted the local bike shops for information about the road ahead. The Colorado state map gives no elevations except for passes, so we had little idea as to gradient and actual gain in

elevation from place to place along the route. Bikers told us there were more summits than shown on the map; some said one, others said two. We gained enough information to confirm our choice of Highway 50 over Monarch Pass, 11,312 feet, rather than Highway 70 over Loveland Pass, 11,992 feet. I thought we should get some topographic maps to check out the route, but Tim said that what we knew already was enough.

"What difference would knowing make?" he said. "The mountains are there. They aren't going away or getting any easier; so why not just mount up in the morning and enjoy the ride?"

"Or the walk," I mumbled. I envied his calm acceptance of the inevitable and his obvious enjoyment of it all. I had worried up the Rockies a dozen times since we left California and now, finally there, I was exhausted.

We left the campground at Grand Junc-

PHOTOS BY TIM WILHELM

MOUNTAIN HIGH



Author Glenda Wilhelm, daughter Kirsten, and two-year-old son Erik begin the eight-mile run down the steeper, shorter eastern approach to Monarch Pass in the Rocky Mountains of Colorado.

tion well after sunrise. With a final good-bye to the Southwest, we crossed the Colorado River and aimed our bikes at the distant peaks. All along the road people honked and waved at us. We had been on television the evening before, and the people of western Colorado gave us great encouragement as they waved us down the road. I needed every bit of it.

Montrose, our destination for the night, was 60 miles from Grand Junction. It would be our last big mileage day before the mountains began just on the other side of Montrose. About halfway there we were stopped by a highway patrolman along a

stretch of narrow two-lane road. I was afraid we were due for a lecture about the hazards or perhaps the illegality of where we were riding.

"Hello," he said as he approached us from behind. "Where you comin' from?"

He seemed friendly enough, to start with at least. "San Juan Capistrano in California," Tim answered.

Without a word the patrolman looked at me, then at little Erik asleep in the trailer, and finally at nine-year-old Kirsten, standing nervously by her bicycle. "Where you going?" he asked her.

She glanced at me, then said, "Washington, D.C." She smiled at him.

The patrolman looked back to Tim. "That a fact?" he asked. He wasn't sure whether to believe her or not. Tim confirmed it. The officer took off his hat, rubbed his forehead and looked down the road.

"You know there are some mountains up there, don't you?" he asked.

Relieved, we nodded and laughed. He proved to be a good source of information about road conditions and traffic; then he got back into his car and waved us on.

Not far out of Montrose we began the climb up to Cerro Summit, 7,958 feet high. There was some hard pedaling, but I didn't have to walk. We celebrated at the top with drinks from our water bottles and handfuls of gorp. Erik had become bored with the slow pace and slept through the summit celebration.

According to the map, there were no more summits until Monarch, some 90 miles away. We knew that couldn't be right, so we began to believe the bikers' talk of one or even two more summits.

On the down side of Cerro we had a brief wild ride into a green mountain valley. We stopped for lunch in a hayfield and napped under a suddenly searing sun. Bugs and stabbing sunlight cut short our rest, so we mounted up for the climb out of the valley. The road rose steadily. Tim was riding ahead of me; Kirsten passed me, too. She didn't worry over entire mountain ranges as I did, but neither was she as composed as her dad. She fretted over each single grade as she saw it down the road. She climbed each one twice, once as she approached it, then again in reality. I think the mental climb was always the tougher one for her, judging from the way she usually eased up the real one.

The hayfield was far behind and still we

climbed. My legs felt like lead as I stood up to get every ounce of power from them on the downstroke. I looked ahead hoping to see the end of the grade, but the road disappeared around a curve with no end in sight. Cerro Summit behind us had been a morning effort, the first step over the Rockies, and we met it with enthusiasm and the certainty of accomplishment. But now it was afternoon; this summit wasn't on the map. It had no name, no known elevation, no end? I started walking. Erik climbed out and helped me push the Bugger, but he soon tired of that game and begged to ride again.

Finally I saw the top. A camper truck was pulled over with people waiting near it with cameras. I felt mean and nasty.

"Can we take your picture?" they hollered.

"Sure," I yelled back, "in exchange for some cold drinks!" I didn't feel like being polite.

They were gracious, as were most of the people we met. The lady of the road emerged with iced colas and a big smile. They didn't seem to notice my surliness; so I hid it away for use later. After the camper left, Tim asked how I was doing.

"Two summits like that in one day is a bit much," I grumbled.

"I didn't think that one was very tough, did you Kirsten?" he asked.

"Well," she hesitated. She never liked to hurt my feelings. "I am kind of tired, Dad." She patted my arm, then climbed back on her bike. I felt very old.

A storm was gathering in the snow-dotted peaks around us. It looked ominous, and we felt a piercing cold as we sailed into the wind down the other side of the unnamed summit. My heart sank with every revolution of the wheels. Every foot of elevation lost was a foot we would have to regain later. Erik was singing at the top of his lungs as we plunged down the mountain; I was thinking unmotherly thoughts.

We hoped to reach a campground at Curecanti Reservoir, but as we descended into a steep-walled canyon, the storm broke. We took refuge under a huge fir tree at a roadside rest area. Through the veil of rain I could just make out a sign ahead that said, "Blue Mesa Summit, 2 miles." From it the road rose sharply and curved out of sight, another summit no one bothered to put on the map. We took the opportunity to fix dinner while the rain poured down around

our natural shelter. Soon hot spaghetti was bubbling on the stove as we munched on carrots and crackers. Kirsten lured a chipmunk out of cover with crackers and had it eating out of her hand, but Erik made a nuisance of himself by running around and scaring it. I had never felt so tired in my life.

As I stirred the dinner, I said to Tim, "We are going to camp here tonight, aren't we? That other summit is just up the road."

"But the campground must be at the top of it," he replied. "We'll have several hours of daylight if this storm passes over soon."

The surliness I had carefully tucked away came bursting out. "O.K.! Go ahead! But you'll climb it without me!" I stabbed at the spaghetti sticking to the bottom of the pan. "Three summits in one day is just plain stupid!" I added so there would be no doubt as to how I felt about it.

Luckily, the storm didn't let up; so we pitched the tent and stayed the night. Tim told me later that he would never have gone off and left me there at the base of Blue Mesa Summit. After all, I had the tent.

The climb that had seemed so impossible the night before quickly gave way to our rested legs and brighter spirits. I had to walk the last, steepest part, but I was becoming used to that. It was even enjoyable, walking along observing the wildflower display as it unfolded along the road at my feet.

On top of Blue Mesa we pedaled along the edges of Morrow Point, Blue Mesa and Curecanti reservoirs, which combine to make the largest body of water in Colorado. They filled a huge bowl set on a high table in the midst of the state; we couldn't believe our good fortune to be covering practically level miles in the heart of the Rockies.

People in a little cafe told us it was fairly level going the rest of the way to the base of Monarch Pass. We relaxed and reveled in the blue skies, bluer water and rarefied air of 7,600 feet above sea level. Somewhere along the shores of Curecanti Reservoir, I stopped worrying about the Rockies and began to enjoy them. I was a little disappointed that we weren't surrounded by the grand glaciated peaks of my imagination, but those were farther north. They were the price we had to pay for easy pedaling over the backbone of the country.

We camped that night in Gunnison. We were making about 30 miles a day through the mountains, just what we had planned.

From there it was an easy 30-mile ride to the base of the pass. We left late in the morning, my anxiety about the climb veiled in a sunny Sunday haze. We lazed along Tomichi Creek, broad and farm-framed at its mouth, then followed it to its brush-choked, canyon-crowded beginnings. Huge distended thunderheads were forming in the sky behind us, but since we rarely looked



back, they didn't cause us much concern.

We paused at the settlement of Sargents where a snappish waitress told me to move my bike away from the front of the cafe, answering only with a curt nod my question about a campground up the road at the base of the pass. A mile or so farther on the storm broke in a fury of soaking rain and lightning flashes.

We stayed on the bikes; Erik was covered with the poncho, and we knew we hadn't far to go. Then the road began to climb abruptly. We were pedaling hard. Traffic was heavy on the rain-slick narrow road. Too late we realized we were starting up Monarch Pass. I wasn't ready for that and I panicked. Drivers, friendly only an hour before, now gave full attention to the demanding climb, refusing to slow down for us as they passed in a frenzy of mountain fright. Water splashed my legs from their dizzy wheels, and I knew I had been born to die on Monarch Pass. I was busily mourning my passing when I saw that Tim had pulled off the road under a sprawling white fir tree. Kirsten looked wet but happy, and it crossed my mind that the poor thing didn't yet know her mother was dead.

"What's the matter, Dad?" she asked, all innocence.

"I can't understand where that campground is," he replied. "We should have reached it by now. I hope we didn't pass it back there in the rain."

"Maybe we should camp right here," I

Erik Wilhelm and his faithful traveling companion Snoopy catch 40 winks in the Bugger, a sturdy trailer towed by his mother.

said, surprised that they could hear me from The Beyond.

"I'll ride ahead a little," Tim answered, mounting up. He was taking his new widower status calmly. I was glad the children would have at least one responsible parent.

Within minutes we heard Tim shout. We raced up the road and joined him at the dirt trail leading to a campground. It was U.S. Forest Service maintained, had water, toilets and tables, and I knew, dead or not, that I was in heaven.

We were giddy as we threw up the tent, pulling soggy packs and bags from the bikes. Kirsten and Erik sat in the tent wiping everything off with towels as Tim and I covered the bikes and ran for the doorway. Inside, we laughed and talked of our narrow escape. It was good to be alive—again—and Rocky Mountain high. Outside, the weeping woods disappeared into the darkness as we cooked a hot supper. We marveled that no one in the world knew just where we were at that minute; yet we knew not only where we were but how good it was to be there. As for me, I was finally meeting Monarch face to face and tomorrow I would know if I could match it.

The morning began with a trickle of sunlight through the aspen leaves. Everything was heavy with rain as we loaded up and

prepared for our assault on the last pass, the Monarch, all 11,312 feet of it. On the road, we were warming up when we passed a sign saying, "Monarch Summit, 7 miles." We pedaled beyond the 10,000-foot level. Then it was time to walk.

Without the Buggers we could have pedaled up the entire pass, I'm sure, but then I wouldn't have been serenaded all the way by a blond and blue-eyed boy whose joy that day bounced off every peak and sailed on every puffy cloud. He knew it was a special day and he responded with every inch of his uninhibited being. But Tim's trailer wasn't singing to him, although he had a few things to say to it better left unrecorded.

As we approached 11,000 feet, toddler tunes stopped. Erik said, somewhat in awe as he looked back down the mountain, "Mommy, we're going uphill!" We had been on the upside for two hours when our moods dampened. I had been walking for an hour and ten days. I kept changing pace—one-two, one-two, then one-pause-two, one-pause-two—to give my muscles a chance to do something besides ache. Tim was walking by that time as well; even Kirsten had settled into a one-foot-after-the-other attitude. Erik got out and walked awhile, then climbed back in to ride, alternately complaining about walking too fast and sitting too slow.

No one wants to hear how much it hurts to push a loaded bike up the side of a mountain. It does hurt, but it is an individual thing. I



Kirsten Wilhelm (above) begins the long climb to the crest of the Rockies.

The Wilhelms (below) pose for a family portrait atop the Continental Divide at the summit of Monarch Pass.

had mentally climbed this pass so many times that when I finally did it with my muscles instead of my mind, it was almost a relief. There is fear in anticipation but also unlimited possibilities of joy, of sorrow, of just plain living. When the reality finally comes, it is enough all by itself.

The road seemed to go on forever. I followed it with my eyes as it disappeared around the mountainside, across a steep cutback and behind a stand of trees. Then it reappeared at an impossible height. I thought that it is true what geologists say about the Rockies: They are still young, growing mountains. And that day they were growing faster than we were climbing.

Then Kirsten shouted, "Mom, I see a building. It must be the summit!" She screeched with joy and jumped on her bike for a last, victorious sprint to the top. Tim joined her in the race for the pass. I hung behind, partly because my gears slipped out when I tried to ride and partly because I was too busy wiping tears from my eyes.

We took dozens of pictures at the summit sign, trying to convince ourselves that we were actually there. We felt like aliens in a world of parked cars as we posed with our bicycles at the top of Monarch Pass. At the sign we met two cyclists who had come from Nebraska, pedaling all the way up the eastern face—a shorter and steeper climb than ours. They were slightly shocked at our appearance. We must have looked the same

to them on their lightly loaded single bikes as a 30-foot motor home looks to the back-packer. Yet we are the first to admit there are other ways to climb a mountain range, and certainly easier ways than pulling loaded trailers. But for us there will never be a better way than the way we did it one short summer when we were wheeling free and Rocky Mountain high. □

Glenda Wilhelm is a freelance writer living in Cortez, Colo. She and her husband have coauthored *The Bicycle Touring Book and Bicycling Basics*.

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BIRDS IN

By HARRY MIDDLETON

SPRING HAS TAKEN HOLD at last and life around my place has taken on the aspect of a jostled beehive. The new season has put a rush into everyone; all life is of a sudden in a hurry.

There is a winter's worth of dullness to be washed from the windows, shutters to be thrown open, shades to be raised, earth to work and a new garden to be planted and tended, a chimney to clean, a barn to put in order, and in every tree and bush songbirds to identify.

Whatever the season, getting along with songbirds is no easy proposition. Indeed, any person who willingly goes around looking and listening to birds is headed for trouble, especially if, like me, he is forever being taken away from one chore or another by a flash of wing or tail, or an unknown song filling the woods. Last spring I was three days late getting the garden started, not for lack of energy or seeds, but because of the presence of a little gray bird among the oaks and pines and maples. Each morning as I set out to the garden patch I caught sight of him darting among the upper branches of the trees. I'd hurry back to the house and spend hours with the bird guides, which are, of course, brimming with nervous little gray birds who like to spend their days darting from treetop to treetop. I never did learn this bird's name, but having him so near the garden filling the air with his liquid song was something special indeed.

Every spring bears similarly delightful surprises. Just when it's time to put a new edge on the grub hoe or oil the tiller, the birds begin showing up, singing at the wood's edge, demanding attention and identification. Sometimes I think that the individual who can't tell a cardinal from a tanager is blissfully ignorant. He or she simply lumps all birds together and enjoys them, as one might enjoy a choir without knowing the individual singers. Sooner or later, though, curiosity overcomes the person who watches and listens to birds, and the desire to know whether the birds eating him out of ten pounds of birdseed a week are grackles or blackbirds gets the better of him. From that point it's just a matter of time before he finds himself purchasing



a pair of binoculars and the latest editions of the birding guides.

At this time of year the songbirds show up early and stay on, driving everyone to distraction. For weeks now I

have been awakened with a start at five o'clock in the morning by a burly, dark-blue jay screaming at the first weak light of the sun's rising. He likes to perform this ritual while perched in the poplar tree outside my bedroom window. Most nights I fall asleep listening to a mockingbird's symphony of songs, wondrous sounds that are battle cries, threats, all anger and aggression. The jay screaming in the mornings reminds me it is time to go out into the day, my Smith & Hawken grub hoe in one hand and a well-worn copy of Roger Tory Peterson's *A Field Guide to the Birds East of the Rockies* in the other.

Birds keep a person off balance and off course. This morning I was up and in the garden early, not adjusting a furrow but tracking down a difficult thrush. Meanwhile, in the house there was a washing machine that refused to wash, a dog with an expired license, a boy in the back bedroom with a nasty cold, a clogged drain in the bathroom, and a wife waiting patiently to go into town. With every bird that shows up in the bayberry bushes and fills my ear with song, I fall farther and farther behind.

These days also find my wife at loose ends. She vacuums the carpets with a pair of binoculars hung loosely around her neck as she keeps one eye on the four bird feeders we keep in the backyard stocked with cracked corn and unshelled sunflower seeds. The birds' meals are served promptly at six in the morning and again at five in the evening in any weather no matter whether we have eaten or not. At our house the report of a speckled breast in the serviceberry pushes aside any thought of pancakes or porkchops.

The rains come and go; the sun sets and the moon rises; the boy sneezes; the plants grow; my wife dusts the cabinets and her binoculars; and

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OUR B E L F R Y

YELLOW
WARBLER

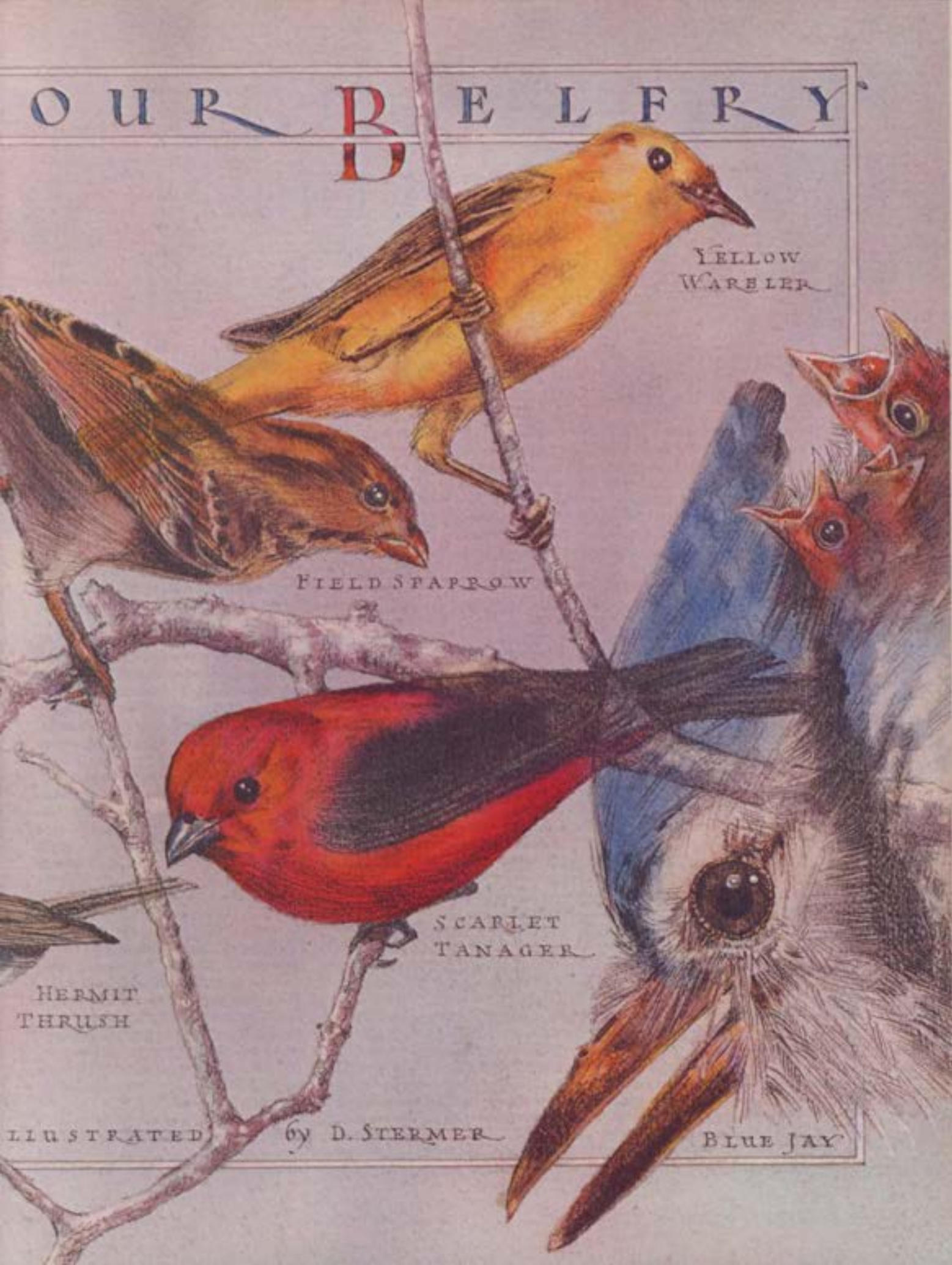
FIELD SPARROW

SCARLET
TANAGER

HERMIT
THRUSH

BLUE JAY

ILLUSTRATED by D. STERMER



PERSPECTIVES ON THE FEDERAL ENVIRONMENTAL BUDGETS

THE REAGAN ADMINISTRATION'S aggressive antagonism toward federal environmental programs surprised the many Sierra Club members who were reluctant to believe that President Reagan actually intended to implement the anti-environmental rhetoric of his campaign. But the actions and policies of Interior Secretary Watt, EPA Administrator Gorsuch and Assistant Secretary of Agriculture John Crowell compel the conclusion that the President is serious. His appointees are not, as we had both hoped and feared, loose cannons aboard a rolling deck. They are executing the President's policy of weakening environmental protection, including cleanup and research programs that might interfere with potential business profits.

In addition to the destruction of environmental protection standards, the Reagan administration has crippled environmental agencies' programs through drastic budget cuts and redirecting agency funds away from activities that preserve resources. The top policy-makers of the Reagan administration have made it clear that they regard the federal budget as a policy tool.

Nearly two years ago, the directors of the Sierra Club decided that the Club had to try to stave off these debilitating attacks on environmental budgets by taking an active role in the congressional budget and appropriations processes. The Club began by hiring a lobbyist to do what the agencies used to do themselves: ask for sufficient funds to carry out programs aimed at environmental protection.

Two years ago, the Club joined with ten other national environ-

mental organizations in preparing a comprehensive environmental budget that specified what Congress should appropriate for environmental programs and agencies. This alternative environmental budget was well-received by members of Congress. Unfortunately, environmentalists' efforts have so far proved inadequate. Congress gave EPA an appropriation for its fiscal-year 1983 operating budget that was \$40 million below that of 1982. Though that sum was \$80 million more than the President had requested, it was still not enough. Allowing the EPA's budget to fall even further behind the demands of today's pollution is criminally false economy.

To be an effective participant in the budget and appropriations processes, the Sierra Club needs the active support of the membership at the grassroots level. Members of Congress need to hear from constituents about the dismal state of our federal environmental programs and agencies, a situation caused by excessive budget cuts. Through a better understanding of the appropriations process, Sierra Club members can increase their effectiveness during the debate over the budget for fiscal year 1984, which goes into effect October 1, 1983. This issue of *Sierra* presents an unusual look at how Congress appropriates money and when and how the individual citizen can be most effective in influencing this process.

The budget and appropriations processes aren't the easiest things to understand—even for members of Congress who toil over the budget every year. But it is essential that environmentalists become more familiar with them—if Reagan's environmental assault is to be halted.

—Larry Williams

UNDERSTANDING THE BUDGET

REPRESENTATIVE MICHAEL E. LOWRY

PARTS of the Alaska Lands Act have been repealed. So have portions of the Clean Air Act, the Endangered Species Act, the National Forest Management Act, the Toxic Substances Control Act and the provision for a Solar Bank. If *Sierra's* readers missed these changes in hard-won environmental laws, it is not too surprising. All of them were made not through formal repeals, but through

inadequate funding of important provisions in existing law. Since it is unlikely in the near future that Congress will pass many new environmental laws requiring significant federal expenditure, environmentalists must focus on protecting existing laws and on ensuring that they are adequately funded.

Some funding refusals have had a positive effect. A provision was adopted to keep oil

and gas leases out of wilderness study areas by adding to a funding bill a measure that prevents the Interior Department from spending money or processing such leases. The wording was so stiff that the department was barely allowed to even open mail on the subject. There is some chance that this tactic can remain effective through December 31, 1983, when the Wilderness Act of 1964 ends this vulnerability permanently for any wilderness area.

In the Forest Service, money must be spent to plan timber sales. The size of the allowable cut is related to the amount needed for planning the sales. By reducing

the planning budget, the number of sales is forced down. Since remote roadless areas are often the most expensive to plan for, moderate reductions in the allowable cut and its attendant planning budget can dramatically reduce the number of clearcuts in roadless areas.

In an era of tight budgets, funding is the core of the entire legislative process. Interior Secretary James Watt recognized this when he said that the Reagan administration would "use the budget system as the excuse to make major policy decisions."

Unfortunately, the budget process and the appropriations process are tremendously complex. Their complexity has made it difficult for public-interest organizations to change the processes or affect their results. In general, interest groups have several opportunities to influence the federal government: first when a law is being created, and each fiscal year thereafter when the law is funded. Most of the time environmental groups, because of their limited resources, have been able to affect only the original legislation. But winning the legislative battle and losing the funding battle have only one result: losing.

The complexity of the federal budget and of the congressional budget process makes it hard, also, for a grassroots organization such as the Sierra Club to educate its entire membership on how to make their influence felt at the right time and place. But members need to understand the broad outlines of the budget and appropriations processes in order to follow the debate and to identify programs whose funding may have local interest for them. Following is a brief description of how this core of the legislative process works.

Every spring, two kinds of budgets are discussed in Washington. One is the massively detailed proposal submitted by the President to Congress. The other is the budget Congress adopts in its Budget Resolution. The Budget Resolution divides all federal spending into 19 broad categories, such as defense, research and development, health, and natural resources and the environment.

The congressional process begins when the various House and Senate committees report to the appropriate budget committees how much they expect to spend on their programs in the coming year. Based on these reports and on certain assumptions about unemployment, interest rates, inflation and the rate of economic growth, the budget committees draft a resolution that sets levels of federal income, spending and deficit. (If the underlying economic assumptions are off by only 1%, the effect on the deficit can be billions of dollars.)

Passage of the Budget Resolution by the

House and the Senate is a general indication of how Congress wants money spent in the coming fiscal year. The Budget Resolution is not a national law but rather a pledge Congress makes about how it intends to collect and spend money.

The congressional budget committee's report accompanying the resolution describes the assumptions Congress made about spending levels for the thousands of programs included under the 19 categories. The committee does not consider any amount smaller than \$50 million.

While the 19 totals are binding, the spending assumptions of the report are not. Essentially, the Budget Resolution decides the size, shape and flavor of the federal-budget pie and puts in a few dotted lines indicating how the pie should be apportioned within the categories. The division of the pieces is done by the authorizing and appropriations committees.

The functions of these two types of committees are clearer if you think of the federal

“Interior Secretary James Watt has said that the Reagan administration would ‘use the budget system as the excuse to make major policy decisions.’”

Treasury as being like a gigantic bank. An authorizing committee sets up an account in the Treasury without actually putting money into it. The money is put in later by the appropriations committees through appropriations bills. Some authorizations never receive appropriations.

The House and Senate appropriations committees traditionally use the President's suggested budget as a starting point. They produce bills that divide the available money according to the limits set for the 19 categories by the Budget Resolution. Where the President's budget is considered too high, it is adjusted to fit the resolution. The argument that spending for some particular small program "conforms with the assumptions of the Budget Resolution" is politically powerful on the floor of the House or Senate, but it does not override every other argument. Congress may decide



to allocate money as it chooses among the 19 categories, since the assumptions in the report are only guidelines.

The critical stage for an environmental program in the funding process depends on the size of the program. For large programs, such as those requiring more than \$500 million a year, the Budget Resolution is important, since too low a ceiling in the applicable category can make it hard to fund the program at an adequate level. Examples of such large programs are the EPA, The Forest Service, Amtrak and the Department of Energy. For smaller programs, or for particular programs within the agencies, the appropriations phase is the critical time. These include the Office of Endangered Species, the Forest Service road budget, the Solar Bank, the Land and Water Conservation Fund, the Clinch River breeder reactor and the Coastal Zone Management program.

One crucial difference between the funding process and the authorizing process is the competition among programs that occurs because of the funding ceilings set on categories by the Budget Resolution. Elimination of funding for the Clinch River reactor, for example, could mean that more money would become available for solar energy programs. A decrease in the Forest Service road budget can mean more money for the National Park Service.

These, then, are six critical stages in funding an environmental program:

- Midwinter: When the executive branch develops agency budgets and presents the entire presidential budget to Congress.
- Early spring: When the Senate and House budget committees prepare estimates of how much they hope to spend on their programs in the coming year.
- Midspring: When the budget committees

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Sierra Club Financial Report

Touche Ross & Co.
December 8, 1982

Board of Directors
Sierra Club
San Francisco, California

We have examined the balance sheets of the Sierra Club as of September 30, 1982 and 1981, and the related statements of revenues, expenses and changes in fund balances, changes in financial position and functional expenses for the years then ended. Our examinations were made in accordance with generally accepted auditing standards and, accordingly, included such tests of the accounting records and other auditing procedures as we considered necessary in the circumstances.

In our opinion, the financial statements referred to above present fairly the financial position of the Sierra Club at September 30, 1982 and 1981, and the results of its operations and the changes in its financial position for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

Touche Ross & Co.
Certified Public Accountants

To Members of the Sierra Club

Fiscal year 1982 ended with a surplus of \$308,100 compared to a surplus of \$935,900 in 1981, reflected in the Fund balances (net worth) which now stand at \$2,487,000.

Revenues continue to improve from \$12,181,700 in 1981 to \$14,898,500 in 1982. Member dues increased by \$1,417,400 and provided 40% of total revenues. Contributions and grants were up \$768,200 to a total of \$3,757,500, of which

\$2,469,100 was unrestricted and \$1,288,400 was restricted. This represents a 26% increase over the \$2,989,300 raised by these sources in 1981. Outings and lodge income was up \$81,100, sales increased by \$371,500 and miscellaneous income rose by \$169,900.

Total expenses increased by \$3,344,600 to \$14,590,400 in fiscal 1982. Expenses for studying and influencing public policy were up \$1,079,000, and for information and education, up \$858,000. Chapter dues allocations were \$1,054,700 in FY'82 compared to \$813,600 in FY'81. Expenses for support services, including fund raising, were up \$405,200. However, support services represent 15% of total expenses, down from 16% in 1981.

For the second year Sierra Club has no bank debt; however, our bank overdraft increased \$45,400 and our working capital decreased by \$327,100.

Investments increased by \$241,400 to a fiscal 1982 total of \$1,297,800. The amount invested in property and equipment rose by \$145,800 during fiscal 1982 to \$1,008,400.

Pursuant to the provisions of sections 6321 and 6322 of the California Corporation Code, the following information is furnished as an annual report:

The Club's complete financial statements for the fiscal years ended September 30, 1982, and September 30, 1981, together with the report of Touche Ross & Co., independent accountants, are available on request from Sierra Club headquarters at 530 Bush Street, San Francisco, California 94108;

The membership list of the Sierra Club is on file at the Club's headquarters at 530 Bush Street, San Francisco, California 94108;

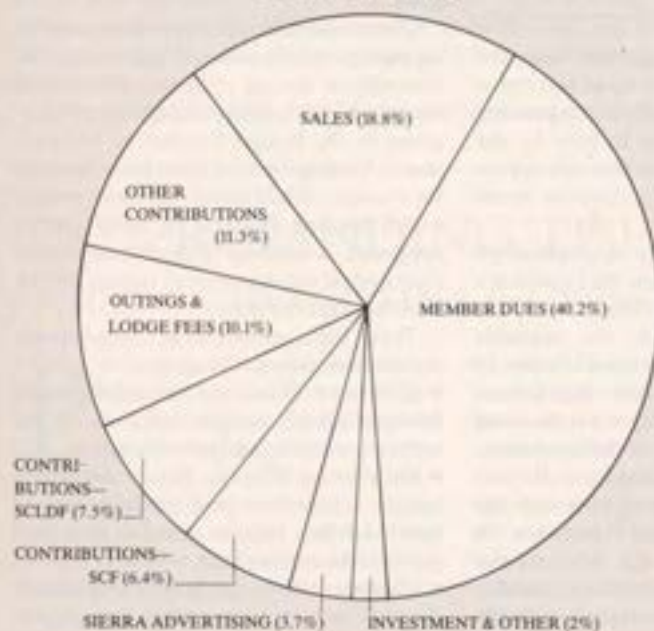
There are no transactions to disclose that constitute a conflict of interest involving directors or officers; no member has voting power of 10% or more;

The books of account and minutes of meetings of the Board of Directors are available for inspection by members on written request at the Club's headquarters at 530 Bush Street, San Francisco, California 94108.

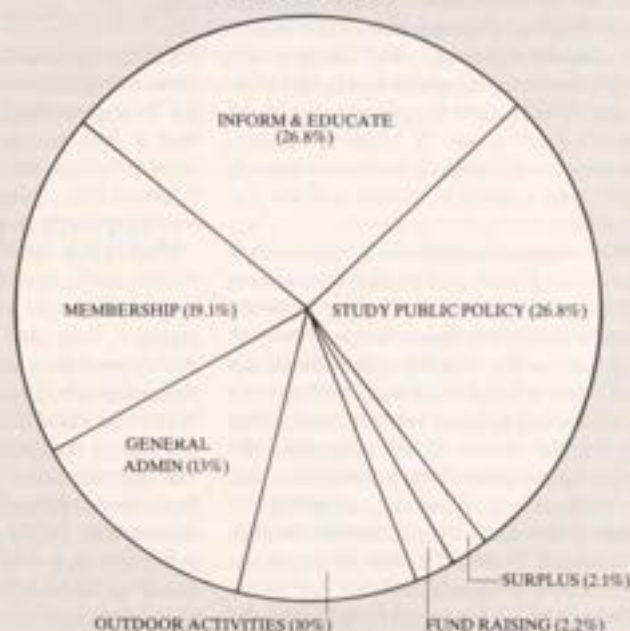
Peg Tilston, Treasurer

SIERRA CLUB FISCAL YEAR 1982

SOURCE OF FUNDS



USE OF FUNDS



SIERRA CLUB BALANCE SHEETS

ASSETS	September 30		LIABILITIES AND FUND BALANCES	
	1982	1981	1982	1981
CURRENT ASSETS:			CURRENT LIABILITIES:	
Cash	\$ 233,000	\$ 206,900	Bank overdraft	\$ 135,200
Investments (Notes B and D)	113,700	323,100	Note payable (Note D)	—
Trade accounts receivable, less allowances for returns of \$70,000 (Note A)	443,000	686,200	Accounts payable	1,634,700
Other receivables, less allowances for doubtful accounts of \$40,000 and \$10,000	273,000	226,100	Obbligations under capital leases (Note E)	38,600
Grants receivable	326,000	227,300	Accrued expenses	520,200
Inventories (Note A)	923,400	612,400	Deferred revenue (Note A)	424,300
Advances, less allowances of \$36,700 and \$42,100 (Note A)	515,600	383,400	TOTAL CURRENT LIABILITIES	2,753,000
Prepaid expenses	527,300	236,100	Obbligations under capital leases (Note E)	107,300
TOTAL CURRENT ASSETS	3,154,800	2,901,500	Fund balances (Note F):	
Investments (Notes B and D)	1,184,100	733,300	Restricted	34,500
Property and equipment (Notes A and C)	1,008,400	862,600	Unrestricted	2,452,500
TOTAL ASSETS	\$5,347,300	\$4,497,400	TOTAL LIABILITIES AND FUND BALANCES	\$5,347,300

See notes to financial statements.

SIERRA CLUB STATEMENTS OF CHANGES IN FINANCIAL POSITION

Years ended September 30, 1982 and 1981

	1982 Total	1981 Total
Financial resources were provided by:		
Excess of revenues over expenses	\$ 308,100	\$ 955,900
Add items not requiring working capital:		
Depreciation and amortization	212,700	199,100
Loss on disposal of property and equipment	4,800	6,600
TOTAL RESOURCES PROVIDED FROM OPERATIONS	525,600	1,111,600
Proceeds from sale of property and equipment	5,000	61,400
TOTAL RESOURCES PROVIDED	530,600	1,173,000
Financial resources were used for:		
Purchase of noncurrent investments	450,800	289,200
Acquisition of property and equipment	368,300	289,800
Reduction of capital lease obligations	38,600	33,900
Distribution of restricted fund assets	—	30,000
TOTAL RESOURCES USED	857,700	642,900
INCREASE (DECREASE) IN WORKING CAPITAL	\$ (327,100)	\$ 530,100
Changes in components of working capital:		
Increase (decrease) in current assets:		
Cash	\$ 26,100	\$ 198,700
Investments	(209,400)	(93,100)
Trade accounts receivable	(243,200)	(139,200)
Other receivables	46,900	17,100
Grants receivable	(101,300)	(4,800)
Inventories	311,000	(105,200)
Advances	132,200	31,400
Prepaid expenses	291,000	(11,200)
	253,300	(106,300)
Decrease (increase) in current liabilities:		
Bank overdraft	(45,400)	116,500
Notes payable to bank	—	900,000
Note payable	100,000	—
Accounts payable	(431,000)	(168,900)
Obbligations under capital leases	(4,600)	10,300
Accrued expenses	(217,800)	96,000
Deferred revenue	17,400	82,500
	(580,400)	636,400
INCREASE (DECREASE) IN WORKING CAPITAL	\$ (327,100)	\$ 530,100

See notes to financial statements.

SIERRA CLUB STATEMENTS OF REVENUES, EXPENSES AND CHANGES IN FUND BALANCES
Years ended September 30, 1982 and 1981

	1982			1981
	Unrestricted	Restricted	Total	Total
REVENUES:				
Member dues	\$ 5,990,600		\$ 5,990,600	\$4,573,200
Contributions and grants	2,469,100	\$1,288,400	3,757,500	2,989,200
Outings and lodge reservations and fees	1,502,200		1,502,200	1,421,300
Sales, principally publications	2,239,900		2,239,900	1,868,400
Royalties on publications	568,300		568,300	659,600
Advertising, investment and other income	839,200	800	840,000	670,100
	<u>13,609,300</u>	<u>1,289,200</u>	<u>14,898,500</u>	<u>12,181,700</u>
EXPENSES:				
Program services:				
Studying and influencing public policy	2,905,300	1,100,800	4,006,100	2,927,300
Information and education	3,822,800	163,900	3,986,700	3,128,700
Outdoor activities	1,470,200	22,000	1,492,200	1,302,800
Membership	2,846,700		2,846,700	2,033,600
	<u>11,045,000</u>	<u>1,286,700</u>	<u>12,331,700</u>	<u>9,392,300</u>
Support services:				
General and administrative	1,935,200	2,500	1,937,700	1,672,400
Fund raising	321,000		321,000	181,100
	<u>2,256,200</u>	<u>2,500</u>	<u>2,258,700</u>	<u>1,853,500</u>
	<u>13,301,200</u>	<u>1,289,200</u>	<u>14,590,400</u>	<u>11,245,800</u>
EXCESS OF REVENUES OVER EXPENSES	308,100	-0-	308,100	935,900
Other changes in fund balances	-0-	-0-	-0-	(30,000)
Fund balances at beginning of year	2,144,400	34,500	2,178,900	1,273,000
Fund balances at end of year	<u>\$ 2,452,500</u>	<u>\$ 34,500</u>	<u>\$ 2,487,000</u>	<u>\$2,178,900</u>

See notes to financial statements.

SIERRA CLUB STATEMENTS OF FUNCTIONAL EXPENSES
Years ended September 30, 1982 and 1981

	Program services					Support Services			Total Expenses 1982	Total Expenses 1981
	Studying and Influencing Public Policy	Information and Education	Outdoor Activities	Membership	Total	General and Administrative	Fund Raising	Total		
Salaries and employee benefits	\$1,510,900	\$ 731,300	\$ 258,400	\$ 395,400	\$ 2,896,000	\$1,004,800	\$294,100	\$1,298,900	\$ 4,194,900	\$ 3,023,400
Outside services	151,600	494,900	534,100	461,200	1,641,800	214,700	118,700	333,400	1,975,200	1,684,600
Cost of sales, principally of publications	5,700	1,602,800			1,608,500				1,608,500	1,276,200
Mailing and office supplies	188,200	378,400	73,200	566,000	1,205,800	96,100	168,300	264,400	1,470,200	988,500
Legal Services (Notes A and I)	1,130,000	4,000			1,134,000	32,900	200	33,100	1,167,100	866,500
Chapter dues allocations				1,054,700	1,054,700				1,054,700	812,600
Travel and meetings	284,100	99,700	133,800	2,500	520,100	183,900	14,800	198,700	716,800	570,800
Copying and printing	176,600	50,000	13,900	292,400	532,900	11,400	69,900	81,300	614,200	409,400
Rent and occupancy	173,200	111,300	70,500	39,300	394,300	158,000	33,100	191,100	585,400	383,500
Telephone	241,800	35,800	18,900	7,900	304,400	39,500	7,200	46,700	351,100	247,100
Advertising and promotion	11,500	161,300	84,700	11,500	269,000	6,800	1,200	8,000	277,000	222,400
Royalties	300	216,900			217,200				217,200	216,200
Lodge and outings field expenses			208,900		208,900				208,900	175,900
Depreciation and amortization	7,000		16,300		23,300	189,400		189,400	212,700	169,100
Insurance and interest		300	54,500		54,800	54,000		54,000	108,800	157,000
Amounts allocated to the Sierra Club Foundation						(39,700)	(387,300)	(427,000)	(427,000)	(60,800)
Other	125,200	100,000	23,000	15,800	264,000	(12,100)	800	(11,300)	254,700	102,400
	<u>\$4,008,100</u>	<u>\$3,986,700</u>	<u>\$1,492,200</u>	<u>\$2,846,700</u>	<u>\$12,331,700</u>	<u>\$1,937,700</u>	<u>\$321,000</u>	<u>\$2,258,700</u>	<u>\$14,590,400</u>	<u>\$11,245,800</u>

See notes to financial statements.

SIERRA CLUB NOTES TO FINANCIAL STATEMENTS
Years ended September 30, 1982 and 1981

NOTE A—Organization and Summary of Significant Accounting Policies

Organization

The Sierra Club is a nonprofit voluntary membership organization established to explore, enjoy and protect the wild places of the earth. The Club operates many public interest programs covering a broad range of environmental issues. The studying and influencing public policy program consists of staff and volunteers engaged in legislative and nonlegislative activities including lobbying, research, legal and policy development. Information and education includes the literary programs of Sierra Club books, catalogue operations and Sierra, the Club's magazine. Outdoor activities include national and international outing programs consisting of approximately 250 trips annually. The membership program includes support and funding of 54 volunteer chapters and over 200 groups, and the development of a broad-based volunteer membership.

Basis of Presentation

The financial statements of the Club do not include the financial activities of the Club's various self-directed chapter and group organizations.

Some members of the Club have donated significant amounts of time to both the Club and its chapters, groups and committees in furthering the Club's programs and objectives. No amounts have been included in the financial statements for donated member or volunteer services inasmuch as no objective basis is available to measure the value of such services.

Summary of Significant Accounting Policies

Allowances for publication returns are determined using historical return rates.

Inventories consist of publications and catalogue merchandise and are stated at the lower of cost or market. Unit costs for new books are based on paper, printing and binding charges only (manufacturing costs). Plant costs are amortized over unit sales for the first printing, but for no longer than the first twelve months of sales.

An allowance is provided against advances to authors for estimated losses resulting from unearned royalties.

Property and equipment are stated at cost at date of acquisition or fair value at date of gift or bequest. Depreciation expense is provided on a straight-line basis over the estimated useful lives (5 to 30 years) of the related assets.

The Club defers revenue from outings and grants until the period the trip is completed or the grant requirement is met.

Legal services performed on behalf of the Club by Sierra Club Legal Defense Fund are recorded as contributions with equivalent amounts charged to expense (Note I).

All contributions are considered available for unrestricted use unless specifically restricted by the donor.

Certain reclassifications have been made in the 1981 financial statements to conform to the classifications used in 1982.

NOTE B—Investments

Investments are stated at cost. It is the Club's intention to hold investments to maturity. No allowance for the decline of market value below cost is established unless there is a permanent impairment of value.

Cost and market values at September 30, 1982 and 1981, were:

	1982	
	Cost	Market Value
U.S. Government and Federal Agency bonds	\$1,293,200	\$1,367,400
Cash in savings account held for reinvestment	4,600	4,600
	<u>1,297,800</u>	<u>1,372,000</u>
Less current maturities	113,700	117,400
	<u>\$1,184,100</u>	<u>\$1,254,600</u>
	1981	
	Cost	Market Value
U.S. Government and Federal Agency bonds	\$1,050,600	\$1,006,200
Cash in savings account held for reinvestment	5,800	5,800
	<u>1,056,400</u>	<u>1,012,000</u>
Less current maturities	323,100	320,000
	<u>\$ 733,300</u>	<u>\$ 692,000</u>

Investment income amounted to \$142,900 in 1982 and \$92,000 in 1981.

NOTE C—Property and Equipment

	September 30	
	1982	1981
Land	\$ 3,300	\$ 3,300
Buildings and leasehold improvements	435,300	280,400
Furniture and equipment	992,600	792,100
Leased equipment	261,900	261,900
	<u>1,694,100</u>	<u>1,337,700</u>
Less accumulated depreciation and amortization	685,700	475,300
	<u>\$1,008,400</u>	<u>\$ 862,400</u>

NOTE D—Note Payable

The Club has a revolving line of bank credit for \$1,000,000. Borrowings under the line bear interest at the prime rate and are collateralized by investments. There were no borrowings outstanding at September 30, 1982 or 1981.

The other note payable was paid off during 1982.

NOTE E—Leases

Substantially all leases are for office facilities and equipment. Leases for computer equipment, system software and other equipment include options to purchase the leased assets at nominal amounts at the end of the lease. Accordingly, these leases are accounted for as capital leases.

Future minimum payments under all noncancelable leases with terms greater than one year at September 30, 1982 are as follows:

Year Ended September 30	Capital Leases	Operating Leases
1983	\$55,700	\$ 269,000
1984	55,700	286,500
1985	55,700	284,000
1986	14,000	68,800
1987	-	41,800
Later years	-	138,900
Total lease payments	<u>\$181,100</u>	<u>\$1,139,000</u>
Less amount representing interest		35,200
Present value of lease payments		<u>145,900</u>
Less current portion of obligations under capital leases		36,600
Long-term obligations under capital leases		<u>\$109,300</u>

Rent expense for operating leases was \$304,000 in 1982 and \$235,800 in 1981.

NOTE F—Fund Balances

The following is a summary of fund balances:

	September 30	
	1982	1981
Restricted funds:		
Expendable	\$ 13,000	\$ 13,000
Nonexpendable	21,500	21,500
	<u>34,500</u>	<u>34,500</u>
Unrestricted funds:		
Designated by Club bylaws for permanent investment	1,308,500	977,700
Designated by Board for Clair Tappaan Lodge reserve	-	82,500
	<u>1,308,500</u>	<u>1,060,200</u>
Invested in property and equipment	682,500	682,700
Other unrestricted funds	281,500	401,500
	<u>2,452,500</u>	<u>2,144,400</u>
	<u>\$2,487,000</u>	<u>\$2,178,900</u>

NOTE G—Income Tax Status

The Club has received rulings from the Internal Revenue Service and State of California Franchise Tax Board granting exemption from income taxation. Contributions to the Club are not deductible for tax purposes by the donor.

NOTE H—Pension Plan

The Club has a noncontributory defined benefit pension plan covering substantially all full-time employees who meet minimum age and service criteria. Voluntary employee contributions to the plan are permitted. Pension expense, which is funded currently, was \$86,700 in 1982 and \$61,800 in 1981.

A comparison of accumulated plan benefits and plan net assets as of the most recent valuation dates is presented below:

	October 1	
	1981	1980
Actuarial present value of accumulated plan benefits:		
Vested	\$163,300	\$209,700
Nonvested	43,600	82,500
	<u>\$206,900</u>	<u>\$292,200</u>
Net assets available for benefits	<u>\$345,000</u>	<u>\$311,600</u>

The weighted average assumed rate of return used in determining the actuarial present value of accumulated plan benefits was 7.47% for 1981 and 6.25% for 1980. The effect of this change on pension expense is not material.

The decrease in the actuarial present value of accumulated plan benefits is the result of a decrease of approximately \$51,600 due to the change in the weighted average assumed rate of return, and a decrease of approximately \$33,700 due to normal activity of the plan.

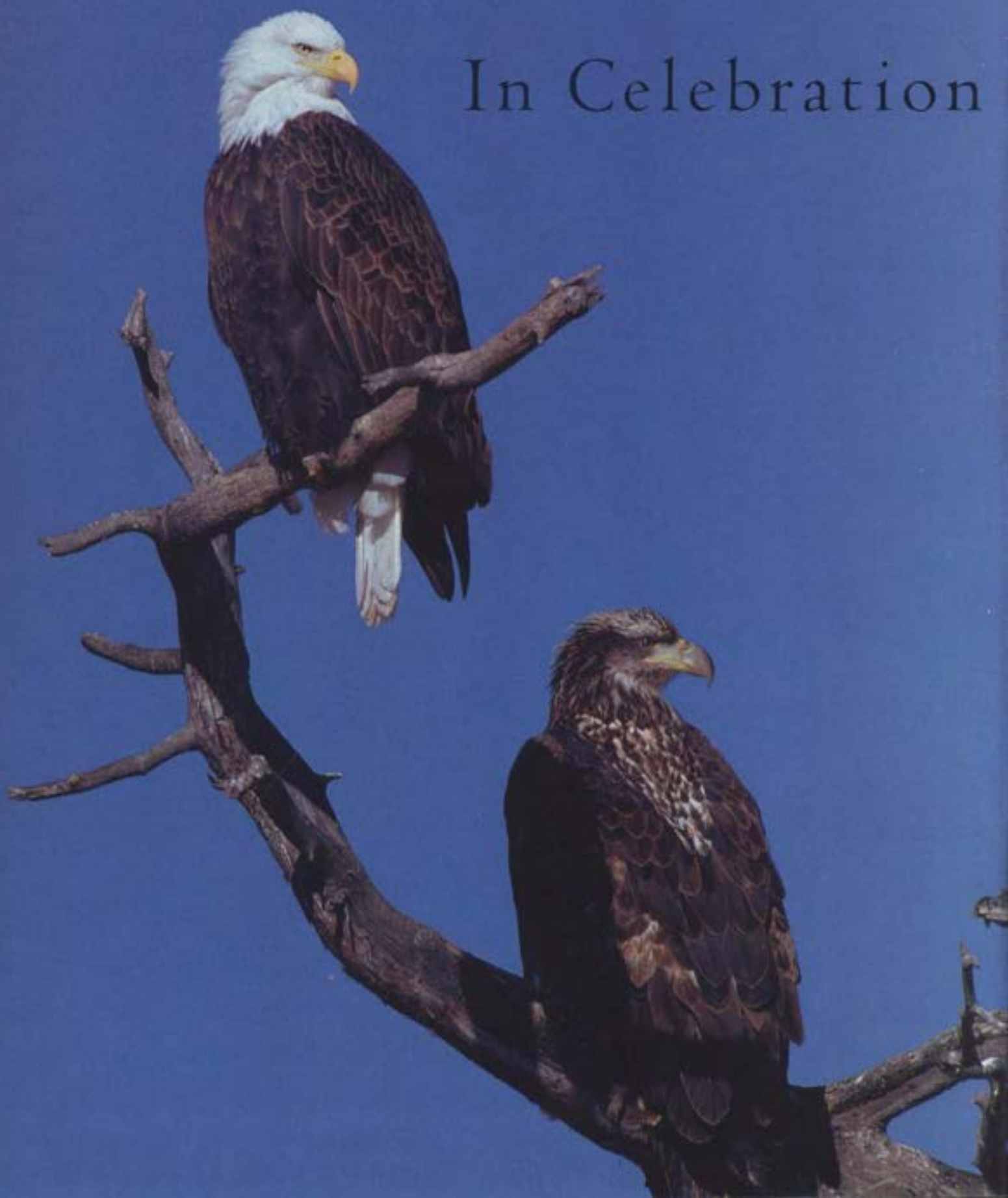
NOTE I—Contributions from the Sierra Club Foundation and Sierra Club Legal Defense Fund

The Sierra Club receives contributions from the Sierra Club Foundation and the Sierra Club Legal Defense Fund.

Contributions from the Sierra Club Foundation represent direct grants to the Club in support of programs that are nonlegislative in nature and totalled \$883,300 in 1982 and \$462,900 in 1981. In addition, the Sierra Club Foundation granted the Club proceeds of \$126,600 and \$100,000 from the sale of the Flora and Azules Lakes property to support its publication program in 1982 and 1981, respectively.

Contributions from the Sierra Club Legal Defense Fund for legal services performed on behalf of the Club totalled \$1,118,100 in 1982, and \$643,400 in 1981.

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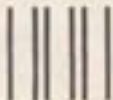
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of Eagles

Text and Photographs by
TUPPER ANSEL BLAKE



JUST OVER TWO HUNDRED years ago, the bald eagle was chosen as the national emblem for the fledgling United States. In recognition of that anniversary, President Reagan declared last year "The Year of the Eagle." Before that celebration fades from memory, let's underscore its importance by quickly reviewing what's happened to the bald eagle during the last 200 years.

The decision reached by the founding fathers on June 20, 1782, was not without controversy and debate. Some early Americans thought the golden eagle was a better choice for our emblem; it was, they believed, a far nobler bird. But the majority rejected the golden eagle because it could be found on other continents besides America.

So the bald eagle, being strictly North American, moved to the head of the list of candidates. All agreed it was a "fine looking" bird but one hardly worthy of the distinction. Its habit of feeding on carrion, its timid and cowardly behavior and its predatory attacks on the smaller and weaker osprey hardly inspired respect and certainly failed to exemplify the best in the American character.

Benjamin Franklin, whose own preference was for the wild turkey, said of the bald eagle: "For my part I wish the Bald Eagle had not been chosen as the representative of our country. He is a bird of bad moral character; he does not get his living honestly... Besides, he is a rank coward..."

For the next 170 years the bald eagle, the nation's symbol, soared

over America and into a hail of bullets. Bald eagles fell to the American soil at the hands of taxidermists, farmers, hunters and fishermen.

In Alaska, where both bald eagles and salmon were plentiful, fishermen led the campaign against the bird. The salmon fisheries seemed to forget that eagles are too lazy to catch live fish when they can pick up dead ones, and that probably the bulk of their food consists of dead or dying salmon that have finished spawning.

In 1917, the territory of Alaska passed a bounty law on bald eagles. During the first ten years under this law, bounties were paid on 41,812 eagles. The fishing industry claimed the bald eagle had destroyed the salmon, when in fact this had come about through commercial overfishing.

Gradually the truths of natural history became more widely known. In 1940 a bill

was passed giving bald eagles full protection throughout the United States. In 1952 the law was amended to include Alaska.

Direct and obvious confrontations between Americans and their national emblem seemed to abate with the protective legislation. However, a new series of subtle and destructive forces were at work. Pesticides such as DDT were building up in the environment and stunting the population growth of bald eagles, as well as other birds. Nesting areas and wintering areas began to disappear as critical habitats were developed or logged.

With the advent of the Endangered Species Act, public educational programs and a concerned public, these calamities, too, have been reduced.

The 200th birthday celebration of the choice of the bald eagle as America's emblem is over, and the outlook appears brighter than it has since that choice was made. With understanding and respect we can ensure the bald eagle its rightful place in our future.

The photographs that accompany this text were taken during the winter months at the Klamath Basin (Oregon-California

border), which holds the largest concentration—more than 500 birds—of bald eagles in the United States outside of Alaska. For the past four years, the National Audubon Society, the U.S. Fish and Wildlife Service and the Oregon Department of Fish and Wildlife have sponsored the Klamath Basin Bald Eagle Conference to further the study, understanding and protection of this majestic bird. □

Adult and immature adult bald eagles (opposite) share a perch in the Klamath Basin in Oregon. Eagle on ice (below) feeds on waterfowl. The Klamath Basin boasts the largest annual congregation of eagles in the continental United States.



Tupper Ansel Blake is a photographer, writer and naturalist whose special interest is birds and mammals of North America.

SIERRA CLUB FOREIGN TRIPS



Everest Base Camp (Wes Walker)

The outing program has scheduled five new trips, all in the spring of 1984.

For supplemental information about these new outings, write the outing department.

(760) Sierra Nevada del Cocuy, Colombia, South America—January 2–15, 1984. Leaders, Frances and Patrick Colgan, P.O. Box 325, La Honda, CA 94020. Cost: \$1125.

The Sierra Nevada del Cocuy are among the most dramatic, exotic and inspiring mountains in all of Colombia. Located near the Venezuela border, this compact range with 15 peaks over 5000 meters, many of them glaciated, are little-known. Yet this unique range of mountains presents some of the finest backpacking, trekking, rock-climbing and ice-climbing to be found anywhere. Three days at the beginning of the trip are for high-altitude acclimatization and for introductory hikes. Two days at the end of the trip are for rest, sightseeing and enjoying the food, music and culture of colonial Boyaca, a green and enchanting place.

(765) Mountains to the Sea Safari, Kenya—February 5–23, 1984. Leader, Betty Osborn, 515 Shasta Way, Mill Valley, CA 94941.

We will drive, walk and camp in many of the best wildlife parks and scenic areas in east Africa—Samburu, Masai Mara, Lake Naivasha, the Aberdares, and the moorlands of Mt. Kenya. Then we journey by train, the famous "lunatic express" to the white sand beaches of Mombasa and the ancient Arabic town of Lamu on the warm Indian Ocean. With our naturalist-guide we will observe and photograph at close range a variety of game, exotic birds and water fowl, visit Masai villages, sail on Dhow boats that are still used in trade, explore tropical islands and swim. Optional yacht sailing trip is planned.

(800) Annapurna Circle Trek, Nepal—June 11–July 9, 1984. Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401. Cost: \$970.

This 25-day moderate 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 and Dhauligiri. This monsoon season trek will have some showers during the first and last week (when we stay in local "tea houses"), but the middle two weeks will be in the "rain shadow" of the Himalaya where arid conditions prevail. This is the time to see Nepal with few other trekkers and when wildflowers are at their best. Leader approval required.

(745) Lamjung Christmas Trek, Nepal—December 19, 1983–January 2, 1984. Leader, Peter Owens, 117 E. Santa Inez, San Mateo, CA 94401. Cost: \$970.

Come spend the holiday season on this moderate 12-day trek into the charming Gurung Villages on the eastern slopes of the Annapurna range. Our route takes us very close to Annapurna IV (24,688), Annapurna II (26,041) and Lamjung (22,740). Timed to coincide with school holidays, the trip will emphasize interaction with the local people and our Sherpa and Tamang staff—many of our evenings will offer opportunities to join in local singing and dancing. Maximum elevations reached will not exceed 13,000 feet. Leader approval required.

(770) Tramping and Camping in New Zealand—March 12–April 2, 1984. Leader, Vicki Hoover, P.O. Box 723, Livermore, CA 94550. Cost: \$1630.

Summer's end in the fascinating land down under is a good uncrowded time to sample mountains and fjord-like lakes of the south islands, and the volcanoes and semi-tropical forests of the north island. At least one week will be spent hiking between huts on two of the south islands' famed tracks. Remaining time will be for day hikes and scenic drives while car camping—from Stewart Islands Bird Refuge far south to northern thermal areas and sheep ranches. Leader approval required.

Don't forget the following 1983 trips

- Hut to Hut Backpack in Corsica (#650), May 30–June 10
- Highlands and Islands of Scotland (#655), June 12–July 7
- Hike and Bike in Ireland (#660), June 24–July 7
- Western Pyrenees, Spain (#662), June 25–July 9
- Zaskar Trek: Kulu To Kashmir, India (#665), June 26–July 25
- Lands Below the Wind, Indonesia (#670), July 4–29
- Slovenian Alps, Yugoslavia (#675), July 10–23
- Cycling the Scottish Highlands (#680), July 10–23
- Kashmir-Ladakh (#685), Aug. 15–Sept. 4
- Wildlife Safari: Kenya and Zambia (#690), Aug. 8–26
- On Foot from Austria to Germany (#695), Aug. 16–31
- Hiking Through Rural Switzerland (#700), Sept. 2–11
- Mediterranean Sailing Adventure (#705), Sept. 20–Oct. 2
- Tanzania Safari (#710), Sept. 25–Oct. 10
- Bike and Hike in China (#715), Oct. 2–22. Cost: \$2145.
- Signiang Trek, China (#720), Sept. 4–Oct. 8. Cost: \$4480.
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HOW TO CHOOSE OUTDOOR CLOTHING

MIKE SCHERER

FOR SOME, communing with nature means battling the elements—being cold, wet and generally miserable. Yet this adversarial approach no longer makes sense. A new generation of pleasing and functional fabrics, in concert with some old standbys, offers outdoor enthusiasts the comfort they long for and the protection they need from nature's sometimes body-threatening conditions. When organized into a well-thought-out system, clothes made from these new fabrics allow outdoorspeople to appreciate such things as the reflective mood of a meadow in a drizzle, the roar and thrill of whitewater at close quarters, or the otherworldliness of a forest in a blizzard. Not minding really inclement weather—and maybe even enjoying it—raises a central question about clothing: When the going gets tough, how will you choose what and how much you wear? A little background on clothing "systems" and a quick survey of what to expect from the new synthetics will help you answer that question and take you a long way toward more consistently enjoyable outings.

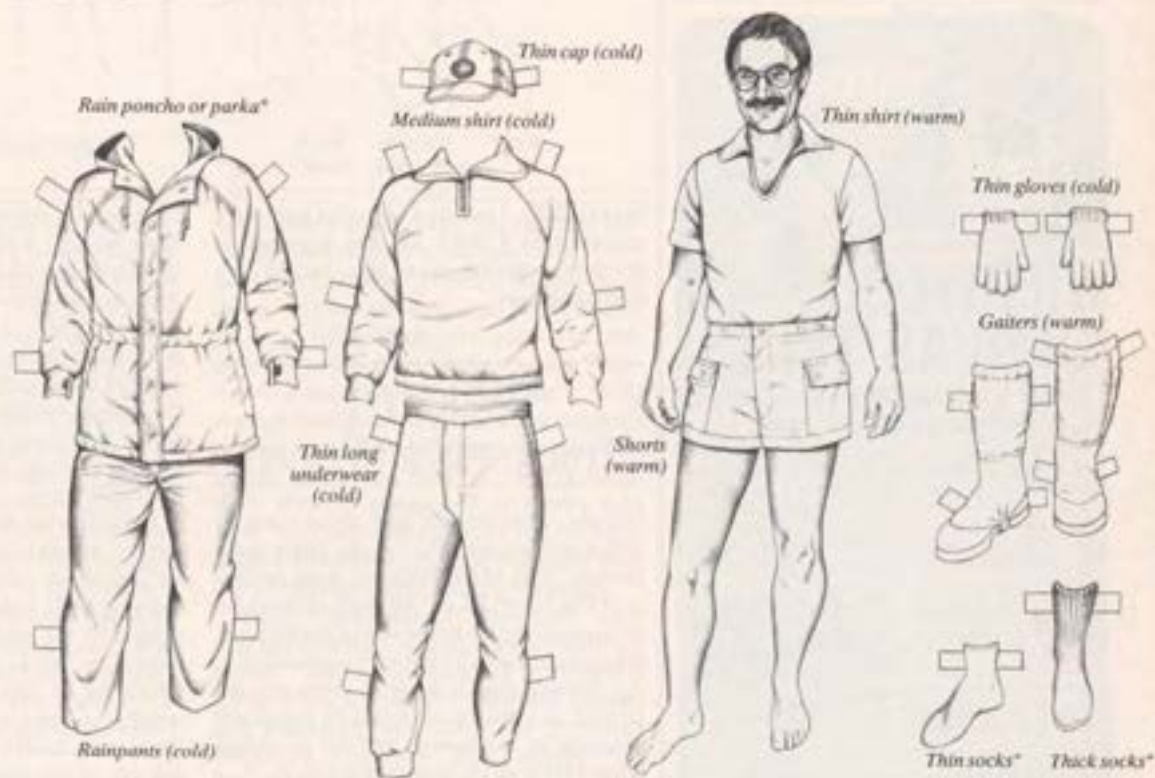
Clothing systems are personalized selections of clothing that completely cover your needs on various types of outdoor excursions. By far the most widespread and versatile system is called layering, which has as its cornerstone the idea that different clothes

can be worn singly or in combination to provide the wearer with an insulation layer or layers. By experimenting with the components and the number of layers, you can fine-tune your clothing to prevailing weather and the amount of heat you are generating. Layering provides flexibility and, when pared to the minimum, the lightest clothing system possible for meeting varying conditions.

Fred Williams, founder of Moonstone Mountaineering, uses layering and ultralight materials to reduce the weight of his backcountry equipment radically. "On a trip

in the autumn of '81 with Chuck Kennedy of Down Home, I carried or wore only 25.3 ounces of clothing. My system was stripped down to the barest essentials, but I was never cold the entire four days. Ultralight packing with a total load of only fifteen to twenty pounds for a week-long trip makes more demands on your entire system of food, clothing and shelter. Chuck and I were out to prove a point: to push lightweight gear to the limit. But we were prepared for all possible normal conditions. I wore a thin, close-fitting polypropylene shirt and a pair of nylon running shorts. If it got windy or

DRESSING RIGHT FOR A DRIZZLE



Your natural body heat often determines what you wear in a given situation. We've keyed the items in this and the following illustrations for people who feel the cold easily (cold) and

for warm-blooded individuals (warm). The starred items would be worn by both body types.

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turned chilly, I put on a Gore-tex suit. As a general rule I don't ask any garment to function as more than one layer even in very cold conditions."

WARMTH, THICKNESS & WEIGHT

"Really, when people talk about wool or cotton as insulators they're not being quite precise," says Mark Erickson, head designer at The North Face. "All clothing relies on air to retain the body's heat. Air has very low thermal conductivity but very high mobility. All clothing does is keep air from moving around. It traps the air inside by physically blocking its movement and by providing filaments for air molecules to attach to. As a result, clothes hold a layer of warm air near the body, through which heat escapes slowly." This explains why densely woven fabrics will be somewhat warmer for their thickness

than loosely woven ones, especially when worn without a windshell. Thinsulate and Sontique, two relatively dense synthetic insulators, are 70% warmer for their thickness than all other parka-weight fabrics. They accomplish this by packing an extraordinary number of extremely thin fibers into a relatively small volume. Obviously, such insulators as these make for less bulky and trimmer looking clothes that can still keep you remarkably warm.

Retaining the most warmth with the least weight in each layer of clothing is generally an important consideration, especially if carrying your belongings on your back is central to the outdoor activity. Here it is helpful to think of clothing materials as belonging to one of three groups: shirt-weight, sweater-weight and parka-weight. Once you classify materials by group, you can ask which material in a specific group will give you the most warmth for the weight — you need to compare apples and apples. For instance, it's impossible to use goose down for a light shirt even though it's the



warmest insulator for the weight available.

Shirt-weight fabrics are numerous beyond words, making it impossible to talk about them individually. Mark Erickson is sympathetic. As a *very rough* gauge of a fabric's warmth value versus its weight, he suggests using the density (specific gravity) of the component fibers. Viewed this way, a polypropylene (Olefin) garment could be the warmest for the weight (specific gravity, .90 to .93), followed by nylon (1.12 to 1.15), wool (1.15 to 1.32), silk (1.25 to 1.34), polyester (1.38) and cotton (1.51 to 1.55). Certainly, though, the fit of a shirt or light pants is extremely important. Baggy shirts definitely weigh more than close-fitting ones. Why carry around the weight of fabric you don't need? A good fit also prevents the bellowslike pumping of air in and out of a shirt as you move.

Sweater-weight fabrics are often characterized by their extremely high porosity and open weave. Because of these qualities, sweater weights must be combined with a windshell to achieve their full warmth poten-

tial. Under a windbreaker the warmest fabrics for the weight are the polyester "pile" fabrics and Helly Hansen's double-faced nylon Softpile. Moonlite and Hansen's single-faced Softpile also do quite well, followed by nylon fleece and polyester Polarfleece (sometimes called "bunting"). Wool sweaters and heavy wool shirts are distinctly heavier for the warmth than the synthetic fabrics mentioned thus far—with a windshell. Without a windshell, in even a light wind, only heavy wool shirts and, to some degree, Polarfleece provide anywhere near the warmth they have under a windshell.

Thick parka-weight insulators have warmth-to-weight statistics that are well tabulated. "The best insulator for the weight is goose down, followed by Quallofil, Hollofil and Polargard; next come the extra-thin insulators, Thinsulate and Sontique. Just like that," says Erickson.

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uncovered in cold weather. You can wear pounds and pounds of insulation and still be cold if you don't put on a hat. Choosing the right windshell is also important. If it's properly made with seam-sealed Gore-tex, it can double as your rain parka and save you more weight. Gore-tex is wind- and waterproof yet breathable, thus keeping you warm and dry without trapping water vapor from perspiration.

WARMTH WHEN WET

Gorgeous rainshells notwithstanding, anyone who is out and active in a heavy rain needs clothing that stays warm when it is wet. Here, wool and synthetics perform well. Robert Donnelly of the Wool Bureau explains: "Wool is a highly absorbent natural fiber that transports (wicks) water as a liquid or a vapor inside its fibers—often without even feeling wet. It is warm when wet because it does not mat down and is therefore able to carry water away from the skin. Wool moves water toward the outer clothing layers. This process often produces the sensation of being dry because wool, unlike synthetics, can wick water vapor—you often have no idea that you were sweat-

ing because there is no moisture buildup."

Synthetics act somewhat differently when wet since they absorb little moisture and must wick liquid water between the filaments of their yarns. This requires actual wetting of the yarns of a synthetic fabric. Once wet, wicking progresses on the surfaces of the synthetic fibers at a rapid rate. Eric Reynolds, founder of Marmot Mountain Works, has found thin polypropylene long johns to be a real boon for that very reason. "My polypro underwear is my most basic clothing unit. It is form-fitting, so when I'm hot it wicks sweat like crazy, spreading it out and helping to evaporate it or move it to the next layer. When I stop after vigorous cross-country skiing or whatever, I have very little water left on my skin to evaporate and chill me. My long johns get rid of sweat virtually as fast as I can make it. Polypropylene isn't warm when it's soaked with water, and I haven't found anything that is. Polypropylene is 'warm when wet' only because it doesn't stay wet."

Because synthetics carry their water on the outsides of their fibers, they evaporate water very fast in a wind. Wool, on the other hand, carries water inside its fibers, so it does not evaporate water nearly as fast. Wool mediates evaporative cooling; synthetics exaggerate it. Bikers especially will find this difference significant. After a sweaty trip up

a hard hill, a biker will face more aching cold on the subsequent fast ride down in a synthetic garment than in a wool one—assuming he's not wearing a windshell.

Long-term trips have one more warm-when-wet consideration—How long will it take your clothes to dry? Polypropylene absorbs virtually no moisture. Polyester absorbs a smidgen, and nylon may gain as much as 5%, while wool, silk and cotton absorb lots of water. This may result in nothing more than discomfort on a short trip, but wearing wet clothes can lead to hypothermia. Cotton, for instance, is wonderfully soft and absorbent, but when it has absorbed about 16% of its weight in water it mats down, becoming a thin, damp and highly heat-conductive layer. A simple rule of thumb: Don't use cotton in wet weather. For long trips in bad weather the choice should be clear: Take only clothing made from fabrics that stay dry or, at least, absorb minimal amounts of water and dry quickly, even without fair weather.

Goose down is similarly useless when soaking wet, but when liquid water is around, it's frequently too warm to pull out a down jacket. Of course, down can be kept dry by a waterproof shell. But for those wet times when longies, a shirt and a shell don't provide quite enough warmth, adding a sweater-weight garment will probably warm

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The human body produces sweat for two reasons: to help maintain constant body temperature and to humidify the skin so it doesn't die. Even when cold, the body sweats to keep the skin livably moist. In dry environments, evaporation of this humidifying moisture can cause extreme cooling, giving rise to what's called the "cold sweats." Here's how a vapor barrier helps. When the humidity inside a vapor barrier reaches 80% to 90%, the skin will stop its efforts to humidify itself. Similarly, if your body temperature is constant, you won't sweat to cool off. You stop sweating and evap-

orative cooling altogether. The result is an increase in warmth of about 15 degrees Fahrenheit and an end to the cold sweats.

To keep the vapor barrier warm and condensation-free, it should be worn close to the skin under at least one other piece of clothing. Most people also wear the thinnest possible shirt under their vapor barriers to keep the coated nylon material comfortably off their skin. Because wearing a vapor barrier entails a minimum of three layers of clothing, most people find vapor barriers ideally suited for quite cold temperatures or times when their heat output is low—at the end of a cold, hard day perhaps. People who overheat easily or naturally sweat a lot will probably not be able to use a vapor barrier except under extremely cold conditions. Happily, people vary, so you'll have to experiment with a vapor barrier to see exactly how it works for you. But bear in mind that almost everyone can effectively and comfortably use a vapor barrier for sleeping.

Vapor barriers could become an integral part of your clothing system. They are light, warm and go far toward keeping your outer insulation dry—be it a wool shirt or a down sleeping bag. As an added bonus, you'll need to drink less water since you'll sweat less. This side benefit can make a good deal of difference on desert, winter and high-altitude outings. □

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you right up. If you're still cold, perhaps even slightly hypothermic, put on a vapor barrier—an article of clothing that does not breathe (see accompanying box)—and pitch camp. At some point the weather wins.

WHAT TO WEAR WHEN

Making a comfortable and personalized blend of the clothing-system ingredients thus far mentioned is an acquired art, so don't be confused by the variety and versatility of layering systems. When planning for a sport in a particular area, take the time to evaluate your needs. And if your clothing system is a little overkill, well, at least you had your fun.

To choose the types of clothes you'll wear or take with you, ask yourself the following questions:

● Is convenience worth some extra weight? Does weight matter at all? Aquatic activities such as rafting, canoeing or kayaking rarely put a premium on weight. Instead they demand clothing that is warm when wet and windproof and that allows for freedom of movement.

● Will you be active and sweaty or will your heat output be low? Fishermen and birders often spend hours hardly moving at all. They need much more insulation than a dayhiker in the same conditions. For them, vapor barrier shirts and pants work flawlessly.

● How cold will it get? How wet? What if the weather service is wrong? Climates that are "temperate" in mountainous regions can be tricky. If a cold, blowing rain is possible, you won't need a great deal of insulation, but you will need to be covered entirely in warm-when-wet clothes and rainwear. Suppose you're high enough up to encounter a sudden snowstorm? It can happen in any month of the year, much to the bone-chilling dismay of the poncho-clad hiker. If you are taking extended ventures into the high mountains or winter landscapes, you'll need different layers for every part of your body: four to six torso layers, two or three leg layers, one or two hats, two or three hand and foot layers and, if there's snow, gaiters. Always, the outermost layer is a shell, ideally one that is both water- and windproof. If you might encounter nasty cold weather, such as a blizzard, you'll need a facial layer, too—goggles and a mask.

If clothes can be thought of as tools, having the right tool for the job is what clothing systems are all about. With our bodies properly protected, our senses can concentrate on nature and delight us with what they perceive. □

Mike Scherer is technical advisor and assistant manager for Marmot Mountain Works.

Conservation and Protection of Nature



On 19 November 1982, the United Nations Postal Administration issued a new set of commemorative stamps on the theme "Conservation and Protection of Nature".

The World Conservation Strategy was prepared jointly by the United Nations Environment Programme (UNEP), the International Union for Conservation of Nature and Natural Resources (IUCN)

and the World Wildlife Fund (WWF). The Strategy aims at setting out the means needed to restore and enhance our planet's capacity to support people, which is being severely reduced in both developed and developing countries.

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CHAPTERS HOLD ANNUAL GET-TOGETHERS

BOB IRWIN

"JOIN US!" urged the Kern-Kaweah Chapter's flyer. Since my wife and I were going to be in the southern Sierra that weekend last September, we accepted their invitation and attended the chapter's First Annual Convergence.

By the time we found the chapter's high mountain lodge, the sun had broken through the drizzle and the program was in full swing. While hikers strode down the rain-dampened trails of Sequoia National Forest and youngsters learned nature crafts, Mary Munis, the chapter's membership chair, oriented new members to the Club and chapter. Kim Martin-Carroll, the Club's director of membership develop-

ment, helped field questions from the floor.

Acquainting new members with the Club was a primary goal of the convergence, said one of its organizers, Gordon Hipp. In less than two years the small, Bakersfield-based chapter had grown from 700 to 1200 members, large enough to organize groups in other cities.

Hipp and his coorganizers, Harry Love and Laraine Turk, originally expected about 50 members to attend. Instead, almost 200 turned up, including Club President Denny Shaffer and chapter member Joe Fontaine, past Club president. Fontaine led hikes, ran a workshop on outings and wound up the program on Sunday by moderating a members' forum. Discussions of the chapter's conservation issues, along with workshops of political action and leadership training, rounded out the educational side of the

SIGHTINGS



Matthew August Perrault Berry, one of the Sierra Club's younger members, socializes at a SCOPE party. The son of Club vice-president Michele Perrault, holding him, and board member Phillip Berry, Matthew carries on a family tradition of involvement in the environmental community.

MUSH EMMONS

convergence. But perhaps the most beneficial aspect of the event was the chance it provided members and leaders to meet and get to know one another, to work together and have a good time doing it. That's how Chapter Chair Jim Davis summed things up as we left one of the friendliest and most enjoyable Sierra Club gatherings we'd attended in nearly 20 years in the Club.

Other chapters and groups have held their own "convergences," some for several years. In the Tennessee Chapter, a different regional group each year sponsors the "Annual Family Weekend" in a local state park. These weekends emphasize family fun—outings, children's programs and square dancing. The only nonsocial matters on the agenda are the chapter's annual meeting and the meeting of the executive committee. Costs ran remarkably low for last year's weekend: two nights' lodging, \$6; breakfast, \$2; dinner, \$2.75; rates for children were lower or free.

The John Muir Chapter included canoeing, hiking and folk dancing on the agenda of its last annual meeting, as well as five special workshops and a general discussion of SCOPE, the Club's political action arm. These and similar convergences are becoming increasingly frequent; their activities may differ, but they hold one element in common: the opportunity for members and leaders to get to know each other in a relaxed, informal atmosphere.

HARNESSING THE MEMBERSHIP TIDE

We've all heard of the phenomenal spurt in Sierra Club membership, which shot from 178,000 to 325,000 in the last two fiscal years. Yet only a few chapters—from a most unscientific survey of their newsletters—seem to be harnessing this tide of new members, or even recognizing it. Here are some of the ways the chapters have helped their new members feel more at home.

The North Star Chapter's newsletter published the names of 280 people who joined the Club in one month, inviting them to attend the new-member dinners that are held four or five times a year in Minneapolis. North Star's membership has doubled in two years to reach its current total of 6400. So has that of the Kansas Chapter, which rose from 715 to 1607 members. In three issues of its bimonthly newsletter, *The Greater Prairie Chicken*, the Kansas Chapter has printed the names and home towns of some 600 new members, welcoming them and urging them to join in chapter activities.

The Mother Lode Chapter, whose membership neared 10,000 at fiscal year's end, tried another approach and formed a task

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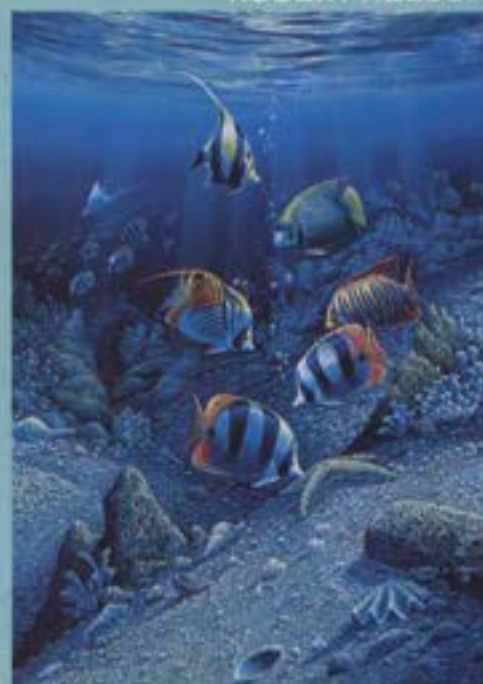
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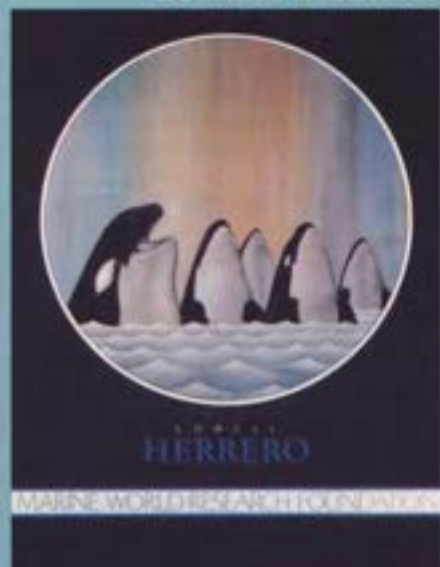
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force to help new members "find their way into Club involvement." The task force will channel new members' completed questionnaires to the persons or committees best suited to use the members' skills. The Columbia Group of the Oregon Chapter has chosen a time-honored Sierra Club method to contact its monthly complement of 150 new members—the group's membership committee has set up a network of telephone volunteers who will each personally welcome 10 to 30 members a month. Each caller receives a suggested script to use when inviting new people to participate in the group's activities and when answering questions about the Club and its programs.

ELECTION UPDATE

By the middle of March, all eligible Club members should have received their ballots for the board of directors election. Ballots must be returned to the National Election Committee and must arrive no later than noon on Saturday, April 9, 1983.

Three candidates submitted sufficient signatures on petitions by December 30, 1982, to be added to the ballot: David Brower, Dave Foreman and Ellen Winchester. The seven candidates selected by the Nominating Committee are: Betsy Barnett, Larry

Downing, Phil Hocker, Sue Miller, Carroll Tichenor, Peg Tileston and Edgar Wayburn. Five of the ten will be elected to serve on the board.

Election results will be announced at the end of April.—VS

THE DENNY AND IDA WILCHER AWARD

Nominations are now open for the Denny and Ida Wilcher Award. A generous donor has endowed a fund that will enable the Sierra Club to present an annual \$3000 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, use of techniques that can be broadly applied to other Club activities, and originality of initiatives.

Nominations and applications are due by April 1, 1983; they should designate activi-

ties undertaken in 1982. Each nomination or application should include a description of accomplishments and an explanation of how they meet the judges' criteria. Please enclose a list of people or Club entities endorsing the nomination.

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 was established in 1980 to honor Denny Wilcher and his wife, Ida. For more than two decades Denny provided outstanding leadership in developing the Club's fundraising programs. The award will be presented at the May meeting of the board of directors. A special committee of the Sierra Club Council and the Committee on Honors and Awards will judge the nominations.—VS

COMPUTER SUPPORT GROUP

The Club's rapidly expanding membership has led some chapters and groups to consider acquiring data processing capabilities—ranging from the loan of a volunteer's home computer to the lease or purchase of a chapter or group machine—and to request com-

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puter-readable membership information.

As a result, the national Club has created a computer services subcommittee of the National Membership Committee. This committee will develop guidelines for the use of membership lists, provide guidance to volunteer leaders on how best to utilize their computers and computer products, and act as a liaison between staff and volunteers in membership activity involving computer services.

The subcommittee will also establish a user group, which will coordinate the exchange of information and otherwise support local Club entities that are thinking of investing in a computer. To participate in this user group or learn more about the subcommittee, contact the subcommittee chair, Charles Oriez, at 39 Wyckoff St., Brooklyn, NY 11201. —VS

TWO NEW CHAPTERS— ALABAMA AND MONTANA

Two new chapters of the Sierra Club were formally voted into existence at the November meeting of the Board of Directors—Alabama, split from the Chattahoochee Chapter, and Montana, previously part of the Northern Rockies Chapter.

The Alabama Chapter, containing ap-

proximately 1000 members and five groups, elected officers and set conservation goals early last month. Chapter chair is Tom Williams; vice chair, Rebecca Falkenberg; secretary, Barney Dale; and treasurer, Deborah Whitmore. The chapter's council delegate is Rebecca Falkenberg; Joan Engermann and Carolyn Carr will continue as GCRCC delegates, and Carr remains as conservation chair. The chapter's first priorities will be to strengthen the groups within the state, to build a state conservation committee and to hone SCCOPE into an effective political tool.

Marty Fluharty, the board's fifth officer, met several members of the organizing committee at a Chattahoochee leadership retreat in 1982 and served as an important resource in forming the chapter. Appropriately enough, Edgar Wayburn made the motion to approve the formation of the chapter—he'd also moved to approve the Chattahoochee Chapter in 1971.

Montana reaches chapter status with more than 1100 members in three groups. The chapter officers include Jim Curtis, chair; Ed Dobson, vice chair; Daryl Murphy, secretary; Rosemary Rowe, treasurer; Don Essig, conservation chair.

Joe Fontaine, member and past president of the board, encouraged Club members in Montana to start a separate chapter when he

visited the state last spring. Brock Evans moved to approve the formation of the Montana Chapter—he said that he'd spent a great deal of time in Montana, as a worker in Glacier National Park and as the Sierra Club's Northwestern representative.

As it develops new groups within the chapter and fortifies SCCOPE's efforts, Montana will also seek additions to the Bob Marshall Wilderness and push for passage of the Lee Metcalf Wilderness Bill, long stymied in Congress.

Both chapters officially came into existence on January 1, 1983. —VS

SIERRA CLUB'S ANNUAL DINNER

The Sierra Club will hold its annual dinner on Saturday, May 7, in the lobby of the One Market Plaza building at the foot of Market Street in San Francisco. Food will be provided by Orient Express—the social hour will begin at 6:30, dinner an hour later. After dinner, the Club will present a variety of annual honors and awards. Tickets are \$17 each. Please send your check and a stamped, self-addressed envelope to: TICKETS, Sierra Club, 530 Bush St., San Francisco, CA 94108. Requests should arrive at the Club's main office by Friday, May 6. For further

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information, call the Sierra Club executive office at (415) 981-8634, extension 500.

INTERNATIONAL PROGRAM RECEIVES DONATIONS

The Sierra Club International Earthcare Center received a \$50,000 grant from the Foundation for the Needs of Others and a \$15,000 donation from the Exxon Corporation. The money will help support efforts of the Club's international program, which include representing the environmental movement abroad, sponsoring research projects and producing training materials on such topics as the safe use of pesticides in Third World countries.



PHOTO CONTEST REMINDER

Time's running out for entering Sierra's 4th annual photography contest, which this year is being sponsored in part by Nikon. All entries must be postmarked by midnight April 1. For a list of categories and complete instructions for submitting photos, see page 158 of the January/February, 1983 issue.

First and second prizes will be awarded according to merit in each category, and a grand prize winner will be chosen from among these winners. The grand prize is a Nikon FG 35mm SLR camera with a 50mm f/1.8 Nikon lens plus a six-day cruise for two on board one of Windjammer's sailing vessels. The first prize winners will each receive a rugged 9x25CF Nikon binocular. Second prize is a pair of high-quality sun glasses from Vuarnet-France. Prize-winning photos will be exhibited at Sierra Club national headquarters, and may be featured in NIKON WORLD magazine or the Nikon House gallery. □

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ENVIRONMENTAL BUDGETS

Continued from page 63

modify all the committee estimates into a Budget Resolution (especially crucial for big programs).

• **Early summer:** When both houses of Congress adopt a Budget Resolution.

• **Summer:** When bills are developed in appropriations committees and subcommittees allocating available funds to various programs (especially crucial for small programs).

• **Fall:** When appropriations bills are passed or rejected by both houses of Congress.

Each of these stages presents opportunities for interest groups to lobby for or against funding. For grassroots organizations, the appropriate techniques are the same as those used to influence authorization bills. Only the players are different.

Secretary Watt was right: Budget decisions are major policy decisions, and they are just as important to the environment as creation of specific wilderness areas or the misguided assignment of oil and gas leases. I

am delighted to see the environmental community focus on the budget and appropriations processes and on the need to make its case heard at critical times in the House and the Senate. This interest comes none too soon, since so many important environmental laws risk repeal by default, through lack of funding.

Michael E. Lowry, a Democrat from Washington, represents the seventh congressional district in Seattle. He is a member of the Budget and the Banking, Finance and Urban Affairs Committees.

THE BUDGET AS POLICY

SENATOR PATRICK J. LEAHY

ROBERT LOUIS STEVENSON ONCE wrote, "The cruellest lies are often told in silence." Although he wrote 100 years ago, his words describe the Reagan administration's efforts to cripple our nation's environmental institutions.

The attacks on national environmental laws, the Clean Air and Clean Water acts, pesticide controls and wilderness protection are well-known. But the administration is quietly attempting to prevent environmental protection agencies from enforcing the law by slashing their budgets and cutting their staffs.

The administration knows it cannot succeed in a public attack on the environmental laws, so it is attempting to achieve the same objectives through budget cuts.

As a member of the subcommittee of the Senate Appropriations Committee responsible for EPA's budget, I have concentrated my efforts on the impact of the unprecedented budget cuts at EPA.

Compared with the last budget proposed by President Carter, President Reagan proposed cutting EPA's budget by 39% for fiscal year 1983, and it will be cut 48% for fiscal year 1984. The total operating budget for 1983 is \$1.4 billion. For 1984, it will be \$949 million.

These dramatic reductions in the EPA budget have put Congress, and especially the Appropriations Committee, in a very odd position. For years we have pushed agencies to be more efficient by cutting waste and by managing more effectively.

When EPA Administrator Anne Gorsuch testifies before Congress, this is just what she says she is doing. She has claimed that the very large EPA budget cuts can be compensated for by increased efficiency, increased delegation of duties to the states, and because a large portion of pollution control is already accomplished.

But the claim that the agency could cut its budget by 39% strained credibility. After all, there is no line item for "waste and fraud" in the EPA budget. In order to test Ms. Gorsuch's claims, I asked my Appropriations Committee staff to examine EPA's budget documents closely.

These documents show that, in more than 70 instances, EPA told the Office of Management and Budget that it was reducing its efforts to stop pollution. This reduction will affect efforts to control toxic air pollutants, auto pollution, toxic water pollution as well as the assessment of health risks caused by certain drinking-water contaminants. EPA's new budgets mean we will know less about pollution and will do less to stop it.

Ms. Gorsuch also claims that EPA budget cuts can be accommodated through increased delegation of federal responsibilities to individual states. This, also, is just not true. A sampling of state environ-



mental officers' comments on the EPA budget cuts makes this very clear. South Carolina officials said the state needed "more money, not less" to fund its groundwater protection program adequately.

Oregon officials warned EPA that it was "ignoring the fact that states have been slashing programs over the last two to three years to reflect reduced nonfederal revenues." Indiana officials said they have already cut their air-pollution control program to "bare bones." Washington state said the effect of EPA budget cuts on attempts to preserve groundwater quality would be "critical"; and Ohio officials said EPA was assuming that state program support was adequate this year, and "that is clearly not the case."

I think environmental officials in Utah said it best: "If resources are cut, then programs will have to be cut. We are all making a mistake if we deceive ourselves into believing otherwise."

The heart of my concern is that this administration has launched an unprecedented assault on our institutional capability to control pollution.

Environmental groups, such as the Sierra Club, must provide the political force to help

"The administration is surreptitiously attempting to prevent environmental protection agencies from enforcing the law by slashing their budgets."



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enact and retain good environmental laws. Legislators must do their part to enact and oversee these laws.

But pollution cannot be stopped by laws or rhetoric alone.

It takes sharp minds, committed civil servants and organizations that can make decisions and implement them fairly. In two critical areas—staffing and environmental law enforcement—Administrator Gorsuch has irresponsibly permitted the agency's capability to deteriorate.

As a former prosecutor, I believe strongly that our laws must be enforced fairly. This means that the public must believe that environmental laws are enforced fairly and uniformly. At the same time, companies that obey the law must believe that they will not suffer a competitive disadvantage if they make pollution control investments while other companies flout the law—and get away with it.

Ms. Gorsuch has repeatedly promised to bring sound management to EPA and that this management would produce "results."

After examining hundreds of pages of EPA documents, I have concluded that Ms. Gorsuch has so thoroughly mismanaged EPA's enforcement division that the agency's staff does not know what its job is, let alone how to perform it.

The extent of this mismanagement can be illustrated by examining a few facts:

- Ms. Gorsuch abolished the Environmental Protection Agency's enforcement division, in spite of the fact that a major consultant's report warned her that it "could be highly damaging to staff morale, productivity and to an office's key programs."
- Between July 1981 and May 1982, the enforcement division went through a major reorganization on an average of once every eleven weeks.
- Ten months after the first reorganization and four months after the second, EPA's chief financial officer still had to ask Administrator Gorsuch to decide the basic issue of "what functions should [the Office of Legal and Enforcement Counsel] manage."
- For six of the last thirteen months, there were only about ten attorneys in the enforcement section of the Office of Legal and Enforcement Counsel.
- Enforcement efforts have dropped by 70% to 80%.

The current administrator is permitting the staffing of the agency to deteriorate to an alarming level.

In October 1981, the permanent staffing ceiling for the agency was 12,860. By the end of 1983, the ceiling will be 8645. In the course of three years, a third of the agency's staff—4215 people—will have left and not been replaced.

But Administrator Gorsuch responds

that she has fired hardly anyone. They all have quit of their own accord. If one third of the FBI or the Department of State had left in three years, we would certainly fire the director or the secretary of state. The President should do the same with the present administrator.

As a member of the Senate Appropriations Committee, I began the efforts that were successful in partially restoring EPA's 1982 budget.

ing bills last year makes clear that it is not Congress' support on environmental protection that is the issue. It is the President's position. Unless the President receives the message that the American people demand a strong, effective Environmental Protection Agency protecting their health, the threat of a Presidential veto will preclude all but token additions to EPA's budget.

The American people want environmental protection. They want their health and

clean air to breathe and clean water to drink. Indeed, a recent Roper poll found that 70% of the public want EPA to continue to be as tough or tougher than it was in the past.

The American people want an environmental policy that works. Isn't it time they got one?

Senator Patrick J. Leahy, a Democrat from Vermont, is a member of the Appropriations Subcommittee on HUD-Independent Agencies, which is responsible for funding the Environmental Protection Agency.

friend (frend)*n.*

1. A person one knows well and is fond of 2. A person on the same side in a struggle; ally

3. A supporter or sympathizer

4. **Someone who would enjoy Sierra Club membership.**

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priations Committee, based on the Budget Resolution passed by Congress.

- The spending ceilings established in the authorizing legislation. The House and Senate committees that created the Clean Water Act, for example, must authorize the spending ceiling for this act for the next fiscal year before the Appropriations Committee can appropriate the funds.

- The President's budget request. The appropriations committees always use the President's budget recommendations rather than the previous year's appropriations as a base for the next year's funding deliberations.

- The political signals the members receive on the various spending issues within their committees' jurisdictions. This is where activists come in.

Influencing the appropriations committees is really no different from influencing any other committee, except for the following two major problems: The contents of the appropriations bills are kept secret from the public until after the mark-up session; and the dates of the subcommittee mark-up sessions are rarely known until the last moment. This secrecy presents major problems, since environmentalists can never know whether their concerns have been heard until it is too late to do much about them.

This apparent absolute control of information by the chairmen regarding the contents of their bills and the timing for the mark-up sessions keep lobbyists away. They are also effective ways of letting subcommittee members off the hook with their constituents. Subcommittee members will often claim prior to mark-up that they have no idea what is in the chairman's bill. While they may have no detailed knowledge of what is in the bill, they can usually get a pretty good idea where the chairman stands on most major funding decisions by watching his actions at the subcommittee hearings held prior to mark-up.

If a subcommittee member wants to affect the bill, there are two ways to go about it. The most effective means of influencing the

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AFFECTING THE BUDGET

LARRY WILLIAMS

THE WORKINGS of the congressional budget process can be as mystifying as watching a chess match without knowing the rules of the game. Because of the complexities of the process, one is left with a strong urge to ignore it altogether in the hope that providence will guide Congress to give proper funding to the programs environmentalists care about. With the arrival of the Reagan administration, environmentalists quickly discovered that funding high-priority programs could no longer be left to providence. If environmental programs are to get a fair share of the federal dollar, conservationists are going to have to lobby hard. The competition is stiff, and the domestic spending share of the federal pie is shrinking.

In early attempts to bolster EPA's weakened budget, the Sierra Club learned that the skills needed to influence the budget process are no different from the ones used to influence other types of legislation. With a little understanding of how the budget process works, together with knowing where concentrated efforts might be most useful, there is no reason why environmentalists can't become effective in supporting budgets for high-priority programs.

Sierra Club members can have the most influence on the process in the House and Senate appropriations committees. Because the responsibility for funding the entire federal government rests with the appropriations committees, the committee members are subject to intense lobbying pressure from fellow members of Congress, the administration and special-interest groups. In self defense, committee members have become very skilled at fending off this attention. Environmentalists, therefore, have to be very good at overcoming the committee's defenses if they are to make an

impact on congressional budget decisions.

As with most committees in the Congress, it is in the subcommittees that the major decisions are made. In each house, three appropriations subcommittees handle most environmental funding decisions.

The Interior Subcommittee appropriates funds for the Interior Department, the Forest Service and the Department of Energy's conservation program.

The Housing and Urban Development (HUD) and Independent Agencies Subcommittee funds the Environmental Protection Agency and the Council on Environmental Quality.

The Energy and Water Resources Subcommittee is responsible for funding the Department of Energy, the Bureau of Reclamation and the U.S. Army Corps of Engineers.

These subcommittees' funding decisions are generally guided by four factors:

- Each subcommittee's overall spending ceiling, which is established by the Approp-

riations Committee, based on the Budget Resolution passed by Congress.

- The spending ceilings established in the authorizing legislation. The House and Senate committees that created the Clean Water Act, for example, must authorize the spending ceiling for this act for the next fiscal year before the Appropriations Committee can appropriate the funds.

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A Personal Story

"DAWSON'S BOOKSTORE and the Pickwick Stage"—these magic words are sure to touch many of you. It was a patient grandmother, about 60 years ago, who first took an eager ten-year old on a weekend outing—a grandmother who managed to instill within me the beginnings of a sustaining interest in the people and purposes of The Sierra Club.

Dawson's Bookstore, in downtown Los Angeles, was a central meeting place and a trusty Pickwick Stage was the means of transportation to the outing location.

The course of my life has been influenced in great measure by a closeness to the Club. Lasting friendships, meeting Sue, who subsequently became my wife, and an appreciation of nature's bounty all resulted from these associations. Sue and I together have tried to help others join in with this rare spirit of belonging and co-operation which is so



Jim and Sue Higman

unique to this organization.

Some few years ago the two of us provided in our wills for testamentary trusts which would accrue to the eventual benefit of The Sierra Club Foundation. Now, in another way that seems more tangible and simpler, we have arranged to participate

in living trusts under the Foundation's new Planned Giving Program.

The assets used to complement and establish these particular trusts have been appreciated securities. The primary purpose of this has been to help provide a future base for ongoing programs which the Foundation supports. A secondary benefit is that as charitable deductions, such trusts help reduce our tax liabilities. Sue and I are not wealthy in the sense of money, but realize that at this point in our lives we can afford to follow through and assist a true volunteer cause. *Jim and Sue Higman*

The Planned Giving Program assists Sierra Club members and friends in creating charitable bequests and life income trusts. These gift techniques offer special income and tax advantages to donors and their beneficiaries, while helping ensure the future strength of the Sierra Club "family" of organizations. For more information, please contact Sarah Beebe Stafford, Director of Planned Giving, 530 Bush Street, San Francisco, California 94108 (415/981-8634 ext. 452).

PLANNED GIVING PROGRAM

*Sierra Club Legal Defense Fund, Inc.
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bill's content is to convince the chairman prior to the mark-up session to incorporate suggested provisions in the draft bill. The alternative is for the member to come prepared to argue for desired changes at the mark-up session and hope that the rest of the subcommittee members will go along. Since the subcommittee members have seen the bill only one day prior to mark-up, it is often difficult to press successfully for funding changes during the meeting. This is especially true if the chairman demands that any increases in one account be balanced by a like cut in another. The subcommittee must make such tradeoffs within the accounts in its own jurisdiction. This can pose a problem, since other programs in the bill are likely to have their own defenders on the same subcommittee.

The timing of the subcommittees' actions is often important. The rules say that the House Appropriations Committee must report out its bills by June 1. The subcommittees usually start holding hearings in early March. In practice, however, these dates don't mean a lot. Last year, for example, the House Appropriations Subcommittee on HUD and Independent Agencies held its hearings in mid-May and reported out its bill in mid-August. (Even so, it was the first FY 1983 appropriations bill to pass Congress.) The House Appropriations Subcommittee on Interior didn't mark up its bill until December's lame-duck session.

Since lobbyists never have much advance warning of when a subcommittee's mark-up session will occur, it is imperative that environmentalists begin making their case to the members early in the year and continue right up to the time of mark-up. □

Larry Williams is a Sierra Club Washington representative who works on federal appropriations issues.

SIGHTINGS



During a break at a recent board of directors meeting, Jerry Lieberman (left), chair of the national membership committee, confers with Howard Saxton of SCCOPE.

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A Celebration of Birds: The Life and Times of Louis Agassiz Fuertes, by Robert McCracken Peck. Introduction by Roger Tory Peterson. Walker and Company, New York, 1982. 178 pages, \$30, cloth.

BIRDS HAVE INSPIRED artists since the days of the cave-dwellers. But it is only with the perfection of color printing that bird portraiture, faithful to the originals, has become widely available. This study of America's great bird artist, Louis Agassiz Fuertes, has been published in connection with the first comprehensive exhibition of his work, which opened at the Academy of Natural Sciences in Philadelphia and will be traveling elsewhere in the country. Superbly illustrated with color plates, pencil sketches and working drawings, it virtually amounts to an exhibition in itself. The author, Robert McCracken Peck, a vice-president of the Academy, is both an art critic and a naturalist.

Among American bird painters, the first name that invariably comes to mind is John James Audubon. He was the great pioneer, and he remains today the inspiration for some of our finest bird artists. "The name has become a myth, and deservedly so," writes Roger Tory Peterson. "Next to him, Fuertes' name will be remembered longest. To the strictly ornithological clan, his name stands without peer, placed way ahead of Audubon."

Fully to appreciate *A Celebration of Birds*, one should recall the intellectual climate of the period with which it deals. Ten years before Fuertes' birth in 1874, George Perkins Marsh had published his classic *Man and Nature*; in Lewis Mumford's words, "the fountainhead of the conservation movement." Thanks to Louis Agassiz, the charismatic professor for whom Fuertes was named, thanks to John Burroughs, to John Muir, and to many others, the study of natural history had become academically respectable and widely popular. Agassiz had founded a world-famous museum at Harvard, Boston had its Natural History Society, Philadelphia its Academy of Natural Sciences. In New York City the American Museum of Natural History was five years old; one of its devotees was a boy named Theodore Roosevelt who, when Fuertes was aged 27, would enter the White House, giving new dignity and recognition to workers in the field of nature. By then natural history books, and bird books in particular, were crowding the shelves of the bookstores, and the demand for illustrations was growing apace.

Peck has divided his book into three parts: The Man, The Artist, The Naturalist. Part I provides a brief overview of Fuertes' youth

and subsequent career—a sort of preview of subjects Peck will deal with later in more detail. Born in Ithaca, New York, the son of a professor of engineering at Cornell, Fuertes was, from childhood, on friendly terms with leading naturalists. He made his first painting at the age of fourteen. At the Ithaca Public Library he pored over the hand-colored plates of Alexander Wilson's classic *American Ornithology* and Audubon's double-elffolio, *The Birds of America*. After a year in Europe with his parents, during which he studied the great color-plate books of the nineteenth century, he entered Cornell University where "he did well in courses that applied to his outside interests." (Other subjects apparently put him to sleep—a tendency not unknown to ornithologists in our time.) He made humorous sketches of his teachers and classmates, worked on the college humor magazine and, coming from a musical family—his mother was an accomplished pianist—he naturally sang in the glee club. Through a friend in this club he met the first of the three men who would do the most to shape his career.

Elliot Coues, founder of the American Ornithologists' Union, was a formidable character. In 1872 he had published the *Key to North American Birds*, considered the most important book on the subject since Audubon's great opus 40 years earlier. A brilliant naturalist, self-assured and outspoken, he was a caustic critic of inferior work, but generous in his support when he recognized true talent. He found it in Fuertes. Almost immediately he became the young man's mentor, guiding his development, introducing him to the scientific community, and reviewing the first book that Fuertes illustrated: Florence A. Merriam's *A Birding from a Bronco* (1896), a charming work by an intrepid young woman who refused to believe that (in the words of an early ornithologist) the female sex could not "without some eccentricity of conduct fol-

low birds and quadrupeds to the woods." In the *New York Nation*, Coues wrote: "[Mr. Fuertes] is self-taught, and his technique is still crude . . . but his power is unmistakable, and we miss our guess if he does not become a great artist in birds in due course. . . . His pictures are better than Audubon's were to begin with, and we suspect that the mantle has fallen upon Mr. Fuertes. . . ." This same year Coues commissioned his young protégé to make 111 pictures for *Citizen Bird*, a book for children that he had written in collaboration with Mabel Osgood Wright, creator of



PAINTER AS NATURALIST

PAUL BROOKS



one of America's first bird sanctuaries. "Never mind your school work," he wrote magisterially, "what matters is what you are doing for me."

In 1899, on the recommendation of C. Hart Merriam, Florence's brother and head of the U.S. Biological Survey, Fuertes was invited to join the famous Harriman Expedi-

tion to Alaska, financed by the head of the Union Pacific Railroad. Here he enjoyed the company of Muir and Burroughs and an awesome roster of distinguished scientists. Though conditions on board ship were luxurious, Fuertes worked like mad during the two months of the trip: collecting, skinning, painting—and making friendships that would last him for life.

At age 25 he was already well-launched on his career.

In Part II Peck expands on many of the facts and themes that he has briefly presented, writing now from the point of view of the art critic. Here the central figure is the popular artist, Abbott Thayer. Impressed by young Fuertes' talent, Thayer offered to give him vigorous training in the fundamentals of the profession. "I am not sure," wrote Thayer, "that you yet know that the highest art purity is needed in your birds. . . . All that

true training does is to purify one's powers, till they no longer refract the truth in its passage through." Thayer insisted that the artist clear himself of prejudices and mental habits and paint what he sees. His point was illustrated by his theory of countershading or concealing coloration, which raised a storm of controversy at the time, but which has since been generally accepted. In 1911 Theodore Roosevelt, who had a tendency to go off at half-cock—as in his unjustified attack on Burroughs during the "nature-faking" controversy—wrote an article declaring Thayer's theory to be absurd and "absolutely false." In reply, Francis H. Allen, chairman of the Massachusetts Audubon Society (and later the leading figure in publication of the Peterson *Field Guide*) found 50 instances of misquotation, misrepresentation and perversion of Thayer's statements in Roosevelt's article. Fuertes himself talked to the ex-President on the subject, to no avail. "I found him quite adamant—not to say rhinoceric," he wrote to Allen. "So I desisted, in the (perhaps vain) hope that he would either blow himself out or become absorbed in some other matter and at least lie fallow for a time. That sometimes relieves an acid condition."

Meanwhile Fuertes had more important matters on his mind, such as making a living. Despite his father's doubts, he was convinced that he could support himself and a family with his bird painting. In 1903 he had married Margaret (Madge) Sumner from Ithaca. This did not interrupt his work. Honeymooning in Jamaica, he traveled into remote mountain areas while his bride remained in the hotel; returning, he would prepare his specimens in the bridal suite. It was a happy marriage—in part, no doubt, because his wife was never tempted to accompany him on future field trips.

These trips alternated with work in the studio as commissions continued to pour in. To satisfy authors and editors and friendly critics was not always easy. Coues liked bird portraits without background, Frank M. Chapman, a leading ornithologist and a great popularizer of nature study, urged "a dash of environment," the *National Geographic* wanted the subject to stand out clearly, whereas Abbott Thayer (fortunately not a client) wanted it to disappear into the background, as he claimed it did in nature. But Fuertes' integrity, his genius as an artist, overcame such considerations. And he found ample room for his talents in such classic works as William Beebe's *Monograph of the Pheasants*, John C. Phillips' *A Natural History of the Ducks*, and Edward Howe Forbush's three-volume *Birds of Massachusetts and Other New England States*.

In Part III, "The Naturalist," Peck de-



COURTESY OF LABORATORY OF ORNITHOLOGY, CORNELL UNIVERSITY

Louis Agassiz Fuertes (above) holds a Lammergeier, or bearded vulture, during an expedition to Abyssinia in 1926. He painted the Emerald Toucanet (below) from sketches made in the Yucatan in 1910.

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Malachite Kingfisher, a watercolor study from the Abyssinia expedition, is now in the Field Museum of Natural History, Chicago, Ill.

scribes the field trips at some length, starting once more with the Harriman Expedition. Following that luxurious voyage, Fuertes took a grueling four-month collecting trip in the Texas wilderness, led by Vernon Bailey, chief naturalist of the Biological Survey. On many later trips he accompanied the man who would become his lifelong friend, teacher and professional colleague. Ten years Fuertes' senior, Chapman was curator of birds at the American Museum of Natural History and founder of the vastly influential magazine, *Bird-Lore* (ancestor of *Audubon*). On expeditions to the Bahamas, Yucatan, Colombia and elsewhere, he and Fuertes collected for the dioramas that Chapman was creating in the museum.

Fuertes' last and most dramatic trip was to Abyssinia in 1927, an expedition sponsored by Chicago's Field Museum. Traveling through spectacular wild country by car and on horseback, he exclaimed at one point to a companion: "This is the highlight of my ornithological career. Birds everywhere and every damned one is new to me."

The sketches and watercolor studies he made on this trip rank with his finest work.

My only reservation about *A Celebration of Birds* has to do with method, not substance, and is perhaps a matter of personal taste. Dividing the text into "The Man," "The Artist," "The Naturalist" seems somewhat arbitrary. It inevitably results in repetition, as if these were closely linked essays: a pattern that also makes the text difficult for reference. More to the point, how can one possibly separate the artist from the naturalist, in the case of Fuertes of all people? And both, of course, are central to the character of "The Man." Fortunately Peck does not follow his pattern too rigidly, and it interferes little with one's reading pleasure.

Louis Agassiz Fuertes died in a railroad crossing accident on August 25, 1927, short-

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ly after his return from Abyssinia. At his memorial service, his daughter recalls, the speakers by instinctive agreement endeavored to make the occasion a happy one, recalling a joyous life. Said Dr. Chapman: "If the birds of the world had met to select a human being who could best express to mankind the beauty and charm of their forms, their songs, their rhythmic flight, their manners for the heart's delight, they would unquestionably have chosen Louis Fuertes."

Paul Brooks, for many years editor-in-chief of Houghton Mifflin Co., has served as a director and as vice president of the Sierra Club. He currently is a member of the Sierra Club Foundation's advisory council. His book Roadless Area won the John Burroughs Medal in 1965.

CARIBOU IN CRISIS

GREG HINES

Caribou and the Barren-Lands, by George Calef. Canadian Arctic Resources Committee, Ottawa, 1981. \$34.95, cloth.

IN THE CANADIAN NORTH and in Alaska, the tundra barrens are brutally cold and largely deserted in winter. But when the snow melts and the ice leaves its many lakes, this treeless land is alive with plants and animals: arctic poppies and cotton grass cover the tundra prairie; jaegers, arctic terns and phalaropes come from far to nest; and barren-ground grizzlies and arctic ground squirrels are out of hibernation. Before the snow melts, the caribou have set out across the frozen lakes for their calving ground above the Arctic Circle.

George Calef, a University of British Columbia biologist, has recorded the life cycle of the caribou in Canada's Northwest Territories and Alaska's Brooks Range. *Caribou and the Barren-Lands* is the most impressive photographic record of the caribou ever published, as well as a lucid account of the caribou's year and an analysis of what must be done to save them from extinction. Calef follows the migration, mating and birthing of three herds: the Bathurst herd's spring migration to their calving ground near the Arctic Ocean east of Bathurst Inlet; the Porcupine herd's summer massing and autumn mating (which is shared by Alaska and Canada) in the Brooks Range/Yukon area; and the Beverly herd's wintering just above the Saskatchewan-Manitoba border.

Caribou have but two predators—wolves and humans. In the early days, native peoples hunted caribou at river crossings in the fall when the skins were prime and the meat less likely to spoil. Because the Indians' weapons were primitive and their mobility

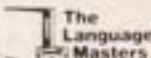
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limited, the caribou herds were able to withstand the combined pressures of men and wolves. But modern technology has tipped the balance against the caribou. Calef notes that caribou populations have crashed recently, mainly as a result of sport and native use of high-power rifles, airplane spotting of herds, road access, and snowmobile-chase hunting. In Alaska these forces combined to devastate the western Arctic herd. This herd of nearly 250,000 animals (the largest in North America), dropped to 65,000 between 1970 and 1976. Alaska officials have since imposed restraints on hunters and bounties on wolves. Calef argues that these kinds of control should be extended to other areas where the caribou population is declining.

The wolf is a part of the wild, too—an essential part—and the barrens are the only place where it is not endangered. Calef points out that caribou are necessary for the wolf's survival, and wolf control can be relaxed only when the herds are restored to strength. But high-power weaponry and pursuit vehicles should not be turned loose on caribou again, and the calving grounds and the passage to them must remain inviolate. If these critical bits of tundra are preempted for dam building and gold mining, the caribou herds will continue to decline.



Without the caribou, the barrens would be a forlorn land indeed. Let Calef describe this surging, vital force in the Porcupine herd's crossing of the Kongakut River in Alaska. The herd has stampeded and drawn back three times from swimming the river.

Finally, a cow and a calf waded into the stream. At last the hesitancy was broken. The living flood poured into the river. For the next hour the herd massed, splashed, waded, and swam. Wave after wave of caribou trotted to the water and, urged on by the pressure from behind, plunged in. At times their bodies pressed so closely together that it seemed the animals squeezed in the centre must surely be crushed or drowned. A turmoil of grunting,

wheezing, and splashing filled the air. The heavy odor of hot, struggling animals hung over the scene. Bands of bulls crossed together, their antlers sticking up like a floating forest. A calf separated from its mother swam gamely alongside massive bulls in the surge and crush, its small body contrasting with their size and power.

Then, as abruptly as it had begun, the seemingly endless flood of caribou was over. No more animals advanced out of the golden distance to replace those entering the river. The last swimmers slid through the water, clambered out, shook quickly, and trotted after the vanishing herd. The horizon stood empty.

Caribou and the Barren-Lands received the 1982 Governor General's Award for Nonfiction, Canada's highest literary distinction. But beyond the compelling beauty of the prose and photography of this book is the stark message of a species in need of help. It is the purpose of the Canadian Arctic Resources Committee, the publishers of *Caribou and the Barren-Lands*, to counsel and guide development in the Canadian North and to check the forces of environmental destruction. As David Brower notes in the book's foreword, we have a joint responsibility with Canada for the protection of the Porcupine herd. Treaty negotiations to protect the herd have stalled,

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however, and the Reagan administration apparently considers commercial development of the Brooks Range corridor a higher priority. Calef shows why this decision must be reversed.

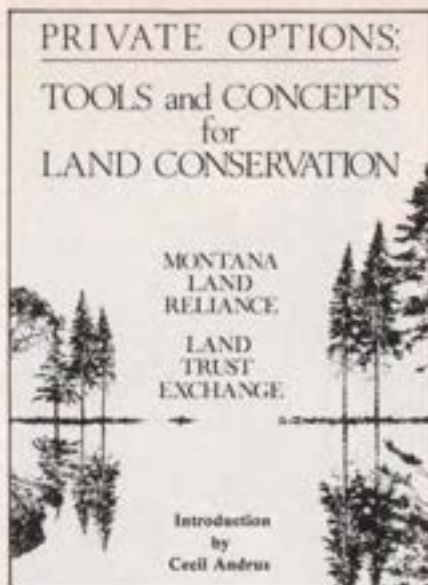
Greg Hines is an economist at Dartmouth College. Reprinted with permission from *Not Man Apart*, November 1982.

STRATEGIES FOR PRESERVATION

DWIGHT HOLING

Private Options: Tools and Concepts for Land Conservation, by the Montana Land Reliance and the Land Trust Exchange. Island Press, Covelo, California, 1982. \$25, paper.

SEVERAL SUMMERS AGO I stood on a windswept plateau overlooking the Musselshell River Valley and held up an old sepia-tone family portrait, taken in front of a farmhouse and a town that are no more. I had returned to the scene of the photograph to see if I could learn more about my ancestors' life in Barber, Montana—a pioneer



farming hamlet built at the turn of the century. Staring into what I hoped would be my medium to the past, I tried to picture life on the family farm. But I couldn't; two generations of suburban living now stood between me and that 160-acre, hard-dirt homestead. All I could imagine was how the look on the family's face would turn from pride to shame if they could see that their legacy had been inherited by a conglomerate based in New

York. The photo haunts me still, for it's all of the heritage I have left to preserve.

Keeping family farms intact hasn't gotten any easier since my grandfather lost his in the Great Depression. Soaring operating costs, price controls, land speculation and reluctant heirs have forced farmers to sell out at an alarming rate. Even more frightening is the rapidity with which farmland is being converted to nonagricultural uses—3 million acres a year fall prey to development. In the past decade, farmland equaling the combined acreage of Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New Jersey and Delaware has been taken out of production. Only 413 million acres of United States farmland remain in cultivation.

Fortunately, we can still save farmland, as well as open space, natural resource land and historical cultural sites—a new book teaches us how. *Private Options: Tools and Concepts for Land Conservation*, compiled by the Montana Land Reliance and the Land Trust Exchange, recaps two landmark conferences held in 1981, when for the first time members of local land trusts met with real-estate brokers, lawyers, accountants and government officials to talk over the nuts-and-bolts techniques of successfully preserving private land. In clear, incisive language, experts from a variety of fields

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explain land evaluation, tax incentives, estate planning, conservation easements and options for partial development. They also give tips on the psychology of successful marketing, negotiating and selling.

Private Options explores the land-trust movement's traditions, motives and objectives, and points out problems land trusts must face. After a rousing introduction by former Interior Secretary Cecil Andrus, the book continues with thumbnail sketches of several prominent regional preservation organizations, as well as provocative essays by Barbara Rusmore, Allan D. Spader and Jon Roush.

More than 400 local land-preservation groups have been created since the first such organization, the Trustees of Preservations, was born in Massachusetts in 1890. Mostly through outright purchase or gift, these groups have preserved nearly 700,000 acres—a remarkable success, really, when you consider that half of the 400 have annual budgets of less than \$5000, and that, until the conferences in 1981 and the publication of this book, most worked in virtual isolation, unable to learn from each other's successes and failures.

One would think the Reagan administration would support the efforts of nongovernmental groups; but the opposite seems true. Recent changes in federal policy hamper the efficacy of private trusts. For example, one of the traditional sources for capital to finance land-preservation purchases, the Land and Water Conservation Fund, has been restricted, and tax incentives once used to attract prospective land donors and sellers have been limited by the 1981 Federal Tax Code.

Nevertheless, *Private Options* rightly cautions land-trust organizations against automatically opposing the government's decisions, even when those decisions frustrate their efforts. Work together, it advises: develop a close, cooperative relationship instead. That might seem to contradict the independent nature of private land preservation, and in some cases it probably does. But in the long run, it's for the common good. Just as federal agencies will never be able to match the responsiveness of local land trusts, the trusts can never replace federal protection; their deliberately regional scopes restrict their efforts to preserve areas that don't have a concerned local citizenry to back those efforts up.

Obviously, both forces are needed to protect the land, and they're needed right now. As the authors of the book repeatedly warn, "The land can't wait." □

Dwight Holing, a freelance writer based in Oakland, California, writes often on environmental and labor topics.

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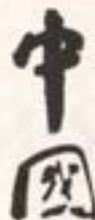
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BIRDS IN OUR BELFRY

Continued from page 60

out in the yards and in the woods and fields the birds sing and call, dash about from tree to ground to shed roof and telephone wire. There are wrens that look like nuthatches, sparrows that look like every other sparrow, obscure finches, swallows that won't stand still, thrushes in a hurry, towhees and woodpeckers. And in the woods are the quick, indistinguishable blurs of color, the perplexing warblers.

When I think I have seen a warbler I always feel the urge to turn away, to pretend it was a sparrow or a finch, rather than sink into frustration as I try desperately to recall how much of the bird was yellow or olive or chestnut or if it had wing bars or eye stripes. Even the authors of the bird guides stumble when they come to warblers and put them down as confusing birds. Actually, they are impossible. Trying to tell one warbler from another is a good deal like trying to distinguish between snowflakes or grains of sand. Of the yellow-throated warbler (*Dendroica dominica*) Peterson says, "A gray-backed warbler with a yellow bib. White eyebrow stripe, two white wing bars, black stripes on sides . . . creeps about branches of trees." Easy for a man with a stuffed specimen in his hand to say. At my place every bird that shows up, it seems, has a dab of yellow on his breast or chin or neck. With birds it's hard to tell unless you have the good fortune to have one land on the bill of your baseball cap. And around my place every bird clearly likes creeping "about branches of trees." The myrtle warbler, we are told, is easily recognized by its "bright yellow rump." Well, it is easily recognized if you happen to be standing directly behind the myrtle warbler while he is creeping about the branches of trees and if you do not confuse him with a Cape May warbler, which has a "dull patch of yellow behind the ear," or the chestnut-sided warbler, which not only looks like the yellow-rumped warbler but also like the Cape May and the bay-breasted and the female Blackburnian warbler.

So you see what I'm up against. When my wife leaps up from the dinner table to report a yellowish breast and gray wings in the white oak I try not to look—but I always do. And just when I think I finally have a fix on that bird another will show up and throw me off the track. I try to tell myself that the birds' names do not matter, but, for some reason, they do and have since the day I discovered that the bird that spent the spring mornings singing above the garden was not just any red bird, but a tanager, sitting in a white oak above the tomato seedlings, as bright as an apple. □

Harry Middleton is a columnist for Louisiana Life and Connecticut magazines.

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Horns: Bison, Pronghorn Antelope, Herford
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Antlers: Whitetail Deer, Barren-Ground
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Horns are hollow, bony structures covered with sheaths of keratin, the same substance that makes up fingernails. Keratin also constitutes claws, beaks, hooves, scales and tortoises' shells. Horns have hard outer surfaces covering their soft, living cores. Horns grow throughout an animal's life and are permanent parts of the animal's body.

Antlers, on the other hand, are made completely of bone. Only members of the deer family have true antlers, which grow on the animals' heads from two raised bones called pedicles. Each winter the animals lose their antlers, and each spring they grow new sets. When antlers are new and tender they are covered with skin and fine, short hair. During this stage, the animals are said to be "in velvet." Eventually the velvet dries up, and the animal rubs the skin off painlessly against trees and bushes.

Both antlers and horns grow in a wide variety of shapes and sizes. Unlike horns, antlers can branch into one or more points. They range from the short, straight spikes of the South American pudu to the huge, palm-shaped antlers of the Alaskan moose. Usually only males sprout antlers, but female reindeer and caribou grow antlers, too.

Cattle, oxen, sheep, goats and antelope have horns. Horns appear on both sexes, but in most cases those of the females are shorter and slenderer. Horns come in flat shapes, round shapes and spirals; some are long, some are short and stubby.

Some horns, such as those of the Rocky Mountain goat, curve only slightly—others, such as those of the bighorn sheep, coil backwards and outwards in a complete circle. Domestic cattle usually have horns. We call cattle without horns "polled" cattle—farmers developed them through selective breeding, to shrink the horns and make the cattle less dangerous to work with.

The American pronghorn is in a class by itself. Many people call it an antelope, but the pronghorn is not a true antelope because of its unusual horns. An antelope's horns are not supposed to branch, but those of the pronghorn have a single, gently curving prong—which is how the animal got its name. And guess what else is different? The pronghorn sheds its horn sheaths every year, just like a deer sheds its antlers.

After reading about the pronghorn, you won't be surprised to learn that some animals have horns that really aren't horns at all. For instance, the rhinoceros, which sports one of the most ferocious-looking horns in the world, has a "horn" made of tightly compacted hairlike fibers. The fibers attach not to the animal's skull as a true horn would, but to its skin instead.

Many animals have been hunted and killed for their horns or antlers. Generally speaking, the bigger the horns, the more valuable the animal. Fortunately, people are becoming more aware of the declining numbers of wild animals, and every year fewer animals die because someone wants their horns. □

Molly Searl is a freelance writer based in Livingston, Montana, who specializes in wildlife issues. She is currently working on a book on the feeding habits of birds.

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


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QUESTIONS & ANSWERS

Q Why have you given up on the "Replace Watt" campaign after such a successful start? He's still in office, isn't he? (MARCIA EDGERTON, MINERAL SPRINGS, WIS.)

A According to Doug Scott, the Club's director of federal affairs, the Club hasn't given up on replacing Watt or the other anti-environmental officials in the Reagan administration. Far from it! Instead, the strategy of that campaign has evolved over the past two years.

In 1981, the ideal tactic was the "Replace Watt" petition drive—it helped educate people across the country, and it got more than 30,000 volunteers actively involved in circulating petitions and telling people about Watt. The result is well-known: 1,100,000 signatures, which the Club delivered to Congress just six months after launching the campaign.

Having achieved that, it made sense to shift tactics and build on that show of public outrage. Thus, 1982 was the year to make Watt and the whole Reagan anti-environmental record an issue in the congressional elections. Again our success is well-documented: over 75 percent of the candidates we backed got elected—and there's no doubt that Watt's unpopularity influenced that outpouring of election activism.

In 1983, with Watt and his policies more thoroughly discredited than ever, the Club needs to remind American voters that Reagan put Watt in office and has supported and encouraged his every move. The "Replace Watt" campaign for 1983 and 1984 must be nothing less than a "Get out the vote" campaign to educate and mobilize voters in the all-important 1984 elections.

Q: I've seen numerous black-and-white portraits of John Muir. What color were his eyes? (GEOFFREY OVERTON, WICHITA, KAN.)

A: Linda Moon Stumpff of the John Muir Historic Site in Martinez, Calif., supplied the following from *John Muir's America*, by T. H. Watkins: "And the eyes—which were the first thing one noticed about him and, according to the evidence, the one thing no one ever forgot—they were as blue as if

Sierra welcomes its readers to Questions & Answers and encourages them to take this opportunity to learn more about the club and its activities. If you have a question you'd like answered, send it along with your chapter affiliation to 530 Bush St., San Francisco, CA 94108. We will respond to as many questions as space allows.



ILLUSTRATION BY BOVCHAN

chipped from a glacier's heart and shone with an intensity that some took for madness and others for genius, both impressions at least partly correct since like all extraordinary men he probably was a bit of each."

Q: Recently I went shopping for a Sierra Club poster and was dismayed to learn that you no longer publish them. How come? (RICK WILSON, SAUSALITO, CALIF.)

A: Jon Beckmann, director of Sierra Club Books, explains that the posters were developed as companions to the Sierra Club Exhibit Format Books printed in the 1960s. The poster program, which was handled under license by an outside firm, ended in the 1970s because the Club was no longer producing the large-format books and because the market for posters had dwindled. However, Beckmann says the Club is currently talking to poster manufacturers about reviving a line of posters under licensing arrangements.

Q: I was looking at the Sierra Club catalog recently and got to wondering who designed the Club seal. Could you explain what it portrays? (LINDA HALES, NYACK, N.Y.)

A: The seal most often used today depicts a *Sequoia gigantea* in the foreground and

Half Dome, Mount Ritter and Banner Peak in the distance. It is a slightly modified version of the seal designed by San Francisco architect Willis Polk in 1894. Polk's design was the second that the Club used. Just after organizing in 1892, the members chose a seal showing a pine tree within a circular margin and the motto, *Altiora peto*—"I seek the high places."

Q: I picked up a rusty old Sierra Club cup at an antique store recently and would like to know more about it. When did the Club start distributing cups, whose idea was it and where did he find the design? (JOHN KITHAS, SAN FRANCISCO)

A: In answering a similar question back in 1963, early Club leader William E. Colby wrote: "For the first three or four years following 1901 when I ran the first Sierra Club outing, I did my best to get a tin cup that would stand the wear and tear of daily rough usage. Naturally I

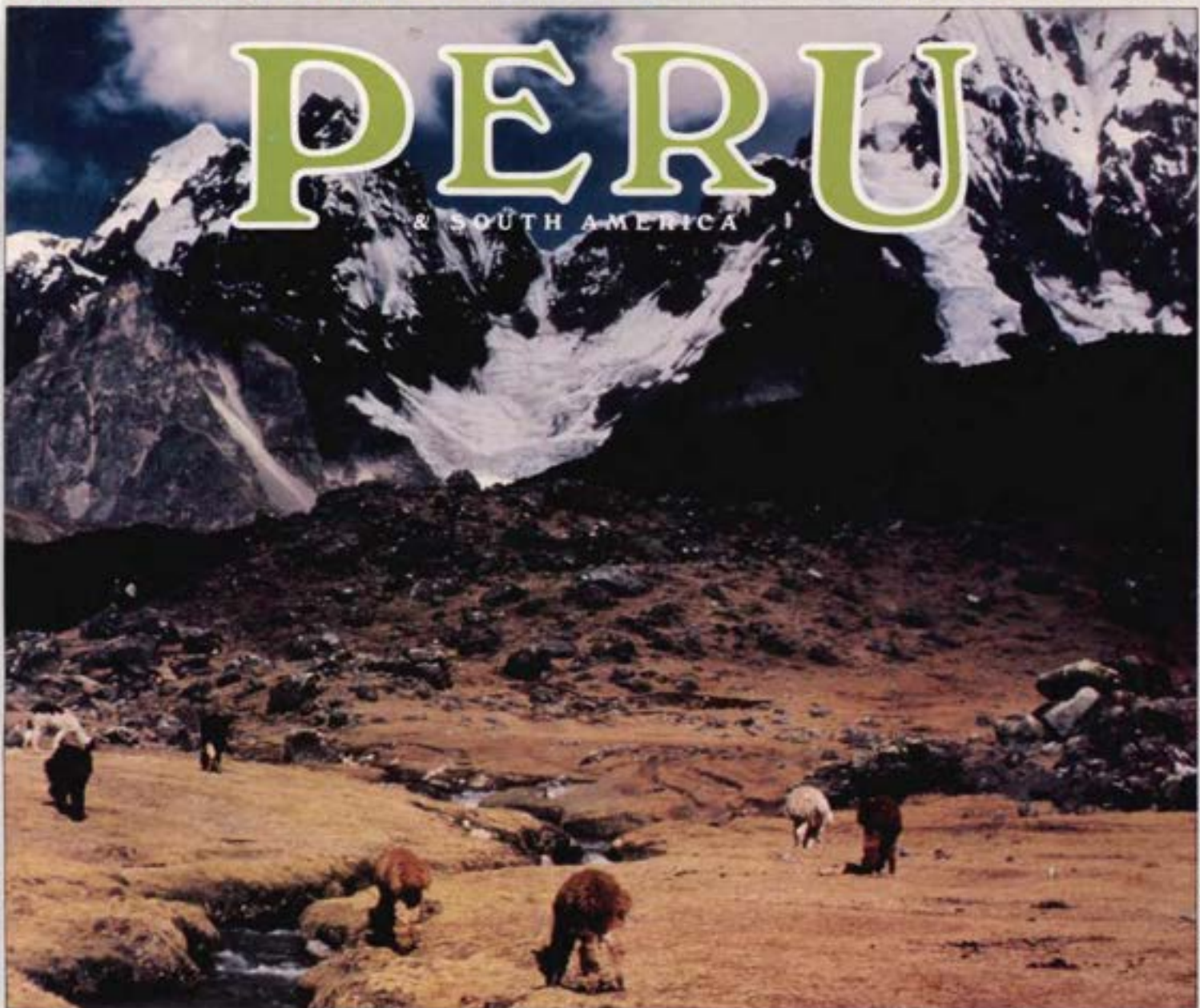
tried to get cups that would nest and save space. As I recall, there was a very poor selection, and I had to use many sizes and makes. Most of them got battered up and the handles broke off, etc. In 1905, about 25 members of the Appalachian Club joined our outing to Mt. Rainier and brought with them some of their regulation cups, which I saw at once were what we needed. They nested, were made of tough enough material and had stout wire handles. So I got the address of the firm and ordered cups made for the Sierra Club with the name stamped on the bottom." World War II interrupted the production of the tin-plate cup and the dies were scrapped for their metal. When the cups made their postwar return, they were manufactured from rustproof stainless steel.

Q: What is the Sierra Club's policy on smoking in public places? (BARBARA RAMIG, OLD TAPPAN, N.J.)

A: The Club has no national policy on smoking, although it supports the right of nonsmokers to a smoke-free environment. To that end, many of the Club's chapters have worked on behalf of state and local ballot measures on this issue, and the board of directors has passed a rule banning smoking at its meetings.

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Approximate Pachacamac Pass below Mt. Ausangate (20,945') in the Peruvian Andes/Terry Brown

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