

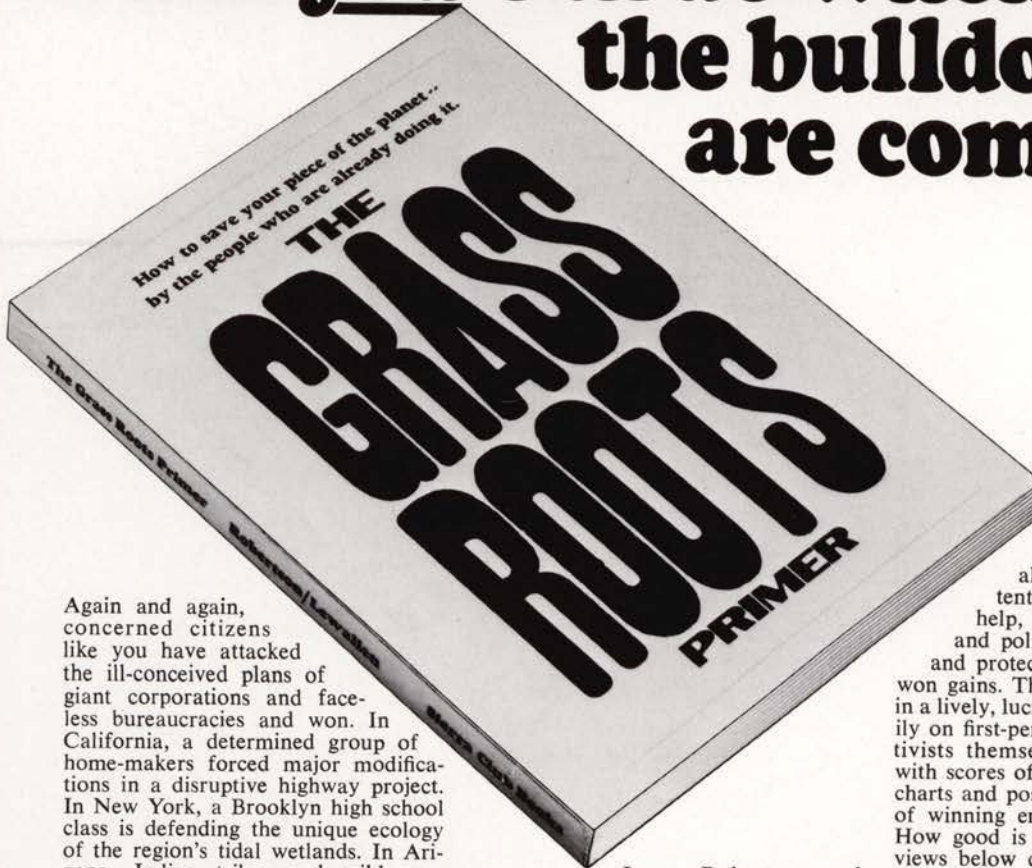
Sierra Club Bulletin ^{\$1.00}



May 1976

Nuclear Initiative
Concessions in National Parks

What you can do when the bulldozers are coming...



Again and again, concerned citizens like you have attacked the ill-conceived plans of giant corporations and faceless bureaucracies and won. In California, a determined group of home-makers forced major modifications in a disruptive highway project. In New York, a Brooklyn high school class is defending the unique ecology of the region's tidal wetlands. In Arizona, Indian tribes and wilderness groups have spared the San Francisco mountains from "development." And now, this important new handbook from the Sierra Club shows how these people have done it — and how you can follow in their successful footsteps.

In **THE GRASS ROOTS PRIMER**,

James Robertson and John Lewallen have gathered 19 success stories from all parts of America, and drawn from them 23 practical, proven techniques you can use to guard your particular corner of the earth. Here's detailed advice on organizing an action group, lining up influential

allies, attracting media attention, getting professional help, understanding the legal and political tools you can use, and protecting each of your hard-won gains. The entire book is written in a lively, lucid style — relying primarily on first-person accounts by the activists themselves — and illustrated with scores of photos, cartoons, maps, charts and posters that have been part of winning environmental campaigns. How good is the book? The rave reviews below can give you some idea. But why not order your own copy and see for yourself? **THE GRASS ROOTS PRIMER** — in a giant, oversize paperback format — is \$7.95 at bookstores. Members can order direct from the Sierra Club for members' discounts. Please use the handy order form on page 23.

"This essential sourcebook can make giant-killers of us all.—*Booklist*

"It's high time the citizenry had a manual. . . This book tells you everything about fighting and winning environmental battles."—*Environment Monthly*

"This book . . . will take its place alongside the Boy Scout Handbook, Sears Roebuck Catalogue, Motors Auto Repair Manual and others of today's Five Foot Shelf."—*Peninsula Living*

"This is a useful book; it shows you how to get things done. But possibly the most valuable lesson it offers is that something *can* be done."—*Not Man Apart* (Friends of the Earth)

"The primer's case studies testify that individuals, inspired by a cause, can combine energy, determination and ingenuity and make their voices heard."—*New York Times Book Review*

In one sense, this book is history. The struggles described in it took place this year, or last year, or a decade ago. But it also hints of things coming. As we see that resources have limits while our appetites seem to have none, the stories in this book look more and more like a prelude to some epic struggle yet to come.

The message here — from people who know — is simple: If the environment is to be kept habitable, we must make it so. No one else will do it.

The editors

You will enjoy reading the chapter from **THE GRASS ROOTS PRIMER** which is reprinted beginning on page 9 in this issue of *The Bulletin*.

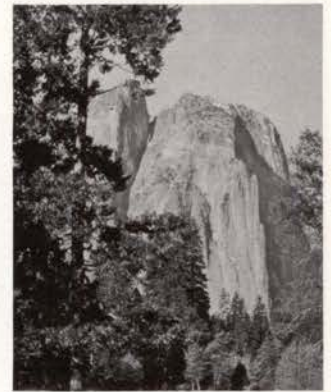


**Get back in your
kitchen, lady, and
let me build my road!**

Sierra Club Books

Sierra Club Bulletin

MAY 1976 / VOLUME 61 / NUMBER 5



Cover: Is such beauty threatened by the activities of park concessioners? A recent congressional report says "yes" and tells why. For details, see John Lemons' "One Concession Too Many," page 21. Photo of Cathedral Rocks, Yosemite National Park, by Galen Rowell.

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Founded in 1892, the Sierra Club works in the United States and other countries to restore the quality of the natural environment and to maintain the integrity of ecosystems. Educating the public to understand and support these objectives is a basic part of the club's program. All are invited to participate in its activities, which include programs to "... study, explore, and enjoy wildlands."

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Voting "Yes" on Proposition 15



Photos by Mary Ann Eriksen

THE CALIFORNIA NUCLEAR SAFEGUARDS INITIATIVE

RONALD DOCTOR, JIM HARDING and JOHN HOLDREN

BY NOW, we are probably all prepared to concede that an old saying about experts applies with special force to experts in the nuclear field: if you laid them all end to end, they'd never reach a conclusion. The fact is that the experts—individuals with appropriate specialized training who have devoted a significant amount of time to aspects of the nuclear issue—do not agree about the answers to many of the important questions. They do not agree, for example, about just how toxic plutonium is, nor about the probability of certain kinds of reactor accidents, nor about how much damage a large accident would do, nor about the adequacy of various proposals for the management of radioactive wastes.

The Nuclear Safeguards Initiative, Proposition 15 on California's June ballot, is the first move in a growing

campaign which responds to these uncertainties. It designs a rational process for reexamining our commitment to nuclear-fission power plants. The Initiative's opponents have played to public fears of blackouts by attempting to portray it as a reactor-shutdown measure. They are wrong. The Initiative does not ask for a vote on whether nuclear power is or can be "safe enough"; nor does it offer a choice for or against nuclear power. It does propose establishing prudent, well-defined standards for the development of nuclear energy in California, and it places this authority with the public's representatives in the state legislature, not in a distant federal bureaucracy that has shown itself over the years to be alarmingly insensitive to the momentous social and ethical consequences of its decisions.

Briefly, the Nuclear Safeguards Ini-

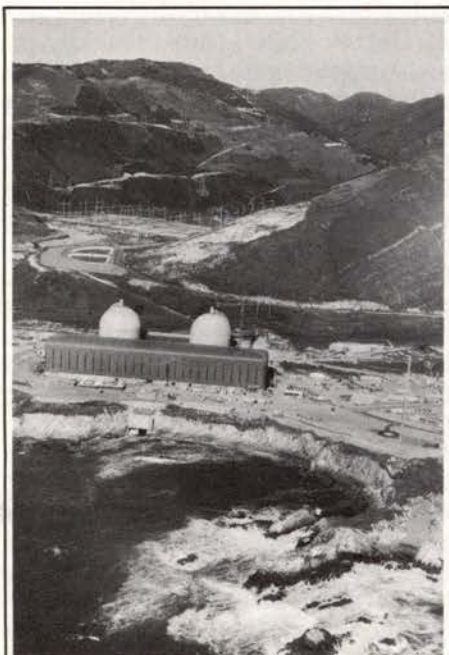
tiative, if passed, would permit utilities to continue operating the three existing reactors in California (Humboldt Bay, Rancho Seco, and San Onofre 1) and to construct additional units on condition that (1) federally imposed liability limits on nuclear-reactor accidents are removed or waived, (2) the effectiveness of reactor safety systems is verified by tests of substantially similar systems and (3) satisfactory means are specified for storing and managing radioactive reactor wastes. The last two conditions do not have to be proved absolutely, but only to the satisfaction of the state legislature, which in its deliberations will balance any remaining uncertainties about the safety of nuclear power against its potential benefits.

Shifting the burden of the decision to the legislature recognizes that the most fundamental issues regarding the

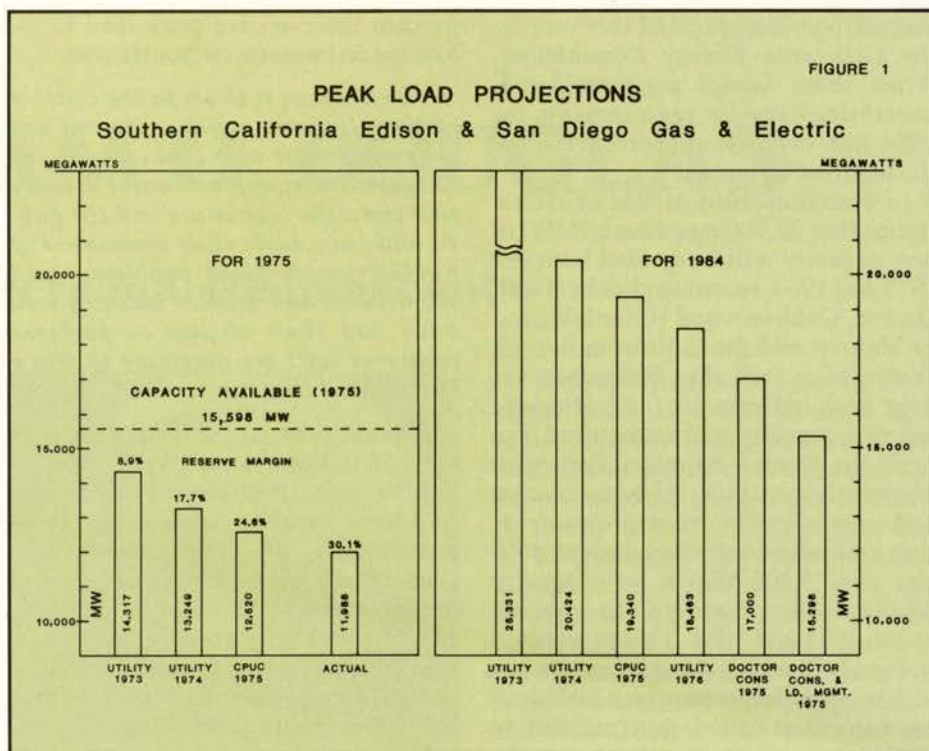
use of nuclear power are not technical, but social, and cannot be resolved by technical expertise alone. What kinds of risks should be accepted in exchange for what kinds of benefits? How much uncertainty of specific kinds does the public care to live with? How does one weigh the high routine impact of some technologies against the small chance of a big disaster associated with others? Do we have the right to seek benefits from nuclear power if those benefits impose high risks on future generations?

Answers to questions of this kind should be sought in a way that embodies the fullest possible participation of the public and that places the major decisions in the hands of those most directly accountable to the public through the political process.

Considering the magnitude and scope of disagreement among scientists over these issues and the non-technical nature of the most fundamental questions regarding nuclear power, we believe a broad public discussion concerning the wisdom of a headlong commitment to nuclear energy is necessary. The Nuclear Safeguards Initiative seems to us the



The Hosgri Fault passes about 2 miles from the Diablo Power Plant site. The fault's significance was not recognized until the Diablo units were 90% completed—the plant is built to withstand a hypothetical quake of magnitude 6.75; the U.S. Geological Survey believes the Hosgri Fault capable of a 7.5 magnitude earthquake.



best available way to provide a forum for such discussion.

Opponents' Rhetoric

What arguments have been put forward against so sensible a proposition? Opponents assert that (1) the increased generating capacity that nuclear plants would provide is essential; (2) the cost of power from alternative sources is excessive; (3) loss of nuclear capacity means loss of jobs; and (4) the existing federal-industrial complex performs its nuclear regulatory functions admirably.

First of all, these assertions are irrelevant because they evade the central question posed by the Initiative: *Who* should decide whether nuclear power is acceptable in a state such as California? They are misleading because they suggest that the Initiative would shut down all nuclear plants and prevent new facilities from being built. This is not true. It could happen only if insurability proves to be impossible or if the nuclear industry is unable to demonstrate to the legislature that (1) radioactive wastes can be safely disposed and (2) effective reactor safety systems can be designed and safely operated. If these conditions cannot be satisfied, then surely human life and health outweigh financial cost and perhaps our dependence on nuclear power should be terminated.

Is Nuclear Power Needed?

Opponents of the Initiative assume that utilities must continue to build power plants to meet an enormous projected demand, as if demand for electricity were as immutable as the rotation of the earth. They very conveniently appear to have ignored the *fact* of energy conservation. In the past, utilities and the California Public Utilities Commission (CPUC) have consistently overestimated both future electrical-energy sales and annual peak demand. This is well illustrated by Figure 1, which shows various "official" projections of peak demands for two of California's major utilities (Southern California Edison and San Diego Gas and Electric, co-owners of the San Onofre nuclear power plant) for the years 1975 and 1984. Even the projection made in mid-1975 by the CPUC for peak demand in that very year was almost five percent too high.

Forecasts made in the past three years for 1984 requirements have steadily decreased year by year. Even so, current utility forecasts are still too high because they do not properly take account of peak-load management and energy-conservation policies that already are in effect. Nor do they properly deal with the demand-reducing effects of higher future prices for electricity and of the mandatory energy-conservation measures

that will be implemented this year by the California Energy Commission. When these factors are considered, generating-capacity requirements for 1984 are twenty-two percent below the utilities' estimates.

In contradiction of the utilities' claims that 22,000 megawatts (MW) of new capacity will be needed between 1975 and 1984, recent studies by Rand, Doctor, Goldstein and Rosenfeld, and by Maurizi and the California Energy Commission staff (See References on page 46.) indicate that significantly less new capacity will be required. For example, Doctor estimates that with vigorously implemented but moderate and cost-effective energy-conservation and peak-load-management policies, only 3,300 MW of new capacity will be needed to serve California between 1975 and 1984. This is reflected in Figure 2, which shows that current utility plans for nonnuclear additions are more than sufficient to meet these moderate growth requirements. In fact, vigorous implementation of conservation actions will allow us to eliminate our "need" for both nuclear power and additional large coal-burn plants and still leave a twenty-two

percent reserve over peak load to allow for unforeseen circumstances.

The message is clear. In the context of these forecasts we do not need nuclear-electric or new coal capacity for California through at least 1984. By that time, the legislature and the public will have made their assessment of nuclear-power-plant problems; and the utilities and nuclear industry will have had their chance to perform whatever tests are necessary to prove their case, if they can.

Beyond 1984, to the turn of the century, it is even more likely that we will be able to displace nuclear and coal-fired capacity with more environmentally favorable alternatives. Continuing energy conservation and implementation of solar-energy systems for heating, cooling and water heating can limit the average annual growth rate of electricity use to about three percent per year, considerably below current industry projections of five to six percent per year.

This reduction can be accomplished by implementing only those conservation policies that make unquestionable economic sense for the consumer:

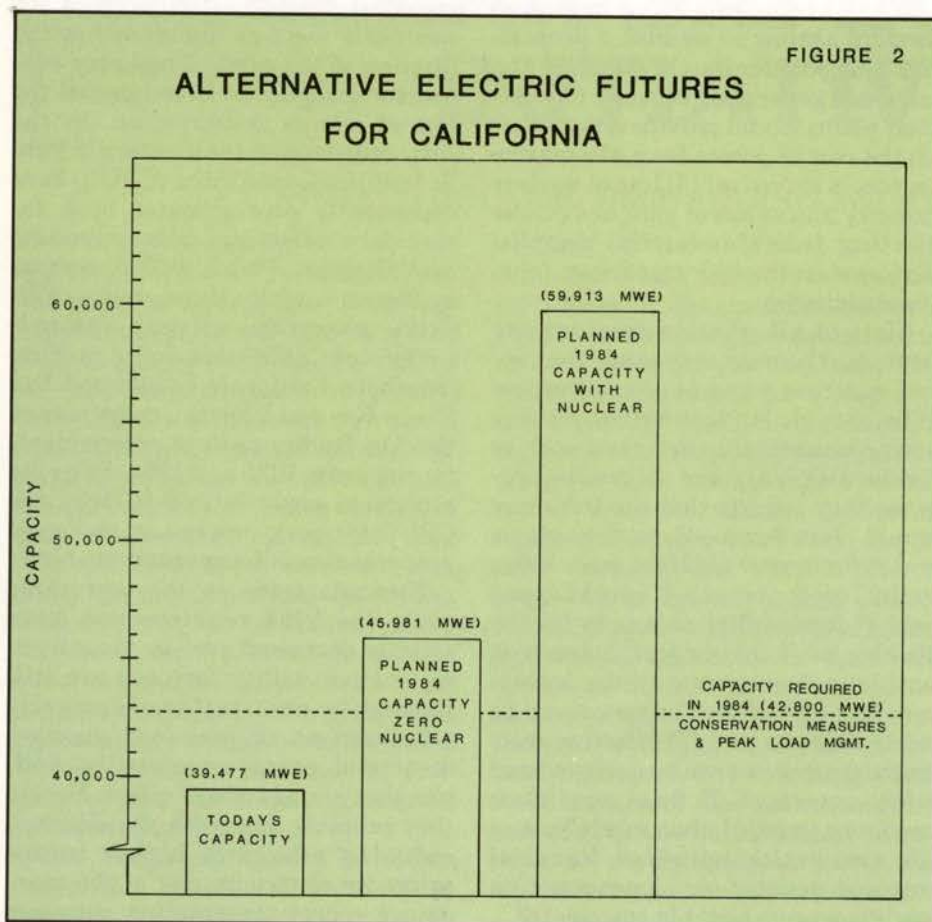
(1) restricting electric resistance heating, (2) improving the efficiency of refrigerators and freezers and other appliances, (3) inhibiting the shift from gas to electric water heating, (4) promoting solar space and water heating, (5) reducing lighting in commercial and residential buildings and (6) improving efficiencies of cooling and ventilating systems. In fact, the California Energy Commission by the end of this year will have adopted mandatory standards for most of these conservation measures for new buildings and appliances. Pending state legislation, combined with further action by the CPUC and the Energy Commission and under impetus from the federal Energy Policy and Conservation Act of 1975, will also extend these standards to existing buildings and industrial consumers.

What does this mean for our nuclear future in California? It means, first, that the fifty to sixty giant nuclear-generating units proposed by the utilities for construction in every corner of California over the next twenty-five years could be eliminated. We would also need less coal-fired capacity than is currently planned by the utilities.

Second, the reduction provides flexibility to choose among different types of electric-generating capacity, instead of forcing us to construct everything that is economically possible. Third, through the year 2000, we would save about \$1,500 for every living citizen of the state by deferring utility capital expenditures of between twenty-five billion and fifty-five billion dollars. This in turn will mean lower electric rates and a lower cost of money in the capital market. Finally, the reduction buys time to develop safer, cleaner forms of energy.

Reliance on utility demand-growth estimates averaging 5.5 percent annually to the year 2000 would lead to a heavy dependence on nuclear power plants, which by the end of the century would supply almost seventy percent of the electricity used in California. Such total dependence is unwise. If a serious flaw were to develop in any nuclear system, the entire economy and well-being of the state would be jeopardized. In contrast to the fourfold increase of electricity generation required by these utility plans, a moderate-growth/conserva-

FIGURE 2



Continued on page 44

WILLIAM O. DOUGLAS

A Personal Reminiscence

WILLIAM O. DOUGLAS is a many-sided man and one difficult to ignore. People have always had strong feelings about him. Some have ranked him among the greatest living Americans; others have termed him a menace. Even the quality of Douglas' work on the Supreme Court has been disputed. One school of thought believes that he has been more innovative, creative and productive than any other justice; another contends that the character of his law is based more on philosophy than on legal principles.

No one, however, can degrade the quantity of work Douglas turned out during his term on the Supreme Court. For many years, either he or Justice Black wrote more of the majority opinions than any of the other justices, and he was just as active in producing minority—even lone—opinions. Douglas also found time, in his leisure, to make numerous speeches and write many books. (He has published more than thirty volumes.) Such prodigious output required his staff to be continuously at his disposal, and for years this staff consisted of only one secretary, one messenger and one law clerk. Douglas demanded total dedication from them. They worked six-day weeks, but were on call at all hours, for Justice Douglas himself never stopped working—he was proud of his capacity to keep going. He did his own thinking, wrote his own opinions and when necessary, conducted his own research.

Considering Douglas' personal commitment, Gary Torre, a former law clerk, said, "It would have been churlish not to give what was asked, and there was always the satisfaction of being involved in the adventure of his great service to America."

I am another of the Douglas admirers. Along with his fertile mind and prodigious capacity for work, Douglas has always been a deeply humane man. His is a spirit that can identify with youth as well as age,



CBS News

with poor or rich, with a person of any creed or color. And he has never lost the ability to grow, or the courage to speak out (often bluntly) on matters he felt strongly about.

His tremendous love of the outdoors and his desire to protect the natural scene, however, have attracted me to him most of all. The concepts and values of wilderness, the threats to it and future planning for it have never been outlined more eloquently than in Douglas' *A Wilderness Bill of Rights*. In advocating a new conservation ethic he wrote:

Wilderness values may not appeal to a majority of modern Americans. But these values constitute a passionate cause for a minority. They are, indeed, basic to our national well-being, and they must be honored by any free society that respects diversity. We are dealing not with transitory matters, but with the very earth itself. We who come this way are merely short-term tenants. Our power in wilderness terms is only the power to destroy, not to create. Those who oppose wilderness values today may have sons and daughters who will honor wilderness values tomorrow. Our responsibility as life tenants is to make certain that there are wilderness values to honor after we have gone.

I first met Justice Douglas in 1959, when he came to the Sierra Club's Clair Tappaan Lodge to address the annual Labor Day convention of the Federation of Western Outdoor Clubs. At this meeting, the fact emerged that he had traveled the world over and explored the mountains of Asia and Europe, but had never been in California's High Sierra. This was soon put right: after the meeting, Dave and Anne Brower, my wife Peggy and I, and Bob Golden, who managed the trip, took the Douglases along the John Muir trail from Donohue Pass south to McGee Creek through five golden early-September days.

The trip was memorable on several scores. Arriving at the campsite the first night, I noted that Bill was not with us. His wife said, "He'll be along sometime, but he's very slow." Being somewhat apprehensive, I went back down the trail and found him far behind the entire party, including the pack stock, plodding his way up the mountainside. He was moving at a snail's pace and his face was peculiarly blue. Not knowing that almost all his ribs had been broken and a lung crushed when he was in his forties, I was concerned and offered to get a horse. He blew up at me: "Go on, don't bother me. I'll get there." And in due course, he did. Once in camp, he recovered quickly. That night, he proved to be a fine campfire companion, having a repertoire of good stories and somewhat bawdy songs. As the days went on, he also proved to be a careful and competent botanist, adding specimens of Sierra florae to his collection with the care of a professional.

We invited Douglas to speak at the Sierra Club's 1961 Wilderness Conference. His introduction of the new Secretary of the Interior, Stewart Udall, at the conference banquet was one of the funniest speeches I have ever heard. He somehow managed to include a review of *Lady Chatterley's*

Lover as a "fictional account of the day-by-day life of an English gamekeeper . . . of considerable interest to outdoor-minded readers, as it contains many passages on pheasant raising, the apprehending of poachers, ways to control vermin, and other chores and duties of the professional gamekeeper." He continued, to the delight of his audience: "Unfortunately, one is obliged to wade through many pages of extraneous material in order to discover and savor these sidelights on the

management of a Midlands shooting estate, and in this reviewer's opinion this book cannot take the place of J. R. Miller's *Practical Gamekeeping*."

At this time he was writing a book for children about John Muir, and he asked our twelve-year-old daughter to act as critic, accepting her observations with great gravity and respect.

In 1961, Douglas was elected to the Board of Directors of the Sierra Club. He was impatient with our lengthy meetings, however, and he became

alarmed that he might be accused of conflict of interest in the cases involving natural resources that he could see coming before the Supreme Court, particularly the Upper Colorado River Project. So he resigned after less than two years.

I think of Justice Douglas with respect, great affection, and profound gratitude. He has meant as much to the cause of wilderness and the natural scene as any of the great men of our time. In my book, he's at the top.

Mr. Justice Douglas' Last Environmental Opinion

JOHN D. HOFFMAN

SHORTLY before retiring from the United States Supreme Court, Justice William O. Douglas issued what proved to be his last environmental opinion. Though only a postscript to his brilliant career, the opinion is remarkable as a final expression of the views which made him a champion not only of conservationists, but of all citizens, against the excessive self-righteousness of governmental bureaucracy.

The case itself (*Northern Indiana Public Service Co. v. Porter County Chapter, Izaak Walton League of America*) was not important by Supreme Court standards. The Atomic Energy Commission had issued a permit to the utility company to construct a nuclear power plant along the south shore of Lake Michigan. The Court of Appeals set aside the permit as being in violation of the AEC's own siting regulations requiring such plants to be a minimum distance from population centers. In a brief opinion, the Supreme Court decided that the lower court should not have rejected the AEC's interpretation of its own regulations, and should not have struck down the permit on that ground.

Justice Douglas did not disagree with the Court's decision, but he used a special concurring opinion to highlight a disturbing aspect of the case which the rest of the Court had chosen, perhaps in understandable haste,

to ignore. After the Court of Appeals decided against the AEC, that agency's successor, the Nuclear Regulatory Commission, simply issued an *ad hoc* amendment to the regulations in question, in an attempt to validate the AEC's permit after the fact. By the proverbial stroke of the bureaucratic pen, the agency sought to undo the results of the lengthy hearings and court proceedings conducted when the former rules applied, and then to obtain the Supreme Court's express sanction for this legerdemain.

Justice Douglas wrote briefly and eloquently in refutation of the NRC's extraordinary request:

A certain danger lurks in the ability of an agency to perfunctorily mold its regulations to conform to its instant needs. In the present case, regulations per-

formed an important function of advising all interested parties of the factors that had to be satisfied before a license could be issued. If those conditions can be changed willy-nilly by the Commission after the hearing and adjudication has been made, the Commission is cut loose from its moorings, and no opponent to the licensing will be able to tender competent evidence bearing on the critical issues. Not just the Commission, but the entire federal bureaucracy is vested with a discretionary power, against the abuse of which the public needs protection. . . . Confinement of discretionary power, however, cannot be obtained where rules can be changed and applied retroactively to effect a controversy. For some years, the agency which was supposed to promote nuclear energy was also charged with the responsibility of protecting the public against its abuse. . . . With the establishment of the Nuclear Regulatory Commission, Congress undertook to rectify this weakness in the control system by separating the promotion function from the function of safeguarding the public. But the power to change the rules after the contest has been concluded would once more put the promotion of nuclear energy ahead of the public's safety.

The ultimate danger of a governmental bureaucracy that routinely fashions its own rules to suit the desired outcome lies in the frustration, the exhaustion and eventually the desperation it produces in the citizens it nominally serves. Above the myriad rules and regulations, such as those before the Supreme Court in the *Northern Indiana* case, stands the rule of law, which buffers the citizenry and the republic against these dangers. In his final environmental opinion, the justice who served longest of all on the Supreme Court admonished us one last time not to lose sight of this basic truth.



Tim Thompson

Justice Douglas was the recipient of the club's John Muir Award in 1975. At its most recent meeting, the club's Board of Directors voted Douglas Honorary Vice President.

John D. Hoffman is executive director of the Sierra Club Legal Defense Fund.

From *The Grass Roots Primer*, edited by James Robertson and John Lewallen. Sierra Club Books, San Francisco, 1975.

Putting Some Shine on the Apple

TO LOVERS of wilderness, New York City is an unholy place. A patchwork raft of telephone cables, sewers, subway tunnels, and concrete towers, permanently anchored in a polluted body of water and occupied by eight million people who want to do whatever you want to do at precisely the same moment. The city's problems often seem as dense as its population—all interconnected, often manifesting themselves in such numbers that the place seems unmanageable, and unnatural—somehow unreal. It is odd, this reluctance to assign the modifier "natural" to the works of man as though he were capable only of unnatural acts. Fortunately for New York City, and probably for the rest of us as well, there are numbers of resident environmentalists who fervently believe that "natural" or not, New York is worth saving—or at least that it is necessary to try.

It isn't easy. Aside from its bewildering array of problems, the political machinery of the place is formidable. Each of the five boroughs has its own administration over which is superimposed the municipal government. In addition, there are networks of metropolitan authorities and commissions with overlapping jurisdictions and sometimes conflicting objectives. Beyond all of that, there are state and federal regulatory agencies operating in the same territory. Taken as a whole, it is impenetrable. As the following sampler of New York stories will demonstrate, the only manageable way to approach environmental problems in that city is to start somewhere—anywhere—with one problem. That's what Marcy Benstock did.

Soot on My Windowsill

Marcy Benstock sits at her desk in a midtown office building, holds a huge yellow and red Chock-Full-O-Nuts paper coffee cup with both hands and

peers through the steam. She speaks softly and chooses her words carefully, pausing often to consider, but seldom backtracking. An academic background—a private college degree in English lit. and New School M.A. in economics—is not hard to guess at. But it is only after a time that one becomes aware of the glint of residual anger that must accumulate in anyone who takes on the power structure of a big city. Marcy Benstock is a professional environmentalist. She is good at it. That does not mean she is 100 percent effective. Victories in New York City are always tentative.

Marcy talks about how it is difficult for her to limit her activities in the NYC Clean Air Campaign, of which she is director, to identifying and dealing with the sources of air pollution in Manhattan. Though the grant under which she operates charges her with that task, she has found that the problems of clean air in any urban setting are inextricably linked with other problems, particularly those of energy and transportation. She must do two or three jobs at once. There is little relief. One gets the impression it is not exactly what a girl from Buffalo dreams of as life in the big city.

"I became an environmentalist only this winter" she says gently. "Before that I wanted to attack specific things, like the soot on my windowsill."

Near the end of 1969, Marcy Benstock left a New York City job and went to Washington to work at Ralph Nader's Center for the Study of Responsive Law. While she was there, she kept her apartment on the upper West Side and when her work permitted (which wasn't often) she'd come back for a day or two. She spent all her time off vacuuming the soot out of her digs. "It was awful," she says.

About the same time she decided to return to Manhattan and do something about the soot in her apartment. John Lindsay signed into law a mu-

nicipal air pollution control code for New York City that he described as "the toughest and most comprehensive in the nation." One of its principal features was intended to encourage citizen participation in pollution control for the first time. It provided that if the city's Department of Air Resources did not act on a legitimate citizen's complaint within 45 days, the citizen himself could initiate action that would be prosecuted in something called the Environmental Control Board, specially installed in order to bypass New York's clogged judicial system. And best of all, citizens who filed action against a polluter were to receive 50 percent of any fines collected. Not a bad scheme.

In January 1972, Marcy Benstock opened a tiny office above the Olympic Theater on upper Broadway. She had convinced the Fund for the City of New York to give her money to do something about the direct sources of air pollution in her neighborhood, on the upper West Side, between 72nd and 110th streets from Central Park to the Hudson—200 city blocks. What her Upper West Side Air Pollution Campaign provided was a mechanism for putting New Yorkers outraged by dirty air into action in compliance with their new pollution control ordinance. What she did was to make heroes out of apartment building superintendents. Or some of them, anyway.

Super Heroes

The upper West Side is a district of large apartment buildings. Each one has a superintendent whose duties are the maintenance of building services—including heat and sometimes incineration. Rather than tracking down landlords, Benstock's volunteers poked around basements looking for incinerators and heating equipment which used heavy residual no. 6 oil as

fuel, already identified as a principal source of sulfur dioxide and particulate matter. According to the city's ordinances, these burners were to have been upgraded by landlords, and licensed, and their operators were supposed to take a city-sponsored course in proper operation and maintenance of the equipment, steps that would reduce pollution from that source by as much as 50 percent. In many cases, neither the modification nor the training had taken place.

Volunteers were organized block by block. If a super had taken the city course, or signed up to do so, a great fuss was made and his name went on the Super Honor Roll with appropriate publicity. If the landlord had not complied with the law requiring upgrading, volunteers filed a citizen's complaint with the Air Resources Department. Campaign organizers awarded prizes to the volunteers who signed up the most supers. By April of that year (1972) 103 of the 200 blocks in the district had been organized, 70 supers had been enrolled to take the city course, and more than 100 formal complaints were filed with the Air Resources Board.

By the end of 1972, the campaign had been expanded to a city-wide effort, the name changed to the Clean Air Campaign of NYC Inc., and Marcy Benstock got herself a paid assistant. Her job was to organize neighborhood campaigns like the one on the upper West Side all over Manhattan. By all accounts, Marcy Benstock's efforts were successful. What doesn't show on the record is that Marcy Benstock and her supporters had not only to take on the enforcement of the city's ordinance in the first place, they also had to cope with enormous red tape and sloth in dealing with city agencies. Though the city had promised neighborhood instruction in boiler operation as soon as 25 supers signed up, it was fifteen weeks (and over 70 additional names) before the city came through with a neighborhood precinct house to give the course in. And only then after Marcy Benstock placed 89 telephone calls chasing the matter from one civil servant to another. When it came time for citizens to take advantage of the famous "you enforce it if we don't" provision in the new ordinance, harassed officials found there were no forms on which citizens could file their complaints. Another 15 week delay.

Now, though Marcy Benstock still works at the neighborhood level on a city-wide basis (to the extent possible with limited help), her optimism is tempered. She knows too well that decisions made in Albany and in air-conditioned limousines and Manhattan penthouses about the management of real estate fortunes and large corporations have much more to do with the environmental ills of New York City than does José Salgado's boiler at 666 West End Avenue. She also knows it is impossible to tug at one environmental ailment without raising a tangle that includes them all.

Grass in the Cracks

What gives Marcy Benstock the gumption she needs to persevere despite incredible odds may be the energy she encounters down on the street. New Yorkers are anything but trodden masses. Present them with any threat, and they'll snap into action like folks possessed. It seems as though at least one response to a hostile environment is some indomitable instinct for survival. In New York it shows up everywhere, like grass in sidewalk cracks, and is just as resilient. If that city is to be in any way saved as a habitat for humankind, it must be thanks to this dogged will to persist.

Its aggregate form is the Block Association—looking something like a vigilante group (defense posture), town meeting (working posture), and grange picnic (at rest), these small groups are fraught with political portent far beyond their size. They function as the guardians of a way of life, are used to flog New York's sagging bureaucracy into something resembling attention to local problems, and are social organisms which seem to be the focus for positive energy, something that can be regarded as a luxury in most cities. This last, the matter of constructive enjoyment, should not be underrated. It is probably the fact that neighborhood folks gather periodically to enjoy themselves that makes them a consistently effective political force. The tie that binds may be not so much a pang of fear as an embrace. Some sense of sharing good as well as bad seems to have given the most active of these neighborhood groups a tribe-like sense of kinship.

Neighborhood is not a particularly apt word to describe a block association's zone of influence, since it is

usually rather smaller than what is commonly thought of as a neighborhood. Actually the boundaries vary, ranging from both sides of a street in a single block between two cross streets to several times that, often defined by major arteries or other landmarks. Though these groups tend to be somewhat insular, they readily combine forces, particularly when responding to some generalized threat. Normally such alliances are temporary, and confined to district or neighborhood issues. There is little evidence that block associations are effective in dealing with city-wide affairs, which is probably more an omen for city hall than an indictment of the block associations.

The block association, as practiced in New York, is one of that city's most encouraging features, and may well be the only political device that can ultimately save it from environmental exhaustion—since it seems to be one of the few political formations that works on a day-to-day and issue-to-issue basis. There is a lesson here for other cities. It may be that the environmental health of any urban center depends to a large degree on the political effectiveness of its smallest subunits. It's getting things down to a manageable size, tinkering with the very specific problems of too much dog poo and not enough street greenery, and taking matters into one's own hands that has made these little enclaves seem so much like home. They are working. And in New York City, anything that works is worth looking at. Hard.

Chauvinism by the Block

Joan McClure lives on Bethune Street in New York's West Village. She is the president of the Bank/Bethune Block Association. She is also its founder. Ms. McClure used to work for *Vogue* magazine's fashion department. She is also one of New York City's most outspoken advocates, and one of its most relentless critics. The two go hand in hand. Here is her story of how her block association came to be, and how it works. It's all changing now, but that's the nature of such things.

"If you really respect people, you know that no two are alike. It's the same with block associations—and that's their virtue. Ours started as a means for neighborhood government. I'm very excited about that idea and

went to England to study it there. I got a lot of old-timer people together first, here at my house. It grew to include first Bank Street, then Westbeth (a nearby artists' cooperative housing project), and then it reached its natural boundaries of the two streets (Bethune and Bank) between Hudson Street and the river. Funny, it's chauvinism by the block. The other end (across Hudson) calls itself the Upper Bank Street Block Association.

"We made a big mistake. We should have gotten better organized. You must take the trouble to search out leadership. We said, 'We're going to learn from our mistakes. We'll have committees for 6 months only as a try-out.' We wasted a lot of time over a constitution, bylaws, and Robert's Rules, which can prevent people from saying what they want, except for the smart-asses who call for point of order. You have to know your neighbors and pull them out to participate.

"Side issues can divide a block association. We have all sorts of people on all political sides interested in all sorts of things: prison conditions, the women's movement—you name it. We decided that we would concern ourselves only with things that apply directly to our area. We had no shortage of those issues: street crime, trees, recycling, traffic, dog behavior, the West Side Highway, locks, street lighting, broken sidewalks. Just getting the Sixth Precinct police to do what they are hired for is a big job."

On the following pages you will find a collection of photographs and stories that show how block associations work in New York's West Village, and the kinds of things they do. Leila Mustachi, who is a Bank Street resident and New York City advocate who takes a back seat to no one, has served as our reporter. Except for editing required by limited space, the words are hers or those of other residents she interviewed. We are deeply grateful to Ms. Mustachi for her help, and to her West Village neighbors for their cooperation.



THE JANE STREET COMMUNITY GARDEN

Her name is Ms. Phyllis Katz. She lives on Jane Street and is the co-chairperson of the Jane Street Block Association which made this garden on a vacant lot, with the owner's permission. You asked me to ask her who owns the lot and how long they can use it. She didn't want to say too much about this but hopes that soon they will be able to use it permanently. Everyone is welcome to use the garden. Just come right in whenever the gate is open. She says: "We have given away about 70 keys to the gate. We gave them away free, but now we charge 50 cents. That's how much it costs us to make them. Forty or fifty people worked on the garden at various times. A lot of thoughtful people had something to do with it."

The first thing she showed me was a book made by 22 fifth and sixth graders who visited the garden with their teachers. Ms. Katz showed them around. The garden is organized around an herb garden in the center. She showed them how to smell the mint, spearmint, sage, chamomile, strawberries, and other fragrances. (These are city kids, remember!) The children were especially enchanted by the Halloween witch scarecrow.

I asked her about the sculpture. She said that some anonymous donor had left two of them outside the fence. "In the Village, you can always be a scavenger because people throw out extraordinary things. This sculpture of a woman is my favorite. She has no face, but she's still so beautiful. We fished her out of a garbage can and put her there near the wall. We call her Gladys."



NOTICE

This garden was built by the contributions and love of the residents of the entire West Village. It was a meeting place, an open green environment, a sense of wonder for children and, most of all, expressed the community's ability to create something of beauty out of what was once rubble. We all enjoyed many hours in planting, watching it grow and the appreciation of everyone who passed.

The new owners promised the Jane Street Block Association that they would give us 24 hours prior notice in order to evacuate our plants. On Monday, May 17 at 1:30 p.m., they sent in a workman, locked the garden and viciously destroyed the plants and flowers despite our pleas to take them out. Only after the interception of the 6th Precinct were two members allowed in to save what was left.

The Jane Street Block Association has offered to purchase the property from the owners in order to maintain it as a garden for the entire community. Thus far they have refused.

We have opposed the pending building on the basis of its "appropriateness" in an historic Landmark district and we have expressed our concern about what the one-room studio apartments above and the commercial space on the main floor will do to the character of the neighborhood and the quality of life in the West Village in general.

At all times we have tried to express our concern with dignity. We wish to maintain this position. Although you undoubtedly share our grief at the loss of the garden and the savage way it was destroyed, we ask that no threats or invectives be posted on the garden fence. They are not our tactics.

[Editor's Note: There is a sad postscript to this story. As this book is being readied for the printer, we have received word from Leila Mustachi that the owners of the lot have destroyed the garden. Apparently the destruction came without warning (though gardeners had been promised a chance to remove plants) after months of maneuvering by the owners for a commercial development opposed by residents. In a statement to the press, Gregory Aurre Jr., one of two owners, justified his action by claiming that residents had used unethical tactics in dealing with the Landmarks Preservation Commission, whose approval is required for any new building in the Greenwich Village Historic District. The same day, notices like the one reproduced here were posted on the garden fence by the Jane Street Association.]



THE VILLAGE WHISTLERS

I hope you will find room for this story in the book because it is one about conserving *people*—a non-violent way of dealing with street crime. The Bank/Bethune Block Association whistle story has made TV and newspapers all over the country. Here it is from Joan McClure:

"In 1971 we had a situation here where people, especially old people, were afraid to go out at night. There had been two murders within two months right in this neighborhood. We put up flyers on Bank and Bethune Streets calling for a 10-minute emergency meeting right out on the street. We didn't say what it was about, and people came out of curiosity. I told them about the murders, the robberies, and rapes that had been going on and said, 'But we can do something about it!' Then I showed them the whistle and blew it. It was very dramatic. We worked out procedures for what to do in case of trouble, educated the neighbors and now it's working."

[Editor's Note: The procedure is simple. On hearing any calls for help, neighbors are to first telephone Sixth Precinct Station or the emergency police number, give the location, and then run to the street or nearest window and blow like hell. The din, apparently, is frightening.]

"We've never had a false alarm, though once a rookie cop answered the call, saw all those people in nightclothes on the street blowing whistles, and thought it was a riot. Within minutes, we had everything the police have on wheels down here.

"One very important point: When a suspect is apprehended in the neighborhood, our block association always pays the cab fare for witnesses to go to the arraignment. If you are not there when the suspect is booked and are not in court to testify, a criminal could be back on the street right away."

THE VILLAGE RECYCLING CENTER

This story comes from Lyda McKenzie who started the Center. "One night I got up at our Bank/Bethune Block Association meeting and said, 'I'd like to start a recycling center but I can't do it alone. Would anyone like to help?' I was put in touch with Allinson Tupper. We did a little research with help from the Environmental Action Coalition. We put up notices on Bank, Bethune, Jane, Horatio and West 12th Streets asking for volunteers, and on May 1, 1971 we had our first recycling day. We've been doing it ever since. Now two other block associations have joined us."

"We have depots around the neighborhood. Every second Saturday we rent a truck and pick up at all of them. Some people bring their stuff directly to our collection site at Jane and Washington Streets. We take the glass to a manufacturer in New Jersey (1c a pound), the aluminum to Reynolds in Brooklyn (10c a pound) and the tin cans to the Environmental Action Coalition (½c a pound). The city sanitation people take the paper to a dealer for us.

"We've already bought 49 trees for the neighborhood with the proceeds. We donated \$75 for planting that triangle at Horatio Street, and we're giving them another \$25 for rose bushes. We contributed to the Jane Street Garden too. We donated \$75 towards guards for street trees and we give money to all the Block Associations who participate. We are completely nonprofit. All our money goes back to beautification of the neighborhood."

BLOCK PARTIES: GETTING THE PEOPLE TOGETHER

I love block parties. In the spring and fall there is at least one, and sometimes three or four, going on every Saturday. We inform the Department of Sanitation, get the "no parking" signs put up, get the street closed off, washed down and then get it set up. Ours is held the first Satur-





day in May. We have banners, balloons, and flowers all over. There are tables selling all kinds of food, domestic and ethnic (we have a very varied population), secondhand stuff, arts and crafts (the local painters, potters, weavers and other craftspeople sell their stuff and give 10 percent of their money to the block association), used clothing, and much more. Ecology groups set up their information

tables as do people representing every other cause. We have more causes in Greenwich Village than anyone could count. Maybe it's the Cause Capital of the World. There are all sorts of booths for children—face painting, knock-over-the-bottles, shave-a-balloon, fortune-telling, etc.—also music, dancing, and entertainment. We've had belly dancers, Scottish bagpipers in full regalia, English morris

dancers, dancers from India complete with toe bells, and square dancing, all on one block on one day. We're very eclectic! Of course we sell plants and window boxes to beautify the street. We make about \$1000 each time and use the money to buy trees for our streets. We lean on the city to make them match us tree for tree, but we do all the measuring for the best planting sites ourselves. All the City has to do is put them in.

Usually the Off-Center Theater performs too, from the back of a truck. They put a big old rug down right in the middle of the pavement so all the kids (big and little) can sit down. Once they did a wild, ragbaggy version of *Little Red Riding Hood* wherein the wolf tried to seduce Red into giving up her police whistle so she couldn't summon the woodsman (dressed in a Boy Scout outfit). One ploy he used was to offer her a huge cone "with no added preservatives." She asked the children if she should make the deal and we all screamed "No! No!" Granny was an old dear swigging "heart medicine" from a Vat 69 jug. At the end, the wolf came out and made a speech about how wolves are really good animals, misunderstood and unjustly persecuted and creatures to be cherished. I wish I could remember it all—it was such fun! Then they'd pass the hat.

THE JANE WEST HOTEL

I want to make a pitch for putting this story in the book because one of the charges levelled against environmentalists is that they care more about trees, animals, and landmark buildings than they do about people.

I got this story from Jo Ann Fluke. She is secretary of the Jane Street Block Association and chairperson of the Jane West Hotel Committee.

"The Jane West Hotel is all single-room occupancy—men only. About three-quarters of them are on welfare and the rest are old seamen and people on social security. It used to be a nightmare.

"The reaction of the people on Jane Street was, understandably, fear. There was constant panhandling, derelicts passing out in doorways, garbage can rummaging—all kinds of stuff. One of the main reasons the Jane Street Block Association was formed was to deal with this problem.

"At first everyone was in favor of organizing all the neighbors to march down to the hotel and demand that it be shut down. Then Ann Shrank had the idea that we could do something positive instead. St. Vincent's Hospital had a part-time case worker in the hotel. Through her we finally got a doctor and nurse from the Visiting Nurse Service, who came on a regular basis. Then we approached the



City and demanded that they put a resident case worker in there. If they didn't, we would take action! It was a threat that worked. The Department of Social Services gave us someone who was there four days a week and he was just wonderful.

"The block association collected clothes for the men because welfare and social security barely cover rent and food. The men decided to pay for the clothing and they do—a nominal amount.

"We had other meetings with other city agencies. The Department of Parks, for instance, sent someone to teach crafts. At one of the block parties, the men got themselves together, set up a table, and sold their craft items. The fear in the neighborhood started to diminish. Now if people see a drunk zonked out, they know how to help. The men don't need to panhandle.

"This year we had our Fifth Annual Christmas Party at the hotel. All the food was donated by the local stores and the neighbors. We had decorations and entertainment.

"The men want to be more active and more a part of the street. They've been very helpful at the Jane Street Garden. They want to attend block association meetings. They are coming to us now. People have so much to give. It's amazing the resources you have."

ONE OF THE WORLD'S GREATEST RUINS

Sometime during December of 1973, a section of New York City's elevated West Side Highway, built in the 1930's and long neglected, collapsed near West 12th Street, depositing two vehicles on the street below. Facts surrounding the incident are vague. There are several versions, the most bizarre of which has it that the two vehicles were city public work trucks loaded with blacktop sent aloft to do another cosmetic patch job on the road

surface. However vague the cause, the response of city officials was quick and decisive—most of the highway was immediately closed to all traffic. The southern section, between 46th Street and the Battery is still closed.

There was an immediate public uproar, particularly from residents living on the West Side in the vicinity of the closed portion of the road, who feared that traffic diverted from the tottering highway would glut the streets. Simultaneously, there began a city-wide controversy, which rages unabated, over what to do about the problem. In the months since the collapse, virtually everyone who is anyone in New York City has gotten into the act—studies have been made, reports have been written, preliminary road plans have been proposed, violent opposition has been mounted. Already the business has taken on epic proportions. No less than five major proposals for re-working the West Side's major north-south artery have been proposed. Each has its own set of proponents, each attracts an equally vocal array of detractors. Two of the proposals are for interstate highways—both of them schemes that would funnel hundreds of millions of dollars of federal money into the project—a glittering prospect considering the City's impoverished condition and its present level of unemployment. Powerful downtown groups such as the Chamber of Commerce, the Downtown-Lower Manhattan Association, business and building trades are solidly in favor of these plans—by far the most radical of the lot. One of them, referred to as the Outboard version, calls for as many as twelve lanes, including access roads, massive fill along the Hudson River and the creation of new real estate. Residents on the West Side are opposed. This response from a local newspaper, *The Villager*, is explicit:

Although planners have dangled the plum of parkland as a possible use for the landfill, battle-scarred Villagers who have been through similar wars before see the landfill as a real estate deal that will affect the zoning of Greenwich Village and Chelsea and make our low rise buildings financially unfeasible. Some proponents of the interstate admit to envisioning a wall of high rise office space and apartments along the Hudson River, and call it progress. These are people who see "growth as the end-all of economic activity," according to Wade Greene writing in the *New York Times Sunday Magazine*. The impact of think-

ing by environmentalists has tended to alter such theorizing across a broad front so that some American cities are attempting to reclaim existing slum areas and clean up and improve existing mass transit facilities.

When confronted with the specter of massive doses of air pollution from such a monster highway, planners' response has been to propose sealing off bordering buildings and venting them with filtered air.

Environmental groups, though unable to agree on an alternative, are uniformly opposed to both interstate proposals. Activists representing these groups, among them Marcy Benstock, are trying to use the controversy as a way of focusing attention on the city's rattletrap subway and surface transit systems, claiming that any highway expansion will make current traffic and air and noise pollution problems even worse and that pumping half a billion dollars into the city to further complicate its already serious problems is sheer madness. Federal Interstate funds *may* be used instead for mass transit projects, though the amount of money available for that use is somewhat less.

Heard from a distance, the hue and cry from Manhattan Island takes on a melancholy timbre that is at once desperate and somehow madcap. With its own life-support systems functioning hit or miss, and an uncertain future hanging over all petroleum-hungry cities, huge road-building schemes, fantastic even in the best of times, have surfaced and are supported with an eerie logic that mesmerizes. Snakes in a basket.

Strangely enough, the huge traffic jams anticipated on West Side streets after the close of the highway never materialized. The traffic that used to course the length of the city on the West Side Highway has simply melted away. No one is quite sure how, though environmental advocates would dearly like to know. Local traffic counts in the West Village have shown some increase in truck traffic, but trucks were never permitted on the West Side Highway in the first place; so that increase must be due to other factors.

Which brings us to a darkhorse highway proposal. In September 1974, *The New Yorker* ran a piece which issued a clarion call for sanity. In it, the writer proposes that the highway be left alone. Just that. The idea may

lie too close to the heart of the problem to be explorable. As far as we are able to determine, it has attracted little serious attention. Perhaps coming from a layman (and a writer at that!), it doesn't stand a chance in a field dominated by politicians, engineers, and other experts. But because the proposal makes a kind of quiet

good sense amid the clamor of great sounds and alarms, and because it is eloquently stated, we reprint it here. We have another reason. We suspect that it may have much meaning for those of us who live in other cities. There is something ominously archetypal about New York City's problems. As Manhattan goes . . .

"Highway" from "The Talk of the Town" in *The New Yorker*.
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LAST DECEMBER, when that section of the West Side Highway collapsed, a miraculous transformation occurred. The highway was closed to automobile traffic between Forty-sixth Street and the Battery. Overnight, a bumpy, dilapidated, inadequate highway, a highway that had degraded the waterfront of the lower West Side with noise and poisonous gases, became the broadest, most magnificent, most beautiful elevated bikeway in the world. We've ridden our bicycle on it regularly ever since. We've ridden on Sundays, when the highway is a promenade for the self-propelled, both on wheels and on foot. Once, we rode at midnight, and a rogue car, its headlights doused, careened at us down the wrong side of the road and scared us out of our wits. Last week, the sun came out after four days of monsoon-like rains, and we went for another ride.

We'll get to the ride in a minute. First, a proposal. All five plans of the West Side Highway Project, ranging from a simple repair job to the grandiose one-and-a-half-billion-dollar scheme for an Interstate Highway, share that ever-receding goal of modern transportation alchemy known as "easing the traffic flow." Our proposal is simple. Forget about "solutions," and leave the highway exactly as it is. The traffic has been "flowing"—not altogether smoothly, perhaps, but without undue suffering—on West Street, under the highway. And as a ruin—as a crumbling monument to the age of automotive optimism—the highway has a dignity and a beauty it utterly lacked when it was a mere conveyance for cars.

We got on the highway at Twenty-third Street, and immediately entered a region of stillness and peace. Without cars, the highway is not in constant vibration, and riding on it is like skimming over the city in a bubble of

silence. The sounds of horns and trucks can still be heard, of course, but on that empty, bleached highway we felt detached from them. We rode up to Forty-sixth Street—where, appropriately, the crumpled, wheelless wreck of a Buick marks the spot where downtown car traffic must exit—and then down to the Battery.

We stopped here and there to examine details. The metalwork of the highway's railing, its gray paint now flaking away, creates a frieze dotted with municipal seals. Each crosstown street is marked by a metal bas-relief along the railing. The basic motif is gears: gears within gears, sun rays shooting out from gears, gears with powerful wings, eagles surmounting gears, helmets crowning gears, and, right in the middle of each relief, a universal joint. Between Twenty-seventh and Fourteenth Streets, the road surface is of cobblestones instead of asphalt, and there are fine Art Deco lampposts in the middle. Elsewhere, the lampposts are of the modern, arching, mercury-vapor variety. They look hideous at the moment, but in fifty years, when the ghastly vision of the future their designers were trying to express is only a historical curiosity, they, too, will be beautiful.

The highway is now a good spot for automotive archeology and urban botany. In every cranny are little pieces of hubcap, shards of headlight and taillight, and scraps of chrome trim. We found a perfectly preserved inch-high chrome "R," probably from an ancient Rambler. Along the edges of the road, where grit has accumulated in the metal gratings, and in the middle dividing strip, where the concrete has started to crumble into something like soil, plant life is flourishing. We noticed a dozen varieties of weeds and wild flowers, and some plants were four feet tall. In the stretches of cobblestone, the vegetation has begun to

creep into the roadway itself.

During our ride, we saw about a dozen cyclists, mostly of the ten-speed backpacker type. We chatted with a gray-bearded painter and a handsome woman, who were out for a stroll together, and who told us that their favorite time for walking on the highway is in the winter, just after a fresh fall of snow. We talked with Eric Romanelli, who has short brown hair and a trim beard, and was wearing a tiny gold ring in his left earlobe. He had on purple jeans, a white tank top, Argyle socks, and a pair of over-the-ankle roller skates with rubber stoppers on the toes. He told us he prefers to skate south, because it's slightly downhill and the wind is at his back. We talked with a couple of transit cops in a battered police station wagon—the only motor vehicle we saw on the highway—who said that, as far as they knew, there is no crime on the highway.

And we saw the sights. To our right, as we rode downtown, was the Hudson, with, successively, the cruise ship *Raffaello*, the liner *France*, and the ruined piers of the Erie-Lackawanna and Lehigh Valley railroads. To our left was the city: the midtown skyline in the background, and, in the foreground, the huge, shuttered brick warehouses of the late Industrial Revolution. The pall that the West Side Highway casts over West Street has kept much of it as it was two generations ago. In the Gansevoort wholesale meat district, we peered down at trucks backed up to covered sidewalks, animal carcasses hanging from hooks, and a topless bar that opens at eleven in the morning, just as the men are knocking off work. We saw a half-dozen true diners—that is, diners that make a serious effort to resemble railroad cars—and one or two of them were still in business. We saw fine, brawling old waterfront lodging houses, such as the *Christopher Hotel*.

Downtown, as we came out behind Pier 25, we suddenly saw the Statue of Liberty, surprisingly large and surprisingly close. A little farther down, the north tower of the World Trade Center rose some thirty yards from the edge of the road. As we coasted down the ramp to Rector Street, we thought gratefully of the decades of neglect that have brought the highway to its present happy pass. With such a ruin, New York is truly a civilized city.

Why a Biographer Looks to Muir

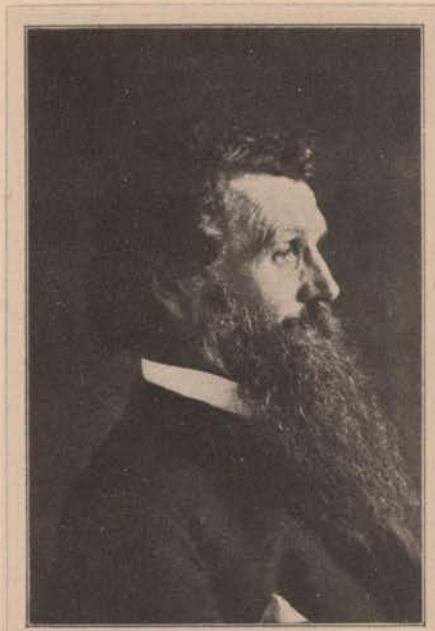
The following article is taken from *John Muir's America*, by DeWitt Jones and T. H. Watkins, American West Publishing Company, Menlo Park, California, 1976.

T. H. WATKINS

THE WRITER approaches John Muir's life with caution. There is, above all, the problem of infatuation. As Catherine Drinker Bowen has pointed out, the biographer's relationship to his subject should parallel that of a successful marriage, beginning with some touchstone of passion and moving from that to commitment, shared experience, acceptance and finally to that quality of understanding which can sometimes be called wisdom. But, even as in marriage, the biographical relationship too often founders on the rock of the passion that began it, never moving out of that "first, fine, careless rapture" into the realm of insight. When that happens, the result is less biography than eulogy and is generally useless to the larger purpose of the craft: like its cousin, history, biography is one of the tools necessary to the maintenance of a civilization (which is nothing more or less than the sum of those who have gone before), and its purpose is to distill the essence of another man's life and time in such a way that we illuminate some part of ourselves and our own time.

The life of John Muir simply compounds the difficulty, for there have been fewer more *appealing* lives in the American chronicle. One searches among the evidence of his existence a little impatiently, looking for warts large enough to roughen all those smooth edges. The warts are there—but, Lord, how small they appear! Did he abandon his wife and children for extensive sojourns into the wilderness and for long stretches of writing? Yes, but most often at their encouragement, even their insistence. Was he no stranger to whiskey and wine? Yes, but if anyone ever saw him cross the line from conviviality to drunkenness, it has not been recorded. Was he quite as lusty as any healthy Scotsman? Indisputably, but the rumors that surrounded him in his lifetime, particularly when he took on all the machinery of progress in his later years, were never proved any more substantial than swamp fog, and were quite as malodorous. Did he

nurse bitterness over the treatment his father gave him as a child? Yes, but few men have had better reason for bitterness—and, what is more, Muir conquered it near the end of his father's life in an exercise in compassion and understanding that would have been beyond the psychic strength of smaller men. Was he tight with a dollar? Yes, but only during his infre-



John Muir

quent business dealings, and then well within the rules of the game; beyond providing for his family's needs (and in his lexicon "family" had a way of including every relative by blood marriage who lay within reach of his hand), he had no pronounced interest in money. Did he make enemies? Yes—chief among them Gifford Pinchot, Chief Forester of the United States and an earnest proponent of utili-

tarian conservation, and James D. Phelan, once mayor of San Francisco and one of the principal advocates for the destruction of the Hetch-Hetchy Valley—but a man who gets through life without enemies can scarcely be said to have lived at all, for he will have believed nothing strongly.

There is precious little grist for the debunker's mill in the life of this man, and that fact has helped to make it virtually impossible for his memorialists to fully escape the obscuring glow of first love. That glow so completely seduced Muir's first biographer, William Frederic Badé, that his two-volume *Life and Letters* (1924) is almost embarrassing in its lack of any critical sense. The same glow haunted Linnie Marsh Wolfe, his last and best major biographer, throughout her *Son of the Wilderness* (1945), and while she struggled valiantly to get out of its range long enough to present a genuinely human portrait, the attempt was not fully successful.

What the biographer is left with, then, is a determination to cut through the mist of admiration and affection enough to get as close as possible to the heart of what this man's life can teach us of hope and understanding in a time that too frequently appears to be spinning out of control. "In wildness is the preservation of the world," Henry David Thoreau wrote, and refined that statement by declaring that "A town is saved, not so much by the righteous men in it than by the woods and swamps that surround it." Substitute "civilization" for "town" and add prairies and grasslands and forests and deserts and canyons and rivers and mountains to woods and swamps, and we come near to the vision which defined the life of John Muir. Thoreau perceived the value of wilderness; Muir not only perceived it but *experienced* it as no man before or since ever has.

Consider, for a moment, the sheer number of wild places which Muir came to know as other men know well-loved rooms: most of the unsettled portions of



the Wisconsin River valley and much of southeastern Canada; the mountains, woods, and swamps of Kentucky, Tennessee, South Carolina, Georgia, and Florida; the mountains of Cuba and the jungles of Panama; almost everything there was to know in California, from the Anza-Borrego Desert of the south to the redwood forests of the northern coast, from the Santa Lucias of the Coast Range to Mount Lassen and Mount Shasta, the San Joaquin and Sacramento rivers, the Great Valley which they drained, and the delta which their confluence formed, and—above all—that incredible “range of light” called the Sierra Nevada, with all its pockets and peaks of wonder; the petrified forests and desert canyons of Arizona and the Biblical wastes of Nevada and Utah; the rain forests of Washington and the splendid upthrust of the Rocky Mountains; the glaciers of Alaska and the bleak, wild whiteness of the Arctic Circle; the “rubbery wilderness” of the Amazon River and the awesome stretch of the Andes; Victoria Falls, the baobab woods, the Libyan Desert, and the headwaters of the Nile River in Africa; the Black Sea and the Caucasus Mountains of Russia, the river valleys of Siberia, the tablelands of Manchuria; the glacial fjords of the Korean coast and the foothills of the Himalayas; China, Japan, Australia, New Zealand, the Philippines . . . in all of these and more he reached out for the wilderness without which his soul would have shriveled and through which his being was enlarged.

And, through him, so have we all been enlarged. His most visible legacy, of course, can be seen and experienced directly in many of those remaining wild places that he knew and loved himself, for it is largely because of his efforts that they are even with us today—most particularly that magnificent glacial valley called Yosemite (and never mind what we have done to it since by loving it so much). This is a very real inheritance, one which we are duty-bound to pass on

to our children, our children's children, their children, and all the generations of children lost in the distance beyond our own mortality. A second tangible legacy is the necessary existence of the Sierra Club, today one of the largest (and certainly most litigious) conservation organizations in the world; his energies helped form it, and his convictions gave it substance, and without it our world would have been measurably different—and surely diminished.

All that was enough and more than enough—more than most of us will ever bequeath to the future. But Muir gave us something more, if we can but learn to use it. He was an advocate—yes, a zealot—and it is necessary for such men to communicate. The medium of communication which Muir chose was the written word. He was not a professional writer in the sense in which Wallace Stegner has described the breed—as “a body that will go on moving a pen after its heart is cut out.” In fact, he hated both the mechanics of the process and the inadequacy of the finished product. “Book-making frightens me,” he wrote to his friend, Mrs. Jeanne C. Carr, “because it demands so much artificialness and retrograding. . . . Moreover, I find that though I have a few thoughts entangled in the fibers of my mind, I possess no words into which I can shape them. You tell me that I must be patient and reach out and grope in lexicon granaries for the words I want. But if some loquacious angel were to touch my lips with literary fire, bestowing every word of Webster, I would scarcely thank him for the gift, because most of the words of the English language are made of mud, for muddy purposes. . . .”

He fretted and strained and cursed under the whip of that language “in the manufacture of which so many brains have been broken,”—but he wrote. The body of literature he left us is not large—a handful of books, most of them largely anthologies of the articles he wrote for such magazines as the *Overland Monthly*,

Scribner's and *The Century*, and some of them edited and assembled by others after his death—nor can it reasonably be said that it constituted a major step forward in the evolution of American literature—there were those before him, with him, and after him who wrote with a clearer eloquence, with greater sureness and sense of craft. No, it is neither the quantity nor the literary significance of his writings that gives them weight. It is the quality of vision they represent, a vision so deeply felt, so carefully structured, so firmly based on direct experience, so consistent through most of a lifetime that we can only stand astonished that it not only developed and matured during Muir's time and place, but survived them. For everything in that vision stood in utter contradiction to the whole thrust of the society in which he spent most of his life.

The men who ruled that society did so with all the “go-ahead” philosophies of Darwinian capitalism, using up land, resources and people in the business of forging the raw outlines of an industrial civilization in a once pastoral land called California. They were men like Collis P. Huntington, who spent most of his active life painstakingly structuring the Southern Pacific Railroad into one of the most solidly entrenched corporate monopolies in American history. Or they were men like San Francisco's William Chapman Ralston—“Billy” Ralston—who devoted his energies and his Bank of California money toward the creation of an industrial Xanadu on a spit of land at the western edge of the continent—and who was ultimately destroyed by the very system he had helped to shape. Such men called themselves realists and did so with pride. Muir knew them, or men like them, and admired many of them (one of his closest friends in his later life was Edward H. Harriman, who acquired the Southern Pacific Railroad after Huntington's death), but he knew that in the eyes of most of them he was the most impractical of dreamers, a vague flower sniffer and

mountain climber, someone whose eccentricities could be tolerated only so long as they did not interfere with the proper march of that realism they called progress.

But it was Muir who was the realist and men like Huntington and Ralston who were the dreamers. Such men truly believed—deeply and sincerely—that the measure of a man was stacked in greenbacks and that the measure of a civilization could only be discovered in the intensity of its commitment to unrestricted growth. Muir did not denigrate wealth; as a canny and hardworking farmer he had accumulated quite enough to keep himself and his family in genuine comfort, if not luxury. Nor did he deny the visible advantages of technological progress; as a certified mechanical genius and technological innovator himself, to reject them would have been to deny part of his own being. "I have this one big, well-defined faith for humanity as a workman," he wrote from his Yosemite cabin in 1872, "that the time is coming when every 'article of manufacture' will be as purely a work of God as are these mountains and pine trees and bonnie loving flowers." That faith never really left him, not even near the end when he knew

the gall of defeat in the Hetch Hetchy conflict.

Yet Muir believed—*knew*—that all of this was by no means enough. He knew that a man who embraced himself as a kind of walking God, who believed himself above nature and invulnerable to its rules, was cutting himself off from the source of his greatest potential strength. "I go to the mountains," he said once, "as a particle of dust in the wind." Become a part of the world, he believed, and you enlarge yourself. He would have all men do so: "Climb the mountains and get their good tidings. Nature's peace will flow into you as sunshine flows into trees. The winds will blow their own freshness into you, and the storms their energy, while cares will drop off like autumn leaves." Further, he knew that any civilization so arrogant as to not only ignore the land which sustained it, but attempt to destroy it, was trifling with social death:

The world, we are told, was made especially for man—a presumption not supported by all the facts. A numerous class of men are painfully astonished whenever they find anything, living or dead, in all God's universe, which they cannot eat or render in some way what

they call useful to themselves. . . . Now, it never seems to occur to these . . . that Nature's object in making animals and plants might possibly be first of all the happiness of each one of them, not the creation of all for the happiness of one. Why should man value himself as more than a small part of the one great unit of creation? And what creature of all that the Lord has taken the pains to make is not essential to the completeness of that unit—the cosmos? The universe would be incomplete without man; but it would also be incomplete without the smallest transmicroscopic creature that dwells beyond our conceitful eyes and knowledge. . . . This star, our own good earth, made many a successful journey around the heavens ere man was made, and whole kingdoms of creatures enjoyed existence and returned to dust ere man appeared to claim them. After human beings have also played their part in Creation's plan, they too may disappear without any general burning or extraordinary commotion whatever.

To tamper with "Creation's plan" was only to accelerate our journey to an end that would be, as T. S. Eliot noted two generations after Muir, more of a whimper than a bang. It is this vision of the essential oneness of life, the relevance of *all* life to the single human form of life, that is Muir's greatest legacy to us.

We need to learn from this man, I think—particularly now. We celebrate this year our 200th anniversary as a nation. There will be bell-ringing and the firing of cannons, local and national festivals, oratory full of the fire of rhetoric, and much self-congratulation. Yet even in the midst of all the fireworks we have to know that all is not well as we stumble into the last quarter of the twentieth century, that we face major decisions whose implications may not be felt for another generation, and perhaps a generation after that. That we ultimately would have to confront some change in our lifestyle should have been no surprise to us—although in our finest tradition we react with a kind of wounded incredulity that the system by which we define our lives is not only flawed, but in too many respects downright unworkable. How could the best and richest nation on earth, the nation that had given bridges and roads and dams to the world and enriched the material comfort of the human condition as never before in history, entertain the proposition that failure might be part of the inheritance of what we had seen as a god-like striving for perfectibility? During the mid-1950s, when smaller European cars began to cut into the market for Detroit's mighty chariots, a General Motors executive responded with a remark that was symptomatic: "Well," he said, "if the American people want to lower their standard of living it's all right with me."

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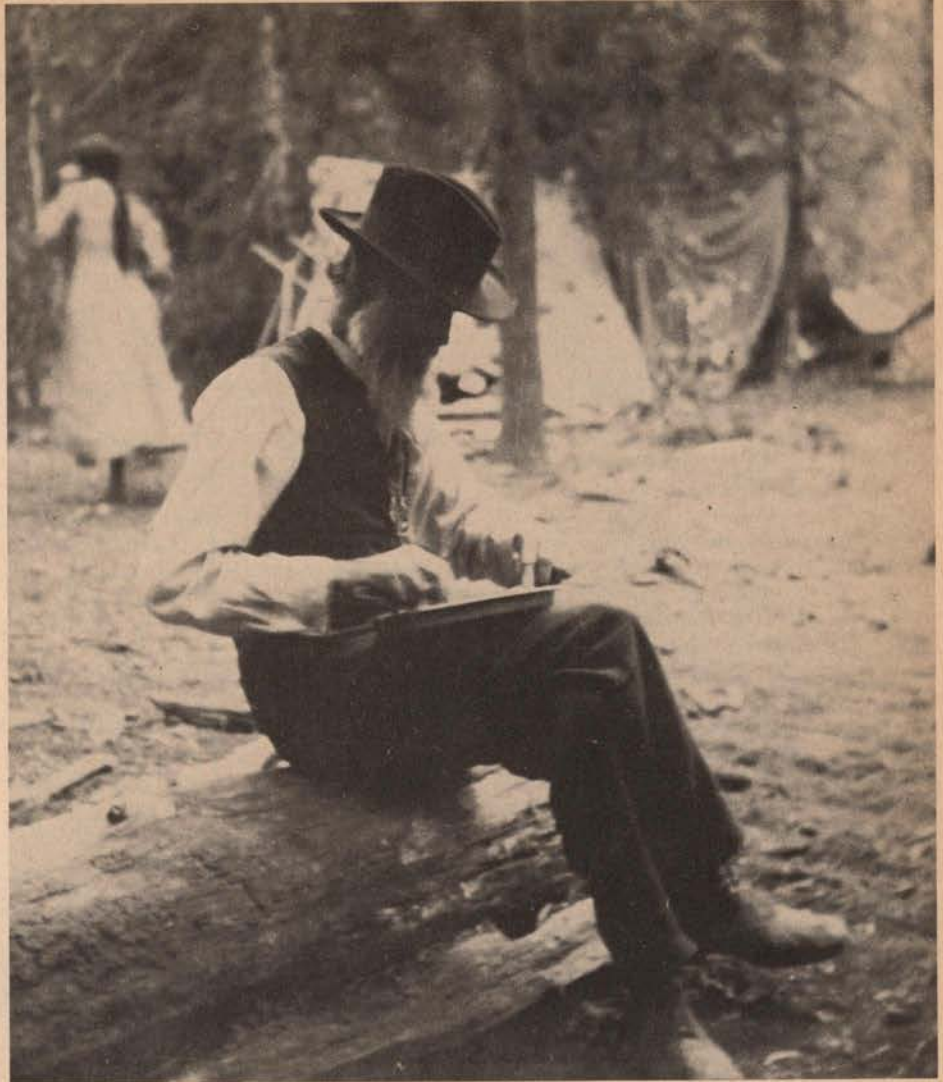
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sandras among us—the Philip Wylies and John Keats, who questioned the value of computers and conformity, the Bernard DeVotos, Wallace Stegner, David Browers and Joseph Wood Krutches, who pointed out that progress and technological expertise could destroy quite as expeditiously as they could create. Yet for nearly twenty years after World War II most of us embraced the notion that our path was true, if sometimes hard to follow. Some of us called it the American Dream. It was a powerful and compelling idea, and comforting to believe even then.

But slowly, inexorably, some of the hope was going out of us, even as we continued to celebrate the ordained rightness of our way of life. A quiet dissatisfaction began stirring in American hearts, an uncertainty of purpose, a suspicion of the verities we once held as self-evident. We heard gunfire in the streets of our cities and learned to recognize fear in our own neighborhoods; we learned shame and guilt and something of righteous anger from a war in which most of us could not really believe; we learned to distrust the institutions of our government, which seemed to drift farther and farther from the control of those whom it governed; we learned to doubt, finally, even the conventional wisdom that had allowed the machinery of progress to foul the house in which all of us had to live.

We were questioning our system, to be sure, but we were even more profoundly questioning ourselves, doubting the quality and direction not only of our institutions but of our personal lives. Hundreds of thousands of our children drifted into their own definitions of what life was supposed to be, calling their choices “countercultures” or “alternate lifestyles.” And millions of us—respectable, middle-class, and not young—were driven to our own kind of counterculture, finding solace (if not necessarily wisdom) in encounter groups and self-realization clinics, exploring the dark of our interior landscapes.

Whether any of this really helped much remains to be seen. “Sooner or later in life,” Robert Louis Stevenson once wrote, “we all sit down to a banquet of consequences.” In spite of the decade of violence and questioning and our sometimes feeble efforts to resolve our uncertainties, we could not escape the consequences of all those years when we did not doubt, perhaps could not doubt. They confronted us in the form of what most of us called an “Energy Crisis.” Others pointed out that it was more than a crisis—that it was in fact the result of an energy binge, a hang-over of such magnitude that it forced us for the first time to come dead up against the fearful possibility that a standard of living was not necessarily defined by 285-horsepower automobiles, air conditioning, self-cleaning ovens, hair dryers, electric tie racks, and a household tem-



perature of 78 degrees. We now had solid evidence that the dream on which we had based our existence may have been hollow all along. All the cant and clever intellectualizing faded when put against a hard, physical reality, and we found ourselves facing two questions: How are we going to live?—and what is the quality of life? We may not resolve these questions for as many generations as it took us to face them, but resolve them we must.

What has all this to do with John Muir and the wilderness to which he gave his life? Quite a lot, I think. Wallace Stegner called such landscapes part of our geography of hope, reminders that we are natural creatures living in a natural world, no matter how close to the angels we may believe we are, no matter what we have tried to do to that world with plastic and concrete. We prattle quite a bit about freedom in this country, our own and that of mankind at large. But I am not sure that we really understand what the term means. The Hindus, it is said, define freedom as a prison in which we are equi-

distant from all walls. Muir understood that. More importantly, the world he knew best understood it, and it was that lesson he spent his energies promoting. Freedom is balance. Freedom is a condition in which all living things function as if they knew and respected the demanding rules of nature's wondrous game.

So we are not truly free, not free in the sense in which we have seen ourselves for two hundred years; we are only human. The world we have created in all our humanness is demonstrably out of balance, giving us too little of joy and nothing, finally, of security. We need to change it, and if we are neither physically nor psychologically equipped to plunge naked into a purely natural environment, we must now more than ever before try to understand what wilderness can teach us of life, of balance, of quality, of freedom.

T. H. Watkins has recently joined the staff of American Heritage in New York. He is the author of Lands Nobody Knows, Sierra Club Books, 1975.



OUTSTANDING FOREIGN OUTINGS STILL OPEN THIS YEAR

A FEW openings remain on some of the most fascinating outings offered by the club in 1976. Remote, exotic or far-reaching corners of the earth can be visited on outings to Venezuela, the Netherlands, Polynesia, three regions in Nepal and two areas of Africa.

In late summer, August 5-21, you might join Dr. Terry Davis on trip #478 to **Angel Falls, Venezuela**, visiting the highest waterfall in the world, traveling by river past plateau-mountains and hiking through rain forest.

Two weeks in **The Netherlands Afoot and Afloat** (#485 September 7-17) with Ellis and Margaret Rother will be spent exploring the great delta-waterway bird and wildlife sanctuary, visit small communities, travel on and along the canals and camp in the wooded hills of Arnheim. This trip provides an excellent opportunity to meet the Dutch people and to learn about problems of development and open space, the natural resources and the plants and animals of the Netherlands.

Spend **Christmas in Polynesia** visiting Fiji, Tonga and Tahiti with Ann Dwyer (#540, December 10-January 7). Enjoy the enchantment of the South Seas, visiting small villages and watching native ceremonies; hiking to waterfalls; boating to outer islands; and visiting Robert Louis Stevenson's house, the Gauguin Museum and the bay where the *Bounty* lay at anchor.

In the late fall, fulfill your ultimate hiking dream by joining one of the three treks in Nepal. From October 2 to November 6, join leader Edith Reeves in the **Ganesh Himal-Gurkha Himal** (#515), a new, moderate 25-day trek northwest of Kathmandu into the land of the Gurkha warriors. The route combines the best of the favorite Trisuli-Gatlang-valleys trek with a new route farther west that climbs to 15,000 feet nearing the bases of Himalchuli and Manaslu, both over 25,000 feet.

The relatively strenuous loop trip, **West of Dhaulagiri** (#520) October 30-December 5, led by John Edginton, is a brand-new trip for the club. Starting at Jumla, this unique itinerary enters remote back country seldom visited by trekkers. The trip offers an almost encyclopedic survey of the village cultural life of the varied Nepali ethnic and religious groups. The trip will range through environmental climates from tropical to alpine and offer magnificent views of Dhaulagiri and Annapurna.

Or, join a two-week **Natural History Trek Through Kathmandu Valley** (Trip #525) with well-known naturalist, Dr. Robert L. Fleming, Sr., November 18-December 11. Learn about both natural history and the cultures of the local inhabitants; visit a rain forest rich in plants and birds. The trip includes a two-day visit to famed Tiger Tops in the Terai.

Two unusual outings are scheduled for Africa: Trip #510, **Kenya Mountains to the Sea** September 30-October 22, with Al Schmitz, ranges from a base camp at Masai Mara, via Mt. Kenya and Meru National Park, to the coast and an ancient Arab town on an Indian Ocean island. Tsavo National Park, camping at Amboseli near Mt. Kilimanjaro, Game drives, boating and beach combing all add up to an experience with little or no difficulty. A trip to see the fabulous wildlife of Ngorongoro Crater in Tanzania is a special bonus.

Trip #530, **Camel Caravan in the Oggar Mountains, Algeria**, from November 28 to December 17, offers you the chance to experience the lonely desert grandeur of the Sahara, with its wide expanses of sky and sand, rocks and cliffs, peaks and canyons, rock carvings, paintings and archaeological remains. You will sample the simple way of life of your hosts, members of the legendary, nomadic Tuareg tribe.

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One Concession Too Many

JOHN LEMONS

THE conclusions contained in a recent Congressional Report (*National Park Service Policies Discourage Competition, Give Concessioners Too Great a Voice in Concession Management*; Committee on Government Operations and Committee on Small Business, March 3, 1976) uphold Sierra Club allegations that national park concessioners have a disproportionate amount of influence over the management of national parks, even to the point of hindering the National Park Service (NPS) from carrying out its statutory responsibility to protect the natural resources of the parks. In many cases, the influence exerted by the concessioner exceeds that allowed both by law and by their specific contracts with the Park Service.

The NPS is required to allow within national parks only those facilities that do not impair park values and that are necessary for enjoying its natural fea-

tures. Concessioners are responsible as well for providing only services consistent with park values. In fact, though, as conservationists have long contended, many of the national parks have far too many and disruptive facilities. The NPS is supposed to regulate concessions, but the House report characterizes the service's effort to do so as inadequate and ineffective.

In part, the report is a result of the controversy that surfaced two years ago over the excessive influence exerted by the Yosemite Park and Curry Company, a subsidiary of the Music Corporation of America (MCA), on the Yosemite Master Plan. As one Interior Department official remarked, the five drafts produced in 1974 appeared to have been written by the concessioner. The public, however, was systematically excluded from the planning process; the Park Service repeatedly rejected written and oral re-

quests to see the drafts and detailed concessioner comments.

The public consternation that resulted persuaded the Department of the Interior's Project Review Committee to reject the drafts and the committee forced the Park Service to initiate a new planning process, this time allowing full public participation. While applauding this action, the recent House report maintains that the planning process is still overly influenced by concessioners.

Among the reasons the report cited to explain excessive concessioner influence are legislation favorable to the concessioner, budget and staffing shortages within the Park Service, and policies that grant the concessioner preferential rights, possessory interest, and long-term contracts.

"Preferential rights" means that incumbent concessioners are given the first opportunity to operate proposed



new facilities and first consideration at the time of contract renewal. In practice, this provision eliminates competition for the park concessions and guarantees automatic contract renewals regardless of past performance. The House report concluded that preferential rights to national-park concessions, as implemented by NPS, were contrary to law; that the Park Service lacked suitable criteria for judging concessioner performance; and that it should renew contracts only on a case-by-case basis.

A concessioner's possessory interest entitles him to reimbursement if his contract is terminated, allowed to expire without renewal, or is taken for public use. This provision is meant to protect the concessioner's investment. Because it can be transferred to a third party, possessory interest can be used to secure financing for building facilities on park lands the concessioner does not own. It is not supposed to be a device to compensate concessioners for mere contract termination, but that is what it has turned out to be.

During contract renewals, as a result, the concessioner's possessory interest prejudices his offer over that of possible competitors because they would have to include in their bids the costs of reimbursing the concessioner in an amount equal to the cost of duplicating existing facilities. According to the House report, no responses to public notices are received for renewal of concession contracts when the possessory-interest provision applies. When a new firm does assume control of park concessions, it is usually a giant corporation, such as MCA, that can afford the enormous capital outlay.

As a result, although the Park Service might want to terminate a concession contract, it can rarely afford to do so. When concessioners are reluctant to comply with the agency's management directives, they often suggest that if the Park Service doesn't like their operations, it can buy them out. Even if the Park Service elected to do so, which it is rarely able to afford to do, the concessioner would still receive a windfall profit because it would be reimbursed for full construction costs even when these have been completely amortized, and even though the rates charged the public have included a full investment return. For example, if a concessioner invested \$100,000 in 1920 for a facility that today would cost \$500,000, the Park Service would have to pay the larger amount to the concessioner if it wished to divest him of his possessory right. The House Report recommends that reimbursement be only for unamortized costs.

Concessioners also enjoy long-term

contracts—often up to thirty years—again, intended to protect their investments. The Park Service, however, has never determined whether this arrangement is in the public interest. The House report concluded that long-term contracts have been responsible for large corporations such as MCA promulgating development plans outside the proper planning process. Long-term contracts have also resulted in concessioners manipulating the process by lobbying against wilderness proposals and promoting increased tourism, even when it is detrimental to the natural features the

parks are supposed to protect.

The House report specifically notes that facilities such as luxury hotels, golf courses, tennis courts and bars are inconsistent with national-park purposes. The committees requested the Park Service to provide by June 3, 1976, a detailed statement of actions or plans to ensure that the public interest and preservation of parks are not subordinated to the business interests of park concessioners.

John Lemons is a part-time research biologist with the National Park Service.

Sierra Club Position on Yosemite

THE NEW Yosemite master planning process has been under way since 1975. Planning workbooks were distributed by the National Park Service to interested individuals and groups as a way of eliciting public opinion. The Sierra Club's response includes position statements on four planning categories: transportation, visitor usage, resource management and park operations.

The club advocates eliminating all unnecessary concession services from within the park, reducing overnight visitor accommodations in Yosemite Valley and relocating most concessioner and park-service-personnel housing to El Portal, an administrative site ten miles from the valley and just outside the park boundary. We also advocate that the Park Service "permit only those types and levels of use or development that do not impair park natural resources" and that "unnatural sources of air, noise, visual, and water pollution be limited to the greatest degree possible."

The club urges the establishment of mass-transportation systems to, from and within the park to alleviate the impact of automobiles during peak visiting periods. No time limit is requested or included because different changes would require different amounts of time. Changes could begin as early as 1977, though they may not be completed for fifteen or twenty years.

The club recognizes the potential difficulties that stricter use criteria may present to the present concessioner, but insists that in no case should the integrity of the park's environment be sacrificed for the concessioner's benefit.

Therefore, the club has suggested that studies be initiated to investigate the possibility of replacing the current concessioner with a nonprofit corporation, if necessary. This proposal was recently investigated in a detailed study prepared for the Park Service by the citizens advisory board for the Western Regional National Parks, which was authorized by Congress in 1972.

It is widely believed that the National Park Service has been inhibited in its attempts to regulate concessions not only by the restrictions discussed in the accompanying article, but also by a personnel ceiling imposed upon it by the Office of Management and Budget (OMB). Congressional hearings on this matter began in April.

The Master Plan Team is expected to present its first set of alternatives and assessments, presumably based, at least in part, on the public workbooks distributed last year. Sierra Club members are still encouraged to write the Planning Team at Fort Mason, San Francisco 94123, to express their convictions about the management of Yosemite National Park. Public interest and response to the recent House report on national park concessions are also important in order to ensure that funds allocated for implementing the new master plan are released by OMB and the Interior Department. For further information and copies of the Sierra Club's position on Yosemite, write to the Yosemite Task Force, 530 Bush St., San Francisco 94108.

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_____	066-6 Cooking For Camp and Trail Bunnelle & Sarvis, \$3.55	_____
_____	085-2 Fieldbook of Nature Photography Maye, ed., \$6.25	_____
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_____	102-6 Foot-loose in the Swiss Alps Reifsnnyder, \$7.15	_____
_____	068-2 Hiker's Guide to the Smokies Murlless & Stallings, \$7.15	_____
_____	095-X Smokies Map replacement (paper), \$1.75	_____
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_____	069-0 Wilderness Skiing Tejada-Flores & Steck, \$6.25	_____

QUANTITY	EXHIBIT FORMAT SERIES	AMOUNT
_____	045-3 Everglades Caulfield, \$24.75	_____
_____	006-2 Gentle Wilderness Kauffman & Muir, \$27.00	_____

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_____	007-0 Not Man Apart Jeffers & Brower, \$29.25	_____
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QUANTITY	BACK LIST PUBLICATIONS	AMOUNT
_____	062-3 Action for Wilderness Gillette, ed. (paper), \$2.05	_____
_____	110-7 Alaska: The Great Land Miller & Wayburn (cloth), \$22.50	_____
_____	113-X Alaska: The Great Land Miller & Wayburn (paper), \$7.15	_____
_____	016-X Almost Ancestors Kroeber & Heizer (cloth), \$13.50	_____
_____	104-2 Brother Sun Stock (cloth), \$13.45	_____
_____	105-0 Brother Sun Stock (paper), \$5.35	_____
_____	233-3 Ecotactics Mitchell & Stallings (paper), \$.85	_____
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REGIONAL REPRESENTATIVE'S REPORT

Southwest: A status report on oil shale and coal gasification

LAST December, Congress killed a proposed six-billion-dollar loan-guarantee program to promote the commercial development of oil shale and synthetic fuels. Some groups opposed specific aspects of the proposal; others complained about the attempt to attach it, without hearings, to existing legislation. Attempts have begun to revive the loan guarantee, either the initial proposal or a reduced two-billion-dollar version.

The most obvious beneficiaries of loan guarantees are the companies who want to build oil-shale plants in Colorado and Utah or coal-gasification facilities in New Mexico. Two years ago, many experts thought construction of commercial coal-gasification and oil-shale plants would be well under way by now, but so far it has yet to begin. What is the status of these proposals? Why have they been delayed?

During the height of the "energy crisis" in 1974, it seemed as though the time for oil-shale development had finally arrived. Companies bid a total of \$450 million for federal leases on four 5,000-acre tracts in Utah and Colorado. Four firms

joined together to build the Colony Development Operation on private lands at the head of Parachute Creek, in the oil-shale-rich Piceance Basin of western Colorado.

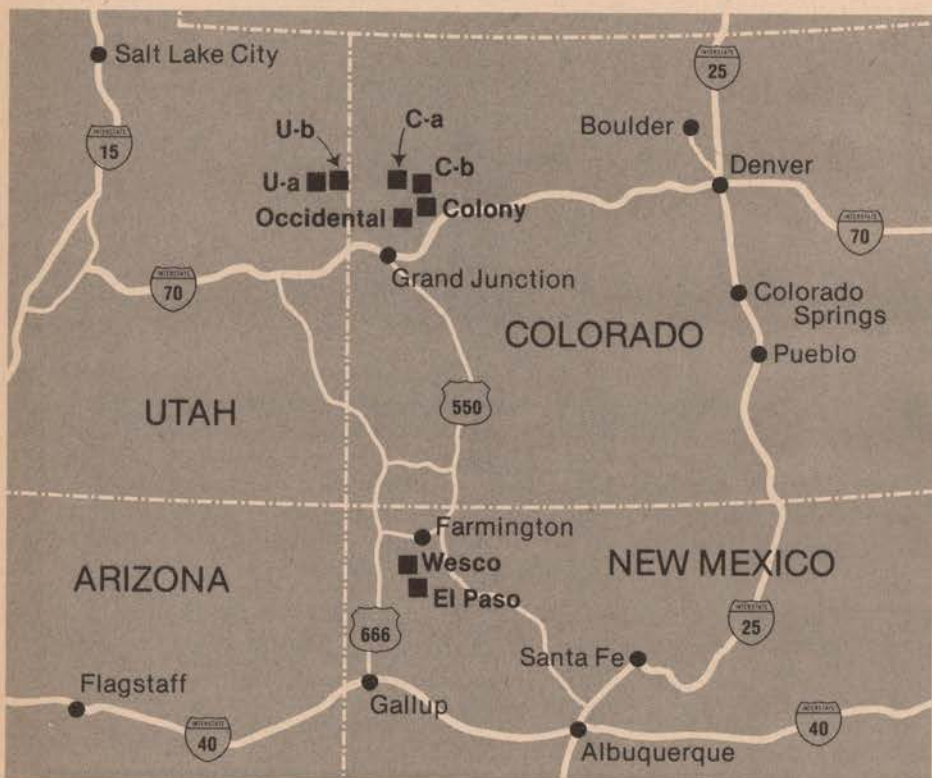
For fifty years, the cost of recovering oil shale had been prohibitive, but this obstacle seemed to be removed in 1974, with the dramatic increases in the price of crude oil. Various groups geared up to fight oil-shale development because of its frightening environmental implications. One of these is a mammoth waste-disposal problem because two tons of rock must be mined to produce one barrel of oil, and the excess rock—called "spent shale"—is toxic. Other problems include the need to divert huge amounts of water for the refining process—this in a region where competition for scarce water is already fierce—plus the difficulties of restoring the disrupted landscape to something even remotely approaching its former aspect and productivity. Equally important, the sparsely populated oil-shale region, which is now devoted to farming and ranching, would be quickly transformed to heavy industry.

Before the battle had really begun, however, the price needed to make oil-shale development feasible began to rise even more rapidly than the price of crude oil. In 1973, it was estimated that shale oil could be produced for six dollars a barrel—an attractive price—and in February 1974, then Secretary of the Interior Rogers Morton told the House Interior Committee that "it now appears [oil-shale development] can be accomplished by the private sector without subsidy." This optimistic assessment, however, soon proved to be wrong as the interested companies began shortly thereafter to press for federal assistance, ranging from loan guarantees to price supports. By 1976, the per-barrel cost of shale oil had risen to twenty dollars, far more than the price of crude.

One of the first casualties of this economic climate was the Colony Development Operation, owned by Atlantic-Richfield, Shell, Ashland Oil and The Oil Shale Corporation. In October 1974, Colony announced that it was indefinitely suspending plans for the Parachute Creek operation, which was to have produced 47,000 barrels a day. Despite this decision, the Bureau of Land Management (BLM) continued to prepare an environmental impact statement for the project. The Sierra Club and nine other environmental organizations asked the Interior Department in January 1976 to stop all work on this impact statement until "there is an active project with a proposed time schedule." As it now stands, however, the BLM intends to finish the statement.

The next economic casualties were two participants in the development proposed for Federal Lease Tract C-b, in Colorado. In December 1975, shortly after Congress killed the six-billion-dollar loan-guarantee program, Atlantic-Richfield and The Oil Shale Corporation (TOSCO) pulled out. Congress' failure to approve the program was cited by both companies as the primary reason for their action. The two remaining companies, Shell and Ashland Oil, asked the Interior Department for an eighteen-month delay in which to pay their third \$23-million installment on their \$117-million bid for this tract. Environmental groups objected to any delay in the payment noting that "the lessees want to retain possession of the lease and continue lease activities without paying the bonus payment due of \$23 million." The two companies cited mining problems as justification for the delay, but others suspect that they needed time to find new partners, if possible. In any event, suspension was not granted and the payment was made on schedule.

Meanwhile, the partners in the Rio



Blanco Oil Project on 5,220-acre Federal Lease Tract C-a, also in Colorado, are having problems of their own. The partners, Standard Oil of Indiana and Gulf Oil, bid a record \$210 million for this tract. Their plans call for open-pit mining, and they argue that they need the use of other lands for waste disposal. Legislation to authorize leasing them an additional 6,400 acres for this purpose is opposed by Colorado Senator Floyd Haskell, chairman of the Senate Subcommittee on Environment and Land Resources, which must approve any such bill. The administration is supporting this bill, on which hearings were held in March. Rio Blanco officials also want federal financial incentives before making a firm commitment to construct an oil-shale plant.

Occidental Petroleum is still somewhat optimistic about their "in-situ" process for recovering shale oil. It would separate the oil from the shale underground, thus eliminating the need for mining and moving the rock to surface processing plants. A significant waste-disposal problem would remain, however, from the excavation needed to gain access to the oil shale in the first place. So Occidental's process, while preferable to open-pit mining and above-ground processing, is not without its problems. Much work remains to be done before it is proved feasible.

Occidental also needs a richer mining site: Logan Wash, where current experiments are being conducted, contains only low-grade oil shale. Company officials are out looking for more promising sites that might support a commercial operation. Presumably, Occidental would be one of the prime beneficiaries of a proposed new federal-lease program that will offer two more 5,000-acre parcels of land for in-situ development of oil shale.

Last summer, in response to an Interior Department request, companies interested in underground processing nominated nine tracts of federal land they would like to see offered for lease. The Interior Department has tentatively selected two of these, one in Utah and one in Colorado, for further study. Before any leasing could take place, however, an environmental statement would have to be prepared.

Two of the four original federal oil-shale lease tracts are located in eastern Utah. The two adjoining tracts, known as U-a and U-b, have been leased to Phillips Petroleum, Sun Oil, and Sohio, who plan to develop them as a single unit. TOSCO, which pulled out of the C-b tract in Colorado, has acquired some 14,000 acres of oil-shale leases on nearby state lands. TOSCO officials and others

have said that if and when oil-shale development becomes economically feasible, the first such development may take place in Utah simply because state and local officials in that state are more "cooperative" than those in Colorado.

Two hundred and fifty miles to the south, in northwestern New Mexico, economic woes are also delaying the plans of several companies for what were to have been the first commercial coal-gasification plants in the United States. At one time both the Western Gasification Company (WESCO) and El Paso Natural Gas had hoped to have their initial plants in operation by 1978, with additional units to follow shortly thereafter. If anything, the prospects for coal gasification here seem more remote now than when plans were first announced several years ago.

Of the two companies, WESCO seems in a somewhat better position to proceed. They still face two obstacles, however, either one of which may prove insurmountable. First, the Navajo Tribe must approve leases for plant sites and rights-of-way on its land. Opposition to coal-gasification plants on this part of the Navajo Reservation has always been strong. While tribal leaders have been

divided on the issue, the balance now appears to be shifting toward opposition to coal gasification as it is now proposed.

Navajo Tribal Chairman Peter MacDonald has made it clear that whatever energy development takes place on the reservation must be on the tribe's terms and for its benefit. These include assurances that a significant number of Navajos will be employed and that the tribe will receive increased revenues both from the leases and through taxes. Meanwhile, it has not approved the leases and shows little signs of doing so in the immediate future. WESCO, in turn, has cut back on preliminary engineering work because of the delays.

Doubts about the financial viability of the projects are also increasing. During hearings before the Federal Power Commission (FPC), WESCO asserted that federal financial assistance was essential. Project officials also have been widely quoted as saying that the project is not feasible without some sort of loan guarantee. Even though the FPC nearly doubled the price it will allow WESCO to charge for the gas, apparently the higher price may still not allow the firm to recover its costs.

El Paso Natural Gas shares all of

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Once eagles lived in abundance in America. Now after 200 years (America's Bicentennial) Bald Eagles are losing their nesting grounds and their population has declined.

You can help preserve our national bird from extinction by purchasing this beautifully detailed belt

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Belt and Buckle: \$10.00 (plus \$1.00 postage handling)
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WESCO's problems, but in addition needs congressional approval to use water from the San Juan River. El Paso's coal lease expires in 1978, and negotiations for renewal have bogged down. El Paso also seems to have shelved their coal-gasification plans for the moment, as it focuses its activities and available financial resources on building a gas pipeline south from Alaska.

Proponents of coal-gasification and oil-shale development have been prominent among those arguing for a federal loan-guarantee program. Some observers fear that any guarantees would be but a first step toward even greater subsidies,

since oil from shale or synthetic natural gas from coal cannot compete with other fuels at today's prices. Deregulation of natural-gas prices might improve the prospects for coal gasification, but without subsidies, the short-term prospects for shale oil are bleak. Environmentalists should keep in mind that delays in the commercial production of synthetic fuels, at least in the Rocky Mountain region, have resulted from economic limitations. If Congress relieves this situation by approving a loan-guarantee program or similar subsidy, mere environmental difficulties will not easily stop the resulting rush to the cash register.

John A. McComb

WASHINGTON REPORT

Brock Evans

Volunteers for Action

LIKE THE seasons, there seems to be a certain rhythm, a yearly cycle, to the legislative process: quiet in late summer, early autumn and the first of each year; busier later in the fall, and most intense in the spring. This is the rhythm that guides our work, and within the last six weeks, the always-intense pace of phone calls, meetings, endless hearings and visits to congressmen has already increased noticeably. Sometimes, the pressures seem almost too awful to bear, as we race from hearing to hearing, attempting to make contact with key congressmen, returning at the end of the day to a desk of unopened mail and dozens of unanswered telephone messages, all of them having some urgency or importance.

It has been this way for nine years now. Each spring I wonder if we can possibly make it one more time—but, of course, we always do. There is a certain serenity and security in this knowledge, but at the same time, we are always painfully aware that things could be done better; that much is left undone because there is simply no time; that as effective as we might be, we could be more effective yet.

What is needed, however, is not just more staff, or a bigger budget or larger office—the normal things that would occur to an outsider. These would all help make the pressures more bearable, but they are not really the answer. The source of our power is, rather, in the people themselves—the volunteers and leaders in our chapters and groups across the nation. This is one of the first

principles that every Sierra Club lobbyist learns, as do all other public-interest lobbyists.

A lobbyist does not persuade anybody by oratory alone, nor even by providing factual information, crucially important as this is. No, the shape of legislation is ultimately determined by the interplay of two kinds of forces—money and votes.

We obviously cannot play the money game; nor can any other public-interest group. We do not have the resources to buy even one \$100-a-plate ticket at a fund-raising dinner, let alone the whole tables that industry lobbyists traditionally purchase. We do not have the resources to take anybody out to dinner, let alone to give a fat honorarium to a committee chairman to come and give us a speech. We are automatically excluded from this game.

The other game, however, is votes, and here we are strong. The Sierra Club "delivers the mail," and everyone knows that our members are concerned enough about environmental issues actually to sit down and write letters. Mail, telegrams or phone calls are very important to the legislative process.

Since member response is the only way we can compete with big money, the Sierra Club Board and the Washington staff have discussed for several years ways of making this process even more effective. As a result, a Volunteer Training Program was authorized by the Board last fall. The idea was to have about three training sessions each year for key volunteer activists and leaders throughout the club. For each session,

about a dozen people would be selected to come back here for one week and, under the instruction and direction of the Washington staff, "learn the Washington scene." They would meet with senators, congressmen and top agency officials, learning what influences them and what pressures they work under. The trainees would attend hearings, have lunch with industry lobbyists, meet key staff people—in short, learn the process. Finally, they would spend long hours themselves pounding the halls of Congress, learning how to be citizen lobbyists.

The idea behind this program was that these club leaders could take what they had learned in Washington back to their own chapters and groups. By conveying exactly what it is like in Washington, they could help others to become more effective in responding to future issues, thereby enhancing the club's effectiveness at all political levels.

We held the first training session during the last week of March; it worked beautifully. Participants came from all over the country. They comprised a typical cross-section of club members, striking an even balance between men and women, generally younger, all extremely bright, articulate and well educated. The schedule was very intense, with little free time from Sunday night through the following Saturday morning. Each day was crammed with meetings with agency or division heads, congressmen and senators, key staff and the Washington office staff. One of the more impressive features for many was the VIP treatment given them by the federal officials with whom they met—a clear indication of the respect and stature the club enjoys in Washington. Their main complaints were the sore feet and intense pace, which left not enough time to reflect on each day's events. But as we told them, that too is part of a lobbyist's life, part of the Washington scene.

For me, personally, the experience was a profound one. To see the quality of our club members and leaders, to know that people like them are out there in each of our states and districts—this was in itself rewarding. But it was also deeply gratifying to watch average citizens who didn't know each other and who had no experience with Washington in the beginning turn into fast friends and expert lobbyists within a week.

Three times a year, one dozen leaders each time, each one going back home and spreading the word, creating a cell of energy and activity where it counts most—out there in the districts among the people. If the program can continue, surely the cause that we all care for so deeply can only prosper. **SCB**

Win everything you need to discover the real America.

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Raichle wants you to discover the real America. Out there. Beyond the cities and the highways. The real America is still there. Enter the Raichle Discover America Sweepstakes. Look at all the great prizes.

First Prize

A pair of Raichle hiking or climbing boots of your choice, a Maran 70K frame pack, a Northwoods down-filled sleeping bag, a Gerry 2-man tent, a Class 5.65/35 parka and a Northwoods Down Vest.

Second Prize

A pair of Raichle boots of your choice, a Maran 70K frame pack, a Northwoods down-filled sleeping bag, a Gerry 2-man tent and a Class 5.65/35 parka.

Third Prize

A pair of Raichle boots of your choice, a Maran 70K frame pack, a Northwoods down filled sleeping bag and a Gerry 2-man tent.

Fourth Prize

A pair of Raichle boots of your choice, a Maran 70K frame pack and a Gerry 2-man tent.

Fifth Prize

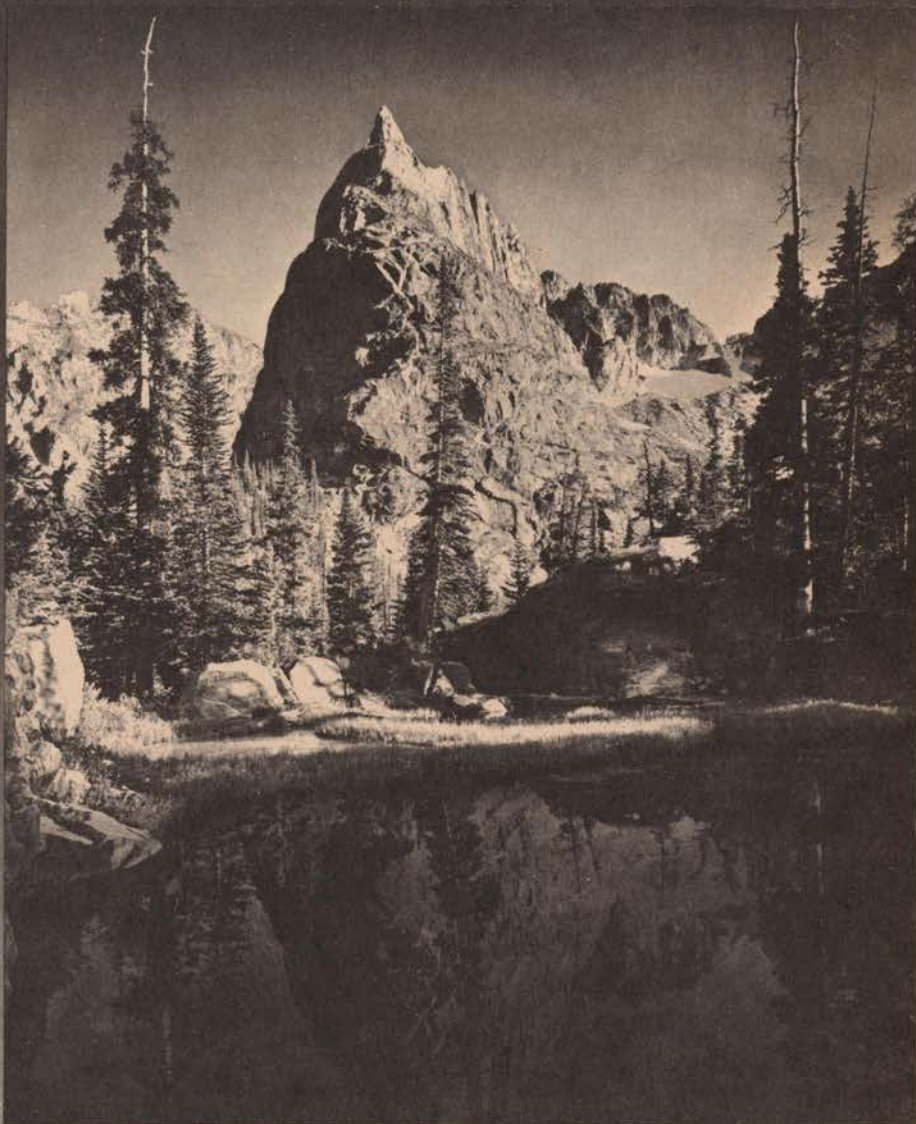
A pair of Raichle boots of your choice and a Maran 70K frame Pack. **Sixth Prize:** six Gerry 2-man tents.

Seventh Prize: seven Northwoods down-filled sleeping bags. **Eighth Prize:** eight Maran 70K frame packs. **Ninth Prize:** nine Class 5.65/35 parkas.

Tenth Prize: ten pair of Raichle hiking/climbing boots.

Entering is easier than lacing up your Raichle boots. Just follow the rules and fill out the entry blank. Raichle boots have been discovering America for decades.

Enter the Raichle Discover America Sweepstakes.



Raichle

Official Raichle "Discover America Sweepstakes" Entry Blank

Name _____

Address _____ City & State _____ Zip _____

Names of two (2) Raichle Boot Models (1) _____ (2) _____
(Copy from our catalog or ask your local Raichle dealer)

Official Rules:

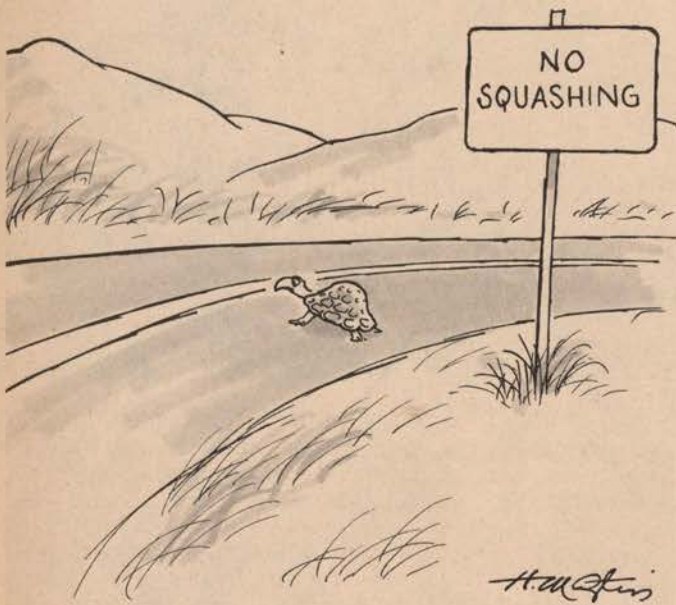
1. To enter, complete the official entry form or, on a 3" x 5" piece of paper, print in block letters the words "RAICHLE DISCOVER AMERICA SWEEPSTAKES," along with your name, address and zip code. Mail each entry separately to "RAICHLE DISCOVER AMERICA SWEEPSTAKES," P.O. Box 10, Commerce City, Colorado 80022.
2. Each entry must include the names of at least two (2) Raichle hiking/climbing boot models or a 3" x 5" piece of paper on which you have hand-printed the words "RAICHLE DISCOVER AMERICA SWEEPSTAKES" in block letters. No purchase is necessary. To be eligible, entries must be postmarked no later than September 30, 1976 and received by October 15, 1976.
3. Prizewinners will be determined in a random drawing conducted after the close of the promotion from all entries received. Drawings to be conducted by Smith/Dennis & Associates, an independent judging organization, whose decisions are final. All taxes, if any, are the sole responsibility of the winners. All prizes will be awarded. Prizes are non-transferable. Only one prize to any person.
4. Sweepstakes open to residents of the continental United States, Alaska and Hawaii only. Employees and their families of Raichle Molitor USA, its advertising agencies and judging agencies are not eligible. Sweepstakes void in Georgia, Missouri and wherever else prohibited or restricted by law. All Federal, State and local laws and regulations apply. Odds of winning will be determined by total number of entries received.
5. To obtain a list of winners, send a stamped, self-addressed envelope to "RAICHLE DISCOVER AMERICA SWEEPSTAKES WINNERS LIST," 6765 East 50th Avenue, Commerce City, Colorado 80022 on or before October 15, 1976.

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Endangered Species...



"It isn't just you, Wally, we've all been put on the endangered species list."

Energy and Food

Dennis Hayes

THE HUMAN body uses about as much energy as a steadily glowing 100-watt bulb. This energy is derived from the sun. Since *homo sapiens*, like all other animals, cannot capture sunlight directly, we depend upon plants to gather radiant energy and to make it available to us as food.¹

Through photosynthesis, plants convert sunshine into chemical energy. A plant uses about one-sixth of the energy it captures to sustain itself. The remaining five-sixths is stored in chemical bonds until those bonds are broken by animal metabolism, fire, or the slow processes of decay.

Not all the energy available in these chemical bonds is usable by humans. Grain comprises only 40 percent to 50 percent of the dry mass of a corn plant; sugar constitutes only 20 percent to 30 percent of the dry mass of sugarcane. Ordinarily, most of the digestible energy in a crop is not retained by humans. Much potential energy passes through and remains stored in excrement. While efficiencies vary widely, a 20 percent retention of potential energy in digestible food is common.

Animal metabolism is complementary to plant photosynthesis. Photosynthesis uses energy from the sun to rearrange the atoms in carbon dioxide and water molecules to form carbohydrates and oxygen. Metabolism, on the other hand, oxidizes carbohydrates to form carbon dioxide and water, with a complicated release of useful energy. This energy—the sunlight captured and stored by plants, and then released by animals—makes possible all the work of the body: flexing and relaxing muscles; sending and receiving nerve impulses; synthesizing proteins and other molecules to build cells.

The sunlight that plants capture works its way through the animal kingdom along food chains, losing energy at each link. The longer the chain, the lower the percentage of original energy available at its terminus.

Lamont Cole has described the energy losses along one such food chain:

For example, 1000 calories stored up in algae in Cayuga Lake can be converted into protoplasm amounting to 150 calories by small aquatic animals. Smelt

eating these animals produce 30 calories of protoplasm from the 150. If a man eats the smelt, he can synthesize six calories of fat or muscle from the 30. If he waits for the smelt to be eaten by a trout and then eats the trout, the yield shrinks to 1.2 calories.

Humans have long stood at the top of many food chains. We eat many other species—animal and vegetable—and are rarely ourselves ingested. But in recent decades per capita intake of beef in the United States has more than doubled; Americans have moved farther up on the food chain and now acquire the sun's energy less efficiently.

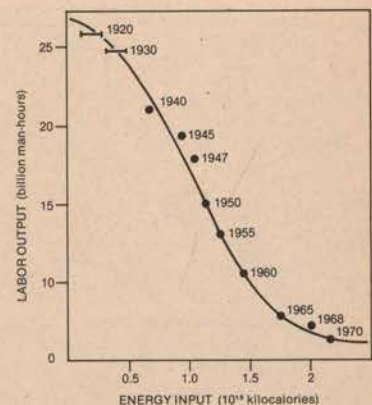
In the early days of agriculture, the discretionary energy put into cultivation was all derived from human muscle. Humans in turn culled all their energy from food. Unless the agricultural system had produced a net excess of food energy out over muscle power invested, the system could not have continued. Nothing can persistently spend more bodily energy to acquire its food than it derives from that food; it must at least break even.

To the extent that a foraging animal, or a fuel-driven engine, was substituted for muscle energy, the ratio of food calories invested to food calories acquired shrunk. In the process, the ratio of total calories invested to food calories acquired swelled.

But since people could not eat grass or oil, and since both seemed to be plentiful, total energy accounting was not, until recently, given serious attention. Ratios of food production to units of land, labor, fertilizer, or seeds were often noted, since these were all thought to be potentially limiting factors to production. But fuel was not considered a potential limiting factor.

Today we use several times as much energy as fuel to produce, process, retail, and prepare food as the food itself contains. None of the energy in the fuel is actually transferred to the food; food energy is all obtained from sunshine. The fuels used in the food system are substitutes for labor, land, capital, rain, and so forth—not for sunshine. In an era when food and fuel are jointly responsible for almost half of our spiraling inflation, the increasing fuel-intensity of the food system deserves close scrutiny.

A large fraction of agricultural energy substitutes directly for human labor. Mechanized farming reduced the need for agricultural labor at the same time that industry required an expanded work force. Between 1920 and 1950 the proportion of the population involved in agriculture decreased by half. By 1962 it did so again. Now, it has dropped by almost half again, and, say Carol and John Steinhart, more than half the remaining farmers hold other jobs off the farm. Today each U.S. farmer feeds 50 of his fellow citizens and also produces a surplus for export. The relationship between this declining labor force and the increased use of fuel in agriculture is clearly demonstrated in the following figure.



The Substitution of Energy for Labor on U.S. Farms²

Considering agricultural labor in terms of the time spent producing a unit of output, a New York farmer spent 150 minutes producing a bushel of corn in the early twentieth century. In 1955 it took him just 16 minutes. Today he spends less than 3 minutes per bushel.

Land is another production factor for which energy, in the form of chemical fertilizer, has increasingly been substituted. A series of technological advances in the fertilizer industry resulted in progressive price decreases. Between 1940 and 1950 the use of chemical fertilizer increased 129 percent; between 1950 and 1960 the increase was 69 percent; and the decade between 1960 and 1970 saw an additional 113 percent growth in

fertilizer use. Today the average American farm uses almost as much energy in the form of fertilizer as it uses to operate all its tractors. In fact, corn farmers use more energy per acre in fertilizer (940,800 kilocalories) than in gasoline (797,000 kilocalories).³

Use of irrigation, another energy-intensive agricultural activity, has shot up dramatically too. Pumped water is often used to bring dry new land under cultivation (as in much of California), to reduce the risk of drought, or to increase the yields on existing farmland. Trickle irrigation, which conserves water and energy, is prohibitively expensive for all but a handful of crops.

International comparisons clarify the importance of energy to American agriculture. If all the world's inhabitants were to eat as Americans eat, and farm, process, and prepare their food in the American style, the world food system would require almost 80 percent of the annual world energy budget. The Green Revolution is a step in that direction. While this paper is not the appropriate forum in which to examine the myriad social and ecological effects of the Green Revolution, its energy implications do fall within our purview.

The Green Revolution allowed for the systematic substitution of energy-intensive fertilizer for scarce agricultural land. The "miracle seeds" required a vast increase in fuel use in order to double or triple the production of digestible food. In an era of cheap, plentiful energy such a development probably made sense; the Green Revolution staved off certain starvation for millions of people. But in recent years energy has been neither cheap nor abundant. In fact, energy has increasingly become the limiting factor in agricultural productivity. The implications of this fact for international agriculture can scarcely be exaggerated.⁴

As energy costs rise in the United States, our agricultural system will doubtless adjust. Wind power, underpriced decades ago by cheap electricity, will make a strong comeback in rural areas. Farmers will tune-up their vehicles, and will stop plowing eleven inches deep where seven inches is sufficient. Increasing amounts of human excreta will be returned to the soil as nutrients, reducing the demand for chemical fertilizers. Direct solar power will play an important role in heating buildings and drying grain. And the

simple, on-the-spot bioconversion of agricultural wastes could produce enough fuel to allow many farms to fulfill all their own energy needs.⁵

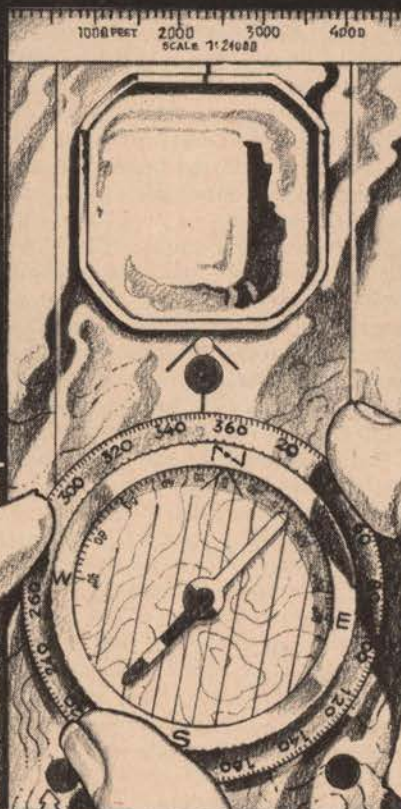
But, as the following table makes clear, potential gains in agriculture alone cannot solve the energy problem since agriculture accounts for only a fraction of the total energy use in the American food system. More than 12 percent of all U.S. fuel is consumed by the food system, and food processing uses almost twice as much as does farming.

Activity	Percent of Total Use
Food Processing	33%
Households	30%
Agriculture	18%
Wholesale & Retail Trade	16%
Transportation	3%

As people moved off farms into cities, food had to be stored longer and transported farther. As America became a leisure society, the desirability of food became increasingly linked to the ease of preparing it. Today a vast food infrastructure, built in large measure around the food processing industry, delivers

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more than three-fourths of our food pre-washed, pre-cooked, and prepared. It has taken over many tasks traditionally performed in the home—substituting fuel and machinery for human labor.

One of the oldest of the food processing technologies is refining. White flour has long been preferred to wholewheat flour, and refined sugar has been considered superior to unrefined sugar. When it was discovered that white flour lacked basic nutrients contained in wholewheat flour, the agri-business community restored some of the lost nutrients. Now, however, mounting evidence suggests that this "enriched" flour is still inferior, because the missing fiber content performs a vital health function. Systematically, energy is expended refining white flour, more energy is expended enriching the white flour, and yet the final product remains in many ways inferior to unadorned wholewheat flour.

Food processors must shoulder blame for an explosive growth in unnecessary packaging too. According to the U.S. Environmental Protection Agency, "the consumption of food in the United States increased by 2.3 percent by weight on a per capita basis between 1963 and 1971. In the same period, the tonnage of food packaging increased by an estimated 33.3 percent per capita, and the number of food packages increased by an estimated 38.8 percent per capita."⁷

The food processing industry can play a legitimate role, and enormous scope exists for technological improvement in the energy efficiency with which this role is played. But over-refining, over-processing, and over-packaging should be eliminated altogether.

Food retailing suffers from the same energy inefficiencies that plague other commercial enterprises. Space heating and cooling is wasteful; open entrances and exits are constant drains on space conditioning systems, etc. Some food retailing problems are unique, though, including the energy drain of open-topped food freezers and the strain such freezers put on a store's heating system.

The supermarket concept has altered energy tastes and appetites. In the neighborhood market era, food was transported to the market in large quantities by a relatively small number of trucks and purchased by people who, for the most part, carried it home on foot. Now the trucks deposit the food at a central supermarket, and thousands of two-ton vehicles each transport twenty pounds of food from supermarket to home.

Cooking, refrigeration, home freezers, and food shopping by car account for about 30 percent of the total energy expenditures on food—two and one-half times as much as farming. More than half the total electricity spent on food is

spent in homes. Recent years have seen wildfire growth in the sales of food-related electrical appliances. While some domestic energy use has been transferred to the food processing industry, many frozen foods now require more energy use at home than their unfrozen predecessors—in addition to the energy used by industry to process them.

Not only are traditional foods being processed and prepared in energy-intensive ways, but American dietary changes have also borne a high energy price tag. One previously mentioned example is moving up the food chain. U.S. annual per capita beef consumption went from 55 pounds in 1940 to 115 pounds in 1970. Similar examples of decreasing energy efficiency literally dominate the American diet (which now consists of almost 20 percent refined sugar and 45 percent fat). Between 1909 and 1973 per capita processed fruit consumption increased nearly tenfold while fresh fruit purchases fell by almost a half; per capita processed vegetable consumption increased fivefold while fresh vegetables fell by about one-fifth. Per capita flour and cereal purchases declined by about one-third.⁸

The Center for Science in the Public Interest has argued that the current American diet—"high in fat, sugar, cholesterol, and refined grains—is the prescription for illness; it can contribute to obesity, tooth decay, heart disease, intestinal cancer, and diabetes. And these diseases are, in fact, America's major health problems."

Current economic ailments seem to be causing some salutary dietary changes. Sales of many convenience foods in 1975 were down 25 percent to 60 percent from 1974. Although comprehensive figures are not available for frozen foods, one major supermarket chain has stated that its overall frozen prepared food volume fell 16 percent from 1974. Canned foods, snack foods, and ready-made desserts of all kinds have suffered sales drops. Unprepared foods, including flour and raw vegetables, have simultaneously experienced a sharp rise in sales.

High food prices mean that less will be wasted. Family leftovers will be more carefully preserved, and restaurants, taking their cues from smorgasbords, will serve portions suited to people's appetites. Since the 1930s, few restaurants have offered a variety of plate sizes for meals. Men, women, and children—despite their differing appetites—are all given a standard plate full of food. In 1974, a small number of American restaurants began reintroducing meal size (and price) options. The customer can once again decide whether he wants one veal chop or two, whether he wants six ounces of meat or ten or twelve. The effort was designed to lure back customers

whose pocketbooks had been unable to adjust to rising food costs, but who would dine out if less expensive, smaller portions were available.

The current economic climate is bringing still another bit of good news with the explosive growth of personal gardens. A great deal of potential cropland is available in back yards. As energy prices (and consequently food prices) soar, an increasing number of backyards and vacant lots are being converted to gardens. The gardener's labor (called recreation) is substituted for gasoline, and fertilizer, previously wasted on grass, is used to grow edible crops. Better yet, in many cases a compost pile provides a rich fertilizer while simultaneously reducing the amount of organic residential garbage. Home gardens also require less pesticide, partly because crops can be mixed to provide a less attractive target for pests. Finally, home gardens lead to less food waste; people who wouldn't buy a blemished tomato will eat one out of their own garden.

The American food system, like the rest of our way of life, matured in an era that has now largely faded. The potential for systematic savings is woven through every aspect of the food process. The opportunity for savings is enormous, if only we choose to be savers.

NOTES

1. This section draws heavily upon John S. Steinhart and Carol E. Steinhart, "Energy Use in the U.S. Food System," *Science*, November 2, 1973; David Pimental and Walter Lynn, "Energy, Food, Man and Environment," Center for Environmental Quality Management, Cornell University, April, 1974; Gerald Leach, "Energy and Food Production," International Institute for Environment and Development, June, 1975; National Academy of Sciences, *Agricultural Production Efficiency*, 1975; Eric Hirst, *Energy Use for Food*, ORNL-NSF-EP-57, Oak Ridge National Laboratory, October, 1973; Gary H. Heichel, "Comparative Efficiency of Energy Use in Crop Production," Connecticut Agricultural Experiment Station Bulletin 739, November, 1973; Albert Fritsch et al., *Energy and Food*, Center for Science in the Public Interest, 1975.

2. Carol E. Steinhart and John S. Steinhart, *Energy: Sources, Use, and Role in Human Affairs*, North Scituate, Mass., 1974.

3. David Pimental et al., "Food Production and the Energy Crisis," *Science*, November 2, 1973.

4. Gary Heichel, "Energy Needs and Food Values," *Technology Review*, July-August, 1974.

5. The Portola Institute, *The Energy Primer* (Menlo Park, CA: The Portola Institute, 1974); Farno L. Green, "Energy Potential from Agricultural Field Residues," speech to the American Nuclear Society, June 9, 1975; Alan Poole, "The Potential for Energy Recovery from Organic Wastes," in Robert H. Williams, ed., *The Energy Conservation Papers*, Chapters 2 & 3 (Cambridge: Ballinger Publishing Company, 1975).

6. Eric Hirst, "Energy Use for Food in the U.S.," *op. cit.*

7. John R. Quarles, "Waste Production: The Need for Action Grows," speech by the Deputy E.P.A. Administrator on April 2, 1975.

8. Department of Agriculture, *Agriculture Statistics* (Washington, D.C.: G. P. O., 1974); Department of Agriculture, "Food Consumption, Prices, Expenditures," Supplement for 1973 to *Agricultural Economic Report No. 138: Supermarket Trends*, Winter, 1974.

Guest Opinion

From time to time in this space we present "Guest Opinions"—messages from prominent individuals who are not primarily involved on a daily basis with environmental concerns, but whose voices should be heard by those of us who are. Their viewpoints on various conservation issues, while inherently interesting and important to us, do not necessarily reflect or represent Sierra Club policy.

The Editor

The Forgotten Energy Crisis

Al Ullman

Al Ullman is a Democratic Congressman from Oregon and chairman of the House Ways and Means Committee.

THE DEBATE over natural resources versus industrial development has sharpened over recent years. And the Sierra Club deserves the gratitude of all conservationists for challenging the abuses of development and raising our awareness of the natural beauty around us—and how tenuous it is.

On the other side, the world of industry and finance makes the argument that the spate of federal and local regulations to protect and cleanse the environment has stunted national growth. They point to the loss of jobs and output brought about by stiff pollution standards and public outcry over strip mining and nuclear power.

In the middle of this classic debate stand most Americans, who believe we must settle on some common approaches that permit growth as well as conservation. So far, the combatants in the arena have staked out little middle ground.

But the debate over whether to preserve or develop ignores the larger and most critical question of energy supply.

What we once called the "energy crisis" has become an invisible crisis. Environmentalists and developers—as well as consumers and politicians—seem to have erased from memory the desperate cries for political force and public sacrifice.

Gone are the days when the nation put itself at the end of a long line waiting for a few gallons of gasoline. We no longer read about the threat of natural-gas shortages. The OPEC nations have ceased in our imagination to be the evil sultans of our destiny.

Last year, the nation consumed more gasoline than in 1974. And it's getting worse. We're now told that America is going back to the big car. Even gas wars are back.

Despite the vision of solar power and geothermal heat and wind-driven gener-

ators, the real world of U.S. production depends heavily on oil and gas. Last year, oil and gas accounted for three-quarters of our national energy consumption.

The view of oil rigs off shore or a pipeline resting on the delicate Alaska tundra is unpleasant to all of us who believe in naturalness. But much more alarming is our reluctance to face up to the hard facts of our dwindling energy resources.

Despite the promise of new oil reserves, domestic production remains depressed. We are drilling for new oil that is deeper and more costly to reach. Yet our consumption of oil grows each year—with a dramatic jump expected as we pull out of the current recession.

The number of operating oil-drilling rigs—a traditional measure of exploration—is well below a year ago. During the second week in March, imported oil (crude oil plus refined products) outstripped our own production of oil for the first time in history. Yet reports suggest that imports—and consequently the mounting trend of larger payments to cartel nations—will continue.

We seem to believe that some easy answers to more costly demand and shrinking supply will suddenly appear. Two years after the embargo we still haven't brought together a national energy policy. But not for lack of ideas. The number of energy bills introduced in Congress since the embargo of 1973 approaches 3,000. All are aimed in one way or another at shoring up our crumbling energy base.

Ultimately, Congress agreed on a compromise bill that temporarily brings down the price of oil to the consumer, gives the President a pocket full of standby powers and establishes distant fuel-efficiency standards. We now have a law that is probably more a measure of the country's mood than the country's real energy needs.

People don't believe the energy crisis is still with us. The nation has become accustomed to paying sixty cents for a gallon of gas. We have learned to live with higher heating bills. The pressure

on Congress to take stern, long-range measures has slackened.

Suddenly, the question of energy has become a rather listless point of political debate between Congress and the White House. If we permit the question of our dependence on oil—both foreign and domestic—to disappear onto the shelf of "things to be done sometime," then we risk terrible disruption of our economy and, hence, our range of national choices.

One obvious beginning in the effort to swing away from our dependence on oil is to use less. We certainly accept the conclusions that our oil reserves are rapidly diminishing. Like smokers, we don't want to believe that dependence is harmful. And unless we stop—or dramatically reduce our habit—we will find ourselves in real trouble.

The days when the sun will do our work are far away. Even the development of coal liquefaction and gasification and nuclear energy are hardly at hand. Nuclear energy—for all the controversy—fills only 2.5 percent of our energy needs. So, we must find ways to reduce our consumption of energy—especially oil.

The House of Representatives last year passed an energy bill that set limits on imports of foreign oil. The schedule of quotas is gradual and takes into account the pace of economic recovery and the special need of certain regions for foreign oil. In essence, the bill—which is now before the Senate—forces us to use less.

The bill is a message to the world that we will not continue to pay crippling oil bills from abroad. It is a message to the oil companies that they can't count on mounting supplies of OPEC oil for their refineries—that they must restructure their production.

Limiting the supply of foreign oil must be matched with conservation at home. Instead of slipping back into old patterns of wasteful consumer goods, like the "big car," we must renew the spirit of efficiency and saving. Although the pro-

posed tax on excessive use of gasoline was abandoned by the House, we must develop incentives to buy less at the pump.

We must encourage industry to convert to other sources of power—cleaner sources of power—rather than permit oil to reign as power king. We must develop new technology that is more fuel efficient and make sure it is put to use.

Congress can write energy laws and the President can sign them, but the real answer to the energy crisis is public

awareness and public action. Unless we collectively decide to use less energy—and certainly, less oil—our chances of winding up in another crisis are increased.

Environmentalists should be in the vanguard of public action. You are more aware of the limits of our resources—and the consequences of their loss—than most of the country. And that awareness gives you the extra responsibility of anticipating crisis and facing the tough demands of energy conservation.



Malthus Revisited

To the Editor:

May I point out some examples of misleading assertion, incomplete examination of fact, and unjustifiable inference in Appleman's "MALTHUS: The Continuing Controversy" (*Sierra Club Bulletin*, Feb. 1976).

At the end of each day, the world now has more than 200,000 more mouths to feed....

Not the world, but only certain countries, primarily in Asia, Africa, and South America are exploited by the industrialized countries. Most of these exploited countries have lower densities of population than the industrialized ones. Thus the basic reason they have difficulty feeding their people is not population.... The resources of the earth in terms of land, water, energy, technology, manpower are capable of supporting a population many times that now living.

... population growth tends to outstrip the supply of food.

The supply of food is a function of the economic organization of a particular society. Population growth is also a contingent variable. So, even as stated, the proposition requires drastic qualification. But the more important thing is that current population growth shows no sign whatsoever of outstripping human social capability for food production....

Today, even in the face of a Malthusian crisis of vast proportions....

Although a crisis certainly exists, "Malthusian" hardly states its essence. There is a crisis in the undeveloped countries of the capitalist world: lack of jobs in the cities; lack of land for the peasants; orientation of production and commerce to the needs of foreign corporations, banks and governments; misapplication of technology; exploitation; imperialism; profits taking precedence over health and welfare. One manifestation of this crisis is starvation. But it is not a biological law that accounts for the situation: it is the particular way that the economy of the capitalist world is organized. What seems to be expanding at a geometric rate in the dependent countries is the power and wealth of the ruling class relative to the workers' and peasants'.

For it is increasingly clear that the necessity of supplying food to very large and rapidly growing populations has pollution and resource depletion effects....

These effects are primarily attributable to the necessity for sustaining profits in a world economic system dominated by capitalism. As a view of California makes clear, these effects are associated more with super consumption in the imperialistic countries than with meeting basic food needs of the people of the imperialized countries....

Whether or not people will, in fact, interpose prudential checks to catastrophic population growth seems to have been answered in the affirmative for the industrialized countries, but it has by no means been answered yet for most of the less-developed countries.

Here Appleman poses the crux of the issue, but nowhere does he really examine it. First, it should be noted that population density in most of the less-developed countries is below that of the industrialized countries (e.g., in inhabitants per square kilometer, India has 164, compared to 324 for England or 280 for Japan—1973 statistics. As is well known, large parts of South America and Africa have very low population densities and are very rich in natural resources). More fundamentally, the questions raised by this statement are: What are the factors asso-

ciated with population growth or population level in the economically benighted countries of the capitalist world system? Are these factors alterable either by human action or by natural causes? Appleman fails to mention such crucial factors as: (1) the tendency in primitive agricultural communities toward high birth rates, explained by the fact that in such communities children become economically productive at an early age; (2) the reliance of parents, in countries without adequate welfare programs, or none, on their children for care in old age; (3) the cultural-lag effect which prolongs obsolescent traditions and delays social adjustment to new circumstances; (4) the difficulties, not to say disinterest, in providing education on birth control, nutrition and health care to the mass of the people of those countries where dictators, oligarchies and elite classes exercise control over politics and economics; (5) the generationally short-range effect, on population, of reduced mortality; i.e., population grows for awhile simply because people live longer, even if birth rate is only sufficient to reproduce the population in the child-bearing ages.

In any case, both the Soviet Union and China now consider population growth to be a matter of national interest and state planning, thus implicitly conceding Malthus' fundamental proposition.

Just a moment. What is Malthus' fundamental proposition? In a preceding paragraph, Appleman says, "But in the nineteenth century humanitarians refused to accept the inevitability of Malthus' grim 'law' of population." Thus, here Appleman appears to present the inevitability of population growth exceeding food-production limits of the planet, as the essence of Malthus, or as in the opening paragraph where he says, "Humankind, now doubling its numbers every thirty-five years, has fallen into an ambush of its own making." If this inevitability, this "law," is Malthus' fundamental proposition, then if the Soviet Union and China, or presumably any other country potentially, can avert the ambush, that would seem to be prima-facie evidence of refutation of the "fundamental proposition." In fact, Appleman veers back and forth between two interpretations of Malthus; one stresses inevitability; the other, accommodating to historical developments which obviously conflict with the inevitability notion, suggests the population-environmental support ratio is more contingent. The fact that Malthus himself during the course of his life qualified his original prediction, of certain failure of food production to keep up with population growth, facilitates these veerings.

The basic augury of Malthusianism has always been that growth of population inevitably means more misery for more people, so that humanitarian measures to alleviate this are futile, and accord-

ingly that those lucky enough not to suffer from hunger and want cannot change anything by being "well-intentioned social reformers." Of all countries, the one that in the present day has most strikingly exposed the nonsense of Malthusian fatalism is the Peoples' Republic of China. In twenty-five years the problems of disease, drought and pestilence, with famine every few years and never-ending hunger for most of the Chinese, problems as frightful or worse than those now existing in India, Argentina, Panama, Pakistan, etc., have been successfully met. Appleman refers to the difficulties China has in growing enough food to sustain "a burgeoning population" without mentioning the transformation since 1950. The story of China's accomplishments in agriculture has been reported in the American press; for instance, "Agriculture in China," by Wortman, in *Scientific American*, June 1975. The summary under the title reads, "The most populous nation appears to have achieved the objective of producing enough food for all its people."

In many of the less developed countries, there is simply not enough domestic food to nourish the population adequately

Because, for instance, the "domestic" food, bananas, coffee, beef, sugar, etc. is sold to foreign countries to enable the affluent of the misdeveloped countries to import luxuries.

They have flooded the labor markets, and because so large a percentage of them are unable to find employment, they constitute a huge and growing reservoir of human misery.

While in China, Appleman tells us, "according to United Nations estimates" the population is "increasing by over thirteen million per year." Yet, according to observations printed widely in the United States, there is no unemployment in China. Evidently, unemployment, like population growth, is not simply a law of nature.

Appleman's article is an attempt to excuse the existing inequalities in distribution and use of the earth's resources, to direct attention away from the developing economic crisis caused by imperialism, to throw blame on the exploited for conditions forced on them by the exploiters. The publication of the article by the *Sierra Club Bulletin* suggests inconsistency of principle when shifting focus away from the environmental concerns of the materially very privileged people of the world.

Hal Jamison
Sacramento, California

To the Editor:

I am bewildered that your journal would publish a lead article on so specialized a subject as population growth vs. food production, authored by a professor of English. Phillip Appleman's article, "Malthus: The Continuing Controversy," in your February issue, is less a "continuing controversy" than a pop-synthetic, uncritical acceptance of Malthus' old concepts.

In the first place, Dr. Appleman is either unaware of or ignores a recent body of work in this field which challenges Malthus' theories. (See Emma Rothschild, "Food Politics," *Foreign Affairs*, January, 1976; *Food: Politics, Nutrition, and Research*, edited by Philip H. Abelson, American Association for the Advancement of Science, 1976; Nick Eberstadt, "Myths of the Food Crisis," *The New York Review of Books*, February 19, 1976.)

Second, the author oversimplifies the relationships between population growth and food supplies. These relationships are far more complex than Malthus and his recent followers appear to understand.

Third, and more perniciously, the article implies that not much can be done about "the problem"; that it is unsolvable. In short, the implications of the article relieve us of any obligation to act because it implies that basically nothing can be done. This simply is not so.

Recent studies suggest that:

(1) Production of basic foods can be

increased dramatically, even geometrically, and without the use of complex machinery and expensive fertilizers;

- (2) Population growth is related to a constellation of complex factors, and increases or decreases for reasons other than those assumed by the neo-Malthusians. For example, population growth tends to drop precipitously in nations as their gross national product rises;
- (3) The problem, at this moment, is one of distribution, not supply; and the problem in the future will be one of allocating capital and resources into the production of food, which may not be particularly profitable—to the investors.

In summary, the article is full of misleading statements and inferences, plows no new ground, does nothing to acquaint your readers with the new body of knowledge, ideas, and theories in this field, and in the end merely reinforces a lot of old, unproductive, Malthusian myths and stereotyped thinking.

Granted, it is easier to perpetuate a myth than to present the data and ideas necessary to refute it, and to come to a higher and more realistic understanding of this complex and vital subject—but you could have tried.

Alton L. Safford
Los Angeles, California

Philip Appleman responds:

The letters from Messrs. Safford and Jamison have the virtue of illustrating my subtitle, "The Continuing Controversy"; but as they are both compounded of ideological propositions instead of a sober acknowledgment of the real world, they are not otherwise very helpful.

Mr. Safford represents a school of thought which I called in my book, *The Silent Explosion*, "Cornucopian Economics." The "Cornucopians" advise us to ignore rapid population growth as a factor in world hunger and concentrate solely upon increased production of food and other essentials, in the hope that production can manage to stay ahead of population growth. Unfortunately for mankind, a generation of expanding food production has been completely absorbed by a generation of population growth; thus, despite our efforts so far, the hungry remain hungry, and millions of malnourished human beings are still being damaged in body and mind.

The "Cornucopians" advise us not to look at this real world, but to wait for the pie in the sky which will accompany some future agricultural "breakthrough." Clearly, however, the sensible approach to this problem is to work at both aspects of it simultaneously: to do whatever can be done to increase food supplies, and at



"I am getting vibrations which, along the San Andreas fault these days, is not unheard of."

the same time to do whatever can be done about curbing population growth.

Mr. Jamison's letter is characteristic of the traditional, and now rather old-fashioned, Marxist approach to the population problem. Despite the recent recognition of the problems of overpopulation in both the Soviet Union and China, some Westerners, rigidly bound to dated ideological propositions, go on repeating anti-Malthusian arguments which go back as far as Marx and Engels themselves.

As it happens, I take as dim a view as Mr. Jamison does of capitalistic waste, imperialistic exploitation and "super consumption." Needless to say, these are one part of the general problem, as I have pointed out elsewhere. But even if these conditions were changed, rapid population growth would remain a severe obstacle to economic betterment, and would have to be confronted by the changed society. That is why China offers us the best current evidence of the traditional Marxist error on population growth: despite its vigorous and encouraging efforts to increase food production to feed a large and rapidly growing population, the Chinese government recognizes that

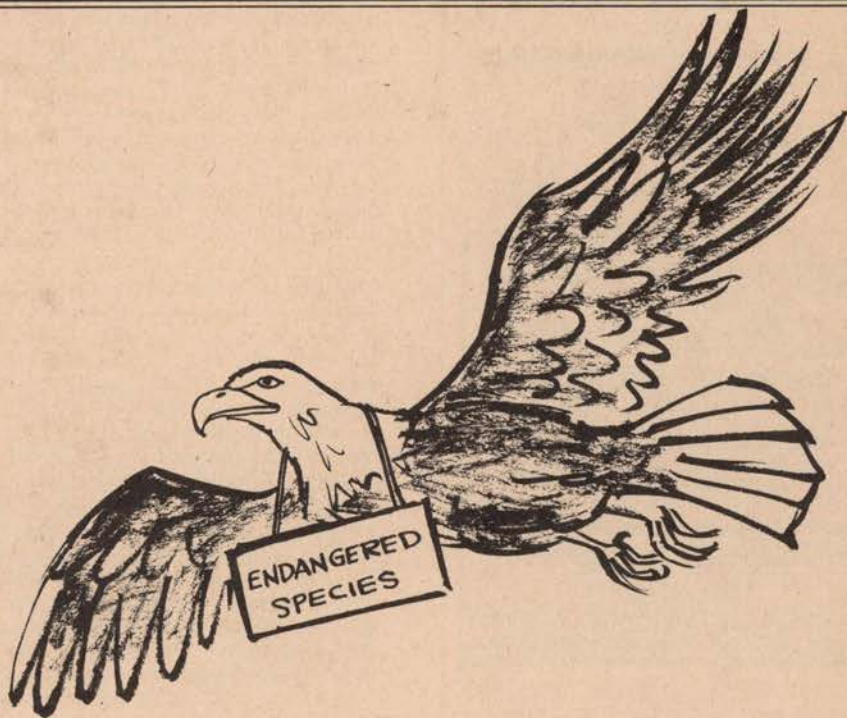
there are limits to the numbers of additional people it can feed. That is why the Chinese Communists have adopted the most comprehensive and ambitious effort to reduce births of any major country in the world, thus demonstrating their acceptance of the basic Malthusian proposition: that without somehow limiting human fecundity, no society will long be able to feed itself.

There are a number of misrepresentations in these two letters: for instance, it is misleading to say, as Mr. Safford does, that population growth rates "drop precipitously" when the GNP rises. Japan's growth rate is still 1.3 percent; Taiwan's is 1.9 percent; South Korea's is 2.0 percent—doubling rates of 53, 36, and 35 years respectively—very high growth rates indeed. And Mr. Jamison's confusion of Malthus' 1798 position (when Malthus saw no real hope for human improvement) and his position after 1803 (when he adopted "moral restraint" as a social imperative and thus could exhort humanity to save itself from the threat of overpopulation) persists in spite of my own careful distinctions, and simply perpetuates those nineteenth-century misrepresentations of

"Malthus' grim 'law' of population" to which I referred.

Perhaps the most astonishing misreading in these two letters is the inference that I (and Malthus) encourage a fatalistic and do-nothing attitude toward overpopulation. Nothing could be further from the statements or implications of either Malthus' essay or my own, as I am sure any reader not blinded by ideologies will have recognized.

I want to conclude with a note of commendation for both Mr. Safford and Mr. Jamison. They clearly have the social welfare of the world's people at heart; that at least is better than the indifference with which many people treat this profoundly important subject. But it is not enough simply to wish people well; societies must create the conditions in which human well-being can prosper. If capitalistic enterprise can assist in this process, as Mr. Safford seems to be saying; or if socialistic transformations can be effective, as Mr. Jamison asserts; so much the better. But the world community cannot afford to permit the ideologies of either of these systems to misdirect social efforts to only one aspect of a many-sided problem. **SCB**





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News

Last stand for the national forests?

Recent hearings in both the House and Senate focused on two critical bills pertaining to management of the national forests. (See "Washington Report" in the April, 1976 *Bulletin*.) One, the National Forest Timber Management Reform Act (S. 2926 and H.R. 11894), sponsored by Senator Jennings Randolph (D-West Virginia) and Congressman George Brown (D-California), would establish firm standards in law to protect the national forests by: 1) limiting the size of destructive clear-cuts; 2) protecting wildlife and fishery resources; 3) prohibiting massive cutting of immature trees; 4) discouraging even-aged management and tree-farming practices closely associated with clear-cutting; and 5) preventing the transfer of valuable eastern hardwood forests to pulpwood species. The other bill (S. 3091 and H.R. 12503), sponsored by Senator Hubert Humphrey (D-Minnesota) and Congressman Harold Johnson (D-California), would allow trees to be cut in the national forests without any firm safeguards to protect fragile resources. Timber interests fervently support the Humphrey approach, and environmentalists stand behind the Randolph bill. Brock Evans, Director of the Sierra Club's Washington Office, told the Senate Agriculture and Interior Committees that "It is time to require specific, yet reasonably flexible minimum standards for logging practices in order to protect those professional foresters who sincerely want to do a good job from political pressure." And club Executive Director Michael McCloskey told the House Agriculture Committee that "This is the time for Congress to assume its constitutional role in setting forth the policies under which timber on some ninety million acres of the national forests will be managed." Letters are urgently needed from all Sierra Club members to their legislators in support of firm standards in law to protect the national forests from abusive management practices. Please act quickly.

Final Mineral King EIS indicates severe damage

At a recent press conference in Los Angeles, Sierra Club spokesmen said that the Forest Service's final environmental impact statement (EIS) for Mineral King, in the Sierra Nevada of California, pointed directly to the conclusion that the year-round ski development planned for the valley would seriously damage Sequoia National Park and compromise the status of the area as a national game refuge. "This \$60 million project represents an idea whose time has passed," said Executive Director Michael McCloskey. "Giant sequoias would be cut down to make way for an enlarged road through the park to take resort goers to the development," and smog from the added traffic would blight the forests in the park and risk damage to the sequoias there. Development of the resort would: strain Sequoia National Park's capacity for absorbing the increased number of visitors without damage to its environment; destroy 108 acres of habitat for deer and other wildlife; and disturb 400 acres in the area. The EIS admits that the development would adversely affect the wolverine and pine marten, and destroy the wilderness quality of the high country above the Mineral King. The club has been in court since 1969 challenging the legality of the project and has long believed that Mineral King should be administered as part of Sequoia National Park. Legislation to accomplish this aim will be introduced soon by the district's representative, John Krebs.

Clean air vote expected soon

Both the Senate and House are expected to vote very soon on the Clean Air Act Amendments of 1975. The National Clean Air Act Coalition, of which the Sierra Club is a member, will be supporting amendments to strengthen the bills reported out of committee and opposing expected weakening amendments. Letters are needed to all members of the Senate and House urging support for the strongest possible set of amendments to the Clean Air Act. In particular, club members should support a strong policy to prevent significant deterioration and oppose proposals to give Detroit additional time to meet auto-emissions standards and to permit industry to use so-called "dispersion techniques," instead of eliminating pollution.

What next for the New?

Disappointed but undaunted by a recent U.S. Court of Appeals decision to deny North Carolina's request for preservation of the New River and uphold the license issued by the Federal Power Commission for a hydroelectric project on the New, the National Committee for the New River will now mount an all-out campaign to push protective measures in Congress. Bills have been introduced in both Houses—in the Senate by Senator Jesse Helms (R-North Carolina) and in the House by Representative Steven Neal (D-North Carolina)—to make the river part of the National Wild and Scenic Rivers System. A decision by Secretary of the Interior Thomas Kleppe to include the New in the System was overridden by the court's decision, which was based not on the merits of protecting the New, but rather on a technicality. Although the Committee has pledged to appeal the case to the U.S. Supreme Court, it feels that the best bet now lies in Congress, where the merits of the issue and the will of the people will hopefully prevail. The committee called on all "old and new friends of the river to rally support in Congress for this legislation."

OMB turns down Interior's redwoods bill—Interior to sue

The Office of Management and Budget has told the Department of the Interior that it cannot submit legislation to Congress authorizing the National Park Service to regulate logging adjacent to Redwood National Park. The Park Service and Interior Secretary Kleppe, who finally agreed with conservationists that congressional consideration of the Redwood Creek problem is required, will have to testify against such legislation, if and when it comes up, as being inconsistent with the President's programs. The Department of the Interior indicated that it plans to ask the Justice Department to undertake some sort of legal protection for the park, but details are not yet available.

Kaiparowits Power Plant cancelled

Southern California Edison, San Diego Gas and Electric, and the Arizona Public Service Company cancelled in April their joint plan to build a mammoth coal-fired power plant on southern Utah's Kaiparowits Plateau. The \$3.5-billion facility would have been situated in the heart of an area containing about twenty percent of the nation's national-park lands. The cancellation was announced just before commencement of a hearing called by the California Public Utilities Commission in response to a Sierra Club petition asking that the project's need be justified. Sierra Club Southern California Representative Mary Ann Eriksen said, "The utilities' withdrawal from the project confirms what the Sierra Club had already concluded—that the demand-increases forecasted are substantially in error and that the need for the project has not been justified." The cancellation was a welcome surprise to environmentalists, who had opposed the project on several grounds, among them that it would have contributed significantly to the deterioration of air quality in the relatively unpolluted southern Utah region. Sierra Club Executive Michael McCloskey said, "Kaiparowits was a project at the wrong time and in the wrong place. It deserved to be dropped. But the deep-mined coal of Utah may still have a place in our energy future if technical breakthroughs can be made in the next ten to fifteen years in perfecting coal-gasification and other techniques to overcome air-pollution problems."

Champion International cancels Tongass timber sale

Champion International Paper Company has requested cancellation of its contract with the Forest Service for the largest timber sale in U.S. history. Eight and three-quarter billion board feet of timber were to have been cut over a fifty-year period in the sixteen-million-acre Tongass National Forest, mainly on Admiralty Island in southeast Alaska. The timber was to have been processed in a Champion pulp mill and then sold to Kanzaki Paper Company of Japan. A lawsuit by Sierra Club and others charging the Forest Service with violation of the requirement that it manage the National Forests for multiple use has held up this contract since 1970. The delay and inflation of prices in Alaska caused Kanzaki to back out, making the sale unprofitable for Champion. The Sierra Club believes that Admiralty Island should be protected to preserve its wilderness character and the outstanding habitat it provides for the Alaska brown bear and the American bald eagle.

Strip mine bill— one more time

At press time the revised strip mine bill (H.R. 9725), which passed the House Interior Committee only to be tabled by the Rules Committee, still seemed to have a chance of getting to the floor for a vote. A resolution was filed by John Melcher (D-Montana) and eight other members providing for a "discharge petition." If signed by 217 representatives it would allow the bill to come to the floor despite the Rules Committee action. Since 278 members supported the veto override last June, it is expected that the needed signatures will be obtained.

Arctic gas— an alternative route

A new look at natural-gas-transportation routes from the Arctic was initiated by testimony given at joint Senate Commerce/Interior Committee hearings. For the first time a major gas-company official seemed willing to consider the Fairbanks/Alaska Highway pipeline route, which environmentalists consider the least damaging of the proposals before the Federal Power Commission. S. Robert Blair, President of the Alberta Trunk Line Company, called this route "manageable and even rather superior in its practicality" from the standpoint of engineering and construction. He estimated its cost at \$4 billion, considerably less than the \$9-billion Arctic Gas project or the \$7.6-billion El Paso Gas proposal. Testifying for the Sierra Club, Brock Evans, director of the Washington office, urged the government to pay more attention to the Alaska-Highway route, which would follow the existing oil pipeline corridor to Fairbanks, and then go overland along the Alcan Highway to the lower forty-eight states. This route would avoid the serious environmental damage to the Arctic Wildlife Range, inherent in the Arctic Gas proposal, as well as problems involved in handling liquefied natural gas, a central factor in the El Paso proposal.

Toxic substances bill passes Senate

By an overwhelming vote of sixty to thirteen the Senate passed S. 3149, the Toxic Substances Control Act, sponsored by senators Tunney (D-California) and Hartke (D-Indiana). No serious challenges emerged on the floor. An amendment by Senator Nelson (D-Wisconsin) to phase out all uses of PCBs over a two-year period, unless it could be proved that no reasonable risk was posed by a particular use, passed on a voice vote. Also passed was an amendment by Senators Williams (D-New Jersey) and Case (R-New Jersey) to set up state demonstration programs to work in concert with the federal program. Focus of action on the bill now moves to the House Commerce Committee. Letters are needed to committee chairman Harley Staggers (D-West Virginia) and the rest of the committee in support of H.R. 10318, the House companion bill.

World population passes four-billion mark

World population passed the four-billion mark last month, according to estimates by the Population Reference Bureau in Washington, D.C. World population reached three billion in 1961, only fifteen years ago, and continues to grow at the most rapid rate in history. The next billion may be added in thirteen years. The United Nations estimates world population will be between 5.8 billion and 6.6 billion in the year 2000. This projection assumes reduction in mortality and decline in fertility ranging from optimistically rapid to moderate. The implications for such environmental concerns as wilderness preservation, energy use and agricultural practices are enormous.



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Robert A. Irwin

National Committees

WHEN PEOPLE read headlines such as "Sierra Club Supports New Redwood National Park in Alaska," no doubt they usually identify the club with its staff spokesmen or, perhaps, its president. Some club members may also have that impression, but most realize that such policy statements, regardless of who voices them, are based on decisions made by the Board of Directors. Only the more active members, however, may realize the important part played by the club's national committees in helping the Board

to formulate policy. Some of these committees also make recommendations relating to the club's internal operations.

Both the Board and the club's professional staff of 110 would be overwhelmed by details were it not for skilled man and woman power and the experience supplied to them by the national committees and task forces, all of which operate on shoestring budgets. For example, in urging new parks in Alaska, the directors rely on more than a simple "gut feeling" that more parkland is good. Some Board members, of course, will have firsthand knowledge of the issue, but even they may require specific data supplied by the club staff and, in this instance, by the Alaska Task Force and the Alaska Chapter.

National club committees are not a recent phenomenon, but their roles and prominence have grown since the founding of the club eighty-four years ago this month. Even then, when membership totaled 182, the directors delegated some of their duties to committees, such as Publications and Finance. Today, with 157,000 members and with activities and concerns covering the globe and embracing mankind's total environment, the Sierra Club simply could not function without its national committees.

In the late sixties to early seventies, when the club's membership increased enormously, the Board of Directors found

itself increasingly calling on its committees for help. In the three years beginning January, 1969, membership almost doubled, from 72,000 to 136,000, and the chapters increased from twenty-eight to thirty-six, with six more to be formed before the end of 1972. Early that year, the Sierra Club Council's Internal Organization Committee (IOC) was charged with reviewing the club's committee structure. It based its subsequent recommendations on the belief that the national club committees should:

- Develop wider member participation in committee work;
- Make greater use of the talents and knowledge of the club membership;
- Foster communication and cohesiveness among committees and club members;
- Reduce the workload of the president and the other directors.

Although the IOC's recommendations applied specifically to the Board's "internal" committees, many were equally valid for the committees dealing with conservation issues. The report urged that the Board's Executive Committee review annually the need for each committee, phasing out some and establishing others; that a broad charge to each committee be stated in writing; that guidelines be developed for the composition of each committee and for the selection of its members; and that the organization and operational procedures for each committee be spelled out in detail. The report's general recommendations, along with many of its specific recommendations, are now being followed by the Board, as well as by the Council and its committees, two of which—the IOC itself and Outing Policy—rank with the national committees because of their wide impact on both the club and its members.

Internal and Issues Committees

Of the three dozen national club committees, twelve, the "internal committees," are concerned with the operations of the club at all levels. The remaining two dozen deal with environmental issues, hence their label, "issues committees." The internal committees, with few exceptions, have their origins in the earliest days of the Sierra Club. Two, the Nominating Committee and Judges of Election, are provided for in the bylaws. The other ten are: Budget; Bulletin Advisory; Clair Tappaan Lodge; Financial; Administration, and Investment; History; Honors and Awards; Mountaineering; Outing; and Membership.

The Outing Committee, one of the club's oldest, is the largest and probably the most active. It has a host of subcommittees set up according to geographic areas, types of outings, and its own internal functions (e.g., Leadership Training, Budget). It alone among all the na-

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tional committees sends a voting delegate to the Council. The Membership Committee also occupies a special position in that it reports to both the Board and the Council. The committee had been inactive before 1972, but was reconstituted in re-

CALL FOR CLUB COMMITTEE NOMINATIONS

THE CLUB'S national committees provide one of several vehicles by which members can become actively involved in the club's work. In order to elicit membership participation and to search out untapped expertise, I am asking club members to consider the committees listed below and, if they, or someone they know, would be capable and desirous of serving the club as a committee member, to send the name, address and relevant background information to the Board/Council Office, 530 Bush Street, San Francisco CA 94108. We would like to hear of your interest by the first of June.

Committee chairmen will be appointed by the Executive Committee of the Board at its June 5-6, 1976 meeting and the chairmen will then be establishing, with the approval of the President, their committees' membership for the next year. Information received from interested members will be furnished to the newly appointed chairmen; it will also be sent to the chairmen of the appropriate regional, chapter and group committees. Most national committees currently have full rosters; however, terms of service are staggered so that a portion of the membership of each committee is up for renewal each year.

The currently active Internal committees are: Budget; *Bulletin* Policy; Clair Tappaan Lodge; Financial Advisory, Administration and Investment; History; Honors and Awards; Judges of Election; Membership; Mountaineering; Outing; Publications.

The currently active Issue (Conservation) committees are: Atmospheric Pollution; Economics; Energy; Environmental Education; Forest Practices; International; Labor Liaison; Land Use; Native American Liaison; Population; Transportation; Wilderness; Wildlife. Authorized but currently inactive Issue committees are: Marine and Coastal; Mining and Minerals; Water Resources.

Kent Gill
Past President

sponse to problems regarding membership processing and services. In order to serve the entire club, committee members were appointed from each of the twelve club regions.

Half of the two dozen issues committees are Regional Conservation Committees (RCCs) made up of delegates from each chapter in each of the ten regions of the contiguous forty-eight states and Canada. Alaska and Hawaii, while not officially RCCs, are each a separate region. (A future article will discuss the RCCs in detail.)

The other thirteen issues committees each specialize in a single environmental problem that transcends regional boundaries. These committees are Economics, Energy, Environmental Education, International, Labor Liaison, Native American Liaison, Population, Transportation, Water Resources, Wilderness, and Wildlife and Endangered Species. In addition, two special task forces, Alaska and Atmospheric Pollution, report directly to the Board.

Sales for Conservation

Two more chapters have gone into merchandising to support their conservation efforts. The Florida Chapter has brought out an Environmental Bluegrass recording titled "The Pioneer Ethic—a 200-Year Review," by biologist Dale Crider. It got a hefty sales boost after the Jacksonville Bicentennial chairman called Crider's recording "unAmerican" because of its digs at the Corps of Engineers. The album is available at \$6 each from the chapter's newsletter, *The Pelican Papers*, 2036 Sussex Road, Winter Park, Fla. 32789. The Great Lakes Chapter and its Piasa Palisades Group each are offering attractive items to further conservation causes in Illinois. Member Nancy Hart, an artist for the Morton Arboretum, has produced three beautiful prints of native wildflowers, which have been reproduced on notepaper. Packets of twelve notes and envelopes are available at \$2 a packet from the Great Lakes Chapter, Sierra Club, 53 W. Jackson Blvd., Chicago, Ill. 60604. Artfully crafted, pewter belt buckles bearing the sequoia-and-mountain emblem of the Sierra Club have been produced by the chapter's Piasa Palisades Group. They measure 2 x 2½ inches and will take belts up to 1¾ inches wide. They can be ordered at \$5.25 each postpaid from Piasa Palisades Fund, 21 Whitford Place, Godfrey, Ill. 62035.

In the November/December issue, under "Chapter Notes," it was reported that two chapters were selling Sierra Club sweatshirts. One of them, Loma Prieta, unfortunately had to abandon its enterprise because of insufficient orders at deadline. No such difficulty should face the latest entrepreneurs, for their items are already produced and on hand.

A Priceless Talent Pool

These three dozen national committees comprise a vast pool of knowledgeable experts, skilled technicians and other talented persons. On the open market their services would be beyond reach, but they serve the club being reimbursed only the cost of travel and some out-of-pocket expenses. A recent example is provided by one of the Board's newest committees, Economics. Its principal function is advisory, providing professional opinions on economic matters to the Board, the staff, or to any other club entity needing such counsel. The committee's dozen or so members, virtually all of whom are on college or university faculties, donated two and a half full days of their time in mid-December, 1975, to the first full-fledged meeting of the committee. Had they collected a relatively modest *per diem* of \$100—which they did not—their services would have cost the club in excess of \$3,000. If the countless hours of work contributed to the club by all the members of all the national committees could be tallied, the annual tab would certainly mount well into the millions—impossibly beyond any conceivable Sierra Club budget.

Even more important, the informed dedication of most committee volunteers could not be purchased at any price. The committees depend on volunteers, club committee meetings are open, and any club member is welcome to attend. Committee reports and rosters are available from the Board/Council office at club headquarters. Some committees publish regular newsletters. Although many national committees have full rosters, some do have openings. Most of them have subcommittees and special task forces that need participants.

If you have knowledge and experience in some special field, contact the chairman of the committee that interests you. The chairman, who is appointed by the club president, nominates his or her committee members subject to approval by the Board. Make yourself known. The chairman could nominate you, or, if there is no vacancy, make use of you and your talents in some other capacity.

Club's World Directory Issued

The Sierra Club has brought out a completely revised, second edition of its *World Directory of Environmental Organizations*, which lists and describes some 3,200 organizations—governmental and private, national and global—from nearly 200 countries. A "User's Guide" is organized by field of interest, listing all of the organizations working in a particular field. The Directory is available at \$18 a copy from Sequoia Institute at Claremont, P.O. Box 30, Claremont, CA 91711.

Photos by Arturo Muñoz



DECISION AT DARIÉN GAP

Michael C. Moss, Eugene Coan and Arturo Muñoz

THE Chocó Indians of Panama live simply, finding food and shelter in the jungles that surround them. Hunting, gathering, farming and trading are their means of survival. The climate is hot and humid. They wear little clothing. Their huts, open-sided and thatch-roofed, blend into the forest. Their home is Darién, a province of Panama covering much of the country east of the Canal Zone. Like other "primitive" peoples, they seem doomed to cultural extinction. Unless there is a rapid change in public opinion and government policy in both the United States and Panama, a highway will be constructed through Darién, opening up the last of the Chocó's secluded land. The Federal Highway Administration of the Department of Transportation (DOT), which is providing two-thirds of the funding for the project, has recently filed a draft environmental impact statement (EIS), in response to a lawsuit brought by the Sierra Club and other environmental organizations. Completion of the procedures under the National Environmental Policy Act is the last action DOT is re-

quired to take before construction of the highway can begin.

The "Darién Gap Highway," the final link in the Pan American Highway, would connect North and South America, allowing a motorist, according to promoters, to drive nonstop from Alaska to the tip of South America. What the promoters are not talking about is that construction of the road would ultimately result in the destruction of one of the last wild areas and last primitive cultures in the Western hemisphere.

The impact of the highway, and the ensuing exploitation of Darién's natural resources, is enormous. Construction will introduce air and noise pollution to a previously quiet and pollution-free environment. Deforestation of the hills and valleys by lumber companies will cause extreme soil erosion. Habitat for animals and rare plants dependent on the forests will be destroyed. Aftosa, a hoof-and-mouth disease of livestock, now largely restricted to South America, has ravaged cattle and wildlife populations in past outbreaks. Completion of the Darién Gap Highway will greatly increase

the chances of aftosa spreading northward into Mexico and Southwestern United States.

Most tragically, the impact of the highway upon the Chocó, who depend upon the forests for survival, will be devastating. Even the Department of Transportation admits that the movement of colonists into Darién in the wake of the highway will "lead to the destruction of the [Indian] culture." Many Chocó, because of their relative seclusion from the outside world, do not even know the road is to be built.

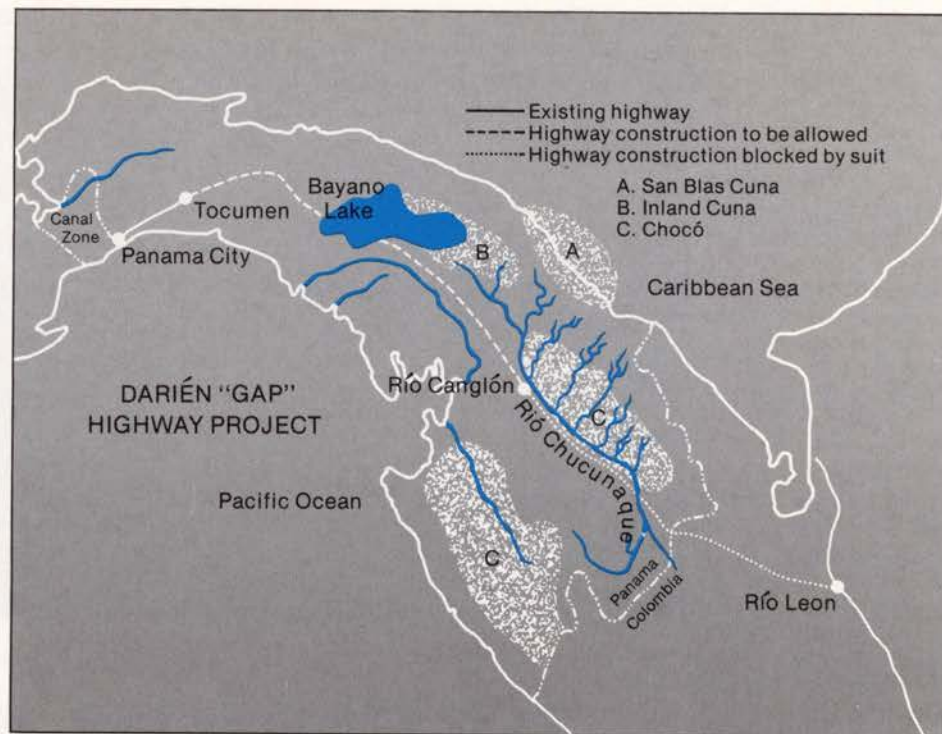
The main part of the Chocó population is concentrated in the Río Chucunaque and its tributaries, and in valleys to the southwest. They live in relative harmony with their environment, practicing a form of slash-and-burn agriculture. Clearings are cut in the forest and the vegetation burned. After a few years of cultivation, the Chocó move on to new plots; the old ones quickly revert to forest. The soil regains its fertility, and fast-growing tropical trees begin to tower over formerly cultivated areas. In this manner, the Indians temporarily exploit the forest without destroying it. In

remote areas, there are still some Indians who hunt with only a lance. The Chocó also observe a fishing season of sorts. Since the traditional fishing spear must be used in clear water, little fishing is done during the rainy season, when the rivers and streams turn brown.

The Chocó, however, are receptive to change. Most hunters use rifles nowadays. Rubber masks for spear fishing, flashlights and other technological innovations are prized. The Chocó have adapted somewhat to the modern world. Most of the men speak some Spanish, and many have traveled to Panama City. National currency is used in trade and non-Indian crops such as rice and sugar cane are planted. Virtually all the men own at least one pair of trousers and a couple of shirts for periodic trips to town.

Nevertheless, the Chocó have largely retained their indigenous culture. In their forest habitat, the men wear only a loin cloth, and the women a colorful wrap-around skirt called a *paruma*. Both the men and the women paint their faces and upper bodies with intricate and beautiful symbolic designs. In certain ceremonies, the spirits of forest animals, represented by wooden carvings, are invited to join the Indians for a drink of corn *chicha*.

The Chocó are a peaceful people. Rather than enter into conflict with settlers, they usually move deeper into the forest or migrate to another area. For this reason, most of the Chocó in



Darién are found in the upper reaches of the rivers. Many are immigrants from the neighboring Chocó Province in Colombia, where colonists moving up the river valleys for the past hundred years have steadily pushed the Indians out of their lands. Darién, with its remote wilderness forests, is the last refuge for these primitive, semi-nomadic people.

As the Pan American Highway has pushed south towards the land of the

Chocó, it has left behind a path of environmental and cultural destruction. The Cuna Indians lived along the Río Bayano until the highway, cutting right across their land, opened up the area for commercial development. Much of their former territory will become the bottom of a lake, as construction of a major dam on the Río Bayano is completed. In a sad reenactment of nineteenth century United States Indian history, the inland Cuna



have been relocated. It is only a matter of time before their fellow tribesmen, the San Blas Island Cuna, also get their share of the "profits," as side roads built off the main highway throw open their once secluded land. The Chocó are within miles of being the next victims.

In 1970, the United States Congress, without substantial public notice, approved construction of the Darién Gap Highway. Two-thirds of the estimated \$251 million project is to be funded by the United States, the other third by the governments of Panama and Colombia. From Tocumen, Panama, to Río Leon, Colombia, the highway is to cut through about 250 miles of rainforest and swamp. If it is completed in ten years, as planned, the highway will include seventy bridges and hundreds of culverts.

The United States is funding the project to provide access to the wealth of natural resources in Darién. Up for grabs are 2 million hectares (5 million acres) of mixed commercial timber, 670,000 hectares (1.7 million acres) of potential agricultural land, and newly discovered copper and other mineral deposits. The massive dam on the Río Bayano is already under construction. The estimated 10,000 cattle present in Darién will be multiplied many times over as new lands are made accessible. Add to that list bus and truck companies, gas stations, hotels, restaurants and settlements along the highway, and one gets the picture of what will happen if the highway is completed.

In June 1974, the Sierra Club, the National Audubon Society, Friends of the Earth and the Association of Fish and Wildlife Conservation Commissioners filed suit in the U.S. District Court in Washington, D.C. against the Federal Highway Administration. The suit cited the agency for failure to prepare a proper environmental impact statement under the National Environmental Policy Act (NEPA). It had prepared only a grossly inadequate document which it called an "environmental impact assessment."

One of the critics of this draft "assessment" was Royston C. Hughes, Assistant Secretary of the Interior. He said, "We find the environmental assessment for the Darién Gap Highway inadequate in several respects. . . . This department strongly urges that all impacts of the proposed Darién Gap Highway on the environment of

the Darién region be fully evaluated and discussed in a draft environmental statement in accordance with the National Environmental Policy Act."

Despite claims by DOT that NEPA did not apply to projects occurring entirely outside the United States, District Judge William Bryant ruled in favor of the plaintiffs and granted an injunction against further highway construction. Later the Department of State insisted on a compromise: while continuing to halt future congressional contracting and fund-raising in Congress for the highway until a proper EIS is prepared, Judge Bryant allowed the completion of existing construction contracts in Panama. Nevertheless, for the first time, NEPA was found to apply to activities funded by the United States and carried out overseas. A significant result of Judge Bryant's ruling may be that EISs will be required of all such projects.

Unfortunately, almost half of the Darién Gap Highway—as far south as the Río Canglón, Panama, just into the Chocó lands—is being completed under the existing contracts named in Judge Bryant's ruling. The fate of the remaining 150 miles and of the

Chocó Indians will probably be decided by the United States, for without U.S. funds, it is doubtful that the Panamanian and Colombian governments would finish the road. (There is rumor of growing opposition among some Panamanians to completion of the highway. Concerned about the spread of *aftosa* into their country, and of the potential influx of contraband and illegal aliens, these people would be satisfied with halting the highway at Río Canglón.)

A decision by the United States Congress to cut off funds for the Darién Gap Highway would, at least temporarily, save Darién and the Chocó from the onrush of civilization. If this is to occur in the few months that remain before the final construction contracts are let, an outcry from concerned conservationists will be necessary, and those interested should communicate their views to their senators and congressmen.

Michael Moss is a journalism student at San Francisco State College. Eugene Coan is Major Issues Coordinator in the club's Conservation Department. Arturo Muñoz is a graduate student in anthropology at Stanford University.



NUCLEAR SAFEGUARDS

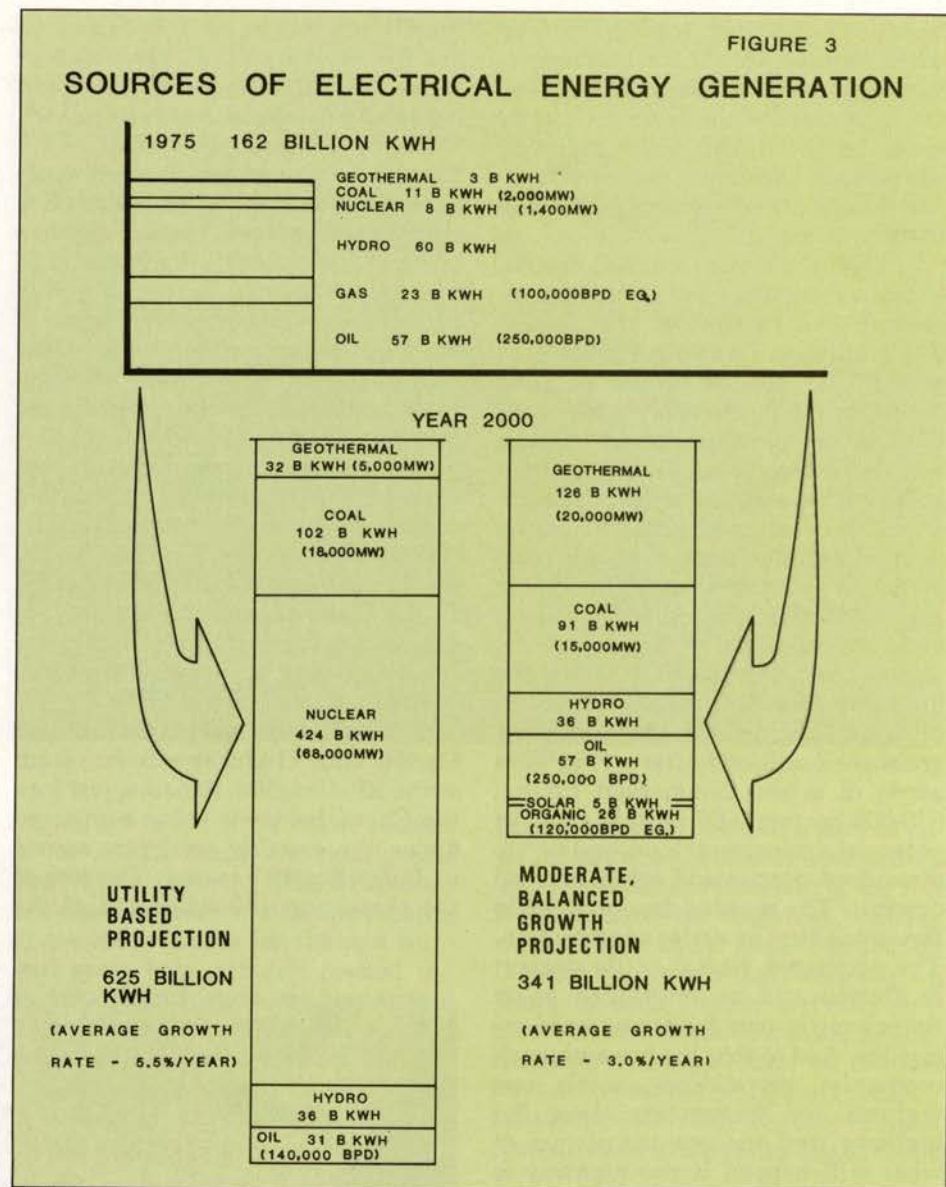
(Continued from page 6)

tion program would lead to only a doubling of generation requirements in twenty-five years, for an average growth rate of three percent per year. This would allow for a healthy mix of many different types of generating capacity with emphasis on renewable resources, as shown in Figure 3. The mix of generating capacity in electrical sources shown in Figure 3 is only one of many possible alternatives. A slightly different general mix was suggested by Michael McCloskey in a Sierra Club paper of March 9, 1976. Other alternatives also are possible. The important point is that when demand is reduced, our flexibility and capability to choose from a wide variety of options is enhanced.

The Economics of Nuclear Power

Nuclear energy is not the bargain it was once thought to be. Real (uninflated) construction costs for nuclear power stations have quintupled in the past eight years. Uranium prices have doubled in each of the past two years, from \$8 to \$10 per pound in 1973, to \$36 to \$40 per pound at the end of 1975. The effects of these cost increases are typified by the experience of the Sacramento Municipal Utility District (SMUD), the second largest municipal utility in California, which in January 1976, reversed an earlier commitment for a second nuclear reactor at Rancho Seco.

In March of last year, SMUD issued its draft environmental impact report (EIR) for a proposed 1,100-megawatt nuclear unit. The EIR estimated final completion costs at \$794 million and uranium costs at \$17 per pound in 1984. Seven months later, the utility revised its construction-cost estimate to \$1.21 billion and admitted that uranium prices might easily be three times higher than its earlier estimate. This escalation of more than \$400 million in capital costs over seven months is a dramatic indication of the instability of the factors affecting the economics of nuclear power. Focusing on the unreliability of operating reactors, the unexpected sharp rises in estimated construction costs, and the unresolved problems of the nuclear fuel cycle, SMUD General Manager William Walbridge concluded this January that the combined effect of these uncertainties "shows that the



projected cost of supplying power through nuclear generation is roughly equivalent to that of supplying power through geothermal generation, and that the cost of nuclear is far closer to coal than was the case two years ago."

SMUD is not alone in this experience. The fact is that most utilities have no idea what the future price of power from nuclear plants will be. Uranium contracts, for example, cannot be negotiated unless utilities agree to pay either market price at time of delivery or today's price plus a steep escalation rate, *whichever is higher*. Additional safety equipment to cope with unforeseen problems, such as the recently discovered active earthquake fault offshore from the giant Diablo Canyon nuclear complex, may raise the cost of a plant by several hundred million dollars or may prevent its operation entirely.

One matter is clear. Commercial nuclear fission remains an immature technology. After a quarter of a century of high-priority development, it still cannot be depended upon to satisfy a major portion of our energy demands, nor can it be counted on to provide electricity at lower cost than its competitors. "The nuclear-power industry," conceded Southern California Edison's manager of steam generation, Ronald Knapp, earlier this year, "is a very, very infant industry in terms of technological development." Obviously, the assertion of the Initiative's opponents that nuclear power is the cheapest alternative is simply wishful thinking.

Jobs

Opponents of the Initiative claim that its passage would cause a drastic increase in unemployment in Califor-

nia. As we have already noted, however, the Initiative itself does not shut down nuclear power plants. Only the state's legislature can do that. But even if it did, would a loss of jobs result? There is good reason to think not.

Production of electricity is one of the least labor-intensive activities in the United States economy. This means that more jobs are created when money is spent on things other than producing electricity. Consider a specific example. Many studies (Schipper's, for example. See References.) have shown that one can save electricity, without sacrificing well-being, by designing and manufacturing electrical appliances to operate more efficiently. (One need not have fewer frost-free refrigerators, only more efficient ones.) Moving in this direction shifts capital from the electric-utility industry to manufacturing. If society practices energy conservation to the economic break-even point, it should be willing to spend an extra \$1,000 on better manufacturing in order to save \$1,000 worth of electricity. Furthermore, U.S. Department of Commerce statistics show that a dollar spent on appliance manufacturing creates *twice* as many jobs as a dollar spent in the utility industry. This means that national and state energy-conservation programs should produce a positive impact on jobs and a decline in unemployment. Society literally would be substituting labor for energy.

The Regulatory Complex

The Initiative's opponents have tried to argue that existing federal agencies, together with the nuclear industry, have performed admirably and that state government should not interfere with their processes. The real issue, however, is credibility. How can we trust the nuclear establishment when it has repeatedly distorted the most basic information about public-safety aspects of the nuclear program? Bureaucratic bungling has continually set back reasonable efforts to resolve problems concerning the efficacy of nuclear-reactor emergency systems, radioactive-waste management programs and measures to safeguard nuclear materials and facilities from terrorist activities.

Efforts of concerned scientists and laymen outside the nuclear establish-

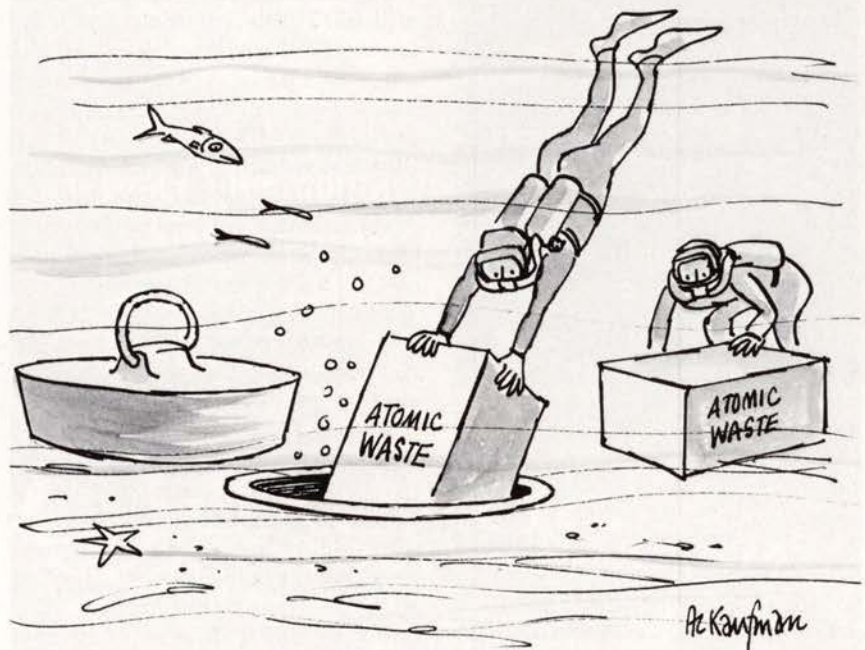
ment have been necessary to call attention to the worst of the establishment's fiascos and to recommend sorely needed changes in existing programs. In the area of nuclear reactor safety, for example, it was Henry Kendall and Dan Ford of the Union of Concerned Scientists who revealed that the emergency-core-cooling system (ECCS)—the critical link in a nuclear reactor's accident-control capability—has never been adequately tested and that the efficacy of the ECCS is presumed only from *calculated* results based on computer models that have never been properly validated by experiments.

Repeatedly, the Atomic Energy Commission (AEC), and now its successor agencies, the Nuclear Regulatory Commission (NRC) and the Energy Research and Development Agency (ERDA), have tried to persuade the public that the federal decision to move ahead with nuclear energy is the right one. The Reactor Safety Study (RSS), or "Rasmussen Report," is the agencies' latest attempt to defend this stance. This report concludes that a meltdown of reactor fuel resulting from accidental loss-of-coolant and failure of the emergency-core-cooling system to function as hypothesized could occur once every 20,000 reactor-years. With 700 reactors projected to be in use in America by the end of the century, RSS thus implies that the chance of a meltdown

is one in 28.5 years of operation. We do not know from operational or experimental data that this figure is correct. For example, it has not been proved that the controversial emergency-core-cooling system, with all its complicated paraphernalia, will function as intended. RSS simply *assumes* it to be highly reliable.

The American Physical Society's analysis of RSS states that "the calculational methods used in both the research program and the regulatory function [are] fairly unsatisfactory.... the probability of functioning of the emergency core-cooling system is at present unpredictable in many respects and many of the physical processes which could interfere with its functioning have not been adequately analyzed.... The consequences of an accident involving major radioactive release have been underestimated by an order of magnitude...."

In other respects, too, RSS is grossly deficient. Two examples will suffice. First, outside events, such as sabotage and terrorist activities, which could greatly complicate the report's statistical conclusions were ignored. Second, the number of casualties resulting from specified accidents was held down by the simple artifice of *assuming* that the evacuation area would be small and that ninety percent of the people threatened would be evacuated within eight hours. This assumption itself is dependent on untested



governmental disaster machinery functioning perfectly when first called upon.

In short, the NRC's highly vaunted Reactor Safety Study, although a worthwhile first step, is little more than an academic exercise. Here again the credibility of the nuclear establishment's vigorous defense of nuclear power is open to question.

Similarly, the history of the federal government's efforts to resolve radioactive-waste management problems provides no basis for placing faith in the nuclear bureaucracy. Through the years, many methods have been suggested for managing the growing quantities of highly dangerous radioactive wastes produced by private industry in the commercial nuclear-reactor program.

Five years ago, the AEC's preferred method was to store wastes underground in geologically stable formations, where they presumably would remain dry and isolated from the biosphere until their danger had diminished. The AEC selected a salt forma-

tion near Lyons, Kansas. Repeatedly, it ignored the warnings of Kansas state geologist William Hambleton, who argued that oil drilling and salt-solution mining had left the formation looking like "Swiss cheese." Although the commission's "substantial investigations" prior to selecting the Lyons site had been inadequate, it persistently refused to acknowledge its error. Only after intensive pressure from independent scientists and citizens who questioned the area's suitability was the AEC's position reversed.

The problem persists as one waste-management method after another is found unsatisfactory: ERDA has abandoned above-ground "temporary storage"; storage tanks in the Columbia River Basin continue to leak high-level waste; plutonium and other actinides are carried by natural but unanticipated processes out of the trenches used to store "low-level" radioactive wastes; and new drilling activity at a proposed salt-storage site near Carlsbad, New Mexico, produced carbon dioxide, briny water, hydrogen sulfide and methane gas, eliminating this most recently favored site from consideration.

A viable solution to the waste management problem is still not in sight. Today we have a backlog totalling some three million pounds of unconsolidated, unprocessed nuclear waste from commercial plants. The quantity is growing daily. Perhaps in recognition of this continuing dilemma, ERDA has quintupled its proposed 1977 waste-management budget to \$62.8 million. However, this amount is still too small to be meaningful, especially when compared to the total nuclear-fission research and development budget of \$1.674 billion and to the very long-lived nature of the radioactive wastes. Considering the history of governmental efforts to resolve this issue, we must question the wisdom of relying on the nuclear establishment's hopes for a technological solution to a problem that has such important social implications for many generations yet to come.

A multiplicity of non-nuclear choices and opportunities is available to us. The preferable path is clear. When the nuclear industry asserts that the Nuclear Safeguards Initiative will shut down nuclear power, they are in effect admitting that current reactor-safety systems are unsafe or untestable, that reliable isolation of nuclear

wastes cannot be demonstrated, and that neither industry nor government has enough faith in its own claims of safety to assure full compensation to the victims of accidents. *Whether they are right or not*, we can do without nuclear energy in California if that is the choice we ultimately make.

These choices must not be dictated by appointed federal or state bodies or in the board rooms of utilities and multinational oil companies. Our energy future must be carefully planned through explicit policy actions developed through public forums and an open governmental process. The California Nuclear Safeguards Initiative proposes, properly we believe, to assure public participation in the assessment of commercial nuclear power in California and to provide for greater accountability from those who make the most significant decisions.

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Ronald Doctor, a nuclear engineer and Commissioner of the California Energy Resources Conservation and Development Commission, is principal author of the RAND studies *Slowing the Growth Rate* (vol. III in *California's Electricity Quandary*, 1973) and *Energy Alternatives for California's Future* (1975).

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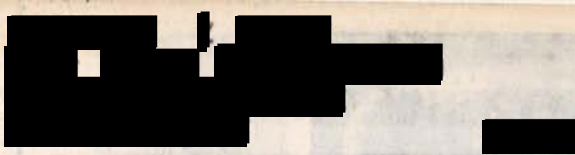
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FOR 83 YEARS the Sierra Club has defended wilderness and the integrity of nature. To protect and conserve the natural resources of this planet; to preserve the quality of our environment; to restore what has already been needlessly spoiled: these are the ends toward which the Sierra Club applies its strength.

INFORMATION/EDUCATION. Through its books and periodicals, films and exhibits, the Club points out the challenge we dare not fail to meet: to formulate a sane and tenable relationship between the human race and the fragile world that sustains us. Sierra Club outings have taken on new meaning as lessons in "walking lightly" on our vulnerable land. Rock climbing, winter camping, ski touring, kayaking, scuba diving, mountaineering: Sierra Club classes, formal and informal, teach these and other skills. The themes are safety and respect for the land.

SERVICE TRIPS. Wilderness survey trips to endangered areas gather the data the Club must have to lobby for preservation. Trail maintenance trips and clean-up trips combine fun and service. "Inner City Outings" conducts first-time wilderness trips for the urban young. For some participants, these experiences may be the start of lifelong friendships with the land. We hope that all will come away with at least a little more awareness of what a gift the natural world is—and how greatly it deserves our care.

RESEARCH. The Club's office of environmental research surveys the work of experts in many countries and carries out its investigations in such fields as geology and forestry. This scientific back-up helps the Club define its policies and state its case to the public, to legislators, and to courts.

SIERRA CLUB LEGAL. In recent years the Club has found it increasingly necessary to turn to the courts to force compliance with environmental protection laws. This is the task of the Sierra Club Legal Defense Fund. Without this legal pressure, many of our best statutes would be empty pronouncements of good intent.

LOBBYING. The Club's essential work is to promote sound laws and policies and, more fundamentally, the climate of opinion that allows these laws and policies to succeed. The Club's small hired staff spends most of its time in this field. The real momentum, however, comes from thousands of active Club members offering uncountable thousands of hours of volunteer service, backed by the dues and contributions of the entire membership.

There is everything to be done, most of it at chapter and group levels: complex issues to study and understand, policy to debate, meetings and hearings to attend, news to spread, letters to compose.

In the search for solutions that are long-lasting, the Club must constantly communicate: with legislators, leaders in business, labor, minority groups, and many others. The lack of such contact could be crippling.

CONTRIBUTIONS TO THE SIERRA CLUB. The effort we make is costly, but the stakes are huge. Gifts made directly to the Club are applied largely toward lobbying efforts, and can no longer be deducted from the donor's taxes. If a deduction is important to you, we invite you to consider a gift to the Sierra Club Foundation, which funds educational, legal, scientific and literary projects. Consider also a bequest to the Sierra Club: such a gift is a strong personal statement, and a legacy that will live.

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