Sierra Club Bulletin

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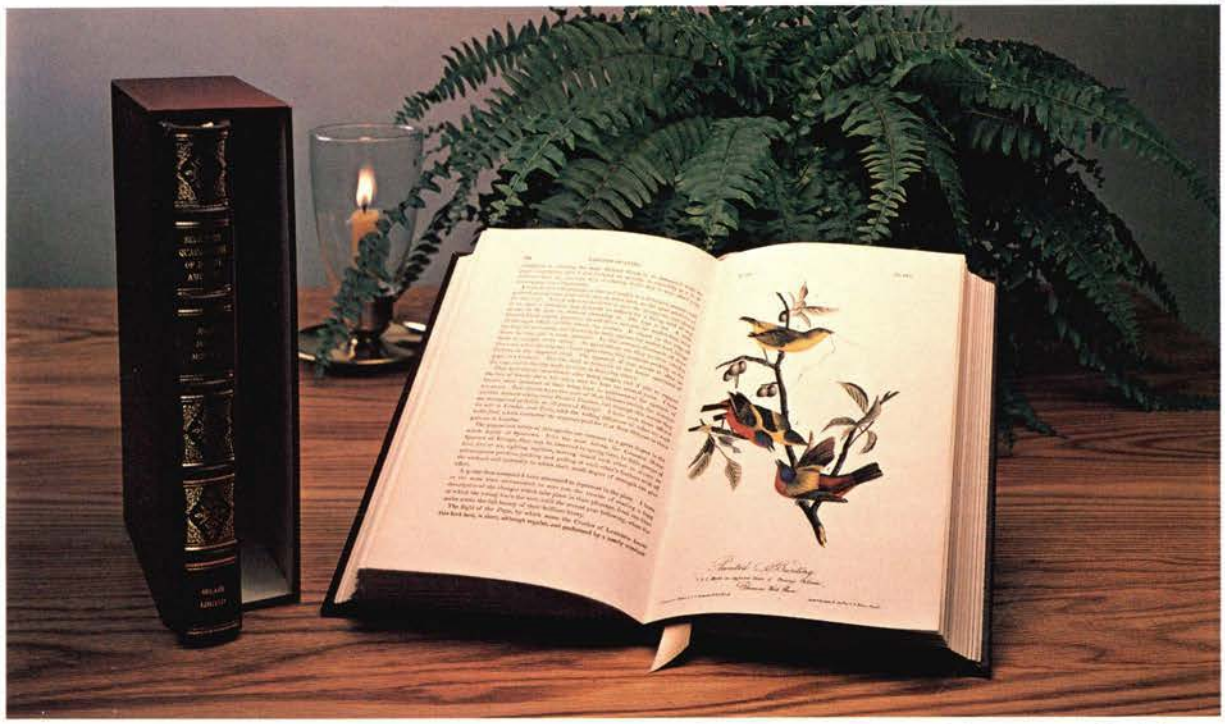

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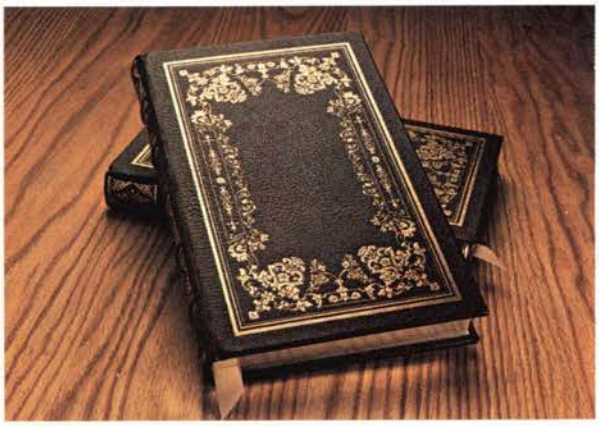

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Editorial correspondence should be addressed to *Sierra Club Bulletin*, 530 Bush St., San Francisco, CA 94108. Manuscripts must be submitted in duplicate and accompanied by a stamped, self-addressed envelope.

Changes of address should be sent to Sierra Club Member Services, 530 Bush St., San Francisco, CA 94108. Along with your old and new addresses, please include an address label from a recent issue, if possible.

Sierra Club Bulletin

MAY 1977 VOLUME 62/NUMBER 5

Cover: Moraine Lake in Banff National Park exemplifies the grandeur for which the Canadian Rockies are renowned. Conservationists in Alberta and British Columbia are now working to establish a Great Divide Trail linking Banff in the north with Waterton National Park on the U.S. border. We present a progress report on their campaign beginning on page 41. *Photographer, Hälle Flygare.*

The Perils of Palau

Photos by Mary Ann Eriksen

MARY ANN ERIKSEN

Sitting in the cool of the *abai*, the men's meeting house, I listened to the village leaders express their opposition to the oil superport proposed for their island home, the Micronesian archipelago of Palau (see *Sierra Club Bulletin,* June 1976). Outside, the noonday sun blazed down on coconut palms and papaya trees, and glistened off turquoise water rippling over some of the world's most productive coral reefs.

Mary Ann Eriksen is the Sierra Club's Southern California representative.

Here on the island of Kayangel, near one of the possible superport sites, these men, fishermen all, know firsthand about oil pollution. They still point to the small Okinawan tanker that ran aground years ago, its rusting hulk resting on a dead reef.

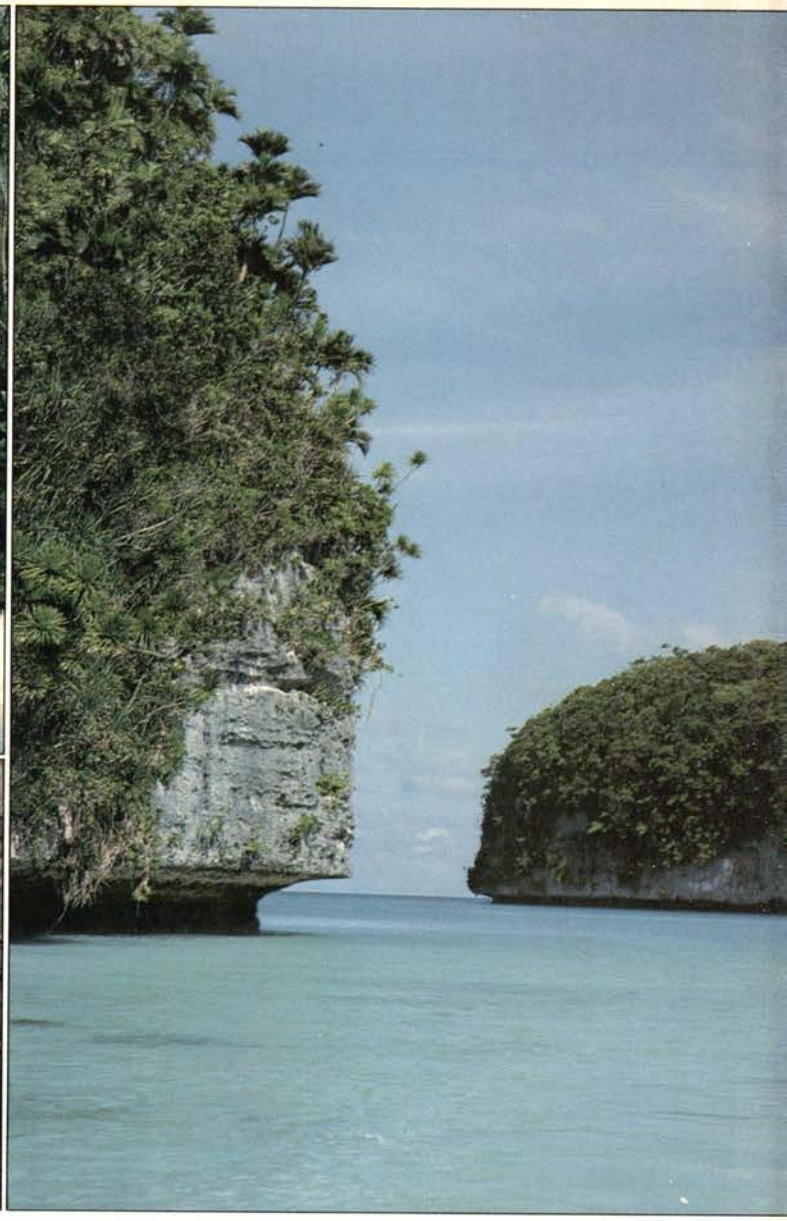
But as one elder said, "Oil is not the only pollution we must worry about; Western culture will destroy us."

With financing from the Industrial Bank of Japan and Nissho-Iwai Trading Company, guarantees of oil from Iran, and promises of military protection from the United States, New Yorker Robert Panero is promoting for the

Big Oil Bullies a Tiny Island

islands of Palau a superindustrial port complex ten to twenty times larger than the world's largest. Here, raw materials from resource-rich countries would be transformed into products for resource-hungry nations. The mainstay of the operation would be Iranian oil for Japanese consumption, brought to Palau's reefs by supertankers for transshipment, storage, refining and transformation into petrochemicals. One reason Palau was chosen as the site for this complex was that pollution-control laws and political opposition restricted it in Japan, the primary beneficiary.

Palau is an attractive site to the developers because of its central location with respect to Japan, Taiwan, the Philippines, Australia and Southeast Asia, and because of its natural harbors, but it also would provide the developer and the industrial nations with benefits of a different sort. As a strategic trust territory administered by the United States, Palau is considered politically stable, that is, controllable. Moreover, a superport in Palau would guarantee continuing American control, providing such benefits to the United States and Japan as a permanent base in the Pacific, a port for the Trident submarine, and American



military protection for Japan's investment and oil supply.

Although some Palauan business and political leaders favor the port, I found during my visit that the traditional leaders, the young intelligentsia and hundreds of Palauans from Kayangel to Peleliu, are unwilling to sacrifice their culture and country regardless of monetary gain.

Weeks later, in Washington, D.C., I spoke to Interior Secretary Cecil Andrus and other members of the Carter Administration on behalf of the Palauans opposed to the superport, as they had requested. Though the Administration is more receptive than its predecessor to an early, complete and public review of impacts of the superport, Congress may be more recalcitrant. Early optimism about the prospects of obtaining a decent hearing for those Palauans opposed to the superport was quickly dampened by the shabby treatment they received from the Senate Interior Committee, which invited the Palauans to Washington to testify. When their time came to do so, however, most of the committee, including Senator Henry Jackson (D-Washington) who chairs it, did not even show up. The senators who did were not well acquainted with either Palau or the port. The Palauans opposed to the superport had traveled 8,000 miles at a cost of $1,400 each in order to address the committee, yet only High Chief Ibedul Gibbons was permitted to present testimony and respond to questions. The rest were either limited to a minute or two, or not allowed to speak at all. None of the invited environmental groups was allowed to speak either. Four Palauans supporting the superport, however, were allowed to speak for twenty minutes, while Panero was permitted to address the committee for almost an hour.

As the Japanese feasibility study begins, it seems clear that if Palau is to become more than a pawn on the chessboard of international politics, we must defend its right to be heard and to protect its resources as it seeks wiser forms of economic development. Otherwise, this glittering jewel of the Pacific will be lost not merely to its people, but to all the world. **SCB**

George Rose

Social Risks and the Energy Option

DAVID ORR

In an era when almost everything seems to be increasing exponentially, the number of potentially catastrophic occurrences appears to be no exception. A century ago a list of the most serious disasters possible would have included only one global event: collision between the earth and a large meteor. Any current list of potential disasters would include nuclear war/accidents/terrorism; worldwide epidemics; depletion of the earth's ozone shield; the death of oceans; global climate changes; the melting of the polar icecaps; accelerated soil erosion; widespread chemical contamination; resource and energy shortages; and so on.[1] While there is room to debate specific items, the general trend suggests that we face an increasing number of potential disasters. Even Herman Kahn, otherwise an irrepressible optimist, concedes that there is a "list of fifty problems we don't understand; any one of these might kill or harm us greatly."[2]

For analysis, we can identify five types of catastrophic situations. The first, identified by Malthus in 1798 and later by the Club of Rome, occurs when we unwittingly cross thresholds of tolerance or supply, thus overburdening the carrying capacity of the ecosystem. Any discussion of problems such as thermal limits, population carrying capacity, or estimates of resources, must take into account our ignorance about the thresholds of critical elements in our life-support system. A second type of catastrophic situation, characteristic of pollution problems, occurs when two pollutants mix with synergistic results. Given the large and growing number of chemical substances that are routinely released into the environment, it is entirely prudent to expect some possibility of future disasters in the form of "legionnaires' disease," genetic mutations, and cancer epidemics.

A third type, accidents, can be anticipated to some degree, but occurs nonetheless when technical control systems break down because of careless design, human error, improbable events including "acts of God." As in the near melt-down of the Brown's Ferry nuclear plant in March of 1975, most accidents occur when too little attention has been given to failsafe systems covering bizarre and improbable contingencies. Increasing the repetition of safety checks beyond certain levels produces prohibitively high costs and decreasing returns, thus the potential for accident survives in the niche described as "statistically improbable."

We can distinguish a fourth, albeit similar, situation in which potentially disastrous side-effects can be foreseen, but are regarded as tolerable given other objectives. In such instances, the dominance of a single value leads to a willingness to assume risks. President Kennedy, in order to remove Soviet missiles from Cuba in 1962, was willing

David Orr teaches political science at the University of North Carolina. *This article was originally printed in* Science & Public Policy, *April, 1977.*

to assume what he reportedly thought to be a one-third to one-half chance of nuclear holocaust. In similar (if less dramatic) cases, what stands out is neither the ignorance of risk nor the belief in its remoteness, but rather the dismissal of risk as a value to be equated with security.

A final situation involves what Jay Forrester has called "counter-intuitive" behavior which may have disastrous outcomes because of the inability to comprehend the behavior and interactions of large-scale social (as opposed to technical) systems.[3] There is a chance that large social systems, which Forrester describes as "nonlinear, multi-loop feedback systems," may simply become unmanageable. The potential for disaster lies in the possibility of social disintegration under conditions of unmanageable complexity, and also in the ease with which individual malcontents can cause massive disruption. According to Richard Webb, sabotage of a nuclear power plant could conceivably contaminate an area equivalent to "one-half of the land east of the Mississippi [500,000 square miles]" leading to severe restrictions on living and agriculture.[4] While not a likely event, it is not entirely unlikely either.

The spreading potential for catastrophe and the difficulty of forecasting and avoiding its occurrence create the likelihood that modern societies will experience periodic disasters exacting a costly toll in lives, property and capital. The potential for recovery will be complicated by the further possibility that cataclysm might occur as a spiral of interlocking events and processes.[5]

We have been accustomed to thinking of risk as analogous to the occurrence of low-probability and—from a societal perspective—low-consequence events characteristic of auto accidents. We must now adapt our thinking to the qualitatively different circumstances posed by the growing number of plausible low-probability/high-consequence events. There is a need to determine how many of what types of catastrophe society can withstand over what length of time, and who ought to decide.

The Technological Answer

For a group defined as technological optimists, present risks are a necessary companion of technological progress. Underlying this view, however, are at least three critical assumptions. The first is the determinist argument that we have no practical choice. For example, Herman Kahn *et al.* maintain that "Mankind is involved in a process that probably cannot voluntarily and safely be stopped or prematurely slowed down significantly, even if there are good arguments for doing so."[6] Kahn supposes that society can withstand what he admits are "probably inevitable" catastrophes, but cannot muster the flexibility or wit to control its own technological momentum.

Risk as a Function of Energy Production

	Oil	Coal	Nuclear	Hydro
Synergistic	Pollutants, particularly Hi-sulfur oil	Pollutants, including small particle	Effects of increased radioactivity	Problems of ecology ex: Aswan Dam
Threshold	Depletion; thermal	Thermal effects on climate, acid drainage into rivers	Depletion U235; extreme heat effects/climate; expense of waste storage	Unknown
Accident	Oil spills, effects on marine environment		Nuclear meltdown, release of plutonium; explosion	Dam break from faulty construction
Value Conflict	Need for future generations	Stripmining, agricultural needs	Need for centralization v. limited government	Agriculture & food production
Counter-Intuitive	War: i.e., Middle East	Sabotage of coal-fired power plants	Sabotage, nuclear terrorism, nuclear proliferation	Sabotage of dams

A second and crucial assumption is that a growing energy supply is essential for the survival of post-industrial societies, and can be met only by high technology sources. Hans Bethe in a recent article advocating the "necessity" of nuclear power concludes by stating that "This country needs power to keep its economy going. Too little power means unemployment and recession if not worse."[7] He implies, without offering supporting evidence, that a leveling or decrease in energy consumption would lead to social disintegration. But beyond just "keeping our economy going" lies the optimists' ultimate fix on the breeder reactor and eventually nuclear fusion. From these inexhaustible sources, in the words of Sterling Brubaker, "we might make a direct attack on entropy . . . or perhaps reach for the alchemists' dream of elemental transmutation."[8] This course constitutes a vast gamble that we are intelligent enough to do what has heretofore been considered impossible, and that we would be wise enough to manage the result. If we fail on either count the future, as noted by Nicholas Georgescu-Roegen, would be "truly great, but brief."[9]

A third assumption of the techno-optimists is that high technology measures to meet a growing energy demand would be politically and socially benign. Alvin Weinberg's proposal for a scientific "priesthood" to preside over the "Faustian bargain" with nuclear technology indicates the all-too-probable course of events.[10] The potential for political and social abuses in such a highly centralized social system, however, would increase enormously. Faustian bargains, whatever their other merits, can hardly portend any great boon for democratic participation and civil liberties.

A Minimax Approach

An alternative approach suggests that risks are not inevitable, but result in large part from the centralization of society around the axes of high technology and constantly rising energy consumption. As suggested in the figure on this page, there is little chance of supplying the increasing energy demands of a high-technology society without simultaneously multiplying the prospects for disaster. To maintain our present course will lead us into unresolvable conflicts between energy production and food pro-

duction, between democratic ideals and emerging technological imperatives, and between safety and our relentless demand for energy.

It is time to face the fact that we have no good energy options left, although we do have some that are decidedly better than others. Under the circumstances of high risk and uncertainty, the only prudent course is to adopt what game theorists describe as a "minimax" strategy (i.e., *mini*mizing the *max*imum hazard)—to minimize the likelihood of large-scale disaster(s) by avoiding irreversible commitments of capital and reputation in risky technologies. Through some linguistic alchemy, those advocating a more prudent approach to risk have been labelled "radicals" while those urging the expansion of risk are identified as "conservatives."

Using the energy flows of society as a leverage point,[11] the first step of a minimax strategy is to readjust consumption to levels that can be sustained by income sources, thereby avoiding the risk of catastrophe or depletion. A minimax goal of a "sustainable energy society" would require (1) a strong commitment to energy conservation; (2) the physical restructuring of society to favor energy efficiency; (3) the development of new values and standards; (4) a long-term transition program to phase in renewable energy technologies.[12]

There are, however, two variants of a sustainable-energy society. One is the grandiose scheme espoused by the L-5 Society to mount a vast effort to put satellites in stationary orbits in order to beam solar energy to earth by microwave.[13] Such a course requires large amounts of capital, reliance on high technology, unprecedented international cooperation, and a version of Weinberg's priesthood to manage it all. Aside from its debatable political, economic and technological prospects, this course does not dispense with risk, but creates new ones, including the effects of microwaves on persons near the receiving antenna, and the effects of the loss of control of the beam itself.

". . . and then the bad industrial manufacturer dumped chemical waste products into the streams . . ."

A more realistic approach to a sustainable-energy society is to gradually decentralize the energy supply system by utilizing small-scale solar, wind, and bioconversion technologies.[14] This approach has three major advantages. First, the very possibility of serious accidents with "soft" technologies is minimal. Second, a decentralized energy supply system could be used to trigger a renaissance of local autonomy thereby increasing the resilience of society.

Third, a decentralized energy system can create a necessary, if insufficient, condition for active citizen involvement in the making of public policy. Too often the public has been omitted because of presumed ignorance or alleged indifference. It is closer to the truth to argue that citizen apathy and incompetence stem from a lack of opportunity for meaningful involvement in a society grown too hierarchical, and overly dependent upon experts. Wide participation is a necessary antidote to the tendency of elites to maintain power by keeping the public dependent upon complex, esoteric, expensive, and risky technologies that demand centralization. Jeffersonian democracy is a plausible requisite for the control of risk.

The transition to a sustainable-energy society could provide stimulus for a period of unparalleled social creativity necessary to build the institutional base and attitudes for participation. It is time, in the words of one expert, for the creation of "new kinds of institutional arrangements and novel procedures for decision-making."[15] The challenge thus posed by the age of risk may ultimately prove to be an opportunity for resurgence and rejuvenation. **SCB**

Notes

1. For examples see: H.C. Dudley, "The Ultimate Catastrophe," *The Bulletin of Atomic Scientists* (November, 1975); John Fuller, *We Almost Lost Detroit* (New York: Reader's Digest, 1974); John McPhee, *The Curve of Binding Energy* (New York: Ballantine, 1974); Willrich and Taylor, *Nuclear Theft: Risks and Safeguards* (Cambridge: Ballinger, 1974); Paul and Ann Ehrlich, *Population Resources, Environment* (San Francisco: W.H. Freeman, 1970), pp. 149-151; Michael Drosnin, "Not with a Bang, but with a PSST," *New Times* (May, 1975); Noel Mostert, *Supership* (New York: Knopf, 1974); Schneider and Dennett, "Climate Barriers to Long Term Energy Growth," *Ambio*, Vol. IV, No. 2 (1975); Damon and Kunen, "Global Cooling?," *Science* (6 August, 1976); Erick Eckholm, *Losing Ground* (New York: Norton, 1976); Meadows *et al., The Limits to Growth* (New York: Universe Books, 1972); Mesarovic and Pestel, *Mankind at the Turning Point* (New York: Dutton and Reader's Digest, 1974).

2. Herman Kahn, "Things are Going Rather Well," *The Futurist* (December, 1975), 291.

3. Jay Forrester, "The Counter-Intuitive Nature of Social Systems," *Technology Review* 73 (1971).

4. Richard E. Webb, *The Accident Hazards of Nuclear Power Plants* (Amherst: University of Massachusetts Press, 1976), 4, 150-153.

5. See also Harrison Brown, *The Challenge of Man's Future* (New York: Viking/Compass, 1974), pp. 222-228.

6. Herman Kahn, William Brown, Leon Martel, *The Next 200 Years* (New York: William Morrow and Co., 1976), 164.

7. Hans Bethe, "The Necessity of Fission Power," *Scientific American* (January, 1976).

8. Sterling Brubaker, *In Command of Tomorrow* (Baltimore: Johns Hopkins University Press, 1975), 5.

9. Nicholas Georgescu-Roegen, *The Entropy Law and the Economic Process* (Cambridge: Harvard University Press, 1974), 304.

10. Alvin Weinberg, "Social Institutions and Nuclear Energy," *Science* (7 July, 1972).

11. See H.T. Odum, *Power, Environment, and Society* (New York: Wiley Interscience, 1972); and Bruce Hannon, "Energy Conservation and the Consumer," *Science* (11 July, 1975).

12. For a more detailed statement see David Orr, Cecil Phillips, James Benson, Charles Cicchetti, Herman Daly, Bruce Hannon, Denis Hayes, Amory Lovins, and Eugene Odum, *The Wolfcreek Statement: Toward a Sustainable Energy Society* (November, 1976).

13. Gerard O'Neill, "Space Colonies: The High Frontier," *The Futurist* (February, 1976); O'Neill, "Space Colonies and Energy Supply to the Earth," *Science* (5 December, 1975).

14. See Amory Lovins, "Energy Strategy: The Road Not Taken?" *Foreign Affairs* (October, 1976); and E.F. Schumacher, *Small is Beautiful: Economics as if People Mattered* (New York: Harper Torchbooks, 1974).

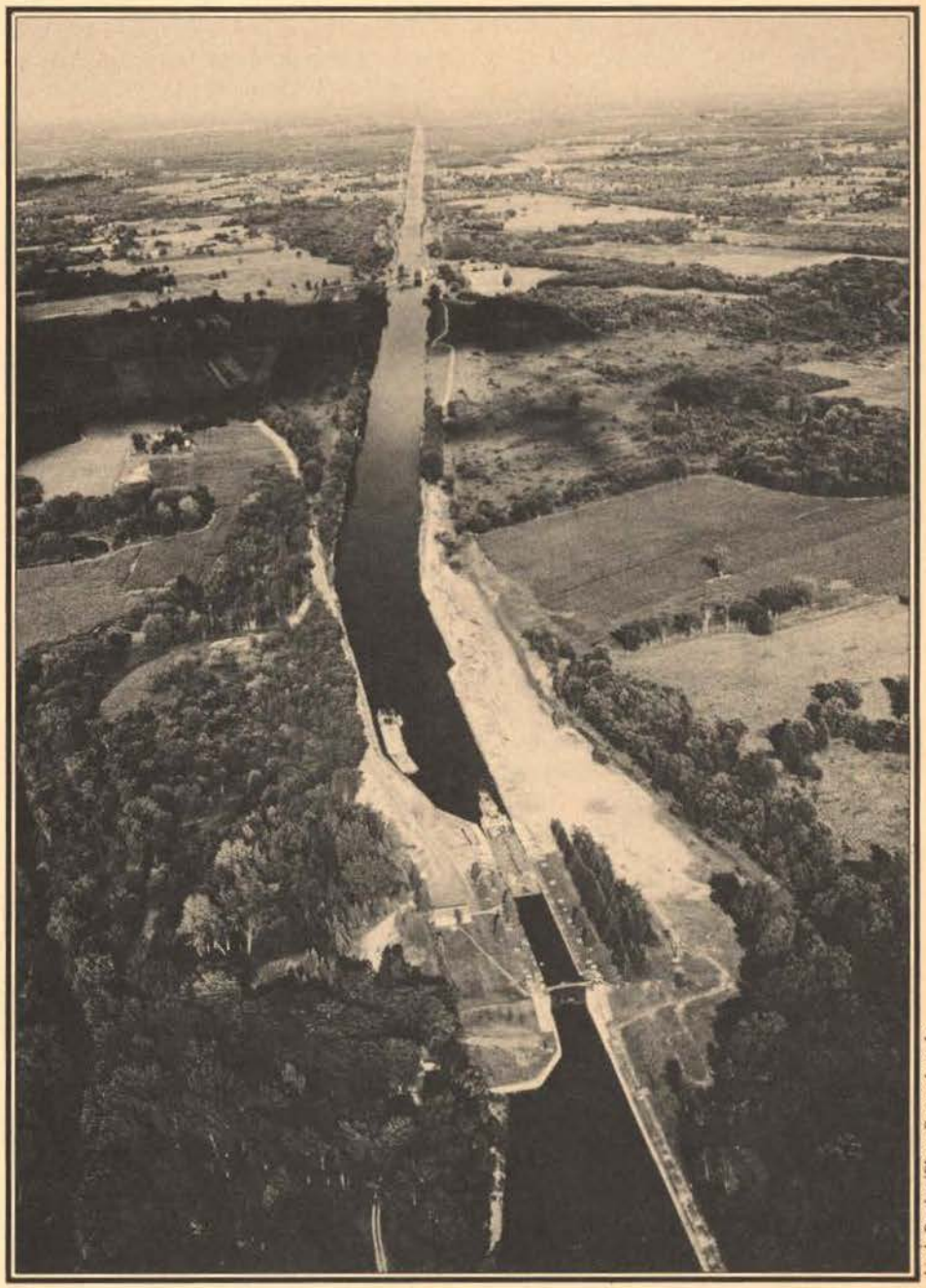
15. Maurice Strong, "One Year After Stockholm," *Foreign Affairs* (July, 1973), 696.

Waterway User Charges
Striking a Blow for Free Enterprise

LEE LANE

Barges and towboats plying the nation's rivers float on a stream of federal subsidies. American taxpayers pay virtually all the costs of building, maintaining and operating the 25,000 miles of inland shallow-draft navigation channels and related facilities used by large companies to transport such bulk commodities as coal, grain and chemicals, which account for most domestic barge traffic. These subsidies now amount to more than $400 million a year. Competing modes of shipping, mainly the railroads, operate at a distinct disadvantage. The waterway subsidy allows barge operators to price their services well below actual costs. This is not possible for railroads, which may receive federal loan guarantees, but still must pay for the construction and maintenance of their lines. Along many routes, railway shipment would be preferable were it not for the waterway subsidy. Moreover, by subsidizing barge traffic in those instances where railroads would serve as well or better, the government in effect is increasing unnecessarily the total cost of transportation. This is grossly inefficient as well as inequitable. Shippers react to the price of transportation to them, not its total cost to society. As a result, the productivity of the transportation system and of the economy as a whole is diminished.

Yet aside from the fact that anyone might wonder why certain corporations merit such public support at the expense of others, why should environmentalists in particular be concerned about the federal waterway subsidy? Because it encourages more barge traffic and hence more canal construction than might otherwise occur. This, in turn, means that more miles of natural riverine environments are destroyed. If the companies that use the canals had to pay for their construction and operation, fewer would be built. Environmentalists therefore advocate reinstating free enterprise in the waterway shipment industry in the form of a user charge for each segment of inland waterway. Such a fee, while discouraging unnecessary new segments and unprofitable ones that now exist, would preserve the economically efficient sectors of the water-transport industry as a viable component of the national commercial transportation system. It would also save many of our remaining natural rivers from destruction.



Linda Bartlett/Photo Researchers, Inc.

Through the locks on the Erie Canal.

The environmental consequences of waterway construction and operation are notorious. Natural river courses are modified to facilitate barge movements, often transforming substantial stretches into stagnant reservoirs and ditches. Waterborne nutrient flows may be disrupted, diminishing the biological productivity of downstream waters and marshes. The entire nature of rivers can be changed as ecologic, aesthetic and recreational values are all

Lee Lane, formerly an economic consultant to the Club, works for the Public Interest Economics Center.

sacrificed to accommodate the demands of moving freight.

A list of proposed extensions of the inland waterway system reads like a who's who of environmentally disastrous projects:

• The Cross-Florida Barge Canal, if completed, would destroy the floodplain forest of the Oklawaha River Valley. The water quality of the canal would be poor, and that of the region's groundwater would be threatened by the project's invasion of the fragmented limestone aquifer.

• The Tennessee-Tombigbee Waterway in Alabama and Mississippi would cut through a mountain ridge, dividing the Tennessee and Tombigbee rivers, to provide a shorter route for barges to the Gulf of Mexico. The project would require removing more than 280 million cubic yards of earth, more than was taken from the divide cut of the Panama Canal. This earth would be used to fill more than fifty valleys, and its low nutrient value would ensure poor revegetation and future erosion problems. The free-flowing Tombigbee River, home to an unusually large number of fish species, would be turned into a series of slackwater pools. Some of the rarer species may not survive.

• The Corps of Engineers proposes to turn the meandering 550-mile Trinity River in Texas into a 335-mile ditch, cutting off 180 biologically rich and picturesque meanders in the process. The system of locks, dams, reservoirs and channels would seriously disrupt the downstream flow of nutrients to rich coastal marshes. One element of the project, the Wallisville Barrier Dam, is to be built across a salt marsh at the mouth of the Trinity. If completed, it would eliminate more than 12,000 acres of estuary, prime nursery ground for numerous ocean fish and shellfish.

New extensions of the inland waterway system, such as those above, produce the worst environmental damage, but operation and maintenance of existing segments also degrade water quality and destroy fish and wildlife habitat. On the Missouri River, for example, continuing construction of bank- and channel-stabilization structures has caused the loss of fifty percent of the original surface area of the river. Much of this loss comprised ecologically important backwaters, areas that determine whether a river is a rich resource or a biological desert.

Charles E. Schmidt/Bruce Coleman, Inc.

Barge in Lock #9 on the Upper Mississippi.

On the Upper Mississippi River, the navigation channel is maintained by means of a system of locks and dams, as well as continual dredging. Spoil-disposal practices, along with the dredging itself, have caused such severe problems with regard to water quality and habitat that both Minnesota and Wisconsin have been forced to sue the Corps of Engineers, which maintains the channel.

Barge operations themselves are not free from environmental problems. The giant propellers of towboats increase harmful turbidity by churning up bottom sediments, thereby destroying the organisms living there, which are the base of the food chain on which a river's fish, waterfowl and other inhabitants depend. Barge traffic further degrades water quality through spillage of chemical and petroleum products and, in some cases, the illegal pumping of wastes into the rivers. Much of the opposition by environmentalists to an expanded Locks and Dam 26 on the upper Mississippi stems from the damage increased barge traffic will cause.

Most waterways, of course, are constructed and maintained by the U.S. Army Corps of Engineers, which supposedly conducts a cost-benefit analysis of each project to determine whether it should be built. The answer, however, always seems to be "yes," partly because there is a powerful bureaucratic imperative to justify and expand one's activities, partly because neither the corps nor the corporations have to pay the costs of new construction. In this context, "evaluation" becomes an exercise in creative accounting. In 1973, the National Water Commission observed that many projects were still being commenced even though they could not withstand objective economic analysis. In some cases, the decision to proceed was based on such excessive optimism that, initial costs aside, even the operation and maintenance expenses for some projects were not economically justified. By instituting a user charge, such new projects would automatically be consigned to the wastebasket, if they were ever proposed in the first place.

To be effective, the waterway-user charge should (1) recover 100 percent of the costs of building, operating and maintaining commercial navigation facilities, and (2) be computed for each individual waterway segment rather than for the system as a whole.

In the past, the Department of Transportation has recommended that only some fraction of the total costs of waterways be recovered from users, a system based more on political expediency than logic since the amount to be charged would be arbitrary. Inasmuch as the federal government has already spent $3.2 billion constructing the shallow-draft inland waterway system, surely the large corporations that are the primary beneficiaries of this past generosity can afford to pay for new construction and future operation and maintenance.

The charges should be levied for each segment rather than for the system as a whole because the cost to the public of operating different segments varies widely. To take the extreme cases, federal costs range from .13 mills (1000 mills = $1.00) per ton-mile on the lower Mississippi to 114.8 mills per ton-mile on Oregon's Willamette River. To assess user fees by simply averaging the costs of the two, for example, means that the most efficient and inexpensive segments of the waterway system in effect are subsidizing those that are least efficient and most expensive. This is not only economically wasteful, but environmentally harmful because the least profitable segments, those that cost the most to build and maintain, tend to be those that required the greatest amount of land-

Larry Mulvehill/Photo Researchers, Inc.

Oil barge and tugboat on Florida's Intercoastal Waterway.

scape alteration—earthmoving, cutting, filling, dredging and so on—the more engineering required, the more expensive a project will be. Moreover, the first segments of the system to be built were naturally the most obvious choices, the ones that yielded the most benefits for the least costs. The more recent projects often tend to be outlandish proposals—such as the Tennessee-Tombigbee Waterway—that are built only because the federal government, rather than private enterprise, is footing the bill.

Several members of Congress have objected to segmented charges because such a system would close in whole or part several existing segments. To make such a claim, however, is tantamount to admitting that those segments are unneeded and uneconomical, that the taxpayers' costs exceed the users' benefits. In fact, about fifty percent of the federal operation and maintenance costs come from segments that account for only three percent of the total tonnage shipped. Yet in the perverse logic of pork-barrel politics, the more inefficient a segment is, the more likely it is that the member of Congress concerned will oppose the waterway-user charge.

A number of arrangements, however, might prove persuasive. For example, the federal government might match, at some predetermined ratio, subsidy payments by interested states and communities, thus covering the deficit between uneconomic waterways' user-charge revenues and their federal operation and maintenance expenditures. As with the railroad branch-line subsidy arrangement, the federal portion could be phased out gradually, leaving the decision about continuing public support to the local areas enjoying the benefits. The federal share could be financed from the sale of federal barge and tow-boat licenses on that segment, relieving the burden on the general taxpayer.

If the direct beneficiaries of waterway development were required to pay the costs of building and maintaining such projects, they would be given far more careful scrutiny. The 1973 National Water Commission Report pointed out that "cost sharing requirements would be effective in eliminating political pressures from a group seeking a project for no other reason than that they expect it to be paid for by the federal treasury."

The scale of the potential savings is

very large. A 1975 survey found that there were $6.6 billion in inland-waterway projects under active consideration and another $656 million in abeyance because of litigation. If anything, these figures understate the situation, for corps projects show a propensity for cost overruns. A study by Senator William Proxmire indicated that of 178 major civilian Corps of Engineers projects, eighty-three have experienced cost overruns of 100 percent or more. If the bill for these projects were being paid by the politically powerful water-development interests rather than the average taxpayer, the corps might become more ingenious in devising effective cost controls and less bullish about proposed new waterway developments.

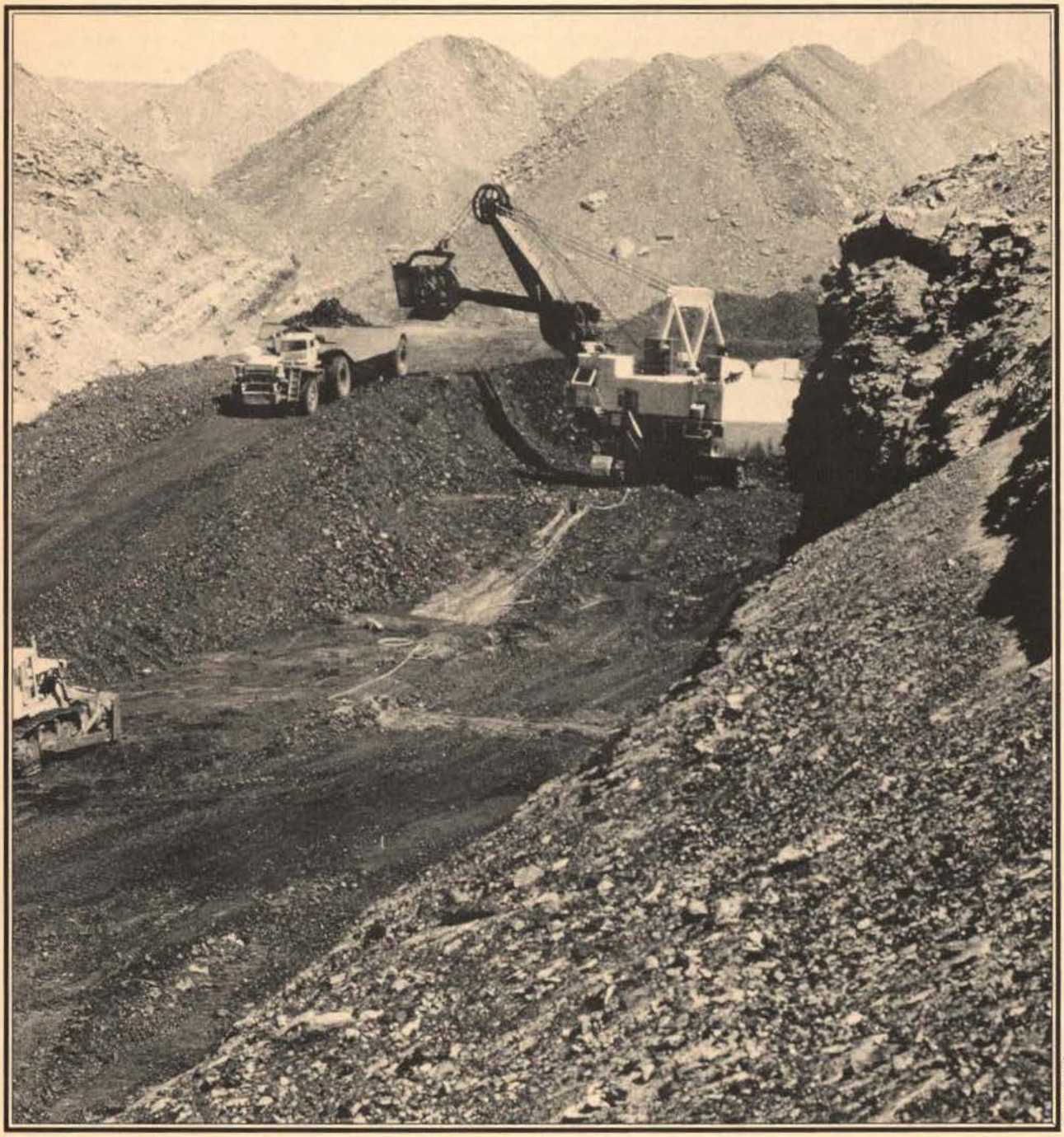
Obviously, environmental and economic logic overwhelmingly favor the imposition of waterway-user charges, but what are the prospects for passing such legislation in the near future? Probably better than ever, though the struggle will be long and difficult at best.

Last year, largely at the insistence of Senator Peter Domenici (R-New Mexico), a user-charge provision was attached to the Water Resources Development Act of 1976 as a necessary condition for his supporting authorization to expand the controversial Locks and Dam 26 on the upper Mississippi. The committee actually passed the user charge, which was later deleted, along with the authorization, by amendment on the Senate floor. Already this year, Domenici has introduced similar legislation and in his capacity as ranking minority member of the Water Resources Subcommittee has pledged to fight for the legislation. He argues that if the barge companies want a new Locks and Dam 26, they should pay for it; and his view may very well prevail again in the Public Works Committee. This year, however, jurisdiction over user charges is shared with the Surface Transportation Subcommittee of Senator Russell Long's (D-Louisiana) Commerce Committee. A long-time advocate of waterway expansion, Long is expected to oppose imposition of adequate user charges vigorously. Even if a user-charge proposal were to survive both committees, it would face strong opposition on the Senate floor. Opposition in the House, both in committee and on the floor, is expected to be very stiff.

Some waterway interests, fearing that total opposition to user charges may block chances for authorization of an expanded Locks and Dam 26, have tempered their positions, so that now they are willing, it seems, to support "modest" or "reasonable" charges. It may be that the real battle will not be over whether user charges are imposed, but over what will constitute "adequate" charges. Environmentalists and economists will continue to work for charges that will recover all costs of building, maintaining and operating the inland-waterway system and that will be apportioned so that income from efficient segments cannot be used to subsidize construction of economically marginal and environmentally disastrous ones. **SCB**

Western Coal: The Mirage of Abundant Energy

Michael McCloskey



Jack McLellan

This article is adapted from a speech given to the American Association of Petroleum Geologists Panel at the annual meeting of the American Association for the Advancement of Science in Denver, Colorado, on February 23, 1977.

The oil embargo of 1973 was a rude shock to the American public and prompted politicians to call for drastic solutions. Project Independence was the most elaborate piece of hyperbole from this period. At one early point, former "energy czar" Frank Zarb actually predicted this country would be a net exporter of energy by 1985; then Interior Secretary Rogers Morton said we had more coal than anyone else and "just watch us develop it." In such free-swinging responses from the Nixon and Ford administrations, the Rocky Mountain West was singled out for attention: its coal and oil-shale would provide the answer.

A lot has changed in just a few years. Two presidents have gone; a new one is here. How many "energy czars" have come and gone? Who can even remember their names? One after another, they came up against the hard realities: public concern over environmental impacts, huge

capital needs, and prices for many energy forms that are just too high to be competitive. Gradually, they—and all of us—are coming to realize there are no quick and easy answers. Our options in the next decade or so are extremely limited. President Carter has probably sketched them out accurately by now: lots of energy conservation *and* some more coal. Nuclear energy is floundering, and oil imports are not about to go away.

Even the role of coal has been reassessed. The high-flying predictions about expanded coal production have been coming down. In 1973, Rogers Morton predicted that by 1985 national production would total two billion tons. At that time, it was only about 600 million tons and it is little more (640 million tons) today. The following year, energy chief John Sawhill reduced the target to 1.5 billion tons; in 1975, President Ford revised it down to 1.1 billion tons; and finally, last year, the federal administration quietly slipped it down to 900 million tons.[1] Somehow, 1.1 billion tons of "natural need" disappeared in the process.

In the process, too, the role of the Rocky Mountains and the Northern Great Plains has been changing: their coal no longer seems so necessary or attractive. While roughly half the country's coal reserves are in the West, only about ten percent of its production now originates there. Coal producers, though, are apparently prepared to expand western production fourfold by 1985.[2] The Northern Great Plains region is of particular interest to them because it contains the largest deposits of easily strippable coal. Dozens of scenarios envision production increases there by 1985 ranging from three to ten times existing levels,[3] but there is no clear indication that demand exists to support these projections. The fact that they vary so widely suggests how uncertain demand is over even a short period of time. Projections of a large market for western coal assume that high rates of growth in electrical demand would continue, that there would be heavy emphasis on converting oil-fired boilers to use coal, and that utilities would prefer low-sulfur western coal as a way to avoid installing scrubbers, which remove sulfur from the smoke. But these assumptions have not been borne out by recent experience.

- While electrical demand has crept up from the lows of 1974 and 1975, it has still risen slower than the rapid rates of growth characteristic of the 1960s (nearer five than seven percent).
- There has been no large program of converting power plants to coal. Legislation to force conversion by 1980 did not pass because utilities and environmentalists both opposed it, and the outlook continues to be doubtful. It looks as if we will continue to operate under the Energy Supply and Environmental Coordination Act of 1974, which permits conversion only where primary air-quality standards will not be sacrificed and where both the coal and the means to transport it are available. In heavily polluted areas, continued use of oil or gas may provide the only way to keep air quality from deteriorating further.
- The debate in Congress last year over revisions in the Clean Air Act indicates it is unlikely that air-quality and new-source performance standards will be weakened. In fact, in last year's version (which would have passed but for a last-minute parliamentary snag), the provision relating to preventing significant deterioration of air quality was actually strengthened. Furthermore, the Carter administration is also committed to keeping air-quality standards strong, and the Environmental Protection Agency may actually toughen new-source-performance standards. Thus, it is likely that the law and its administration will stress the need to install the best available control equipment on power plants to minimize emissions. This means the installation of more scrubbers. Resistance to installing scrubbers may be crumbling; already utilities have agreed to install them on more than 100 power plants.

Cheaper local coal

Once a utility in the East or Midwest installs scrubbers, there is no particular reason for it to pay the extra expense of hauling western coal half-way across the country since it can burn cheaper local coal instead. Nor is all the low-sulfur coal in the West. Thirty billion tons of it, much of which can be deep-mined,[4] exist in the East. While scrubbers are being phased in, this coal can help fill the gap.

In light of all these changing factors, an increasing number of observers doubt that western coal development will undergo the startling expansion that was being fostered a few years ago. In fact, one can wonder why western coal has drawn so much attention as it has. While it is abundant and cheap to produce, it is *not* cheap to deliver to nonlocal markets. Perhaps the boom for western coal is attributable primarily to a short-term defensive strategy by utilities trying to stave off scrubbers. Or it may mask still other motives. Some companies, for example, may be trying to escape having to deal with the United Mine Workers who are strong in the East (only a small labor force is needed in surface mining). Oil companies increasingly want to diversify into coal as they see their domestic oil reserves decline; they now own more than thirty percent of United States coal reserves.[5]

The West appears to be the only place where large tracts can be easily assembled by a firm newly entering the business because the federal government is the principal landlord, owning sixty percent of the coal lands. Although it has already leased 16 billion tons of coal and another 12 billion tons are under preference rights by prospectors,[7] only about 20 million tons per year are being mined on these lands.[8]

It would thus appear that lease-holders are probably sitting on their leases waiting for prices to rise sufficiently. The leases were acquired under the old Mineral Leasing Act of 1920, which was finally amended and strengthened by Congress last year despite opposition from the Interior Department and President Ford's veto. Before then, there was no real penalty for failing to develop such leases. And most cover rather large parcels: sixty-one percent of them exceed 2,500 acres, and ninety percent of them exceed 1,000 acres.[9] This backlog of leased coal could supply the whole country for thirty to forty years,[10] and it is but a small part of the total picture. On the Northern Great Plains alone, there may be as much as 105 billion tons of state or privately owned coal already under lease.[11] Clearly, a prodigious amount of coal is already available for future development, should conditions warrant, without further leasing of federal reserves. Spectacular forecasts of demand may really be designed to create a clamor to "do everything in sight," including leasing more federal land so that long-time lessees may more comfortably sit on their old leases—while new lessees will have to produce under stringent development requirements now written into the law.

The amended Mineral Leasing Act also establishes a comprehensive federal program to study the extent of federal coal holdings and to determine where underground mining is feasible.[12] These studies should provide basic data that will help us determine whether more leasing is needed, identify the best tracts, and sort out the many attendant environmental problems. Under former Secretary Thomas Kleppe, the Interior Department was reluctant to acknowledge that the ground rules for leasing really had been changed. It continued to use its EMARS leasing procedure, which began with the supposition that studies would be made only in response to specific development proposals by the coal com-

panies. We contended that this process was backwards, that leasing should begin instead with the government's determining whether more federal leasing is needed, and if so its timing, location, manner and extent. As both proprietor and government, the Interior Department should assess where the public lands fit into the national picture. Its determinations should reflect the thinking embedded in the amended Mineral Leasing Act and should be embodied in an overall leasing plan subject to an environmental impact statement. This is what we were asking for in the case of *Sierra Club v. Kleppe* which went to the Supreme Court. While that case was lost, the finding really was simply that the federal government lacked an overall proposed plan for development on the Northern Great Plains. The Interior Department must now, at least, launch the studies that would lay the groundwork for such a plan.

Questions to be answered

An overall plan for coal leasing should at least address the following questions:

- Should more coal be mined for export or just for local use?
- Are there substantive differences between shipping coal to West Coast markets or to Midwestern and Eastern markets, which have their own coal?
- Should federal coal be leased in areas already subject to heavy development on state and private leases?
- Should federal leases be concentrated in existing mining areas rather than new ones?
- Should there be limitations on how much of a local watershed can be disrupted at any one time?
- Do certain districts have fewer serious environmental problems than others?
- Should areas where deep mining is feasible be leased first?
- Should leases be concentrated in areas having coal with the lowest sulfur content?
- Should surface mining be allowed only where rainfall is sufficient to make long-term reclamation feasible?

Such a plan should be a basic policy document, and the accompanying environmental impact statement should be analytical rather than merely descriptive. We are going to urge the new administration of Secretary Cecil Andrus to undertake the preparation of such a plan, which should take no more than two years at most. In the meantime, we see no need for a resumption of leasing. We will urge that plans to do so be cancelled, since enough coal is available from existing leases.

Of course, it is also likely that a new law to regulate surface mining of coal will be

enacted this year, since the twice-passed but twice-vetoed legislation is supported by both President Carter and Interior Secretary Andrus. Once such legislation is enacted, the Interior Department will have to promulgate revised regulations for its coal lands, for old as well as new leases. They should rule out new sites that cannot be reclaimed or that are unsuitable for mining because natural systems would be irreversibly damaged. It is not clear at this time if the new law will allow the Interior Department to delegate regulation of surface mining on federal leases to states (the House bill permits it only where joint enforcement programs are developed for intermingled lands).[13]

The new law should have the effect of shifting coal production somewhat away from its current emphasis on strip mining and hence from the West. Seventy percent (293 billion tons) of the country's recoverable coal reserves can *only* be deep-mined, (compared with 135 billion tons for surface mining) and sixty percent of them are in the East.

With new laws on coal leasing and surface mining, as well as the new administration's increasing emphasis on energy conservation, the real challenge to the Interior Department will be to find the place for western energy resources in the national supply scene. Along with the energy agencies, Interior needs to formulate an energy plan for the whole West. National energy planning should be something more than an abstraction or a set of generalized projections; it should be based on the specific characteristics of all regions of the nation. The West's role cannot be addressed in the narrow context of permit-application reviews or regulatory hearings. These are not equipped to consider such complex questions as, for instance, whether coal should come to Chicago from Wyoming or southern Illinois; or whether gas for Los Angeles should come from Alaska via tanker as liquefied natural gas, from New Mexico as synthetic gas, from Texas via displacement, or from Alberta through a pipeline. Nor can they address questions of whether mine-mouth power plants for Southern California can be located on sites in Utah that qualify for Class I protection for clean air around national parks and wilderness areas. Ad hoc responses to countless private initiatives are no substitute for real planning. They create new problems, generate opposition from environmental groups and local residents, and produce nothing but frustration and confusion.

The time has come for the federal government to begin to identify the markets with the greatest need and with the fewest alternatives; to identify the environmental values that are most vulnerable and of greatest national interest; and to identify the resources that most quickly and effectively meet those needs with the least amount of environmental harm. It should produce a regional development strategy for energy in the West that will set forth the sequence under which questions will be taken up. The states, local residents, and the principal parties in past disputes should all be invited to help develop such a strategy. Everybody may not be satisfied with the result, but at least everybody would have a chance to be heard, and there would be no surprises. Everyone would know what the general framework for development would be.

A coequal public need

We would hope that environmental values would have a fair chance, and that the West would no longer be viewed as one large "national-sacrifice area." Environmental values would be treated as something more than as an object of mitigation, or mere verbiage consigned to oblivion in an environmental-impact statement. They would be accepted as a coequal public need; their protection would become a major object of public policy. Some areas would be acknowledged to have environments so valuable and vulnerable that they should not be developed at all. The environment would not be foredoomed, as in the past, to be the loser in every contest, a fate that fosters opposition and distrust in the environmental camp. It need not be. Nevertheless, someone will have to continue asking hard questions—and answering them:

How much of the West that now has good air quality will continue to have it in the event of large-scale mining?

How much water will remain for ranching?

How will aquifers be protected where coal seams run through them?

How many valley bottoms, which provide vital hay for winter feed, will survive?

Can reclaimed soil banks support native cover once supplemental fertilization and irrigation stop?

Are we willing to wait centuries for natural succession to reestablish itself?

How much windswept, snow-free winter range can the ranchers afford to lose?

How far should we go in assuming that reclamation is feasible over the long run in places like Wyoming, when so few research data are really available?

How is a site under restoration to be cared for years after a coal company winds up its work and leaves?

Can we accept serious reductions in antelope numbers in the southern end of the Powder River basin?

Should National Grasslands be invaded by mining?

Can the salinity of the Colorado River be increased?

Who should bear the cost of added social services in small communities hit by sudden growth?

Such questions must be addressed on wider than a local basis. Failure to consider environmental consequences will permanently impoverish the West. It would be tragic if the wrong decisions were made because no one asked the questions or was willing to look for alternatives. Yet happily, the national picture is changing. The pressure on the West now seems to be less intense; there may be more time to plan and a new administration sympathetic to both the West and environmental concerns may be willing to start afresh to provide us with new philosophy and a new approach to planning. Both are badly needed. **SCB**

Notes

1. See James G. Phillips, "Energy Report: Coal Industry is Still Beset by Problems Limiting Production," *National Journal* (August 9, 1975), p. 1131; see also Federal Energy Administration, "Coal Mine Expansion Study" (May 1976), Table 7.

2. *Ibid.*, Coal Expansion Study, Table 20.

3. Charles Tiefer, "NEPA and Energy Supply: A Case Study of the Effects of Sierra Club v. Morton on Coal Production in the Northern Great Plains," *Environment Reporter,* Monograph 22 (May 28, 1976), p. 8.

4. Bureau of Mines data reported in "The Coal Industry's Controversial Move West," *Business Week* (May 11, 1974), p. 135.

5. "The Lag in Coal Expansion," *Business Week* (January 27, 1975), p. 130.

6. John Leshy and Terry Lash, "A Black Mark: Failure of Federal Coal Leasing Policy," *Environment* (December 1975), p. 7.

7. *Ibid.*, p. 9; see also statement of Sierra Club and Western Coalition of July 28, 1976 to Interior Department on proposed coal leasing regulations (41. F.R. 22133).

8. Twenty-five percent of western production has come in recent years from federal leases (see p. 15, note 3, *supra*); see Table 2D, note 2, *supra,* which reports 83 million tons of western production in 1974.

9. *Op. cit.*, Leshy, p. 10.

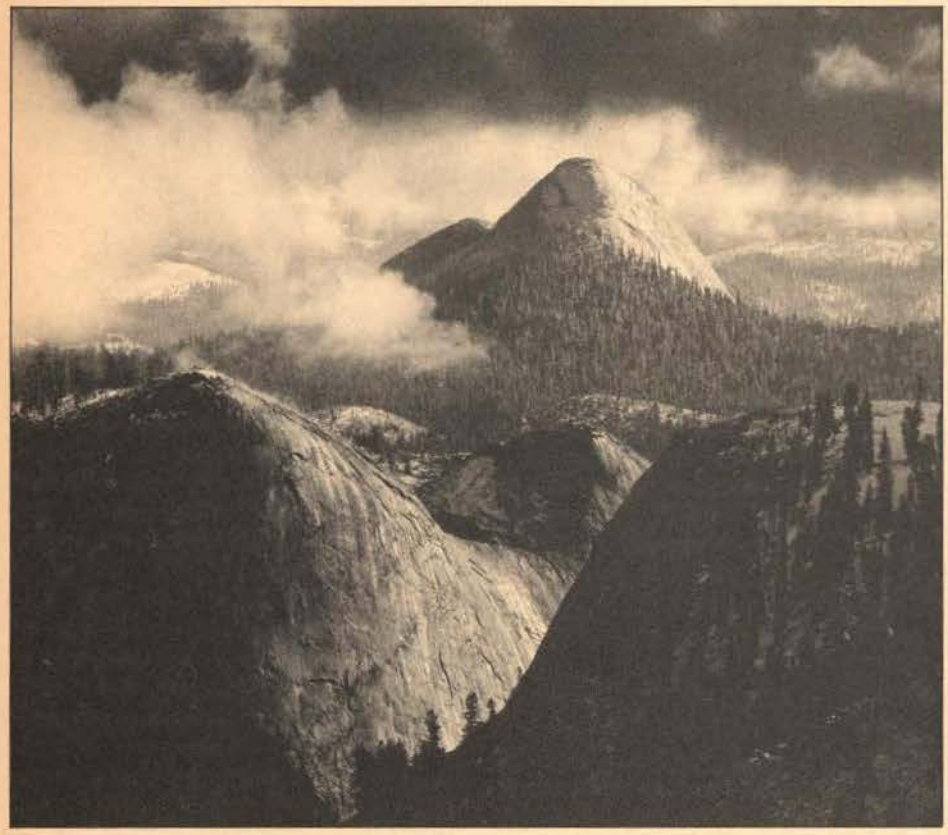
10. *Ibid.*

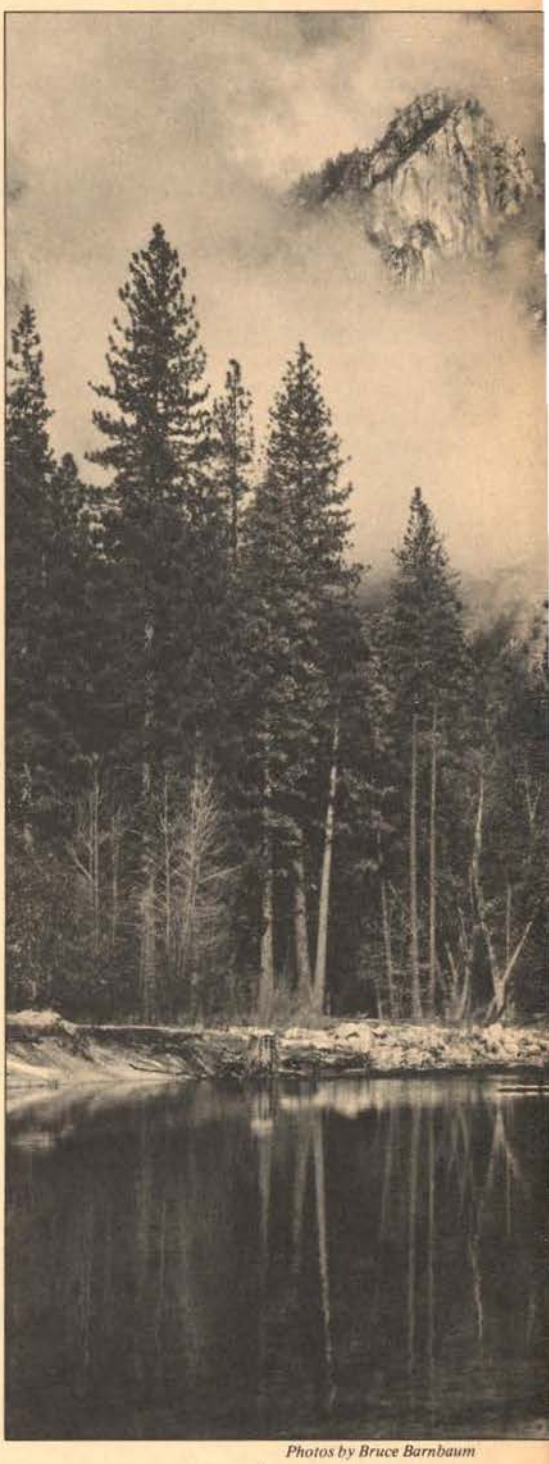
11. *Ibid.*, p. 9.

12. Public Law 94-377 (August 4, 1976).

13. See Sec. 523(d), H.R. 2 (1st session, 95th Congress) and Sec. 423, S.7 (1st session, 95th Congress).

California: Breaking the Stranglehold of National Park Concessioners





Photos by Bruce Barnbaum

Bruce Barnbaum

Two years ago, in response to the public outcry that greeted the Yosemite Park and Curry Company's announced plans for expanding their operation and facilities in Yosemite National Park, the House of Representatives began to investigate the policies and practices of the National Park Service with respect to the management of park concessioners. The two bills—H.R. 313, by Representative Silvio Conte (R-Massachusetts), and H.R. 3092, by Representatives John Dingell (D-Michigan) and Jack Brooks (D-Texas)—are identical in language and will be carried through Congress together. They constitute the most important National Park Service reform legislation in decades.

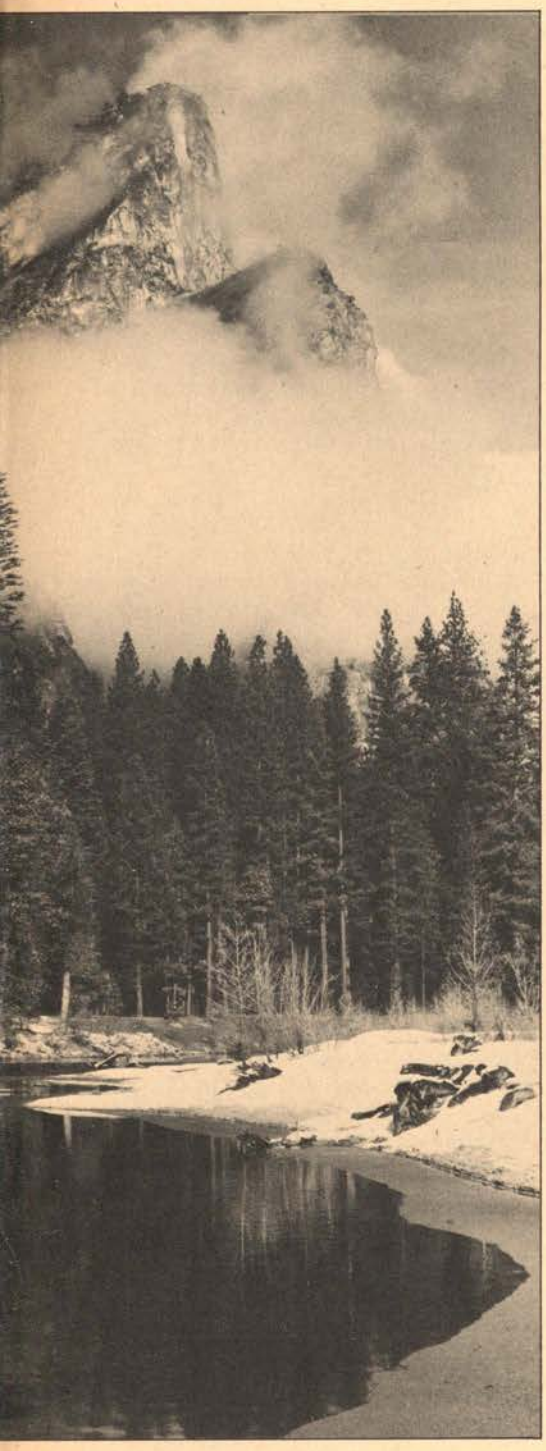
Four years ago, the Music Corporation of America (MCA) purchased controlling interest in the Yosemite Park and Curry Company. At that time the Park Service was nearing completion of a master plan for Yosemite. It appeared to be a well-conceived plan stressing natural values and ecological integrity, but this orientation apparently did not suit MCA officials, who launched a concerted attack on the plan and aggressively pushed a series of alternative proposals:

- Constructing three new High Sierra camps on the North Rim of Yosemite Valley;
- "Upgrading" low-priced valley accommodations to middle- and high-priced units;
- Generally expanding all accommodations;
- Constructing an aerial tram from the valley to Glacier Point;
- Transferring control of campgrounds from the Park Service to the Curry Company;
- Greatly expanding ski facilities at Badger Pass;
- Expanding food facilities and accommodations at Tuolumne Meadow, as well as constructing winter facilities there;
- Opening Glacier Point Road and the cross-park Tioga Road to year-round use.

In addition, MCA opposed the Park Service's proposal to relocate some administrative facilities and housing to El Portal, just beyond the park's western boundary. It also opposed all proposals for reducing or placing an upper limit on facilities or services.

While MCA was attempting to reorient the master plan—indeed, virtually to control the planning process itself—it "used" Yosemite as an advertising prop for its corporate goals, bringing in TV film crews from its largest subsidiary, Universal

Bruce Barnbaum chairs the Sierra Club's Yosemite Task Force.



Studios, to film the series *Sierra*. The filming was not only disruptive to park visitors, it was disrespectful to the park itself, leading to the infamous "painted rocks" incident, in which the crew painted granite boulders to make them look better on TV. Fortunately the series aborted, and the associated national publicity brought the activities of MCA to the attention of the public.

The Park Service had never before confronted such high-pressure tactics; it buckled under the onslaught, approving one MCA demand after another. The collapse proceeded from the top down, beginning with Park Service Director Ron Walker, a Nixon appointee with no previous Park Service experience. Walker's chief claim to fame was his stint as Nixon's advance man in the 1972 Presidential campaign. Oriented toward business rather than nature or parks, his decisions were contrary to long-standing policy and would have been inconceivable for anyone with a clear understanding of national park ideas.

Lower-level, career personnel in the Park Service began to revolt. As internal opposition mounted to MCA's alterations of the plan, the company desperately tried to circumvent the process by expanding facilities before completion of the plan. By this time, however, the public also was aware of the machinations, and its hue and cry was heard on Capitol Hill.

Representative John Dingell took an immediate interest in the situation, and as his preliminary inquiries proceeded, Walker began apologetically to deny MCA's requests for expansion. High officials of the Interior Department, too, began to scrutinize the situation: Nathaniel Reed, Undersecretary of Fish, Wildlife and Parks, said that the draft master plan "appeared to be written by MCA."

As resentment of MCA increased, so did displeasure with Park Service decisions. In late 1974, one week before Dingell's formal hearings were to begin, Walker announced that the old master plan would be scrapped and a whole new planning process would begin in January, 1975. He also submitted his resignation, effective at the end of 1974 (See *Bulletin*, February 1975).

Although MCA was thwarted in its attempt to circumvent the plan and control its direction, had the Park Service had sufficient regulatory powers, there would have been no battle in the first place.

Dingell's hearings initially focused on

the Yosemite-MCA problem, later broadening their scope to include studies of overall Park Service policies, particularly those regarding contracts with concessioners. In time, it became apparent that the crux of the problem was the poorly conceived 1965 Concessions Policy Act, which gave the Park Service little regulatory authority over the concessioners.

H.R. 313 and H.R. 3092 would amend the four worst portions of that 1965 act. First, the bills give the Park Service authority to set the amount of the concessioner's franchise fee (paid by the concessioner to the government, based on its in-park profits). The concessioner may appeal that fixed fee to the Secretary of the Interior. Today, the franchise fee is negotiated between the Park Service and its concessioner, giving the latter a veto over any proposed fee alteration. MCA has twice vetoed proposed fee hikes, despite the agency's finding that the current fee is one-half the proper amount.

Second, the bills abolish from all future contracts the "Preferential Rights" clause, which states that the current concessioner will be given "preference" to renew its contract over bids from outside competitors. In reality, bids from outsiders are virtually ignored. This clause entrenches a concessioner and almost encourages inferior service. Removal of the clause would result in better services, lest the concessioner risk losing his contract to a worthy bidder.

Third, the bills reduce the length of the contract term from today's maximum of thirty years to a future maximum of ten years. Obviously, the Park Service would exercise greater control over a concessioner with eight years left on its contract than over one with twenty-eight years remaining. (MCA's contract will expire in 1993.)

Finally—and most important—the bills would remove from all future contracts the "Possessory Interest" clause, which gives concessioners their greatest advantage over the Park Service. Possessory interest is a complex issue that boils down to this: a concessioner is given *de facto* ownership of all capital improvements it makes in the park, which means that the Park Service must repay the concessioner for its accumulated capital investments when the contract is terminated. To make matters worse, the payment is based on the current assessed valuation, not on the original cost of the improvement. Needless to say, the Park Service has insufficient funds to "buy out" the contract of even the worst concessioner; MCA's possessory interest is well above $10 million: some sources place it near $30 million.

The two bills would place the franchise fees paid by all concessioners in a fund that would then be used to pay off the possessory interest of each concessioner at the close of its current contract. Congress would appropriate all necessary funds not fully covered by the franchise fees alone. Future contracts would omit any possessory interest clause, thus gradually bringing Park Service concessioner contracts in line with those of the Forest Service, which do not include possessory interest.

The bills apply to all national parks and to all concessioners, several of which are especially troublesome. Although MCA has become the most notorious of the conglomerate concessioners, other corporate giants have run roughshod over the Park Service in recent years, while avoiding the same widespread publicity.

TWA's gambit in Zion National Park is a startling case study: TWA took over the existing contract with only two years left until termination, at which time all accommodations were to be removed from the park. Zion, unlike Yosemite, is small and easily accessible and would be well served by outside accommodations.

Originally, TWA agreed to those terms, but when it actually took control of the concession operation, it applied its considerable corporate muscle to Utah congressmen and to the Park Service. The result of this pressure was a new contract and unlimited extension of on-park facilities. TWA is now firmly entrenched in Zion and is also the prime concessioner at Bryce, Crater Lake and Grand Canyon's North Rim.

Other large corporations operate concessions in the national parks and more will be lured into the field in the future, given the same lax Park Service rules. Fighting can be expected to continue between the agency and its concessioners, particularly the corporate giants, with the parks the inevitable losers. The way to end the battles and free Park Service officials to concentrate on park management is to pass H.R. 313 and H.R. 3092 in their present forms.

Write Hon. Morris Udall, Chairman of the House Interior and Insular Affairs Committee, to urge passage of H.R. 313 and H.R. 3092. Write Hon. Phillip Burton (D-California) and Hon. Alvin Baldus (D-Wisconsin), whose subcommittees will first hear these bills in the House of Representatives, urging them to hold hearings soon and to support the bills. Ask your senators to introduce companion bills in the Senate. For further information, write to Bruce Barnbaum, 29322 Trailway Lane, Agoura, CA 91301. **SCB**

Western Canada: Kitimat and the Oil Supply Dilemma

Rosemary J. Fox

Kitimat Pipeline Limited's proposal to build an oilport at Kitimat, British Columbia, and a pipeline east to Edmonton, Alberta, poses one of the most serious single threats to the environment ever faced by British Columbia, without assuring any significant benefit to either the province or Canada.

This project is one of several suggested alternative solutions to the problem of supplying oil to the American Midwest, which faces serious shortages because of Canada's decision to stop exporting oil. Although one of the reasons for the oilport is to transport Alaskan oil to the lower forty-eight states, some say that Alaskan oil, high in sulfur and unsuited for the Midwest refineries, will go to Japan. Be that as it may, the Kitimat proposal envisions an oilport receiving tankers of up to 320,000 deadweight tons from the Middle East and Indonesia.

Misgivings regarding the proposal relate for the most part to the extremely hazardous nature of the route that supertankers would take through inadequately charted coastal waters and along narrow, twisting channels plagued with strong currents, winds, storms and submerged rocks. Little is known about the wind system or the tides, and the only marine charts available are fifty years old. Fog and low clouds reduce visibility to half a mile or less for an average of ninety days a year, and the mean wind velocities average over thirty m.p.h. for five months of the year.

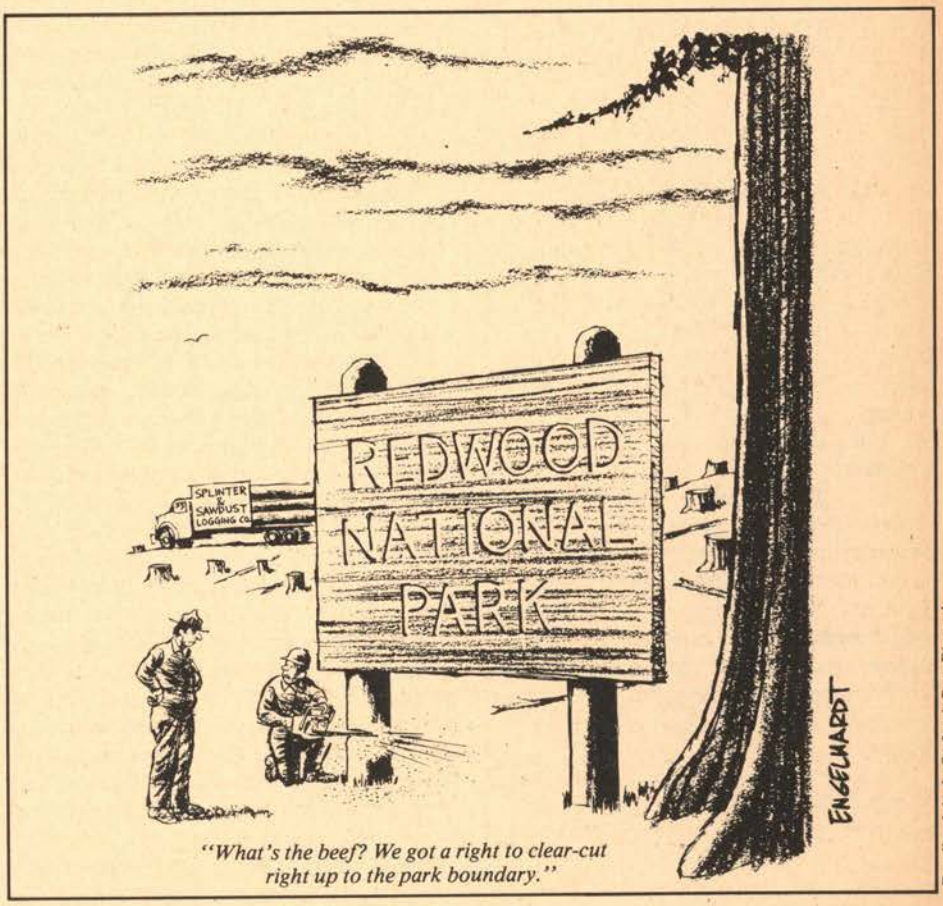
Under such conditions, a major oilspill is a foregone conclusion. Given British Columbia's rugged coast and small population, an oilspill would be impossible to contain and clean up. Under a "worst case" hypothesis, the environmental report submitted by the Kitimat Pipeline Company to the Canadian National Energy Board estimates that all five species of Pacific salmon might be eliminated locally and that recovery could take a decade or longer. Herring stocks could be similarly affected, and there would also be serious losses of shellfish. In addition to sustaining these important commercial species, which form the basis of a multimillion-dollar fishing industry, these waters and their associated coastal areas are rich in many other forms of wildlife, including several species of whales, porpoises and dolphins, seals and sea lions, bald eagles, peregrine falcons, and grizzly bears.

The Sierra Club of Western Canada has joined with eighteen other groups to form the Kitimat Oil Coalition, which opposes the oilport proposal, both on environmental grounds and because of the haste and secrecy in which negotiations have taken place. Fortunately, the Canadian government now recognizes the importance of the threat to the marine environment, as well as the need for public input, and has established a royal commission, headed by a highly regarded lawyer (Dr. Andrew Thompson), before which environmental groups and others can make their cases.

Understandably, the other proposed alternatives in California and Washington state have also met with stiff local opposition. What is the solution? Even now, tankers are supplying oil to the Cherry Point refineries to meet the needs of Washington state, similarly affected by Canada's decision to stop oil exports. A major oil terminal at Cherry Point, one of the options being vigorously opposed by Washingtonians, is not in B.C.'s interests either, as a spill in Puget Sound would in all probability spread northward throughout Georgia Strait in two tide changes. However, if an oilport is built at Kitimat there will be no guarantee that tankers will not continue to come into Cherry Point to supply Washington's needs, and British Columbia's coasts will be threatened from both north and south.

It is imperative that all the alternatives and their consequences be very carefully assessed before a decision is made on the question of supplying oil to the Midwest. "Marine" alternatives include Cherry Point and Port Angeles, Washington; Long Beach, California; Freeport, Texas; and Grand Isle, Louisiana (which would receive Alaskan oil via the Panama Canal), as well as the possibility of sending Alaskan oil to Japan in exchange for Middle East oil purchased by Japan. "Non-marine" alternatives include exchanges with Canada, and a pipeline spur off the Alyeska pipeline at Fairbanks down the Alcan Highway route to join up with existing pipelines to supply both Washington state and Midwest refineries. And finally, there is the option of leaving the oil in the ground and conserving energy.

Should we, as environmentalists, support any alternative but energy conservation? Oilports and pipelines, hydroelectric dams and nuclear power plants will continue to be built north and south of the forty-ninth parallel until we succeed in reducing the demand for energy in Canada and the United States. This is the paramount task that lies before us. **SCB**



"What's the beef? We got a right to clear-cut right up to the park boundary."

Engelhardt in the St. Louis Post-Dispatch

Rosemary Fox chairs the Mainland Group of the Western Canada Chapter.

Washington, D.C.: Defending the Dam Back Home—Congress and the Politics of Waste

Brock Evans

Newcomers to the Washington legislative scene rapidly learn that certain things are sacred to members of Congress and are not to be tampered with. Most important of all are the expenditures of federal money that a representative or senator is able to get appropriated for his or her district or state. And most sacred of all are the so-called "water development projects," the dams, canals and irrigation works.

Such projects, of course, are the famous "pork barrel" developments well known to the taxpayers who have to pay for them, to the tune of many billions in public funds expended over the years. Over the past three or four decades, a carefully designed process has been worked out among members of Congress to ensure that new projects desired by their constituents are authorized and funded without difficulty. The general rule has been: "You vote for my project and I'll vote for yours." When allied with a powerful combine of real estate speculators, construction industries, agribusiness and barge interests, this political backscratching at the top level has ensured the construction of billions of dollars worth of incredibly uneconomic and environmentally damaging projects across the country. The key mechanism for making sure that few dams or canals are voted down is the annual "public works omnibus bill." Using this device, the House and Senate public works committees each year put together in one bill *all* the projects for that year. If a member of Congress wishes to oppose any one of them, he has to vote against the whole package, thus risking the certain ire of all his colleagues. It has been a very cozy—and effective—game.

But on February 21, when President Carter released his revisions of the 1978 budget submitted earlier by President Ford, he became the first President to dare challenge this arrangement and the "water establishment" that runs it. The revised budget recommended deleting $289 million for nineteen projects that have serious economic, environmental, and/or safety problems.

These deletions were not necessarily intended to be permanent; a special review was to be undertaken by the Secretary of the Interior, and on April 15 further recommendations and final decisions would be made. In addition, the Administration announced there would also be a review of the remainder of the 320 projects already authorized by Congress.

Needless to say, this announcement provoked immediate and vociferous outrage on Capitol Hill, precipitating a confrontation between the President and members of Congress, many of whom treated it as a direct affront to their dignity and honor.

A howl of protests

"Nobody is going to be doing anything but trying to restore their water projects," said Louisiana Senator Bennett Johnston. (One of the projects announced for review is a dredging operation in his state.)

This howl of protest from members of Congress whose districts were affected was matched by an avalanche of mail from development interests "back home" who count on pork barrel. Hasty meetings were called to formulate a strategy for hanging on to the projects, and the horse trading began. Senator Daniel Patrick Moynihan of New York announced he would be glad to support some dredging in Louisiana bayous in exchange for help on a public-works formula favorable to New York. In apparent retaliation against the President, Colorado's Senator Floyd Haskell successfully stalled the confirmation of Guy Martin, a capable Alaskan, as an assistant secretary of the Interior. Since Martin's new job would require him to review reclamation projects—including several in Colorado—Haskell apparently wanted Martin to make up his mind about the projects in advance. Even such well-known environmentalists as Representatives Morris Udall of Arizona and Senator Gary Hart of Colorado came out against the President's move when pet projects in their own states were also affected. Fairly typical of some of the statements being made was that of Senator Warren Magnuson of Washington, who when informed that the Bacon Siphon irrigation project in his state was being reviewed, said "It might stop some rattlesnakes from mating or some jackrabbits from running around out there, but that's about all."

Such protests were translated into political action last March, when the Senate approved Senator Johnston's amendment to the public-works jobs bill requiring the President to spend money appropriated for 1977 for eighteen out of the nineteen projects. In late March and early April, public hearings were held around the country by the Bureau of Reclamation and the Corps of Engineers, as well as in Washington by the appropriations committees of the House and Senate. Thousands of witnesses, pro and con, turned out, somewhat to the surprise of dam proponents, who had not expected much public opposition. At the same time, the Administration released a final list of fourteen more projects to be reviewed, bringing the total to thirty (after three of the original nineteen were dropped from the list).

Thus by early April, the battle lines were clearly drawn between the President and Congress over the fate of the pork barrel projects. Conservationists lined up solidly behind the President's bold move, seeing their best and perhaps only chance to defeat such disastrous projects as the Auburn Dam in California and the Garrison Diversion Irrigation project in North Dakota, as well as many of the others. The mood on Capitol Hill remained ugly, as pork barrel politics and horse trading politics gathered momentum.

The battle shifts

On April 18, the President announced the results of his review: he requested that eighteen projects be dropped entirely and substantial environmental modifications be made on five others. While conservationists are disappointed that all of the original thirty could not have stayed on this "hit list," they recognize the political problems in taking on the pork barrel system so suddenly and completely.

Now the battle has shifted back once again to Congress, and the showdown will probably come in May or early June. The fact that the President did not recommend cutting all of the projects gives some members a chance to save face, since many would like to support the President's recommendations, but are afraid to vote against their friends' projects.

Our initial work on Capitol Hill has turned up a surprising number of representatives and senators who are not afraid to speak out against these damaging projects, however. Amendments to delete all or some of these projects will be offered to the various appropriations bills in the next few weeks. Sierra Club members should immediately write his or her representative and senators, urging them to support the President's efforts to stop funding wasteful and damaging projects.

International: World Environment Day 1977

Martha Lackner

World Environment Day, marking the fifth anniversary of the 1972 United Nations Conference on the Human Environment held in Stockholm, will be celebrated on June 5, 1977, in towns and cities all over the world. The Stockholm Conference was a signal to some of us that the international community was growing toward a new environmental consciousness that recoiled from humanity's rapacious exploitation of the earth, that understood the interdependency of all ecosystems, and that was committed to action on a global scale. (A Sierra Club delegation attended the Stockholm Conference, and Club representatives have attended each of the follow-up conferences on food, population, human settlements and water.)

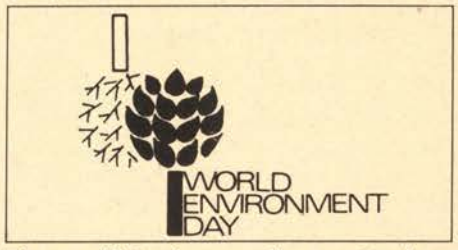
On World Environment Day in 1975, the Sierra Club, with the National Audubon Society, sponsored the now-famous EARTHCARE Conference, assembling more than 600 persons at the United Nations, representing some 200 organizations from around the world.

This year the Sierra Club has been invited to join the United States Environmental Protection Agency and State Department in celebrating World Environment Day across the country. The United Nations Environment Programme, "the environmental conscience of the U.N.," is cooperating with us in New York and is inviting the United Nations Secretary-General to participate. Because effective environmental improvements demand the involvement of all our citizens, we are seeking participation from all segments of the community.

In New York a week-long celebration will range over all the land and water of the city. Many and varied activities are scheduled for New York's parks, gardens, conservation centers, neighborhood blocks, theaters and rivers, with major events focussed at Lincoln Center and the United Nations.

The program begins on May 30. World Environment Day will be announced in playbills, stagebills and posters at Lincoln Center where strolling minstrels, jugglers and pantomimists will entertain. The center will also be the arena for speeches in honor of the day. On June 4, a mass rally will take place at the United Nations Mall and Rose Garden, where Captain Jacques Cousteau, Margaret Mead and others have been invited to speak.

A symbolic tree-planting ceremony will close the United Nations observances and the celebrants will walk to nearby Dag Hammarskjöld Plaza, which will be filled with environmental displays, exhibits, booths and ongoing entertainment. There visitors will listen to a series of addresses by distinguished representatives from government, industry, labor, environmental groups and the diplomatic community.



There will be intermediate-technology displays and solar-energy exhibits, and workshops will be held on marine mammals, on ocean pollution, and on environmental economics. The American Museum of Natural History will furnish educational materials and displays on endangered species.

Some of the many and diverse groups that will take part are the New York Urban Coalition, the Boy and Girl Scouts of America, the New York Zoological Society, the American Institute of Architects, Rational Transit Alternatives, the League of Women Voters, the United Nations Youth Caucus, the National Urban League, the Council on the Environment, the Cousteau Society, the Hudson River Restoration Society, the Parks Council and the Metropolitan Solar Energy Society.

All across the United States other Club groups and chapters are organizing events and programs. In Nashville, the Middle Tennessee Group will conduct a Whole Earth Fair with country music as background to strong anti-nuclear, anti-strip-mining, and Great Smoky Mountain Wilderness platforms.

In Palo Alto, the Loma Prieta Chapter program will include public officials and other well-known speakers, musicians and numerous environmental organizations.

The Eastern Missouri Group will concentrate on the Great River issues. Centering on the levee at the St. Louis waterfront, activities will include canoe landings and slideshows. Displays will be housed in nearby buildings. The group hopes other river towns will join them. Another Missouri unit of the Club, the Kansas City Group, plans a large celebration in a park adjacent to the Missouri River that will involve over twenty environmental and governmental organizations and attendance of over 10,000.

The Tecumseh Group in Ohio is marking the occasion by holding a day-long solar-energy conference at Wright State University. In Tucson, the Seccion del Rincon Group will take part in a bikeathon-walkathon-jogathon that will converge on a park for music and talks. A number of church and community groups will participate in the New Haven Group's activities, which will take place at the New Haven Green and will include dancing on the green.

Why this kind of turnout for World Environment Day? In the spirit of Stockholm —five years later—it is time to reach out again to the old conservation partners who have walked the long road with us, and it is time to reach out to our new partners—to youth, to our senior citizens, to minorities, to religious groups, to labor. The time for making this connection—and for achieving the more difficult long-term commitment to solid legislation—grows short. This coming together could be, perhaps, the stuff of which mass movements are made: the beginning swell of a long pure wave which will wash over our benighted planet and give us back the Good Earth.

Members interested in taking part or who want more information may contact Martha Lackner at the Sierra Club International Office, 777 U.N. Plaza, 10th floor, New York, 10017. **SCB**

Martha Lackner is on the International Committee of the Sierra Club.

News

Carter proposes new tanker standards

Responding to the rash of recent oil spills, President Carter has directed Secretary of Transportation Brock Adams to issue proposed rules for a series of new oil-tanker standards. The new regulations are to apply to all oil tankers, U.S. and foreign, over 20,000 dead weight tons entering U.S. ports. The rules include (1) double bottoms on all new tankers, (2) segregated ballast on all tankers, (3) inert gas systems on all tankers, (4) back-up radar systems on all tankers and (5) improved emergency steering standards on all tankers. Meanwhile, Richard Frank, an attorney with the Center for Law and Social Policy, told the House Subcommittee on the Coast Guard and Navigation, which is considering a proposed new oil-spill liability act, that such legislation should "assure that all damage from oil discharges be compensated for . . .," and ". . . act as an incentive to prevent discharges of oil which lead to damage." Opposition will be intense from tanker owners and oil companies to both this legislation and Carter's proposed regulations. Environmentalists are urged to write President Carter in support of the proposed new tanker standards.

Andrus supports Redwood Park expansion

Conservationists were very pleased when Interior Secretary Cecil Andrus announced that the Carter Administration supports expansion of Redwood National Park; however, his recommendation would acquire fewer acres than conservationists would like. He explained his position last April 22 to Representative Phillip Burton's (D-California) House Committee of Interior and Insular Affairs, then holding hearings on HR. 3813, a bill to increase the size of the park from 58,000 to 132,000 acres. Andrus recommended instead that the federal government purchase only 48,000 acres, at an estimated cost of $359 million. He said the remaining 26,000 acres could be protected through strong regulations. The Sierra Club believes that all 74,000 acres specified in the bill are necessary to protect the park and enhance visitor use of the expanded park. Andrus also asked that the Interior Secretary's authority to protect the park be clarified and that $12 million be provided for rehabilitating the Redwood Creek watershed over the next five to ten years. He pledged to work with Burton to find the best solution to anticipated job losses resulting from declining timber output, pointing out that Humboldt County would run out of old-growth redwoods within ten to fifteen years even if the park were not expanded. He said that a viable alternative to Humboldt County's single-resource economy had to be found in any case.

Carter submits energy-reorganization plan

President Carter transmitted to Congress a comprehensive bill to restructure the energy-related functions of the federal government. The measure would create a new, cabinet-level Department of Energy (DOE), presumably with White House energy advisor James Schlesinger as its secretary. The new department would combine the Energy Research & Development Administration, the Federal Energy Administration, and the Federal Power Commission. In addition, the DOE would absorb the Bonneville Power Administration and three other regional power administrations (but not the Tennessee Valley Authority), as well as bits and pieces from other federal agencies. While the Club generally approves the plan, it has criticized some aspects of it. First, too much authority over the leasing of federal energy resources would be transferred from the Department of the Interior to DOE and a better balance between the two departments is needed. Second, the authority for the licensing of dams should be transferred from the Federal Power Commission to the Department of the Interior, not to the proposed DOE. Finally, research on solar and other renewable energy resources should be given independent status within the DOE. Concerned Club members should make these points to their representatives and senators.

Endangered American wilderness campaign begins

The House Subcommittee on Indian Affairs and Public Lands, chaired by Representative Teno Roncalio of Wyoming, has held hearings on H.R. 3534, the Endangered American Wilderness Act of 1977. The bill would designate national forest roadless areas in six states either "instant wilderness" or wilderness-study areas. Holway Jones, chairman of the Club's national wilderness committee, documented for the subcommittee the flaws in the Forest Service's inventory and study of roadless areas, the so-called *"de facto* wilderness." Singer John Denver testified to the importance of wilderness in his own life. Denver also met with President Carter to discuss environmental concerns and this priority wilderness legislation. *Club members are urged to write to their representatives and senators, requesting them to cosponsor this important legislation.*

New day dawns over the OCS

Carter administration witnesses recently testified in support of legislation to amend the Outer Continental Shelf Lands Act (H.R. 1614 and S. 9). At hearings in both the House and the Senate, Interior Secretary Cecil Andrus and Federal Energy Administrator John F. O'Leary gave strong statements of support. Andrus also suggested several amendments to the bill. Passage of such legislation is one of the Club's high priorities for this Congress.

News

Redwood Park-expansion action heats up

Despite a request from the Carter administration to the presidents of Arcata National, Simpson, and Louisiana-Pacific timber companies, urging them to stop cutting old-growth redwood trees on approximately two-thirds of the 74,000 acres being considered for addition to Redwood National Park, the presidents refused, calling the request "an unreasonable and unjustifiable action." The request came from Secretary of the Interior Cecil Andrus at the urging of leaders of the House and Senate interior committees, which are considering the park-expansion bill, H.R. 3813. Following the timber companies' rebuff to the secretary, Representative Phillip Burton (D-California) called the refusal an "unconscionable effort to thwart the public and the efforts of Congress" and said he will try to speed up the legislation.

Additional support for park expansion has come from Representative Leo Ryan (D-California). In a report approved by the House Government Operations Committee, Ryan recommends expansion of the park, as well as an immediate moratorium on timber cutting near the park's boundaries. The report calls for Congress to expand the park by *at least* 21,500 acres and as much as the 74,000 acres included in the legislative proposals. In the meantime, over 400 acres of old-growth redwoods have been approved for cutting by the state of California and the National Park Service in areas directly adjacent to the park and proposed for addition to the park. *It is urgent that telegrams and letters be sent to your senators and representatives urging fast action by the Congress.*

Study urges changes in nuclear policy

Termination of the Liquid Metal Fast-Breeder Reactor (LMFBR) program and an indefinite moratorium on nuclear-fuel reprocessing were among the conclusions drawn by a panel of twenty-one scientists and economists, including members of the Carter administration. The panel's report, entitled "Nuclear Power: Issues and Choices," was funded by a Ford Foundation grant. Panel participants were chosen for their objectivity regarding nuclear energy. Their report concludes that nuclear power plants would be as expensive and dangerous to operate as coal-fired plants, that uranium reserves are probably much greater than present official estimates contend and that fossil fuels are sufficient to meet our needs until alternative technologies are in wide-scale use. Adoption of the panel's recommendations by the Carter administration would mean the end of the Clinch River breeder reactor in Tennessee and the Barnwell reprocessing plant in South Carolina.

Club members asked to support Carter's energy policy

President Carter addressed the nation and Congress twice in April, expressing grave concern about the energy problem and outlining proposed solutions. Emphasizing the non-renewability of fossil-fuel resources, he spoke of the need to conserve energy, protect the environment, price energy at its replacement cost and move toward nonconventional sources. He set a number of goals, including the insulation of ninety percent of the homes in the United States, as well as all new buildings. While the Club will study carefully the energy measures the Administration sends to Congress, the Club generally favors the plan. Readers are asked to urge their representative and senators to enact legislation implementing the measures Carter has outlined. Letters to the President applauding his speech would also be in order. Club members also should write letters to the editors of their local papers in praise of Carter's action.

Club seeks air-quality controls near national parks

The Club's campaign is progressing to establish the highest possible air-quality protection for national parks. The National Park Service regional offices in the Pacific Northwest and the Southeast have requested stringent air-quality controls on industrial development near the parks in their regions. The recommendations came in response to letters from the Club urging the Department of the Interior to place all thirty-eight national parks under the Class 1 Environmental Protection Agency (EPA) designation. According to EPA regulations, Class 1 designation for the parks would severely restrict the design or location of future nearby industrial development, including coal-fired power plants, pulp mills, and iron and steel mills. Park Service Director Gary Everhardt, commenting on Utah air-quality regulations, said, "The Class 1 category was established to recognize the importance of national parklands and to provide for the highest possible protection to air quality within these lands."

Public works jobs bill goes to the President

At this writing, the Public Works Jobs Bill has been cleared for Presidential signature. Entitled the Public Works Employment Act of 1977, the bill would authorize an additional $4 billion for local public-works projects (e.g., schools, municipal buildings, roads, and water and sewer lines). A number of provisions important to the protection of the environment were included. The bill requires that projects meet the provisions of the National Environmental Protection Act (NEPA), and allows the Secretary of the Interior to reject those that are environmentally damaging. Projects are to be constructed in areas with the greatest need, which may cut down on "suburban sprawl" types of projects. The bill also gives special funding consideration to projects that conserve energy. On the bad side, the bill allows money to be used for a wide variety of potentially damaging water-resource projects in the guise of "drought relief." Other important issues in the bill centered around the method of allocating funds and the targeting of projects to areas of high unemployment.

News

International News

Risks to the ozone layer explored

Destruction of the earth's protective ozone layer by such atmospheric pollutants as fluorocarbons, aircraft emissions and inorganic fertilizers was the subject of a recent United Nations conference held in Washington, D.C. Sponsored by the U.N. Environment Programme and attended by governments and representatives of international and nongovernmental organizations, the meeting produced a comprehensive plan to study the problem. This coordinated program will be carried out by the World Meteorological Organization, the Food and Agriculture Organization, the World Health Organization and others. Although such major fluorocarbon producers as West Germany, the United Kingdom, France and Japan have so far shown little interest in developing legislation to regulate the use of these gases, the United States intends to continue exploring ways of dealing with the issue. For example, it sponsored a meeting for twelve major fluorocarbon-producing nations in April, partly to set up a mechanism for the continuing exchange of information and action on the problem. The United States and Canada are both moving toward passing legislation to regulate nonessential fluorocarbon uses.

Environmentalists and scientists meet on Law of the Sea

Environmentalists and scientists met in Washington, D.C., last February to assess the current status of the Law of the Sea, as well as impending national legislation on fisheries, oil pollution and seabed mining. The meeting was held under the auspices of the American Committee for International Conservation and was organized by the Sierra Club to examine policy alternatives prior to the opening of the next Law of the Sea session in May. Some speakers urged continuing to work for strong environmental articles in the treaty, despite the rather weak provisions achieved thus far. But it was agreed that effective protection for the oceans would also require national and regional measures. A number of participants felt that agreement on a full treaty is unlikely, but that even in this event many of the articles agreed on so far will become international law.

Water conference highlights global problems

Sierra Club International Vice President William Futrell, a member of the United States delegation to the United Nations Water Conference, reports that the "action plan" adopted by the conference contained generally good proposals on pollution. Among these were recommendations for industrial water use and treatment; for considering impacts on health and the environment when planning water projects; and for actions to combat water pollution, including adoption of the general principle that the polluter pays. The conference, which was held last March in Mar del Plata, Argentina, sought to solve potential water problems in the coming decades and to consider how the earth's fixed water supply can best be managed. The Sierra Club prepared the United States' thematic paper entitled "Water for Recreation and the Conservation of Living Resources."

Law of the Sea talks resume

Delegates from 157 countries will meet once again this summer in an attempt to reach agreement on a comprehensive treaty to govern the world's oceans. The seven-week meeting will begin in New York City on May 23. Consensus has been achieved on most proposed treaty articles, but a number of still-unresolved issues stand in the way of adopting a final treaty. These include the rights and duties of coastal states in the 200-mile economic zone, exploitation of the deep seabed, and freedom of scientific research. Environmentalists are concerned that the delegates have yet to establish an effective mechanism for controlling vessel-source pollution and preventing tanker accidents such as that of the *Argo Merchant*. Environmentalists also expressed reservations about environmental provisions for deep seabed mining, which they fear are inadequate. Deep seabed mining has been one of the most controversial topics facing Law of the Sea delegates, who attended an informal meeting held in Geneva last February and March in an attempt to break the deadlock. Reports indicate that some progress was made toward reaching a compromise.

Pennsylvania Chapter features international issues

At a recent meeting, members of the Club's Pennsylvania Chapter were treated to a workshop on ocean pollution organized by Philadelphia Group Leader Al Slap and International Chairperson Rosanna Morris. Panelists included representatives from the Coast Guard, EPA and New Jersey Department of Environmental Protection. Local university students and members of the Divers Association also participated in the day-long workshop. Nicholas Robinson, chairperson of the Club's International Committee, reminded participants that there is "only one earth" and said that it must be protected as a total system. He also emphasized the need for vigilance to prevent United States projects from resulting in environmental degradation in other countries. The Club now has more than 100 international chairpersons in chapters and groups across the country. They act as liaisons between members and the Club's International Program. Martha Lackner, working out of the international office in New York, coordinates this volunteer program.

It's Not Too Late to Sign up for a 1977 Wilderness Outing

A large number of Sierra Club 1977 outings are filled, with wait lists for most. But many outings are still available. If you act promptly, you can probably find space on any of the trips listed below. *Please refer to Page 35 of the 1/77 Outing Issue of the* SIERRA CLUB BULLETIN *for application form, reservation instructions and deposit/cancellation/refund policy information; Page 49 for outings information order coupon.* Or you may contact the Outing Department for trip descriptions and current sign-up information on these and other trips.

Remember, too, that the June/July/August and November/December issues of the SIERRA CLUB BULLETIN have special Outings sections describing next year's Foreign and Spring trips.

Trip Number		*Date*	*Trip Cost (Incl. Deposit)*		*Deposit*	*Leader*
	ALASKA					
52	Seymour Canal Canoe Trip, Admiralty Island	July 24-31	465		25	Sandy Sagalkin
55	Seymour Canal Canoe Trip, Admiralty Island	July 31-Aug. 7	465		25	Jon Tillinghast
	BASE CAMP (Other base camps are listed under: Wilderness Threshold [family base camps], Alaska, Ski, Canoe.)					
62	Talchako Lodge, Tweedsmuir Park, B.C., Canada	June 21-28	230		25	Gary Miltenberger
63	Sailing-Camping, Coast of Maine	June 26-July 2	435		25	Gerry Ireland
64	Craig Lake State Park, Michigan	June 26-July 3	205		25	Virginia Prentice
65	Slickrock Wilderness Photography, Nantahala Forest, NC	June 26-July 2	140*		25	Dolph Amster
69	Chain Lakes, Yosemite, Sierra	July 10-22	255		25	Dick May
70	Talchako Lodge, Tweedsmuir Park, B.C., Canada	July 12-22	300		25	Gary Miltenberger
75	Minarets West Alpine Camp, Minarets Wilderness, Sierra	Aug. 7-19	255		25	John Freiermuth
76	Margaret Lakes, John Muir Wilderness, Sierra	Aug. 7-19	255		25	Joanne Barnes
77	Hopkins Basin Back Country Camp, John Muir Wild., Sierra	Aug. 13-27	335		25	Ray Des Camp
80	Talchako Lodge, Tweedsmuir Park, B.C., Canada	Sept. 15-25	300		25	Gary Miltenberger
83	Death Valley Christmas Camp, California	Dec. 18-27	180		25	Robert Miller
84-E	Natural History of Organ Pipe Cactus Nat'l Monument, AZ	Dec. 18-27	205		25	Serge Puchert
	**Children under 12 $100.*					
	BICYCLE					
86-E	Eco-cycling Southeast Minnesota and Western Wisconsin	June 12-26	200		25	Elizabeth Barnard
87	Cycling around Kauai, Hawaii	July 18-Aug. 1	350		25	John P. Biestman
	BURRO					
90	South Warner Wilderness, Northern California	July 6-13	250		25	Joe Holmes
91	Rae Lakes, Inyo Forest, Sierra	July 14-23	200		25	Richard Cohen
94	Haystack Peak, Stanislaus Forest/Yosemite, Sierra	July 24-Aug. 7	330		25	Richard Cooper
95	Trans-Sierra Trek, Inyo Forest/Kings Canyon, Sierra	Aug. 6-20	330		25	Randall Rasicot
96	Tilden Canyon, Yosemite, Sierra	Aug. 7-21	330		25	Jack Costello
98	Muir Gorge, Yosemite, Sierra	Aug. 21-Sept. 4	330		25	Dan Holmes
100	Trans-Sierra via Evolution Valley, Kings Canyon, Sierra	Sept. 3-18	335		25	Joe Holmes
	FAMILY TRIPS (Other trips with family rates are listed under Base Camps.)					
	Wilderness Threshold		*Parents and one child*	*Each addl. child*		
114	Chamberlain Basin, Sawtooth National Recreation Area, ID	Aug. 16-24	480	120	25	Myrna & Tom Frankel
116	Canyon de Chelly National Monument, Arizona	Aug. 28-Sept. 3	410	95	25	Joyce & Sid Alpert
	Family Canoe		*Parents and one child*	*Each addl. child*		
121	Kipawa Reserve Canoe-Base Camp, Quebec, Canada	Aug. 17-25	480	125	25	Jim Finucane
	Family Knapsack		*Parents and one child*	*Each addl. child*		
129	Bear Creek Spire Teen-Age/Family, Sierra	Aug. 14-22	300	80	25	Carol & Howard Dienger
	FOREIGN 1977 (Trip prices are subject to change and do not include air fare.)*					
603	Land of the Sun Kings, Peru	June 18-July 25	1905		50	Ray Des Camp
636	Galapagos Islands, Ecuador	July 11-28	1615		50	Charles Schultz
650	Australia Down Under	Sept. 2-Oct. 1	1370		50	Ann Dwyer
700	Annapurna Circle, Nepal	Sept. 24-Oct. 29	2030		50	Norton Hastings
710	Mexico, Glimpses of Past and Present	Nov. 12-Dec. 13	915		50	Ray Des Camp
	**Per-person deposit.*					

Trip Number		Date	Trip Cost (Incl. Deposit)	Deposit	Leader
	HAWAII (Other Hawaii trips are listed under Bicycle and Underwater Exploration.)				
134	Moku Loa, The Big Island	Aug. 22-Sept. 1	330	25	Dianne Christich
	HIGH-LIGHT				
140	Kaiparowits Plateau, Utah	June 4-11	265	25	Allen Malmquist
141	Pecos Wilderness, Sangre de Cristo Range, New Mexico	June 19-30	395	25	Les Albee
143	High Uintas Primitive Area, Ashley Forest, Utah	July 10-22	405	25	Velden Black
144	Remote Redwoods of the Southern Sierra	July 18-26	265	25	Mary Coffeen
145	Cirque Crest Circle, Kings Canyon Park, Sierra	July 21-Aug. 5	440	25	Wayne Woodruff
149	High Uintas Primitive Area, Ashley Forest, Utah	July 24-Aug. 5	405	25	Les Albee
151	Snake River Range, Targhee National Forest, Idaho	Aug. 7-16	410	25	Bill Huntley
155	Jasper-Robson Parks, Alberta/B.C., Canada	Aug. 16-26	325	25	Al Combs
156	Canyons and Crests of the Kings, Inyo/Kings Canyon, Sierra	Sept. 5-19	360	25	John Edginton
157	Cabeza Prieta, Arizona	Dec. 27-Jan. 1	145	25	John Ricker
	KNAPSACK TRIPS (Other Knapsack trips are listed under Service Trips.)				
161	White Mountain Forest, Appalachian Trail, New Hampshire	June 2-11	160	25	Sue & Duncan Bailey
162	Sierra de San Pedro Martir, Mexico	June 5-11	90	25	Tom Pillsbury
164	Black Range Primitive Area, Gila Forest, New Mexico	June 12-18	110	25	John Colburn
166	Matterhorn Peak, Yosemite, Sierra	June 20-29	100	25	Chris Carman
168-E	Southern Sequoia Field Biology, Sequoia Park, Sierra	June 23-July 4	175	25	Walter Goggin
169	Dolly Sods Leisure, West Virginia	June 26-July 2	120	25	Elihu Leifer
128	Silver Lake, Lassen Park Leisure, Northern California	July 3-9	85	25	Anneliese & Ken Lass
171	Hanging Lake, Le Conte Divide, Sierra	July 11-19	100	25	Leslie & Gary Young
174	Tyndall Creek, Sequoia National Park, Sierra	July 17-27	120	25	Ken Maas
175	Mount Zirkel Wilderness, Colorado	July 18-23	130	25	Bill Murphy
177	Mt. Sill, Kings Canyon National Park, Sierra	July 18-28	120	25	Bob Berges
180	Mt. Humphrey, John Muir Wilderness, Sierra	July 22-29	105	25	Serge Puchert
182	Minarets-Bench Canyon, Minarets Wilderness, Sierra	July 27-Aug. 7	140	25	Matt Hahne
185	Colosseum Mountain, Kings Canyon Park, Sierra	Aug. 1-10	120	25	Jim Watters
189	Big Baldy-Pistol Creek, Idaho Primitive Area	Aug. 7-20	205	25	Arthur Beal
191-E	Geology of the Eastern Escarpment, Sierra	Aug. 8-16	130	25	Mary Coffeen
192	Goblin Gates, Olympic National Park, Washington	Aug. 9-18	160	25	Molly & Harry Reeves
193-E	Southern Sierra Art, Sequoia National Park, Sierra	Aug. 12-19	130	25	Ellen Howard
195	Panorama Ridge Traverse, Tweedsmuir Park, B.C., Canada	Aug. 17-27	245	25	Jane Rondthaler
197	Absaroka Range, Shoshone Forest/Yellowstone Park, WY	Aug. 22-31	155	25	Bob Madsen
198	Deer Park, Olympic National Park, Washington	Aug. 22-Sept. 1	160	25	Rich Wisowaty
199	Sunny Side of Silver Divide, John Muir Wilderness, Sierra	Aug. 24-31	90	25	Jim Skillin
201	Mineral King to Kings Canyon Park, Sierra	Aug. 26-Sept. 5	140	25	Pete Nelson
202	Superior Shoreline Leisure Trek, Michigan	Aug. 29-Sept. 4	180	25	Virginia Prentice
204	Bighorn Plateau, Sequoia Park, Sierra	Sept. 6-14	100	25	Ralph Huntoon
212	Little Colorado, Grand Canyon, Arizona	Oct. 2-8	155	25	Nancy Wahl
213	Grand Canyon, Arizona	Oct. 9-15	115	25	Lester Olin
216-E	Grand Canyon Geology, Arizona	Dec. 18-24	195	25	Tom Pillsbury
217	Sea Islands Leisure, Georgia	Dec. 25-Jan. 1	230	25	Steve Johnson
218	Superstition Wilderness, Arizona	Dec. 27-Jan. 1	85	25	Dave Ganci
219	Grand Canyon, Arizona	Dec. 27-Jan. 2	110	25	Lester Olin
220	Pinacate Peak, Gran Desierto, Sonora, Mexico	Dec. 29-Jan. 2	160	25	Chuck Kroger
	JUNIOR KNAPSACK				
225	Trinity Alps, Northern California	June 20-27	90	25	Dave Neumann
227	Grinnell Lake, John Muir Wilderness, Sierra	July 4-12	110	25	Ann Peterson
228	Mount Holy Cross, White River Forest, Colorado	July 10-16	160	25	Bill Murphy
229	Nine Lake Basin, Sequoia Park, Sierra	July 10-17	90	25	Ellen & Jim Absher
232	Painter Basin-Gilbert Peak, High Unitas Primitive Area, UT	July 30-Aug. 7	110	25	John Carter
234	Hell-for-Sure Pass, Sierra Forest/Kings Canyon Park, Sierra	Aug. 8-18	120	25	Brian Lemmon
235	Ruby Mountains-Snake Range Older Teens, Humboldt Forest, Nevada	Aug. 14-25	135	25	Patrick Colgan
236	Muir Wilderness, Sierra	Aug. 23-31	100	25	Norm Weeden
	SADDLE-LIGHT				
238	Kern Plateau, Inyo Forest, Sierra	June 25-July 2	425	25	Ken Henrickson
239	Cascade Range, Canadian Rockies, Alberta, Canada	Aug. 8-13	430	25	Kathy Jones
	SERVICE TRIPS				
	Special Projects				
241	Gilbert Lake Meadow Restoration, Inyo Forest, Sierra	July 10-18	55	25	Mark Johnson
242	Siberian Outpost Trail Replantation, Sequoia/Kings Canyon, Sierra	July 13-23	55	25	Kevin Ahern
	Clean-Up Projects				
246	Galena Peak Wilderness Restoration, Pike-San Isabel, CO	June 30-July 10	55	25	John Stansfield
247	Gable Creek, John Muir Wilderness, Sierra	July 13-21	55	25	Randall Pullen
248	Cottonwood-to-Mulkey Pass Backpack, Inyo Forest, Sierra	Aug. 28-Sept. 7	55	25	Dave Simon

Trip Number		Date	Trip Cost (Incl. Deposit)	Deposit	Leader
	Trail Maintenance Projects				
249	Renshaw Lake, Sun River District, Montana	July 2-13	60	25	Melissa Brown
250	Deep Creek, Teton Ranger District, Montana	July 15-25	55	25	Melissa Brown
251	Steelhead Lake, John Muir Wilderness, Sierra	July 23-Aug. 2	55	25	Tod Rubin
252	Pacific Crest Trail, Tahoe Forest, Sierra	July 26-Aug. 5	55	25	Nick Fowler
253	Trinity Alps, Shasta/Trinity Forest, Northern California	July 27-Aug. 6	55	25	Don Coppock
255	Teton Wilderness, Bridger/Teton Forest, Wyoming	July 30-Aug. 9	55	25	Bill Bankston
256	Steelhead Lake, John Muir Wilderness, Sierra	Aug. 6-16	55	25	Mark Johnson
261	Trinity Alps, Shasta/Trinity Forest, Northern California	Aug. 8-18	55	25	Don Coppock
262	Pacific Crest Trail, Tahoe Forest, Sierra	Aug. 11-21	55	25	Nick Fowler
263	Two Mouth Lake, Selkirk Range, Idaho	Aug. 12-22	55	25	Bill Bankston
266	Hurricane Creek/Seven Lakes Basin, Eagle Cap Wilderness, Oregon	Aug. 24-Sept. 3	55	25	Don Coppock
	SKI TOURING				
270	Ski-Touring Clinic, Steamboat Springs, Colorado	Dec. 4-9	80	25	Sven Wiik
271	Ski-Touring Clinic, Steamboat Springs, Colorado	Jan. 8-13 '78	80	25	Sven Wiik
272	Superior-Quetico Ski and Snowshoe, Minnesota/Ontario	Feb. 19-25 '78	190	25	Stu Duncanson
	UNDERWATER EXPLORATION*				
277	Virgin Islands	July 4-16	630†	50	Ann Gladwin
278	Lanai and Kona Coast, Hawaii	July 5-16	600††	50	Lou Barr

**Per-person deposit. †$795 for divers. ††$760 for divers.*

FOREIGN UNDERWATER EXPLORATION (Total cost is approximate and does not include air fare unless indicated.)

401-E	Grand Cayman, Tropical Reef Biology, B.W.I.	June 11-22	940	50*	Steve Webster
403	Bonaire, Netherlands Antilles	July 21-Aug. 1	800††	50*	Kent Schellenger
400-E	Galapagos Islands, Ecuador	August 6-27	2225†††	50*	Kent Schellenger
405-E	Baja California Kelp Forest Biology, Mexico	August 14-19	455	25	Rob Spivack

**Per-person deposit. ††$905 for divers. †††$2525 for divers.*

WATER TRIPS (Other Water Trips are listed under Alaska, Foreign and Underwater Exploration.)

	River Raft Trips				
283	Rogue River, Oregon	June 6-10	205	25	Tris Coffin
285	Hells Canyon of the Snake River, Idaho	June 11-16	325	25	Anna Stedina
286	San Juan River, Utah	June 13-18	325	25	Russell Snook
287	Westwater-Cataract Canyon Raft-Hiking, Colorado/Utah	June 19-26	440	25	John Barnard
288	Rogue River, Oregon	July 4-8	205	25	John Garcia
290	Middle Fork of the Salmon River, Idaho	July 10-15	445	25	Ann Dwyer
293	Middle Fork of the Salmon River, Idaho	Aug. 3-8	445	25	Deborah Douglas
296	Middle Fork of the Salmon River, Idaho	Aug. 19-24	445	25	Kurt Menning
297	Hells Canyon of the Snake River, Idaho	Aug. 22-27	325	25	Martin Friedman
298	Chilcotin River, B.C., Canada	Aug. 22-27	530	50*	Harry Neal

**Per-person deposit.*

	Canoe/Kayak Trips				
302	Southern Appalachian Whitewater Canoeing Base Camp, Georgia/North Carolina/South Carolina	June 4-11	150	25	Ken McAmis
303	Eleven Point River Leisure Canoe, Missouri	June 5-11	175	25	Jackie E. Kerr
304	Niobrara River, Nebraska	June 12-18	125	25	Faye Sitzman
306-E	Killarney Park Natural History, Ontario, Canada	June 18-25	195	25	Rose McCullough
307	Main Eel River Teen-Plus Trip, Northern California	June 19-25	175	25	Doug Christensen
308	Canadian San Juan Islands, British Columbia	June 19-25	170	25	Chuck Fisk
309	Scenic Rivers, Wisconsin/Minnesota	June 19-25	195	25	Tom Carroll
310	Dumoine River, Quebec, Canada	June 25-July 2	220	25	Alma Norman
311	Quetico-Superior Leisure Canoe, Minnesota/Ontario	June 26-July 9	395	25	Stu Duncanson
313	Upper Klamath Kayak, Klamath Forest, California	July 24-30	145	25	Reg Lake
315	Klamath River, Northern California	Aug. 13-19	200	25	Mary Miles
319	Kipawa Reserve Park, Quebec, Canada	Aug. 22-Sept. 1	255	25	Stephen Lessels
320	Rio Grande Canyons, Texas	Oct. 9-15	135	25	John Baker
321	Boquillas Canyon, Texas	Nov. 20-26	110	25	Steve Hanson
322	Everglades Park, Florida	Dec. 4-10	205	25	Lincoln E. Roberts

	Boat Trips				
415	Baja and the Sea of Cortez, Mexico	June 11-20	535	50*	c/o Ellis Rother
419	Puerto Vallarta, Mexico	Nov. 7-19	700†	50*	Margaret & Ellis Rother
413	Sea of Cortez Leisure Trip, Mexico	Nov. 19-26	575	50*	Monroe Agee

**Per-person deposit. †From Los Angeles, $660 from San Antonio. Costs include RT air fare (subject to increase). $560 from Puerto Vallarta.*

Getting Involved: You don't have to be an expert

Back in the simpler times of not so many years ago, the conservation, mountaineering and outings committees handily took care of the Sierra Club's chief concern: the protection of wilderness. Since then, "progress" has seen to it that even the most remote area of wilderness now cannot escape the impacts of modern technology—proving the old environmental truth that everything indeed is hitched to everything else.

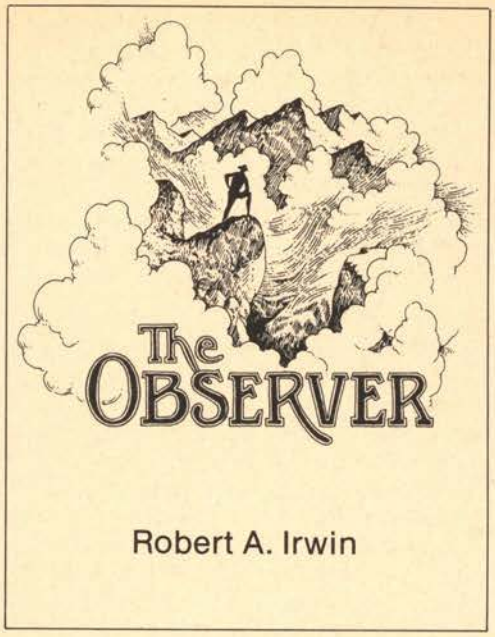
Today, the Sierra Club, too, is hitched to everything else. Its list of concerns still includes wilderness, of course, but also spans the entire range of environmental issues. And the longer this list has grown, the harder it has been to find enough volunteers to take on the heavy workload of the proliferating task forces and committees at all levels of the Club. Many members are awed by the technical knowledge and skills they feel some of these committees and task forces require. "What," they might ask, "do we know about insecticides or geothermal power?" They hesitate to volunteer, assuming the "experts" have everything under control. But that ain't necessarily so. Help *is* needed.

Any reasonably intelligent member interested in a particular issue should be able to contribute effectively to the work on any task force or committee. The Loma Prieta Chapter accepts that premise and has taken what promise to be effective steps to involve more of its members in work on the many conservation issues in its area south of San Francisco. On April 12, the chapter's conservation committee hosted the first in a series of "conservation evenings," with a slide show and informal discussion on California's *de facto* wilderness areas. The "evenings" will be relaxed and informative, and each will focus on one or two current issues. Leaders of the appropriate committee or task force will lead the discussions and, it is to be hoped, enlist members for significant and much-needed conservation work for the chapter.

Lobbying by Chapters

Lobbying in the public interest, both to further conservation and to safeguard environmental gains already achieved, more and more has become an essential activity on the chapter and group levels of the Sierra Club. One of the most recent to join the lobbying parade is the Pennsylvania Chapter. In January, its 4,000 members were asked to contribute funds to support a lobbying effort in the state capital. Within two months 429 members had given $3,475—an average of $8.10 each—not a penny of it tax-deductible! Now, the chapter is firming up plans to utilize the funds "in the most effective way possible to provide a strong and respected voice in Harrisburg."

The Florida Chapter, one of the first outside California to conduct a regular lobbying effort in a state capital, is continuing its lobbyist-training program. (The thirteen California chapters and the national Club have long supported and staffed a lobbying office in Sacramento.) Chapter Chairwoman Shirley Taylor, who pioneered the Club's lobbying effort in Tallahassee, is heading the training program. The chapter will pay the expenses of the member or members chosen to cover the legislature two or three times during each of its sessions over the next three years. Florida law requires citizen lobbyists, just as their industry counterparts, to register.



Three Filmstrip Series Available

Three Sierra Club books—*Alaska: The Great Land, Navajo Wildlands,* and *Time and the River Flowing*—serve as the bases for three series of color-and-sound filmstrips. The three filmstrip kits are titled:

Alaska:
Part I *The Great Land*
Part II *A Living History*

Grand Canyon:
Part I *Time and the River Flowing*
Part II *Journey into the Great Unknown*

Navajo Wildlands:
Part I *Created-From-Everything*
Part II *The Place That Comes At One*

About 120 or more of the photographs from each book have been incorporated into the filmstrips, and the authors of the first and last of the books—Peggy Wayburn and Francois Leydet—have written the texts for the sound tracks. The Sierra Club is a partner in their production and receives royalties on all sales.

Each includes 35-mm filmstrips and a choice of either tape cassettes or 33 ⅓-rpm phonodiscs for the soundtrack. Each is broken down into two parts: the first centers on the geology and other physical features of the region and the second on man's historical and present impacts on the land. Each runs about thirty to forty minutes.

Any one of these audio-visual kits would be a worthwhile investment for chapter or group use, for their own meetings as well as for rentals to schools or other organizations. The list prices for each of the series are $36 for the disc version and $45 for cassettes. A DuKane or similar type projector, commonly used in classrooms, is necessary to show the filmstrips.

For more information and ordering details, write either to Lyceum Productions, Inc., P.O. Box 1226, Laguna Beach, California 92652, or to Charles Scribner's Sons, 597 Fifth Ave., New York, N.Y. 10017, Attention: Sales Department. (The Sierra Club does not have these items for sale or for rent.)

Notes and Briefs

Gary Miltenberger, manager of the Sierra Club's Talchako Lodge in Stui, near Bella Coola, British Columbia reports that he has been swamped with volunteers for summer work all because of a brief note in this column last February. He adds that by mid-April all offers of positions will have been mailed out. With most of the western United States likely to be tinder dry this summer, a vacation in well-watered northern British Columbia might be appropriate. For information on Talchako Lodge, write to Gary Miltenberger at the lodge, Hagensborg, B.C. V0T 1H0 Canada, or telephone (604) 982-2489.

* * *

To make white-water and other types of canoeing experiences available to all of its members in North and South Carolina, the Joseph LeConte Chapter has purchased a fleet of canoes. They are rented to its several groups for $50 a year, and the groups in turn rent them to members for about $8 a day or $12 a weekend. Repair costs are paid by the user or group. The $50 annual fee goes into the Chapter Canoeing Fund

for the purchase of additional or replacement canoes.

* * *

A small, vigorous chapter marked a significant milestone on February 2, 1977. On that day, the 2,400-member Ventana Chapter opened its elegantly appointed Environmental Center in Carmel, California. A library, a book store, an information post, a meeting place, an office—the center is staffed by volunteers from noon to 4 p.m., Tuesday through Saturday. More than a dozen members pooled their talents to create the attractive new center, which stands as clear evidence that, indeed, small can be beautiful.

* * *

Environmental-impact consciousness is not limited to national Sierra Club outings. The Grand Canyon Chapter has adopted a reservation-only policy for all of its outings. The purpose is twofold: to enable the leader to select a group size that won't harm the area to be visited, and to guarantee participation in an outing to an interested member. As do several other chapters and groups, the Grand Canyon Chapter now charges nominal fees for outings: 50c for members and 75c for nonmembers. Perhaps this should be a universal practice in light of the tremendously higher insurance rates the Club and chapters now must pay. After all, the cost of insurance is rising because of the risks involved in outings. Maybe the "nominal fees" should be higher and frankly labeled as insurance charges.

* * *

The Sierra Club's Redwood Slide Show, a visual presentation of what's at stake in the efforts to expand Redwood National Park, is now available. To borrow the slide show, send $5 to cover shipping and handling to Exhibits, at Club headquarters. Include your telephone number and inclusive dates the show is needed and allow one month for delivery.

* * *

Along with wilderness-interpretive outings, a variety of summer courses on environmental and human ecology topics is being offered by the Sierra Nevada Institute beginning July 27. Among the courses are:

- Land, Resources, and Governmental Agencies—focuses on the issues, policies and planning processes of all governmental agencies concerned with the natural resources of the Owens Valley and the eastern slope of the Sierra (June 27–July 1, Bishop, California);
- Ecotactics—studies environmental protection and how citizens can participate in it (July 18–22, Mammoth Lakes, California); and
- National Park Service Planning and Policy—how those activities relate to legislative mandates and what roles citizens can play (July 25–29, Yosemite National Park).

Optional credit (three quarter-units) for the courses is available from University of California Extension. For full information write to Dr. John Lemons, Director, Sierra Nevada Institute, Route 1, Box 20, Bishop, CA 93514.

* * *

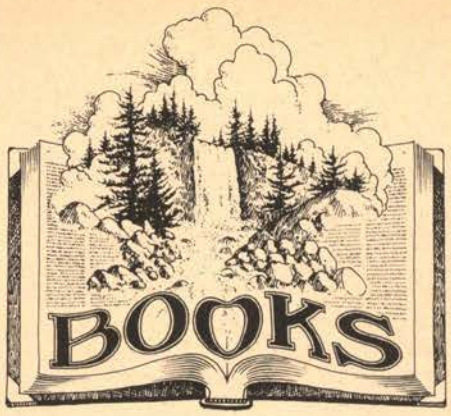
The Los Padres Chapter, in cooperation with Zero Population Growth, sponsored an action-oriented population conference in Santa Barbara, California, on March 5, at which biologist Garrett Hardin discussed "Compassion and Responsibility Toward Illegal Immigration" and Judith Kunofsky, the Club's population specialist, talked on "U.S. Population Growth: the Five-Year Record and an Agenda for the Next Ten." Four workshops were held simultaneously on illegal immigration, abortion, programs for the schools and urban growth limits. Local Club leaders Fred Eissler and Selma Rubin were conference organizers.

Comings and Goings

John McComb, long-time Southwest representative, based in Tucson, has taken the new post of public-lands lobbyist in the Club's Washington, D.C., office. He will cover a wide range of legislative land-use issues, including wilderness, wildlife refuges, BLM lands, and western energy and water development.

Bruce Hamilton, recent news editor of the environment-oriented *High Country News,* replaces Laney Hicks as Northern Great Plains representative. Hicks retired in March. In her six years in that post she succeeded in making the Sierra Club known and respected throughout the Northern Great Plains and Rockies.

Don Morrill, the Club's first Northern California wilderness coordinator, has resigned. For the last two and a half years he has ridden circuit in Northern California and Nevada recruiting, inspiring and training new wilderness activists. He has promoted *ad hoc* wilderness groups and worked through the California Wilderness Coalition, which he helped found. **SCB**



The Storm

Hal Borland

In Hal Borland's Book of Days *one of our most eloquent observers of the natural world has provided a daily journal of a year spent in the New England countryside. In the following passage reprinted from the book, we share with Borland the prelude, arrival and aftermath of a late spring rainstorm.*

MAY 27

Sometimes, as I did today, I go out and sit on the riverbank on a warm afternoon and watch the green banks and the flow of gray-blue water and feel that I am watching a kind of stream of evolving life in this river that flows past my dooryard. Life began in the freshwater oceans, true, but by the time it had progressed to that stage of organization where backbones and brains and vestigial limbs were at least latent in the structure of a fish, there was land and there were rivers. And those rivers and the tidal waters at their mouths teemed with life.

Fish evolved for life in the water, which then was the major element, excepting only the air that enveloped this earth. And that air was poor in oxygen, since there were few green plants to cycle the moisture and the sunlight and create oxygen from water. Life depended on water. And water, the great solvent, contained all manner of materials for life's creation and sustenance. And, through the agency of lesser life, it provided the vital food for those strange new creatures whose framework was made of calcium and whose flesh was essentially protoplasm enriched with carbon and hydrogen.

Why, I wonder, watching the river, did one of those fish choose to leave that hospitable water? What urgency was upon it to climb out into the air and onto the land? Was it to escape predatory enemies, or was it to achieve greater freedom? What was that urgency?

I don't know the answers. I doubt that anyone knows. All we know of a certainty is that other forms of life already had left the water-womb. A small assortment of primitive plants were growing in the humid air and marshy ground at the water's edge. Spiders and scorpions were there upon the land, eight-legged precursors of the insect armies that eventually would appear. But there were no other animals of enduring consequence except in the water. Yet from those fish, those early backboned creatures, came the hordes of land animals.

I sat there on the riverbank and watched the emergence, the long, slow change that evolved the first amphibian, the ages when that whole cosmos of marshland was dominated by those awkward newcomers of such a long history. The amphibians, then the first reptiles, then the age of the reptile giants. And somewhere among them, unheeded, I could see the insignificant beginnings of still another kind of creature, the mammal. Creatures no bigger than rats, but wholly land animals and no longer reptiles, were scurrying about in the background. Animals whose blood ran warm, who had bigger brains than the reptiles, who did not have to fear the chill of night. There, in those scurrying strangers, was the beginning of my own kind.

But first, I reminded myself, watching the slow roll of the river in front of me. . . first, there were fish.

MAY 28

A typical late May day, here in the hills—overcast this morning, and a light shower; then clearing, hot and humid this afternoon, and this evening warm and what we used to call "close," meaning oppressive. But we probably are past the time of frost, at last, so today we set out tomato plants, and peppers, and we planted more beans, more beets and carrots, and another lettuce bed for seedlings to transplant in two or three weeks. The first lettuce seedlings were transplanted a few days ago and we have had our first salad, thinnings from the lettuce seed bed. Such baby lettuce is almost too young to eat, but it has a subtle flavor that even the best mature lettuce cannot match. We think so, at least, though a part of it may be in our own palates, which have not had garden lettuce since last September. Anything that new and fresh—and free of chemical fertilizers or pesticides—has a special taste.

MAY 29

From the time I woke up this morning, soon after five, there was tension in the air. It was a strangely quiet morning, with few birds singing and the leaves hanging limply from the trees, not a breath of air stirring. There wasn't a ripple on the river and the sun had a brassy look. And the day never relaxed. The birds called with a querulous, questioning note, even the robins. The brown thrashers uttered a phrase or two, repeated them, then stopped. And the catbirds flew restlessly from bush to bush, didn't even scold.

By noon the heat was oppressive, though only in the high eighties. The humidity hung like a blue haze on the hills. The plants we set out yesterday were limp and drooping, so I took old curtains out, draped them on wooden stakes, and provided shade, which did little good. By mid-afternoon the temperature was ninety-two and a low bank of clouds hung in the west.

It was almost five before there was any sign of the tension breaking. A few restless gusts of wind whipped down the valley, stirring the trees, which seemed even more listless afterward. Then there was a flicker of distant lightning. The cloud bank, steadily rising now, was illuminated with each flicker and looked like the surging foam on a flooded river.

The cloud bank rose, reached the zenith, and just before six there was a blinding flash as a jagged bolt of lightning ripped the sky beyond the mountain. I counted seconds and got to eighteen before the booming roll of thunder came bouncing down the mountainside. That bolt was almost two miles away. Before the echoes died there was another, and then another, closer now, twelve seconds, then ten.

The storm was moving up the valley beyond the mountain. Another flash, and the count was only eight. It was coming around the mountain, making a big circle. Crash! Another boom, and another crash. The house shook. Windows rattled. You could feel the jolt in the very bedrock, and the flashes were so constant, the roll of thunder so endless, I couldn't count.

Then the rain came, a roar of wind and a thunder of rain on leaves, slashing, drenching. And with it a flash of lightning so close that the thunder shook its final flare. But after that the rain seemed to quench the lightning, which passed to the east, still growling and rumbling but moving on. And the rain settled down from a cloudburst to a roar on the roof.

By six thirty the violence of the storm had passed. I stripped to a pair of old

khakis and Barbara to shorts and a shirt and we went out to see what could be done for the garden. Barefoot, we sloshed about in mud to our ankles, rescued the tomato plants from their sunshades, which had been beaten down around them, and transplanted another row of lettuce seedlings, as much to get our hands in the warm, wet soil as to get those lettuce roots in. Then, wriggling our toes in the mud like eight-year-olds, we closed the garden gate, wiped our feet on the lawn grass, lifted our faces, eyes shut, mouths wide, drank the rain as it fell, and were one with grass and trees.

Then we came in, stripped to the skin, made sandwiches, took them to the sun porch and lay, naked as jaybirds, slowly eating and listening to the soft drone of rain on the roof, the gurgle in the downspouts, and the brown thrasher celebrating the cool wetness of the rain-washed evening.

MAY 30

A beautiful day, a kind of atmospheric apology for last evening's bombardment. The rain continued only a little while into the night and the gauge this morning showed .75 inch total, most of which must have come down in that first furious downpour.

The whole world looks washed and clean, and we have the first lemon lilies out and the first of the big yellow iris, the special ones. The old-fashioned yellow and purple iris, those I always called flags, have been out for a week. Those flags, of course, are the bi-colored ones, the purples more a blue, really, and with a good deal of white in them, and the yellows marked with an orange-brown, a good deal the color of the streaks in the common day lilies that will soon be in bloom along our roadside. I can remember those yellow flags from my very small childhood. My grandmother had a whole bed of them along the picket fence that enclosed her dooryard. I remember them as huge flowers and very tall, as tall as I am. Actually, they probably were about three feet tall, which must have been my own height at that time.

MAY 31

This morning, about six fifteen, I saw a big raccoon in the back yard eating something it had dragged out of the compost heap back of the woodshed. I stood at the sun porch window, which was wide open, and it obviously saw me. It kept watching me but was in no mood to run until it had finished with whatever tidbit it had. Its coat was full and glistening, indicating good health. Finally it ate its treasure, to the last gulp, looked at me again, then turned and went across the pasture toward the woods at the foot of the mountain. It was in no hurry whatever.

I wonder if this was the same coon that spent a time under our front porch last winter. I never knew why that one came down to the house, or why it took up quarters under the porch, which it entered by pushing aside one of the lattice slats on the frame that covers the gap at one end between porch floor and ground. We saw that coon almost every day for the better part of a month. It wasn't exactly tame, but it obviously considered itself the owner of this house and we were guests or possibly short-term renters. If I hadn't been careful to close the door every time I went in or out, I am sure it would have moved right in.

Just when we thought it was becoming a nuisance and would have to be dispossessed, it packed up and moved, we never knew where or why. Possibly the move was in response to the arrival of a skunk that found that place under the front porch to be a comfortable haven on a cold, windy day. We didn't welcome the skunk, but it stayed only a week or so. After that nobody lived here but we two people. **SCB**

Brief Reports: Naturalists

All the Strange Hours, the Excavations of a Life, by Loren Eiseley. 273 pp. New York: Scribners, 1975; paperback, 1977. $2.45.

The book is Eiseley's official autobiography, yet it is really but the latest installment in an ongoing story that he began twenty years ago with the publication of *The Immense Journey*. For most of his books are to a great extent autobiographical, and his genius has been to endow with eloquent significance what to most of us would be the commonplace events of life. Eiseley's life seems more interesting, one comes to realize, because he is more interested.

An American Prophet, by Gerald Green. 323 pp. New York: Doubleday, 1977. $8.95.

Novels with environmental themes have become increasingly popular in the last few years. This one, by the author of *The Last Angry Man*, recounts the heroic efforts of aging scholar Daniel D. Vormund to protect the Arizona desert from the depredations of real estate developers, energy companies and other environmental predators. Vormund is a thinly disguised version of the late Joseph Wood Krutch, and the book is Green's tribute to that beloved scholar and naturalist, who spent most of the last years of his life living in the desert outside Tucson. Krutch died in 1970.

The Bird Man, by Ian Strange. 182 pp. London: Gordon and Cremonesi, 1976. $16.95.

Known in Great Britain as "the bird man," naturalist, painter, and conservationist Ian Strange has carried on a lifelong love affair with the remote Falkland Islands in the South Atlantic. This book, an autobiography, is the story of this affair, of Strange's life and work on the islands. The book contains good color reproductions of six of his fine bird paintings.

Reflections from the North Country, by Sigurd F. Olson. 172 pp. New York: Alfred A. Knopf, 1976. $7.95.

Olson, the poet of the Quetico-Superior lake country, the land of the voyageurs, looks back on a life spent exploring the vast Canadian wilderness, not for the purpose of autobiography, but to see what he has learned. This book is a collection of essays on the great ideas of human existence—freedom, solitude, courage, frontiers, and many others—the fruits of Olson's wilderness life.

Trails to Nature's Mysteries, the Life of a Working Naturalist, by Ross E. Hutchins. 222 pp. New York: Dodd, Mead, 1977. $6.95.

Mr. Hutchins uses the course of his own life to organize a miscellany of information about plants and animals, nature photography, and curiosities of nature to be found in such places as Montana's Madison Range, Guam, the Everglades and the Great Smoky Mountains. Unlike many nature writers, the author indulges in little philosophy, and in place of impressionistic description he has substituted a scientist's curiosity and penchant for clear, simple descriptions. The book is illustrated by numerous black-and-white photographs taken by the author, many of them fascinating close-ups of such bizarre insects as the giant waterbug and Australia's ferocious bulldog ant.

The View from Lincoln Hill, by Paul Brooks. 273 pp. Boston: Houghton Mifflin, 1976. $8.95.

This book is at least three things: a history of a town—Lincoln, Massachusetts; a history of an idea—land-use planning to preserve the open, rural character of suburban communities; and an offering of love by author Brooks to the town he and his family have lived in since 1934. Brooks, a former member of the Sierra Club Board of Directors, writes very well indeed, and his book will be enjoyed not only by people who love New England or American history, or who want to learn about one town's efforts to protect itself from urban sprawl, but by everyone who enjoys seeing the English language used with skill and sensitivity.

Robinson Jeffers and

KEVIN STARR

As a matter of perception and symbol, the environmental movement has reached a new state of consciousness regarding natural objects, animate and inanimate alike. Rocks, trees, rivers, wilderness areas: we now, in a very real sense, grant the vegetable and mineral worlds rights—as we did the animals for the first time effectively at the turn of the century. The chain of creation, it is now felt, is a continuity, not a succession of mutually exclusive segments. If people have rights as natural creatures, then animals have similar rights. And if animals and people have rights, then trees and other growing things, also part of the biosphere, have rights also: rights to growth, nourishment, and self-determination as species; rights against wanton obliteration; and the right, above all, not to have their essential purpose in the scheme of creation irreversibly altered or destroyed. No one has the right, for instance, to destroy a river; nor does one have the right to pollute a stream, since water has the right to be uncontaminated water. No one should, without grave reason, level or deface a mountain, since mountains have the right to remain mountains.

The Western, Judeo-Christian tradition has been slow in coming to this awareness. Its genius has been either in the benevolent use of nature as a sacramental symbol or in the reshaping of nature for instrumental human ends. At its best, the West has humanized nature, making it a partner in human life and art, using it prudently as a resource. At its worst, it has plundered nature as if it were an inexhaustible storehouse intended solely for prodigal human use.

Many forces have led to this new sensibility. Modern sciences, for instance, stress the continuities of animate and inanimate life, whereas nineteenth-century science grew passionate over discontinuities and distinctions. Astronomy and scientific cosmology, both dealing with a world infinitely beyond the human factor, have helped mankind scale down its sense of its own central importance to the purposes and processes of the galactic universe.

Art and the imagination have also played a role. Twentieth-century art, especially painting and poetry, has demonstrated an objective regard for natural phenomena that has greatly nourished our new respect for nature on its own terms. No artist has done more in this regard than the great California poet Robinson Jeffers.

Born in 1887, the son of a professor of Old Testament literature at the Western Theological Seminary of Pittsburgh, Robinson Jeffers came to Cali-

Kevin Starr is currently a Research Fellow at the Huntington Library, San Marino, completing a study of modern California.

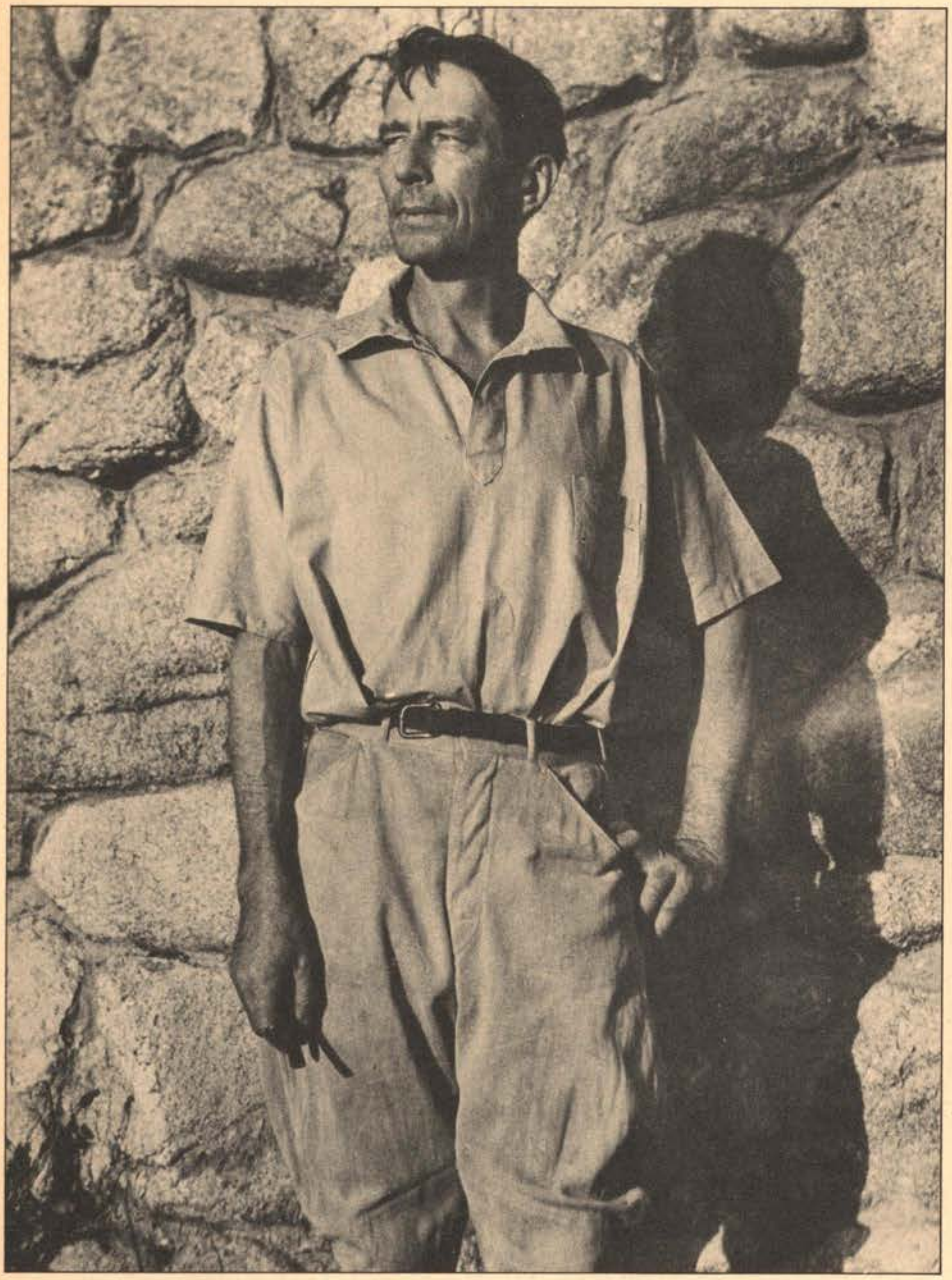
Love the Wild Swan

"I hate my verses, every line, every word.
Oh pale and brittle pencils ever to try
One grass-blade's curve, or the throat of one bird
That clings to twig, ruffled against white sky.
Oh cracked and twilight mirrors ever to catch
One color, one glinting flash, of the splendor of things.
Unlucky hunter, Oh bullets of wax,
The lion beauty, the wild-swan wings, the storm of the wings."
—This wild swan of a world is no hunter's game.
Better bullets than yours would miss the white breast,
Better mirrors than yours would crack in the flame.
Does it matter whether you hate your . . . self? At least
Love your eyes that can see, your mind that can
Hear the music, the thunder of the wings. Love the wild swan.

Photos courtesy of the Bancroft Library

Jeffers with his wife Una Call Kuster

the Integrity of Nature



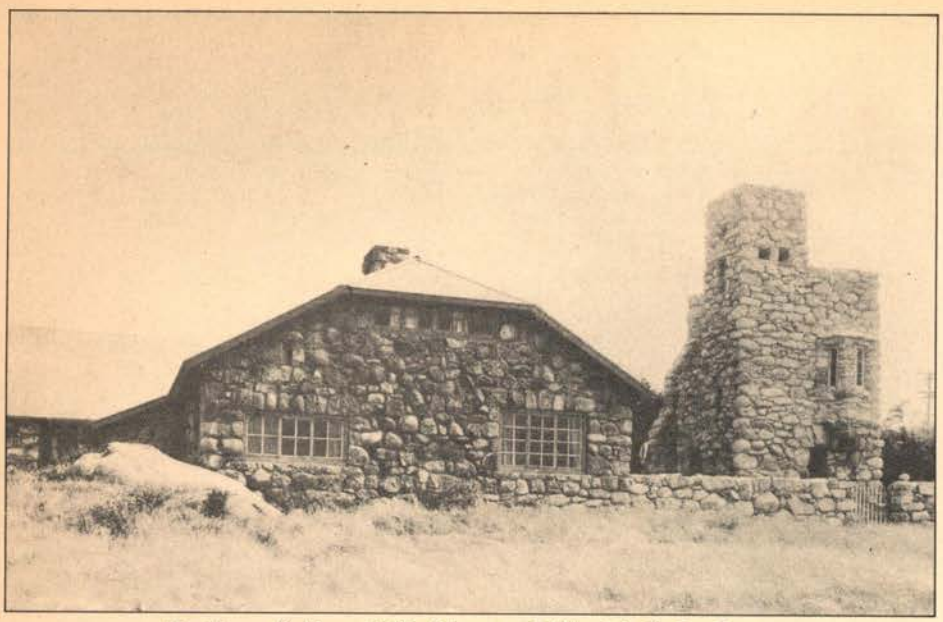
Robinson Jeffers

fornia in 1903 when his father, plagued by ill health, decided to move his family to Pasadena. At age sixteen, Robinson Jeffers brought to California an already complicated heritage: a Calvinist Presbyterian upbringing; tutoring by his father in Greek, Latin and Hebrew; and the broadening effect of travel and education in Switzerland and Germany. In the next nineteen years, from his entrance into Occidental College in 1903 to the appearance in 1924 of *Tamar and Other Poems*, his first mature book of poetry, Jeffers developed from a transplanted eastern college student, ill at ease about what he would do with his life, to a poet whose sense of vocation has hardly been paralleled in our literary history.

It did not come easily, this vision, this vocation, this sense of self. Jeffers achieved his poetic *persona* and his subject matter out of an almost archetypically yearned-for fusion of high culture and Far Western imperatives. Son of an enormously learned scripture scholar, Jeffers absorbed, beginning at the age of five, Hebrew and Greek stories, imbuing him early in life with a sense of myth as the primary and most powerful mode of presenting psychological experience. At the same time, he absorbed his father's Calvinist reading of myth: his necessity, that is, to push myth to its outer and most intense possibilities of moral statement. Myth presented and probed the moral and psychological universe.

Travel and education in Europe endowed young Jeffers with a cosmopolitan culture, a culture that at its worst threatened to turn him into an empty aesthete, but that at its best provided him with a sense of high thought carried on with consistency and purpose: the sort of high thought for which the West had ever yearned since its first rude frontier days.

The bookish Jeffers also had a taste for physical experience. Young Jeffers had climbed the Alps. Then as an undergraduate at Occidental, he had tackled the Sierra and the San Bernardinos with equal vigor. At the University of Southern California, where he studied literature for a year and medicine for three years, he distinguished himself as a heavyweight wrestler, swimmer and long-distance runner. Yet the gap between the physical and the imaginative proved impassable for Jeffers for many years. Art and nature seemed unbridgeable entities. One element in his nature seemed to drive him to the study of science, medicine and forestry during the course of a rather long and unfocused sojourn in graduate schools at the University of Southern California and at Washington University in Seattle. Another side of his nature, in opposition to that of the science-loving outdoorsman, drove him to bouts of personal dandyism, indulgent aestheticism, and the sort of literary bohemianism char-



Tor House, Robinson Jeffers' home on California's Big Sur Coast

acterized by much drinking, more loafing, even more womanizing, and very little writing.

Flagons and Apples (1912) shows Jeffers' precious beginnings. At twenty-five, he could turn out a pretty line, pulsating with the usual sentiments, self-consciously poetic in diction, fragile. Four years later, with the publication of *Californians* (1916), verse-forms and diction are still formal; but something exciting has happened; Jeffers has turned to Big Sur—for subject matter, for inspiration and, most important, for myth. It was as if landscape and setting itself—cliffs, bare hills, crashing surf—had the power to tighten, toughen, and focus the young poet's verse.

In 1905, as a graduate student at USC, Jeffers fell in love with Una Call Kuster, a fellow student, married at the time to another man. It was eight years, from their meeting in 1905 to their marriage in 1913, after Una's divorce, before she and Jeffers were able to live together. In between were years of heartbreak, separation, and mutual hurt. In "The Truce and the Peace" (the poem in which he celebrated his happiness and maturity) Jeffers associates his premarital years with his simultaneous irresolution as a thinker and his lack of vigor as a poet. Sexual possession—the sanctioned and stable sexual possession of marriage—went hand in hand with Jeffers' achievement of intellectual coherence and his arrival at a sense of self-possession and a sense of place.

Place, for Una and Robinson Jeffers, meant the dramatic, isolated Big Sur coast south of Carmel, where they moved in 1914. Their first child, a daughter Maev, was born and died in the same year; in 1916 they welcomed twin sons, Donnan and Garth, whose Celtic names suggest the Jeffers' strong sense of Scotch-Celtic heritage. Made modestly independent through a legacy, settled in Carmel with his family, and at the beginning of a focused poetic career, Jeffers had reached the first plateau in his ascendance to greatness.

In 1919 he began to build Tor House, a stone citadel overlooking the Pacific, in which he lived until his death in 1962. "As he helped the masons shift and place the wind and wave-worn granite," his wife tells us, "I think he realized some kinship with [the granite] . . . and became aware of strengths in himself unknown before. Thus at the age of thirty-one there came to him a kind of awakening such as adolescents and religious converts are said to experience."

The building of Tor House was partially the cause and partially the symbol of an inner awakening. Surmounted by the thirty-foot-high Hawk Tower—which Jeffers built himself over the course of five years—Tor House became the emblem of Jeffers' growing philosophical detachment, his movement away from human culture and intellectuality toward an identification with rock and sea and mountain: correlatives of that detached grandeur and permanence the poet sought

through what one critic has called "a religion of lithic permanency." The building of Tor House simultaneously constituted the construction of a house, a philosophy, and a poetic.

Jeffers struggled for a new idiom as he piled boulder upon boulder. As were Tor House and Hawk Tower, Jeffers wanted his verse constructed of natural materials. Abandoning rhyme, he lengthened his lines to resemble the movement of waves and tides, the flow of blood, the pumping of the heart. Speech rhythms lost the self-consciously wrought patterns of his earlier verse and followed instead the fluid patterns of subconscious rumination. Jeffers' diction lost its initial prettiness, becoming assertive, craggy, granitelike. "Tamar," a long narrative poem completed in 1924, signals Jeffers' achievement of his new idiom: the analogue in verse form of Tor House in architecture and "inhumanism" in philosophy.

Jeffers' lifestyle and physical presence reflected these relationships among poetry, philosophy and place. Edward Weston photographed Jeffers against Tor House, his face taking on the quality of the granite itself. George Sterling found in Jeffers the very physical paradigm of the great Western poet he knew he had failed to become himself. "He is built on heroic lines, physically and mentally," reported Sterling of Jeffers, "a good six feet in height, shoes lacking, slender, but powerfully limbed, and perhaps a hundred and seventy pounds in weight. In color his is between the brunette and the blond, bronzed by the sun, since he seldom wears a hat, and with the sternest, most searching blue-grey eyes that I have ever seen in a human face—a gaze more piercing than even that of Bierce's. In short, a more austere version of the Greek. And he always wears puttees, and a soft shirt, invariably open at the throat. The whole impression is that of a panther-like litheness and strength. Indeed, as his lines would indicate, he was a mile runner at college, and was afterwards accustomed to swim miles to sea. Nor is he ever physically indisposed, except from rare headaches, arising probably from eyestrain."

The rugged coastline extending south of the Carmel River down past Big Sur is Jeffers country: jagged cliffs, hill ranches, fog-bound in the mornings; secret beaches, skirted by windblasted pine and cypress, protected by redwood groves; the Santa Lucia mountain range, yet alive with Indian memories, criss-crossed by forgotten paths. This was "Haunted Country," said Jeffers, on the edge of the continent, the last resting place for every broken American ghost and dream. Here, in this final edge of the final West, experience seemed to double back on itself and again become mythic. "I could see people living," said Jeffers of Carmel life, "amid magnificent unspoiled scenery—essentially as they did in the Idylls or the Sagas, or in Homer's Ithaca. Here was life purged of its ephemeral accretions. Men were riding after cattle, or plowing the headland, hovered by white sea gulls, as they have done for thousands of years, and will for thousands of years to come. Here was contemporary life that was also permanent life; and not shut from the modern world but conscious of it and related to it; capable of expressing its spirit, but unencumbered by the mass of poetically irrelevant details and complexities that make a civilization." Myth, then, seemed as natural to Big Sur as its flora, fauna, and geological forms. A poet's vision and the suggestions of a place fused—and the coast south of Carmel found its way into high art.

Jeffers called himself an "inhumanist." He rejected humanistic comfort in anthropocentric concepts or institutions, be they social, aesthetic, philosophical, or religious. Student of the sciences, Carmel hermit—Jeffers sought to objectify transcendence through identification with permanent, remorseless nature: to subdue the self to the inhumanity of sea and rock and hawk's flight. Such was not an atheistical position. Even Saint Thomas Aquinas admitted that, if and when God is understood, He is only understood by analogy: by comparison, that is, to the natural world. In the tradition of the great mystics, Jeffers sought to bypass knowledge by analogy and search for God-in-Himself: imageless, transcendent, eternal. Intellect should not seek to organize God and Nature, Jeffers asserts, but to subdue itself to creation's contours and imperatives. Such a disciplining—as in all classical ascetical theologies—implied a withdrawal, a turning inward, a detachment from the ebb and flow and miscellany of human experience.

In poem after poem, Jeffers contrasted the vanity and frailty of human life with the permanency of inanimate nature. The net result was a fresh view of creation itself. Inanimate creation, in the world view of Robinson Jeffers' poetry, is the Permanent Other, exist-

Carmel Point

The extraordinary patience of things!
This beautiful place defaced with a crop of suburban houses—
How beautiful when we first beheld it,
Unbroken field of poppy and lupin walled with clean cliffs;
No intrusion but two or three horses pasturing,
Or a few milch cows rubbing their flanks on the outcrop rockheads—
Now the spoiler has come: does it care?
Not faintly. It has all time. It knows the people are a tide
That swells and in time will ebb, and all
Their works dissolve. Meanwhile the image of the pristine beauty
Lives in the very grain of the granite,
Safe as the endless ocean that climbs our cliff.—As for us:
We must uncenter our minds from ourselves;
We must unhumanize our views a little, and become confident
As the rock and ocean that we were made from.

To the Stone-Cutters

Stone-cutters fighting time with marble, you foredefeated
Challengers of oblivion
Eat cynical earnings, knowing rock splits, records fall down,
The square-limbed Roman letters
Scale in the thaws, wear in the rain. The poet as well
Builds his monument mockingly;
For man will be blotted out, the blithe earth die, the brave sun
Die blind and blacken to the heart:
Yet stones have stood for a thousand years, and pained thoughts found
The honey of peace in old poems.

ing, enduring in, of and for itself. Nature, Jeffers asserted, might lend itself to our symbolic purposes, but its first existence is not as a human symbol. Nature might be the backdrop of our most profound myths, but its ultimate meaning is not as a setting for human triumph or tragedy.

Inhumanism or trans-humanism involved, to Jeffers' way of thinking, an act of courageous renunciation.

"To the Stone-Cutters" best expresses Jeffers' religion of lithic permanency, his sense that only by acknowledging the permanence of nature could men find transcendence of their own frustrating limitations. "To the Stone-Cutters" underscores Jeffers' belief in the fragility and vanity of human effort, in contrast to the enduringness of nonhuman creation.

Art, Jeffers believed, should seek the lithic endurance of sea-washed stone; and in his comparison of art, in this case poetry, with inanimate creation, Jeffers, through the implication of comparison, bridges the gap he so severely postulates between enduring nature and the passing human race. Art is a struggle to achieve the permanency of stone itself.

Jeffers, of course, like every great poet, overstates his case. The universe is not so permanent as he would have it. Suns die, stars collapse, galaxies contract and expand in an infinite dance of immeasurable time. And yet, despite his exaggerations, Jeffers has expanded our consciousness in the matter of inanimate creation. Because of his poetry we are more aware of the otherness of natural things. And in that new respect for otherness in the inanimate, in that fresh and vital respect for the sacred beingness of rocks and rivers and mountains and trees, are the sound beginnings of an environmentalism that is so very much more than a program of protection. It is a philosophy of creation itself. **SCB**

Halle Flygard/Bruce Coleman, Inc.

Moraine Lake, Banff National Park

Waterton to Banff:
Canada's Proposed Great Divide Trail

PAT KARIEL

The notion of a long-distance trail evokes a nostalgia in those of us who live in cities, linked perhaps with romantic notions about escaping civilization and returning to nature. The popularity of the Pacific Crest and Appalachian Trails in the United States and the Bruce Trail in Southern Ontario have demonstrated the attraction of this idea.

A trail along the Continental Divide —or, as it is called in Canada, the "Great Divide"—has been considered seriously for at least a decade. Emphasis has been placed on that portion lying within or bordering Canada's mountain parks. Several studies have been made and provisional routes suggested. Parks Canada has the responsibility for this portion of the trail, but is not now pushing its development because of the fear of overuse and consequent environmental degradation, particularly of alpine areas.

Between Waterton and Banff parks, however, the divide, which forms the boundary between Alberta and British Columbia (B.C.), passes mainly through Crown lands in both provinces. Crown lands are roughly the Canadian equivalent of U.S. Forest Service lands, though under provincial rather than

Pat Kariel co-chairs the Sierra Club's Western Canada Chapter.

Keith Gunner/Bruce Coleman, Inc.

Lower Waterfowl Lake, Banff National Park

federal jurisdiction. The small amount of land held privately lies mainly in the Crowsnest Pass area.

The official policy for Crown lands has traditionally been one of "multiple use," which to date has resulted largely in abuse and misuse, primarily as a result of many types of resource extraction. In both provinces logging, coal mining, exploration for gas and oil, gas and oil wells, hydroelectric dams and gas-desulfurization plants have taken precedence over recreational uses. Furthermore, few attempts have been made to rehabilitate the scars left by logging roads and seismic trails cleared during oil and gas exploration. They have become means of access for all-terrain vehicles, trail bikes, and snowmobiles. With increasing interest in backpacking and cross-country skiing, however, definite conflicts of interest are surfacing, especially near the more heavily populated areas in Alberta.

As oil and gas become depleted, the demand for coal is increasing, providing the impetus for even greater mining activity in this area. Coal seams that have been uplifted and exposed by the extensive folding and faulting on both sides of the divide provide easy pickings for the massive strip-mining machinery now available. Tons of high-grade, low-sulfur coking coal are being shipped to Japan each year by the Kaiser Resources plants in and near the Crowsnest Pass.

Despite the extractive activities in the district, many beautiful areas remain virtually untouched, while others are recovering from the impact of earlier logging. Some sections are almost unknown and unused, except by local outfitters and other residents familiar with the country.

Realizing the rate at which these uses were despoiling the landscape, six young people decided in the summer of 1974 to explore that portion of the Great Divide stretching between Waterton and Banff national parks, with a view to selecting a provisional route for a Great Divide Trail. By the end of summer they had covered a combined total of over 3,000 miles on foot. Even with the assistance of a federal Opportunities for Youth grant, they worked for low pay and under difficult conditions. Because they were faced with the remains of an exceptionally heavy winter snowfall, they started in the south and worked their way northward as the summer progressed.

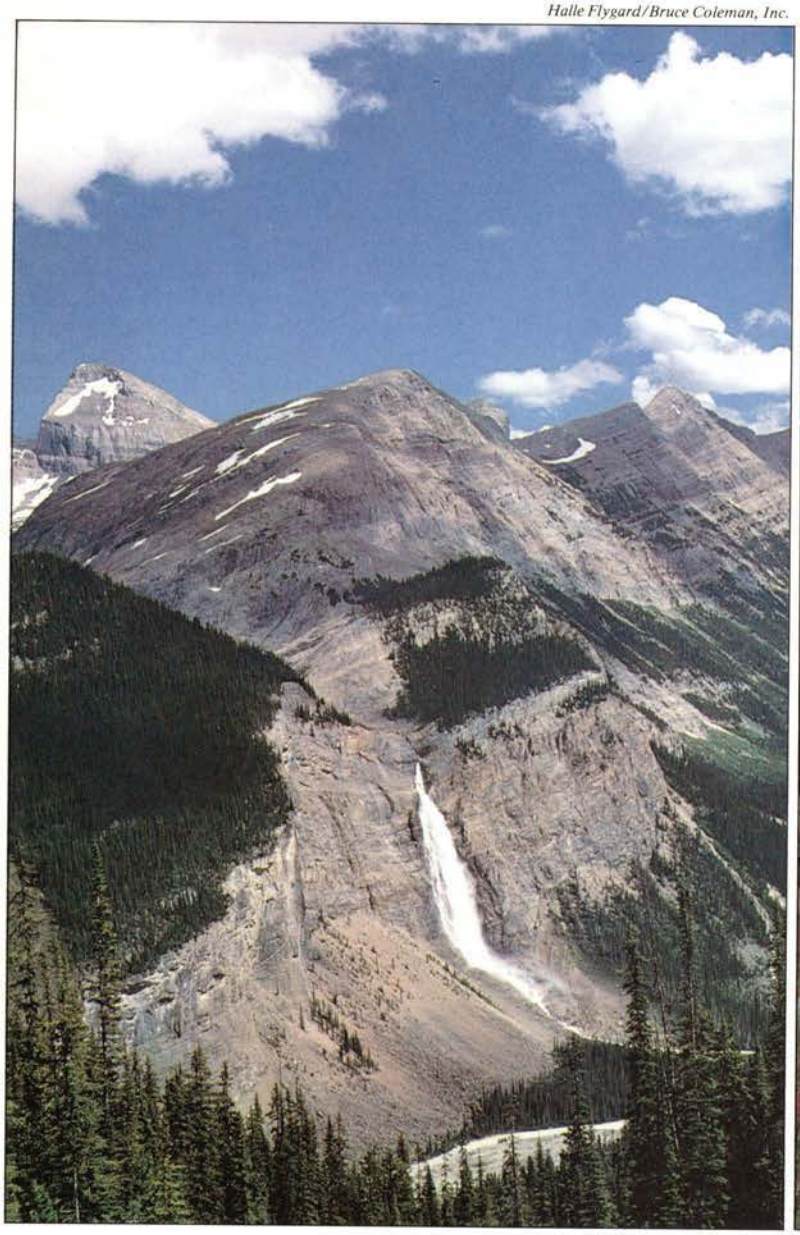
For the first part of the summer, their headquarters and living accommodations were in a large army tent pitched in the backyard of the Kinnear family in Coleman, where Mr. Kinnear works as a foreman for Coleman Collieries. Much of the ninety dollars per week that each member received went to provide food, keep an old car running in the face of its tendency to break down at least once a week, and buy film and other necessities. During the first week, a lodgepole pine smashed the car's windshield; problems continued thereafter. A steady diet of textured soy protein was blamed for creating many gastro-intestinal upsets. Two days before the opening of the sheep hunting season, one girl was nearly shot. A bullet hit a tree near where she was standing, but her scream fortunately convinced the overeager hunter that she was not a sheep after all.

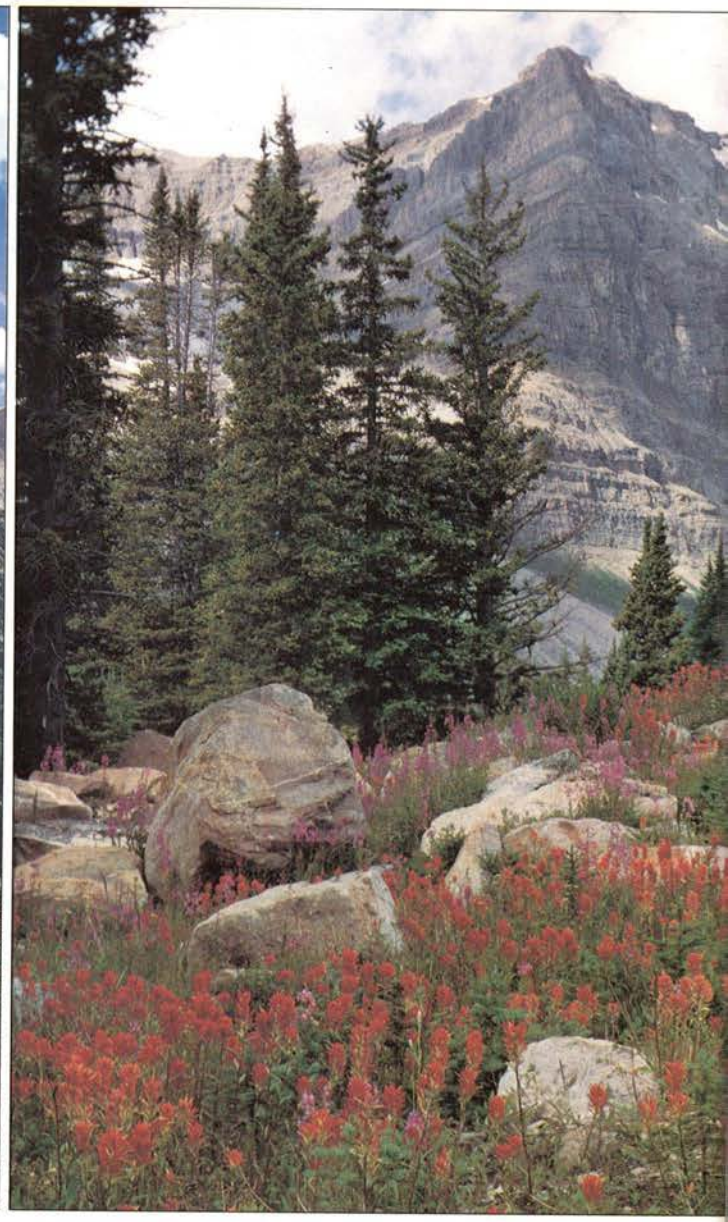
But work went on nevertheless. With a weekly schedule of five days in the field and two back at base, they set out to inventory the trails and the prevailing and potential land uses in the area, with the goal of establishing a provisional route for the trail. They attempted to locate this route so that it would avoid as many areas of conflicting land uses as possible, while taking in a maximum of the most spectacular and interesting scenery in the vicinity of the Great Divide.

Using existing roads, tracks made by four-wheel-drive vehicles, pack trails, seismic exploration lines and game trails wherever possible, they pieced together a number of alternative routes. Although one was designated as the preferred route, the alternatives could be used if necessary. These routes can now be followed by experienced hikers with the ability to read topographic maps, locate almost nonexistent trails, bushwhack for miles, climb over downed trees, ford streams, and pick routes among rocks in alpine areas.

Energetic, knowledgeable and well-prepared hikers planning to travel the entire 242-mile route between Waterton and Banff national parks would be well rewarded for their efforts. The route alternates between the east and west sides of the divide and ranges in elevation from 4,451 feet at Crowsnest Pass to 8,000 feet at Quarrie Pass. The scenery includes forested valleys, alpine meadows and glaciated peaks. At lower elevations on the west side of the divide, the landscape is dominated by dense forests of Douglas fir, western larch, cedar and associated plants. This moist-forest community is replaced on the east side by vegetation associated with the drier climate of the rain shadow—grasses and aspen in the open ranching country at lower elevations, mixed lodgepole pine and spruce forest at higher ones. Some of the subalpine areas west of the divide contain

Halle Flygard/Bruce Coleman, Inc.





Takaukaw Falls, Yoho Valley, Yoho National Park

alpine larch as well as the more common subalpine fir and Engelmann spruce. Wildlife along the trail includes wapiti, or elk, Rocky Mountain bighorn sheep, black bear and deer, all of which are common. Grizzlies and mountain goats are encountered infrequently.

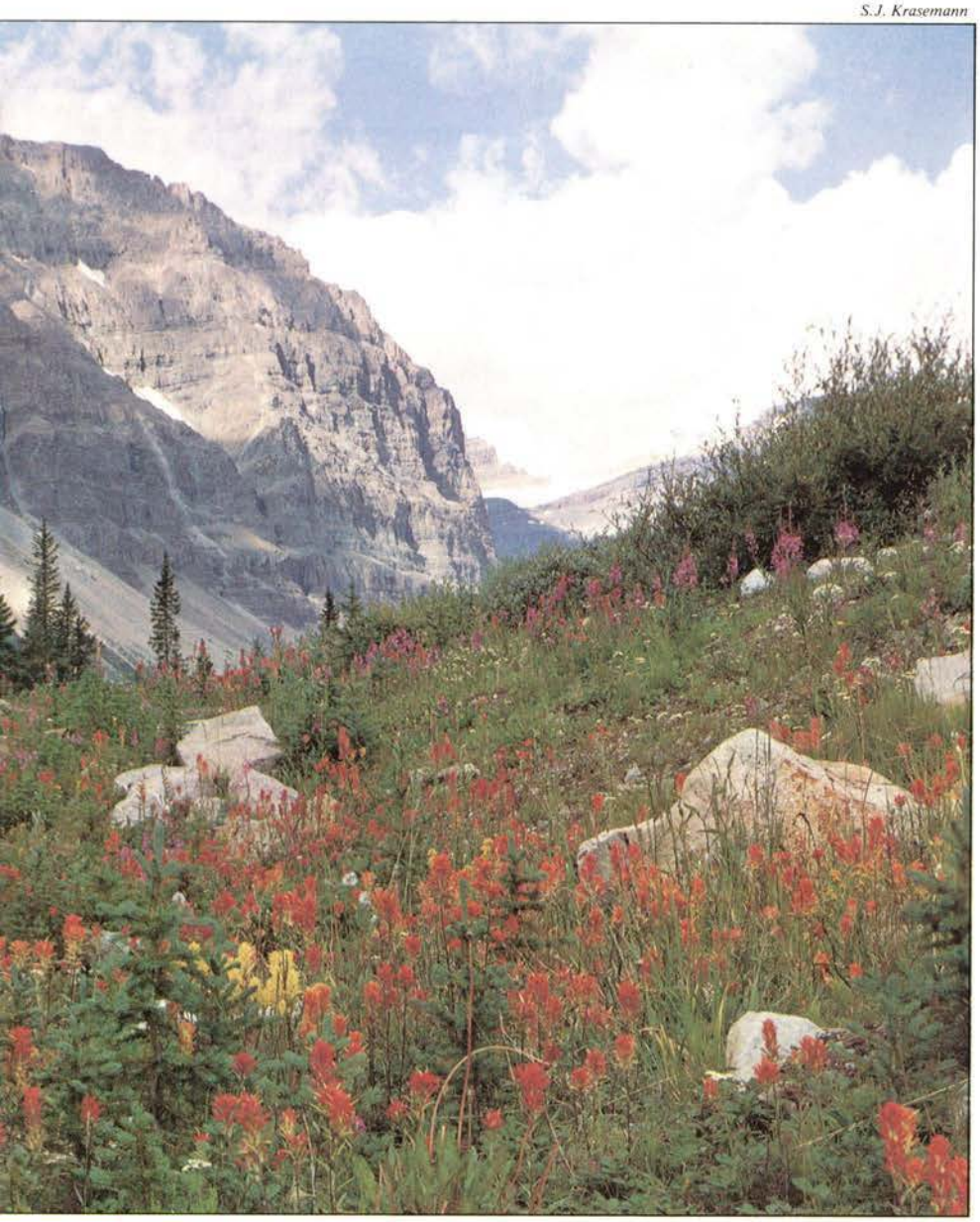
After the initial summer survey got the project under way, the Great Divide Trail Association was formed to convert the trail from a provisional route in the minds of a few dreamers to a recognized trail that could be traveled by ordinary hikers. The association's goal was to encourage the governments of both Alberta and British Columbia to: 1) endorse the concept of the trail, 2) designate a route for that portion of the trail in the province, and 3) set aside sufficient land to provide for a buffer corridor, so that the view from the trail will be as esthetically pleasing as possible. Although minimum standards for such a recreational corridor should be established, they must be flexible enough to deal with local conditions.

To date, more progress on the trail has been made in Alberta than in British Columbia. During the summer of 1976, negotiations with the Department of Parks, Recreation and Wildlife led ultimately to a grant of $5,000 to reimburse volunteers for time spent surveying the first seventeen miles of the trail. In the interim, a $200 grant from the Sierra Club's Northwest Regional Conservation Committee helped to feed these volunteers while the grant was pending. Crew members testify that the food made possible by this assistance was a big boost to their morale, and kept them going in spite of uncertainty about the provincial grant.

The concept of the trail has been accepted by the Alberta government; the mechanics have been worked out for establishing the route and allotting land to it. By the summer of 1977, it is hoped that a supervisory crew will be funded by provincial and, possibly, federal grants. Volunteers will then be able to work for varying periods of time under this permanent crew, surveying the next portion of the final route and constructing parts already approved.

Negotiations with the British Columbia government continue, but contingency plans are being made to route

S.J. Krasemann



Indian Paintbrush near Bow Lake, Banff National Park

the entire trail through Alberta if necessary. British Columbia officials have become so committed to resource extraction along or near the spine of the Rockies that they fear any possible conflict with such development.

During the first summer's survey work, some of the team came across an old man standing near a big trench at Fording Pass, tears rolling down his cheeks. He was sad because the trench had almost wiped out several miles of the historic Fording Pass Trail, which had been used first by Indians, then by early white traders, and later by settlers. The trench was an eroded seismic line, deepened by having been later used by all-terrain vehicles. Negotiations with Shell Oil Company, which had put in the original seismic line, led to their contributing a vehicle, tools and two workers for a weekend work party. The Great Divide Trail crew, fortified by additional volunteers, provided labor. Within two days the trench was filled in, blockades set up to keep out vehicles and cairns placed to re-establish the trail, which had been obliterated by bulldozer scrapings.

If the Great Divide Trail is established, the tangible, immediate gain will be an increase in facilities for self-propelled recreation in natural, if not always wilderness, surroundings. This would help to relieve some of the ever-increasing pressure on nearby national parks. Perhaps even more important, as people hike along the trail, they may become aware of the contrast between the remaining unspoiled areas and those that have been abused by poor logging practices, careless coal mining, and failure to rehabilitate seismic lines, logging roads and other facilities related to resource extraction. They may become not only more environmentally aware, but also more politically active, translating their concerns into pressure on their respective governments to recognize that recreational use should, at times, take priority over resource extraction. In areas where resource extraction is already approved or under way, citizens must urge better practices, with more concern for environmental impacts. At present, neither Alberta nor British Columbia has adequate laws for this purpose, and those that exist are not properly enforced.

The Sierra Club, through the Western Canada Chapter, can play an important role in helping to coordinate efforts on the two sides of the divide. The largest concentration of population, and therefore of potential users, living reasonably close to the trail is in Alberta. Calgary, with a population approaching 500,000, along with smaller cities such as Lethbridge, will presumably contribute most of the day, weekend and short-term users of the trail.

In contrast, the population of the East Kootenays, the district of B.C. through which the trail route runs, is sparse and far-separated from the provincial capital at Victoria by both physical and psychological distance. The Western Canada Chapter's groups in Vancouver and Victoria can play a vital role in the establishment of the trail, since they can call upon their members and others to exert the necessary pressure on their government. Members of the Federation of Mountain Clubs of B.C., to which the Sierra Club belongs, have also expressed their willingness to help make the Great Divide Trail a reality. Club members and other interested persons are urged to help achieve these goals, especially to impress upon the British Columbia government the need for quick action, before the land is irreparably lost to nonrecreational uses. **SCB**

Further information about the Great Divide Trail Association, membership applications, and opportunities for summer volunteer labor on the trail may be obtained from the chairman, Brian Prior, at 3427 Button Rd. N.W., Calgary, Alberta, Canada, T2L 1M9.