

Sierra Club Bulletin



DECEMBER 1972

Running Amok at James Bay



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Cover: The sinking sun of an autumn afternoon casts a strange glow over the Juneau Ice Field. The photograph was taken by Tom Tracy while circling the 4,000-foot-thick ice field—mother of several glaciers—in a chartered aircraft.

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

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Running Amok at James Bay

BOYCE RICHARDSON

ABOUT AN HOUR'S jet-flight north of the city of Montreal, in the Canadian province of Quebec, lies a wilderness that is today almost as untouched as when the white man first found it. Tucked in on the east side of James Bay, which itself lies at the bottom of the huge inland sea called Hudson Bay, this is an area of dozens of swift rivers, thousands of lakes, and dense forests of small trees that finally straggle off into treeless tundra.

This wilderness also contains the last great hydroelectric resource on the continent. Now, the provincial government of Quebec has dreamed up a huge scheme for damming its rivers, creating a series of enormous man-made lakes, and opening up to exploitation its presumed riches in iron ore, zinc, copper, molybdenum, uranium, and other minerals. Already, \$200 million worth of roads are being built in the area, which for several hundred years was accessible only by a once-a-year supply ship that came from England each summer to service the trading posts along the shores of Hudson Bay. In addition to roads, a large airport will be built in this wilderness, and airstrips will soon dot the bush. For the next ten or 15 years, the primeval quiet will be shattered by an invasion of thousands of transient workers from the south, by the roar of bulldozers, airplanes, and vast earth-moving machines. The manifest destiny that took the white man westward across North America a century ago is now pushing him north, and the same people who paid in the West—the Indians—will also pay in the North. Furthermore, no one knows (perhaps least of all the engineers who are pushing ahead so enthusiastically on the James Bay project) what damage we will create by our intrusions into this fragile system of nature.

The whole James Bay project is one of the biggest engineering works in history. Its first phase alone—to dam four great northern rivers, build four immense power stations, create four large reservoirs, and extend the area of four lakes—will cost \$5.8 billion and produce 8,330 megawatts (over six times the output of Hoover Dam). The size of this project is evident from the fact that the combined watersheds of the four rivers to be diverted cover 122,300 square miles, an area nearly 25 percent larger than Great Britain.

The project centers on the La Grande River, 600 miles north of Montreal. The La Grande was not included in the original proposal, which concentrated on three rivers 200 miles south; but when the plan finally was announced by Quebec's Prime Minister Robert

"Quebec, the powerhouse of America, is on the verge of another mammoth breakthrough...."

Boyce Richardson is the author of James Bay: The Plot to Drown the North Woods, a new Sierra Club Battlebook scheduled for publication in December. Mr. Richardson now lives in Montreal.

Bourassa in April, 1971, the La Grande complex was thrown in to make the scheme sound doubly impressive. The decision as to whether to proceed with the damming of the southern rivers will be made in five years. This complex would add another 5,000 megawatts of capacity and raise the total projected cost by almost \$10 billion.

The James Bay scheme in the North can be seen as yet another example of the huge modifications that North American society has made and proposes to make to natural systems in its drive for the energy needed to turn the wheels of its technology. Though James Bay lies closer than Point Barrow to centers of population, the James Bay project is Canada's equivalent of the Alaska oil industry. But in Canada, the decision to proceed with development has been made in an even more haphazard and unacceptable way than in Alaska. What is common to both these great development schemes is that both are being forced ahead long before their environmental consequences are understood. The Alaska pipeline, however, has been delayed by the American statutory requirement for an environmental-impact study, but no such requirement exists in Canada. Under Canadian law, environmentalists cannot intervene in the courts unless their own property stands to be damaged. Although cries of alarm from conservationists are growing in Canada, they have a slightly desperate quality, given their impotence in the face of an evident identity of interests between the government and private industry, both of whom are anxious to exploit the North.

A recent conference of scientists concerned about Canada's northern environment concluded that if research on northern ecosystems could be increased ten times and development delayed ten years, Canada might be in a position to develop its northern lands on the basis of real knowledge. The half-baked James Bay scheme was imposed on the province's hydroelectric authorities by a young, newly elected prime minister who had pledged himself to create 100,000 jobs in a year and who was desperate to find something that would look like economic activity. He made his decision with nonchalant disregard for environmental and social consequences. Not even the economic viability of the

plan has been established. For example, in the year *following* the announcement of the scheme, \$30 million was spent on technical studies to determine whether the electricity to be produced would be economically feasible by 1980 and provide economic benefits to a province plagued by high unemployment and a sluggish economy.

It is fascinating to see how in one of the world's most technologically advanced societies such technical decisions are still made for purely political reasons, how the experience of other nations that have built environmentally disastrous reservoirs in the past ten years has been totally ignored, and how experts and technicians can always be found who are willing to justify political decisions, no matter how foolish.

The plan to develop James Bay, like other proposals for the far North, has been accompanied by extensive lip service both to environmental protection and to the welfare of local native Americans (Indians and Eskimos) who are scattered thinly across the Canadian North. The politicians assume that we should force upon them the so-called benefits of our technologically advanced civilization—urbanization, high living standards, jobs, wages, and so on. Pierre Nadeau, president of the James Bay Development Corporation (a sort of TVA set up by the government to oversee the project), expressed this view when he said there was no doubt that the Indians would be the first people to benefit from the James Bay project. Absolutely no evidence supports this arrogant assumption. The Indians themselves know it is not true and have, in fact, opposed the project from the start. Though there are only a handful of Indians—7,000 at most—they have set a Canadian precedent by appealing to the courts to try to prove that the legislation setting up the development corporation is unconstitutional.

Those familiar with the native Americans of the Canadian North do not underestimate the adverse effect the James Bay project could have on their cultures. For example, the Cree Indians of the James Bay region have probably been less touched in the fundamentals of their lives by their 300 years of contact with the white man than any other group of Indians on the continent. The Europeans who arrived at Hudson Bay in 1668 never

succeeded in making a significant mark on the region. They tended to stay on the coast, waiting for the Indians to bring their furs out of the bush for sale. The Indians, who before the white man came wandered across the land living on the animals they could hunt or trap, are now settled in small villages, but each winter they still return to the bush to hunt. Many families still live a subsistence life and practice a culture based on their relationship to animals and their respect for them.

I went into this area last winter to visit some of the hunting camps. Though the Indians take with them staple foods bought in village supermarkets, and though their camps are now supplied by air, they still live primarily on the food they catch as they go about trapping beaver. They still live on moose and beaver meat, their children still catch rabbits, and they have a fine selection of wild fowl available. In their camps, almost everything is handmade. The tents have high walls of split logs, insulated with moss and packed with snow in winter. This same moss, when dried, provides diapers for the babies. The canvas roof of each tent is supported by tamarack boughs bent into an arch. Their camp stoves are made from old oil drums, and their chimneys are hand-fashioned from pieces of tin. The wood for fuel is packed outside the door to break the cold winds. Inside the tent, the ground is covered with spruce boughs, which are changed every week. When a beaver carcass is hanging from the roof beside the hot tin stove (as it usually is), a delicious aroma of spruce and roast meat strikes the visitor as he pulls aside the canvas door and enters the tent.

The Indians' snow shovels and sleds are also handmade. Their magnificent snowshoes, which are still their main means of transportation in the bush, are laboriously made from wood that is gathered, fashioned, and carefully aged. They lace their shoes with moose hide, cured by the women according to a slow and difficult process of cleaning, scraping, washing, drying and smoking that these Indians have used for thousands of years.

In the last 15 years, however, white society has moved into the southern part of their region with roads and mines. The assumption has been that the Indians have not made rational use of the area's resources. Conse-



The James Bay Development Project

The potential area of the James Bay hydroelectric development covers 133,000 square miles (twice the size of England) and includes the existing Mistassini Provincial Park. The La Grande River complex (white area on the map) has been chosen as the initial point of development. Power output is scheduled to be 8 million to 12 million kilowatts, depending upon the amount of diversion from basins adjacent to the La Grande itself.

In the words of the James Bay Development Corporation, "The development of James Bay opens

a fascinating vista for the James Bay Indians." The same report seeks to prove that the Cree will on the one hand scarcely be affected, and on the other hand will have a wonderful opportunity to change their life style. With the same majestic disregard for elementary logic the developers announce that they are determined to "consolidate the ecological balance, not upset it." This consolidation of the balance promises to turn James Bay into "a natural laboratory of world-wide significance."



Typical muskeg country

quently, they simply have been pushed aside to make way for white men. The animals of the area on which the Indians depend for food and clothing are killed by southern hunters for sport. The Indians in these southern areas—about 400 miles north of Montreal—have spent nearly two decades working for the white man as bush cutters for exploration and mining companies and as laborers on the roads. It has not been a rewarding experience for them. They have been used as cheap labor, the last hired and the first fired, and often have not even made enough money to support their families. Though white men assumed that the Indians would give up a life of hunting and trapping to enjoy the benefits of the crumbs dropped from the white man's table, this has not, in fact, happened. More than 50 percent of the adult Indian males still trap and hunt on a full-time basis.

Anthropologists have discovered recently that the Indian values still extant in this area, which are based on a balance between themselves and the animals on which they live, amount to a set of ecological principles perfectly consistent with the most advanced scientific thinking of white society. It has therefore come as no surprise to biologists in Montreal to find that

Indian trappers have given the most pointed descriptions of the likely environmental effects of the James Bay project. When I toured the area, I asked Indians of all types—trappers and service workers in villages, old and young, educated and uneducated—what they thought of the project. I received a remarkably unanimous set of responses.

"We are thinking about the animals," they would say. "If you flood the land, you will destroy the animals. If you destroy the animals, you destroy the Indians."

The Indians know that the animals on which they depend live near the shorelines of lakes and rivers, and that if these shorelines fluctuate constantly (as they will in a hydroelectric scheme)



Rupert House, near James Bay

the animals will have to move away. They know that the animals will thus be forced to eat in summer the hilltop browse on which they usually depend in winter. The Indians are haunted by the prospect of their glorious wilderness turned into a wasteland of decayed stumps and mudflats. The best scientific estimate supports their fears, though no one in a position of authority will admit it.

It is deeply moving, and in the present context disturbing, to meet superb grandmotherly figures in the Indian villages who spent their younger years portaging their families past the tumbling rapids of these wild rivers and carrying their small children on their backs as they trudged through the bush, and to whom such experiences are life itself. They see nothing but disaster in the white man's schemes for taming the rivers, flattening the rapids, changing this whole land. Their grandchildren will never know life as they have known it.

It is true that the decision to proceed first with the more northerly part of the development will displace fewer Indians, because in the North around the village of Fort George (which has a population of about 200 whites, 1,400 Indians and 50 Eskimos), most Indian families no longer live in the bush. Even so, they still have a strong need for the land, for assurance that the land on which their culture has been built is still there, available to them for food any time they want to go back to it. These Indians, even young ones who have been to school, show a stoic fatalism: the jobs which the James Bay project will bring will be temporary, they say. The money that will come in will disappear. These things are not permanent. The land will persist. When the James Bay project has been built and the workers and engineers have gone away, what will be left for the Indians if the land is flooded and the animals are destroyed? Indian families, even those whose breadwinners are now working in a hospital, a school or at some other wage-earning job, still get up to 70 percent of their food from the bush.

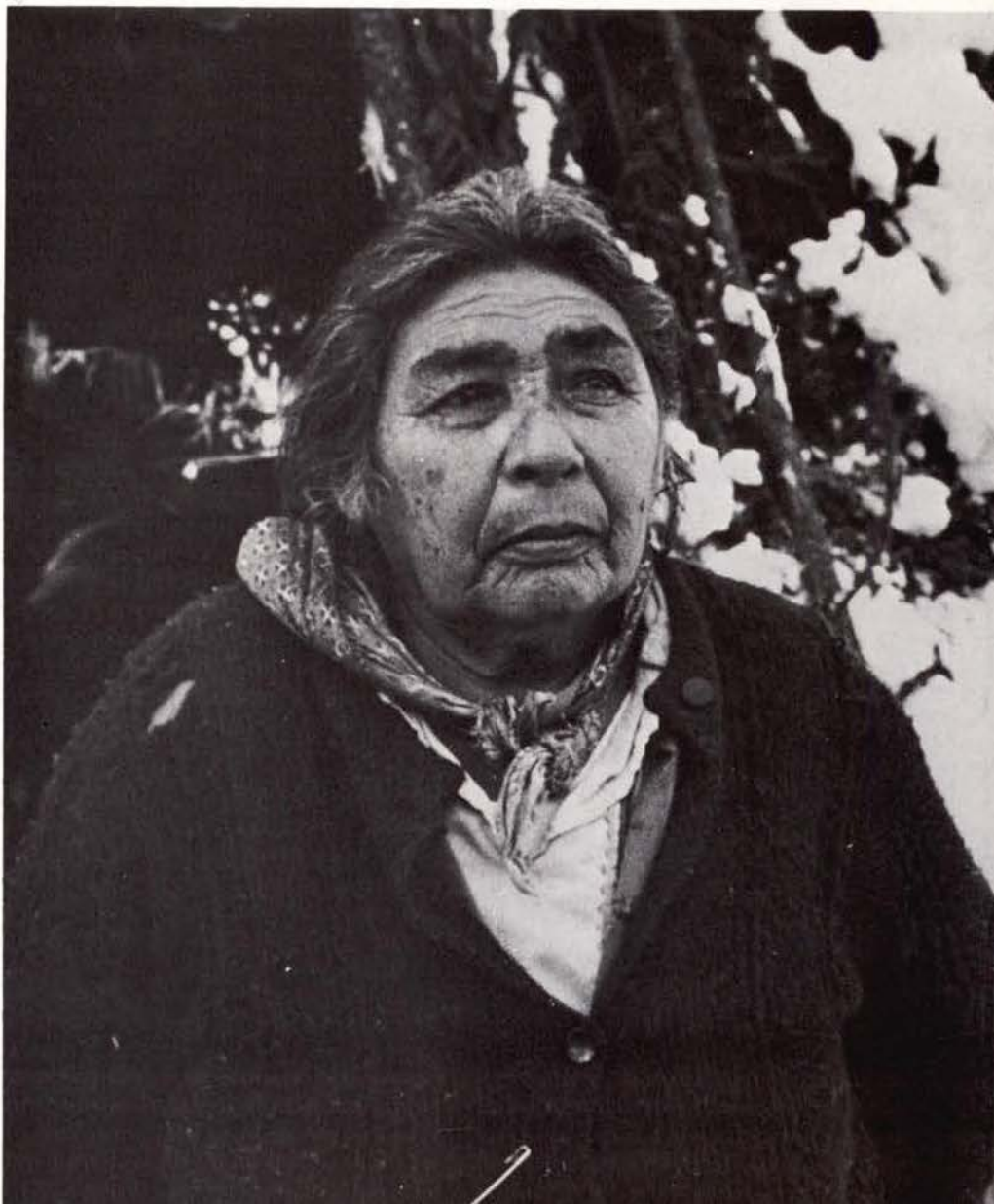
The James Bay project has been conceived as if the Indians did not exist. As has happened further south, they are to be shunted and the land which they have always roamed taken over by invading technocrats. Under Canadian statutes dating from 1763 to 1912, the Canadian and Quebec

governments have undertaken to recognize the Indians' aboriginal rights in their land, but as no treaty has ever been made with them, it is with an air of surprise and irritation that the Quebec government enters into negotiations with the Indians as to their rights. While negotiations drag on (the Indians so far have found nothing but frustration in the endless meetings), work on the project has begun. Though ownership of the land is supposedly in question, the dominant society has seized it and is building on it—and the Indians have not been able to stop them. It is clear that the Quebec government, at least, has no doubt about its right to do as it wishes with this land: the James Bay Corporation has been given dictatorial powers, and the president of Hydro-Quebec, the

generating authority in charge of building the dams, has asked that the land be handed over by the government for \$1. What about the Indian rights? Well, what about them?

The government has shown no more sensitivity to the environment than to the Indians. But in these days, at least a respectful bow must be made towards the environment, and it has been duly made. Though international experience indicates that biologists should be allowed three years, and preferably five, to examine a region before a decision is made as to whether or how a natural system should be modified, not one second of biological research was done in James Bay before the decision to build the project. A few months later, in September, 1971, a team of officials

Cree woman



from the Canadian and Quebec governments was given only two months to report on the environmental consequences of the project. The team scrambled desperately around for material in the government files about the fish, animals, plants, and people of the area, only to conclude that the proposed human intervention would improve the ecosystem rather than damage it. The only potentially alarming result, they said, would be the effect on the Indians. As for other effects, the officials were honest enough to point to the enormous amount of information as yet unavailable and to suggest further studies that should be made. Their main conclusion was that James Bay should be turned into a vast ecological laboratory in which the consequences of massive technological intervention in the environment could be studied, a gesture that lent a patina of environmental respectability to the whole project and managed to create the public impression that a forward-thinking government was really trying to do things right, for once.

The facts, however, are rather different: though it is true that the consequences may not be as dramatic in a cold northern environment as they are in Egypt, Ghana, Rhodesia, and other tropical countries, still the decision to go ahead in James Bay was made without anyone in government knowing what might happen.

When emphasis was on the southern project, for example, the idea was to block off two of the three rivers flowing into Rupert Bay. The combined flow of these three rivers—the Rupert, the Broadback and the Nottaway—jumps from a sluggish 20,000 cubic feet per second in the last weeks of winter to 210,000 cubic feet per second a few weeks later, as the great snow cover melts. The entire natural regime is adjusted to this extraordinary cycle. Yet project engineers proposed diverting all three rivers into one channel, which would release water into the bay at a steady 30,000 cubic feet per second. Rupert Bay has reached a delicate equilibrium among powerful natural forces—the thick ice cover, the great spring flood, the shallow sea waters, the vast marshy coastline. The environmental danger in messing about with this equilibrium is that Rupert Bay is the stopping-off place in the spring and fall for millions of geese migrating between the Gulf of Mexico and the Arctic. They

rest here and eat the zoster grass in the coastal swamps. The Rupert Bay project could destroy much of this habitat.

That a responsible government with expert scientific advice available to it should in 1972 be prepared to interfere in this magnificent wilderness life-cycle on the massive scale proposed, without any investigation before the decision is irrevocably taken, is a sad commentary on the values of our society and the economic system that dominates it.

When the task force was asked to recommend whether the northern or southern scheme was better from the environmental point of view, they declined to make a recommendation on the grounds that not enough was known about the La Grande region to enable them to make a reasonable judgment. Yet only three months later, the government decided to go ahead in the north, claiming that the environmental consequences would be less severe there than in the south. There is not a shred of proof for this claim.

Independent scientists in Montreal have had to rely largely on Swedish and Russian research (apart from Indian knowledge) when trying to estimate the likely environmental effects of the James Bay scheme, for Canadians have never studied any of the large man-made lakes they have created and know nothing about the effects of water impoundment on a whole range of phenomena, including the fish spawning cycle, water quality, siltation, erosion, groundwater levels, and seismic activity, or about the effects of fluctuating shorelines on animal and plant life.

All official statements have greatly underplayed the damage likely to result from the proposed impoundments. Russian experience in similar latitudes and terrain indicates that the changes in water levels around man-made lakes can cause a dead area as much as 12 miles deep along the shorelines. Any such effect around the vast reservoirs to be built near James Bay would create a wasteland. Certainly, in the southern half of the project—now deferred for about 15 years—authorities were ready to go ahead building dikes, dams, and canals, creating reservoirs, extending lakes, and diverting rivers in low-lying land totally unsuitable for such construction. Furthermore, despite protestations of environmental virtue,

their intentions are no more creditable in the North. In fact, they have decided to go ahead with the plan to block off the headwaters of the Caniapiscaw River, which flows north across the tundra into Ungava Bay on Hudson Strait, despite the environmental task force's timid recommendation that it should not be done. The Caniapiscaw is one of the world's great salmon-spawning rivers. There is now a delicate balance between the river's flow and the tidewaters in Ungava Bay. If this flow is reduced by 40 percent, as planned, the salmon run is expected to be wiped out. It seems a matter of little concern to the authorities.

Furthermore, in James Bay, as in the far Canadian North, the arrival of large numbers of sport hunters will quickly decimate fish and game populations, which may seem plentiful at first, but will have little recuperative power if dealt too heavy a blow. The fish in northern lakes are large, but they take many years to grow. If fishermen take too many in the first year or two, as seems inevitable, large fish may never again be common in these waters. It should also be remembered that the Indians need this game to live on. Many people in the south, incensed by the callous indifference shown toward the needs of the Indians, are calling the James Bay project an act of genocide.

It is sad to have to report that environmental and humanitarian reasons account for nothing in the argument about James Bay. The only arguments politicians or the general public take seriously are economic calculations about the need for power and the likely cost of it. A citizens' opposition group, the James Bay Committee, which began a few months ago with the object of trying to get the government to provide some rationale for the project, has had little impact on public opinion and is completely ignored by the authorities. The newspapers only perfunctorily publicize its views and so far the committee has found no way of forcibly bringing its position on the project to the public's attention. Though economic considerations are the only ones taken seriously, it seems unlikely that even economics could halt the James Bay project, for it will saddle the province with enormous, unwarranted debts and there appears to be no objection to letting future generations pay the bill.

ENERGY: Tomorrow Starts Today

JAMES SPAULDING

FOR SOME TIME now there have been ominous warnings of an impending energy crisis, a time of brownouts and slowdowns predicted for the day not far off when the fuel reserves of the country can no longer keep pace with its increasingly voracious appetite for more and more energy. Public utilities and private industry would have us believe that we must build more nuclear power plants, drill for more oil, and mine more coal just to maintain the standard of living we already have. But most experts agree that such a policy would at best only postpone the inevitable. The fact is that traditional fuel resources are finite while our appetite for energy seems unlimited. In recent months, a solution advocated by the Sierra Club and other environmentalists has been gaining support: instead of mining and drilling for more fuel and designing more and more power plants, why not try cutting back on the energy demand?

Heretical as this idea might once have seemed in the United States, it nevertheless is being suggested seriously by scientists, economists and engineers. A staff report representing 11 federal agencies recently set forth in more than 200 pages "The Potential for Energy Conservation." Even more recently, the Rand Corporation studied the energy crisis as it affects California and suggested energy-saving steps to the state government. Both studies indicate that the United States not only consumes energy at an ever faster pace, but consumes it recklessly and wastefully, as if energy cost nothing and were in endless supply. How much could the nation's energy demand be reduced by stopping this

needless waste? The studies indicate a potential savings of 25 to 30 percent. This could not be accomplished immediately, but according to the federal report the eventual savings by 1980 could amount to as much as 7.3 million barrels of oil a day. (One barrel contains 42 gallons of oil, which provide enough energy to run the average air conditioner for 23 straight days.) Over a year's time, the savings would amount to \$10.7 billion.

How significant such a savings of energy might be can be judged from the estimate that by 1980, the United States will have to import at least 9.2 million barrels of oil a day because of the growing disparity between demand and supply. According to the federal report, "... it is pertinent to stress that a half or even a third of the 7.3 million barrels per day is a very significant input to programming a manageable solution to the energy crisis." No one is suggesting that reducing the energy demand by 25 to 30 percent will be easy, or that it can be accomplished overnight, but the experts contend that not only are such energy reductions feasible without cutting the living standard or dislocating the economy, they may even be essential. Man cannot go on consuming energy at an ever-increasing rate; so much waste heat would be produced that life would become intolerable.

Supposing the steps suggested in the federal report to conserve energy actually are put into effect, and that saving energy—instead of wasting it—becomes a way of life, what will life be like then? People will more often walk or ride a bicycle on short errands. For commuting and short trips,



they will ride buses or rapid-transit vehicles, which by then will have eliminated much of the wasteful use of the automobile. Cars will be smaller and use less energy because of different design. Traffic will be regulated to minimize the amount of energy wasted by stop-and-start driving. For travel between nearby cities, railroads and buses will carry many of the passengers now carried by automobiles and airplanes, which are much more extravagant users of energy. Railroads will carry much of the freight now hauled by trucks, and trucking will be systematized for efficient operation. Energy waste will be reduced, too, by much better insulation in homes. Regulations will require manufacturers to design appliances for efficiency, instead of minimum price, so as to save electricity. And though such appliances may cost more, they probably also will last longer.

A new price structure is also expected to discourage waste of electricity. Tomorrow's user may pay a higher rate per kilowatt the more he uses, instead of a lower rate as is the general practice today. Since this new rate structure will apply to business and industry, as well as to the homeowner, lights will be turned out more frequently in homes and offices when not in use, and the trend toward more and more light, which some experts regard as needless, will be reversed. Homes and offices will be heated a little less in winter, cooled a little less in summer. In industry, the higher cost of electricity and other fuels will encourage efficiency and discourage waste of energy. Products will be designed for longer life and greater repairability. They also will be made so that the materials in them can easily be re-used. Electric utilities will pipe waste heat—now a form of pollution—to homes, offices and industrial plants to supply energy for space heating, cooling and manufacturing.

Judging from the federal report, the opportunities for saving energy are surprisingly many. But perhaps the long list is not so surprising in view of the enormous amount of energy being expended. With only six percent of the world's population, the United States consumes 35 percent of the world's energy. John F. O'Leary, an energy consultant and former director of the United States Bureau of Mines, says that energy has been priced so low in this country, compared with other

forms of capital, that "the entire industrial system is based on its inefficient use." Speaking at a symposium sponsored by the American Association for the Advancement of Science, O'Leary said that because energy has been so cheap in the United States, it is used at no more than ten percent efficiency, possibly at no more than five percent.

The federal report on ways to conserve energy is in agreement. "It should be emphasized," the report states, "that underpriced energy encourages wasteful energy use." The report also says that industry as a whole could easily cut its energy demand by 10 to 15 percent of the projected demand by 1980—and probably more—if given enough incentive.

Incentives and acceptance appear to be the keys to any energy-saving scheme. Can the public be persuaded to relinquish some of the convenience of the automobile for the sake of cleaner air and the benefit of future generations? Will the public support regulations that will mean higher prices for housing and appliances for the sake of saving energy (and money) on heating and electric bills?

Those who have studied the origins of our energy predicament are not optimistic about the likelihood of the public spontaneously changing its prodigal energy ways. But the experts appear to agree that through a combination of information, persuasion, price regulation and taxation, much of the potential saving of wasted energy can be brought about. They also say that brownouts and fuel shortages will demonstrate the necessity for such an energy conservation program and thus make it somewhat palatable.

The predicament exists because of three principal factors: a huge energy demand that is increasing so fast it will more than double in less than 20 years at the present rate; depletion of the limited supply of traditional fuels, particularly natural gas and petroleum; and the increasing number of constraints imposed on production of energy because of damage to the environment and danger to life.

The United States is not about to run out of fossil fuels, according to Earl Cook, a professor of geology and geography at Texas A & M University, and an authority on fuel reserves. He says that resources are adequate for the next 30 years, although not for the next 50 years. The real crisis, he

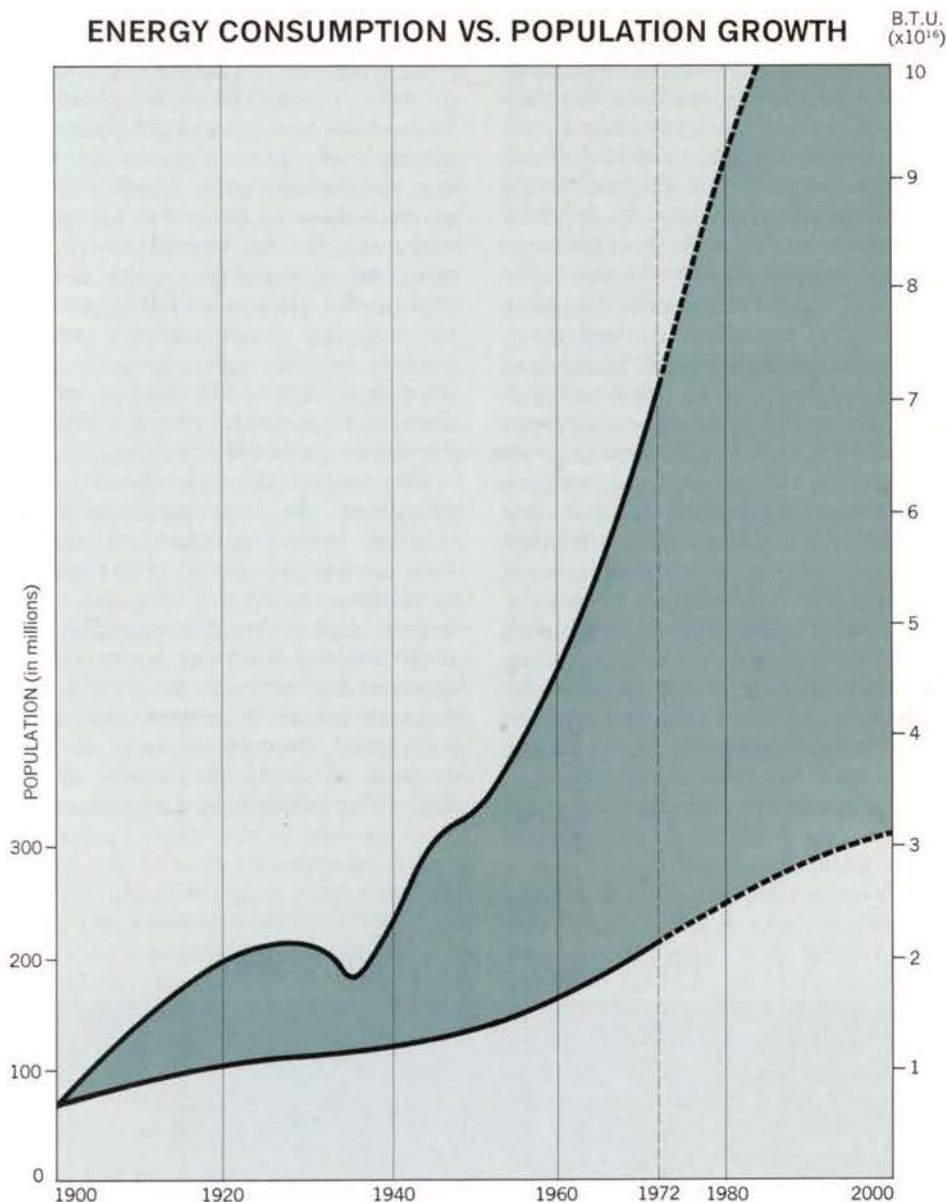
claims, is more in the lack of planning for an orderly replacement of fossil and nuclear-fission fuels as these run out. Even so, the United States already is beginning to feel the fuel pinch. Imports of petroleum products doubled between 1960 and 1970, and these imports now constitute about 30 percent of the country's gross consumption. Virtually no natural gas was imported ten years ago, but today imports account for more than four percent, and fleets of special tankers are being planned to bring in natural gas in liquid form to meet the growing demand.

A recent research report in *Science*, the official publication of the American Association for the Advancement of Science, estimated the reserves of fuel in the United States in terms of how long each would last if called upon to supply all of the country's energy needs. Ignoring the steady increase in demand for energy, the report estimated there was enough coal to last 125 years, enough oil for five years, enough natural gas for five years, and enough conventional nuclear fuel for 2.3 years. Breeder-reactor fuel—provided technical problems with reactors are solved—would last 115 years (or over 1,000 years, according to some authorities). The *Science* report said that United States total fuel reserves were much greater than these figures indicated, but recovering them for fuel was not necessarily feasible.

Cook and other scientists and economists appear to be looking toward a time when the demand for energy will be stabilized. Fossil fuels will have been phased out gradually as recoverable supplies of them diminish. Nuclear power—which today is beginning to succeed them—will itself be succeeded; whether by power from nuclear fusion (about which physicists are increasingly optimistic) or by solar energy remains uncertain. (The new Rand report on California's energy crisis contends that more than two-thirds of the energy needed for heating and cooling houses and heating water could be supplied by solar energy.) In either case, it is in this period of transition from fossil fuels—beginning now—that the conservation of energy may prove crucial.

The federal report on energy conservation says that energy can be saved both by "belt tightening" and "leak plugging." Belt-tightening, in terms of the report, would mean accomplish-

ENERGY CONSUMPTION VS. POPULATION GROWTH



Energy demands have rapidly outstripped population growth in the recent history of the United States, except for a sharp dip in energy demands during the depression of the 1930's.

ing a given task in a different way, and at less cost in energy. Leak-plugging would mean accomplishing it the same way, but at less energy cost by stopping waste. Saving energy in transportation would require belt-tightening; saving it in home heating would need leak-plugging. Of the total of seven million barrels of oil per day (and \$10.7 billion per year) that could be thus saved by 1980, the federal report said that roughly one-third of the savings could be accomplished in each of three major categories: transportation, residential-commercial, and industrial.

In the United States, transportation accounts for 25 percent of the total

energy budget. Each year, transportation gobbles up almost 2.9 billion barrels of oil, the equivalent of 16.4 quadrillion BTU (British Thermal Units), energy enough to provide every American with eight cross-country auto trips. The amount of energy required for transportation in the United States would be high in any case because of the constant coming and going of people and goods in a highly developed technological society, but the federal study shows that the same amount of movement could be accomplished for at least 20 percent less energy cost—provided society can be persuaded to change its wasteful ways. Mostly, this would mean

more travel by bus and rail, less by car and air; more moving of freight by rail, less by truck and air. Figures in the federal report indicate that a bus is nearly six times as efficient in energy terms as the automobile in its typical use today. Double-decked commuter trains are 17 times as efficient. Typically, the private automobile in the city carries only the driver; in normal stop-and-go traffic, it thus averages seven miles to the gallon—a yield of seven passenger miles per gallon. Efficiency rises rapidly with the number of passengers carried. The Volkswagen sedan with three occupants averages more than 100 passenger miles per gallon, and a Volkswagen Microbus with eight occupants about 200. But 80 percent of all workers commute by automobile and 68 percent of these commuting drivers carry no one but themselves.

The result is not only traffic tie-ups, smog, and clamor for more freeways and parking garages, but enormous waste of an increasingly scarce fuel—in this instance, petroleum. Automobiles consumed more than 55 percent of the 16.4 quadrillion BTU burned for transportation in 1970, and 55 percent of that was used for driving in urban areas. About 30 percent of the automobile energy was consumed in trips of ten miles or less. More than half of all car trips are less than five miles in length.

The federal report said further that within a decade, savings of 15 to 25 percent in the energy budget for transportation could be achieved, provided a comprehensive energy-conservation program is mounted, with government coordination at all levels. By the year 2000, a shift toward more efficient transportation methods—but nothing revolutionary—would make possible the saving of 6,110 trillion BTU annually, the equivalent of more than one trillion barrels of oil a year.

Eric Hirst, an engineer conducting energy research at Oak Ridge National Laboratory, has calculated that we could have reduced the transportation energy budget in 1970 by 29 percent if: 1) half the urban automobile passengers had been carried by bus; 2) half the intercity airline passengers and one-third the intercity auto passengers had traveled by train and bus; and 3) half the freight carried by trucks and planes had been carried by rail. Hirst calculated that the potential

saving from such a scheme in 1970 would have amounted to more than five percent of the United States' total energy expenditure.

The federal report blames the huge expenditure of energy for transportation in the United States to a large degree on "the tastes, habits and aspirations of the American public," of which the foremost "is an almost total disregard of any problems posed by the rate of energy consumption." As a result, Americans tend to ignore the opportunity to save fuel by driving slower, less powerful cars. "Therefore," the report continues, "the trend toward more powerful, larger cars and more cars per family has been persistent. Moreover, low-average car occupancy, use of cars for many short trips, and disregard for congestion problems have further aggravated other pollution and fuel-consumption problems."

Thus, according to the report, any effort to cut energy waste in the United States must be aimed primarily at the automobile, which is responsible for so much of the waste. The federal study team does not suggest that weaning the motorist away from his present habits—and especially away from his car—is going to be easy. Only comprehensive programs will accomplish that. "In view of the variety of powerful special-interest groups and the host of technological, political, sociological and environmental problems associated with transportation," the report says, "it seems highly unlikely that any significant action can be taken—cooperative, persuasive or regulatory—until a very sizable constituency favoring decisive action to correct present trends is established."

Building that constituency will be difficult, if a survey taken a few years ago is any indication. The questionnaire noted that the automobile contributed to air pollution, noise and congestion, displaced thousands of homeowners and small businessmen to make way for highways, destroyed natural beauty, and had caused tens of millions of injuries and nearly two million deaths in this century. Was the automobile worth it? Eighty-five percent of those surveyed responded "yes."

As a start toward building support, the federal report suggests enactment of programs to make the public aware of the need to save energy. It also proposes to raise the issue of

energy conservation in connection with other national programs such as those involving health, urban development and safety, and the environment. Citizen groups would be asked to participate in planning and developing transportation programs. Industry would be enlisted to promote conservation of energy. Stronger steps would come next. One of these, for instance, would be to raise the price of gasoline to reflect its real costs. (Hirst has calculated that because of the energy needed to produce gasoline, for every ten gallons pumped into the gas tank, 12 gallons are consumed. The energy required to manufacture one automobile is equivalent to 1,100 gallons of gasoline.) Beyond these beginning steps would come a variety of others, backed by regulations, taxes, and incentives, to promote more energy-efficient vehicles, less-wasteful driving habits, and widespread use of "fast, safe, inexpensive, comfortable, convenient and reliable mass-transit systems." Much the same kind of program of incentives and

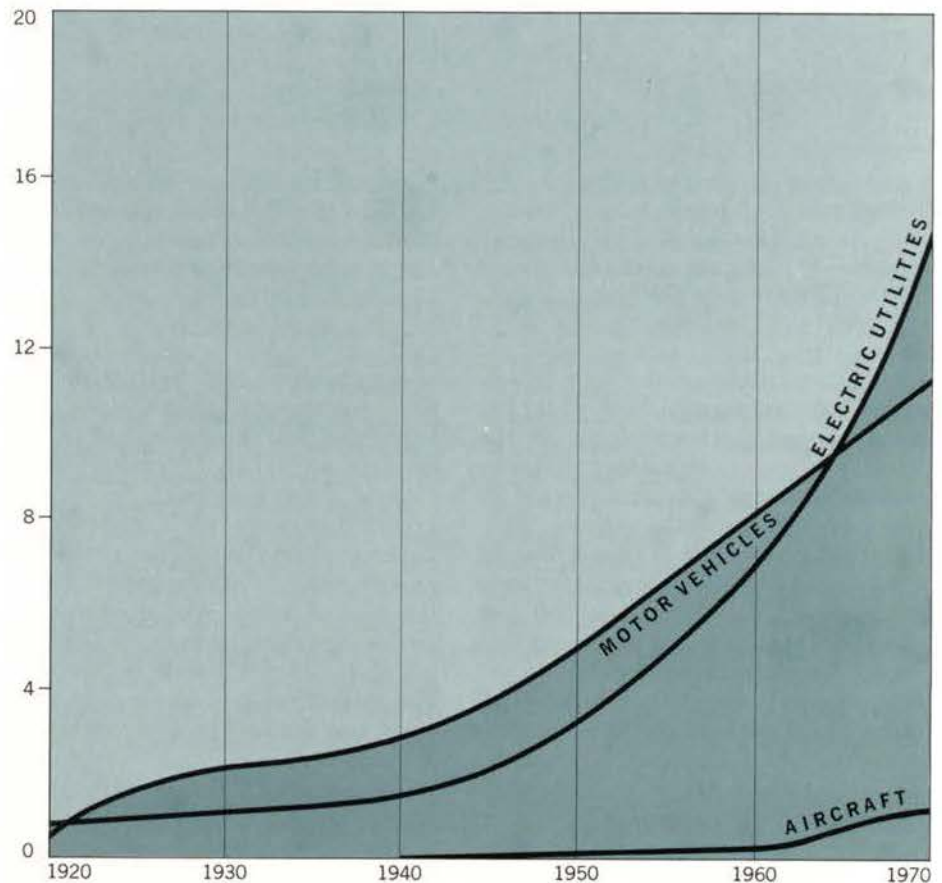
taxes would be applied to cut waste of energy in the moving of freight.

So much for the major opportunity to save energy by belt-tightening; what about leak-plugging? Here, residential and commercial uses of energy are the main targets. Together they accounted for 21 percent of all energy expended in the United States last year, yet according to the federal report, the savings possible—simply by stopping waste—amount to 20 percent within eight years and 30 percent by 1990. The 20 percent reduction is equivalent to 2.4 million barrels of crude oil every day.

The most effective way to save energy in the home appears to be through more insulation, but significant savings are possible immediately without structural changes. The federal report says, for example, that if all home thermostats were set two degrees higher in summer and two degrees lower in winter, the 1980 projected energy savings would amount to 600,000 barrels of oil daily. The unlikelihood of persuading

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($\times 10^{15}$)

FAST-GROWING ENERGY USERS



everyone to readjust his thermostat, however, caused the federal team to project such energy savings at only 30,000 barrels a day.

Other simple steps to reduce needless expenditure of energy in the home and office include: shutting off lights when leaving a room; drawing blinds and draperies in unoccupied rooms; operating washing machines and dish washers only when fully loaded; repairing faucet leaks promptly; having furnaces cleaned and adjusted at least annually; keeping the damper closed in an unused fireplace; cleaning condenser coils periodically in air conditioners, refrigerators and freezers; selecting light colors for roofing and house paint; and changing filters often in air-distribution systems. Many of these steps would save electricity, and for every BTU of electricity saved in the home or office, three BTU of energy will be saved ultimately because the conversion of fuel to electricity wastes about two-thirds of the fuel. The federal report says that the price of energy must be raised, or other strong incentives offered, to induce widespread adherence to these energy-saving steps. As it is now, a homeowner who conserves electricity might save energy but pay a higher bill, owing to a rate system that charges more per kilowatt the less fuel consumed.

Improving insulation in homes also offers an opportunity for substantial energy savings. For example, according to Hirst and his Oak Ridge colleague, John Moyers, the new FHA insulation standards of June, 1971, if applied to an 1,800-square-foot home in New York City, would result in a 29 percent energy savings if the home were heated with gas and 19 percent if heated by electricity (electrically heated homes require more insulation from the start). If still better insulation than the 1971 FHA standard were required, as has been recommended, Hirst and Moyers calculate that the energy saved in a gas-heated home would approach 50 percent. For the homeowner, the saving would amount to as much as \$155 a year for a gas-heated home. This amount would quickly pay for the costs of additional insulation and soon would begin saving him money.

More efficient home air conditioners represent another possibility for saving energy. The federal report says that many of the units being sold today

are so grossly inefficient that they use about twice as much electricity to accomplish the same cooling as efficient units. The federal government specifies a minimum efficiency for the window air conditioners it buys. If these specifications became standard nationwide, the energy required for air conditioning would be cut 20 percent by 1980 at a savings of 500 trillion BTU per year.

Another 350 trillion BTU could be saved, according to the federal report, by changes in lighting. Fluorescent lamps, for instance, are more than three times as efficient as ordinary incandescent lamps. The report said that interior lighting in some new buildings is thought by some architects and lighting engineers to be excessively high, and the *Wall Street Journal* recently reported that a small group of these experts contend there is 10 to 20 times too much light in most modern schools, factories, and office buildings. They blame the makers of lighting equipment and the power companies for encouraging what the experts consider excessive lighting. In many new buildings lighting is so intense, the *Wall Street Journal* article says, that lighting experts estimate that except for the very hottest days, the main function of office air conditioning is to remove the heat caused by the indoor lighting. William M. C. Lam, a Cambridge (Massachusetts) lighting consultant, says that some new buildings are so excessively lighted that air conditioning is required even when it is snowing outside. The recommended minimum lighting in Britain is ten foot-candles; in the United States, the recommended minimum is 70 foot-candles. A study by the Illumination Engineering Society in the United States shows that the lighting intensity in commercial buildings has risen to 124 foot-candles, from 85 in 1958 and 35 in 1940. Richard Stein, a New York City architect, said lighting could be reduced 50 percent, cutting \$3.5 billion annually from lighting bills, with a large saving in energy. A mayor's committee in New York is considering the advisability of reducing required light levels and setting a ceiling on lighting to cut energy consumption. The federal Occupational Safety and Health Administration recently adopted industrial codes specifying minimum lighting of less than half the intensity recommended

by the lighting industry.

The increased attention being focused on amelioration of the so-called energy crisis by reducing the energy demand seems likely to continue. More and more articles are appearing in magazines and newspapers, and a new report on the energy crisis, arising from a study by the Office of Science and Technology, is expected early in 1973. Participants at the recent American Chemical Society energy conference in San Diego were told about the forthcoming report, which was billed as likely to play a major part in averting the energy crisis before it becomes acute.

How that would be done was not explained, but several speakers advocated creating a new federal agency to administer the national energy program. One of the speakers, Paul Rappaport, director of RCA's process and applied-materials research laboratory, said he was convinced that the task of reorganizing the energy system of the United States could not be left to industry because the problems were mainly political. Neither could the task be accomplished by existing agencies such as the Atomic Energy Commission and the National Aeronautics and Space Administration, which are too parochial. Rappaport and other speakers agreed that whatever organization is created to direct a national energy program, the key abuse that must be eliminated is the artificially low energy-price system, which fails to reflect the ultimate cost to society. In adopting such views, members of the American Chemical Society, along with other scientists and engineers, are coming around to the position taken by the Sierra Club and other conservation groups that an energy crisis exists only to the extent that we continue to ignore the sound management of existing resources. What remains to be done is to convert this growing awareness of the potential for conserving energy into a comprehensive national policy and program. In this effort, both scientists and environmentalists have much to contribute.

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The Right to be Right:

A Sierra Club Victory

STAFF REPORT

“... plaintiffs intentionally exercised their right to petition the government...”

THE SUCCESSES of the Sierra Club and other groups in bringing legal actions to halt corporate activities contrary to the public interest prompted industry this past year to retaliate with several lawsuits of its own. These suits entailed enormous damage claims, and clearly seemed to be attempts to harass and intimidate conservationists who put their convictions into action. We are now more than pleased to report that some \$110 million worth of these flimsy but menacing actions have either failed or seem on their way to quiet but significant oblivion.

The Sierra Club itself faced two of these counter suits: one for \$6.5 million filed by Humboldt Fir, Incorporated; the other for \$20 million filed by seven other logging companies. Humboldt filed suit in response to the Club's request for a preliminary injunction against timber sales in a roadless area adjacent to the Salmon-Trinity Alps Primitive Area. The Club's request was denied, but Humboldt sought damages anyway, on the grounds that the Club had intentionally and wrongfully tried to interfere with the company's business.

The seven other logging companies filed suit in response to the Club's having successfully obtained a preliminary injunction against further timber sales in 34 million acres of de facto wilderness in the national forests pending a proper review of those lands for possible inclusion in the wilderness system. Both suits charged that the Club's actions constituted an attempt to induce the United States government to violate existing contracts with the logging companies, and both sought not only injunctive relief but also monetary relief for alleged losses incurred as the result of the Club's actions. The implication was clear: if the court found in favor of the logging companies, the Sierra Club and other conservationists would be seriously hampered in their efforts to bring actions in the courts because whenever such actions might result in damage to a third party, the Club might be held liable.

The Club, of course, enjoys a fine record in the courts, having won the majority of the lawsuits that it has brought on behalf of various environmental causes. Perhaps it was just a matter of time before private industry would try to strike back. The first sign of this came last May when the

McKeon Construction Company of Sacramento filed an \$80 million lawsuit against four named conservationists and 50 "John Does" for doing nothing more than speaking up at a public hearing against a proposed McKeon subdivision. The suit charged that the defendants had conspired to deprive McKeon of its development "rights"—whatever those are—and claimed compensatory damages as a result. Perhaps McKeon's approach impressed the lumber companies, for their similar countersuits against the Sierra Club followed one month later. All three suits had in common the notion that environmentalists were liable for losses that a private company might incur as a result of their successfully influencing government action. The suits also seemed to agree that the right to profit took precedence over the right to voice an opinion.

The speciousness of these countersuits is now increasingly clear. The initial complaint in the McKeon suit was held to be too vague to state a case which should even be heard in a preliminary way in court, though McKeon's attorneys may try to come back with a more specific complaint. The two countersuits by timber companies have now been dropped as a result of a landmark decision on the principle involved. In a decision by United States District Judge Alfonso J. Zirpoli, the countersuit brought by Humboldt Fir, Incorporated, of Hoopa, California, against the Sierra Club and four individuals was dismissed on the grounds that their constitutional right to seek to persuade the government to take certain actions took precedence over any losses to other parties that might result.

Judge Zirpoli cited a previous Supreme Court ruling when he argued that "liability can be imposed for activities ostensibly consisting of petitioning the government for redress of grievances only if the petitioning is a 'sham,' and the real purpose is not to obtain governmental action, but to otherwise injure the plaintiff."

"It is a corollary of the court's conclusion," he continued, "that liability can never be imposed upon a party for damage caused by governmental action he induced; only if he causes other damages while acting under the guise of attempting to persuade the government will liability be imposed."

Judge Zirpoli recognized that the

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Sierra Club COMMENTARY

News View

Victory for California's coast—Proposition 20 passes

Conservationists scored many victories in California on election day, but the crowning triumph was passage of the bitterly contested Proposition 20, the Coastal Protection Initiative. Under this new law, further development along the coast will be controlled until 1976, pending the completion of a comprehensive plan to guide future use of the coast.

"For the first time, there is true public participation in the planning of the use of our coastal resources," said Club assistant conservation director Charles Clusen.

Campaign spending reports were expected to indicate that supporters of the measure were outspent 10-to-1 by developers, oil companies, and power companies hoping to prevent regulation of coastal development.

"This is a tremendous victory for the grass roots conservation movement," said Club Coast Coordinator Will Siri. "It shows the American people just won't stand for this kind of foolishness. Americans are becoming increasingly committed to preserving the environment."

"Californians want not only the preservation of the coastline but also rational land use planning," Sierra Club spokesman John Zierold told the press. "This was a classic dualism: the money and power of the companies matched against the grass-roots conservation movement. This time, those forces who clobbered the public interest on other initiatives at other times opposed

this one too. But this time, the electorate recognized their disguise, saw behind the whiskers and dark glasses, and saw the real opponents: the Whitaker and Baxter public relations firm and their corporate clients both inside and outside the state. Proposition 20 passed not because of any grand strategies," Zierold said, "but because the environmentalists went to the precincts. And they stayed with it."

During the campaign, the Proposition 20 fight resulted in angry charges and counter-charges throughout the state. Anti-20 editorials fulminated that conservationists were ignoring the need for power growth, and that the coastal protection initiative would "place control of the coast in the hands of elitists" and "encourage a flood of litigation imperiling property rights" and "would prevent any more nuclear power plants on the coast." Meanwhile, Sierra Club spokesman demanded retraction of "false and misleading" anti-20 ads from buses and streetcars in the Bay Area, and from radio and TV stations throughout the state. Some stations complied; others offered equal time for pro-20 ads. But anti-20 material deluged the media.

Only days before the election, a Sierra Club official charged that "out-of-state investors hoping to cash in on development of California's coastline are pouring huge sums of money into the anti-20 campaign." Charles Clusen said the anti-20 campaign finance statement, issued a few days before election, listed more out-of-state contributions than all the pro-20 contributions received by the club. The club's pro-20 campaign was financed al-



most entirely by individuals, Clusen said, whereas the anti-20 campaign was financed by 227 companies and 50 individuals—many of them affiliated with the companies.

"They had 277 contributors giving an average of \$3,240 each," Clusen said. "We had 5,071 contributors giving an average of \$13.20 each."

"This victory was truly an environmental mandate," Clusen said. "Now the move is on to massively implement this as it is intended."

Contributions to the coast campaign are still being accepted.

Proposition 20 sequel: world's biggest lawsuit?

In the wake of passage by California voters of Proposition 20, the Coastal Protection Initiative, three coastal property owners have filed a half-trillion-dollar suit contending that the initiative unconstitutionally confiscates private property for public use.

The suit asks \$509 billion on behalf of all California property owners within the 1,000-yard coastal fringe affected by the initiative. The amount is alleged to be what coastal owners will lose through the "confiscation" of their property rights without compensation.

During the campaign, Proposition 20 advocates denied that tem-

porary restrictions on development constituted confiscation.

The suit is filed against state and regional officials, including Governor Ronald Reagan, who opposed the initiative.

Club wins suit to keep clean air clean

A District of Columbia Appeals Court handed down a landmark decision sustaining a District Court injunction won by the Sierra Club against the Environmental Protection Agency to prevent significant deterioration of air quality. EPA had appealed for a stay of the injunction requiring EPA Administrator William Ruckelshaus to determine if state implementation plans would prevent deterioration of air quality where air is cleaner than that required by the National Secondary Ambient Air Quality Standards. Now Ruckelshaus is required to promulgate regulations preventing deterioration—if the states have not already done so.

As Sierra Club Vice President Laurence I. Moss pointed out, "Away from heavy concentrations of industry and population, the air is presently cleaner than the mediocre quality established in the National Secondary Air Quality Standards."

"This does not mean that there can be no new development in such areas," Moss said. "Development can occur when the resultant emissions are expected to be below the amounts which would cause significant deterioration, or when compensation reductions in emissions from existing sources are made."

Who pays for clean air—and when?

Will it really cost car buyers \$260 to \$500 extra to buy cars meeting present standards for 1975 cars, and is that a good reason to postpone those standards to some other time?

This question was hotly debated in Washington and Detroit as oil companies and carmakers mapped out their upcoming presentations to the 93rd Congress. An Environmental Protection Agency official

was quoted as saying that new control equipment to meet presently effective standards for 1975-model cars might add from \$260 to \$510 to new-car prices in that year. But other sources said that easy-to-install catalytic converters meeting 1975 standards would cost carmakers closer to a tenth as much. Gas recirculation systems are already required by present regulations and thus could not be considered an additional cost for 1975 cars. There were reports that inflated cost estimates were being used as part of a campaign to delay implementation of the 1975 standards.

Meanwhile, Chrysler Corporation President John Riccardo was proposing to the American Petroleum Institute that auto pollution standards be weakened by the elimination of lead-free gasoline and catalytic converters. The Chrysler Corporation proposal for joint action by industry to suspend the 1975 standards, coupled with the EPA announcement of new guidelines, increased speculation that an attempt would be made in the 93rd Congress to emasculate Clean Air Act requirements. Riccardo told the petroleum officials that reduction of standards would save the petroleum industry millions of dollars needed to convert refineries to production of nonleaded gasoline, and would relieve car buyers from having to pay for emission control devices.

Caltech says burying atomic plants is thinkable

Scientists at Caltech's Environmental Quality Laboratory say the additional cost for putting a nuclear plant underground would be less than ten percent more than the total cost of putting the plant on the surface. Their study shows plants could be built underground without substantial changes in already developed equipment design. Underground construction would, however, require suitable rock formations. Study director Dr. Martin Goldsmith said the hundreds of feet of rock on all sides of containment vessels for radioactive material give "even greater assurance of containing radioactive materials in case of accident." Underground nuclear plants

could be built nearer to population centers that use the power and might also use the waste heat (presently rejected by all power plants) for space heating, air conditioning or other industrial uses.

Tankers and supertankers, ports and superports

Environmental groups are suing in US District Court in Washington to block federal subsidies for construction of supertankers until the Commerce Department studies the mammoth ships' environmental impact. The suit, filed by the Environmental Defense Fund, the National Parks and Conservation Association, and the Natural Resources Defense Council, said construction of the supertankers threatened two kinds of environmental damage. One is the danger of oil leaks twice as large as the one from the grounding of the *Torrey Canyon* off England and France, which fouled the coasts of both countries. The other is the present lack of new superports with ship channels deep enough for the 70-foot draft of the supertankers. The suit charges that the Commerce Department is planning to subsidize at least 300 vessels through 1980 at 35 percent to 45 percent of their cost.

Meanwhile, the Sierra Club's Lone Star Chapter was urging caution on various proposed "superports" and deep water facilities along the Gulf Coast. A proposed project at Harbor Island would require dredging a 10-mile, deep-water channel into the Gulf, a large turning basin, and docks. It would be "one of the largest dredging operations ever attempted in the United States," said Club spokesman Anthony Athens, Jr. He told local officials that the moving of millions of cubic yards of material from the ocean floor could significantly damage currents and salinity balance in Corpus Christi and Aransas bays and other closely connected bays and lagoons. He urged a halt in action until a study by the Corps of Engineers is completed. "While the Sierra Club appreciates the economic importance to Texas of petroleum importation," he wrote officials, "the estuarine and marine

resources of the Gulf Coast are too valuable to be destroyed by precipitous or haphazard development of 'superport' facilities, wherever they might be located."

"Worst-time, worst-place" oil spill jolts EPA; but what about Alaska?

"You'd be hard pressed to find a worse place to have an oil spill," said an Environmental Protection Agency official of a 40,000-gallon accident in October just outside Ship Rock, New Mexico.

Sometime during the day on Oct. 10, a 16-inch oil pipe of the Texas-New Mexico Pipeline Company burst, and spilled oil into an arroyo intersected by an irrigation ditch. A surge of water arrived in time to carry the oil down into the nearby San Juan River through steep canyon walls in Utah toward Lake Powell.

The pipeline company alerted EPA, which must cope with such unexpected pollution problems. Nothing like it had ever faced the relatively new agency. It just "couldn't have happened at a worse time or in worse circumstances," an EPA official said.

EPA men chased the oil down the river, trying unsuccessfully to halt and barricade the moving tide. Eight other federal and state agencies joined the chase. More than 100 men at a time fought to control the moving oil from the banks of the river. A light plane and then a helicopter crashed, injuring seven people.

The slick came to a rest in a debris-locked arm of Lake Powell, boxed in by four massive booms, and the long task of scooping it out began. EPA, said one observer on the site, "is earning its spurs here."

Other observers wondered about the frequency of spills in an area often described as "leak-prone"—though it has none of the permafrost problems associated with the proposed trans-Alaska pipeline. Editorialized the *Deseret News* of Salt Lake City: "This episode ought to raise fresh doubts about the guarantees that the proposed trans-Alaska pipeline won't rupture and spew much larger amounts of hot oil onto the Alaska tundra."

Editorial

IS THERE AN "ENERGY CRISIS?" With as much debate as there is, clearly there is a crisis of some sort. However, industry and environmentalists view the root of the crisis in diametrically different ways. Industry, which coined the phrase to wring concessions from government regulators, cries about the need to bolster supplies, while environmentalists point to the need to level-off demand curves.

The contrast in viewpoints is dramatized by two articles in this issue. In the case of the James Bay project, we see the habits of massive development being passed off as imperatives. Once the electricity is produced, a market will be made for it, and new appetites for energy growth will be whetted. And in trying to keep up with the demands of these appetites, we will be forced into more and more acts of desperate destruction. At some point, the giddy spiral of environmental havoc has to come to an end. The James Bay project embodies the intellectual dead-end to which a growth-oriented, energy-intensive society will carry us, as it threatens to wipe out a last remnant of an aboriginal culture which has something to say to us, as well as rights of its own.

James Spaulding shows us a different and more hopeful way in his article on conserving energy. In the past year, the energy industry has begun at least to pay lip service to the need to end habits of wasteful extravagance, and some government agencies have actually begun to stress this need. Of course, the problem goes deeper than merely tidying up a bit. Wasteful habits stimulate over-consumption and result from the underpricing of energy and a web of federal subsidies and incentives that leads to unrestrained demand. And as a result of cultural conditioning, we confuse these distorted market demands with needs.

But inevitably, as they must, the patterns are beginning to change. The constraints are asserting themselves: reserves are being depleted; environmental restrictions are growing; and prices are rising. These should lead to a slackening of demand and give us an opportunity to live in greater peace with our environment—if we don't try to escape momentarily through some new act of folly. We can't keep trying to engineer a way out of coming to terms with the finite nature of our habitat.

Michael McCloskey
Executive Director

Club urges changes in oil shale pilot program

Major changes in the Interior Department's proposed prototype oil shale program have been called for by a coalition of environmental groups. In a statement prepared by attorneys Edward Strohbehn, Jr. and Thomas Stoel, Jr., the Sierra Club, the Natural Resources Defense Council, and the National Wildlife Federation charged that the Interior Department failed to consider adequately the alternatives of leasing fewer tracts, relying on private development, or relying on other energy sources; failed to consider criticisms of the department's initial draft statement; and didn't carefully evaluate the program's environmental impact nor its costs and benefits. If the department doesn't consider the impact of a larger development program than necessary, the groups said, "industry and the federal government will have invested billions of dollars; thousands of people will have been employed and will have established new homes; a substantial part of the environment will have

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Regional Reps' Reports

NORTHWEST

The outcome of the November elections will have a deep impact on the Northwest environment in a number of ways. For example, the reelection of President Nixon appears to assure both a revival of the SST project and a "full steam ahead" approach on the Trans-Alaska pipeline. Just before the elections, Seattle newspapers carried frontpage stories of the visit by the President's top advisor, John Erlichman, a former Seattle attorney. Erlichman promised a revival of the SST if Nixon were reelected, because the President "feels it in his heart" that the SST is a good project and that America must "keep her leadership" in this field. Such a message, of course, had great appeal for the Seattle business community. The same business community is right now eagerly rubbing its hands in anticipation of the tremendous increase in traffic to Alaska "when" the Alaska pipeline is built—an outcome that all here now expect with certainty since Nixon's reelection.

But there is going to be a very tough struggle in Washington State over some of the consequences of the pipeline, because a statewide coalition of environmentalists, fishermen, and some of the tourist industry has organized to oppose the anticipated supertanker traffic into Puget Sound and the construction of a proposed Trans-Canada pipeline to take the oil across the mountains to eastern markets. If the pipeline is built, the initial battles will be in the state legislature, with environmentalists attempting to minimize the adverse impacts.

There were many issues of an environmental nature on Northwest ballots this November: bond issues for park acquisition, freeway advisory measures, and a comprehensive shoreline bill in Washington. But still, the most pressing and vital ones remain the questions of forest management and wilderness protection. Much of the commercial forest

of the nation is in the four Northwestern states, and most of the remaining unprotected wilderness is here too. Thus, it is in the Northwest that the battle will be joined, and won or lost, in the next five or six years. Throughout the Northwest is a pervasive feeling among environmentalists that not much time remains to make decisions on these questions.

Two major victories were won just recently by Northwest environmentalists in this arena, with the creation of the 240,000-acre Scapegoat Wilderness in Montana after a nine-year struggle, and with the addition of 80,000 acres of splendid wilderness in the Minan River Valley in Eastern Oregon to the existing Eagle Cap Wilderness, after eleven years of strenuous effort.

But elsewhere on the critical Northwest scene the situation remains cloudy. Conservationists who care about wilderness in Washington State came out reasonably well, with the reelection of Congressmen Mike McCormack and Lloyd Meeds, who between them have nearly all the remaining *de facto* wilderness in the state in their districts. Both are at least open to conservationists' ideas, and both were heavily attacked during the campaign by their conservative opponents for their alleged "pro-environment" stance. Both won solidly.

In Idaho and Oregon, all is not so well, with the reelection of Senator Mark Hatfield in Oregon, a man who has consistently and staunchly supported the dominant timber industry of that state, and who received a great deal of his campaign funds from it. His opponent, Wayne Morse, had promised to commit himself to protection of most of Oregon's remaining wilderness, but Hatfield made no such commitment and, in fact, went out of his way to advertise his opposition to any substantial control on clearcutting as evidence of his fealty to the timber industry viewpoint. Conservationists who care about wilderness in Ore-

gon (where less is protected than anywhere in the West) are bracing for a rough six years.

The results in Idaho may be even graver for the final fate of the magnificent wilderness and scenic resources there. The winner of the race for the senate seat there, James McClure, had a zero rating from the League of Conservation Voters, and was noted for favoring more dams in Hells Canyon and for his devotion to the logging and mining interests, which still run much of that state. A new congressman was also elected on a program of (among other things) turning both the public schools and the public lands back to private interests; one of his more interesting campaign slogans was a statement that the foundation of America rested with the "ballot box, the jury box, and the cartridge box!"

There was one other bright spot, however, with the reelection of Senator Lee Metcalf, long one of the finest conservationists in the Senate. His conservative opponent was heavily financed by out-of-state timber and electric utility interests, and Metcalf was heavily attacked for his alleged "pro-Sierra Club" leanings. Montana's vast wilderness resource is in reasonably good shape.

Now the battle is joined, and we have some idea of the potential fate in store for some of the nation's finest places: the forests of the South Kalmiopsis and the superb game ranges of the North Fork of the John Day River in Oregon; the deep gorges of Hells Canyon and the magnificent ponderosa pine stands of Big Deer Creek in Idaho; the superb vistas of uncut forests in the Middle Fork of the Flathead River and Rock Creek in Montana; the ancient rain forests of the Suiattle



and Boulder rivers in Washington. These names are unfamiliar to most of us now, but we should get to know them. They will certainly be the Northwest's battlegrounds of the future.

Brock Evans

MIDWEST

Lake Michigan's hot pursuit of Lake Erie in the race to become the most endangered body of water in the United States has received a big assist from the federal government and the states surrounding the lake. The forum in which Lake Michigan was delivered to private industry was the fourth session of the Lake Michigan Enforcement Conference, held in Chicago in late September and early November. The issue was thermal pollution, or the discharge of huge quantities of hot water directly into the lake without the use of such alternative cooling methods as towers or ponds.

Enforcement conferences are (or rather were, since the procedure was eliminated in the recently passed Federal Water Pollution Act) the consultative arrangement between the federal government and the individual states contiguous to a polluted body of water, in which pollution standards can be set and abatement schedules outlined and monitored. The history of the Lake Michigan Enforcement Conference has been dominated by the issue of thermal pollution, particularly from large nuclear power plants, at every meeting from the first in 1968 to the final, last November 9th.

The 1971 conference had recommended a thermal standard that would prohibit once-through cooling from power plants not in operation by March of that year; and the Federal Environmental Protection Agency had approved that standard. Three of the four Lake Michigan states, however, had pandered to their industrial clientele and rejected the standard. Only Indiana accepted it, while Michigan (site of American Electric Power Company's Donald C. Cook, Units 1 and 2, nuclear plants), Illinois (Zion Nuclear Plant, Units 1 and 2, of Commonwealth Edison), and Wisconsin (Point Beach Nuclear Power Plant, Units 1 and 2 of Wisconsin Electric Power, and Kewaunee Nuclear



Power Plant of Wisconsin Public Service Corporation) all set different standards that would permit once-through cooling for those plants. The rejection by the states of the recommended standard completely stymied all progress, and so the stage was set for the enforcement conference review in 1972.

At the September 19-20 session the EPA presented a powerful statement supporting its tough proposed standard, while the state representatives mumbled inaudibly. Then commenced the public testimony, which included both articulate and confused appeals from representatives of the public, and a phalanx of utility witnesses. Commonwealth Edison alone presented eight "ecologists" who consumed nearly four hours of the conference's time, and who essentially repeated the same testimony they had all personally given the year before, but who averred that they were even more correct in their predictions of minimal effect from thermal discharges on Lake Michigan than they had been at the time of their last humbugging of the conference.

Exhausted by this display, the enforcement conference deferred action on either renewing or revising its proposed thermal standard until a specially called "executive session" on November 9th. An added element of uncertainty came from the fact that in September the Federal Water Pollution Bill was still pending in Conference Committee in Congress, and nobody knew whether that bill, which eliminated the enforcement conference mechanism altogether, would pass or die.

By the time of the executive session, two important events had taken place. First, the new water bill had become law over the President's veto, and so the federal EPA possessed new enforcement authority at the expense of the individual states. Second, two days earlier Richard Nixon had been reelected President of the United States. The second event proved more compelling than the first.

In a statement apparently designed to disguise by its dryness what was in fact a complete capitulation to the utility industry, regional EPA administrator Francis T. Mayo announced the new federal line: no thermal standard would be promulgated at the present time, all utilities would receive "relatively short period" permits to dump their hot waters directly into the lake, and (oh yes!) not one, but two committees would be established to review the entire problem. While the state representatives looked on glowingly, one by one the utility spokesmen, canary feathers hanging out of their mouths, purred their approval, though each was careful to quibble over some trivial detail.

So much for cooling towers, so much for the Nixon Administration's concern about Lake Michigan: Commonwealth Edison *über alles*. As this writer pointed out in an angry address to the enforcement conference, it is highly ironic that at the very time the EPA has been given the authority to proceed with a thermal policy it has nurtured nearly two years, it has instead decided to beat a drastic retreat, giving the utilities everything they want and leaving the ultimate solution of the thermal problem in a greater state of uncertainty than ever before.

Nobody will ever regret the passing of the enforcement conference procedure, for it proved throughout the country to be impossibly cumbersome and incredibly ineffective. In the Lake Michigan Basin, however, the new system has initially proved even more devastating. Any readers who feel outrage at the EPA's sellout of Lake Michigan should certainly feel free to write President Nixon, EPA administrator William Ruckelshaus, and regional administrator Mayo.

Jonathan Ela

Washington Report

W. Lloyd Tupling

DISPARAGEMENT OF THE CONGRESS seems to be standard operating procedure for legislative post mortems; not so much for what was done but because of things left undone. So it was with the 92nd Congress.

The surprising thing is that it functioned as well as it did. A total of 25,354 measures were introduced in the House and Senate during the two years. The congressional winnowing process reduced this number to 2,840 that passed either the House or Senate. Proceedings of the two bodies covered 63,853 pages of *Congressional Record* fine print. Something good for the national welfare could not help but emerge.

Indeed, in the area of environmental programs, it did. Major measures enacted into law by the 92nd Congress provide a firm foundation for environmental betterment. Water Pollution Control Act amendments set the first serious goals for eliminating pollution from our waterways. Provisions of the Alaska Native Claims Act could make possible a doubling of the land areas within our national park and wildlife refuge systems. First steps—somewhat stumbling, to be sure—were taken to curb noise pollution.

The second session was the year for long overdue attention to the oceans, with far-reaching measures passed to apply land-use planning and management procedures to US coastal zones and the Great Lakes, to curb dumping of harmful substances in the oceans, and to improve protection of ocean mammals. For the first time, important national park units were established on the perimeters of major population centers—New York City and San Francisco.

The 92nd Congress also saw a shift in assessing national priorities and goals. A decision was made to terminate the federal subsidy for construction of supersonic aircraft

that threatened new environmental hazards. The proposal of House Interior Committee Chairman Wayne Aspinall to open the way for disposal of public domain lands was buried under an avalanche of protest without even coming to a floor vote.

Left on the list of unfinished business were bills to control toxic substances, to require advance planning of powerplant and transmission line locations, to halt surface strip mining, to open the courts to citizen suits involving environmental problems, to levy taxes on pollution as an adjunct to abatement, to provide an organic act for management of the public domain, and to establish a program for national land-use planning. Legislation on these subjects will make up a large part of the package on which conservation organizations will seek action in the 93rd Congress, along with new measures on energy policy, the repeal of the 1872 Mining Act, and the revision of other mining laws.

Other measures of concern to environmentalists will be revived in the early days of the 93rd because of events at the end of the past session. The controversial Highway Act of 1972, with provisions overturning court decisions to bar expressway construction in parkland, died on the House calendar when the leadership could not muster a quorum, thus forcing adjournment. A few days later, President Nixon vetoed the omnibus Rivers and Harbors Act on grounds that it was inflationary, thus killing a major source of congressional "pork." Failure to pass the Highway Bill leaves many state highway building programs in jeopardy for lack of funds, and this makes certain the early revival of a similar measure next year. There will be less pressure to ram through a new Rivers and Harbors measure because the Corps of Engineers has a backlog sufficient to keep it busy for years.

Also, action on new pesticides control legislation fell far short of bills sought by environmental and consumer groups. Amendments will be sought at the next session, particularly to eliminate a provision in the new bill which opens a pipeline into the US treasury for those manufacturers with products banned as health hazards. The 1972 law provides indemnification for the banned products, thereby placing further restraints on enforcement because of potentially heavy costs.

Much attention must be given in the new Congress to implementing recommendations of the National Water Commission. This body was established five years ago to study problems of water resource availability, distribution, and conservation on a national basis, as an outgrowth of proposals to divert Columbia River waters to the arid Southwest. The commission has issued a review draft report and hearings will be held early in 1973 to receive comments. The commission's life expires next year, and its recommendations for legislation could have long-term effects on programs for dam construction, river dredging, and irrigation projects. Related to the commission reports is an effort to include in the vetoed Rivers and Harbors Bill a one-year moratorium on revision of the phony cost-benefit analysis by which water projects are and have been evaluated. Existing procedures have been criticized because of weight given to inflated benefits and the ignoring of costs such as interest during construction and costs of money borrowed by the treasury.

The time and attention of conservationists also will be focused on retaining auto emission standards of the Clean Air Act. After the session ended in October, it became apparent that the petroleum and auto industries were ready to launch an effort to rescind the clean air standards that will require autos of

the 1975 model year to have pollution control devices capable of reducing emissions by 90 percent from the 1970 levels. At a meeting of the American Petroleum Institute in mid-November, a proposal was made by a Chrysler Corporation executive to eliminate the need for manufacture of lead-free gas and use of catalytic converters on cars. These revisions would drastically alter the impact of the Clean Air Act in curbing auto-caused pollution.

In an unusual report issued just prior to adjournment, the Senate Commerce Committee announced intentions "to take up as its first order of business when the new Congress convenes in January" the Environmental Protection Act, commonly known as the Hart-McGovern Bill. The bill would open the courts

for citizen suits against polluters and government officials who are lax in enforcing pollution laws. The Environment Subcommittee favorably reported the measure, but the full committee expressed concern that it would "severely tax our overcrowded federal courts." Some committee members expressed belief that the new act should reflect the more restricted "standing to sue" concept which evolved from the Supreme Court decision in the Sierra Club's Mineral King case.

Of course, this "laundry list" of forthcoming legislative action will have to wait organization of the House, which will have 96 new members, and of the Senate, with 13 replacements. Retirements and election defeats will cause major changes in many committees. For instance, the House Interior Com-

mittee, long dominated by Representative Aspinall, will have 74-year-old James A. Haley as Chairman. This committee, of major concern to conservationists, will have 12 new members—seven Democrats and five Republicans. If strong environmentalists fill the vacancies, this key body which decides on park, public land, and wilderness bills could be invested with an entirely new image. Rather than the committee which regularly capitulated to industrial pressures—such as the drastic cutbacks in redwood park legislation—a new committee could be a real force for protection of the environment.

That, of course, would make life easier for Mother Nature—and those who try to ride herd on the often errant, sometimes heroic Congress.

*Environmental and Natural Resources Legislation
Enacted into Public Laws by the 92nd Congress*

PUBLIC LANDS

Alaska Native Claims Settlement Act P.L. 92-203
Coastal Zone and Estuarine Management Act P.L. 92-583

FORESTRY and NATIONAL FORESTS

National Reforestation Program P.L. 92-421

PARKS, MONUMENTS, and RECREATION

Arches National Park, Utah P.L. 92-155
Canyonlands National Park addition P.L. 92-154
Capitol Reef National Park, Utah P.L. 92-207
Buffalo National River P.L. 92-237
Lincoln Home Historic Site P.L. 92-127
Oregon Dunes National Recreation Area P.L. 92-260
Tincum Marsh Environmental Center, Pennsylvania P.L. 92-336
Sitka National Monument (additions), Alaska P.L. 92-501
Hohokam Pima National Monument, Arizona P.L. 92-525
Cumberland Island National Seashore, Georgia P.L. 92-536
Fossil Butte National Monument, Wyoming P.L. 92-537
St. Croix River, Minnesota P.L. 92-560
Delaware Water Gap National Recreation Area (increase acquisition funds) P.L. 92-575
Golden Gate National Recreation Area, California P.L. 92-589
Gateway National Recreation Area, New York-New Jersey P.L. 92-592
Glen Canyon National Recreation Area P.L. 92-593
Restore Golden Eagle Program P.L. 92-347
Increased Appropriations Ceiling on National Park System P.L. 92-272
Gulf Islands National Seashore, Mississippi (addition) P.L. 92-275
Sawtooth National Recreation Area, Idaho P.L. 92-400
Great Dismal Swamp Protection (feasibility study) P.L. 92-478

WILDERNESS

Pine Mountain Wilderness, Arizona P.L. 92-230
Sycamore Canyon Wilderness P.L. 92-241
Cedar Keys Wilderness, Florida P.L. 92-364
Eagle Cap Wilderness (Minam River Canyon, addition, Oregon) P.L. 92-521

Indian Peaks Wilderness Study, Colorado P.L. 92-528
Lassen Volcanic National Park Wilderness, California P.L. 92-510
Lava Beds National Monument Wilderness, California P.L. 92-493
Scapegoat Wilderness, Montana P.L. 92-395
Washakie Wilderness, Wyoming P.L. 92-476
Sawtooth Wilderness (in Sawtooth National Recreation Area) P.L. 92-400

WILDLIFE

Protection of Wild Horses and Burros P.L. 92-214
and P.L. 92-195
Prohibition on Shooting Wildlife from Aircraft P.L. 92-502
and P.L. 92-195
Conserve and Protect Atlantic Salmon P.L. 92-219
Protection of Marine Mammals P.L. 92-522
Bald Eagle Protection Act P.L. 92-532
South San Francisco Bay Wildlife Refuge, California P.L. 92-330
Seal Beach National Wildlife Refuge, California P.L. 92-408
Moratorium on Killing of Polar Bears Resolution passed by House & Senate
Ten-year International Moratorium on Killing of Whales Resolution passed by House & Senate

WATER QUALITY

Federal Water Pollution Control Act P.L. 92-500
Regulation of Ocean Dumping P.L. 92-532
National Advisory Committee on Oceans and Atmosphere P.L. 92-125
Ports and Waterways Safety Act P.L. 92-340

PESTICIDES

Federal Environmental Pesticide Control Act P.L. 92-516

NOISE

Environmental Noise Control Act P.L. 92-574

MISCELLANEOUS

Youth Conservation Corps Pilot Program P.L. 92-597



Are You Making a Better Plan?

A LONG LOOK AHEAD

ROGER OLMSTED

AFTER THIRTY YEARS of intense anxiety over the responsibilities of world leadership, Americans find their homeland in an unhappy state. Such words as pollution, crime, welfare, unemployment, and integration provoke those intense reactions that bespeak the existence of deep troubles. Our institutions flounder rather than cope. As usual, California leads the nation in almost everything, including the souring of the golden dream.

Ralph Nader, in *Power and Land in California* (1971), sums up the state of the Golden State: "For California there was history to learn from, planning to benefit from, and abundant wealth to nourish the dreams of all those who trekked west or north to invoke its promises. But the promises, in their fullness, are fading before the pressures of corporate farming, minority group isolation, pesticide profligacy, urban sprawl, mindless development spawned and exploited by speculators, the near-certainty of catastrophic earthquakes, bumper-to-bumper mobility, pollution, private seizure of public wealth, and the complicity of government and land interests. . . ." What is California to do about its problems? Indeed, what is America to do about those social and environmental problems it shares with California?

A doctrine of hope for conservationists who are bone-tired from fighting inconclusive skirmishes and rear guard actions against the armies of blind and haphazard growth and destruction is *The California Tomorrow Plan*, an imaginative and comprehensive strategy for turning our society's assault on the environment into a coherent social effort to preserve and enhance those values to which we pay constant lip service (but little else).

The California Tomorrow Plan, edited by Alfred Heller, president of California Tomorrow and chairman of the plan task force, shows how we can build an institutional framework that can make solutions to our problem *possible*, how we can stop investing our best energies in barely palliative attempts to treat multiplying symptoms and instead treat directly the causes of our discomforts, causes that left to themselves are certain to generate future symptoms of increasing severity. The plan, which is supported in principle by the Sierra Club, should be studied not only by conservation-minded Californians, but by Americans in general. For the plan—and particularly the method of the plan—applies to problems facing the whole nation, and implementa-

"To provide for personal fulfillment within an amenable environment."

tion of important parts of the plan will require federal action that would affect the whole people.

The heart of *The California Tomorrow Plan* is a system for identifying, analyzing, and coping with "major disruptions" in our society and environment. The most important single message of the plan is that we are faced with the rational choice between coherent planning for whatever future we and our children must live in or a continuation of *ad hoc*, narrow-purpose plans and policies that promise nothing but more of what has not cured our ailments. For instance, when we find that between 1954 and 1964 we paved over 195,034 acres of our best irrigated farmland in the Santa Clara Valley and in Southern California with sprawling suburbs (while plenty of agriculturally marginal or useless land was theoretically available for building) we have no choice but to blush at our folly. Yet what else could have been the result in the absence of any integrated and effective zoning, taxation, and transportation policies? When no single agency of our government was clothed with more than single-purpose powers and made more than single-purpose plans, all agencies had no choice but to accept whatever drift the current of events implied, however undesirable the consequences and however obvious these consequences were.

In seeking to offer a systematic means of guiding our future development while curing our more curable present ills, *The California Tomorrow Plan* begins by listing the major social and environmental problems or disruptions (such as those related to water resources, agricultural land use, air pollution, transportation, housing, employment) that afflict the state. All of these disruptions are found to be caused by more than one factor (such as, obsolete governmental institutions, bad effects of existing tax structures, population growth, overcontrol of individual action). In its overview of the condition of California, the task force identifies 21 disruptions attributable to 12 root causes. A mere list of disruptions, each with its several causes, with every cause applying to several areas of disruption, would be an interesting, but confusing, document. The purpose of this analysis, however, is to shed new light on the problem of discovering policies that will effectively deal with all the disruptions

simultaneously. This is achieved by simultaneously (as it were, instantaneously) considering all the disruptions and causes and detecting the pattern that can lead to rational major policies. This technique is the antithesis of the single-purpose analysis of problems by our current single-purpose planning agencies, such as the Division of Highways.

And a pattern does emerge from this analysis of the matrix of disruptions and their causes. The causes fall into four groups that cut across the range of disruptions. These four major underlying causes are found to be: 1) lack of individual political strength; 2) lack of individual economic strength; 3) damaging distribution of population; 4) damaging patterns of resource consumption. These underlying causes can be directly translated into four public goals ("driving policies," the plan calls them): 1) to provide political strength; 2) to provide economic strength; 3) to guide settlement; 4) to guide resource use. Within these driving policies a plan for specific action may be deduced.

If the heart of *The California Tomorrow Plan* is its analytical approach, its soul is its description of two alternative Californias of the year 2000—the California we will have if we continue our present methods of problem solving and policymaking ("California One"), and the California we might have if the driving policies of the plan are adopted and their logic translated into effective programs ("California Two"). The central characteristic of California One is that no integrated framework is developed to guide or make public policy. "Coordination among the agencies of government consists mainly of resolving major disagreements through *ad hoc* policy compromises." Essentially, we get more of what has already failed us: we have single-purpose regional and state agencies; we have special-interest groups who tend to dominate these proliferating agencies; such institutions as our tax structure continue to encourage poor use of our resources.

"Subdivisions of land in rural and mountain areas continue to cause erosion and stream pollution. Rural slums, some of them remnants of recreational subdivisions of years before, are spread across foothills, mountains, and the coast. Wilderness established under federal regulations is endan-

gered by increasing public use." In California One, by the year 2000, we have tried hard to solve such problems as pollution, unemployment, and crime; we have tried with good will and we have done many things that were necessary to keep our total environment from just falling apart. But our successes have been negated by population growth and spendthrift use of our natural and human resources. Some people still live the good life in California One, but most of us will remember the mess we had in 1972 as a far, far better time in a far, far better place.

California One is a place that still has hope for it—in a statistical sense. After all, 35 million people on 100 million acres of land does not seem an impossible concentration. And it would not be if it were not that our present patterns of growth have the effect of hemming us in rather than spreading us out in some orderly and pleasant fashion. Watts, for example, is a new kind of slum, a place that contains the spirit even while it seems to offer the decent space and living accommodations that would have appeared the answer to settlement house workers in Chicago and New York at the turn of the last century. Beyond the California-style ghetto is the depressing future of the middle-class home, a speck in a suburban sprawl that is linked to whatever community it could be part of by a maze of arterials and freeways—but is essentially a part of nothing in a nowhere, a part of a culture that respects nothing but eat-and-buy as a standard, a place where the supermarket is the church, the used car lot the museum, the department store a recreational facility, TV repair an essential service, and the hospital a place where you are indeed parted from the goods of this world. With less than 30 more years of effort along the lines we have been following, we can bring every defect we see today in the life style of California into much sharper focus. We can, as we are doing now, not just fail to meet the demands of our deprived—the poor, the old, the black, the brown, the unlucky—but we can also undermine the *amenities* of life that have been the dream, and it seems the right, of that vast middle class of people who dominate California.

"Amenity." It seems a vague and perhaps effete-sounding word. But what else do you call it? It sums up the

drive for a decent life style, a way of living—not just free of the potential terror of absolute want, but a way for people of middling means and prospects to live the life that California has traditionally promised. The promise was not idle, for in California (more than anywhere else in the world) a great mass of people has comfortable housing in reasonable privacy, with access to good schools for their children, with the convenience of urban cultural activities, with the opportunity to enjoy a fine climate and almost unlimited outdoor recreation. But these words sound more hollow every year, and those of us in the middle level of California can see the reality of the idea of amenities slipping away even as we struggle to make a better environment for ourselves. The brutal fact is that for this great middle class California is not quite so good a place to live in as it was 20 years ago; the trend indicates that it is going to be less and less a good place as the decades pass. It is certain that our environment will be poorer because among other things, the slim resources of such privately financed conservation groups as the Sierra Club and California Tomorrow are not adequate to win *all* the battles. Worse, a win for conservation can be nullified a year or a decade later, while a loss is generally irreversible. The logical result of this unequal battle must be the steady erosion of our environmental amenities.

“To provide for personal fulfillment within an amenable environment.” This is the goal of the policies that govern the development of California Two. Maintaining or advancing the total quality of life in California is the special concern of a State Planning Council and ten new regional governments and as many new community councils as circumstances dictate. Instead of a welter of special-purpose agencies responsible only to themselves and indifferently responsive to public pressure, California Two has clear lines of authority and feedback to the people.

“State planning, programming and budgeting become fully visible for the first time, and the public can hold specific individuals—the governor or members of the legislature—more closely accountable than in the past for the direction of state government.

“A reason for this is that all major state policies and expenditures are set

forth in the comprehensive [annual] California State Plan, which is developed along clear lines of responsibility by the governor, the State Planning Council, and the legislature. The council develops the annual plan/budget, but after he takes office, a new governor in effect takes control of the council. . . .

“The legislature, furthermore, must finally adopt a coordinated, systematically developed State Plan and budget as a unit. This provides a solid basis for judging legislative performance.”

The regional governments, which consist of an elected legislature and an executive with a planning staff, works with the federal, state, and local governments to prepare a regional plan, program, and budget dealing with the full spectrum of social, economic, and environmental concerns. While the regional government works within the planning policies developed by the state council and approved by the legislature, it is at the regional level that most specific projects are developed. At the regional level the public has a powerful voice to represent regional interests. In the past, fragmented local interests often could not make themselves heard in such matters as the development of the freeway system; now the people of a region have not only the means to make themselves heard, but the expert technical staff it takes to make convincing arguments and proposals. No more can a state or government agency (such as the Division of Highways or the Army Corps of Engineers) bury local outcries under a snowdrift of drawings and figures. Altogether, this rational democratization of government is the key element in implementing the first driving policy of *The California Tomorrow Plan*: to provide political strength to the people.

The second driving policy (to provide economic strength) involves such programs as a guaranteed minimum income, a state-level economic advisory service that would give both business and public interests the advantage of advanced economic planning techniques, and a rational state and regional works program. In implementing these and many other specific programs, federal cooperation is necessary, as in the case of a new Federal Conservation and Development Bank, which would guarantee loans needed to implement regional plans.

The third driving policy (to guide settlement) leads to a statewide zoning plan that protects agricultural lands, puts bounds on urban sprawl, and sets up conservation areas. A plan for the state infrastructure—freeways and streets, railroads and transit systems, power plants and transmission lines, dams and aqueducts, seaports and airports—is completely coordinated with the land-use zoning, thus insuring that such developments as new communities are attractive, convenient, and economically rational. “California standards” of air and water quality, housing and open spaces, public facilities and access to them are in effect. In California Two, by the year 2000, the cities are not much more sprawled out than they were in 1972. Instead of prodigally spreading municipal services into every corner of the countryside, government has been able to spend its money more effectively in assisting rebuilding and renovation, in creating parks and improved transit. A zero-increase population policy has been less than fully effective, yet by 2000 the population seems to have stabilized at 30 million or less, while public policies regarding conservation of open space, agricultural land, and recreational and wilderness areas have minimized the undesirable effects of a 50 percent increase in population. This is no easy trick, and only the extra value that can be achieved through comprehensive planning and rational use of our resources has enabled us to absorb this growth while still making positive gains in such matters as overcoming pollution and providing an amenable environment.

The zero-growth population policy is central to implementation of the fourth driving policy (to guide resource use). Zero population growth is a very controversial matter, and the means of achieving it in our democratic society are limited to dissemination of information and other such mild measures. Here, as in the case of some tax reforms, is a clear case where national planning and effort must accompany state planning. Yet, on another level, we can still say that the very idea of positive planning can have its desired effect: when we accept what we want to do and set about with the proper means to do it, we will make responses that make sense.

A vital part of the plan to guide resource use involves taxation policies that promote the goals of the compre-

hensive plan. For instance, a graduated tax on the size and power of automobiles encourages the use of small cars that use less fuel and space. Another tax on autos provides for their eventual recycling. There is a graduated consumption tax on electricity and an oil-depletion tax. Land is taxed according to its zoning category and its optimum social use rather than according to its potential for development. Speculators are no longer able to claim capital gains benefits on the sale of unimproved property.

The goal of California Two is to enhance the life of the individual by creating a better and more rational community. Of course, we do not get something for nothing, though to a surprising extent rational planning has made our dollar go further. In other words, we are getting a little higher output for every unit of input because of better planning on the input side and a less wasteful product on the output side.

"People do not have a great deal of disposable income, and costs are high, partly because of the environmental constraints on manufacturers. Taxes are high. But new buying habits, guaranteed access to amenities such as public transportation and parks, clean air and water, and health-care services stand in lieu of direct purchasing power. Most people eat better and

enjoy better housing than they could have years before. . . .

"There are widespread complaints about government interference. . . . In actual fact, government exerts strong controls mainly in the areas that are necessary for the protection of the natural environment. In other areas, government helps to establish a framework under which individuals and communities can decide pretty much for themselves how they want to live their lives on the land.

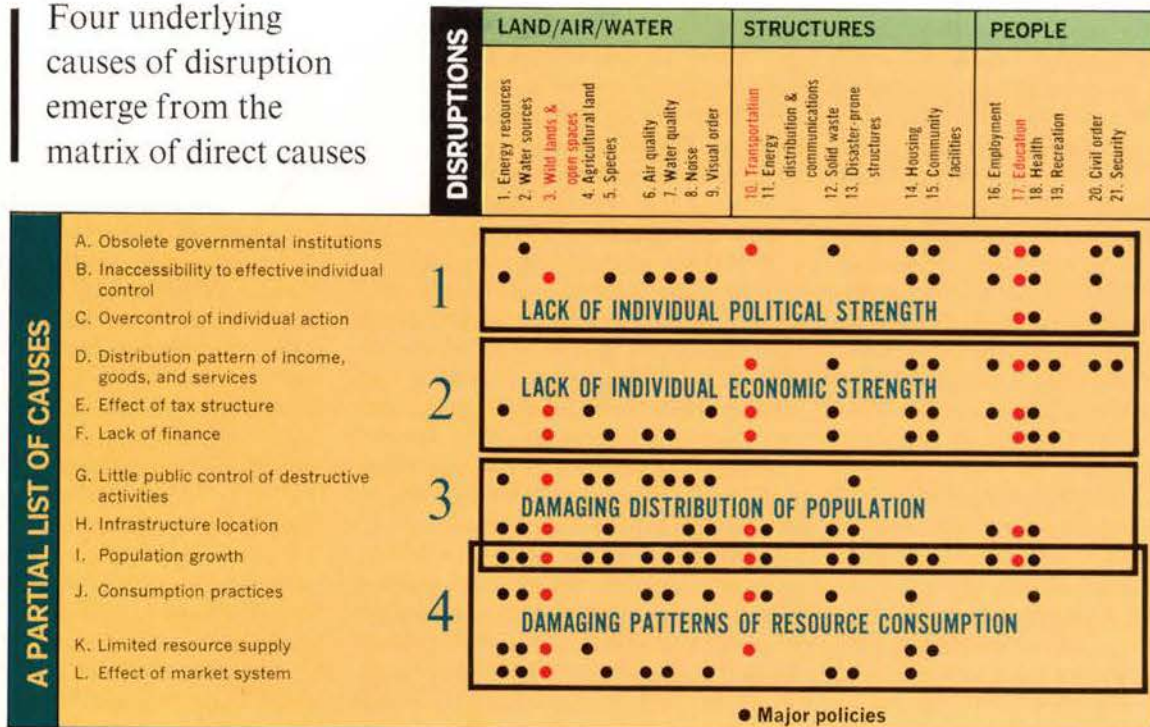
"In other words, California Two is not to be considered Utopia, but a reasonable, workable conception of how planning can help assure that this state and this nation will be better places for people to live, rather than worse, in the decades that lie ahead."

This necessarily abbreviated summary of *The California Tomorrow Plan* might lead one to imagine that it is some kind of blue-sky proposal that glosses over hard economic realities. Nothing could be further from the case. In California and in America we have been led to believe that unbridled growth and progress were the same thing, that such amenities as open space might be aesthetically pleasing but are economically unsound. The California Tomorrow task force tackled head on three axioms of popular economic mythology — that open space is an expensive luxury, that mass

transit is justifiable only in social rather than economic terms, that full and free health care costs more than the limited national insurance system that we seem certain of getting—with startling results: 1) The annual cost over the next 30 years of buying and maintaining 1.8 million acres of open space adjacent to metropolitan centers would be less than half the cost of extending and maintaining utilities and government services to only *half* of this land if it were developed. 2) The installation of a comprehensive mass transit system in the Los Angeles area, combined with some freeway development, would cost substantially less than a present plan to install a very limited transit system with great freeway development—when all of the factors, including auto ownership and operating expenses are considered. 3) The cost in the year 2000 of limited health insurance plus private payments for dental care and other medical needs not covered would be about the same or slightly greater than that of a total care program based on an extension of something like the Kaiser plan to cover *all* medical needs.

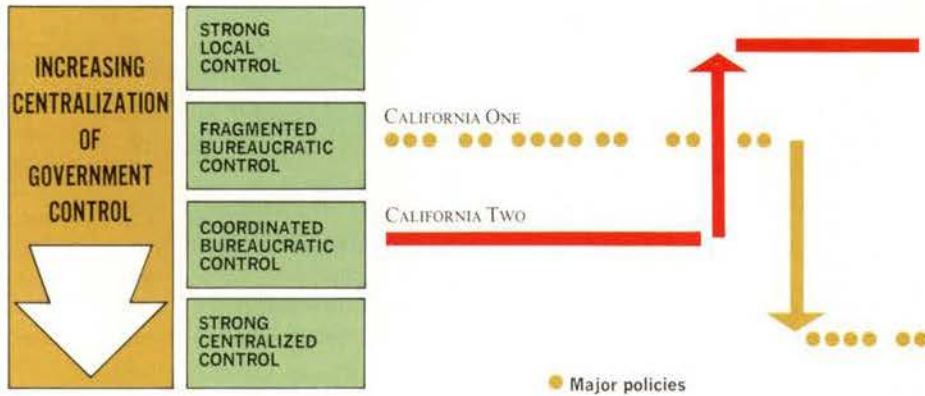
What the brief analyses of the California Tomorrow task force show is that we need to study all kinds of alternatives to our present *ad hoc* ways of doing things. We all want to live in a better tomorrow, but a prerequisite

Four underlying causes of disruption emerge from the matrix of direct causes



Government control
in California—
drift vs. plan

DISRUPTIONS	LAND/AIR/WATER	STRUCTURES	PEOPLE
	1. Energy resources 2. Water sources 3. Wild lands & open spaces 4. Agricultural land 5. Spectics 6. Air quality 7. Water quality 8. Noise 9. Visual order	10. Transportation 11. Energy distribution & communications 12. Solid waste 13. Disaster-prone structures 14. Housing 15. Community facilities	16. Employment 17. Education 18. Health 19. Recreation 20. Civil order 21. Security



to effective analysis of alternative ways of doing things is the creation of planning bodies with the resources to gather needed information, sort it out, feed in social goals that we agree upon, and present rational alternatives for our consideration.

The California Tomorrow planners show us not *a* method of looking toward the future, but *the* method. We must consider all of the social and environmental factors that affect us comprehensively and simultaneously, for they are all interrelated, however tenuously. There is a relationship between, say, wilderness areas and urban transit—if only because they both affect our life style and environment. A fully developed California Plan would involve the simultaneous consideration of several thousand times as much information as the California Tomorrow task force had at its disposal or had the means to deal with. Yet the method is the same.

We must look to alternatives when we commit an investment, and we must consider our investment as all coming from the same social capital. Everybody can find examples of this truth if he starts to consider a problem. I will take just one that comes to mind. For several years there has been a question in Marin County, where I live, as to the best route for a freeway (or at least some kind of high-speed arterial) to the new National Seashore at Point Reyes. It seems obvious that some better access is needed as population growth puts greater pressure on the area. The question argued in Marin County is "Where

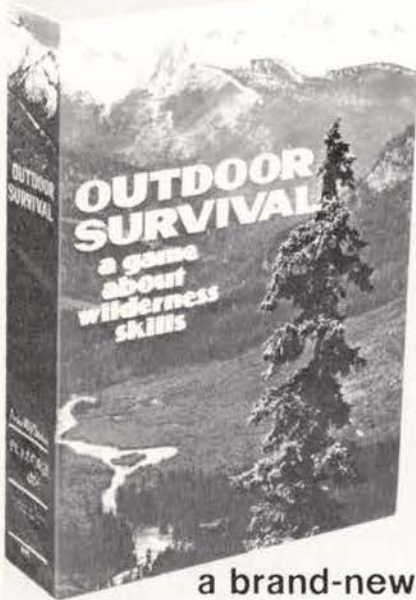
shall we place the new road?" This thinking is characteristic of single-purpose planning. Is it not possible that the "road money" might be better spent in improving the more accessible state park lands at the Marin Headlands and Angel Island? Since we are talking about a park, why isn't "road money" translatable into "park money?" Again, since the San Francisco area is blessed with a great park system that is fairly accessible, are we sure that we shouldn't take this "road money" that has been turned into "park money" and spend it on a watershed protection program and sewage disposal subsidy for Lake Tahoe? Whatever the merits of this simple line of thinking, it should be obvious that there are perhaps dozens of more rational ways of spending the Point Reyes road money than in seeking to make a magnificent natural area into the terminus of a freeway. This is what comprehensive planning is all about; this is why we have got to put our money into the same pot that we put our plans into. Special-purpose financing is just as dead-end as special-purpose planning. And we can never get the resources and means that it takes for comprehensive planning (rather than half-baked argumentation in county supervisors' meetings) unless we demand the kind of rational and democratic system that *The California Tomorrow Plan* proposes.

The California Tomorrow Plan suggests specific goals and sketches a fairly specific future. But do not mistake the details of a specific "California Two" for the sense of the whole

program. A better, and alternative, California of the future does not rest in acceptance of all of the specific social goals of California Tomorrow's model. It is not necessary to accept the idea that cradle-to-grave medical care is an essential goal or that special tax and other social subsidies should be given to the family farm in order to see that the general system proposed is essential to the future general welfare. The future seen in California Two is based on a generous social doctrine that perhaps a majority of thoughtful Californians might endorse. But this is just the soul of a specific projection—and we have the right (and the chance in California Two) to take care of our own souls as we see fit. The heart is another matter: we have the choice to determine our future or to just drift into the sinkhole that is clear before us. The method is the message, and we cannot afford to ignore it or misunderstand it.

Some of the specific ends *The California Tomorrow Plan* would promote are identical with specific goals of the Sierra Club and the conservation movement in general; some are social ends which may or may not agree with the views held by individual conservationists. The basic purpose of the plan is to give the public greater opportunity to make rational judgments as to what it wants. The function of such an organization as the Sierra Club in the planned California Two would be the same as it is today, for there will always be competition for the alternative uses of the monetary, human, and environmental resources at our disposal. What *The California Tomorrow Plan* offers is a more rational method of gathering the information we need to make rational choices and a more responsive institutional framework within which to argue out the merits of various priorities.

"Are you making a better plan?" is the challenge that Alfred Heller throws at the people of California (and incidentally, the United States). Well, the State of California has already spent several million dollars to come up with a plan that suggests that we ought to *have* a plan. The California Tomorrow task force spent nickles and dimes to come up with a plan sufficient to make us *think*. Every Californian or American interested in his future life and the life of his children should get a copy of this plan, read it carefully,



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and think out his own conclusions for himself. That is why the plan was made: to help us think our way to a better future. It may be the most important document ever published in California.

News View (continued)

been destroyed; and patterns of land use will have been established which will make it seem less harmful to expand the size of the industry.”

Mucking on the Sound

The Sierra Club's Connecticut and Atlantic Chapters' Long Island Sound Task Force won a significant victory in US District Court when a federal judge directed the Army Corps of Engineers to stop dredging Connecticut's New Haven Harbor until it had filed an environmental impact statement.

Statement required by the Act of Congress of August 24, 1912, amended by the Acts of March 3, 1933, July 2, 1946, June 11, 1960 (74 STAT. 208), and October 23, 1962, showing the OWNERSHIP, MANAGEMENT AND CIRCULATION OF the *Sierra Club Bulletin*, published ten times yearly at San Francisco, California— for December 1, 1971.

1. The names and addresses of the publisher, editor, and executive director are: Publisher: Sierra Club, 1050 Mills Tower, San Francisco, California; Editor: William Bronson; Executive Director: Michael McCloskey.

2. The owner is the Sierra Club, an incorporated non-profit membership organization, not issuing stock; Judge Raymond Sherwin, President, Superior Court, Union Ave., Fairfield, Calif. 94533; Charles Huestis, Treasurer, Duke University, Durham, N. C. 27706.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amounts of bonds, mortgages, or other securities are: NONE.

The average number of copies of each issue of the publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was 122,478.

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Right to Be Right (continued)

Sierra Club really did want the government to hold off granting any more timber concessions until a wilderness study could be made and had no intent, malicious or otherwise, beyond that stated in its original suit.

Furthermore, Judge Zirpoli said that even if the Club had acted with malice toward the Humboldt Fir Company (which it did not), the company could still not prevent the Club from openly seeking to persuade the government of its own case.

"Moreover," he said, "this court believes that the malice standard invited intimidation of all who seek redress from the government . . . and therefore in most cases, even those acting without malice would be put to the burden and expense of defending a lawsuit. Thus, the malice standard does not supply the 'breathing space' the First Amendment freedoms need to survive."

Judge Zirpoli said that the second cause of action, under which Humboldt Fir Company "seeks actual damages and \$1.0 million punitive damages because plaintiffs were allegedly successful in persuading the government that timber sales should be reduced in the Salmon-Trinity Alps Primitive Area . . . , does not constitute the type of conduct for which state civil law can constitutionally impose liability."

As for Humboldt Fir's attempt to enjoin the Sierra Club from further such actions, Judge Zirpoli said, "It is difficult to conceive of a more direct abridgement of the 'right of the people . . . to petition the government for a redress of grievances.'"

Finally, Judge Zirpoli concluded that Humboldt Fir's countersuit only alleged that the Sierra Club was doing what it had, in fact, a right to do. He said, "Nothing more is alleged than that plaintiffs intentionally exercised their right to petition the government, and this is precisely that with which this court cannot interfere. It is therefore ordered that Humboldt Fir, Incorporated's counterclaim and 'cross-complaint' be dismissed for failure to state a claim upon which relief can be granted."

John Hoffman and Barry Fisher of the Sierra Club Legal Defense Fund, who represented the Club in the

litigation, praised Judge Zirpoli's decision. "We believe this to be the first decision in the country on this specific point," Fisher said, "and we hope that it will rapidly become the unquestioned law of the land."

Judge Zirpoli's decision was felt only two weeks later when the seven logging companies who had filed a similar countersuit against the Club consented to a dismissal only three days before the scheduled hearing on the matter. They had originally countersued the Club after the Club had won a preliminary injunction barring

further development on 34 million acres of de facto wilderness until proper wilderness studies were made. Their consent to dismissal cited Judge Zirpoli's decision. So now only the McKeon suit remains, but there is reason to hope that Judge Zirpoli's decision may apply in that litigation as well. If it does, industry's effort to find a new weapon to ward off environmental suits will have collapsed. In the process, environmentalists will have been reminded that they have a large stake in protecting basic civil liberties such as free speech.

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