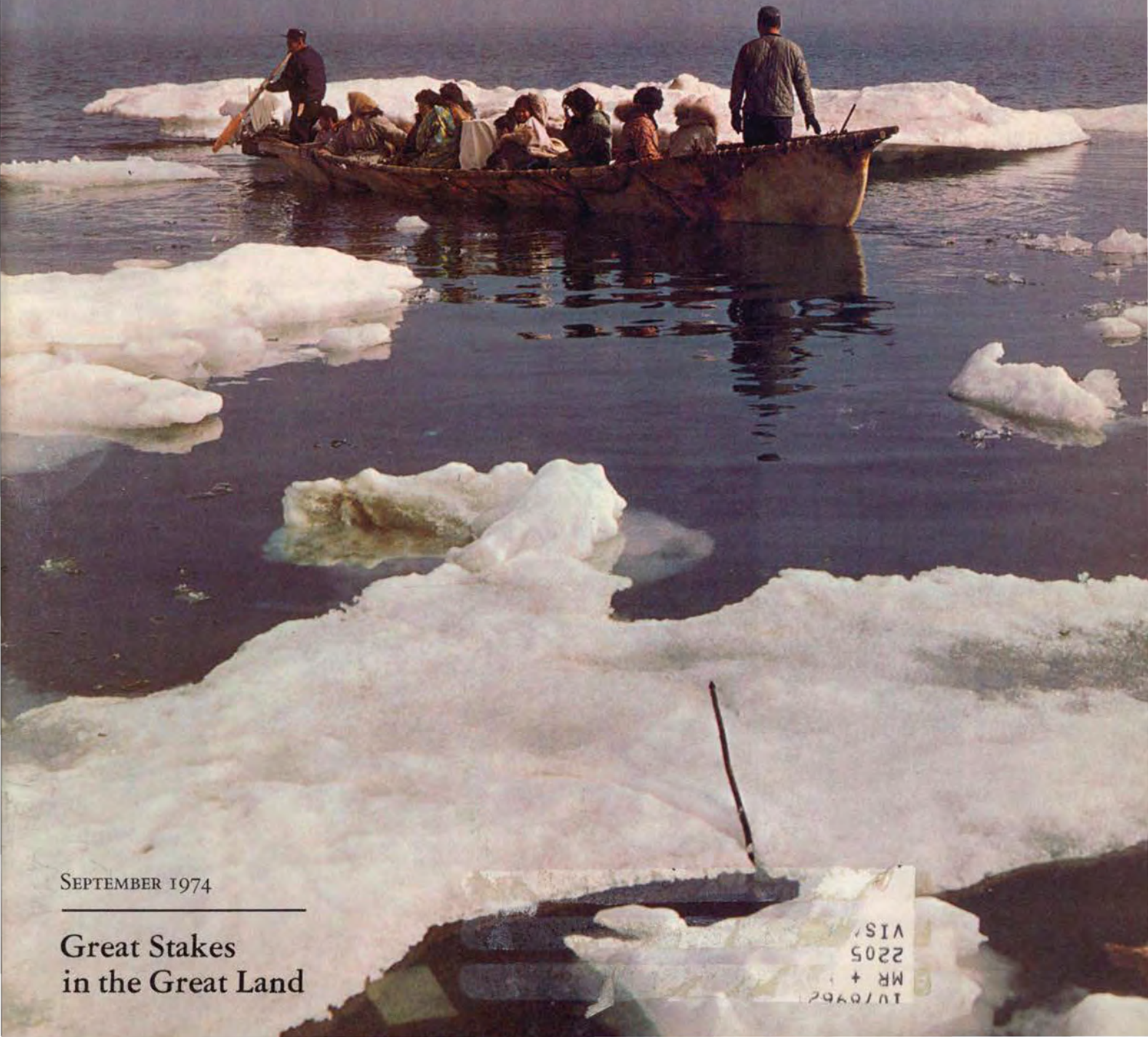


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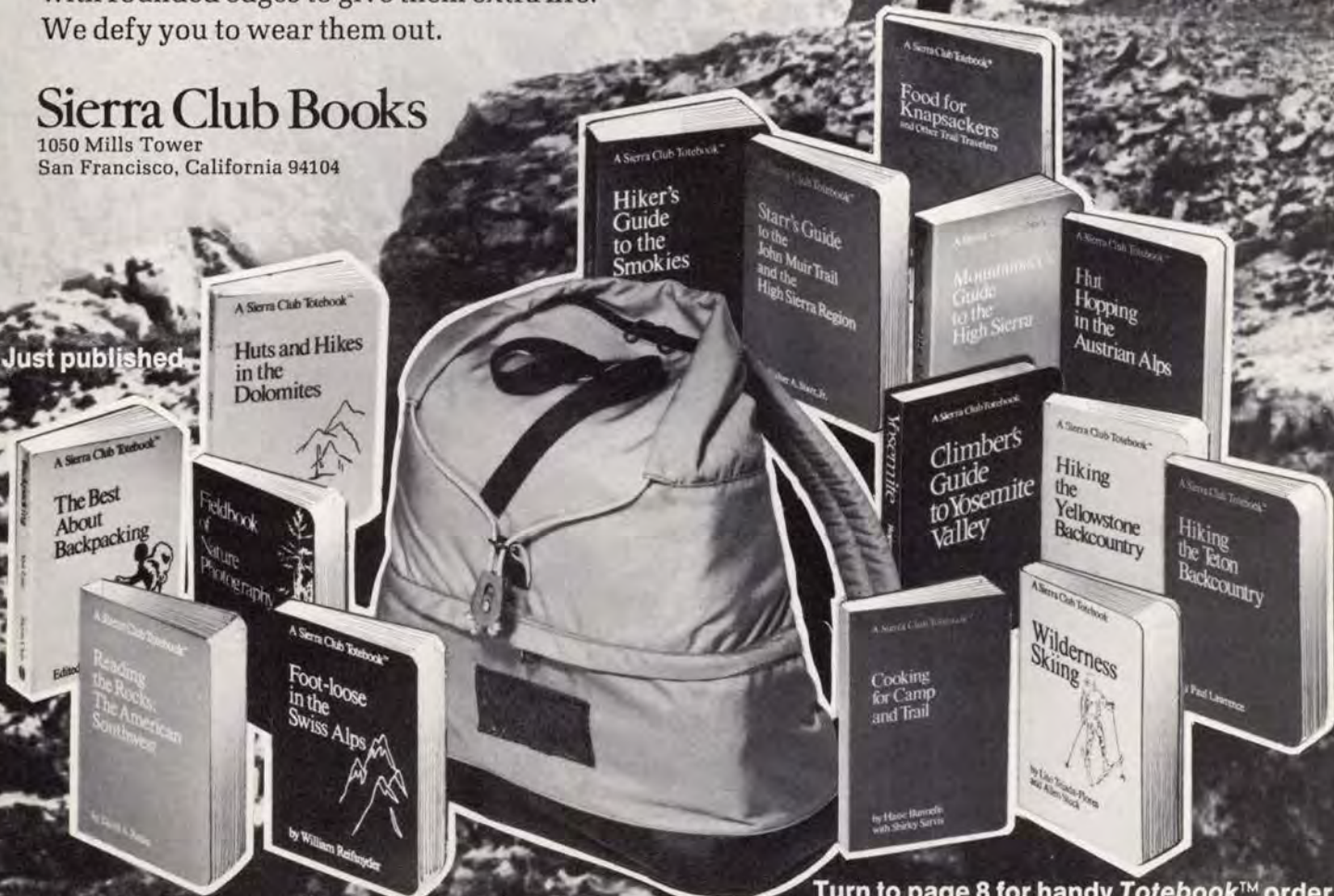
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Cover: The Eskimo hunters of Alaska, no less than the native Indians of the Old West, seek a share of the great lands that are the common property of the whole American people. In this issue: public lands in Alaska; Indian claims to western lands in the "Lower 48." Photo by Bob and Ira Spring.

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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THE RINGS OF LIFE

GALEN ROWELL

A GUST OF WIND brightened the campfire as two men warmed themselves high in a remote California mountain range. They were above 10,000 feet, where the air that rose hot from the desert floor blew cool and clear on a September evening. One man pulled a brand from the fire and examined it closely. "1277 to 1283 A.D.," he said with assurance. "This six-year ring pattern never repeats itself."

When Edmund Schulman finished studying the flame-blackened ring pattern, he tossed the wood back into the fire. It burned hot and even and long.

Schulman was in the process of proving that bristlecone pines were the oldest living things. He already believed it, but proving the age of trees is far harder than just counting rings. Intensive statistical correlation must establish the ring-producing tendencies of a certain species in a certain location before the number of rings can be interpreted into years of growth. Some trees commonly grow multiple rings in wet seasons; others miss rings in dry years. Schulman's book, *Dendroclimatic Changes in Semiarid America*, is a maze of graphs and statistics. Like nails to a carpenter, these were the tools of his trade.

While most foresters contemplated long lives dealing with third and fourth growths of a "renewable resource," Schulman dealt with trees already more than 1,000 years old when King Tut ruled Egypt. His poor health magnified this contrast. Although only in his forties, his bad heart made him realize that his own life might not be very long. The high mountain home of the bristlecone, with its steep terrain and thin air, was among the worst places for his health, yet year after year he persisted in his research.

Schulman was basically a practical, scientific man. Perhaps his fascination with the "Methuselahs," as he came to call the oldest trees, was the contrast between their longevity and his own tenuous claim on life. Perhaps, like all of us, his mind occasionally wandered in an unstructured, mystical, superstitious fashion. Whatever the emotional trigger, he gradually restated the goals of his bristlecone research, depending on his audience and the evolution of his thought. For the scientific journals he wrote that the primary goal of tree-ring research was the record of rainfall and temperature in times before man recorded such things. For a more popular magazine he said, "The capacity of these trees to live so fantastically long may . . . serve as a



Galen Rowell

Galen Rowell, a freelance writer and veteran mountaineer, will participate in the American K-2 expedition, which plans to assault the second highest peak in the world in the summer of 1975.

guidepost on the road to understanding longevity in general."

Weeks before these words appeared in the March, 1958, issue of *National Geographic*, Schulman died of a heart attack. One of his friends is convinced that behind the facade of a dedicated researcher was a doomed man hunting for an elixir. Like Ponce de Leon, he never found his fountain of youth.

Appearing in the same magazine and during the same decade as an article conferring the title "Oldest Living Things" on the giant sequoia, the bristlecone story brought world attention both to Schulman and the trees. In April of that year the U.S. Forest Service established 28,000 acres of the White Mountains as the Ancient Bristlecone Pine Forest Botanical Area, naming the area with the oldest trees, "Schulman Memorial Grove."

Like Schulman, I too have warmed my hands over the hot, even coals of bristlecone wood in more than one Great Basin mountain range. Since the days of prehistory, man has used trees for tools, weapons, shelters, and fires. Bristlecones have not escaped this use. Power poles on the road to Goldfield, Nevada, were originally made of bristlecone, as were poles on the powerline to the Barcroft Laboratory at 12,500 feet in the White Mountains. Forest Service signs, a cross in a Bishop, California, church, and the firewood in many local homes were all bristlecone. A basic dilemma exists when modern man comes in contact with bristlecone: the idea that wood is useful and ornamental versus the inescapable conclusion of any sensitive individual who walks through a grove of bristlecone that there is something very special about these twisted trees. On a mountain pack trip more than 20 years ago, my mother jotted down these words:

"Why is the ugly in Nature so beautiful? Why do we notice and reverence the jagged, rocky, forbidding peaks more than the smooth symmetrical ones? Why do we carry in our minds the picture of the knotted, twisted tree, or the dead tree hit by lightning and forget the sedate, proper trees that have grown according to pattern?"

Why indeed? Why should bristlecone become protected with the reverence of the Lincoln Memorial (where an armed guard chased me across the lawn because I dared look at the rear

of the buildings), while coast redwoods are being clearcut to the very boundaries of Redwood National Park?

Bristlecones are a very rare combination. They combine scientific evidence of age and climate with a mystical appreciation for their form. The Governor of California may have gotten away in some circles with saying, "If you've seen one redwood, you've seen them all," but he could never say that about bristlecone pine. Each tree is unique, both in its scientific and spiritual importance. The most appalling thing I've seen in recent years was the dead stump of a 4,900-year-old bristlecone pine.

The stump looked me in the eye from a blanket of winter snow at nearly 11,000 feet, below Wheeler Peak near the Nevada-Utah border. In 1964, the living tree was approximately 300 years older than the oldest Methuselah Tree discovered by Schulman in the California White Mountains. Now, chunks of chain-sawed wood lay in the snow, like magically preserved arms and legs on an ancient battlefield. The glory of Gettysburg was not to be found here. No one won when the Forest Service granted Donald Currey, a geographer from the University of North Carolina, permission to cut down a large tree in order to date Little Ice Age events. Apparently, Currey did not have the equipment or expertise to take pencil-sized core samples, which are the basic tool of dendrochronologists. In his scientific report, Currey offers no apology or compassion for his destruction of the earth's oldest known living resident, which he fondly calls WPN-114. We do learn statistics. WPN-114 was 252 inches in circumference, had a dead crown 17 feet high, a living shoot 11 feet high, a single, 19-inch strip of bark, a mean ring-width diameter of 0.47 mm and 4,844 counted rings.

After Currey's "discovery," the Forest Service invited a team of dendrochronologists to search the Wheeler Peak area for an older tree. It was an everything-to-gain, nothing-to-lose proposition. For the dendrochronologists the possibility of finding a tree older than WPN-114 would mean world acclaim. For the Forest Service it would mean considerable relief.

WPN-114 was an anomaly. No bristlecone in that region was discovered within 1,200 years of its age.

Subsequent literature has been purposely obscure, avoiding direct reference to the man-caused death of this tree. Why the Forest Service would wish to conceal this fact is obvious, but the half-truths in the writings of scientists are not. A possible explanation is that most all dendrochronologists have cut down certain trees in their time, but even if they had impeccable scientific justification—which Currey did not—they do not wish to call the kettle black, especially when, some time in the future, they might be caught in the position of asking the Forest Service for permission to remove bristlecone wood from public lands.

I purposely hunted for WPN-114, struggling to spend two March days on fiberglass skis in a region where the tree had survived almost 5,000 such winters in the most adverse timberline conditions. What I saw in that winter sunrise, were chain-saw marks on an ancient soul. The lowland world quickly hides death with rapid decay, but the dry air of the alpine world preserves it, often creating a thing of beauty, which WPN-114 was not. Standing in place, a dead bristlecone is a noble thing. But a stump of the oldest living thing, cut by man, the tool-user, is one of the most repugnant sights I've seen.

Though she never saw the bristlecones, my mother's yellowing mountain notes go far in expressing the roots of human esthetics concerning timberline trees: "The grandeur of Death in Nature! To see a tree that has lived and covered itself with foliage finally die, and for the first time show the Strength and Line of its limbs. To raise them naked and unashamed from the earth to the sky and there, silhouetted, to create for the whole world Beauty as it never before has been conceived. Such is Death in Nature!"

Should age, and age alone, give bristlecone protection over other timberline species? Logically not. We have only to view the way the human race treats the aged of its own kind to appreciate that the mere factor of age could not protect the bristlecone pine. Perhaps this is why legal protection has not worked perfectly. The exact location of the Oldest Living Thing By Default, the 4,600-year-old Methuselah Tree in the White Mountains, is kept a secret for fear that tourists will desecrate it or carry off souvenirs. Al Noren, a White Mountain Forest

WPN-114
2880 B.C.—1964 A.D.

*The ex-Oldest Living
Thing on Earth—
Was ancient when Cortez
conquered Mexico,
Was bent with years when
Caesar entered Gaul,
Was old beyond memory
when Moses delivered
the Law,
Was Time's patient watch-
man when Cheops built
his pyramid,
Was sliced by a chainsaw
to see how old it was.*

Requiescat in Pacem



Galen Rowell

Ranger who loved the bristlecone and first brought public attention to them by reporting the dimensions of the Patriarch Tree as a world's record, paneled his home in Big Pine with bristlecone shortly before the botanical area was made official. He had walked through the bristlecone hunting Indian artifacts long before a road made the area accessible, but I couldn't help thinking, as I looked at the beautiful paneling in his home, that the wood belonged in the mountains, where it would have resisted decay for another era.

Charles W. Ferguson, a successor of Schulman, also decries the loss of dead bristlecone wood, but for other reasons. In an article in *Science* he wrote:

"The beautiful sculpturing of the bristlecone wood makes it particularly desirable, and even in areas where collecting is restricted, wood is still disappearing. In our research in the White Mountains and other bristlecone areas, we have noted that the more accessible the area is, the less wood on the ground and the more saw cuts there are on trees. As a dendrochronologist, therefore, I must compete with the public for my basic research material: a small, often quite attractive piece of wood that may hold the solution to a dendrochronological problem may become someone's personal memento."

Even Schulman, who dreamed of elixirs and clues to longevity, would not have predicted the far-reaching effects of his bristlecone chronology. For many years, tree-ring dating was primarily an archeological tool for dating timbers from sites in the American Southwest. Then it became accepted as a scientific tool for understanding world climate before man kept records. It gained popular acclaim for pointing out the locations of the oldest living things. Eventually it ran headlong against the scientifically accepted carbon-14 dating system—and won. But as the story of bristlecone and radio-carbon unfolds, it returns to archeology, where the twisted trees in the Great Basin ranges have brought about a revolution in Old World prehistory. The previously accepted theory of cultural diffusion, which explained that culture in early Europe spread from prior civilizations in Egypt and Mesopotamia, has now had its complex chronology reassembled. Bristlecone-corrected carbon-14 datings now show that many aspects of European culture are actually older than their assumed Mediterranean progenitors.

It has been but a single century since the theory of evolution altered the framework of biological and social sciences—a change that is still incomplete. Modern archeological theories tracing European cultures to Egypt

and Mesopotamia are, in part, vestigial conglomerates held together by a cement of Judeo-Christian beliefs. Because of their own culture, early scientists unconsciously stacked evidence behind the remnants of their biblical heritage, guessing at dates to order the spread of civilization in Europe. When carbon-14 dating came on the scene in 1949, it was little used by Egyptologists. They already had a highly functional ancient calendar derived from the written records of astronomical events. This record took them to 1900 B.C., beyond which they depended on the "king lists," which did not include astronomical events. Carbon 14 was used extensively for dating European artifacts of the Neolithic period. By coincidence, C-14 did little to upset the theory of cultural diffusion. Only a few discrepancies were found, and their sharp edges were rounded off to make them fit the overall pattern.

A skirmish developed between the C-14 physicists and the Egyptologists. Datings agreed reasonably closely until 1500 B.C., beyond which the physicists claimed that the Egyptian calendars read too old. By 3000 B.C. the discrepancy was on the order of five centuries. Tree-ring researchers in the United States had noticed similar discrepancies in C-14 datings of bristlecones, but there were very few

Continued on page 36

The Athabasca Tar Sands

PAT KARIEL

BEFORE A COUPLE of years ago, few people outside the oil industry or the Fort McMurray area in northeastern Alberta had heard of the Athabasca tar sands. These bitumen-saturated sediments, though known to the local Indians for centuries, were "discovered" by the White Man less than 100 years ago, and until recently were considered to have little economic value. Though tar sands were used in the early part of the century to pave the streets of Edmonton, subsequent attempts at commercial exploitation were sporadic. The breakthrough finally came when the Alberta Research Council developed a process for separating the tar from the sand, making it accessible for further refinement into synthetic crude oil. Although one plant has been in production on a small scale since 1967, interest in further development lagged until the energy crisis of 1973 sent prices of crude oil soaring, making the commercial exploitation of the tar sands suddenly seem economically feasible.

But no sooner had the grand prospect of a "new Saudi Arabia" reared its head than it was beset by economic, technological, and environmental problems. One New York securities firm, in a report issued to client investors, agreed with those who had referred to the tar-sands development as "a cemetery of engineering hopes and theories" and advised against investing in the project. On May 6, 1974, a headline in *Oilweek*, the key trade journal of the oil industry, said: "Underestimation of Tar Sands Problems Slowing Down its Rate of Development." The accompanying article began: "Size and complexity of problems, equipment and capital expense have all been underestimated initially,

president Frank K. Spragins of Syn-crude Canada Ltd. told the Engineering Institute of Canada Athabasca tar sands conference in Edmonton."

Potential environmental problems have been underestimated as well, according to reports from recent on-site visitors to the single operating



Alan Ross

plant in the area. The tour indicated that answers to some of the most crucial environmental problems still have not been found, despite optimistic assurances from the company's "educational" representative, who conducted the tour. These problems include the siltation of streams and lakes from the destruction of natural drainage patterns, destruction of salmon-spawning areas, contamination of groundwater and the Athabasca River, and air pollution. But so far, neither economic nor environ-

mental difficulties have dissuaded the oil companies from pursuing their goal.

To be sure, the prize is considerable, for the Athabasca deposit, which covers some 11,000 square miles, contains 88 percent of the evaluated tar-sands reserves of the province. To refer again to *Oilweek's* report: "Out of the 626 billion barrels of oil obtainable from the tar sands estimated for the Athabasca, only 74 billion barrels are surface minable (within 150 feet of surface), while 416.5 billion barrels are under more than 500 feet of overburden, the minimum depth usually associated with in-situ recovery methods, said M.A. Carrigy, senior advisor on oil sands, Alberta department of mines and minerals. This leaves 135.4 billion barrels in a 'no-man's land' for which no current extraction technology other than underground mining exists." By comparison, Canada's present annual domestic consumption rate of oil is .64 billion barrels. Assuming no growth in demand, the surface minable tar sands alone would provide for all the country's petroleum needs for over 100 years. If *in-situ* mining techniques were developed, another 362 years' supply could be added. But if Canada's rate of consumption continues to increase by five percent a year, which seems more likely, its total known recoverable petroleum reserves, including the tar sands, will last only 70 years, rather than the 625 projected for a no-growth situation.

DEPOSITS of tar-saturated sand lie under more than 11,000 square miles of northeastern Alberta. They are part of a wedge of sediment that overlies pre-Cambrian basement

layers.

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rock, the geologic backbone of North America. The lower part of the wedge consists of limestone, dolomite, and salt deposited from a widespread shallow sea that covered the area during the Devonian period, about 350 million years ago. These rocks were tilted and partly eroded, and then covered by sand deposits during the Cretaceous period, about 100 million years ago. Some time later, tar migrated in from an unknown source, impregnating the sand with viscous bitumen. Most of the resulting tar sand is now buried under 150 to 2,000 feet of younger sand, shale, and glacial drift. It surfaces only in the valley of the Athabasca River, which has eroded through the overlying layers.

The issue at present seems to be not whether the tar sands will be exploited, but how and at what rate. Herman Kahn, the self-styled American futurist, has advocated a headlong development program financed by foreign capital and manned by Asian labor, a scheme that prompted one Canadian newspaper to declare: "It would be as though the 10,000 square miles of tar sands were declared international territory, for the international benefit of virtually every nation but Canada." Farfetched as Kahn's proposal sounds, it has the vocal support of cabinet member Jean-Pierre Goyer, Minister of Supply and Services. Others are being more cautious.

Harold V. Page, president of Hydrocarb Consultants, Ltd., told the Edmonton tar-sands conference that "The most credible scheme for tar-sands development is the 1972 proposal by the Alberta conservation and utilization committee, representing 19 provincial departments and agencies." This committee's report agrees with an environmental study commissioned by the Alberta Department of the Environment, which recommends that not more than one new plant be constructed every four years. Right now, however, this recommendation is being ignored. One plant, operated by Great Canadian Oil Sands (GCOS), a fully-owned subsidiary of Sun Oil, is producing about 50,000 barrels a day. A second plant, built by Syncrude (a consortium of Imperial, Atlantic-Richfield, and Gulf), is scheduled for 1978. But after that, approval has been given for the construction of three plants in two, rather than four-year

intervals, as recommended in the environmental study.

Compared with the environmental hazards accompanying exploration for and exploitation of conventional oil resources, the process of extracting and processing the bitumen contained in the tar sands is an especially risky enterprise. Every step poses problems that must be solved if irreparable damage to the extremely fragile northern environment is to be avoided. Except for the river valleys, most of the area is poorly drained and covered with water-saturated muskeg, the "peat bog of the North." Tampering with the muskeg could create serious hydrological problems, and the land itself will be slow to recover from the effects of strip mining. For though this region lies south of the permafrost line, its short growing season (60 to 80 days) and long, cold winters mean that the processes of biological recovery will proceed slowly—very slowly.

All the plants now projected will rely essentially on the same process that GCOS is now using. First, the muskeg, which covers most of the area, is drained and then removed, along with the surface vegetation. Next, a gigantic earth-moving machine strips the overburden, the layer of mineral soil overlying the tar sands, which is then trucked away and used to build dikes for the tailings pond. Huge bucket excavators, each 100 feet high and 210 feet in length, dig out the tar sand, which moves to the processing plant by conveyor belt. There, it is mixed with hot water and steam; the resulting bitumen froth is skimmed off. The waste water and sand go to the tailings pond. The bitumen is heated to fragment the molecules, producing petroleum coke and various liquids and gases. The liquids are processed into naphtha (a precursor of gasoline), kerosene, and gas-oil, which is about the same weight as diesel or heating oil. The gaseous components include the fuels butane and pentane, as well as environmentally hazardous hydrogen sulfide and various oxides of nitrogen.

Drainage of the muskeg can overload surface streams and lakes with water and silt, which in turn will damage fish-spawning areas. Subsequent land clearance and removal of the overburden completely will destroy existing land contours, further changing surface drainage patterns

The 626 billion barrels of oil lurking in the tar sands of northern Alberta are a sore temptation to the oil industry, sore because the costs of getting the oil may be too high. The environmental costs have been too high all along.

and adding to the siltation load. These operations may also contaminate subsurface water. A layer of water-deposited salts, called evaporites, lies above the tar sands. When it is exposed, surface water seeping down may dissolve the salts and eventually carry them into the Athabasca River. Experience in other areas certainly indicates that adverse consequences to biological ecosystems could result not only locally but also downstream (north) throughout the entire Peace-Athabasca Delta. Any further damage could prove catastrophic.

Furthermore, excellent as Environment Alberta's criteria for site reclamation may be, they are worthless if means of meeting them are lacking. It is not simply a matter of returning the tailings to the mined areas and then revegetating the surface. After processing, the highly compressed tar sands increase in bulk by a factor estimated at anywhere from 12 to 40 percent. But if liquid as well as solid tailings are also stored indefinitely, as seems likely, about twice the total volume of mined tar sands will be produced. The *Oilweek* article admits, "This would result in insurmountable difficulties for hydraulic tailings disposal systems in terms of water supply, logistics, conservation and environmental impacts." Even if this difficulty could be overcome, the problem of satisfactory revegetation would remain. Grass has been grown in some experimental plots—with huge erosion ditches where it failed to survive. Other native vegetation has not done well either, partly because of browsing by animals.

After the tar sands have been mined, the process of separating them from their store of bitumen presents one of the greatest environmental hazards associated with the project. For the liquid tailings that remain after the bitumen has been removed are ex-

tremely alkaline, with a pH of 9.3, and would have to be stored in tailings ponds indefinitely in order to avoid serious, long-lasting contamination of local surface and ground waters and destruction of vegetation. According to *An Environmental Study of the Athabasca Tar Sands*, a glossy summary of the environmental impact of the Syncrude plant, "The concentration of these contaminants would have to be reduced significantly to permit any discharge of the liquid wastes." Under the regulations of the Alberta Department of the Environment, these tailings are to be contained in ponds and not discharged, but what will happen to them in the long run is difficult to answer. The original plan of both GCOS and Syncrude was to treat them so that the water could be recycled through the plant. In a personal communication, Syncrude explains: "In essence, the total water required will be removed from the Athabasca River until approximately 1982. After this time, extraction processes will be carried out using water from the river to compensate for evaporation . . . At the conclusion of operations the tailings water will be treated in whatever way appears technologically feasible, and left in a condition 'to be acceptable relative to chemical, biological, circulatory and hydrological considerations.'" (Italics mine) But *Oilweek* contradicted Syncrude's position when it said that "effluent will probably be held in perpetuity for environmental reasons." But equally important environmental reasons require that the level of the Athabasca River remain more or less the same. Recycling is the essential, if expensive, answer.

The Syncrude plant alone will use ten percent of the minimum flow of the Athabasca River in order to process the tar sands; each additional plant will need a similar amount. The drastic effects of this substantial withdrawal of water have not been precisely determined, but they can well be imagined—alteration of riverside ecosystems, destruction of wildlife, disruption of the subsistence economies of local native villages, and a threat to the salmon that spawn in the region. Despite Syncrude's assurances that after 1982, only relatively small amounts of Athabasca River water would be used, a recent on-site visitor confirmed information received by the author from other sources that this

prospect seemed unlikely. GCOS is now recycling only a very small fraction of the water it uses, and so far there is no method for separating out the fine silt or for purifying the water chemically or biologically. Total recycling thus remains a dream for the future; the ever increasing demands for river water, the likely reality.

Even in the short run, what happens to the liquid tailings? The question of how much will be lost by seepage through the dikes and pond bottoms has not been answered. One opinion is that the bottom and upstream end of the pond will be sealed by sludge once a certain amount of seepage has occurred, although some spilling will take place continually during filling. One geologist, whose specialty is strip-mining operations, said it is possible that, depending on the make-up of the dikes, the seepage could saturate them and cause a massive collapse. Since the dikes and pond bottoms are constructed of either overburden or sand, rather than clay, the possibility of both seepage and massive rupture of the dikes is greater than environmentally sound practices would permit.

Finally, even if the problems of water pollution, water supply, siltation of rivers and streams, and reclamation of the land were somehow solved, there would remain the serious problems arising from the process of upgrading the tar to synthetic crude oil, most notably, the problem of air pollution. Since the tar contains large quantities of both nitrogen and sulfur, both NO_x and SO₂ (sulfur dioxide) are produced in the refining process. Even though environmental regulations provide for stack scrubbers and other methods to remove 98 percent of these gases, the total amounts released, especially in multi-plant operations, will almost certainly damage vegetation, and may be hazardous to animals and humans.

WHAT EFFECT will the changes accompanying development have on the present residents of the area? Canada's North is just beginning to feel the impact of economic development. Over the entire history of the white man's occupation of our continent, the native peoples and Metis have consistently come out on the losing end whenever the ruling whites wanted any resources: furs, whales, seals, trees, ores, oil and gas,

and now the tar sands. Consequently, it has become increasingly difficult for them to maintain even a semblance of their traditional way of life. Hunting and fishing become less productive each year. The lure of quick money to spend on useless gadgets draws many young people away from their homes, only to be rapidly disillusioned by the reception they get from whites.

Many people claim that the native way of life is already gone. In recent years, however, there has been a resurgence of ethnic consciousness. Many tribes are making a conscious effort to inculcate their youth with the traditional values, which they believe to be superior to the white man's. They have sought to live in harmony with nature rather than to conquer it; to draw their livelihood from it without destroying it. But the rapid advance of technology and development makes it unlikely that they will succeed in saving what the majority seems intent on eliminating forever.

Development of the tar sands also poses political and economic problems. Although it is impossible to explain the Canadian situation briefly, it is essential for Americans to remember that Canada is a sovereign state. Historically friendly to the United States, it is recognizing that it has its own interests to look out for.

Many Americans think of Canada as a petroleum-exporting country. While it is true that western Canada exports oil and gas to the western U.S., eastern Canada imports its oil, mainly from Venezuela. The two almost equalize. With the present oil crisis and the escalating world price of crude oil, conflict already present between the oil-producing western provinces (mainly Alberta and Saskatchewan) and the oil-importing east has intensified. Because the east was formerly able to get Venezuelan oil much cheaper than western Canadian oil, the west's call for a trans-Canada pipeline went unheeded. But now that eastern Canada must pay far higher prices for imported oil, this population center of the country is calling for immediate construction of the formerly scorned pipeline. Pressure for self-sufficiency in oil and gas, with a phase-out of exports, is growing.

Before its May, 1974, victory, the Liberal government of Pierre Trudeau imposed an export tax on petroleum,

Continued on page 32



Nancy Newhall and the American Earth

The Passing of a Vision

The story of the modern Sierra Club and its place in the American consciousness is very much the story of the works of Nancy Newhall and Ansel Adams. They brought to the public a new and lasting vision of man and nature and set the tone and quality of subsequent works that have moved the spirit of mankind.

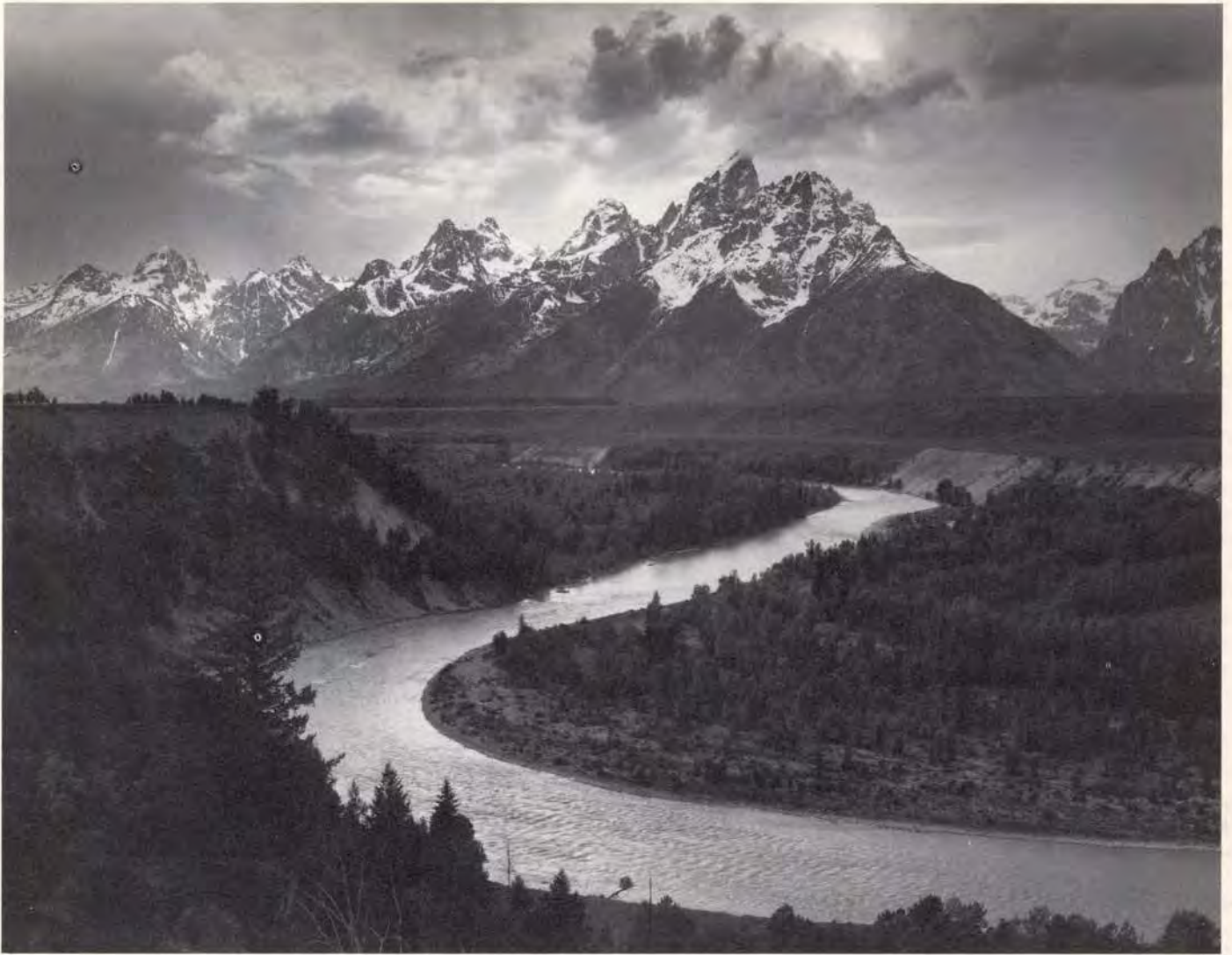
Nancy Newhall died this July of 1974 of injuries she suffered two weeks earlier when a tree undercut by the rapids of the Snake River fell across the craft in which she was making yet another adventurous journey in our American wilderness. She was 66 years old.

In honor of this noble soul and her fortunate partnership with the West's greatest photographer we present once again some of the words of Nancy and the photographs of Ansel from their landmark book, *This Is the American Earth*.

*You shall know the night—
its space, its light, its music.
You shall see earth sink in darkness
and the universe appear.
No roof shall shut you from
the presence of the moon.
You shall see mountains rise in the
transparent shadow before dawn.
You shall see—and feel!—first light,
and hear a ripple in the stillness.*



*Shall we not come as pilgrims to these sanctuaries?
limit, where need exists, our numbers,
that each may find a singing solitude and pass
free as a cloud's shadow?
Shall we not leave behind, below, tensions and frenzies,
the cacophony of machines and fractured time?
Shall we not strip to essential skills,
embrace the deep simplicities?
Be heir once more of all light's splendor, back in diurnal time,
time of the turning earth and of the rising stars?
Approach, humbly and on foot—in joy—the thresholds of heaven?*



*Life and death on this planet now lie in Man's hands.
At depth after depth we penetrate these phenomena which encompass us.
Still beyond our grasp shimmer the ultimate truths.
Unless we master these, how shall we learn—not to die—but to live?*

*What wisdom guides life's ever-changing balances?
What subtle factors work in flesh and spirit to cause one kind to rise
to dominance and brilliance while its near kin declines into extinction?*

*After overuse by Man, the earth remains barren.
Yet after vast natural disasters—earthquakes and tidal waves, fires,
volcanos, glaciers, hurricanes—life builds back, if undisturbed by
Man, stage upon stage, to richness.*

What are the forces of renewal?



*Even the soil beneath our feet is life—
—the fabric of a living chemistry so complex its final processes elude us
—the fabric of years, centuries, millenia, of living and dying
by plants and animals moving above in the light
by rodents, insects, worms moving below in darkness,
by group after group of fungi and bacteria transforming
the minerals of the planet, the gases of air and water,
the leaves, shells, bones and flesh death discards
on into substances life can use again.*

*Tenderly now
let all men
turn to the earth.*

Ancient Wrongs and Public Rights

T. H. WATKINS

PERHAPS THE MOST consistent losers in the lottery known as the American Dream have been the country's first immigrants—the Indians. The long sorry tale of the culture clash that turned their world upside down is too familiar to go into in any detail here, save to remark that it seems a minor miracle that any Indians at all remain. "It is the nature of human ecology," anthropologist John Greenway has written, "that hunting-gathering and Neolithic peoples cannot survive against the onslaughts of expanding agriculturists. The fact that the Indians—and especially the Plains Indians, who upon their acquisition of the horse reverted to a hunting-gathering subsistence—managed to save not only their populating viability but also their pride and their culture, is a tribute to the psychic energy that made them and motivated them."

The U.S. census for 1970 recorded the living presence of 791,839 American Indians, a population respectably close to that which existed when the first seasick settlers stumbled ashore at Jamestown in 1607. The Indians survive, but too many survive at the lowest level of American society, trapped there by two centuries of a paradox that lies at the core of American life. We are certainly not the first highly developed agricultural people to have overrun lands occupied by a marginal subsistence culture, but we may be the first people in history to have assumed a burden of guilt because of it. Even as the first powerful thrust of the westward movement was filling up the valley of the Mississippi with expanding agriculturists, President James Monroe could lament the fate of the Indians in 1818: "The progress of our settlements westward, supported as they are by a dense pop-

ulation, has constantly driven them back, with almost the total sacrifice of the lands which they have been compelled to abandon. They have claims on the magnanimity and I may add, on the justice of this nation which we must all feel. We should become their real benefactors. . . ."

That sentiment, expressing at least a theoretical benevolent paternalism,

". . . land does not belong to any single man but to all people and to the future generations."

*John Fire/Lame Deer, holy man
of the Lakota Sioux, 1972*

"The Indians just want their land back. . . . The Indian is tired of being ripped off and he wants his land back."

*Barrie Caldwell, member of the
American Indian Movement, 1973*

was absorbed into the bloodstream of the growing beast we soon came to recognize as bureaucracy. Yet the sentiment was the child of an eastern environment, where the Indian "problem" was almost an abstraction. But out on the cutting edge of the frontier, the problem was no abstraction, but a reality whose raw and sometimes bloody outlines could not be softened by rhetoric. The Indians occupied the land; the frontier settlers wanted the land, demanded the land, would not be denied the land. And as the westward movement grew in force and political significance, its desires not only could not be ignored, they had to be accommodated if the nation itself were to survive. The government in

Washington found itself in the dilemma of having to do what its highest ideals said it could not do—dispossess an entire race of people. Forged in necessity and fed by confusion, the official Indian policy in the United States remains an amalgam of guilt, greed, promises, broken promises, and a desperate inability to reconcile the forces of history and conscience.

"That the Indian is confused in mind as to his status and very much at sea as to our ultimate purpose toward him, is not surprising," Interior Secretary Franklin K. Lane wrote in 1914. "For a hundred years he has been spun around like a blindfolded child in a game of blindman's bluff. Treated as an enemy at first, overcome, driven from his lands, negotiated with most formally as an independent nation, given a treaty, a distinct boundary which was never to be changed 'while water runs and grass grows,' he later found himself pushed beyond that boundary line, negotiated with again, and then set down upon a reservation, half captive, half protégé. What could an Indian, simple thinking and direct in mind, make of all this? . . . To him it must have seemed the systematized malevolence of a cynical civilization. . . . Manifestly, the Indian has been confused in his thought because we have been confused in ours."

The confusion continues, and because of it the Indian today is the least well-fed, the least well-housed, the least well-educated, the least healthy, and the least employed minority group in the United States. None of the solutions offered by the government in the past or in the present has done much to bring him out of this abyss of poverty, and since this is an age of activism and ethnic assertiveness, it should not be surprising to see the Indian—like the black and Chicano before him—beginning to present his own solutions. Nor should it be surprising,

since confusion is contagious, to find that at least one of these Indian "solutions" suffers as much from confusion as those the white man has suggested.

The particular solution offered is land, perhaps as much as 110 million acres, to serve as a "land base" for Indian survival, some of it to be carved out of existing national parks and forests, but most of it out of the nearly 200 million acres of the public domain (otherwise known as National Resource Lands) remaining in the lower 48 states, land owned by *all* American citizens—including the Indian. First widely promulgated by Kirke Kick- ingbird and Karen Ducheneaux in *One Hundred Million Acres* (1973), the basis of the demand is the same that activated the proceedings of the Indian Claims Commission, established in 1946: the conviction that many Indian tribes have legitimate claims on land out of which they were cheated or from which they were driven in the nineteenth century. Up to now, the bulk of the claims have been recompensed in money, but there is a growing sentiment among Indians and those who support them that payment should be in land, not money. Even so, most of the claims have been settled—to the tune of some \$400 million as of April, 1973.

The militant American Indian Movement, founded in 1968 and notable for its participation in the seizure of the Bureau of Indian Affairs building in Washington in November of 1972, and the second "battle" of Wounded Knee in February and March of 1973, carried a 20-point proposal to Washington by the "Trail of Broken Treaties Caravan" in November of 1972. In this proposal, AIM articulated its "land base" demand: "The next Congress and Administration should commit themselves and effect a national commitment, implemented by statutes or executive and administrative actions, to restore a permanent non-diminishing Native American land base of not less than 110 million acres by July 4, 1976. This land base and its separate parts should be vested with the recognized rights and conditions of being perpetually nontaxable, except by autonomous and sovereign Indian authority, and should never again be permitted to be alienated from Native American or Indian ownership and control."

It might be tempting to dismiss AIM's 110-million-acre proposal as

little more than another example of radical excess, to be taken no more seriously than, say, black nationalist demands for the creation of a separate black nation were once taken. Unfortunately, the temptation begins to dissipate in the light of several facts: that a minority plank supporting the allocation of federal surplus lands to Indians on a first-priority basis passed by a voice vote punctuated by war whoops during the Democratic National Convention of 1972; that a recent claim by the Havasupai Tribe of Arizona for 256,300 acres—almost all of which would come from Grand Canyon National Park and Monument and Kaibab National Forest—has been at least partially supported by such diverse political types as Senator Edward Kennedy and Senator Barry Goldwater; that a judge involved in the still unsettled claim of the Pit River Indians of Northern California for 3.4 million acres (including parts of Lassen National Park and Forest) has commented that "These Indians may very well file suit for ownership to that land and win it"; that the Indians of the Taos Pueblo of New Mexico were in fact given 48,000 acres of Carson National Forest in 1971; and that the Indians, Aleuts, and Eskimos of Alaska were in fact allotted no less than 40 million acres by the Native Claims Settlement Act of 1972. The Administration, while legitimately pointing out the vagueness of the AIM demand, apparently misunderstood its scope: "The Federal Government now holds in trust about 40 million acres of tribal land owned in common, plus approximately ten million acres of land held in trust for individual tribal members. In addition, the title to 40 million acres has been confirmed by the Congress as belonging to Alaska Natives. . . . Assuming the above land is included in the suggested 110 million acres land base, this proposal calls for giving to Indians an additional 20 million acres of land. But what is omitted is the fact that claims concerning some of this additional land (it is difficult to know how much since the 110 million acres are not identified) are undoubtedly [sic] involved in the 250 cases now pending before the Indian Claims Commission."

But the government's assumption is incorrect, for if AIM spokesmen are to be believed, the 110 million acres are *in addition* to the 90 million acres now conceded to the Indians and Alaska

Natives, bringing the total claim to 200 million acres, all from the public domain. If we allow this land to become a hostage to confusion, neither the Indian, the land, nor our posterity will benefit.

And there *is* confusion involved, a confusion buried in three assumptions whose flaws have evidently escaped detection. The first of those assumptions is that any given tribe of Indians has a claim on any given piece of land by right of prior occupancy. Strictly speaking, the legal validity of such a claim remains open to debate. Those who recognize its validity point to the Treaty of Fort Stanwix of 1784, which ceded lands to the Six Nations, and to similar treaties concluded with various tribes throughout the nineteenth century. Those who question the legality of these treaties argue that the U.S. Ordinances of 1785 and 1787, which ceded to the federal government all lands not then privately held, for distribution among the populace or for the designation of new territories outside the original 13 states, legally precluded turning over these lands to "foreign powers," even if these powers happened to be American Indians.

But whether the Indians' current claims are strictly legal or not, they do, rightly or wrongly, possess clear moral authority with many Americans, and recognizing this, those making such claims invariably assume the highest moral tones, with the clear implication that the appropriation of Indian lands by white society was a callous act unprecedented on the North American continent—an act *unique* to white society. This tone, which plays upon the strings of our guilt, enforces the Indians' contention that he has a moral as well as a legal claim to the land. "The Indians just want their land back," AIM leader Barrie Caldwell has said. "I know if I owed the white man something, he would come and take it back. The Indian is tired of being ripped off and he wants his land back."

Quite apart from the fact that land ownership was a concept alien to most Indian societies in the United States, this presumption of morality deserves examination, for it implies a static condition among Indian societies at the time of European intrusion, a system of neatly carved up and uncontested plots of land held in peace and

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Pipeline at Valdez by Tim Thompson

Great Stakes in the Great Land

Alaska Lands for Public Good

Alaska is the largest of the United States, the most beautiful, and for various reasons—biotic and economic as well as esthetic—the most valuable. Yet today it remains our least-known state and the subject of the greatest misconceptions. A surprising number of people who have not seen Alaska still picture it as a vast ice-locked wasteland, producing little besides polar bear, caribou, mosquitoes, and recently, oil. It is indeed hard to convey in words the true largesse of Alaska's riches, the qualities of this last great wilderness, and the extraordinary opportunities it offers the human spirit. Some of the most eloquent writers, John Muir among them, have tried and failed. And color photographs themselves can portray only a part of the picture. The increasing number of tourists who do see Alaska are too often herded in crowds, jet-borne, and presented with a narrowly proscribed view of the state. And while the trans-Alaska pipeline has attracted national attention to certain of Alaska's economic and environmental problems, little has been said in the public press of the critical land-use decisions being made in Alaska today, decisions that affect every American.

At this moment, Alaska's 370 million acres are being finally parcelled out: millions are passing into uncontrolled private ownership; millions are being earmarked for the kind of exploitation that has scarred and destroyed so much of the contiguous 48 states during past decades. In the greatest subdivision in history, Alaska is up for grabs.

It is important to understand the terms of this subdivision. They were written by Congress in two significant but generally little known pieces of legislation: the Alaska Statehood Law of 1958, and the Alaska Native Claims Settlement Act of 1971. The Statehood Law presented the State of Alaska with over 103 million acres of public land (plus another 30,000 to 40,000 acres of tidelands), far more, both actually and percentage-wise, than any other state has ever received. The Native Claims Act (ANCSA) provided for the conveyance of

another 40 million acres of public lands to the Alaskan Natives, along with a cash payment of about \$1 billion. (An Alaskan Native is defined as any U.S. citizen, regardless of residence, who is descended from at least one Alaska Indian, Aleut or Eskimo grandparent. Present estimates set the number of Alaskan Natives at about 65,000.) In ANCSA, Congress also acknowledged a responsibility to set aside adequate parks and protected wildlands in Alaska, these to be the national heritage of every American citizen, Alaskan or otherwise. In ANCSA, in fact, Congress included machinery to allow the selection of as much as 125 million acres for such national-interest lands.

Few people quarrel with the overt intent of these two congressional acts which subdivide Alaska: they were meant to make the State independent, to give the Native peoples their just rights, and to serve the broad public interest. Inevitably, however, special interests influenced the writing of these acts. And unfortunately, neither act recognized the critical importance of maintaining the integrity of Alaska's magnificent and invaluable ecosystems. (ANCSA, in fact, decrees by law a kind of wholesale fragmentation—and in many places a devastating checkerboard pattern—of land ownership.) Nor did either act include effective long-range land-use planning as a prerequisite to the disposition of these, America's most valuable, public lands. Furthermore, both acts contain loopholes, inconsistencies, and terms that are often confusing and conflicting. For example, ANCSA, intended to be loose and elastic, is instead too often simply nebulous. As a result, the subdivision of Alaska is proceeding hectically and sometimes chaotically. Native selections (on a nearly impossible tight schedule) conflict in places with previous and planned-for state selections. Proposed national-interest-land selections conflict in places with both state and native choices. Priority of selections is a major issue. Litigation is already rampant over who should get what, how much,

and when. It will likely be several years before things are straightened out, and in the long run, Congress must make the final and sometimes hard decisions.

(A complicating and frequently overlooked factor in this complex situation is the corporate structure imposed on both native regions and native villages by ANCSA. The native regions established by the act are required to be profit-making corporations: the villages may opt for profit-making and/or non-profit-making corporations. Virtually every village is choosing to be profit-making. This means that a people who have traditionally lived closely with the land, being dependent upon it and its wildlife for their subsistence, are now forced to become businessmen, and to consider the land they select for its money-making potential.)

Despite the present confusion, the subdivision of Alaska can result in an enlightened land-use program that will allow the survival of Alaska's remarkable qualities. This will require the largest possible blocks of land to be set aside as national-interest lands. This alone can prevent the loss of perhaps the greatest remaining wildlife, wilderness, and scenic resource on earth. Such a loss would not only make poorer the people of Alaska and America, but our planet-home itself. Thus it is in everybody's interest to work for the survival of Alaska, which in the long run just may affect the survival of us all.

PEGGY WAYBURN

THE SUBDIVISION OF ALASKA

The Alaska Native Claims Settlement Act of 1971 grants Alaska Natives the right to select 40 million acres of land from the Alaskan public domain and sets into motion a mechanism to determine the disposition of all federal lands in the state by 1978. To this end, the act directs the Secretary of the Interior to designate for congressional approval those lands which the national interest requires should remain in the public domain. These lands would be managed under one of four systems: the national park system, the national wildlife refuge system, the national wild rivers system (all in the Department of the Interior), and the national forest system (in the Department of Agriculture). While no single government agency is equipped to handle the acquisition and maintenance of these lands, each can do part of the job. Cooperatively, they can achieve the best protection of the Alaskan land possible at this time.

We should set aside from the public domain at least 106 million acres if we are to preserve Alaska's important wildlife and scenic assets. In general, this is the approximate acreage identified by the Department of the Interior as being of special value or ecological concern. But the secretary has designated only some 83 million acres for congressional approval, of which over 18 million would be managed not for protection, but for "multiple use" by the U.S. Forest Service. Conservationists believe it is surely wiser to choose the larger figure, to preserve as much land as possible in our time and leave future generations the option of changing our decision.

The following list (which is keyed to the map on pages 20 and 21) describes those Alaska lands that should be set aside as national interest reservations. These units comprise 106 million acres, at present under the jurisdiction of the Bureau of Land Management, and have been selected to protect Alaska's scenic, wildlife, wilderness, historical, recreational, and ecological resources.

EDGAR WAYBURN

Unit A-1: GATES OF THE ARCTIC NATIONAL PARK (12.2 million acres) North of the Arctic Circle stands the Brooks Range, whose 9,000-foot peaks form the divide between central Alaska

and the North Slope. This park would preserve the spectacular central portion of the range, a region first explored and vividly described by Robert Marshall, who gave the name "Gates of the Arctic" to the two peaks that guard the headwaters of the north fork of the Koyukuk River. A region of rugged peaks, deep canyons, wide valleys, and wild rivers, the central Brooks Range offers unsurpassed wilderness recreation to backpackers, fishermen, naturalists, rock climbers, and boaters. Wild rivers in the proposed park include the swift upper Kobuk and the more gentle Alatna, both of which offer superb river-running opportunities. The park would also include the Killik watershed, the only river system on the Arctic Slope still available for such protection. An abundance of wildlife is found in the area, including grizzly bears, wolves, moose, and the Arctic caribou herd, which migrates through the mountain passes each spring and fall. Essentially, the region's wildlife communities are still complete, the food chain still intact. Together with the following three units, the Gates of the Arctic National Park would protect 24 million acres of Alaska's remarkable Arctic backbone.

Unit A-2: NOATAK RIVER NATIONAL ECOLOGICAL RESERVE (7.0 million acres) This unit would border the proposed Gates of the Arctic National Park on the east and the proposed Kobuk Valley National Monument on the south. It would preserve most of the watershed of the Noatak River, which springs from the glaciers of spectacular Mt. Igikpak and flows west through narrow canyons and broad plateaus on its 425-mile journey to Kotzebue Sound. The reserve would also protect the upper reaches of the Squirrel River, one of the loveliest to drain the Brooks Range, along with 650 miles of major tributary waters, a dozen large lakes, and three mountain ranges studded with gemlike lakes and laced with streams. The Noatak watershed has remained virtually untouched by man, save for the hunting and gathering activities of a single native village, and thus offers vast opportunities for scientific study as well as wilderness recreation. Because of the varied terrain and the presence of two distinct ecosystems—the boreal forest and the tundra—the area supports an unusually rich fauna.

Unit A-3: KOBUK VALLEY NATIONAL MONUMENT (1.9 million acres) Just south of the Noatak Reserve, green tundra-swathed hills, boreal forest, and extensive inland dunes mark the valley of the Kobuk River. The terrain here is gentler than that of the Brooks Range, but the opportunities for recreation and research are no less ample. Campers, hikers, and river runners will relish this area, and naturalists will delight in its abundant wildlife, which includes grizzly and black bears, moose, wolves, and the Arctic caribou herd. The Great and Little Kobuk Sand Dunes are truly remarkable so far north, offering a unique opportunity for ecologists and botanists to study plant succession in the sub-Arctic. Covering some 25 square miles, these dunes are remnants of an earlier inland-dune formation that once spread over 300 square miles. The proposed national monument would also protect archeological sites of major importance, including one where more than 30 successive cultures are represented. With Native cooperation, much can be done to preserve the ancient record of man's activities in this hospitable area.

Unit A-4: SELAWIK NATIONAL WILDLIFE RANGE (2.1 million acres) This unit lies to the south and west of the proposed Kobuk Valley National Monument. The region contains an extremely high population of nesting waterfowl, ducks alone numbering more than 40 birds per square mile. During the autumn, migratory flights commonly comprise some 350,000 birds. The proposed refuge would also protect the threatened gyrfalcon and peregrine



An essential addition to the Mt. McKinley Park: Mt. Huntington by Galen Rowell

falcon, as well as a large mammal population, including that portion of the Arctic caribou herd which winters here.

Unit B-1: ARCTIC NATIONAL WILDLIFE RANGE ADDITIONS (5.6 million additional acres) When the 9-million-acre Arctic National Wildlife Range was established in 1960, more than 200 miles of valleys along its western and southern borders were excluded. These lands are essential to maintaining the free-roaming animal populations the range was intended to protect. Two herds of caribou depend upon the present range and its proposed additions: the Porcupine herd of 150,000 animals calve in the range, and a portion of the larger Arctic herd migrates through the proposed western extension. Other animals include grizzly bear, wolverine, red fox, moose, musk oxen, and Dall sheep. The range should be enlarged on the south and west by 5.6 million acres. It is essential that the withdrawal of a million-acre utility corridor now within the area be revoked.


Unit B-2: YUKON FLATS NATIONAL WILDLIFE RANGE (12.3 million acres) Tens of thousands of lakes, tarns, and ponds, more than 25,000 miles of streams, and uncounted acres of spruce bog make the Yukon Flats one of the single most productive waterfowl habitats on earth. The river basin, which includes the confluence of the Porcupine and Yukon rivers, supports more than two million ducks. Between 10 and 15 percent of the canvasbacks in North America are born here. The proposed range would also offer protection to the peregrine falcon, as well as to the salmon


fisheries that support the Athabascan Indians who inhabit the region.

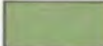
Unit B-3: YUKON-CHARLEY RIVERS NATIONAL PARK (2 million acres) A thoroughfare for explorers, traders, miners, boatmen, tourists, and salmon, the Yukon River is Alaska's most important waterway. Along its entire length, it supports more than three-fourths of the state's migratory waterfowl, some 200 species of birds, and numerous species of mammals. Its periodic flooding enriches the adjacent lands and renews the delicate ecosystems along its banks. Yet no part of the Yukon River is now protected within park boundaries. The proposed Yukon-Charley Rivers National Park would preserve a stretch of the historic upper Yukon, including surrounding rangelands and the wonderfully clear Charley River, an excellent float stream that winds between cliffs where Dall sheep roam. Thousands of caribou calve and winter here; lynx, wolverine, grizzly bear, and fox inhabit the area; the peregrine falcon and other raptors are plentiful. The upper reaches of the Charley River support flora and fauna of nearly every major Alaskan interior species.

Unit C-1: WRANGELL-KLUANE INTERNATIONAL PARK (18.1 million acres) The prospect of a major international mountain park makes this national-interest-lands proposal perhaps the most exciting in Alaska. The region contains some of the most spectacular alpine scenery in the world, culminating in 18,008-foot Mt. Elias and, in Canada, 19,200-foot Mt. Logan. Canada has already

Legend

 Existing National Forests, Parks, and Wildlife Refuge Systems

 Pipeline Utility Corridor
Withdrawals for utility corridor

 The National Interest Lands

Area A: The Arctic and Sub-Arctic

- Unit A-1: Gates of the Arctic National Park
- Unit A-2: Noatak National Ecological Reserve
- Unit A-3: Kobuk Valley National Monument
- Unit A-4: Selawik National Wildlife Range

The following rivers, in part or in whole, are proposed for Wild River Status: the Alatna, Killik, Kobuk, Noatak (including the Cutler, Aniak, Kugururok and Kelly), North Fork of the Koyukuk (including the Tinayguk), Salmon, Squirrel, and Wind*

Area B: The Arctic-Interior Ecosystem

- Unit B-1: Arctic National Wildlife Range
- Unit B-2: Yukon Flats National Wildlife Range
- Unit B-3: Yukon-Charley Rivers National Park

Rivers proposed for Wild River Status: the Black (including all tributaries), Beaver Creek, Charley, Ivishak, Porcupine, and Sheenjek*

Area C: South Central-Southeast Alaska

- Unit C-1: Wrangell-Kluane International Park
- Unit C-2: National Forest Additions
- Unit C-3: Kenai Fjords National Monument

Rivers proposed for Wild River Status: the Alsek, Bremner, Chitina, and Copper*

Area D: The Alaska Range-Aleutian Chain

- Unit D-1: Mt. McKinley National Park
- Unit D-2: Lake Clark National Park
- Unit D-3: Iliamna National Wildlife Range
- Unit D-4: Katmai National Park
- Unit D-5: Aniakchak Caldera National Monument
- Unit D-6: Alaska Peninsula National Brown Bear Range

Rivers proposed for Wild River Status: the Aniakchak and Mulchatna (including Chilikadrotna)*

Area E: Western and Central Alaska—Migratory Bird Sanctuaries

- Unit E-1: Togiak National Wildlife Range
- Unit E-2: Yukon Delta National Wildlife Range
- Unit E-3: Koyukuk National Wildlife Range
- Unit E-4: Coastal National Wildlife Refuge

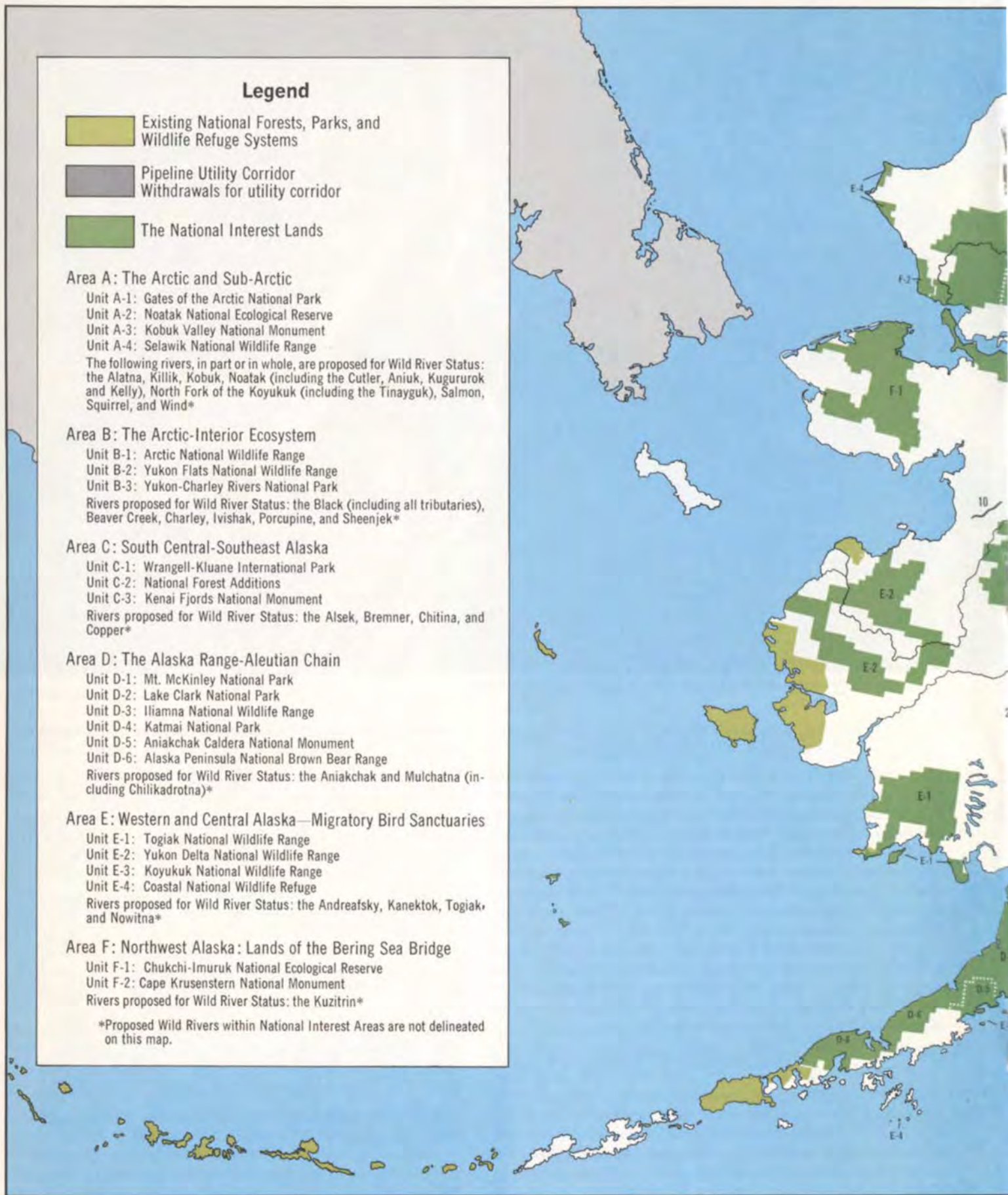
Rivers proposed for Wild River Status: the Andreafsky, Kanektok, Togiak, and Nowitna*

Area F: Northwest Alaska: Lands of the Bering Sea Bridge

- Unit F-1: Chukchi-Imuruk National Ecological Reserve
- Unit F-2: Cape Krusenstern National Monument

Rivers proposed for Wild River Status: the Kuzitrin*

*Proposed Wild Rivers within National Interest Areas are not delineated on this map.



The National Interest Lands

Proposed for protection by conservationists

Conservationists recognize the necessity of maintaining as much as possible the integrity of Alaska's major eco-systems, if the great land and its life are to survive. With this in mind, seven extensive areas are proposed for protection under the terms of the Alaskan Native Claims Settlement Act. Where possible, they are integrated with areas previously reserved by the federal government.

Rivers proposed for Wild River Status (outside of proposed National Reservations)

- | | |
|----------------|----------------|
| 1: Birch Creek | 6: Nelchina |
| 2: Holitna | 7: Nowitna |
| 3: Hoholitna | 8: Susitna |
| 4: Melozitna | 9: Tazlina |
| 5: Mulchatna | 10: Unalakleet |

Rivers proposed for Scenic River Status:

- | | | |
|-----------|----------------|-------------|
| 11: Delta | 12: Forty Mile | 13: Gulkana |
|-----------|----------------|-------------|



Gates of the Arctic Proposal: Arrigetch tarn by Wilbur Mills

In the language of the Aleuts, "Alaska" means The Great Land. And so it is—great in its wildness, its awesome beauty, and its sheer size. Alaska contains more public-domain lands than any other state, federal lands belonging to all Americans. But under the terms of the Alaska Statehood Act and the Alaska Native Claims Act, the state may select from this common heritage 103.5 million acres, and the Alaskan Natives another 40 million. By 1978, Congress must decide which lands shall be preserved in the national interest, and which shall be opened to selection. Its answer could determine whether Alaska's greatness shall endure beyond our brief lifetimes, and whether our greatness as a people shall be remembered at all.

protected its share of this mountainous region in the 6.8-million-acre Kluane National Park and Game Sanctuary. Canadian officials have expressed interest in joining an even larger area to the proposed American park to form what could be the earth's single greatest natural scenic reserve. These mountains contain the most extensive glacial system in the United States and the greatest concentration of peaks over 14,500 feet in North America. Their ice and snow fields feed both the longest and largest glaciers on the continent. The lowlands offer hospitable country for the hiker and camper and superb fishing for the angler. The Alsek River, rising in Canada, has been run only once and attracts only the most daring and expert kayakers. On the other hand, the Copper River offers superb, safe stretches for canoeing and rafting. The area abounds in wildlife, being one of the richest in Alaska, but these animals, along with their lowland habitat, are now threatened by mining operations and possibly by future logging. The Ahtna Native Regional Corporation, whose lands are adjacent to the proposed international park, is interested in the proposal and has indicated its support.

Unit C-2: CHUGACH AND TONGASS NATIONAL FOREST ADDITIONS (1.6 million acres) The proposed addition of 900,000 acres to the existing 16-million-acre Tongass National Forest and 700,000 acres to the 5-million-acre Chugach National Forest are designed to incorporate contiguous lands suitable to national-forest objectives under a single management authority.

Unit C-3: KENAI FJORDS NATIONAL MONUMENT (300,000 acres) Situated about 120,000 miles due south of Anchorage, the proposed Kenai Fjords National Monument would extend from the top of the Harding Ice Field along land recently exposed by retreating glaciers, past a deeply dissected coast, and three miles out to sea. The resulting ice field-fjord association is unique, and the ice field itself is one of only a few in the United States. The coastal waters are populated by seals, sea lions, sea otters, and whales; the coastal land by bear and moose. Bald eagles are common. The region's wave-churned lagoons and estuaries support the giant Alaska shrimp and king crab. Lush green forests of Sitka spruce, mountain hemlock, and western hemlock, along with grasslands, cover the region.

Unit D-1: MT. MCKINLEY NATIONAL PARK ADDITIONS (4.2 million additional acres) Mt. McKinley National Park was established in 1917 to protect the scenery and wildlife of North America's highest and most magnificent peak. The present boundaries do neither. Over half the mountain, including its most spectacular glaciers, lies southeast of the present park. The range of its wolves, moose, caribou, and grizzly bears is lopped off on both the north and the west. The park is one of the few places where one can easily observe at close range some of the remaining great wild animals of North America, but if these animals, and the mountain itself, are to be adequately protected, major additions to the present park are urgently required.



Copper River Delta by Philip Hyde

Unit D-2: LAKE CLARK NATIONAL PARK (5.8 million acres) The proposed national park would rise from Cook Inlet on the east, straddle the massive Alaska and Aleutian mountain ranges, and extend to the rolling hills and flatlands on the west. This comparatively unknown but superbly scenic park area would feature glaciers, volcanoes, and a spectacular coastline, along with numerous blue lakes set in meadowlike tundra and fed by waterfalls and streams. The Chilikadrotna, Mulchatna and Stoney are among Alaska's finest wild rivers. Wildlife includes the Bristol Bay salmon and rainbow trout, trumpeter swans, brown and black bears, wolves, eagles, and the Mulchatna caribou herd. Because the proposed park would be only 100 miles west of Anchorage, wide use of this area could be expected, if the very livable tree- and tundra-covered country west of the mountains is included in the park.

Unit D-3: LAKE ILIAMNA NATIONAL WILDLIFE RANGE (1.6 million acres) Lake Iliamna is the seventh-largest freshwater lake in the United States. The primary function of the proposed range is to protect the wildlife of the region. The rivers and streams support the world's largest remaining population of red salmon and Alaska's finest trophy rainbow trout. Adjacent Bristol Bay is considered one of the continent's richest marine habitats. Lake Iliamna itself hosts North America's only freshwater colony of seals, as well as Beluga whales, which migrate upstream from Bristol Bay. The area is a major fall resting place for migrating

birds, including thousands of black brant. In October, the entire world population of emperor geese congregates in the Bristol Bay region. This area is already heavily used by fishermen and hunters from nearby Anchorage, and future human use will have to be controlled if the native wildlife is to survive. Many Native villages lie within the area, and it is hoped that cooperative agreements can be arranged with them.

Unit D-4: KATMAI NATIONAL PARK (5.6 million acres) The 3-million-acre Katmai National Monument was established in 1918, six years after a massive eruption of Mt. Novarupta created the bizarre moonscape of the Valley of Ten Thousand Smokes. But the area also contains forest, shrubland, grassland, tundra, lakeshore, and coastline, which provide essential habitat to such endangered animals as the red salmon, Alaskan brown bear, and osprey. The strangely beautiful scenery of the area provides a unique setting for campers, hikers, and naturalists. The Alagnak River offers excellent floating opportunities. It is proposed that the present national monument be redesignated as a national park and enlarged by 2.6 million acres on the north, west, and south, thus offering complete protection to the area's wildlife and placing entire watersheds under park service jurisdiction.

Unit D-5: ANIAKCHAK CALDERA NATIONAL MONUMENT (700,000 acres) This caldera of an extinct volcano has formed a complete and inclusive environment of unusual scientific and scenic interest. Old and new lava flows exist side by side in an extraordinary



The North Slope by Wilbur Mills

30-square-mile crater, within which lie the turquoise waters of Surprise Lake. The Aniakchak River spills from this lake through a deep, colorful gash in the crater's rim known as "The Gates." Alaskan brown bear and moose roam the tundra-covered flanks of the caldera. Salmon and trout frequent the streams of the proposed monument, and the coastal waters are rich with life: sea lions, sea otters, and thousands of sea birds. The Aniakchak River is a wild but floatable stream.

Unit D-6: ALASKA PENINSULA NATIONAL BROWN BEAR RANGE (4.9 million acres) North and west of the Aniakchak Caldera, the proposed Alaska Peninsula National Brown Bear Range would ensure essential habitat for one of the two largest carnivores of the North American continent. One of these mammals (specimens eleven and a half feet tall have been reported) requires 64,000 acres to support itself. This proposed range would, in effect, replace that which will be lost in the present Kodiak National Wildlife Refuge as Native village corporations make their land selections.

Unit E-1: TOGIAC NATIONAL WILDLIFE RANGE (3 million acres) This proposed wildlife range would extend from the Wood River-Tikchik Lakes (an area of superb beauty already selected by the state) west to Kuskokwim Bay, embracing a range of habitats from the summit of a 5,000-foot peak to sea level. The area supports 32 species of land mammals and serves as a crossroads for migrating waterfowl and shorebirds. The proposed range would contain mountains, upland tundra, jewel-like lakes, and two superb wild rivers, the Kanektok and the Togiak. This unit would connect the existing Cape Newenham National Wildlife Refuge with three other units.

Unit E-2: YUKON DELTA NATIONAL WILDLIFE RANGE (5.4 million acres) This proposed unit will help preserve the second most productive waterfowl habitat on the continent. Along with two million ducks, geese, and swans, countless shorebirds breed in the delta. During migration, more than three million waterfowl also use the area, along with other migrating species enroute to or from the Soviet Union, Australia, South America, and even Antarctica. The beautiful Andrefsky River watershed, which serves as the breeding grounds for the rare and little-known bristle-thighed curlew, would also be included in the range. A number of Native villages are located within the proposed refuge, most of whose 16,000 inhabitants depend on the land for their subsistence and way of life. These Yupik Eskimos have sponsored a program known as Nunam Kitlusi ("protector of the land"), which aims to educate people to the values of the land and its wildlife. The cooperation of the Eskimos can be hoped for in the establishment and maintenance of this range and others established earlier.

Unit E-3: KOYUKUK NATIONAL WILDLIFE RANGE (8.2 million acres) Nearly 800,000 ducks and geese rest in the marsh areas of the Koyukuk River during the fall migration, and the entire region serves as a breeding grounds for many other kinds of birds, as well as for mammals and fish. The five units of the proposed range would offer protection as well to the wolverine, lynx, marten, and grizzly bear.

Unit E-4: COASTAL NATIONAL WILDLIFE REFUGE (500,000 acres) This proposed refuge would comprise a series of islets, islands, rocks, pinnacles, and cliffs distributed along 1,500 miles of coast from Cape Lisburne in the Chukchi Sea to the Aialik Peninsula in the Gulf of Alaska. Refuge status will provide protection of marine birds and waterfowl and for the preservation of the hauling grounds and rookeries of marine mammals. The refuge would help preserve essential habitat for 16 species of whales (seven of which are endangered), 28 species of other marine mammals, and some four to six million nesting birds.

Unit F-1: CHUCKCHI-IMURUK NATIONAL ECOLOGICAL RESERVE (4 million acres) Situated on the Seward Peninsula, this vast expanse of tundra is rich in human history, offering abundant clues to ancient human migration patterns from Asia. The shoreline in this region is a nearly continuous strip of prehistoric and more recent Eskimo sites. In the northern portion of the reserve, there are remnants of unique ash explosions that have almost completely preserved ancient ecosystems. In the southern portion of the unit, lava flows have encased an ancient tundra world. Scientists will be able to study both the human record and the corresponding natural record of the area from prehistoric times to the present, thus offering a chance to reconstruct a remarkably complete account of man's relationship to the land. The area also contains an exceptional transect of tundra communities, from the coastal tundra (sedge) to the moist tundra (tussock) and the dry tundra (heath). Finally, the area is an important habitat for migratory birds.

Unit F-2: CAPE KRUSENSTERN NATIONAL MONUMENT (350,000 acres) Cape Krusenstern is an ancient and stable promontory whose unusual beach ridges offer unique research opportunities in the study of fluctuating sea levels and coastal currents. Rimmed with lagoons, ridges, and cliffs, the coastal plain will also provide information about the cultures of the ancestors of today's Eskimos and about their progression throughout Alaska. This historical area should be preserved by the nation to recognize and protect the heritage of the Eskimo people.

Unit G: WILD AND SCENIC RIVERS (see map)

**Towards a Dark Future for the Land,
the Sky, the Waters, and the People**

Blueprint for Disaster

ALTHOUGH THE NIXON Administration has fallen, one of its major legacies, "Project Independence," will likely remain, much to the dismay of environmentalists. When former President Nixon announced the birth of Project Independence in a television address last November, few then realized just how high the environmental price tag would be. Although complete independence from foreign sources of oil by 1980 is virtually impossible, programs to achieve this dream are moving ahead rapidly—surface mining in the West, enormous oil-shale development, a ten-million-acre-per-year offshore leasing program, a speedup of reactor siting, and increased support for the breeder-reactor program. Efforts to conserve energy and to cut demand appear, with a few welcome exceptions, to be getting off to a very slow start.

The recently created Federal Energy Administration (formerly the Federal Energy Office) set up a series of ten hearings around the country (which began in Denver last August 6, and will end in San Francisco on October 10) ostensibly in order to sample the public's reaction to Project Independence, but environmentalists have been skeptical whether these hearings will influence basic policy. For example, preparation of the so-called "Project Independence Blueprint," due by October 11, is proceeding unabated and uninformed by public opinion. Nevertheless, the Sierra Club and other conservation organizations are making an effort to appear at these hearings and to express their concerns and proposals.

On the surface of it, the idea of achieving independence from foreign oil sources seems like a great idea, but having once penetrated the facade of national security and prosperity that has been used to promote Project Independence, it quickly becomes apparent that the program actually entails using unacceptable means to achieve an impossible end. As Sierra Club Executive Director Michael McCloskey told the government panel in Denver, eliminating foreign oil imports or even restricting them to 15 percent by 1980 was impossible. "The needed capital, material, and labor," he said, "are just not available. Capital needs for independence are estimated to be more than \$600 billion. And this is capital that wouldn't be available for housing, mass transit, or consumer goods."

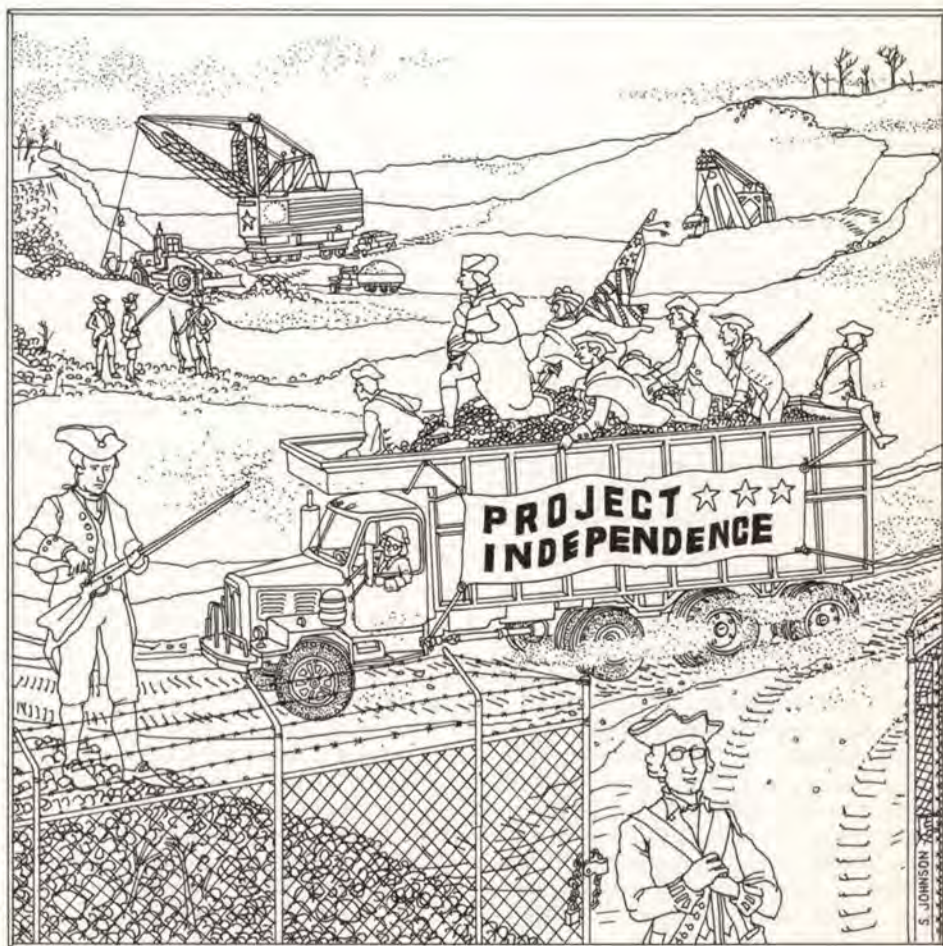
And what, if anything, would we get in return for this enormous investment? McCloskey's answer to this question is hardly comforting to a nation already beleaguered by what seems to be an endless round of inflation: "replacing cheaper imported energy with higher-priced, less economical, domestically produced energy." He said that one of the ultimate consequences of Project Independence, then, would be to price energy beyond the reach of many Americans, thereby creating an inflationary spiral that "would make the modest investment for pollution control look like a drop in the bucket."

But inflation alone is only part of the price we will have to pay for Project Independence. The rest is the depletion of our more easily recovered energy resources, thus

leaving us the poorer in the future, along with the destruction or pollution of our land, air, and water. McCloskey pointed out that Project Independence will, at best, simply postpone the need to import huge amounts of foreign oil. Eventually, we will once again become dependent on foreign sources, but this time around, as McCloskey pointed out, the situation will be worse than ever because "we would have used up our easily accessible and higher grade domestic resources."

"We hardly become more secure," McCloskey concluded, "by depleting our domestic fuel reserves in the fastest time possible, in triggering even more ruinous inflation, and in befouling our environment in a mad rush to devour all our domestic reserves."

The sad part is that we don't have to.



Steve Johnson

"There is absolutely no need to step up the leasing of federal energy resources to the degree this Administration is planning to," McCloskey said at the Denver hearings. "Even a high growth rate in energy consumption could be supplied with a leasing rate far below that chosen. On the Outer Continental Shelf, leasing 2.5 million acres per year would suffice instead of the ten million acres per year this Administration has committed itself to leasing." McCloskey added that even prudent energy-conservation measures could cut OCS leasing to less than one million acres a year.

The government has also encouraged acceleration of both oil-shale development and coal strip mining in the West as part of its quixotic drive to achieve independence by 1980. According to McCloskey, both programs are now proceeding faster than necessary to supply our projected energy needs and faster than seems prudent if we are to develop adequate methods of protecting our natural resources. "We are already 'independent' in land, air, and water," he said "and they are as essential to our economy and people as energy. The misuse of any of these is also a threat to our economic security."

McCloskey explained that there is even less need to rush ahead with federal coal leases in the West than there is with offshore leases because, "Private lessees are already sitting on leases containing 22 billion tons of coal—35 times the total amount produced by both surface and underground mining in 1973. About one billion tons per year might be derived from these leases, more than enough to meet even high projections of demand."

On the other hand, the oil-shale leasing program, which is being pushed prematurely, will not contribute a significant amount of energy in the near future. And inasmuch as it is not, in McCloskey's words, "designed to find real solutions to the most pressing environmental problems," the oil-shale leasing program will cost us dearly all the way around. "Thus," McCloskey concluded, "in the case of oil shale, the public gets neither significant production nor environmental protection, and may end up having to use taxes to subsidize the operation."

"It's not much of a bargain."

It remains to be seen how the outlines of federal energy policy will develop in this period of political uncertainty. Regardless of whether Congress or the Administration is in the driver's seat, the transition to a steady-state energy system called for by environmentalists will not come easily, and one of the major battlefields of the transition will be the northern Great Plains and Rocky Mountain states, with their coal and oil-shale deposits. We can only hope that those battlefields will not be strewn with too many environmental corpses before it is all over.

Eugene V. Coan

Who Do We Pay and What Are We Paying For?

MARION CLAWSON of Resources for the Future, risked his credibility as he opened the *Forum on Forest Policy* at the Cosmos Club in Washington Wednesday, May 8, 1974, when he said the forum had nothing whatever to do with the report of the President's panel on timber and the environment. But everyone knew the purpose of the forum was to sell that report by bringing about a semblance of consensus on forest policy consistent with the report's recommendations. Those were principally to increase the sale of timber on the national forests by some 50 to 100 percent, while ostensibly improving the environment.

The forum was conducted by Resources for the Future, and most of the material presented would have led inevitably to the very conclusions the timber industry wants most. Two members of the President's panel were principal speakers—Marion Clawson of Resources for the Future, and Ralph Hodges, Executive Vice President of the National Forest Products Association.

All through the meeting participants were urged to speak up, to say what was on their minds, to be frank, because only in that way, they were assured, could they truly communicate and reach consensus. Three background papers were presented. The first by Mr. Clawson roughly paralleled the Seton Report itself.

The second, by Leonard Fischman of Resources for the Future, dealt with future demands for U.S. forest resources. While Mr. Fischman unfortunately accepted the forecast of a small-log economy, which is a self-fulfilling prediction erroneously used as justification for accelerated liquidation of our presently merchantable timber, he cast some doubt on the high projections of demand that have been prepared by the Forest Service and other agencies. He thought because demand for wood had not lived up to expectations in the past, it was not likely to do so in the future, and he thought the demand for recreational opportunities would probably exceed that of the projections.

Other members of the panel were visibly shaken when he said at the conclusion of his presentation that in the long run demand always meets supply.

The third background paper was by John Ziunuska. John gave us his typical, sharply reasoned paper analyzing the economics of forest investment. He thoughtfully included a discussion of inheritance taxes, which are frequently overlooked, as factors affecting owner policies. But he made the horrendous mistake of assuming industries' lands are

being managed for sustained yield as a matter of course, and he compared ratio of cut to inventory on industry lands versus national forest lands as a basis for demonstrating inadequate management of the public lands. (The more you cut, the more efficient the management.) This is purely a propaganda argument propagated by industry to further accelerate cutting in the national forests.

"In terms of the nation's timber-supply problems, both now and for the remainder of this century, the dominant feature of the national forests is that, with only 18 percent of the nation's commercial forest land, they include 52 percent of the total softwood-timber inventory, but yield only 27 percent of the nation's softwood saw timber cut."

"If there is to be any appreciable increase in the nation's softwood saw timber cut over the next 30 years to meet rising demands, the national forests provide the only significant opportunity to achieve such an increase without adverse effects on both the environment and the levels of future timber growth."

He told us that half the national forest land area is non-productive forest, and that "that ought to be enough for recreation." Besides, he said, people should have to pay to use it. But who do we pay? and what are we paying for?

The entire meeting was dominated by economists. The whole question of forest policy revolved around supply and demand. A forest was considered as though it would automatically "pay out" depending on how it was programmed, as if it were a data-processing machine. Biological limitations were acknowledged to exist, but were not discussed.

At the close of the conference, after two days, the emperor's robes were still invisible. It was mentioned from a mike provided for the audience that the Sierra Club would dearly love to support a program to provide continued financing of a balanced program for the national forest, but that is impossible until the now excessive rate of cutting acknowledged and corrected. Unfortunately that topic was beyond the scope of the forum and definitely not welcomed. Consensus cannot be reached on forest policy unless, as Mr. Clawson said, we are honest with each other and probe our differences in depth. He urged participants to establish a private structure for "constructive debate" on the questions raised. That could work if honest debate is allowed.

Gordon Robinson

WASHINGTON REPORT

Brock Evans

Let's not Give Up the Canyon

ON WEDNESDAY, July 31, the House Interior Committee, during hearings on legislation to expand Grand Canyon National Park, voted 24-11 to adopt an amendment that would transfer 91,000 acres from the park and 95,000 acres from the adjoining national forest to the Havasupai Indians. The amendment, introduced by Representatives Morris Udall (D-Arizona) and Sam Steiger (R-Arizona) is being vigorously opposed by every major national environmental organization, including the Sierra Club.

This legislation, if approved by Congress, offers the prospect of a serious disaster not only for the whole national park system, but for all the other public-land systems built up during the past century. Why is this so? After all, many people argue, Indians are the most impoverished segment of our society, and one of the sorriest chapters of this country's history has been the wrongs done to their ancestors. Should we not make it up to today's Indians if we can? But at the same time, should such compensation be paid out in the form of land, and not just any land. But the public lands, which belong to *all* Americans? This is the basic issue.

The Havasupai's claim is not an isolated or unique case, as proponents of the transfer would argue. A serious precedent will be established if this transfer is ultimately approved. Other Indian tribes have claimed at least 18 areas in the national park system (including the eastern half of Grand Canyon and all of Mt. Lassen), and nearly 50 million acres of national forest land, including many of our most famous wilderness areas. There are ways to deal with the claims of Indian tribes other than offering up national parks and wilderness areas. Congress already established another way in 1946, when it passed the Indian Claims Commission Act, which reflects the fundamental policy that the proper way to resolve Indian claims is *not* to make compensation in land, but rather, to make it in money—to do otherwise would dismember the public lands, and all Americans would suffer. So far, 234 claims have been settled and over \$500 million has been paid. Some 198 claims are now in the process of being settled.

The fundamental point to keep in mind in the case of the Havasupai is this: the Havasupai filed such a claim in 1949; they *settled* in 1969, and were paid \$1.24 million for their claim; and that claim was to the same lands now being asked for in Congress. The terms of the settlement provide that "*Entry of final judgment in said amount shall finally dispose of all rights, claims, or demands which the*

petitioner has asserted or could have asserted with respect to the subject matter . . . , and petitioner shall be barred thereby from asserting any such rights, claim or demand against defendant in future action."

In its findings of fact accompanying the settlement in 1969, the Indian Claims Commission stated, "Mr. Daniel Kaska, chairman of the Havasupai tribe and of the general meeting held on June 14, 1969, took the stand. Mr. Kaska testified, among other matters, that the meeting of adult Havasupai voters held on June 14, 1969, was well attended and that the terms of the proposed settlement were understood and fully approved by those persons present and that the vote taken at the meeting was a fair and representative reflection of the views of the Havasupai tribe." Thus, the major precedent being established here is that an Indian tribe can break its agreement, once a settlement is made, if the times are propitious.

There is a further precedent: For the first time, national park lands are being offered up to an Indian tribe on the grounds that the transfer of such lands will improve the economic situation of the tribe. This is the plain intent and statement of the Udall-Steiger amendment. If the Havasupai have economic problems, is the acquisition of a national park nearby the way to solve them? If this is the case, then every other tribe adjoining every other park and wilderness area has the same claim.

The argument is made that the Havasupai will take care of the land, and use it in the

"traditional manner," which means grazing and some limited homesites. However, they already have lease rights for grazing purposes from the National Park Service. The transfer of title adds nothing to this situation. The only way the tribe will be able to improve its economy will be to lease the park land for hotels, campgrounds, tramways, and other mass-recreational developments. And if anyone doubts this prospect, on March 21, 1969, the Havasupai tribal council passed a resolution supporting tramways in the Grand Canyon.

Finally, those who have opposed dams for so long in Grand Canyon fear the final result of this legislation, for the Havasupai tribe went on record in 1966, and again in 1967, in support of such dams. The amendment will not give the tribe any lands next to the river, but it does create a large new political entity along the south rim of the Canyon. If the transfer bill passes, many feel that the Havasupai will join its fellow tribe, the Hualapai, just downstream, in renewing the agitation for dams within the park.

Although most all the treaties made between the U.S. Government and the Indians 100 years ago were broken, a new set of circumstances exists today. In 1872, with the establishment of Yellowstone National Park; in 1897, with the creation of the national forests; in 1916, with the National Park Organic Act; and in 1964, with the establishment of the National Wilderness Preservation System, the people of this nation have established a great reserve of magnificent public lands in trust for all Americans, including Indians.

This is the competing principle. Having fought so hard to save the public lands for *all* the people, we cannot simply turn them over to one group. There are other ways to help the Indians, and we must do it. But we cannot give up our national parks and forests.

CAPITOL NEWS

Club attorneys open new round in ongoing clean-air battle

THE SIERRA CLUB Legal Defense Fund (SCLDF) opened the second round of a two-year battle to enforce the nondegradation principle of the 1970 Clean Air Act, which requires the Environmental Protection Agency (EPA) to issue ambient-air-quality standards and to review each state enforcement plan.

"We foresee additional years of legal action, first to win a set of regulations that will safeguard presently clean air and then to enforce those regulations," said SCLDF Executive Director John Hoffman. "It is evident that the EPA requires the constant

pressure of litigation for the lawful performance of its congressionally mandated responsibility to improve and protect the nation's air quality."

On July 25, SCLDF filed a motion before the U.S. District Court in Washington, D.C., for an order requiring that the EPA within 30 days issue final nondegradation standards, now more than 21 months past the November, 1972, court-ordered deadline. The EPA had incorporated the nondegradation principle in issuing national standards, but in its instructions to the states for the preparation of enforcement plans EPA re-

What Lies Ahead for the American Wilderness?

ON SEPTEMBER 4 this year, we celebrate the tenth anniversary of the Wilderness Act. Anniversaries are ordinarily a time for rejoicing, a time for celebration, a time for honoring the men and women who had the foresight to politicize a magnificent idea into legislative reality. Not so this anniversary. On the tenth we can pause only a moment to look backward.

What has been accomplished in this ten-year period? The framers of the Wilderness Act wisely provided a timetable for review of Forest Service, National Park Service, and Wildlife Refuge lands that would qualify under the act's definition. One-third of these lands were to be reviewed by 1967, two-thirds by 1971, and the remainder by September 4, 1974. As in so many built-in legislative-review periods, however, the agencies were slow in starting and found themselves rushed toward the end—and in some cases actually found themselves outside the law in failing to complete reviews. Something over 40 units, some three and a half million acres, have been incorporated into the Wilderness System since its establishment in 1964. Another 65 units, comprising over seven million acres, have completed their journey through the administrative process and now await review by the Congress. About a hundred more have not yet emerged from the executive branch.

Given the complex procedures of the Wilderness Act—agency field analyses, study reports, local administrative hearings, Presidential recommendation, congressional hearings, often in the field as well as in Washington—it is surprising that we are this far along in fulfilling the provisions of the act. One reason we are is that citizen conservationists have worked hard to convince Congress that the review procedure must proceed according to schedule. They have gone further. For example, in the 93rd Congress there are: (1) four omnibus wilderness bills in the House, (2) three omnibus bills in the Senate, and (3) at least 15 citizen-initiated bills to establish various wilderness areas for lands not included in the mandate of the Wilderness Act. Some of these bills have already seen positive action, the proposed Lincoln-Sagegoat wilderness in Montana being the outstanding example. Still another category of lands outside the act are the 13 special recreation units, such as the Oregon Dunes National Recreation Area, which have embedded within their legal framework a special wilderness-review section requiring the agency to report to the President on the suitability or nonsuitability of wilderness. As with the Wilderness Act, target dates are given for completion of agency recommendations to the President. For the Oregon Dunes, that date is March 23, 1975—about six months from now. Most significant of all is the action taken to establish wilderness areas east of the 100th Meridian, a program that has passed the Senate, but is presently stalled in the House.

Along with the above wilderness proposals, conservationists have had to pay close attention to the court-ordered Forest Service review of roadless areas under its jurisdiction. This national inventory of lands that might qualify under the provisions of the 1964 Act began in 1967, but was not completed until October, 1973, with the release of the final environmental impact statement. More than 56 million acres of *de facto* wilderness were identified on National Forest lands not covered by the Wilderness Act and therefore outside its review procedures; 274 of the 1,500 identified areas are temporarily classified as New Wilderness Study Areas and are off-limits to development until the Forest Service completes in-depth studies of the areas and determines whether they should be classified as wilderness or not. A wholly new review procedure for these lands, quite outside the Wilderness Act, is being established by the Forest Service, a process that will carry us into the 1980's. Even more critical—because they are immediately threatened with development—are the several hundred *de facto* wilderness areas not accorded New Wilderness Study Area status. These, by the terms of the *Sierra Club v Butz* court settlement, are subject to the NEPA process, with environmental impact statements required prior to any action that would compromise the wilderness qualities of the land.

We face a prodigious task in monitoring these Forest Service roadless areas, within the agency's land-use planning process, if we are to save any of them from the bulldozer and chain-saw. In the four Northwest states alone, we face an offensive siege of draft and final environmental impact statements on these lands which, by rough count, will require citizen response to some 500 planning units containing over 700 roadless areas!

As if the Forest Service program were not pressure enough on our limited volunteer

Continued on page 36

versed itself, announcing that air of better quality than that required by national standards may be degraded.

During the first round of litigation, SCLDF won the following: On May 30, 1972, a District Court order directed the EPA to disallow state plans that permit significant deterioration of existing air quality in any part of any state; on November 1, 1972, the Court of Appeals decision upheld the District Court; and on June 11, 1973, a Supreme Court decision affirmed the two previous court actions. EPA disallowed non-complying state enforcement plans but issued no final degradation standards. "Such footdragging," Hoffman said, "suggests that the EPA is engaged in an evasion of a federal court order."

Senate votes to extend Price-Anderson Act

By voice vote the Senate agreed to approve the Joint Committee on Atomic Energy bill modifying and extending the Price-Anderson Act for nuclear powerplant accident liability coverage. Floor bill manager Senator John Pastore (Democrat-Rhode Island) agreed to a compromise with Senator Gaylord Nelson (Democrat-Wisconsin) extending the Price-Anderson Act for five years, rather than for the ten-year period proposed originally. Senator Pastore promised that the conference committee would accept the five-year extension. The legislation now also requires a review of the Rasmussen study by the Joint Committee on Atomic Energy, including public hearings, and allows the Congress opportunity to act before further extension of the act takes effect.

Despite the strong case made by Senator Richard Schweiker (Republican-Pennsylvania), the Senate, by a 60-to-28 vote, rejected an amendment allowing the states to set higher liability limits than the AEC's national limits. Conservationists believe higher liability provisions would force utilities and equipment producers to take greater care toward preventing any nuclear accidents.

Wildlife ranges endangered by BLM land-grab scheme

There are few wildlife preserves left in the United States that provide the great expanses required by the desert bighorn sheep, the pronghorn antelope, and such endangered raptors as the peregrine and prairie falcons. Now, the BLM proposes to take over five of those that do (C. M. Russell National Wildlife Range in Wyoming, Charles Sheldon Antelope Range and Desert Wildlife Range in Nevada, and Kofa Game Range and Cabeza Prieta Game Range in Arizona), presumably to open up these lands to grazing and mining. The BLM

is trying to take these lands from the U.S. Fish and Wildlife Service, which now administers them. Secretary of the Interior Rogers C. B. Morton will soon decide the matter, so it is important that you write him now (Department of the Interior, Washington, D.C. 20240) and ask him:

1) to issue public-land orders withdrawing the five wildlife refuges from mineral entry

and mineral leasing, and to assign management of the refuges exclusively to the Fish and Wildlife Service; and

2) to approve wilderness areas within the refuges as recommended by local conservationists, namely, 778,790 acres in Kofa Game Range, 538,000 acres in Sheldon Antelope Range, and 461,220 acres in C. M. Russell National Wildlife Range.

NEWS VIEW

Yosemite National Convention Center proposed by new concessionaire

THE MUSIC COMPANY OF AMERICA, a division of Universal Studios and 96-percent owner of the Yosemite Park and Curry Company, which holds a virtual monopoly on concessions in the park, recently announced plans to make Yosemite "the showcase of the national park system." Plans include construction of a brand new hotel on Glacier Point, a tramway connecting the point to the valley floor, development of a major ski resort in Tuolumne Meadows, and construction of new, higher priced accommodations in the valley. According to Janice A. Eckdahl, chairman of the Tehipite Chapter's national parks committee, and Hal Thomas, the chapter's conservation committee chairman, "Their plan includes active promotional campaigns in major cities to attract businessmen and other groups to use the park as a convention center." Eckdahl and Thomas report that last May the company tried to push through an inadequate environmental assessment for renovating part of Curry Village by replacing the present 150 seasonal tent cabins, which rent for \$6.50 a night, with modern, winterized cluster units, which would rent for \$19 a night. Conservationists obviously oppose the scheme, not only for the rampant environmental damage it would inflict, and the fact that it runs blatantly counter to both national park objectives and current efforts to reduce visitor impact in Yosemite Valley, but also because it would flagrantly discriminate against those visitors unable or unwilling to fork over \$19 for a night's stay.

Overwhelming citizens' opposition to the scheme led Regional Park Service Director Howard Chapman to suggest postponing further park construction until completion and approval of the Park Master Plan and the Yosemite Development Concept Plan. Public hearings on the draft environmental impact statements for the proposed developments are tentatively scheduled for October. Eckdahl and Thomas asked conservationists to work to defeat this incredible and insensitive scheme:

"We are urging your personal attendance and/or letters to local, regional, and national

Park Service officials, as well as to your congressmen. Letters requesting copies of the Master Plan or Development Concept Plan, along with your comments concerning their substance, should be directed to: Leslie Arnburger, Superintendent, P.O. Box 577, Yosemite National Park, CA 95389."

Club will appeal decision on Florida OCS drilling

The Sierra Club Legal Defense Fund plans to appeal a Federal District Court decision in Tampa, Florida, which turned down the Club's lawsuit to enjoin drilling under Interior Department oil and gas leases on the outer continental shelf (OCS) off Mississippi, Alabama and Florida until the Interior Department completes an adequate environmental impact statement.

Earlier the court had denied the Club's motion for an injunction against the lease sale on some 817,297 OCS acres. Before this sale, the eastern Gulf of Mexico, an area rich in biological resources and rimmed by some of the nation's finest beaches and valuable estuaries and marshes, had never been used for oil production. The Interior Department estimated that development of the sale area will require 700 to 1,200 wells operating from 75 to 125 platforms and using 480 to 800 miles of pipeline. Some 471 more acres will be needed for onshore support facilities. This complex of wells, pipelines and refineries is just the first major step in expanding offshore-oil exploitation, and is the forerunner of similar plans to open up for leasing other large tracts along the U.S. coastline.

The Sierra Club and its co-plaintiffs told the court they did not seek to prevent oil development in the eastern gulf, but they did want to ensure that the Interior Department undertook adequate preliminary studies and analyzed, as required by the National Environmental Policy Act, to minimize and wherever possible to avoid adverse environmental impacts of oil development on one of the country's most valuable systems.

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Gerald Gentleman power plant approved—Club will appeal

The Sierra Club plans to appeal a decision by the Nebraska Department of Environmental Control that reversed a hearing examiner's ruling forbidding a construction permit for the proposed 650-megawatt Gerald Gentleman coal-burning powerplant near Sutherland, Nebraska. The hearing examiner had determined that the Nebraska Public Power District (NPPD) failed to satisfy Clean Air Act requirements, but then the acting director of the state's Department of Environmental Control took "judicial notice of the fact that the electrical energy to be generated by this plant is a vital part of meeting the energy needs of Nebraska from 1977 on and approved issuing the construction permit."

The director did note that "an operating permit is required before the plant comes on line," and said "should there be evidence at that time showing a violation of federal New Source Performance Standards, it will be considered before the plant becomes operational."

"The Sierra Club will appeal the ruling and seek a stay of action pending the appeal," said Sierra Club Legal Defense Fund Director John Hoffman.

Club urges litter group to support bottle bill

"It is not credible for an organization truly devoted to litter prevention to oppose the most effective single step we can take to prevent litter," Sierra Club Executive Director Michael McCloskey told the annual meeting of Keep America Beautiful. McCloskey asked the group to join the Sierra Club in supporting S. 2062, introduced by Senator Mark Hatfield: The bill would require use of returnable beverage containers and would require deposits as an incentive to have such containers actually returned by consumers. Recycling, McCloskey said, is making only a small dent in abating bottle and can litter.

Because KAB's staff chose to oppose such legislation, the Sierra Club and other environmental groups following its lead have decided they can no longer lend their support to KAB and have resigned from its advisory board.

McCloskey said that if the Hatfield bill were enacted—as was a similar bill in Oregon—there would probably be at least two billion fewer beverage containers appearing as litter across the country and 41 billion fewer beverage containers produced.



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REGIONAL REPS REPORT

Northwest: The Brink of Victory

LAST MARCH, I reported here on the fight to save Hells Canyon, the earth's deepest river gorge. Now, even as the 93rd Congress winds down, that fight is close to being won. The dam builders, to be sure, are pulling out all the stops. Some of their lobbyists and lawyers have spent entire careers trying to harness the free-flowing middle Snake River, to turn it into slack, muddy brown power reservoirs. It is an obsession with them, so it wouldn't be realistic to think they'd give up without a fight.

Our bouquets go, however, to the key Northwest political figures who have come out solidly for preserving this canyon and river—Idaho Senators Frank Church and James McClure, Oregon Senators Bob Packwood and Mark Hatfield, Oregon Congressman Al Ullman, and the three Northwest governors, Tom McCall, Cecil Andrus, and Daniel Evans. They have found a bi-partisan way to harmonize seemingly incompatible positions and, with the exception of the most concretely entrenched dam-builders, to achieve a solid consensus of legislation that will:

- Designate 100 miles of the middle Snake River through Hells Canyon as part of the national wild and scenic rivers system, thereby prohibiting any dams.
- Designate the spectacularly wild, steep walls of Hells Canyon as "instant" wilderness, an area of more than 200,000 acres.
- Establish a Forest Service-administered Hells Canyon National Recreation Area of more than 700,000 acres, surrounding the canyon (including the canyon wilderness).
- Initiate a planning process for management of the NRA, including wilderness study for additional roadless lands.

In the Senate, as this is written, a bill with these features is awaiting final approval by the Interior Committee, with passage by the Senate itself hoped for by mid-September. The key to succeeding in the long fight to save Hells Canyon will then become approval of similar legislation by the House of Representatives, which is now working on a bill by Congressman Ullman. Time will be short, so the dam-builders' strategy will be to delay, delay, delay, hoping to throw enough sand and confusion in the works so that this bill dies without final action when Congress adjourns.

The House Interior Committee hearings in July on the Ullman Bill brought out a host of Northwest citizens who testified against the dams and for the bill. But observers knew that the position of the Administration would be most significant in determining the final outcome of the issue. Would the energy-

conscious Administration buy the dam-builder lobby's specious argument that the piddling power generated by these dams was somehow the answer to our energy needs?

Well, the Administration gets a bouquet, too! The parade of Administration witnesses was impressive—Forest Service, Interior, Bonneville Power Administration, and the Federal Energy Administration. Most impressive was the unanimity: they all favored preserving the canyon and the free-flowing Snake River. In a speech a few days later, energy-administration czar John Sawhill, his shortcollar open to dramatize one energy-conservation step, said: "I'm personally too committed to the cause of environmental protection to call for a full-speed ahead, crash-development-at-any-cost energy program." And he cited Hells Canyon as an example of "cases where we oppose energy-development projects with too high an environmental price tag." While the dams would provide some power, he added, "It was our decision that this did not justify destroying the beauty of one of the last major wild-river areas—and one of the most spectacular gorges on this continent."

So, not even the federal energy people bought the thin argument that a few more megawatts justify drowning the middle Snake. Beyond delay and obfuscation the dam-builders have few tactics left. They have run out of arguments that anyone will listen to.

Delaying tactics work best in a vacuum—in the absence of persistent support from the other side. So far, Hells Canyon has not really emerged as a national issue for conservationists, but now, it will take an outpouring of national enthusiasm to assist your own congressman, especially if he's on the House Interior Committee. The crunch for this bill will come in the final week of September and early October.

Argus, an independent magazine of news, comments, and opinion in the Northwest, summed it up this way in an article by David Brewster: "One reason the issue is so hot is that its resolution has considerable national significance. Other river sites await the outcome—Grand Canyon, North Carolina, the Ben Franklin Dam on the Columbia above Pasco, the Yellowstone and Clearwater rivers, among others. Moreover, the Hells Canyon debate is as good a place as any to discover whether the mood of the country has shifted enough to where we are willing to pay more for electricity (or conserve it) in order to preserve the vanishing wilderness." *Doug Scott*

insider... news of the members and their club

THE SIERRA WATCH

The Unfouling of a Florida Foulup

And Its Lessons for All of Us

A breakdown in communication that put the credibility of the Sierra Club and its work in jeopardy is revealed in an exchange of correspondence this past spring and summer between Southern California graduate-student member and Club representatives. The student had asked the club in April for information on its work in Florida and had been promptly referred to a Florida Sierran, to whom he thereupon wrote. Two months passed. He heard nothing. By then, filled with doubts about the Club's conservation effectiveness outside California—and yet still eager to do battle himself in Florida he sent off a blistering letter to Club headquarters.

At that point, on June 25th, *Wendy Pettigrew*, supervisor of the Club's information services, stepped in. She checked with *Susan Miller* of the Chapter Services office to get the name of the person in the FLORIDA CHAPTER best able to help him. In addition, Wendy sent him a packet of newsletters from the Florida Chapter's various groups to show him indeed that the Club was not asleep in Florida.

Five days later, *Ellen Winchester*, the Florida Chapter's legislative chairman, mailed the student a long, detailed account of the Club's work in her state, of the efforts and successes of the chapter and its eight groups. She told him that the chapter, formed only in 1971, now had 1,600 members active in every major population center of the state, and she urged him to "please come back to Florida and help us."

In her letter to the turned-off student, Ellen made some cogent comments on the limits of the national Sierra Club's influence on issues "out in the provinces"—comments that deserve wide circulation:

"In your letter . . ." she wrote, "I perceive a misunderstanding about how the Club operates. Even if it were a much more wealthy organization than it is, it couldn't simply step into Florida and give us the legislation we need to protect all the endangered animals, lands, and waters in the state. Our state officials, legislators, and a great many ordinary citizens would view such a procedure as imperialism from California. Most of Florida's problems can only be cured in Florida, by Floridians. The national Sierra Club can provide its members here with encouragement, inspiration, guidance, and even money, but it can't do the job for us."

Now, what can be done to prevent such future communications foulups? A couple of suggestions come to mind:

1. Members should be made aware that the national Club cannot be expected to keep up with all the changes in all 45 chapters. Therefore the best tack for a member who wants information on a particular area may be to check first with his own chapter's officers for the names of persons to contact, and then write to them direct.

2. The Club's staff and the inquiring member alike need to realize that most chapters depend completely on volunteers. Efficiency, therefore, is bound to suffer. Sierrans are terribly mobile, and thus chapters constantly lose key people to transfers. Perhaps a failsafe device is in order. A copy of an inquiry to a particular chapter officer might be sent to the chairman or secretary of that chapter with a note asking that he check to see that the inquiry has gone to the proper person and that it is being handled.

Chapter News

The GRAND CANYON CHAPTER, in sponsoring an Explorer Post, has been introducing teenage boys and girls to backpacking in the mountains of Arizona. The teens plan and run the trips, with backup and transport support from the adults. For information, write *Tim Ryan*, chapter membership chairman, 3003 N. Central, #1400, Phoenix, Ariz. 85012.

Pete Nelson, chairman of the San Diego Chapter, reports some innovative ways of funding worthwhile projects. The chapter's conservation committee hired a law student for the summer to do research on the complex clean air and water issues facing the chapter. The committee's chairman, *Roger Hedgecock*, was able to cover almost half of the student's pay by renting himself out as a speaker. The other half was picked up from a U.S. matching-fund grant. In a second summer project necessary repairs to the chapter's lodge were paid out of part of the roughly \$2,100 annual profit from yet another project. the chapter's *Basic Mountaineering Book*.

This column welcomes readers' comments and wants ideas and suggestions for smoothing out the inner workings of the Club as well as items on unusual activities or projects in their areas that might inspire similar action by other chapters, groups, or individuals.

BOB IRWIN

BULLETIN BOARD

NEW CONSERVATION AMMUNITION resource sheets, handbooks, and *Bulletin* reprints—awaits your order, and most of it is free, except in large quantities. Among the new releases is an *EIS Primer for Conservationists in the Field*. It tells how to watchdog the enforcement of Environmental Impact Statement (EIS) requirements of the law. In all, more than 75 pieces of resource material are on hand. See your chapter conservation education chairman for a list, or write to the Club's Information Services office, 220 Bush St., San Francisco, CA 94104.

1974-75 MEETING CALENDAR

- Oct. 12-13 Board of Directors and Council, San Francisco.
- Dec. 7-8 Board of Directors only.
- Jan. 18-19 Council only.
- Feb. 1-2 Board of Directors only.
- March 1-2 Budget Committee.
- March 15-16 Board of Directors only.
- May 3-4 Annual meeting of club, Board of Directors and Council.

THE SIERRA CLUB CHILDREN'S NOTEBOOK

That's the name of the Club's newest publication, a semi-monthly newsletter for school-age youngsters. It carries reports on youth activities, special outings, and school and community projects in conservation. It also lists and describes environmental books, magazines, and films of interest to young people. For a free copy, write the Club's information services office in San Francisco.



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TAR SANDS (Continued)

using the proceeds to equalize the price of petroleum across the country by subsidizing eastern buyers. Premiers Lougheed of Alberta and Blakeney of Saskatchewan saw this as an unfair and unjustified violation of the provinces' traditional right to control their own natural resources. They felt that they were being deprived of money which they could have earned from higher domestic prices for oil and increased royalties. A long period of wrangling was temporarily halted in late March with the announcement of a federal-provincial agreement which set the well-head price of crude at \$6.50 a barrel for one year. This is simply a stalemate, with a long-term solution still to be worked out.

Several oil companies stand ready to construct and operate plants in the tar sands as soon as permission is granted. Both the federal and provincial governments have large financial stakes in development: the federal through the export tax and federal income tax, the provincial through royalties and income tax. Employment and tax reduction have great popular appeal. Calgary bumper stickers read, "Oil feeds my family," and you may be sure they want to keep it that way.

On the minus side is the potential for major environmental disaster—not just complete devastation of 1,500 or so square miles of northeastern Alberta, but contamination of the Peace-Athabasca Delta and the Arctic Ocean. Experience has reinforced the conclusion of the environmental impact study that "The environmental effects of eventual multi-plant operations over the extent of the Athabasca Tar Sands could be enormous, unless preventative measures are implemented." and that "The tar sands industry must improve its technology significantly to protect the environment against the possible impacts of the large scale expansion currently being contemplated . . . Extensive additional research will be needed to develop new preventative techniques."

With the economic interest of major oil companies coupled with those of the federal and provincial governments, the temptation to get in and make a fast buck and then get out before any one can do anything about it is almost irresistible. At the

same time, when the president of a company now building a billion-dollar plant in the oil sands area admits that things are more complex than had been thought, and when people who have worked in the oil industry for 20 years and more wonder out loud, "Who needs it, if this devastation is to be the result?" a total re-evaluation of possible gains and losses seems to be called for.

Does Canada need energy so badly that it must exploit the tar sands now, no matter what the environmental cost? How much energy will she actually gain from them? Early estimates were that about 17 percent of the total energy contained in the tar sands would be required for mining and extraction. This estimate was based on the assumption that the petroleum coke, which emerges as a byproduct of the upgrading process, could be burned to provide energy for the separation and refining plants. It was soon learned that the sulfur content of the petroleum coke was unacceptably high, so that natural gas was burned as a supplementary fuel. More recent estimates are that as much as 50 to 60 percent of the energy may actually be required for mining and extraction. When the additional energy used in construction, capital equipment, transportation, and pipelines is considered, the net might well turn out to be negative rather than positive.

In spite of high energy and capital costs and the recognized potential for environmental disaster, plans to develop the tar sands are proceeding at a pace far greater than that advocated in two governmental reports. Development is unlikely to be slowed down unless the entire Canadian people raise a mass hue and cry against despoliation of the environment. But they perceive the North as too remote, hostile, and unproductive to concern them, so the rate of development is far more likely to respond to economic and political pressures, as well as to the constraints imposed by lack of technical personnel and skilled labor and the difficulty of buying capital equipment. Let us hope that another ten years will not see the realization of Herman Kahn's nightmare scheme.

Pat Kariel is chairman of the Alberta Group of the Western Canada Chapter.

In Time to Stop

JOHN TUNNEY

THE ENERGY CRISIS is not over, though it seems to have been forgotten as once again we can fill up at our local gas station. Unfortunately, the problem of matching our ever-increasing rate of energy consumption to rapidly decreasing energy reserves is not one that promises to disappear in the next few months, or even years, though specific shortages may come and go. And surely, we should not forget that the Arab nations can turn off the spigot, as they did last year, whenever they choose to do so.

Yet since the annoying gas lines of last January, there are signs of a rapid relaxation—if not outright abandonment—of essential energy conservation measures:

- The nationwide 55 mph speed limit is being ignored.
- Bus ridership, which had rapidly increased last winter, has begun to return to pre-embargo levels.
- Carpool programs are foundering for lack of participation.

Everywhere people are beginning to act as if the shortage of last winter was an unfortunate fluke. Their complacency has not been discouraged by the brave rhetoric of Project Independence, the Administration's plan for energy self-sufficiency by 1980. The plan is proceeding rapidly apace, though it is now clear that insofar as the likelihood of fulfilling its promise is concerned it is but another puff of hot air. For example, in a recent report the National Academy of Engineering raised serious questions as to whether, even with maximum effort, self-sufficiency is possible even by 1985. The report states that self-sufficiency would require capital expenditures of about \$600 billion and would collide with nearly insurmountable technical and manpower problems. Meanwhile, Project Independence is serving as an effective rationale for government programs to increase offshore drilling, strip mining, and oil-shale de-

velopment, all before sufficient environmental safeguards have been insured.

So-called easy solutions to our energy problems are also fraught with difficulties. For example, optimism concerning the amounts of coal, uranium, or even oil that remain in the ground may be unfounded, since the statistics concerning the size of our remaining energy reserves are misleading. For as we utilize more and more sophisticated and complicated means of extraction—which we will be forced increasingly to do—the energy required to produce the fuels will increase rapidly, perhaps

While the Administration continues to pursue its impossible dream of energy self-sufficiency by 1980, the Congress is considering legislation that will begin to encourage energy conservation and recycling.

to the point where input could well exceed production. For example, it is estimated that oil-shale deposits in Colorado, Wyoming, and Utah contain 1.8 trillion barrels of oil—more than four times the crude oil discovered to date in this country. Yet *Business Week* recently reported that one major oil company had already declined to bid on oil-shale leases because "after developing the necessary technology, buying massive new machinery, moving tons of earth, reclaiming acres of land, and processing the shale oil for market, the BTU's produced would barely make up for the BTU's consumed." This situation is likely to become increasingly true as the easiest of the new reserves are tapped and only the more difficult ones remain.

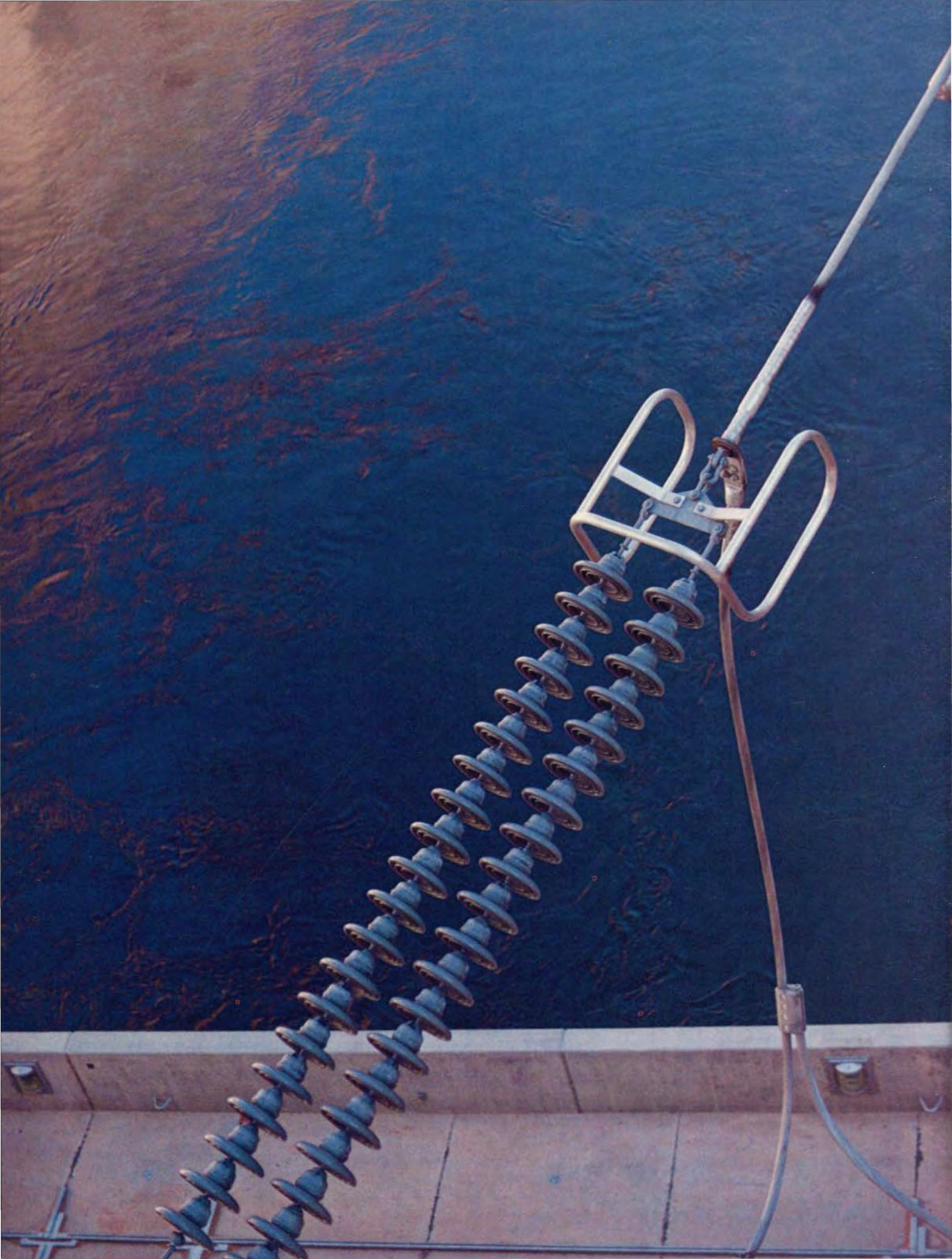
In short, we could end up chasing

ourselves in circles, utilizing enormous amounts of energy to develop new energy supplies.

The point is that there is no easy answer to our energy crisis save by conserving what resources we have and by eliminating, at least, the enormous waste of energy that now pushes our rate of consumption far higher than it needs to be. It has been estimated that only 40 percent of the energy consumed in this country is actually used for productive purposes, while a significant amount of the remaining 60 percent is wasted because of present industrial and commercial inefficiencies. According to a recent study by the Ford Foundation, a major energy-conservation effort can reduce requirements by 46 percent in the year 2000, in comparison to the needs as based on present trends. More important, the Ford Foundation study concludes that these savings can be achieved without sacrificing economic growth or personal freedom. Unfortunately, for the most part, this challenging opportunity for energy savings has not yet been acted upon either by the Administration or the Congress.

That we should begin such a program now is obvious. Even in the short run we can no longer allow our energy utilization to spiral continually upward or it will force us into an ever growing and debilitating dependency on foreign fuels, which could threaten both our balance of trade and national security. Already, the World Bank, in a private report, has projected that the Arab oil-producing bloc could control over one trillion dollars by 1985. This staggering sum, more than ten times the current American investment overseas and 100 times the gold held by

Senator Tunney is author of the Truth in Energy Acts of 1973 and 1974, and has sponsored a bill to develop a more efficient, less polluting alternative to the internal combustion engine.



the United States Government, could cripple our economy and give these countries more power than armies can provide. According to the World Bank, the resources and wealth of the Arab States "make their decisions very critical since they can affect the rate of growth of the world economy, worldwide income distribution, the level and allocation of investments, world money and capital markets, as well as the pattern of development in their countries."

In the face of these disturbing trends, it is necessary to ask ourselves what alternatives we have. Project Independence won't work, and the widespread utilization of the vast energy potential of fusion, solar power, geothermal power, coal gasification, and wind power are still a decade or more away. Therefore, in my opinion, our only acceptable short-term answer is energy conservation on a major scale. Without such an all-out effort, any program aimed at self-sufficiency seems doomed to failure.

Unfortunately, so far the government's energy-conservation programs have focused on the curtailment of activities by the individual consumer. Although voluntary energy-conservation measures such as adjusting thermostats, forming carpoools, and forgoing weekend trips can diminish our energy demand, significant, long-lasting savings can only be achieved by such measures as improved design of energy-consuming products, improved efficiency in the operation of factories and buildings, and development of new, less energy-consuming equipment and processes in major industry.

While we have not yet begun seriously to implement such a comprehensive energy-conservation program, there are a number of promising proposals before the Congress that begin to tackle the problem, and therefore deserve widespread support. They represent a small, but hopeful, beginning on the road to instituting truly comprehensive energy-conservation measures.

During the height of the oil crisis, the Senate passed S. 2176, the National Fuels and Energy Conservation Act. This bill, an outgrowth of joint efforts by the Senate Commerce, Public Works, and Interior Committees, is the most extensive energy-conservation measure yet considered

by the Congress, and is now pending in the House Interstate and Foreign Commerce Committee.

Senator Magnuson joined me in introducing an important provision of this legislation, which calls for a four-year, \$340-million, Apollo-like program to develop an energy-efficient and nonpolluting alternative to the internal combustion engine. This provision, coupled with one by Senator Hollings, which mandates a 50-percent improvement in the average fuel economy for automobiles over a ten-year period, could, based on pre-embargo projections, save an amount of oil equal to half the imports from the Middle East. This dual approach of establishing a goal for achievement, while simultaneously developing the needed technology represents, in my opinion, a rational approach toward truly astounding savings in energy consumption in all sectors of the economy.

S. 2176 also requires that major household appliances be labeled in accordance with their estimated annual operating costs. A recent MIT study estimated that the typical \$300 refrigerator will consume about \$350 worth of energy in its lifetime. With the operating cost attached to the label, consumers can select better buys in terms of operating costs, thus forcing manufacturers to produce ever more energy-efficient appliances. They would be forced to compete on the basis of efficiency, dusting off plans for technological improvement that may have been shelved by cost cutters. A similar provision mandating operating-cost labeling for cars is also included in the bill.

Two other important energy measures now before the Congress are a comprehensive resource recovery and energy recycling bill, which, for the first time, offers a total approach to the country's management of its solid wastes, and a solar energy bill, which aims to increase demand for solar heating and cooling units. Both could have substantial beneficial impacts on the pattern and quantity of energy consumption in this country.

The resource recovery and energy recycling bill proposes a set of economic and other incentives for improving solid-waste disposal and for the rapid acceleration of new techniques for recycling and generating energy from solid waste. The provision in the bill mandating a program for

major demonstrations through development of energy-recovery facilities is the outgrowth of the two days of hearings of my Science and Technology Subcommittee of the Senate Commerce Committee. This legislation is crucial if America is to do more with its junk than be smothered in it.

To get some idea of the possibilities inherent in this legislation, we need only note the example provided by Europe, where garbage has been successfully used for years as a fuel to generate energy. The City of Frankfurt gets seven percent of its electrical energy from a garbage-burning installation; Amsterdam gets six percent. It has been estimated that solid waste could generate enough energy to light every home and factory in the country. At the same time, using garbage for energy would relieve the enormous problem of finding enough land to dump it on.

Furthermore, recycling uses much less energy to produce materials than do traditional methods of extraction and refinement. For instance, steel can be made from scrap with 25 percent less energy than from virgin ores. For aluminum, recycling would save 95 percent of the energy required for original production. Yet at present, our major cities dispose of metals worth \$5 billion a year, including 12 million pounds of steel and more aluminum and tin than we now produce.

The solar-energy bill, which is now in Senate-House conference, envisions that existing technology will be utilized increasingly over the next few years to provide solar heating and cooling for several hundred houses and other buildings in various parts of the country. Most of the technology is already available; the obstacle is cost. This bill will provide for a thorough evaluation of various solar heating and cooling units, and hopefully, will encourage a sufficiently large demand so that the costs can be reduced through mass production.

If the three bills discussed above pass both houses of Congress and are signed by the President, we will have made an important, if modest, start toward truly achieving energy self-sufficiency without paying the high price of environmental degradation. The individual citizen can promote this and similar legislation in the future by stressing the importance of

such programs in letters to senators, representatives, and other elected officials.

Action on the local level is equally important. For example, a number of states, in the absence of federal action, are beginning to consider their own labeling requirements for household appliances. A groundswell of such actions along a broad front will prod federal action on further, even more comprehensive, energy-conservation measures. Local actions such as working for the reform of outmoded building codes, encouraging carpools, and lobbying to assure that utilities conserve energy as a prerequisite to rate increases will also contribute to the eventual implementation of comprehensive energy-conservation programs. Additionally, stockholders may compel their companies to institute conservation programs. Many companies have shown that they can significantly conserve energy without increasing costs of operation.

The Sierra Club has always led the fight to preserve our environment. The billions of barrels of oil and the millions of tons of coal that can be saved through energy conservation will greatly lessen the pressure for strip mining and other depredations of our environment. Therefore, I hope



Steve Johnson

each of you in the Sierra Club will continue vigorously to take up this challenge and join with those of us in Congress who believe that only

the institution of an ever-broadening energy-conservation program in this nation can prevent a future of disastrous shortage and pollution.

Wilderness (Continued)

manpower and overworked staff, the Bureau of Land Management, if Congress acts favorably this fall on the Organic Act, may have to institute a wilderness-review process for its millions of acres of public-domain lands. Again, a timetable undoubtedly will be established and will require thousands of hours of citizen time in field study and response to agency recommendations.

There is yet a third task ahead of us, one begging for solution now. This is the unsettled question of how wilderness should be managed. It involves not only the wilderness permit system, which both the Forest Service and National Park Service are using to control the pressures of backpackers and horse parties, but also the more subtle questions of the biological carrying capacity of the land—what John C. Hendee and George H. Stankey, Forest Service researchers, have characterized as the concept of “biocentricity.” Their argument has already led to a major conflict over the interpretation of the Wilderness Act in regard to how “pure”—that is, uncontaminated by man and his works—a roadless area should be for admission to the Wilderness System. Their argument is effectively countered by a brilliant young law student, Jeff Foote, who feels that the Forest Service’s “purist”

position overlooks the important legislative history of the Wilderness Act and is, in fact, being used as an anti-wilderness tool.

All this adds up to an enormous load on conservationists and underscores the reason why we can pause but briefly to celebrate the 10th anniversary of the Wilderness Act. The Forest Service unit-planning process is on top of us now. Waiting in the wings is a similar task confronting us on BLM primitive lands. There is still the continued surveillance on the remaining Wilderness Act mandatory review areas, many of which will actively appear in the 94th and probably even the 95th Congress. There are the many additional citizen-initiated proposals that will be reintroduced in subsequent Congresses. There are the wilderness-review requirements of the several special recreation acts. And, finally, there are future actions for lands, only partially in public ownership, which may warrant designation as wilderness or roadless areas, such as the Congaree Swamp in South Carolina. To most citizen volunteers, this task will appear as an overwhelming and nearly impossible job. But the future of the American wilderness now depends on our bringing to this task the same hard work and dedication that have brought success in hundreds of previous conservation battles. *Holway R. Jones*

BRISTLECONES (Continued)

4,000-year-old living trees. Mainly through the research of Charles W. Ferguson and the University of Arizona Laboratory of Tree-Ring Research, an absolute chronology of more than 8,000 years was developed for bristlecone. This was accomplished by cross-dating the ring patterns of dead wood with those of established age in live wood, often using computers to match the complex patterns.

Science has now accepted the bristlecone-corrected radiocarbon clock. Bristlecone research indicates that the production of C-14 in the atmosphere has not been constant. The corrected C-14 dates now agree closely with Egyptian calendars. The new clock has, however, pushed back the dates of many artifacts in Europe to the point there they now predate their Mediterranean counterparts.

According to Colin Renfrew, writing in *Scientific American*, the effect on archeology will be far greater than the initial idea that European cultures may have evolved independently. He writes:

"The more profound impact . . . will be on the kind of explanation that prehistorians will accept in elucidating cultural change. A greater reluctance to swallow 'influences' or 'contacts' as sufficient in themselves . . . is to be expected. . . . When the textbooks are rewritten, as they will have to be, it is not only the European dates that will be altered. A shift in the basic nature of archeological reasoning is necessary."

Bristlecone may hold the key to other secrets, locked from man by the doors of time. As Renfrew has called for a shift in man's attitude toward archeology, bristlecones themselves speak for a new perspective on trees. Sequoias are strong and healthy into old age. Scientists can find no reason for them to die from aging. They don't. Every one of them topples in muddy soil or otherwise suffers a catastrophe before approaching the age of the oldest bristlecones. Tall fir and pine rot and tumble earthward only a relatively short time after death.

Bristlecone rarely die in natural catastrophes. With the exception of an occasional lightning strike they grow too high and too far apart for fire to threaten them. A few have toppled after their roots became exposed from the gradual erosion of the mountain surface around them. A few large trunks with bark on them lie in the bottoms of the steepest canyons in the White Mountains, apparent avalanche victims from the colossal 1969 winter. Their only real threat is modern man.

In the 20-odd years since man "discovered" bristlecone, he has wreaked more change than the previous 2,000 years. The cool, clear wind that brightened Schulman's campfire now has measurable air pollution. Some of the oldest snags are gone—in the interest of science and kitchen cabinets. Others have found their way into campfires, wood stoves, and curio shops.

Depending on how man treats the bristlecone, age can be their downfall or their salvation. With growth rates often less than an inch in diameter per century, they cannot recover from the pace of human society like rabbits or eucalyptus. Their survival, and man's too, depends on slowing down the frantic scramble we call civilization. Only then will man be able to look beyond the blindfolds of time, realizing that compared to a bristlecone pine, he himself is a renewable resource.

INDIAN CLAIMS (Continued)

relative prosperity by sundry "nations" of Indians, a system disrupted and finally destroyed by white society. In fact, the Indian civilizations of the North American continent—like most civilizations on most continents in the world—had been in an almost perpetual state of flux since prehistoric times, constantly mingling cultures and languages, migrating, expanding, contracting, vanishing, fighting one another for hunting territory, agricultural territory, trade territory, or slave territory. It was a condition accelerated, but by no means instituted, by the appearance of Europeans on this continent.

In such a context, the concept of prior occupancy is suspect and claims of moral ascendancy evaporate like summer rain. If the descendants of nineteenth-century white Americans have a moral obligation to the descendants of nineteenth-century Navajos, do not the Navajos have a similar obligation to the descendants of the Pueblo Indians, whom they forced from their lands in the thirteenth century? If white Americans have a moral obligation to the Chippewas (or Ojibways), do not the Chippewas have a moral obligation to the Lakota Sioux, whose lands they appropriated by warfare in the seventeenth century? If white Americans have a moral obligation to the Blackfeet, do not the Blackfeet have a moral obligation to the Shoshoni, who were driven out of their hunting territory by the Blackfeet in the seventeenth century? If white Americans have a moral obligation to the Cherokees, do not the Cherokees have a moral obligation to the Shawnees, whom they vanquished in the early nineteenth century in a war over which tribe would have a monopoly on selling Indian slaves to the South? Morality is a notoriously tricky proposition, and if we even concede that Indians have a legal claim on compensation for lands appropriated by white society, it does not necessarily follow that they have a moral claim on the land itself—land that now belongs to all Americans.

The second assumption, which by now has acquired the unquestioned validity of gospel, is that by instinct, training, and tradition the American Indian is a superior steward of the land, and that by giving it over into his care we may actually be saving it from

the depredations of white society. The Indian, some have gone so far as to say, was the "first ecologist," and historian Alvin M. Josephy, Jr., has written that many Indians "yet feel a sacred attachment to the land and a reverence for nature that is incomprehensible to most whites. Many, though Christian, find repugnance in the idea that man possesses dominion over the birds and beasts, and believe still man is brother to all else that is living."

No one with eyes to see or ears to hear is going to argue that the impact of white society on the American environment has been anything less than a disaster. Nor is it reasonable to deny that in its purest form the Indian's relationship to the land displayed a sense of balance and respect that would indeed be incomprehensible to most whites. The Indian, in fact, had little choice, for in the hard game of survival he was by circumstances forced to play, he had to respect—even revere—the land, for the rules of nature were often life-or-death propositions. Men tend to make gods of those things in their world that will propitiate disaster or promote security, and the Indian quite literally worshipped much of the land around him; it was the land that nurtured him. (That attitude, obviously, even if there is as much fear as love in it, is something we could cultivate to our profit today.)

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Even then, however, many Indians exhibited a certain carelessness that led them into some rather curious ecological practices. Near Augusta, Montana, for example, there is a *pikun* or "jump off," a long pile of buffalo bones, the remains of animals driven off for purposes of food, clothing, and all the other things the Plains Indians derived from the buffalo, their most sacred animal. Archeologists estimate the collection to represent at least 500,000 buffalo, most of them destroyed before European contact. Such examples of overkill (and there are others) have led some historians to conclude that even if the white man had never arrived, the buffalo would have been exterminated. Combine that human carelessness with the equally human temptations of wealth and power, and the Indian was frequently willing, even eager, to alter the fragile balance on which his very survival depended. It was Indians, after all, who stripped many fur-bearing animals from the Northeast woodlands, the Great Lakes region, and the Ohio Valley in the seventeenth and eighteenth centuries, in exchange for guns, knives, whiskey, and other fruits of the

Iron Age; it was Indians who cheerfully participated in a similar fur trade in the transMississippi West in the first half of the nineteenth century; and it was Indians who contributed to the stunningly swift annihilation of the great buffalo herds of the plains in the last half of the nineteenth century, again in exchange for those tools of progress they hoped would increase their power and prosperity.

Today, the sense of a necessary balance between man and nature remains strong among the Indian peoples, as Josephy noted, but it would be fruitless to maintain that that sense is universal or that it characterizes modern Indian use of Indian land. One spectacular piece of evidence, of course, is the profound overgrazing on the Navajo reservation. Between 1807 and 1935, the Navajo (who had been shepherds for nearly 200 years) managed to overstock their range by more than 200 percent. When the Indian Service attempted to institute a stock-reduction program, the Indians resisted bitterly, in spite of increasing and visible damage to the land. Stock reduction was finally and painfully achieved over the years, but for much of the land it was too late. A similar situation exists on the Paiute reservation of northwestern Nevada, where rampant overgrazing has reduced the land on the east shore of Pyramid Lake to a wind-blown Sahara, through which it is often downright dangerous to drive. On the lower Colorado River, Indian land has been turned over to cheapjack developers of "summer homes" and housing projects. In eastern Montana and the Southwest, 11 coal strip-mining leases have been granted to private companies by Indian tribal councils. The average size of these leases covers 23,523 acres, 15 times larger than similar leases on public lands. And the Bureau of Indian Affairs, according to the Council of Economic Priorities, has displayed an "abysmal record" in enforcing environmental guidelines and restrictions.

Overgrazing, strip-mining, resort development, clearcutting on Northwest timber lands. . . . None of this is to suggest that the Indian is any *more* inclined to misuse the land than his counterparts in the white world, only that he has shown in more than one instance that he can. Generally speaking, the Indian's concept of success is in terms of the whole community's

success, whereas the white man thinks of success in terms of individual opportunity. The Indian's attitude may be much the superior, one from which white society could learn a good deal. Yet when the Indian community demonstrates itself quite as capable of inflicting wreckage on the environment as any gimlet-eyed practitioner of unrestrained free enterprise, the point becomes irrelevant to the question of land use. Irrelevant, simply because it is the larger community of life that is damaged by both.

The third, and final, assumption involved in the Indian's demand for land is that its possession will, in some magical way, solve the material problems of a century. It is a seductive vision. It speaks of many things important to him—of freedom from the stifling bureaucracy that has trampled his existence since he became a "ward" of the government, of escape from the poverty and ignorance that has kept him out of the sun like a man trapped in a closet, of the chance to stand and be considered an equal in a world whose history has passed him by, of the dream of maintaining the best of the lifeways of his fathers. It is also a delusion, if the lessons of the past have any meaning. The largest, and one of the oldest, Indian reservations is that of the Navajo. Established in 1868, it now comprises more than 25,000 square miles. That is a lot of land, enough land to make the reservation a shade larger than the state of West Virginia. But is it *not* enough land—and has never been enough land—to keep most of its more than 100,000 people much above the bottom line of poverty. A "land base," as any squint-eyed rancher of the northern plains or any hardscrabble farmer of Missouri would confess, is by no means a guarantee of the good life. Most of the land from which any such base would be carved is unsuited for agriculture. Arid land, even if properly managed, will not support large numbers of people, nor will timberlands. Furthermore, modern metals mining, to cite one possible use from which Indian tribes might reasonably expect some financial return, operates on a high-investment, low-return basis and is shaky business for even the most sophisticated corporations. Even strip-mining leases, the latest entry in the energy-exploitation sweepstakes, are not calculated to raise individual-income levels up to the national average.

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For example, the Navajo tribe's share of the royalties from Peabody Coal Company's two Black Mesa leases (13 million tons a year at 25 cents a ton divided with the Hopi tribe) will amount to an additional \$16.25 for each of the reservation's 100,000 residents. Increase the coal output tenfold, and individual income would rise to \$162.50; increase it a hundredfold, and income would rise to \$1,625—while the mesa would become a hole in the ground.

Land as a viable solution to the economic needs of the Indian is a demonstrable myth. There are simply too many Indians and too little land available for a reasonable economic return, even if all the stops were pulled and the Indian was allowed to graze it down to the roots, strip it clean of timber, pockmark it with strip mines, sell it to every interested developer, use it up, wear it out, kill it dead.

FLAWED ASSUMPTIONS. If land is not the solution, what is? The answer—though not its implications—is a simple one, one which can be applied equally to all the varieties of

minority-group situations in the United States. For the first time in its history, this country must come to terms with the fact that in 200 years it has not come close to fulfilling its highest ideals; has not, in fact, provided equal opportunity under the law; has not, in fact, put its heart, mind, and money into a wholesouled effort to find solutions to social problems. In our social structure, as in our technological structure, we are racing toward the end of this century at frightening speed—very nearly out of control. If we do not soon gain that control, we are likely to become less a nation of people than a nation of bickering factions of haves and have-nots squabbling over the last bone in the pot. The American Indian, the gadfly in our souls for 200 years, lost for all that time in the paradox of the American Dream, must be led out of confusion—ours as well as his—by *action*. If this means providing him with food or housing or medical care or schools or education or even the money he requires to buy land, then we must do it. But to yield up the public domain out of historical guilt, when these lands

will do little if anything to alleviate either his situation or ours, is to misunderstand both our needs and to mistake a symbolic gesture for a genuine helping hand.

"We Indians say 'our country,'" John Fire/Lame Deer, a holy man of the Lakota Sioux wrote in 1972, "because it is still ours even if all other races are now in physical possession of it, for land does not belong to any single man but to all people and to the future generations. We must try to use the pipe for mankind, which is on the road to self-destruction. . . . This can be done only if all of us, Indians and non-Indians alike, can again see ourselves as part of this earth, not as an enemy from the outside who tries to impose his will on it. Because we, who know the meaning of the pipe, also know that, being a living part of the earth, we cannot harm any part of her without hurting ourselves. . . . Through this pipe, maybe, we can make peace with our greatest enemy, who dwells deep within us."

*T. H. Watkins is the author of
On the Shore of the Sundown Sea.*

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