Sierra Club Bulletin

May 1973

A Giant Staircase
Energy Economics

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Sierra Club Bulletin

MAY 1973 / VOLUME 58 / NUMBER 5

Contents

Cover: *A colorful scene from the tidepools of Jug Handle Cove. Ulric Meisel photographed this lovely yellow starfish on its spiny bed of sea urchins.*

Credits

Page 4: Ulric Meisel; page 5: Pieter Myers; page 8: Hal Rumel; pages 10, 12, 13, and 15: Steven M. Johnson; page 26: Edward A. Stevenson; pages 28 and 29: Ulric Meisel.

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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WALK A GIANT STAIRCASE

STEPHEN WHITNEY

ALONG THE WATERSHED of Jug Handle Creek on California's spectacular Mendocino coast, nature has created and preserved a remarkable ecological staircase where the basic processes that inform all landscapes are epitomized and displayed with the elegance and economy of a museum exhibit. Here, five wave-cut terraces formed beneath ancient seas rise from the shore in staircase fashion, each step being about 100 feet higher and 100,000 years older than the one below it, and each supporting a distinctive association of plants, animals, and soil. The staircase provides perhaps the finest record anywhere of the fluctuations in sea level that accompanied the advance and retreat of glaciers during the great Pleistocene Ice Age. It may also constitute the most clear-cut display of ecological succession in the world. In most places, we can only infer the processes that created the particular landscape before us—whether it be forest, or desert, or coastal plain—but at Jug Handle we can follow step-by-step 500,000 years of natural history. Here, the child is indeed father to the man, for the lower—and therefore younger—terraces to a degree represent ecological stages through which the upper and older terraces passed hundreds of thousands of years ago. The story progresses from the colorful tidepools of Jug Handle Cove to grasslands and coastal forest and finally, on the upper terraces, to the unique Mendocino pygmy forest, among the tiniest woods in the world.

The Jug Handle watershed does not contain the only staircase formation or pygmy forest on this coast, merely the finest and most accessible. It is also the only place where the entire staircase remains virtually intact. Scientists have long been aware of the importance of the staircase formation to our understanding of soils and ecosystems, but until recently it has received little attention beyond a few technical articles, which appeared from time to time in professional journals. The sole exception seems to have been a short article written by Dr. Hans Jenny, a soil scientist from the University of California, which appeared in the *Sierra Club Bulletin* exactly 13 years ago. Writing about the pygmy forest in particular, Dr. Jenny then stated what remains the most essential point about the need to preserve the entire staircase, which is that some lands deserve preservation not for their scenic beauty or wilderness qualities, but because they embody unique ecosystems that increase our understanding of the processes that shape natural history. Jenny was to recognize in Jug Handle, in particular, the opportunity to preserve an entire ecological transect, an immense,

Jug Handle Creek meanders through its narrow seabluff corridor.

easily readable storybook to scientists and laymen alike. He had studied the Mendocino sea terraces for many years and knew that of them all, Jug Handle was not merely the finest, but also the only one that could be entirely preserved.

In an attempt to educate the public about the importance of the Jug Handle transect, Dr. Jenny has published articles, talked to conservation groups and scientific gatherings, and worked closely with responsible government agencies to preserve the staircase. The first result of these efforts came in 1962 when State Forester F. H. Raymond set aside 250 acres on the upper three terraces as the Pygmy Forest Reserve. Jenny and his colleagues at the University of California had pointed out the great value of the pygmy forest to soil scientists and ecologists, and the force of their argument was recognized not only by the State Division of Forestry but also by the U.S. Department of the Interior, which designated the reserve as a National Natural Landmark in 1969.

While Dr. Jenny was working on one front, John Olmsted, a young botanist who had been teaching courses in the Mendocino area, began to work on another. He had been fascinated by Jenny's description of the staircase, realized that it comprised a natural schoolroom of great value, and in 1968 founded with others the California Institute of Man in Nature for the purpose of preserving it. Beginning with only $300 and a dream, the institute under Olmsted's direction has since raised over $100,000 for the purchase of lower-staircase property. It now owns 140 acres on the first and second terraces and hopes to purchase more land in the future.

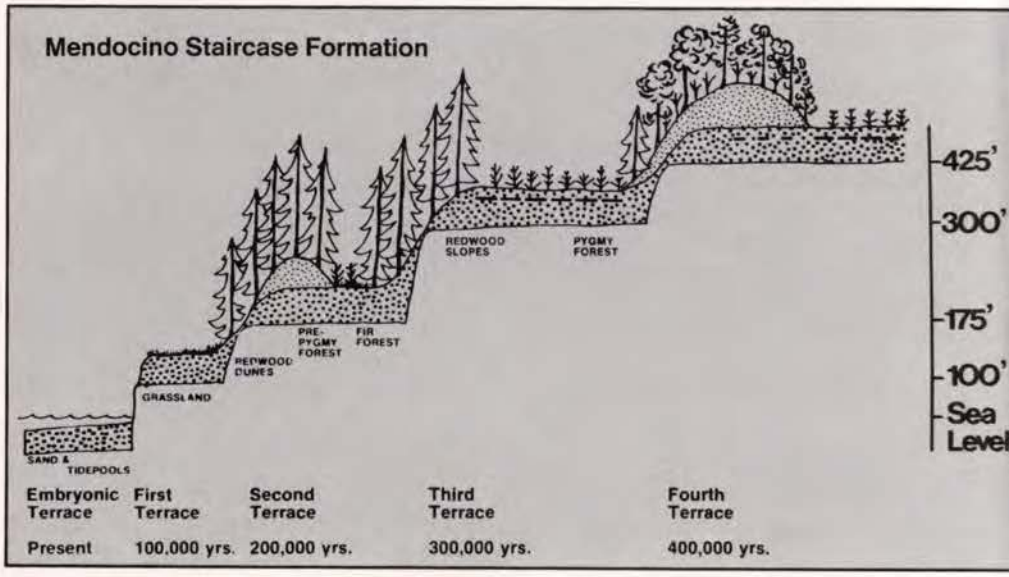
Despite both Jenny's and Olmsted's separate efforts the staircase still remains in private hands. In order that the entire ecological story at Jug Handle can be told, it is essential that at least a major portion of the lower terraces be set aside. The difficulty of doing so, however, has been that of educating the public to values that are not immediately evident. Jug Handle is not scenicly unique—the beauty of the cove, for example, is reproduced all along this coast. Nor is the pygmy forest itself much to look at, being a scrawny, drab tangle of tiny trees and shrubs. We easily respond to the splendor of wilderness, but it is difficult to immediately understand that an area deserves preservation because it is ecologically important.

The process of staircase formation is complex and imperfectly understood, but seems to depend mainly on a steady, uniform uplifting of bedrock possessing just the right physical characteristics, a combination of conditions that in California, at least, obtains most perfectly along the 20-mile stretch of Mendocino coast between Fort Bragg and the Navarro River. Each step of the staircase was cut into sandstone bedrock by the rising seas that marked periods of glacial retreat. Subsequent glacial advances produced receding seas, which then deposited miscellaneous sands, gravels, and clays on the bedrock platform. At the same time, the entire coastal land mass was rising—as it still is—and the terraces were lifted higher and higher, like steps of a giant escalator. Today's interglacial ocean has cut another, embryonic terrace offshore, and if this coast continues to rise, this new step may itself overlook some future sea.

Jug Handle Creek transects the entire staircase, having cut a typical V-shaped canyon through the upper terraces and a narrow corridor through the first-terrace coastal bluff. It flows across a sandbar into Jug Handle Cove only four miles from where it began, high on the fifth terrace. The seabluffs rise about 60 feet above the beach and extend one-half mile eastward along the creek estuary. The beach itself is narrow and is composed largely of quartz sand carried from the upper terraces by Jug Handle Creek. The beach is lighter than others on this coast, where dark sands predominate. Off Jug Handle Point on the south side of the cove, a few seastacks provide nesting sites for cormorants. Beneath the waters of Jug Handle Cove and just off the point exist tidepools and submerged reefs containing an extremely rich variety of sealife, including extensive populations of beautiful urchins and red anemones. The deposition of 5 to 15 feet of sand on the reefs and tidepools would prepare them to be a future uplifted terrace like the seabluff above them.

The first terrace is covered mostly by grasses and herbaceous plants such as lupine, coast poppy, and sea pink, which can withstand the salty air and the seemingly eternal winds that harass this coast. But on the seabluff on the south side of Jug Handle Cove, the southernmost wind-dwarfed Sitka spruces grow in low, sculpted thickets —or krumholtzes—with tanbark oaks, lowland firs, and bishop pines. On the eastern portion of the first terrace, grasslands slowly give way to typical coastal scrub species, which in turn yield to conifers at the beginning of the second terrace. Bishop and shore pines, perhaps remnants of an ancient forest that grew here when the coastline lay farther west, are scattered about most of the first terrace, save that portion nearest the sea. Alder and willow thickets line the creek bottom cut through this terrace.

The beginning of the second terrace is marked by a thick forest of Sitka spruce, lowland fir, and bishop pine, while at the back of the terrace an an-



cient weathered dune supports stands of redwood and Douglas fir. When this terrace overlooked the sea perhaps 100,000 years ago, winds hurled beach sand onto the top of the seabluff, piling it up one mile inland just as they do today at Ten Mile Dunes north of Fort Bragg. Over thousands of years, immense dunes formed, colonized first by grasses and salt-tolerant plants and later by conifers as the terrace rose higher above the sea. At Jug Handle, larger, older, even more weathered dunes mark the beginning of the fourth and fifth terraces. Between, the spruce-fir forest and the second-terrace dune grow mixed stands of tall bishop pine and Mendocino cypress. On the canyon slopes and along the entire stream bottom stands a mixed forest of redwood, Douglas fir, lowland fir, western hemlock, and Sitka spruce, the last species represented by a magnificent 12-foot-diameter tree, which is the largest on the Mendocino coast.

Ecosystems replenish themselves by efficiently utilizing the nutrients bound up in the organic detritus produced in the cycle of life and death. The floor of the coastal forest is covered by a thick carpet of needles and leaves, whose high acidity prevents the incursion of alien species and which, when broken down by micro-organisms, forms the nutrient-rich humus layer on which the forest thrives. On the staircase, however, this recycling of once-living material has been interrupted. Because of the underlying, impenetrable bedrock and flat structure of the terraces, drainage is poor. So during the winter rainy season—when from 40 to 80 inches of rain may fall from October to April—large standing puddles of tea-brown water collect on the older terraces, their color indicating humic acid from the incompletely decayed forest litter.

The standing water on the second terrace has in many places leached nutrients from the surface soil horizon, leaving an ashy white quartz layer known as podsol, a precursor of what is known locally as blacklock soil. In the middle of the second terrace the podsol layer is underlain by a rust-colored hardpan, formed from particles of precipitated iron hydroxide, making it a true blacklock. This podsol and hardpan formation reaches its extreme stage on the higher terraces, where it underlies the Mendocino pygmy forest. Where it has begun to form on the second terrace, a small tract of dwarfed—though not pygmy—bishop pine and Mendocino cypress interrupts the towering splendor of the surrounding forest.

A tall stand of bishop pines and rhododendron grows on the well-drained western face of the third terrace, but soon gives way to a drab, scrubby tangle of plants, looking more like chaparral than forest. This is the Mendocino pygmy forest, drenched in winter, parched in summer, growing in the world's most acid soil. Here, bishop pines and Mendocino cypresses rarely exceed a man's height, and their trunks are seldom bigger than a man's forearm, and often much smaller. Bolander pines, a race of the shore pine and a pygmy forest endemic, are almost as small. One remarkable three-inch-diameter "tree" was found to be a century old. Other pygmy-forest plants include several members of the heath family, including salal, rhododendron, wax myrtle, Labrador tea, huckleberry, and two species of manzanita, one of which is an endemic. In addition, sphagnum bogs—which are rare everywhere and which occur no farther south on the coast—have formed on the upper three terraces where dune springs provide water throughout the summer. Here, too, grow the bizarre, insect-eating sundew plants, whose tiny flypaper leaves can hold large damsel flies.

Longevity is rare in the pygmy forest because disease is common. Pine gall rust, which is an indicator of soil deficiency, forms orange growths on many pygmy forest trees. Soil analyses conducted at the University of California at Berkeley have revealed extreme shortages of potassium, calcium, magnesium, and phosphorus, all necessary minerals to normal plant growth. The process of podsolization that is underway on the second terrace is complete on the third. Only a pygmy humus layer covers the bleached upper soil horizon. Winter flooding continues to leach and sour the soil. Summer drought (almost no rain falls between April and October) produces desert-like conditions in the pygmy forest, and the underlying iron hardpan prevents pygmy roots from tapping the groundwater beneath.

Although no single factor has been found to be the main cause for dwarfing and endemism on the staircase formation, several stand out: poor drainage, highly acid humus layer, mineral content of underlying sand deposits, climate and rainfall, and the length of time each terrace has existed above the sea. The first terrace is too young and too close to the ocean to support most of the conifers that precede the pygmy forest. On the second terrace, the process of podsolization has, on the geological time scale, only just begun, so tall pines, firs, and spruces still thrive on the waterlogged flats. Only when we get to the third terrace has enough time passed (perhaps 300,000 years) to produce the climax pygmy forest. Given the extreme conditions in which the pygmy forest grows, it seems marvelous that it persists at all, that it doesn't just shrivel up and die. Yet not only does it survive, it comprises, according to soil scientists, a steady-state ecosystem in which plants, animals, water, soil, climate, and the countless other elements that interact to form a natural community have achieved a perfect balance. Only man or a major change in the natural makeup of the region can destroy the pygmy forest. It is the climax, and perhaps the glory, of the staircase.

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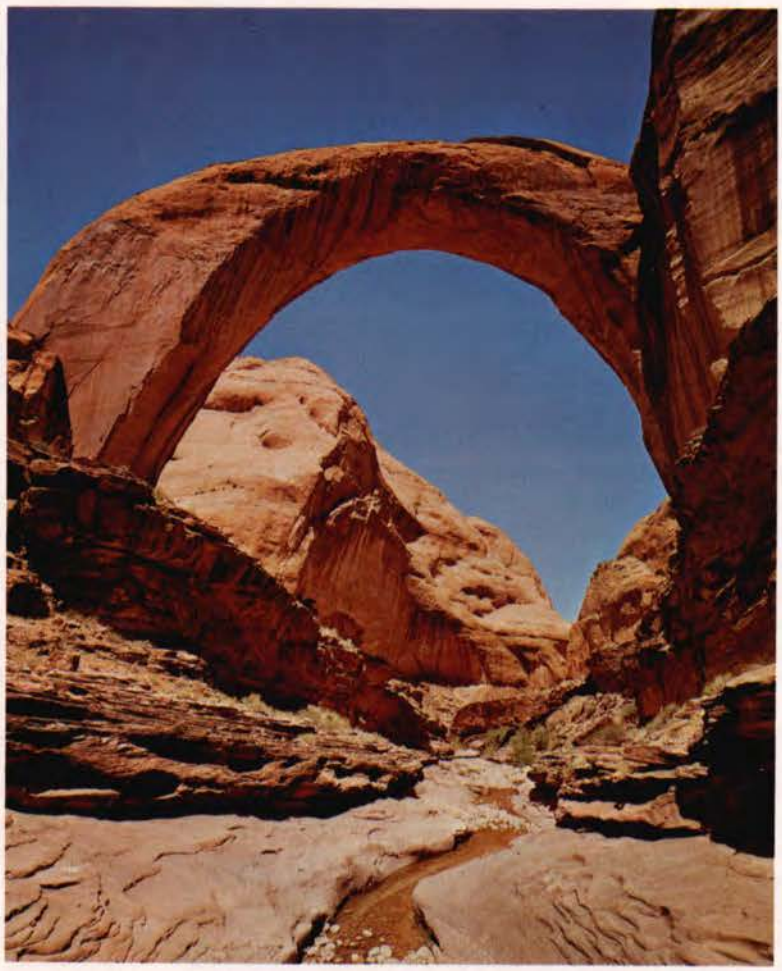
Decision at Rainbow Bridge

ROBERT H. THOMPSON



FAR BELOW the lonely windswept desert of northern Arizona a roaring torrent coursed through a concrete tunnel. Within the subterranean passage a pinpoint of light revealed a muddy river. Slowly the light faded as huge steel gates descended. Soon the water receded and the passage became an empty tomb. Within Glen Canyon Dam's west diversion tunnel, that was the unmistakable moment which brought death to the mighty Colorado and slow strangulation to Glen Canyon, and which now threatens Rainbow Bridge.

That was a decade ago, and since then many of us have grown painfully aware of the finality of that single moment in January 1963—perhaps no one more than I. In the summer of 1961, I toured the damsite with Byron David, a field engineer and the project's second in command. As we stood on a narrow footbridge suspended 700 feet above the Colorado River, I doubt it ever occurred to either of us that the project was anything less than one of man's most righteous endeavors. I, like too many people, learned the truth too late.

Lake Powell was to unlock the hidden treasures of Glen Canyon, but in the past ten years its silent water has destroyed life and consumed beauty. With slow, deadly persistence, the lake found secret places, which it choked, scarred, and finally buried. Simply to forget these places is impossible, since their names are etched deep in western history and folklore. Crossing of the Fathers, Hole in the Rock, Hall's Crossing, and Dandy Crossing are keys that unlock a chronology of Spanish explorers, Mormon settlers, gold miners, and outlaws. To this and future generations, the murky water precludes the opportunity to see and study the volumes of cliff dwellings, granaries, and ancient rock art catalogued in the canyon. To the casual wanderer, to the photographer or explorer, canyons duplicated nowhere in the world, such as Twilight, Labyrinth, Forbidding, Dove, Aztec, Hidden Passage, Last Chance, Soda Gulch and False Entrance are gone. Not unlike many of these places of strange and haunting beauty, Dungeon Canyon was so deep and narrow that even at midday hikers needed flashlights to explore its twisting caverns. Major Powell's incredible alcove campsite of August, 1869, the Music Temple, is now silent beneath 530 feet of water. Cathedral in the Desert, perhaps Glen Canyon's most delicate and beautiful wonder, is now miserably defiled.

With the tragic destiny of Glen Canyon seemingly assured, on February 27, 1973, the course of events abruptly changed. In response to a suit filed by Friends of the Earth, the Wasatch Mountain Club, and river guide Ken Sleight (an earlier suit filed by the Sierra Club and other

groups was dismissed a number of years ago), the United States District Court in Salt Lake City granted an injunction ordering the operators of the dam to take "whatever actions are necessary" to keep Lake Powell from entering Rainbow Bridge National Monument. For the immediate future, Rainbow Bridge, one of the most singularly impressive and beautiful stone sculptures on the planet, will be spared the ugly scarring and possible structural weakening the fluctuating water would bring to the inner gorge at its base. What is perhaps not well enough understood is the reprieve the injunction brings those portions of Glen Canyon still unflooded.

Were it not for the current injunction, the water could slowly rise another 100 feet. To some, the 100 vertical feet may appear insignificant, but when extended horizontally the additional land condemned to submersion is overwhelming. The lake's surface area would increase by 60,000 acres, but since part of this acreage would be in narrow twisting side canyons the shoreline would expand 400 miles. To understand these statistics better, let us look at a side canyon such as the Escalante. Presently the Escalante River enters the lake below Fence Canyon at approximately the 3,600-foot level. The spot is recognized by the stain of last year's high-water mark on the auburn tapestry walls. Beyond the debris-laden floodplain, a tangled morass of rubbish floats on the dead water. The air hangs heavy with the stench of rot and stagnation.

By walking upstream through the deep winding canyon, life is rediscovered. The meandering river leads us through a giant stone corridor and along smooth, tamarisk-lined sandbars. Below the shady ledges, clusters of maidenhair fern hide small freshwater seeps. Scarlet monkey flower, desert evening primrose, and columbine delight the eye, as the call of a canyon wren mingles with the murmur of the gently flowing water.

As we pass the mouth of Coyote Gulch, the massive structure of Stevens Arch dominates the skyline. As we follow the Escalante's tight meander around the base of the arch, our odyssey ends. We are now 100 feet above the lake, but we have walked through six miles of awesome beauty common only here at Glen Canyon.

The injunction not only spares Rainbow Bridge, the Escalante, and Coyote Gulch from the lake's touch of death, but countless canyons along the reservoir's 180-mile length. To the north, the Colorado River tumbles through the roaring chaos of Cataract Canyon. Although little more than three miles are involved, a half-dozen major rapids would be silenced, including Waterhole, the Chute, and Imperial Canyon; eventually silt would fill the lower end of the Big Drop. Here Bowdie and Clearwater Canyons would be flooded, canyons similar to Grand Canyon's Elves' Chasm and Deer Creek. An additional 100 feet of water would also cover the delicately sculptured pools and falls carved in the limestone of Dark Canyon (a BLM primitive area), and flood over ten miles of the Dirty Devil River. An attempt to catalog the full extent of existing esthetic, archeological, and wilderness values between 3,600 and 3,700 feet would be a mammoth undertaking. It would, however, be necessary before the full impact of the Rainbow Bridge injunction could be measured.

Although the court ruling has stirred the adrenalin of those haunted by the memory of Glen Canyon, reclamation advocates are downcast. Acting as a holding pond, the lake makes it possible for upstream states to manipulate rivers and watersheds without jeopardizing their ability to provide Colorado River water to the lower basin states. The injunction leaves the lake 100 feet low, but roughly 50 percent empty in terms of total volume. The reduced storage capacity may cause upper basin states to trim "projected uses" of Colorado River water by as much as 20 percent. Also, because of the lower elevation, several million dollars in power-generating revenue will be lost annually by the upper basin states of Utah, Wyoming, Colorado, and New Mexico. However, operating the lake at "full pool" is expensive because of water loss through increased evaporation and seepage into the porous sandstone. The value of this lost water would offset nearly all the power revenue derived from raising the lake.

While controversy over filling Lake Powell continues, Lake Mead, 275 miles downstream, is little over half full. Since the construction of Hoover Dam in 1935, Lake Mead has been full in only one year, 1941. The average storage has been 66 percent of capacity, and only 57 percent since 1963. Because it is a larger reservoir, Lake Mead will easily absorb the increased flow from Glen Canyon and produce increased power revenues.

Perhaps here lies the solution to the upper basin's problems. Lake Powell could be given full credit for the additional water and power received at Lake Mead. Although the mechanics for such a solution exist, there is one problem: Lake Mead is located in the lower basin. According to some experts, the simple bookkeeping transaction described above would require that Congress modify the 1922 Colorado River Compact.

It now appears that if there are to be any negotiations or compromises they will have to be made between the upper and lower basin water users. Conservationists won protection of Rainbow Bridge at the cost of Glen Canyon. They now contemplate either total victory or total defeat. A brief historical review reveals why there will be no compromises here.

In the early 1950's, Congress attempted to authorize construction of a dam at Echo Park in Dinosaur National Monument. Recognizing the threat to the basic philosophy of the national park system, conservationists throughout the country united in massive opposition to the Echo Park dam. The coalition, led by the Sierra Club, succeeded in stalling the Colorado River Storage Act until an agreement was reached. The *Congressional Record* evidences the intent of the negotiations: Representative Wayne Aspinall said on February 28, 1956, "We have entered into an agreement with conservationists to the effect that we would not trespass upon any national park or monument area in the construction of projects authorized under the provisions of this bill. . . ." The damsite had been moved to a remote, little-known place called Glen Canyon and the bill reintroduced. Satisfied that it contained the guarantees won at Echo Park, the conservationists adhered to their part of the agreement and the Storage Act was passed without further opposition.

Current litigation revolves around the two provisos included in the final legislation. Section three of the Colorado River Storage Act simply states: "It is the intention of Congress that no

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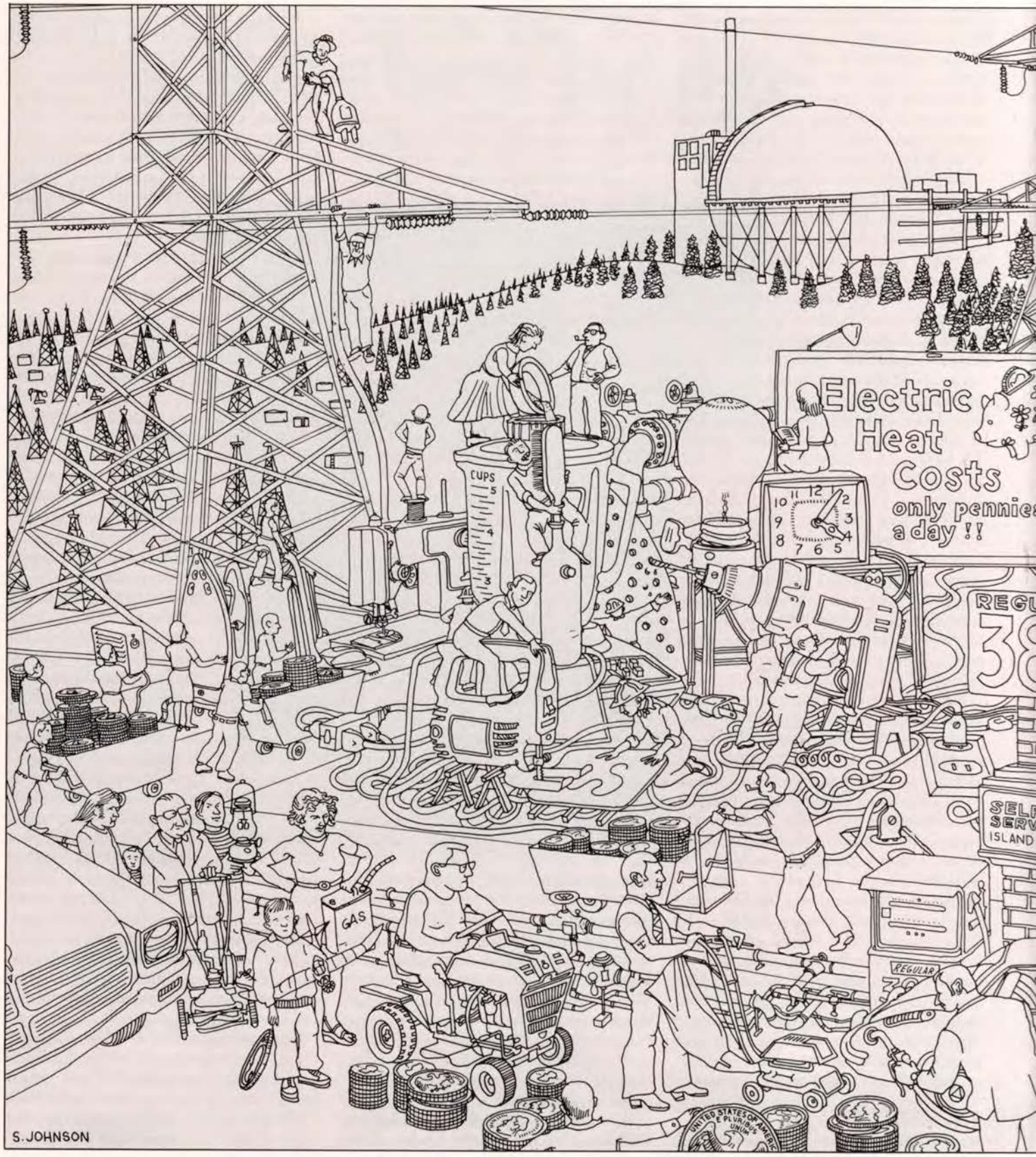
Robert H. Thompson is a Utah conservationist and Sierra Club member.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MIKE MORRISON

The Realities and Unrealities of Energy Economics

FOR AS MANY YEARS as most of us have been driving, we Americans have pulled our automobiles into gasoline stations to receive a gift. Namely, the gasoline. And, for an equal number of years, almost none of us has been aware of this rather astounding largess. We remained unaware although its results stood unhappily all around us.

The great gasoline giveaway, now supposedly nearing its end, has been a primary constituent of a larger esoteric insanity that goes under the name of energy economics. These economics are the progenitor of an energy complex that is many times larger than other industrial components of national life. Energy is a colossus, and its effect on our lives is to scale.

As this giant ambles across the environment, it leaves gargantuan footprints stretching into the distance (like the endless march of high-voltage transmission lines). Oil spills, engine emissions, radioactive wastes, and lacerated coal regions are among the more familiar of these imprints.

Petroleum processing and marketing are sharply illustrative of how energy economics have worked in this country, especially since World War II. They have been linked for years to such urban problems as noise, air pollution, social decay, and physical deterioration—all the deformed offspring of the car culture and the freeway syndrome. Now they are reaching beyond the cities as motorized outdoorsmen surge into the wilderness aboard gasoline-powered recreational vehicles.

Paradoxically, many observers suspect that the "downstream economics" of oil marketing have not represented good business practice; that oil companies have been trapped by history and psychology on one hand and competitive and government actions on the other.

These observers, including senior economists, are capable of little more than suspicion. The best they can do is formulate informed theories and opinions from fragmentary evidence. The crucial sections of the jigsaw puzzle are still missing. How much, for example, does it cost to refine a gallon of gasoline? No one knows, despite efforts by legions of senators, congressmen, and committee counsels to find out.

Working in this twilight, oil industry observers—pro, neutral, and anti—generally have concluded that the companies give their gasoline away in the sense that they sell it at around cost. Given this broad conclusion, there remains a diversity of opinion about details, ranging from the surmise that the majority of large petroleum firms are actually willing to sell gasoline at a loss to the belief that a desire for some profit exists in gasoline sales, but is subordinated to the greater goal of getting rid of the stuff. To anyone who has ever run a business—even selling lemonade from a soapbox—this sounds absurd. It's true that higher volume with a lower price may equal a bigger overall profit. But how can you make money if making money isn't the primary aim?

The answer, which may seem even more absurd, is that the petroleum company earns its profit selling the original crude oil to itself. This Alice-in-Wonderland approach to commerce works for two reasons. First, the major oil companies are integrated. They produce, transport and market their product in a chain that stretches from a wellhead on a platform in the Gulf of Mexico to the pump at your local neighborhood service station. Second, the federal government has placed the tax advantages—on which so much annual passion is vented—at one place in the chain: the wellhead.

It works like this. You drive into a service station and pay for the gasoline. Your payment should cover the costs of marketing, refining, transportation, and the price of the original crude oil. It may cover those items, barely, with a small profit. Or, in a competitive marketing area, your payment may not even meet costs, so the gasoline is sold to you at a loss.

The refining unit buys the crude oil from its parent company or from a sister producing subsidiary of the parent. As refinerymen are fond of pointing out, they must pay the "posted price" for the crude—the going rate which is reported in petroleum publications, just as stock-market prices are quoted in the daily newspaper. They must pay this price even though it is an intracorporate transaction.

At this point, the oil company does

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indeed realize a profit, which is the difference between its costs of producing crude oil and the posted price for which it sells this oil to itself. Far from being fantastic or absurd, this intramural transaction culminates an ingenious process that moves the consumer's dollar upstream in such a way that profits are postponed until the point where they are no longer heavily taxed. This point is at the sale of crude oil, which is sheltered from the usual income taxes by the depletion-allowance and intangible-drilling-expense provisions of the tax code. By foregoing profits until this point, the oil company retains much more of its profits than it could if they had been earned downstream at the filling station.

One question still remains: how do most service stations, which are franchises presided over by nominally-independent, small businessmen, survive without a profit? The answer is that they are subsidized. The supplier grants a temporary dealer allowance that permits the dealer to sell gasoline at or below cost. Not only is the gasoline being marketed at giveaway prices, but the salesman may be subsidized to give it away. For many years, profits at the wellhead were so great that they supported in princely fashion virtually all oil company operations, including this gigantic downstream giveaway.

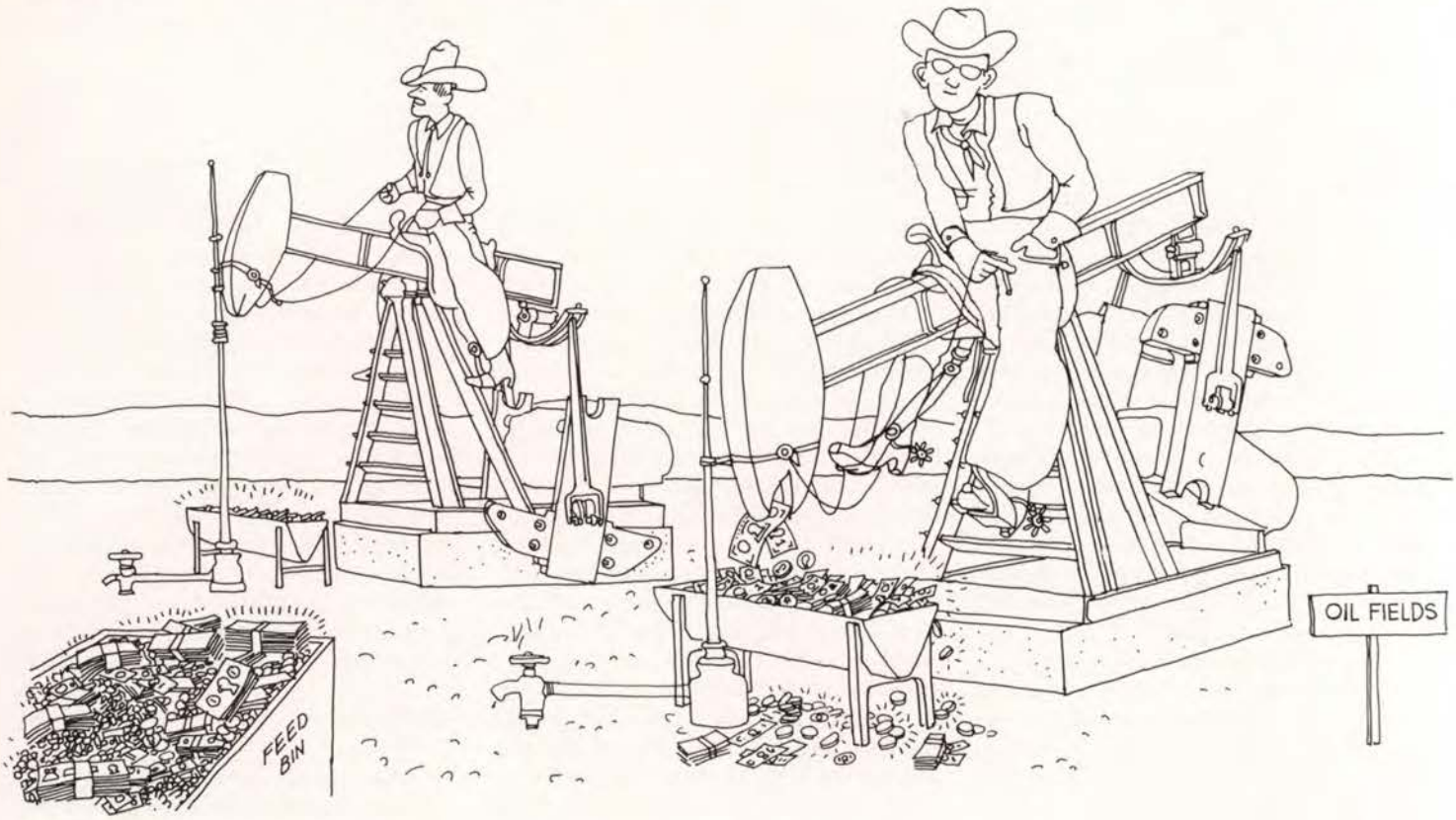
The effect of this marketing system on American life should not be difficult to discern. Gasoline, which represents 50 percent of every barrel of oil produced, is not subject to the commercial checks and balances that set limits of possibility in other retail operations. Hence, oil companies have been able to go to impossible lengths to encourage Americans to burn prodigious quantities of gasoline (and, to a lesser degree, other petroleum products). Under existing law, they would have been remiss in their responsibilities to their shareholders had they done anything else. They can earn the most money and therefore are bound by their corporate charters to put their muscle behind whatever devices most quickly dispose of refined oil. So, they championed the most inefficient transportation mode known to man, fostering the level of combustion that has assisted so splendidly in achieving present levels of air pollution. They supported the severing of urban neighborhood cohesion by freeways and contributed mightily to blight by building millions of service stations which, under non-energy economics, would never have been dreamed of. Clearly, it was their duty to do so.

This state of affairs may appear to be totally wanting in any base of reason. Not so. Energy economics may be perverse, but it is predictable, and like any other predictable phenomenon, it operates according to universal laws. The second law of energy economics states that:

§ *the most inefficient purchase of fuels is the most efficient sale.*

Translating the Orwellian into industry technese: maintain the highest possible load factor by encouraging the highest possible level of consumption. Reworked into common English: move as much energy as possible along your system even if you must accept successively lower prices (including some that fall below cost) in order to get rid of successively larger amounts of energy. Since inefficient users will consume more energy, they are more efficient at helping to move the product along and should be encouraged.

While the oil chain is a stunning example of the second law in action, the law applies to other fuels and power sources, though often in rather different ways. Natural gas and electricity follow the rule with less Germanic obedience—differing from oil in that profits are pursued at all levels



Are we facing a gasoline shortage?

To the extent that some independent Midwestern refineries and distributors are presently unable to obtain sufficient supplies to remain in business, yes, there is a shortage. Major oil companies claim that consumer demand and consumption rates are sky-rocketing. U.S. crude oil production is declining, overseas oil supplies are tight and uncertain, refineries are functioning below capacity because of short supplies of crude oil, new refineries aren't being built, and stored gasoline reserves in the U.S. are dangerously low. This grim scenario has been created, they say, by "environmental and financial restraints." They say that restraints imposed by environmentalists and rising production costs are forcing the hard-pressed oil companies to fail in their obligation to the public.

What the oil industry isn't saying in its eager "energy-crisis" publicity campaign is that increased demand and consumption rates and insufficient supplies, coupled with rampant fear of a catastrophic gasoline shortage, are the precise elements that the industry needs to increase its profits: let gasoline reserves diminish to the point where demand forces prices up.

Why is it necessary for the oil industry to go to such lengths to make more money? Why not just raise the price of gasoline if costs are high and supplies limited and be done with it? As is pointed out in the accompanying article, the oil companies make their profits earlier in the process, by selling the crude oil to themselves, and thus taking advantage of such economic mechanisms as oil depletion allowance, "intangible drilling cost" write-offs, and favorable tax treatments of imported oil. A simple jump in prices of gasoline sold to the distributor or consumer is not nearly so lucrative. Thus, it becomes necessary for oil companies to cry "wolf" to push through their demands for greater tax benefits and exemptions from environment rules, and the authorization of specific projects (like the trans-Alaska pipeline).

Among the techniques energy experts see the oil industry using is "upside down predatory pricing": raising wholesale prices for independent distributors and, in some cases, eliminating altogether the surplus gasoline independents usually buy, while at the same time financing small secondary companies that sell the major company's gasoline at cut-rate prices. Once the independents are driven out, the small companies would be made to raise their prices or close up too, forcing the consumer to buy at increased industry-dictated prices.

Independent distributors are beginning to bring suits against large oil companies, charging them with trying to eliminate independents from competition. The oil interests, of course, claim that demand exceeds the supply—period. In a Houston case, an independent distributor accused Mobil Oil of encouraging him to acquire several Mobil stations, then refusing to provide him with sufficient gasoline. The suit also charges that Mobil raised prices of gasoline to independent distributors by 1.5 cents a gallon, but didn't raise prices for gasoline sold to Mobil-owned stations. By creating situations like this in low-profit fringe areas, oil companies can create an apparent "energy crisis" while keeping a low profile and not doing too much damage to industrial growth.

of sale—but here too power is often virtually given away in return for a high load factor. The consumer who uses the most natural gas and electricity pays the least for them, an odd arrangement considering the claimed shortage of these resources. Any other commodity so rare and precious as these are claimed to be would command high prices indeed. Critics claim that big users often buy natural gas and electricity below cost, with the utilities making up any loss by charging more to those who use the least.

Utilities are encouraged to subsidize big users by the bizarre system used to determine their allowable profits. Regulatory commissions allow utilities a level of profit computed as a percentage of their investment in buildings, operating facilities, and equipment and other costs of doing business. Taken together, these items constitute the utility's "rate base." The utility cannot, with official sanction, earn more money by being more efficient. It *can* earn more money by expanding its rate base, so that its allowable profit becomes, say, ten percent of $20 million instead of ten percent of $10 million. The utility thus is encouraged to get rid of its commodity as quickly as possible so that demand will exceed supply, thus requiring it to invest in new facilities and thereby realize larger profits. Critics of nuclear energy often cite this situation as a major stimulus to the electric industry's romance with the atom. Reactors cost more than boilers and therefore contribute more to the rate base.

By selling power to big users at preferential rates, the utilities encourage them to use much more than they would otherwise, thus necessitating an expansion of facilities with a corresponding increase in the rate base. Oil company charity at the service station is balanced by a large, lightly taxed return at the wellhead. But utility company charity to big power consumers is offset by the increased rates they can impose on the small consumer as a result of expanding their facilities and rate base. All small consumers should, with conservationists, remember this application of the second law of energy economics the next time their gas or electricity bill goes up.

The bizarre nature of the second law of energy economics is exceeded only

by that of the first law. Number one, which provides insight into how number two came into existence, specifies that:

§ *adherence to the principle of competitive free enterprise in energy requires rejection of the principle of competitive free enterprise.*

In technese: energy must be supplied by private enterprises, but government must shield these companies from the constraints of private-enterprise economics. Government must be actively involved in energy to provide the "proper climate" that will permit private companies to fulfill whatever overdemand for underpriced energy exists at any given time.

In the vernacular: government must treat energy as a special case. It must go beyond the passive act of setting rules of the game through a code of prohibitions. Instead, it must actively engage itself in the energy business, granting special concessions (such as the depletion allowance) while imposing special burdens (federal control over natural gas, for one).

The pervasiveness of this first law is demonstrated by its hold on some critics of the energy industries as well as the industries themselves. Neither are willing to accept direction from Adam Smith's invisible hand. Neither believes energy industries would be guides to act in the public good within the usual business context by normal pressures of supply and demand on a finite resource.

The industry wants fuel imports blocked except where controlled by U.S. interests. It wants governmental subsidies and exemptions from such national social goals as diffusion of economic power and full public airings of public issues.

Reformers want more of the government regulation that has been such a failure, special taxes on windfall profits even if the profits result from socially desirable actions, and continuation of the most distorted (albeit popular) part of the mess: below-cost consumer prices.

The second law of energy economics sprang from the first and the first evolved out of history. It is one of history's great ironies, that energy has been deemed too valuable to be subject to the allocation constraints of the marketplace (the first law of energy economics). Without these constraints, energy was partially vested with the characteristics of a free economic good, and few among us give a damn about wasting a good that is free or nearly free.

The inevitable result was the second law of inefficient use to sustain efficient production; a rule whose enormous success and popularity reigned almost without challenge until just a few years ago. It has since come under intensifying assault from without, but it also is showing internal strains and these may ultimately be more important.

To function properly, the efficiency (second) law depends on energy companies, fossil fuel and electric, being capable of large production at low cost. Electric companies see the production half of their balance being crushed by the revolt against construction of new power plants. Failure to bring increased generating capacity on line, while demand continues to race ahead under the promotional spur, means shortages. Few people cared about inefficiency as long as everybody was getting all the power they desired. Gore the people's collective oxen with brownouts, shake in a few incendiary newspaper articles about waste and, presto! utility executives who wish to keep their jobs become efficiency experts (save a watt, friends).

The fossil-fuel situation, especially in petroleum, is more complex, troublesome, and pregnant with implications for society as a whole. An oil company is concerned with capacity, but even more so with the cost-price spread at the wellhead. If profits are squeezed there, the firm is in trouble since it has that enormous downstream charity function to support.

The squeeze is precisely what has been underway for the last several years. Costs of finding and producing new crude have been rising faster than prices. The result: mergers to consolidate downstream operations and desperate attempts to abandon large-loss gasoline markets that sometimes spread across entire regions of the country. Most celebrated has been the dilemma of Gulf Oil, which recently announced a $250-million tax writeoff and has been drenched in "raining red ink," according to an analysis in the financial journal, *Forbes.*

"Back in the sixties, Gulf used its gas pumps to extract profit from its ample crude," said *Forbes.* "Today, many of its gas stations make no profit at all."

If oil companies have not been compelled to operate under the rules that govern other business behavior, neither do they have access to remedies available to other businessmen in times of distress. The old castor oil of trade is to cut back unprofitable operations and raise prices. But retrenchment combined with price increases is doubly difficult to swallow under petroleum economics.

If an oil company tries to retrench to the part of its marketing system which is coincidently profitable, it first jeopardizes the large investment it has in marginal or unprofitable service stations and distribution apparatus. Secondly, it will lose volume, and crude sales will slow. The company has an even bigger investment in the crude producing and refining system and, if marketing operations are made efficient, the crude flow will drop further and further below capacity. This means the capital investment upstream becomes less and less rewarding, and the chain has become financially inefficient.

On the other hand, the oil company will have a difficult time raising prices because of the intense competition prevailing at the service-station level. It runs the risk of losing volume to other companies and the same denouement will proceed, starting at the refinery and moving back upstream, precisely as it would with retrenchment.

The interim answer, unsatisfactory to everyone, probably will be some price increase, some retrenchment, and a good deal of pain for little people involved in the business. A move already is afoot to try to force service station operators to carry more of the loss burden by cutting their allowances. (Money, it should be noted, can be made in gasoline marketing under normal economic rules. It has been done by a few companies of substantial size without access to large amounts of crude and by independent marketers. They merely approached their task with the intention of creating a profit-making market, not a spillway from the refinery.)

The anomalies of gasoline marketing, at least in their more inane forms, are well known to people with an interest in energy. For every hour petroleum industry critics spend fretting

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The Costs of Addiction

America's Automania

IN MARCH THE SIERRA CLUB published large newspaper advertisements in eight major American cities that are sorely afflicted with air pollution—pollution caused in largest part by the great American addiction to the private automobile. The ads were published in order to generate public expression to Environmental Agency Administrator William Ruckelshaus of the immediate public concern over foul air and the grass-roots demand that we start the cleanup in the shortest possible time.

The ads not only pointed to the role of the private car in the field of air pollution, but to the hazards, blight, and unreasonable cost that everyman's tinlizzie—grown to two tons of emotionally sculptured metal—has now visited upon the republic. The ads further charged Detroit with foot-dragging and obstructionism in developing environmentally clean engines.

Though the ads inspired the kind of mail that Administrator Ruckelshaus should see in ever greater quantity every day, many Sierra Club members have felt that the message that could be carried in a single ad was not enough to inform the public as to the automobile's total contribution to environmental degradation. They were right, of course: one newspaper page could hardly tell the story. We can add only a little in this space—some interesting figures.

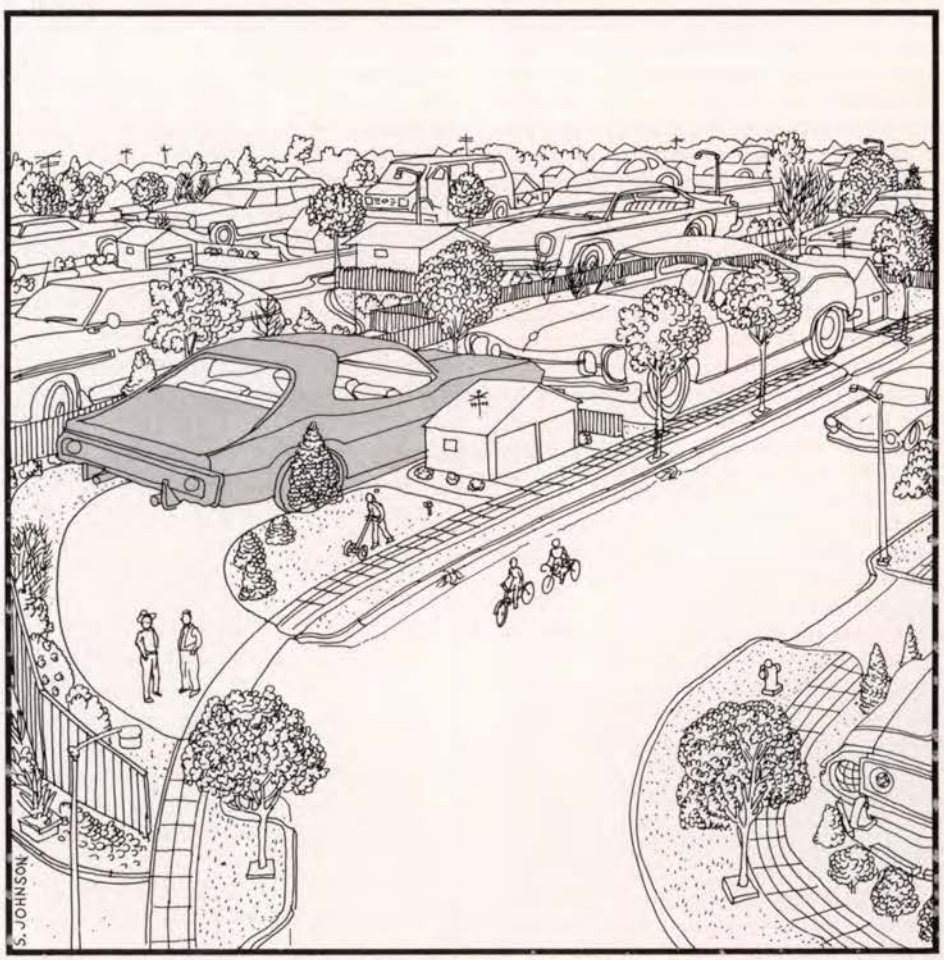
In rounded numbers, Americans have some $95 billion invested in some 100 million passenger cars, which travel one trillion miles annually. To get around, the average car uses over 700 gallons of gasoline each year and costs about 14 cents a mile to operate, all things considered. Each year we spend about $20 billion on additions and repairs to our 3.7 million miles of roads. Of Americans who have both steady jobs and private cars, 82 percent commute by car, 56 percent of them alone. The automobile business accounts for 13 percent of our gross national product, 24 percent of retail sales, and one out of six jobs.

Taking a look behind that part of the energy crisis that is created by the wasteful fuel consumption of the current automobile engines, we find that it takes the equivalent of two gallons of gasoline to produce every ten gallons burnt, and that it takes 1,100 gallons' worth just to build every new car.

Though the automobile's role in air pollution and excessive energy consumption has been staggering, even this may pale in comparison to its impact on land use. As much as two-thirds of the land in some urban sprawl areas is devoted to freeways, parking lots, roads, driveways, used car lots, gas stations, and other automobile-related uses. Indirectly, our automobility has spawned a second-home boom that has reduced some of our loveliest mountain, seashore, desert, and forest areas to rural replicas of the places that vacationers say they are trying to get away from. Finally, our mania for surplus wheels reaches what would seem to be its logical limit in the "recreational vehicle," which at one extreme fills park campgrounds with tacky aluminum boxcars and at the other turns dune buggy enthusiasts into destroyers of our desert and dune environments.

The time allowed for producing a small, safe, efficient, and clean car by 1976 is, of course, at the edge of the absurd. Detroit measures change in terms of decades. (Look, for instance, at how long it took to change a utilitarian object like a bumper into a wretchedly expensive and dangerous piece of junk—and how long it is taking to get it changed back.)

Detroit resists safety, reliability, and environmental improvements with unflinching tenacity. For the 20 years that cars have been known to be serious air polluters, American



automakers have done no more to clean up their product than the laws have demanded, and have stubbornly fought all legislation as well. At the same time, the makers of the Japanese Honda made good their determination to meet the 1975 standards of the Clean Air Act by developing the stratified-charge engine (which has been certified by our National Academy of Sciences) in less than two years. The Mazda rotary—another example of Japanese early-bird development—also meets the standards, as does the Mercedes-Benz diesel. If you want to meet today the clean air standards we are all supposed to heed two years from now, you have to buy a foreign car.

Detroit's interest in auto safety is a tragic joke. In 1972, 12 million cars had to be recalled (by law) for safety defects. Fuel economy as a design objective is all but unknown in Detroit's standard product. The cars grow ever heavier, requiring bigger engines (to give them tire-squealing take-off) burning ever more gas to keep themselves and their power-consuming accessories going. In some areas it is almost impossible to buy a car off the showroom floor that does not have an air-conditioner.

Yet one of these days, we will be driving a smaller, safer, cleaner, and more efficient automobile—because we must, if not because our tastes, habits, and consumer motivations have taken a turn for the better.

Jim Belsey

Wild Lands or Wilderness—A Debate in the East

ALEXANDER POPE, in 1771, declared that "words are like leaves; and where they most abound, much fruit of sense beneath is rarely found." For nearly ten years, since the passage of the Wilderness Act, eastern conservationists have reaped vicarious pleasure preserving western wilderness. But the only harvest "back east" in all this time has been a wilderness of words on the nature of wilderness. Conservationists have spent a decade in theological debate with officialdom over the meaning and intent of the Wilderness Act, forgetting perhaps that it was an easterner named Henry David Thoreau, not John Muir, who wrote "In wildness is the preservation of the world."

The debate, for the benefit of anyone who has been in hibernation, has focused on the 1964 law's definition of wilderness as an area primarily natural in character where the influence of man is "substantially unnoticeable." In all this time, neither the Forest Service nor the Congress has been able to find any such areas within approximately 23 million acres of national forest east of the Mississippi. Numerous local conservation groups such as the West Virginia Highlands Conservancy, Joyce Kilmer Advocates, and Alabama Conservancy have identified areas as suitable for wilderness designation, but the typical bureaucratic response to these discoveries has been to cry "hoax," for on further investigation the Forest Service has always been able to come up with some minor remnant of man's activity—a scrap of iron rail, a rotten stump, a graveyard, a pair of tire ruts. At times the debate has reached stratospheric heights of absurdity. No one has ever suggested radiocarbon dating as a method of distinguishing between substantially unnoticeable and completely unnoticeable traces of human activity, but if someone had they might well have been taken seriously.

All this has changed quite dramatically in recent months with the introduction in Congress of several bills designed to cut off debate and to force the issue. The first of these is a bill introduced by Senator George Aiken of Vermont. Concerned about the abuse of statutory protection for wild forest lands in New England, he introduced a bill creating a brand new system of wild areas tailored to meet what he perceived as different conditions prevailing in eastern national forests. A version of the bill passed the Senate last year and has already been reported out of the agriculture committee this year. While the senator's motives have gone unquestioned, the Forest Service, which has in the past favored a non-wilderness classification system, has been accused by many conservationists of advancing the legislation for the purpose of sidetracking the Wilderness Act. There is also concern that a separate classification system for the East would generate public confusion, legislative duplication, and even jurisdictional friction within the Congress.

On the surface, there is not much difference between the kind of protection offered wild areas and wilderness areas. In some respects the wild-areas legislation offers stronger protection. But it is feared that approval of a new system of wild forest land designation would also imply that wilderness designation must be reserved for the forest primeval, which would bring us right back to the original obtuse discussion of the degree of man's impact. And under such ground rules, it is unlikely that little additional wilderness would be designated in the East or West. The wild-areas concept, nevertheless, has had a catalytic effect. Since its first introduction, Senator Henry Jackson, Representative John Saylor, and even the Forest Service (perhaps wearying of its own argument) have begun promoting eastern wilderness.

The debate now revolves not around the academic distinction between virginity and chastity, but about how much land should be preserved and allowed to grow wild. In February, the Senate Interior Committee held hearings on S. 316, known as the Jackson Omnibus Eastern Wilderness Bill. The bipartisan measure is co-sponsored by 19 other senators and would designate 28 new wilderness areas, totaling 471,186 acres, in 16 states.

In its testimony the Forest Service, speaking for the administration, proposed 53 study areas encompassing 530,500 acres for possible inclusion in an eastern wilderness system. Sixteen of these areas (194,500 acres) would likely become "instant" wilderness areas with the passage of the act.

The Sierra Club has proposed 16 areas

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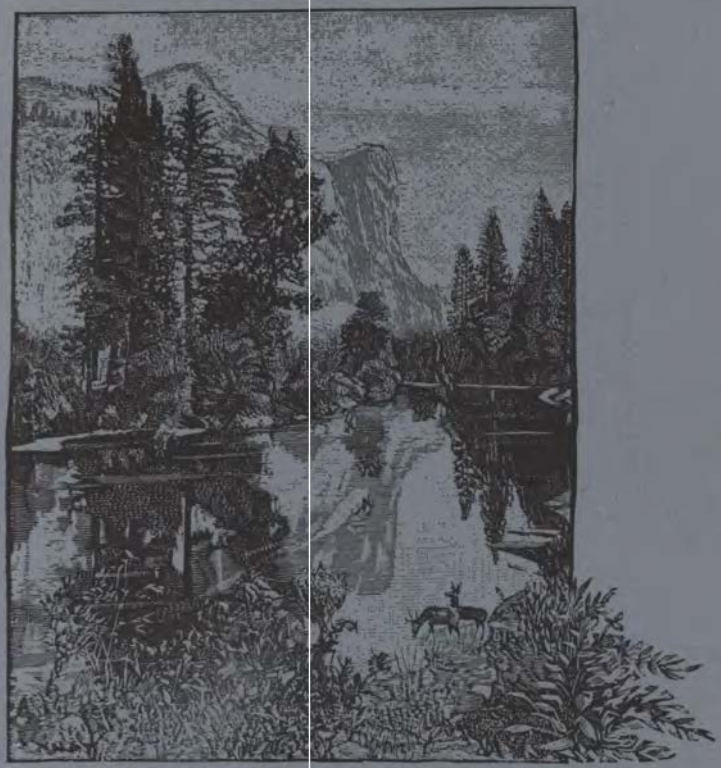
For a better environment tomorrow...



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WASHINGTON REPORT

A Case of Apparent Bias

MANY OBSERVERS of the environmental scene in Washington have commented in the past about the apparent bias of the present Administration in favor of industry and against meaningful environmental control measures. A series of actions, or lack of action, in recent weeks would seem to confirm this unfortunate orientation.

First, John Dunlop, the director of the President's Cost of Living Council, announced that the Administration intended to take several immediate steps to meet the alleged "lumber crisis," including an order to the U.S. Forest Service to increase the amount of timber sold in the national forests this year by 1.8 billion board feet. This announcement followed hard on the heels of a large lobbying effort by homebuilders' associations, retail lumber dealers, and certain segments of the timber industry, protesting higher prices of lumber and alleging that "environmental restrictions" were preventing the Forest Service from cutting as much timber as it should.

Soon after, EPA Director William Ruckelshaus granted a one-year extension on the imposition of tight auto-emission standards, as requested by the auto industry. Environmentalists heavily opposed such an extension on the grounds that technology was presently available to comply with the standards. In fact, two major auto producers—Mazda and Honda—have already complied. Many observers in Washington think that Ruckelshaus' decision is just the first of what will be a long series of unravelings of a very strong and well-founded Clean Air Act.

Next, the President's energy message, which was released on April 18, seemed to be one more example of the Administration's sympathy to the views of big industry. Although not unexpected, the President's message was disappointing in its emphasis on immediately increasing supplies of energy through such measures as tripling the number of off-shore oil leases, greatly increasing coal strip mining, and an ambitious program for new deep water super-ports. These specific proposed actions were not accompanied by any correspondingly specific proposals to protect the environment. For example, in the case of off-shore oil drilling, the President simply maintained that present measures of surveillance and protection are sufficient. He did call for "strong" legislation to control strip mining, but the proposal he has submitted to Congress is woefully inadequate.

Perhaps most disappointing in the energy message, after its overwhelming emphasis on increasing the supply, was the lack of interest in doing much about cooling demand. In spite of the well-documented fact that a host of measures are presently available to reduce energy consumption in this country from 25 to 35 percent, without an appreciable reduction in living standards, the President's most noteworthy statement on the subject was that "Energy conservation is a national necessity, but I believe that it can be undertaken most effectively on a voluntary basis." Thus, he did nothing meaningful at all in this important area.

The President made a tantalizing reference to the pricing problem referred to in my last Washington Report when he said, "We should recognize that the single most effective means of encouraging energy conservation is to insure that energy prices reflect their true cost." But then the only thing he proposed to do specifically was just what the industry wanted—to deregulate natural gas. He never mentioned a word about removing other subsidies to the energy industry—such as oil depletion allowances, and tanker subsidies—which operate in one way or another to stimulate demand.

A final disappointing action—this time by the House of Representatives—came on April 19 when it finally voted not to permit local governments to tap the Highway Trust Fund for non-highway purposes. An immensely able effort by Linda Billings of this office and by the Highway Action Coalition succeeded—in spite of strenuous opposition from the highway lobby—in getting the provision passed by a narrow margin in the Senate. But when the battle shifted to the House, the highway lobby again turned on the steam, and this time won. Congressmen were barraged with delegations of state highway officials (their expenses paid by public funds, of course), Chambers of Commerce, and others urging no diversion. Environmentalists did what they could and almost turned the tide; a shift of thirteen votes would have meant victory.

But the big problem again was the Administration. Although a great deal of lip service has been paid by its spokesmen, including the President, to the idea that the Highway Trust Fund should be used for mass transit purposes also, when the crunch came down, not enough was done. Minority Leader Gerald Ford even gave an impassioned speech against such diversion, and when the final vote was taken, the chorus of "no's" from the Republican side of the House was almost deafening.

If the Administration had done any strong lobbying at all, it could surely have been able to influence at least ten to 15 votes within its own party. It is not that it does not have an effective lobby; it was very effective in its work to prevent an overriding of the President's veto on several spending measures just a few days before. The real reason obviously is that the Administration either didn't think it was important enough to fight for, or it was just giving lip service to the whole cause, when its real sympathies were elsewhere.

Brock Evans

CAPITOL NEWS

Ruckelshaus surrenders to Detroit: emission standards delayed

ONE YEAR AGO, Environmental Protection Agency Administrator William Ruckelshaus refused the auto industry's request for a year's delay in meeting emission standards for carbon monoxide and hydrocarbons on 1975 cars, as required by the 1970 Clean Air Act. But last month, he reversed his position and granted the extension, thereby giving federal encouragement to the auto industry's campaign to weaken the Clean Air Act. Testifying before Maine Senator Edmund Muskie's subcommittee on Air and Water Pollution, Ruckelshaus also urged a relaxation of the Act's tough 1976 nitrogen oxide emission levels, claiming the required reduction of this pollutant wasn't necessary to meet health standards.

Ruckelshaus did qualify his year extension by insisting that the original 1975 standards be applied in California and by setting fairly stringent interim standards for the rest of the nation. Although General Motors and Ford had previously suggested a similar approach in their requests for the extension, they reacted strongly to the interim standards: "Beyond the limits of practicality," snapped Henry Ford II. If Ford's claim, in truth, applies to them, presumably the company hasn't gone far toward meeting the original standards.

Chrysler was singled out by Ruckelshaus as having made the least effort to meet the 1975 deadline. Ruckelshaus reluctantly con-

EDITORIAL

The Environment and the Courts

MORE AND MORE FREQUENTLY, members read of the Sierra Club's participation in lawsuits. If anything, this trend will continue because there is a pressing need for Americans everywhere to vindicate their environmental rights.

We have many good laws, but they are not being obeyed. In three short years more than 150 cases have raised the National Environmental Policy Act to an environmental Magna Carta. However, in many instances, it is necessary to bring suit to compel the filing of an impact statement. In other cases, the official response is inadequate, complying with the letter of law, but violating its spirit. I do not believe that the administrators of the Soil Conservation Service, the Corps of Engineers, and USDA's pesticide programs are evil men; but I know they are lawless men, for I have read the law and I have seen their work.

If our environmental laws are to have any meaning, they must be enforced. If administrators will not obey the law, they must be taken to court.

The courts do not act unless people bring cases to them. Just as important as the environmental lawyers who have forged the procedural tools, and the judges who have declared the new doctrines, are the plaintiffs who shoulder the burden and expense of administrative and judicial proceedings in order to vindicate their environmental rights. The environmental movement needs plaintiffs who are willing to go the whole route, individuals with civil courage and fortitude to outlast the delays of administrative agencies.

Once the determination to sue is made, the Sierra Club Legal Defense Fund is ready to help. Our lawyers have won standing, a judicial recognition of the Sierra Club as a group with special interests giving it the right of access to the courts in environmental cases. The Legal Defense Fund is also important because it can pick and choose cases. Environmental lawyers know that weak cases can make bad law.

If the Club is doing its job, it will be in the courts because in our system of government the courts are where great issues are finally settled. It was De Tocqueville who said, "Scarcely any political question arises in the United States that is not resolved, sooner or later, into a judicial question." It is my belief that we will see a generation of environmental litigation, just as we have seen a generation of litigation involving civil rights, and before that a generation of labor law cases.

I am continually reminded of the civil rights litigants of the 1960's. People who had never before hoped or dared to find lawyers did so and thereby changed this country. It didn't take many. In some communities it was only a handful, but they were citizens who knew their wrongs and were willing to take every legal means to vindicate their rights.

I personally believe environmental rights and civil rights are closely intertwined. I remember a young girl picketing a department store in the August sun of New Orleans in 1962. As she kept her lonely vigil, I came closer to see the sign on her placard. It was a quotation from the Nobel Prize winning poet St. John Perse: "We are brothers to the wind, the sun, the stars—and perhaps to more."

The Sierra Club's lawsuits are a continuation of the grand struggle for justice, which is the haunting theme of our history. Our stand should be: love for the land and justice for its people. The two are inextricable. When we protect environmental rights, we further the civil rights of the people. The land ethic undergirds the social structure of which justice is the crown.

This is why we have fared so well in our lawsuits. The individuals who make the difficult, sometimes courageous choice to file environmental suits are successors to preceding generations of Americans who have given the Constitution the life it has. Sierra Club plaintiffs and lawyers are writing a new chapter in the vindication of justice and civil rights which has been the grand tradition of the courts of this country.

William Futrell

cluded that Chrysler had shown "good faith," but added that Engelhard Industries had testified that Chrysler refused to buy its pollution-control devices because Engelhard had supported enforcement of the original 1975 deadline.

Sierra Club Executive Director Michael McCloskey saw the one-year extension as "a capitulation to the industry's whole strategy of circumventing the act." "The real question," he added, "is what Detroit intends to do with the additional year. Will they use it to launch a crash effort to comply with the standards of the Clean Air Act, or will they use it as an occasion to launch a massive public relations campaign to pressure Congress into drastically weakening the Act? We expect the latter—mobilization of few engineers and legions of public relations men."

The auto industry employed exactly this type of campaign to obtain the extension. After obtaining a court order forcing Ruckelshaus to reconsider his decision to enforce the 1975 standards, the Big Four—GM, Ford, Chrysler and American Motors—mounted an all-out campaign in newspapers, over television, in speeches by top executives, and in packets containing suggested speeches dealers could give before local groups. The auto industry released ominous reports, disputed in part by the EPA, warning against added costs and decreased efficiency due to pollution-control devices. Chrysler Chairman Lynn Townsend's lobbying efforts took him to Presidential Assistant John Ehrlichman who later said that parts of the Clean Air Act didn't "make sense."

House rejects amendment to open highway fund for urban mass transit

Conservationists' efforts to secure Highway Trust Fund money from the Federal Aid to Highways Act for mass transit systems have concentrated on the joint Senate-House conference committee, but the House—by a 215 to 190 vote on the last day before spring recess—rejected an amendment that would have cracked the highway trust.

"Coming only eight days after the news that clean cars will be delayed for one more year, the House vote could have serious consequences for many of our nation's urban areas," said Maine Senator Edmund Muskie, who co-sponsored a similar administration-backed proposal approved by the Senate in March.

The differing House and Senate bills are being reconciled in the fractious Senate-House conference. Last year, the Senate passed and the House rejected a mass transit plan. After weeks of negotiations, the conferees remained deadlocked on the issue, and the entire highway bill died.

The Highway Trust Fund is a special part of the federal budget financed entirely by federal taxes on gasoline, tire rubber, and trucking tonnage. The four-cent federal tax on each gallon of gasoline, for example,

now goes into the fund. These taxes generate about $6 billion each year, but the money can be used only to build highways and for a few related purposes. Rural interests have repeatedly blocked urban attempts to spend a portion of the trust on mass transit.

Created in 1956, the Highway Trust Fund has enabled construction of the largest public works project in history—the 42,500-mile, $80 billion Interstate highway system, which is now more than 80 percent complete.

Morton and Jackson look for "right-of-way" to push pipeline through

President Nixon is pushing hard for congressional approval of legislation that would enable construction of the trans-Alaska pipeline. Last month Interior Secretary Rogers C. B. Morton was summoned to the Western White House for a long conference with the President.

"He wanted me to go all out working with the Congress and with the other agencies involved in pursuing the construction of the trans-Alaska pipeline, which he feels is vital to the national interest," Morton reported. Morton dismissed the possibility of an alternative Canadian route in a letter to congressmen who had inquired about the feasibility of other pipeline paths.

In Congress, meanwhile, Chairman Henry Jackson of the Senate Interior Committee worked the committee day after day to speed passage of his own right-of-way bill (S. 1081), ignoring other longstanding bills about the pipeline. Although Jackson's proposal concerns permits for all rights-of-way across public land, its passage would clear the way for issuance of the construction permit for the trans-Alaska pipeline. His bill delegates broad authority to the Secretary of the Interior to issue right-of-way permits for a wide variety of projects.

Congressional action is necessary for pipeline construction to commence because of a recent Supreme Court decision upholding the 1920 Mineral Leasing Act. The court refused without comment an Administration request to review the court of appeals decision that prohibited the Alaska project. The lower court ruled against pipeline construction because the planned 54-foot right-of-way exceeds the width permitted under the Mineral Leasing Act.

High Court upholds tough oilspill law

Upholding unanimously a tough Florida law regulating shippers, oil drilling facilities, and dockside terminals, the Supreme Court recently ruled that states may hold shippers liable for the damage that offshore oil spills cause private citizens so long as state laws don't conflict with federal antipollution measures. The ruling opens the way for other coastal states to enact similarly stringent legislation.

The decision reversed a finding by a three-judge Federal District Court panel that the Florida law represented an unconstitutional intrusion into federal maritime jurisdiction. The statute had been challenged by a group of shipping and docking interests.

"To rule as the district court has done," wrote Associate Justice William O. Douglas, "is to allow Federal admiralty jurisdiction to swallow most of the police power of the states over oil spillage—an insidious form of pollution of vast concern to every coastal city or port and to all the estuaries on which the life of the ocean and the lives of the coastal people are greatly dependent."

The Florida law makes any shipper or dock owner liable to the state and to private property owners for oil spill damages, without reference to whether he was negligent or not. The law also requires all shippers and terminal operators to establish financial responsibility to meet such costs through insurance or surety bonds. Finally, it provides for the state regulation of containment equipment that ships and terminals must install to prevent spills.

"The damage to state interests already caused by oil spills, the increase in the number of oil spills, and the risk of ever-increasing damage by reason of the size of modern tankers underlie the concern of coastal states," Douglas concluded.

NEWS VIEW

Environmental aggression looms as future international problem

INTERNATIONAL "environmental aggression" is likely to set off a serious political crisis in the next decade, according to Maurice S. Strong, Executive Director of the United Nations Environment Programme. With rainmaking already feasible, he foresees "rain stealing," where one country would knowingly steal another's rainfall, thereby causing drought. This theft could occur if an unfriendly country seeded passing clouds that regularly brought rain to a neighboring nation.

Strong said there have already been a number of disputes between countries over claims of pollution damage to waterways and the atmosphere and predicted that the number will grow as technology makes it possible to modify weather and climate. "We are only beginning to realize the potential areas for conflict," he said.

He also posed the possibility of countries attempting to melt the northern ice cap, either to gain an area for expansion or in search of minerals. Artificially created earthquakes and tidal waves are conceivable as well. All such possibilities underscore the need for international agreements to cover possible modification of weather and climate, Strong said. He thinks that the U.N. Environment Programme, created by the General Assembly last December, should have a significant role in helping governments to settle environmental disputes by "preventive diplomacy" before they reach the stage of a full-blown crisis.

The basis for charges of environmental aggression has already been laid down, Strong pointed out, in the Declaration of Principles adopted at the U.N. Conference on the Human Environment in Stockholm last June. The declaration pledges governments to see that their activities do not cause damage to the environments of others.

Although a party to the declaration, the United States has been accused repeatedly of using weather modification in Southeast Asia to "increase and control rain for military purposes." Last July, the Sierra Club and the Federation of American Scientists asked President Nixon to halt environmental modification activities. In Congress, Rhode Island Senator Clairborne Pell has reintroduced a resolution (S.R. 71) calling on the U.S. "to seek agreement with other

governments" to a treaty "providing for the complete cessation of any research, experimentation, and use of any environmental or geophysical modification activity as a weapon of war." In the House, Representative Donald Fraser of Minnesota introduced a similar resolution (H.R. 329) "asking the U.S. Government to take the lead in seeking an international agreement to ban weather modification activities for military objectives."

Decision pending on Sierra Club lawsuit to keep clean air clean

"We're facing a clean air crisis unless we win this case," said Sierra Club Legal Defense Fund Executive Director James Moorman about the Club's air quality suit. The Sierra Club and three other environmental organizations seek to prevent the Environmental Protection Agency from approving state regulations that would allow significant deterioration of air quality in states where the air is already cleaner than required by federal standards. The case was argued before the Supreme Court last month, but as of late April no decision had been reached. Two lower court rulings have previously upheld the Club's position.

Joining the Sierra Club in the case as friends of the court are 20 states—Alabama, California, Connecticut, Florida, Illinois, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Dakota, Texas, and Vermont—the cities of Boston and New York, and 25 other groups, including the Oil, Chemical and Atomic Workers International Union and the prestigious New York City Bar Association. Arizona, Utah, and Virginia are supporting the EPA.

Sierra Club elects five new directors

Five new directors were elected to the Sierra Club's 15-member national board of directors. They are: Edgar Wayburn, San Francisco, California, physician; Holway Jones, Eugene, Oregon, librarian; Kent Gill, Davis, California, junior high school teacher; George Pring, Columbus, Ohio, chief, environmental litigation, Ohio attorney general's office; and Vicki Mattox, Louisville, Kentucky, housewife.

They join directors Phillip Berry, Berkeley, California, trial lawyer; Claire Dedrick, Menlo Park, California, conservation center director; August Frugé, Berkeley, director of the University of California Press; William Futrell, University of Alabama Law School professor; Laurence I. Moss, Washington, D.C., executive secretary, Committee on Public Energy Policy, National Academy of Engineering; John Ricker, Phoenix, Arizona, physician; Raymond J. Sherwin, Vallejo, California, Superior Court Judge, Solano County and present Club president; William Siri, Richmond, California, biophysicist, University of California, Berkeley; Paul Swatek, Sommerville, Massachusetts, writer; and June Viavant, Salt Lake City, Utah, housewife.

The new board met in San Francisco May 5 and 6.

REGIONAL REPS REPORT

Northern Rockies: Power and the Public in Nebraska

WE'RE GOING TO BUILD and operate the cleanest coal-fired generating plant that is practical, boasts the Nebraska Public Power District, in an attempt to soothe the concerns of local residents who don't want their air degraded or damaging trace elements dumped on crops and livestock. Utilities have typically sought public acceptance for each new power plant by using general and vague statements and value judgments instead of fully disclosing factual information. They repeat *ad nauseam* that they will meet federal air standards, that pollution control costs are high, and that their supposed mandate is to generate an abundant supply of energy at low cost. But this deceptive line has not worked in central Nebraska, where livestock and agricultural interests have organized as the Platte Valley Sierra Club in order to fight for the maintenance of the existing quality of their environment.

Largely given to open, flat plains, the Hershey-Sutherland, Nebraska, area is located just at the southeast edge of the vast sandhill country and between the North and South Platte rivers. The communities are small, and the surrounding agricultural lands are well kept and productive. This pastoral region is now threatened by a 2,000-megawatt, coal-burning power plant —almost as large as the infamous Four Corners power plant in New Mexico. Platte Valley Club members have testified time and again in defense of their clean air and agricultural livelihood, but have been shoved from one agency to another—each one claiming a lack of jurisdiction on environmental matters.

All the while, the power district rolls ahead with construction plans, bond sales, equipment orders, and an abundance of press releases assuring the goodness of their intentions and their concern for the environment. But where are facts about air pollution, water needs, irrigation impacts, the kinds of damaging trace elements in the coal, and general social impacts? It's time the utilities stop their propaganda and really inform everyone what will happen to the area if the power plant is completed. The question is not where the energy will come from, but where will we get clean air. According to local counsel, John Gale, "Aside from the public relation aspects, the company has failed to reveal in public hearings such things as proposed plant design, reservoir seepage, ash pit and coal storage."

The utility company should address itself to all the possible effects its proposed power plant could have on this area. To merely claim that it intends to comply with federal clean-air standards is not enough. Depending on how the Supreme Court rules on a Sierra Club suit now before it, these standards may permit degradation of the air in clean-air regions down to levels that exist in populated industrial areas. Rather, the utility company should take care to see that western Nebraska's air retains its present freshness, even if this effort requires the best pollution-control equipment money can buy. Even more important, it should not be encouraging the profligate consumption of power that necessitates—and permits—the construction of otherwise unnecessary additional power plants. It should instead encourage conservation of power and fully explore both the real need and future impact of power plants proposed for the future. The Nebraska and Omaha Public Power Districts are now planning to increase their present generating capacity by 4,750 megawatts by 1990. The energy needs of Nebraska don't seem to merit this level of production, and the state's central rural areas should not be the "utility dump" for cities to the east.

Laney Hicks

East: The Limitations of Strip Mining

SPRING RAINS have come to Appalachia, and the earth has begun to move. Trees and blossoming flowers, soil and boulders, the graves of the dead, and the homes of the living are washing away. Whole mountains are falling down. It is springtime. Time for renewal. But in the hills and hollows of Appalachia where strip mining continues, it is another season of sorrow.

Here in Washington, the scars are too distant to be seen, and the whimper of a dying land is too faint to be heard. We ponder instead convoluted legislation some say will restore green to the mountains. "If only we had an energy policy," cry others, ignoring the policies of exploitation that are already law. "We need more studies," demand those who have not read the studies they have. The city is abloom, and the throngs of tourists are a welcome sight, for the Congressional spring is deathly.

Ken Hechler is still calling for a halt to strip mining, particularly in the mountains. Even the United Mine Workers say it is time to stop. But Senate Interior Committee Chairman Henry Jackson now has a study proving that we can have our coal and mountains too. Jackson, who aims to strike the golden mean between strip miners and environmentalists, last November asked the President's Council on Environmental Quality to do a quick study on surface coal mining and reclamation with particular emphasis on the impact on coal production of prohibiting contour strip mining on slopes (1) greater than 15 degrees, and (2) greater than 20 degrees.

The report, released in mid-March and entitled "Coal Surface Mining and Reclamation," concludes that contour mining can be conducted without destroying the mountains by means of a substantially untried method of mining known as the "modified block cut." CEQ is so excited about it one would think it had unearthed the missing link. Traditional methods of contour mining have involved cutting into the sides of mountains, exposing the coal, and discarding the spoil down the mountainside, where it generally rests precariously until the next rain. The modified block cut requires that all of the disturbed earth be kept at the level of the initial cut. The obvious difference in operations is that the block cut requires careful handling and storage of the earth that is being removed. At this point most of the engineering has been worked out, but as yet the method has only been applied in isolated demonstration projects. And until legislation is passed that effectively internalizes environmental costs within the industry requiring greater reclamation expenditures, it is not likely to receive widespread application. In the meantime, CEQ's discovery has become yet another rationalization for avoiding any policy that might cut into strip-mining production.

Having diminished the environmental impact of contour mining, the report goes on partly to justify a continuation of contour mining as an economic necessity. The data gathered by CEQ indicates that a 15-degree or a 20-degree angle prohibition "would not have an appreciable economic impact in major sections of northern and southern Appalachia. The impact, however, could be significant in nearly all of central Appalachia," because coal mining obviously is a major source of employment in

central Appalachia, and presumably because of reserve shortages below 15 degrees and the inability to shift to underground mining in a short time span.

According to the report, a prohibition on mining slopes greater than 15 degrees "would preclude production of between 42 and 108 million tons annually, representing between 27 percent and 70 percent of Appalachian surface mine production, 11 percent and 39 percent of total surface production, or 7 percent and 18 percent of total U.S. production." The less stringent 20-degree slope angle prohibition "would affect between 17 and 80 million tons annually, representing between 11 percent and 51 percent of Appalachian surface mine production, 5 percent and 29 percent of total surface production, or 3 percent to 14 percent total U.S. production."

The report focuses on Appalachia because it accounts for more than 90 percent of contour coal mining. But in making its impact assessment independent of the rest of the nation, the picture becomes distorted. The report, for example, deals only with production losses in Appalachia and does not, to quote its authors, "take account of possible substitution of coal production in other areas of the country, domestic production of other fossil fuels, or imports of petroleum products." Nor does it consider changes in U.S. coal-export policy, the impact of new technologies on underground production, alternate sources of regional employment, or most importantly, the *benefits* of prohibiting mining on steep slopes.

The report instead raises numerous short-term obstacles to prohibiting contour strip mining while ignoring the plain fact that all surface coal mining must eventually come to an end. For while surface mining presently accounts for half of U.S. coal production, most of the nation's coal resources will have to be deep mined if they are to be exploited. Only 45 billion tons of the 1,552 billion tons of mapped resources (less than three percent) can now be classified as strippable reserves. Furthermore, the loss of reserves from a slope angle prohibition represents under one percent of reserves.

The obvious conclusion is that any long-term, rational energy policy for coal should be based upon reserves rather than present production demands. Without such a fundamental reversal, it is very likely that federal legislation to "control" strip mining will come down with an acute case of the "energy studies," and end up not controlling anything. Without a firm commitment from Congress, prohibiting mining in the mountains and elsewhere where reclamation has proven impossible or unsuccessful, there can be no real control. By refusing to recognize that only three percent of our coal reserves can be strip mined and that stripping is nothing more than a profitable expedient for coal operators, Congress in effect is trading our lands for a mess of pottage.

Major Environmental Legislation—93rd Congress*

	SENATE	HOUSE
LAND USE		
Bureau of Land Management Organic Act	S. 424 (Jackson) S. 1041 (Administration)	H.R. 5441 (Saylor)
National Land Use Planning	S. 268 (Jackson) S. 924 (Administration)	H.R. 4862 (Saylor) —
Strip mining Ban	—	H.R. 1000 (Hechler)
Strip mining Regulation	S. 425 (Jackson) S. 923 (Administration)	H.R. 3 (Hays)
Wilderness Study Act	—	H.R. 2420 (Saylor)
Omnibus Eastern Wilderness	S. 316 (Jackson)	H.R. 1758 (Saylor)
Eastern Wild Areas	S. 22 (Aiken)	H.R. 656 (Jones—ALB)
Terminate Mining in Wilderness	S. 1010 (Jackson)	
Big Thicket NP	S. 314 (Byrd—WV)	H.R. 4270 (Milford)
Big Cypress Acquisition	S. 920 (Jackson) S. 334 (Gurney)	H.R. 4866 (Saylor) H.R. 46 (Haley)
Gates of the Arctic NP	—	H.R. 1887 (Saylor)
Expand Redwoods NP	—	H.R. 1883 (Saylor) H.R. 4686 (Waldie)
Expand Sequoia NP to Include Mineral King Include Kern Plateau	—	H.R. 3089 (Dellums) H.R. 4765 (Edwards-CA) H.R. 5732 (Rees)
Hells Canyon-Snake River	S. 657 (Hatfield) —	H.R. 1890 (Saylor) H.R. 2624 (Ullman)
California Desert National Conservation Area	S. 63 (Cranston)	H.R. 890 (Pettis)
Amend Indiana Dunes NS	S. 584 (Bayh)	H.R. 3571 (Roush)
Log Export Ban	S. 1033 (Packwood)	H.R. 5744 (Scherle)
ENERGY		
Energy Policy Act	S. 70 (Hollings)	H.R. 1258 (Van Deerlin)
Research & Development	S. 357 (Magnuson)	H.R. 4997 (Thone)
Plant Siting	S. 935 (Jackson)	H.R. 4874 (Staggers)
Trans-Alaska Pipeline Authorization	S. 970 (Stevens)	—
Ban	—	H.R. 4707 (Aspin)
Study	—	H.R. 5750 (Udall)
Trans-Canada Route	S. 993 (Mondale)	—
Mining Law Amendments for Rights-of-Way	S. 1040 (Administration) S. 1081 (Jackson)	—
Superports & Supertankers Controls	S. 80 (Hollings) S. 386 (Case)	—
POLLUTION		
Toxic Substance Control	S. 426 (Magnuson) S. 888 (Administration)	H.R. 5087 (Staggers)
Impose Sulfur Tax	—	H.R. 5334 (Saylor)
TRANSPORTATION		
Federal Aid to Highways Act	S. 502 Passed Senate	To be announced
Prohibit SST Overflights	—	H.R. 2491 (Yates) H.R. 5328 (Dingell)
WILDLIFE		
Predator Control	S. 819 (Bayh) S. 887 (Administration)	H.R. 3612 (Danielson) H.R. 3635 (Gude) H.R. 38 (Dingell)
Endangered Species Protection—		H.R. 37 (Dingell)
Establish Tule Elk NWR	S.J. Res. 6 (Cranston)	H.J. Res. 204 (Dingell)
GENERAL		
Establish Department of Natural Resources	S. 27 (Moss)	—
Environmental Protection Act—Citizen Suits	S. 1104 (Hart-McGovern)	H.R. 657 (Karth) H.R. 853 (Murphy-NY) H.R. 3102 (Dellums)
Permit Lobbying by Certain Tax-Deductible Groups	S. 1036 (Muskie)	H.R. 4995 (Symington)
Environmental Data Bank/System	—	H.R. 36 (Dingell) H.R. 4732 (Anderson-CA)

WILDERNESS PROPOSALS OFFERED TO DATE INCLUDE:

Lone Peak, S. 29 (Moss); Agua Tibia, S. 110 (Cranston); Agua Tibia, S. 111 (Cranston) and H.R. 3142 (Johnson-CA); Yosemite Areas, S. 112 (Cranston); Santa Lucia, S. 113 (Cranston); Snow Mountain, S. 114 (Cranston) and H.R. 4012 (Leggett); Pinnacles, S. 115 (Cranston); Cape Romain NWR, S. 216 (Hollings); Chassahowitzka, S. 331 (Thurmond); St. Marks NWR, S. 332 (Thurmond); Isle Royale Areas, S. 452 (Hart) and H.R. 4859-60 (Ruppe); High Uintas, S. 466 (Moss); Flat Tops, S. 702 (Dominick); Cedar Breaks NM and Bryce Canyon NP Areas, S. 745 (Moss); Brigantine NWR, S. 777 (Case); Shenandoah NP Areas, S. 988 (Byrd-VA) and H.R. 3568 (Robinson); San Joaquin, H.R. 4569 (Waldie); National Key Deer, Great White Heron and Key West NWRs, H.R. 3407 (Fascell); Manazano Mountain, H.R. 3452, Bandilier NM, H.R. 3453, Apache Kid, H.R. 3454, Sandia Mountain, H.R. 3455 (Lujan); Farallon NWR, H.R. 4252 (Mailliard), and Spanish Peaks, H.R. 5544 (Shoup).

**This list is not complete nor does it indicate bills on which The Sierra Club has taken a position. Copies of all bills can be obtained by writing the Senate (House) Bill Clerk, Senate (House) Office Building, Washington, D.C. 20510 (20515).*

Wilderness—Whose Problem?

13TH BIENNIAL
WILDERNESS CONFERENCE

October 6-7, 1973
Boulder, Colorado

To develop innovative solutions to wilderness problems is the aim of the 1973 Sierra Club sponsored Wilderness Conference, which will be held October 6 and 7, 1973, at the University of Colorado Memorial Center on the Boulder Campus. Nestled under the famed Flatiron Mountains to the west and facing 14,000-foot Longs Peak and the Indian Peaks range to the north, Boulder provides an appropriate setting for wilderness thinking.

The Colorado city was chosen also for its easy accessibility for Club wilderness experts from all parts of the country. The Conference has been designed by its volunteer organizing committee especially to encourage participation by experienced wilderness advocates and to bring them together from all chapters. While valuable information will be provided by wilderness professionals from a wide range of disciplines, the emphasis will be on an interchange of thinking among all participants in order to determine strategy and policy alternatives for future wilderness protection.

"Wilderness—Whose Problem?" is a theme intended to establish the broadest possible parameters for consideration and solution of wilderness problems. What are the really important ones? Psychological attitudes? Urban priorities? Legislative roadblocks? Elitist image? The conferees early on will themselves determine the priority problems to be emphasized during the following debate, panel, and action sessions.

Noted photographer Phil Pennington will open the conference with a widely acclaimed and provocative visual overview of wilderness perspective, to be followed by the presentation of several original papers by Club members on innovative approaches to wilderness problems (see below).

Attendance will be limited to 600 persons in order to best utilize the group-dynamics approach for several sessions. The registration fee, which includes Saturday (Oct. 6) lunch, is $8.00. Saturday evening the Boulder Jaycees will sponsor a square-dance and barbecue dinner and on Sunday afternoon field trips in the Boulder area will be available after the formal sessions close at 1:00 p.m. Costs for these events, as well as lodging information, will be sent to all registrants. The fall Sierra Club Board of Directors meeting will be held in Boulder on Friday, Oct. 5 and Monday, Oct. 8.

Wilderness Papers

Sierra Club members wishing to deliver a paper on any aspect of wilderness at the October Conference are invited to submit a summary for consideration by a panel of Club leaders in wilderness activity. The several that are selected will be delivered by the authors at the Saturday morning session.

Conference Chairman Margaret Arp emphasizes that the major criterion for selecting papers will be original and innovative thought on wilderness perspectives and problems. The presentation of the papers will precede a priority session that will determine the direction of the balance of the conference.

Anyone interested in presenting a wilderness paper must submit a two- or three-page double-spaced summary (six copies), along with a one- or two-sentence abstract no later than July 15. Selections will be made by September 1. Transportation to Boulder and basic expenses will be provided for the winners. Ms. Arp points out that even those papers not selected can be very helpful in conference discussions of wilderness problems.

Summaries and abstracts should be sent to:

Chairman, Wilderness Papers Committee
c/o Margaret Arp, 7837 Fairview Road
Boulder, Colorado 80303

To register for the Conference please fill out the form below and send with your check (payable to Sierra Club) to:

Diane Nielsen
1973 Wilderness Conference
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Boulder, Colorado 80303

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Wilderness (*continued*)

encompassing 344,768 acres for instant wilderness classification and another 54 areas totaling 754,300 acres as wilderness study areas. Of these 54 areas it is believed that with further study some will qualify under the Wilderness Act for immediate addition to the wilderness preservation system. Many others will be found to be in some state of natural restoration and should be considered as "wilderness management areas" and protected as wilderness until Congress settles on a permanent designation. Finally, it is anticipated that a few of the study areas may better qualify for alternate designation altogether.

The legislation to come out of the Senate Interior Committee—and for that matter, from the House Interior Committee after it holds hearings—is expected to be a composite of the Aiken (S. 22), Jackson (S. 316), and Administration (S. 938) bills.

The real question that remains and will remain even after Congress acts is "how much wilderness should be designated in the East?" The question has never been seriously considered. The Jackson bill would designate about two percent of the eastern national forests as wilderness. The 70 areas identified by the Sierra Club represent less than five percent of the eastern national forests. Balanced against the demand for wilderness in the East, the population of the region, and the total volume of public land available for any form of recreation, two to five percent is very little land indeed. Some conservationists are already setting their sights for ten percent (2.3 million acres), with the conviction that the basic function of the eastern national forests in the future will be non-commercial. As things now stand, the total volume of *all* timber in the eastern national forests is only equivalent to one year's growth on all the forest lands in the East, which suggests that we could well afford a commitment of ten percent, or even more.

Obviously, there is no scientific method of determining how much wilderness is enough. The decision is essentially political and therefore a function of public demand. That demand already has had the effect of nudging Congress from its decade of slumber. With further support, the long neglected and abused national forests of the East may yet be saved and made a greater part of our natural heritage by application of the very same wilderness ethic that has saved so much of the West.

Peter Borrelli

The obvious conclusion is that any long-term, rational energy policy for coal should be based upon reserves rather than present production demands. Without such a fundamental reversal, it is very likely that federal legislation to "control" strip mining will come down with an acute case of the "energy studies," and end up not controlling anything. Without a firm commitment from Congress, prohibiting mining in the mountains and elsewhere where reclamation has proven impossible or unsuccessful, there can be no real control. By refusing to recognize that only three percent of our coal reserves can be strip mined and that stripping is nothing more than a profitable expedient for coal operators, Congress in effect is trading our lands for a mess of pottage.

CITIZEN SUITS

PERMIT LOBBYING BY CERTAIN TAX-DEDUCTIBLE GROUPS

ENVIRONMENTAL DATA BANK/ SYSTEM

WILDERNESS PROPOSALS OFFERED TO

Lone Peak, S. 29 (Moss); Agua Tibia
H.R. 3142 (Johnson-CA); Yosemite A
Snow Mountain, S. 114 (Cranston) a
Cape Romain NWR, S. 216 (Hollings)
S. 332 (Thurmond); Isle Royale Areas
S. 466 (Moss); Flat Tops, S. 702 (Don
S. 745 (Moss); Brigantine NWR, S.
and H.R. 3568 (Robinson); San Joaqu
Heron and Key West NWRs, H.R. 34
NM, H.R. 3453, Apache Kid, H.R.
NWR, H.R. 4252 (Mailliard), and Sp

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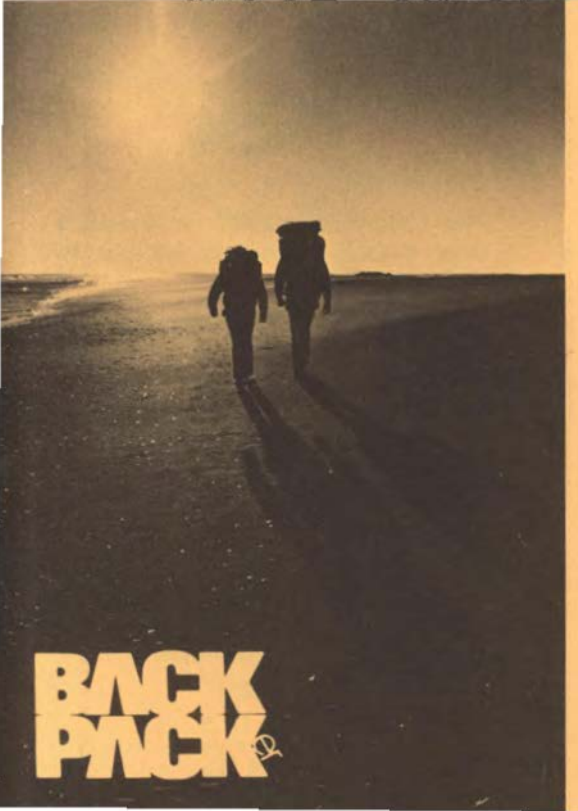

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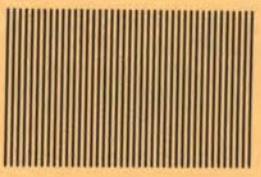

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Long's Peak —
Profile in Words and Pictures
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Snowshoeing Technique
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OSC2

New England's Vanishing Resource

Trouble in Fishing Waters

ROBERT H. STEELE

IN GLOUCESTER, Massachusetts, a plaque commemorates the founding of New England's great fishing industry in 1623 by "a company of fishermen and farmers." Today, America's first and oldest industry is rapidly dying because over-fishing by foreign fleets is threatening our once plentiful fisheries with extinction. If something is not done soon, Gloucester's plaque may well serve as the future tombstone for many species that were once plentiful in Northwest Atlantic coastal waters.

New England fishermen have been facing this problem for a number of years. This year, a Gloucester trawler returned after a week-long voyage with only two haddock to divide among the seven-man crew. The captain said that during past years his vessel would normally return with several thousand pounds of haddock in its hold. Increasingly, New England fishermen set out on their boats only to find that supplies of haddock, ocean perch, whiting, mackerel, herring, red and silver hake, yellowtail flounder, cod, salmon, scallops, and lobsters are not so abundant as they once were.

In 1971, for example, New England's fishermen landed only 380 million pounds of foodfish. Ten years earlier, they caught nearly double that amount—742 million pounds. A breakdown of this figure by species reveals just how critical the problem is becoming. Haddock landings in 1971 totaled only 21.6 million pounds against 134 million only a decade earlier. The 60-million-pound catch of ocean perch in 1971 was less than half the 1962 catch. Hauls of whiting totaled a mere 28 million pounds, compared with 98 million ten years earlier.

Although the total catch by U.S. fishermen over the past 25 years has remained almost steady—from 4.6 billion pounds in 1945 to 4.9 billion in 1970—these figures mask the problem in New England because fishing gains were being made in other coastal regions, such as the West Coast and the Gulf of New Mexico. Even so, the overall national catch has failed to keep up with the country's growing appetite for fish. To meet this demand, we have had to rely more and more on imports. At the end of World War II, we imported only 13.4 percent of the fish we consumed. By 1970, that figure had risen sharply to 57.4 percent.

To help determine the cause of the problem, last October I invited the ranking member of the House Merchant Marine and Fisheries Committee, Representative Frank M. Clark (D-Pennsylvania), to hold investigative hearings at Stonington, Connecticut. Stonington is particularly representative of once-thriving fishing ports that have been forced to curtail operations because of diminishing supplies of fish. In 1930, fishermen from Stonington alone caught more than five times the haddock that was landed in all of New England last year. Stonington's present fleet of 11 fishing boats is a far cry from the 40 that once berthed there.

At the hearings, witness after witness—most of them active fishermen and lobstermen—testified that the depletion of our fish stocks has one basic cause, namely the reckless and exploitative fishing operations of foreign fleets in and just outside the U.S. fishery zone. These fleets operate with no regard to size restrictions or U.S. catch limitations, with the result that, in just two years of intensive overfishing, these foreign trawlers have reduced the stock of herring along the Atlantic coast by 95 percent. They are similarly endangering other species, such as haddock, yellow-tail flounder, cod, mackerel, and sea scallops.

This invasion dates from 1961, when a large Soviet fleet appeared on Georges Bank, the traditional fishing grounds of U.S. fishermen. That year's operations by the Soviets were described as "exploratory fishing"—mostly for herring. In the following years, they increased the number and size of their vessels and expanded the range of species they took.

In 1965, Polish vessels began appearing on the banks, joined in the late 1960's by trawlers from West and East Germany, Spain, Romania, Bulgaria, Japan, and several other countries. In February of this year, the National Marine Fisheries Service (NMFS) of the Department of Commerce reported a total of 220 fishing vessels and support ships off the New England and Middle Atlantic coasts. They came from the Soviet Union (128), Poland (35), East Germany (16), Bulgaria (5), Spain (15), Japan (12), Italy (6) and West Germany (3).

Robert H. Steele is Congressman from the second district in Connecticut.

Eighty-one of the Soviet ships were working off New England. Among them were 57 stern-factory and freezer trawlers, 19 medium-size trawlers, four processing and transport vessels (the factory-base ships), and one tanker. Their operations spread from the eastern tip of Long Island to south and southeast of Nantucket Island, and on to Georges Bank. Their catches, according to the NMFS report, included mackerel, herring, and red and silver hake.

The 1963 haddock spawning season was very productive—and closely observed by the Soviet's "exploratory" herring fleet. In 1965, they moved in and in an 18-month period took 180,000 tons of haddock, including a high percentage of fish smaller than those allowed by federal regulations. Reproduction of haddock stocks from 1965 on has been poor. By 1969, continued heavy fishing by foreigners had reduced stocks to a quarter of the level that had once provided the 50,000-ton sustained yield.

To counter this appalling situation, the International Commission of the Northwest Atlantic Fisheries (ICNAF) established a 12,000-ton quota for haddock for 1970 and 1971 in ICNAF's sub-area 5, the region comprising Georges Bank. Despite this action, our hearings at Stonington last fall and recent hearings in Washington have revealed little hope among fishery representatives that ICNAF quotas could do much more than express pious hope that foreign fleets would abide by the rules.

ICNAF was established more than 20 years ago to protect and conserve fishery stocks in the Northwest Atlantic in order to maintain a maximum sustained catch. For most of its history, the commission's main activity has been limited to studying fish populations and recommending to its member-nations such conservation measures as open and closed seasons, size limits, closed spawning areas, and prohibitions of certain types of gear. In 1970, ICNAF set catch limits on haddock and yellowtail flounder in the Georges Bank area, and provided for international inspection in mid-1971. Since then, additional quotas have been set and allocated to the member-nations, and new recommendations have been proposed to put teeth into the inspection program.

The trouble with ICNAF is that its rulings have often been ignored. In general, the commission's effort to limit takes of cod and haddock worked until 1965 when foreign fleets moved in with modern, government-subsidized fleets and equipment, and proceeded to ignore the guidelines. Since then, the commission's main accomplishments have been to provide a forum for well-meaning rhetoric and to produce an annual report outlining a raft of proposals—decisions on which, more often than not, have been put off until the following years. Quotas or no quotas, witnesses told our subcommittee last fall, the foreign vessels keep busy. "One by one they have picked off haddock, cod, yellowtail, herring, scallops, and who knows what's next?" Reading our delegation's stiff-sounding reports of ICNAF annual meetings leaves one with the impression that foreign representatives generally take a dim view of measures proposed by the United States to conserve the fisheries.

When the U.S. proposed in 1970 that national quotas be allocated on an historical basis to give U.S. and Canadian fishermen fair access to stocks in their traditional fishing grounds, the Soviet Union replied that in computing such quotas it would only consider using as a base the previous three to five years, the period covering their heaviest fishing effort. Quotas thus calculated would, in effect, be no quotas at all. During the 1971 meeting, the USSR, Poland, and Romania "stated again that they could not accept inspection of fishing gear below deck or of their catches," despite acceptance by most member-nations of the reciprocal inspection scheme, and despite indications that the U.S. would pass legislation requiring its fishermen to allow ICNAF inspectors to board their vessels.

Although most ICNAF countries accepted a 1969 proposal to prohibit fishing for Atlantic salmon in waters outside national fishery limits, Denmark, Norway, and West Germany refused to reduce their effort below the 1969 level. It was only when the U.S. last year passed a law giving the President authority to ban imports of fish from countries violating international conservation agreements that the Danes agreed to phase out their high-seas Atlantic salmon operations. More often, though, items in a thorny agenda are put off until they can be "further studied." So it is that action on a U.S. proposal made at a special ICNAF meeting in January, 1973, to reduce the total fishing effort has been deferred until the commission's next annual meeting in June. Judging from past experience, it is unlikely that New England's diminishing supply of fish will realize any relief from foreign fishing pressure on this score, since almost no one believes that the foreign nations will agree on a way to limit catches.

Several years ago, the United States concluded agreements with both the Soviet Union and Poland to protect U.S. fish resources in the mid-Atlantic south of the ICNAF region and beyond the 12-mile fishery zone off the coasts of New Jersey, Delaware and Maryland. Within the region covered by the agreement, "no fishing" zones are set out for various periods during the year. In February of this year, the NMFS reported that "no Soviet or Polish vessels were observed" fishing in the prohibited zones. However, the February report noted that five Japanese, four Spanish, three Italian, and one West German vessel were fishing inside the zone. Since we have no similar bilateral agreements with those countries, the U.S. is unable to protect its offshore resources from their operations.

More and more, officials are expressing pessimism about remedies in multilateral arrangements or in formal and informal bilateral agreements. Our government so far has proven itself ineffective in dealing with countries that flaunt the "spirit" of the agreements. Ask someone like Jacob Dykstra of Rhode Island, a working fisherman and president of the Point Judith Fisherman's Cooperative, how he feels about "international cooperation" in the Northwest Atlantic fisheries, and he'll say—as he told us at Stonington—that "the root of the problem is to get the foreign fishermen off those stocks of fish that are being depleted."

The "species approach," which says that "authority to regulate the living resources of the high seas shall be determined by their biological characteristics," means that the United States will regulate coastal and anadromous species throughout the range of their movement. As it was stated last August, the U.S. draft article reads: "The coastal state shall regulate and have preferential rights to all coastal living resources off its coast

continued on page 31

Staircase (*continued*)

Forming a backdrop to the third-terrace pygmy forest is a stand of tall bishop pine, growing in the deep soil of the fourth-terrace dune, which was formed when that ancient cliff overlooked the sea almost a half-million years ago. The dunes form mounds rising above the second, fourth, and fifth terraces, providing better drainage and offering deeper, richer soils to full-sized redwoods, firs, and pines. Though formed of much the same material as the terraces themselves, the dunes have evolved their own soil type—called Noyo soil—which achieves its extreme form on the fourth-and-fifth-terrace dunes, indicating that bishop pines may comprise the climax vegetation on the staircase dunes. Extreme pygmy forest recurs on the fourth terrace and, to a lesser degree, on the fifth, and its juxtaposition here to the tall, healthy dune pines elegantly climaxes the staircase's parallel stories of ecological succession.

This remarkable ecological story, which has virtually no parallel anywhere else, has attracted the interest of scientists around the world, who see in the Jug Handle staircase an ideal outdoor laboratory where the processes of soil evolution and ecological succession can be thoroughly studied. Research teams from Cornell and the University of California have both studied the pygmy forest, and scientists from over ten foreign countries have visited the staircase. Last year alone, about 2,000 people visited the staircase, including scientists, teachers, college students, school children, and conservationists. Dr. Jenny continues to conduct research in the pygmy forest, and John Olmsted has conducted numerous nature walks down the staircase.

Jug Handle has also become something of a *cause celebre* to conservationists in Northern California. The Northern California Chapter of the Nature Conservancy lists the Jug Handle staircase as its number-one priority. Early this year, the Sierra Club submitted a friend-of-the-court brief in litigation to block a proposed motel development on the seabluffs overlooking Jug Handle Cove.

Jug Handle Inn would be a posh 80-unit motel with bar and restaurant designed to accommodate the more affluent of the thousands of tourists who visit the Mendocino Coast each year. Despite the recently passed coastal protection initiative—which has been most upsetting to many Mendocino coastal property owners—the region could still become another Monterey Peninsula or Santa Barbara, still lovely, but without the wildness and openness that presently constitute much of its special charm. North of Jug Handle is the growing town of Fort Bragg; south is the self-consciously quaint and historic village of Mendocino City, the main attraction to the tourists who fill up the motels in the whole area and purchase the town's store of ceramics, macrame wall hangings, wood carvings, leather goods, candles, antiques, and art works. Sandwiched between go-ahead growth and increasingly popular quaintness, it is particularly difficult to insure the protection of the Jug Handle staircase—though the staircase in its natural state could in the future provide one of the main reasons for visiting the area, to the benefit of both the Fort Bragg developers and the Mendocino City artisans.

Since plans for the $750,000 motel complex were announced last September, the fate of half of the sea front terrace land has largely rested in the courts. The litigation has been complex, but to outline it: 1) Mrs. Elizabeth Burger, owner of the other half of the ocean front land, filed suit to prevent construction of the motel on the grounds that no environmental impact statement had been prepared; 2) the motel developers, Holiday Lodge Corporation, asked the court to dissolve its restraining order on the ground that no impact statement was required because of the early date at which building permits had been issued to them; 3) the court dissolved the restraining order, but did *not* vacate the order requiring the impact statement; 4) when the developer did provide an impact statement, Mrs. Burger appealed to the State Court of Appeals, which issued a second restraining order. At this point the county board of supervisors was left with an impact statement, and the implication that it should do something about it, but without any clear course of action.

The upshot was that the board held a public hearing, and despite the impact statement's recommendation that an alternative plan be developed decided to support the original building permit. As the state attorney general, the Mendocino planning department, the state park plant ecologist, the developer's own consultant, and those interested in the preservation of Jug Handle for public use and education all opposed the original proposal, the supervisors' decision obviously could not lay the matter to rest.

The impact study for Jug Handle Inn is a curious blend of good intentions, insufficient analysis, and poor logic. It admits that the Jug Handle staircase is "an irreplaceable natural resource," but concludes that a well-planned motel would constitute no greater threat to the environmental integrity of the area than would its designation as a natural preserve. Considering the increased traffic the motel would generate, the large area that would be turned into a parking lot, the possibility of sewage contamination of the Jug Handle tidepools, and the possibly adverse effects on the local water table, the impact study's conclusion seems—to be charitable—ingenuous. The study's alternative, which would have reduced the number of units, minimized the destruction of vegetation, and situated the buildings away from the cliffs seems reasonable only if it is assumed beforehand that the motel must and will

A two-course meal for the insect-eating sundew plant.

Summer fog drapes the second-terrace Sitka spruce forest.

John Olmsted in the third-terrace pygmy forest.

be built. The possibility of making the motel site a public park was apparently rejected on the grounds that it "would most likely result in a very great human use impact which would be detrimental to the vegetation and wildlife." The alternative of leaving the site in its present natural state was dismissed as "academic."

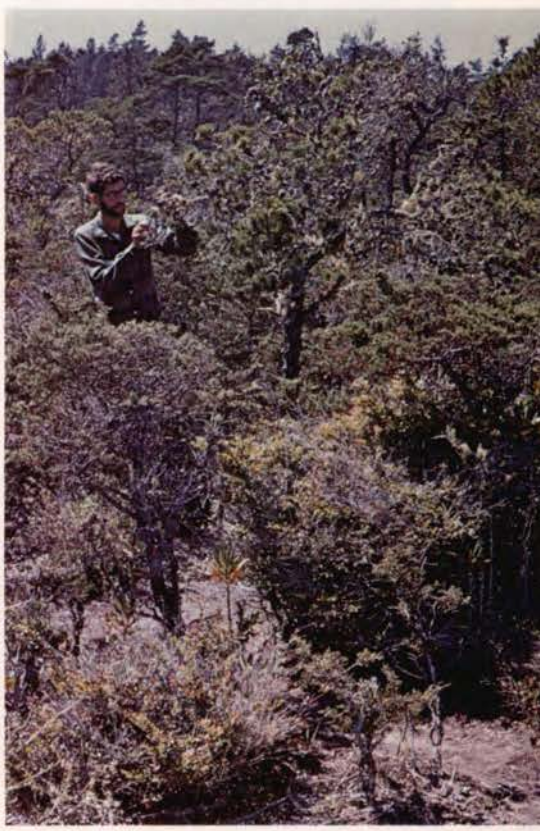
In January of this year, the Sierra Club submitted a friend-of-the-court brief in support of Mrs. Burger's appeal in which it argued, among other things, that the impact study was improperly prepared and insufficient and that the supervisors should not have approved the original motel plan. The brief cites the study's admittedly inadequate treatment of the problems of water supply and sewage disposal and lists several other areas that the study glossed over or ignored, including the impact on local residents of a large tourist facility, the effect of increased usage on the beach and adjacent littoral communities, the damage to plant and animal communities at the motel site, and the impact on local traffic. The brief also points out that the study did not adequately consider its listed alternatives to the proposed motel development and contained no analysis of the need—if any—for further tourist accommodations in the area. (Contrary to a statement in the study, the Mendocino Coast Motel Association is on record opposing the Jug Handle development.)

The brief further argues that, contrary to the provisions of California Environmental Quality Act (CEQA), the impact study was improper because it was written by an agent of the developer and was not subject to proper public supervision to assure its objectivity, comprehensiveness, and accuracy. For example, in his evaluation of the study, the county planning director admitted that the study was "non-technical and generalist in its approach," but did not ask whether such an approach was appropriate and sufficient under the law. "Certainly," the brief states, "such comprehensive technical matters as required by CEQA to be completed in the environmental impact report demand more than a non-technical evaluation before their adoption."

Finally, the brief contends that even if the impact study were proper, the Mendocino County Board of Supervisors' approval of the originally proposed motel project in disregard of the study's recommended alternative violates the intent of CEQA that environmental considerations and feasible alternatives be given serious consideration by the public agency responsible. The brief argued that there was no evidence that such consideration was given.

In March, the appeals court denied part of the Burger appeal, but did so without prejudice, which in effect referred the case back to the superior court for reconsideration. In April, the lower court ruled that the impact statement was sufficient and that the Mendocino County Board of Supervisors acted properly in approving the original motel plan. This decision is now being appealed.

At the same time that John Olmsted



and his immediate supporters have been spearheading the drive to save the south bluff of Jug Handle Cove from motel developers, others have been seeking a far-reaching method of preserving the staircase—the creation of a national monument to protect this whole unique ecosystem at one stroke. While John Olmsted seeks to follow up his earlier successes in raising funds to hold remaining private portions of the staircase, Dr. Hans Jenny has been following up the federal solution suggested several years ago. The national monument that Dr. Jenny and his informal committee of prominent Mendocino County residents and informed laymen and scientists across the nation envisage would combine the presently protected pygmy forest lands with lumber company lands separating them from the parcels owned by the Institute of Man in Nature and would add the seabluff to complete the portrait of the Mendocino staircase. It appears at this time that Representative Don Clausen stands ready to introduce legislation to create the national monument *when* the county supervisors endorse the proposal. The supervisors, in turn, wait on a favorable report from the planning commission.

Time is a serious problem. In the fight to preserve the south seabluff, Olmsted finds that the developers now want $375,000 for the twelve acres that they bought for $150,000 four years ago, a sum that seems completely beyond the reach of the California Institute of Man in Nature, despite its imaginative and successful funding programs. Dr. Jenny argues that even if the south bluff should go, the push to create the National Monument could still succeed in saving an intact terrace system. John Olmsted might reply that if the south bluff goes the north side might soon follow, a depressing eventuality that would indeed demolish all the work that everyone has invested. Furthermore it would take at least a year and a half to get government funds. What is clear is that any program to preserve the entire cross-section of the sea terrace system badly needs the support of the local governmental bodies.

Like so many other irreplaceable natural areas, the Jug Handle staircase could be lost because we Americans have not learned how to weigh those values that elude the accountant's balance sheet. We are beginning to develop a land ethic—the impact studies reflect this progress—but we still have no overriding vision of the best uses to which our various lands should be put, no comprehensive public policy whereby such a vision could be implemented. Willy-nilly our finest resources continue to fall to the bulldozer, the chain saw, and the dragline, despite energetic efforts to save them. Those areas and resources that are preserved from inappropriate uses and thoughtless stewardship are seldom saved by appealing to elusive visions or philosophical positions. The stuff of litigation is facts and logic, and the heart of impact statements is feasibility and compromise. We must use the techniques available and be thankful when they work, but we needn't imagine they embody the highest expression of our intuition or the final justification of our beliefs. The very circumstance of considering and having to debate the possibility of building a motel at Jug Handle Cove argues nothing so much as our own loss of perspective and sensibility.

Perhaps more than any other natural area, this staircase is valuable as a complete, functioning example of ecological succession. The processes here enchant us more than the results. There is an elegance to the story that unfolds here, and if the final result is a scrawny, malnourished cousin to the grand forests of the North Coast, its very oddity impels us to wonder and explore.

Rainbow Bridge (*continued*)

dam or reservoir constructed under the authorization of this Act shall be within any national park or monument." Section one further instructs the Secretary of the Interior that he "shall take adequate protective measures to preclude impairment of Rainbow Bridge National Monument."

Realizing that both sections one and three were being ignored and that water would soon enter the monument, conservationists turned to the courts for relief. Government attorneys attempted to argue that since Congress had repeatedly denied funds for protective barriers around Rainbow Bridge the intent of Congress regarding the monument had changed. This tenuous line of reasoning proved futile. In granting the injunction, the federal court ruled that the provisions of section three remained in full force,

thus forbidding the intrusion of Lake Powell into the national monument.

A distant light has appeared out of the blackness of what some consider the most tragic epoch in the history of American conservation. But even now the pressure to resume flooding continues. Water and power user groups are already working in the courts to overturn the injunction. Meanwhile, in Washington, Utah's Senator Moss and Representative McKay have introduced bills (S. 1057 and H.R. 6255), which would authorize flooding of Rainbow Bridge National Monument. Although the dispute centers on Rainbow Bridge, the implications are far-reaching.

There is no unit in the national park system for which some economic excuse cannot be found for exploitation. If the integrity of America's system of national parks and monuments is to remain intact, their sanctity from intrusion must be guaranteed. If the monument in question were only second rate, the principle involved would still demand its defense. Rainbow Bridge, however, is one of the most spectacular and beautiful natural wonders in the world.

For those who could not forget "the place no one knew," the rescue of Glen Canyon's remaining beauty is the object of enduring determination. As for Rainbow Bridge, this generation's legal and moral obligation to leave this great stone monument unscarred and unimpaired is absolute.

Economics (*continued*)

over the depletion allowance, oil company executives and trade journals spend five bemoaning the infernal problem of gasoline marketing.

One might wish that the two sides would get together, discover a way out of a situation which is becoming increasingly frustrating to them both, and arrive at a greater good. One might as well wish the Good Fairy would leave controlling interest in Standard Oil under his pillow, as the odds on both dreams are about the same. There is too much at stake: pride, power, money—the very fabric of American business life.

The energy industries and their critics have been enmeshed far too long in the commercial neurosis of contemporary energy economics to break free in one bound. The two great laws were fashioned in an evolutionary process. They now are showing the first signs of breaking down. But their disintegration and supersession are most likely to be evolutionary too. We may hope that the process will be quickened for, meanwhile, a great deal of damage may be done.

Fisheries (*continued*)

beyond the territorial sea to the limits of their migratory range. The coastal state in whose fresh or estuarine waters anadromous resources (e.g., salmon) spawn shall have authority to regulate and have preferential rights to such resources beyond the territorial sea throughout their migratory range on the high seas (without regard to whether or not they are off the coast of said state)."

If this principle is accepted by the Law of the Sea Conference, the United States could presumably enter into agreements with other high-seas fishing countries by which we would issue licenses, and enforce regulation of their operations in any of the fisheries over which we claimed jurisdiction. During our hearings, former Secretary of the Navy John Chafee testified on behalf of the species approach, saying in effect that it would not in itself endanger national defense requirements for free passage in international waters.

But history tells us that workable agreements between nations take a long time to accomplish. Until that happens, something must be done to solve the problem of the Northwest Atlantic fisheries for the near future. Clearly, the most desirable solution to the problem is some sort of international agreement which is workable and which issues fair shares of the fishery resources to those countries with sustainable claims. While several organizations, including the Sierra Club, who seek to save our fisheries favor an international approach, I fear that the present condition of several Northwest Atlantic species of fish may compel us not to wait on diplomats, but to take unilateral action now —at least until effective international accords can be agreed upon.

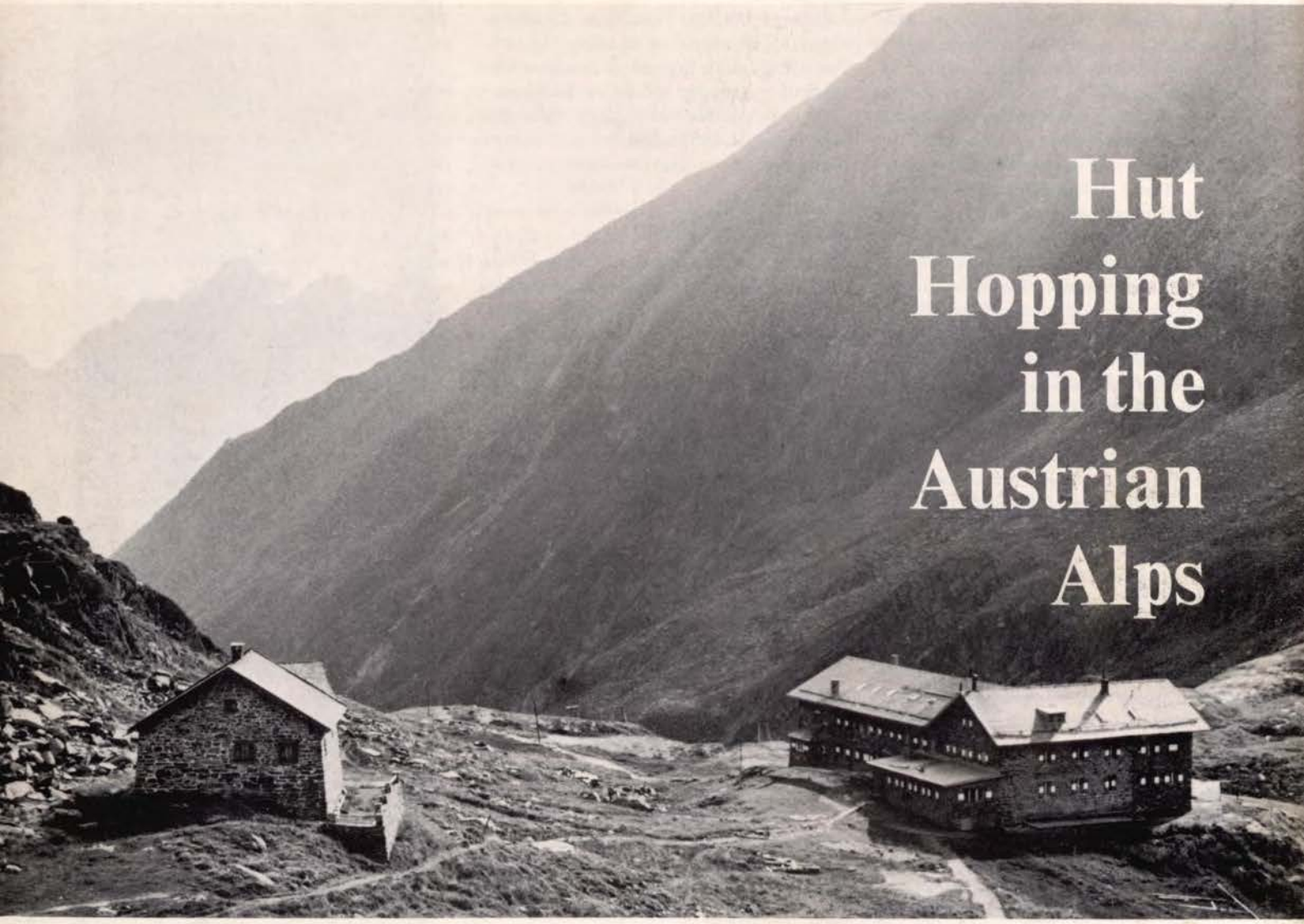
Professor John L. Jacobson of the University of Oregon Law School wrote last year: "In view of the apparent trend toward overexploitation of certain stocks of the world's commercial fisheries, and in light of the proven incapacity of the international community to come to effective agreement in anything like a timely fashion, coastal nations ought to be allowed—even, perhaps, encouraged in some instances—to take action on the high seas." He stipulated that such unilateral action, pending final resolution of the problem by the Law of the Sea Conference, would have to follow these guidelines:

- It must be in response to a "demonstrable" conservation crisis;
- It must be concerned solely with protection of the endangered resource;
- It must not unreasonably discriminate on the high seas against nationals of other nations;
- It must carry an automatic termination date; and
- It must be accompanied by a clear call for international agreement.

With a sense of urgency in mind, I joined fellow members of the Fisheries and Wildlife Conservation Subcommittee in introducing H.R. 4760, the High Seas Fisheries Act of 1973. Since this is the only measure suggested by the Administration to protect and regulate our fisheries, I believe it should be given the earliest possible consideration and should be utilized to focus full Congressional attention on the issue. Although the bill is based on the species approach, it would only implement existing international treaties, which in light of recent developments I fear are too weak to solve the crisis we face.

I am completely in favor of implementing existing treaties, but in order to preserve already endangered fish populations and to strengthen our position in future negotiations, I believe we must first pass legislation to unilaterally declare species jurisdiction and protection. Having thus protected our fishing resource, we can then bargain with other nations on a long-term agreement. I am currently drafting legislation to formulate this approach.

Unless conservationists grasp the significance of stock depletion by foreign fishing fleets and work to implement strong legislation, species of fish once abundant in New England waters will, for fisheries purposes, be lost forever. This fact must be recognized because no one now knows how the ecology of the entire North Atlantic may be upset by continued destruction of the stocks. For my part, I don't want to see us guess about the consequences any longer.



Hut Hopping in the Austrian Alps

Hut Hopping in the Austrian Alps is a new Sierra Club Totebook by William E. Reifsnyder.

It's the first up-to-date English language guide to the Alpine trails and huts of Austria, by a Connecticut Yankee who has been there with notebook and camera.

It's for hikers who have seen America first, for those planning summer trips to the Alps, for anyone who has been wondering how the Europeans use their mountains without loving them to death.

There is, in this book, an important ecological lesson. As Reifsnyder describes it: "Even though Alpine trails receive very heavy use, the impact of the hiker is minimal. He does not pitch a tent, build a fireplace, gather wood, trample the earth around his campsite, leave his debris. The impact is concentrated at the huts, where it can be dealt with adequately. As a result, although many parts of the Alps are more heavily used than sections of the Sierra, the visible impact of man's recreational use is less."

But there is even more. Reifsnyder describes everything you need to know in planning a hut-hopping trip through the Austrian Alps: how to get there, what to expect in accommodations, what to wear, how to decipher the monetary system, how to read menus. Thus prepared, the reader may then select one of three week-long rambles through the Stubai, Lechtaler or Tauern Alps of Austria. Each tour is described in one-day units, from hut to hut, and each unit is illustrated by photographs and a trail-map keyed to an elevation scale. A unique introduction to one of the world's most beautiful mountain regions.

Hut Hopping in the Austrian Alps.
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