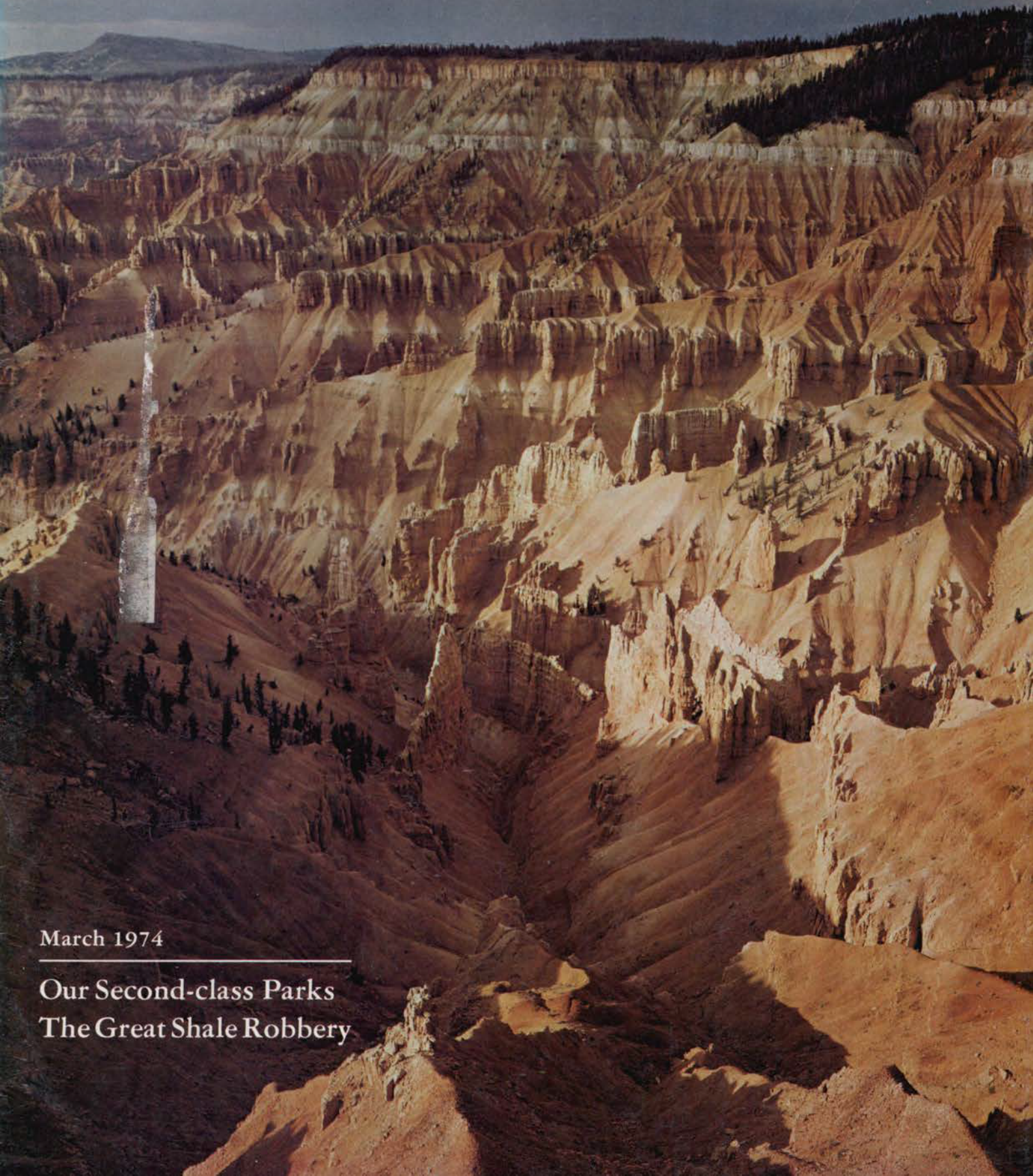


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Sierra Club Bulletin



March 1974

Our Second-class Parks
The Great Shale Robbery

ASCENT

The Sierra Club Mountaineering Journal 1973

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Sierra Club Bulletin

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Cover: Long regarded as second-rate national parks, the national monuments are still fair game for exploitation. Phil Hyde's photograph of the sculpted canyons of Cedar Breaks National Monument shows what all of us want to see for all time.

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Protecting

THE NATIONAL monuments are poor cousins to the national parks. Because most of them are smaller than the more famous national parks, they are thought to be of lesser quality and beauty. Yet because they are administered by the National Park Service, they are assumed to enjoy the same measure of protection as the national parks. Both notions are only true in part.

Although national monuments were originally intended to protect areas of archeological or scientific value, those in the West contain some of our finest natural scenery. People understand that the national parks generally preserve only the very best examples of any given type of natural feature, but they wrongly suppose that the national monuments protect only second-rate, albeit valuable, specimens of the same thing. Death Valley, Glacier Bay, Katmai, Organ Pipe Cactus—each of these national monuments is comparable in scenic beauty to the national parks, and each is, by far, the finest representative of its particular kind of landscape. Nor are the national monuments necessarily smaller than the national parks. Glacier Bay is the largest unit in the park system, with Katmai a close second. Death Valley is only slightly smaller than Yellowstone, the largest national park, and five other monuments each exceed 100,000 acres. Many of the smaller monuments are small for a reason: they protect specific archeological sites or historical buildings—ancient pueblos, cavalry forts, the Statue of Liberty. But the relatively small size of many others is due mainly to various economic and political considerations. Several could, with justification, be expanded.

The management of both parks and monuments is ostensibly the same, the only legal difference between them being that national parks can be created only by Congress, while national

Toroweap Overlook, Grand Canyon National Monument

Nature's Monuments



Cactus Flower, Joshua Tree National Monument

monuments can be established either by Congress or by Presidential proclamation. This executive authority has proven useful in securing swift protection for areas on which Congress has been slow to act. Grand Canyon, Zion, Olympic, Lassen, and Grand Teton all began as national monuments and only later were granted park status by Congress. Two national parks that recently came into being in this fashion are Arches and Capitol Reef.

The President was given the power to establish national monuments by the Antiquities Act of 1906, when a

speedy method of protecting the Indian ruins of the Southwest (which were being damaged by vandals) and other archeological sites was urgently needed. A fortunate provision of this legislation specified that not only could archeological sites be set aside, but also areas of "scientific interest," a phrase Presidents wisely have interpreted to mean "scenic" as well. Theodore Roosevelt, who was President when the Antiquities Act was passed, lost no time in using this new authority. Devils Tower, a huge volcanic plug in eastern Wyoming, became the first national monument on

September 24, 1906. In the next two years, Roosevelt set aside 17 areas as national monuments, four of which later became national parks. His successor, William Howard Taft, established ten more. Later Presidents have been more wary of using this authority than were Roosevelt or Taft because almost every time they have there has followed a great outcry from those who would rather exploit an area than see it preserved. Even so, today there are 82 national monuments.

By law, national monuments and national parks should receive equal care and protection. In fact, the monuments often receive short shrift from Congress, and even from the Park Service itself. They are often underfunded, understaffed, riddled with private inholdings, and ever vulnerable to congressional tinkering.

Dinosaur National Monument, long threatened with the construction of dams, was the scene of one of the Sierra Club's most famous battles—the Echo Park Dam fight of the Fifties.

Devils Postpile National Monument, originally part of Yosemite National Park, was removed from the park at the behest of mining interests and placed under the jurisdiction of the Forest Service. Although the district engineer denied a petition by the

*Inscription, 1709,
El Morro National Monument*



mining interests to dam the San Joaquin River by blowing up the basalt columns, President Taft proclaimed the area a national monument just to assure that no further schemes would endanger it.

Cedar Breaks National Monument, a spectacular amphitheater of eroded sandstone in the mountains of southern Utah, is considered by local agencies to be a fine location for a water pipeline.

Recently, only a last-minute court decision saved Rainbow Bridge National Monument from being flooded by the rising waters of Lake Powell, though this ruling was subsequently reversed by the appellate court. Conservationists are now appealing this later decision. Upper Colorado River water interests, apparently wishing to keep most of the river from escaping into Arizona, were filling Lake Powell

not merely to its undetermined brim, but to the point of overflowing into the national monument.

During the recent debate over the expansion of Grand Canyon National Park, the second-class status of our national monuments was evident. While the congressionally sanctioned boundaries of the existing national park were not meddled with, the adjacent national monument was considered fair game. Portions of the monument were to be deleted from the new national park and turned over to grazing interests.

The problem of acquiring inholdings is a long-standing problem for both parks and monuments, except that usually monuments are not so quick to obtain funds for the purpose of acquiring these lands as are the parks. As a result, an area such as Joshua Tree National Monument, a

splendid slice of California's Mojave Desert, is simply riddled with private holdings. Much of the desert area surrounding Joshua Tree has been subdivided into second homes, and some of this land now supports a sprawl of abandoned cabins and shacks. If the inholdings in Joshua Tree are not acquired soon, it could one day suffer the same fate.

Death Valley, the vast desert park in eastern California, contains 7,500 acres of private land valued at \$23 million, but inholdings are not its main problem. Shortly after its proclamation by President Hoover, Congress reopened Death Valley to mining. Although few of the claims have proven valuable, the vision of the grizzled prospector leading his mule up a desert canyon was, in 1933, still appealing to the politicians in Washington. Today, in place of the old

Marble Gorge National Monument





Bandelier National Monument



Great Sand Dunes National Monument

miner, we face the disturbing prospect of the bulldozer. One open-pit mine in the monument is more than a thousand feet long and a hundred feet deep.

The few mines active today do not pose much of a threat to Death Valley, though they are an insult to the idea of a special reserve such as a national monument. But the existence of 47,000 mining claims, most of which are commercially worthless at today's prices, suggests a potential disaster. For should the price of certain minerals go up—which seems more likely than not—it might suddenly be economically feasible to work these claims, and Death Valley in, say, 20 years could be one vast mining district, with scenic overlooks from which to view the open-pit mines. The presence of these 47,000 claims makes intelligent, long-range planning impossible for Death Valley, and the spectre of 47,000 dirt roads, each leading to nothing but a claim marker, remains a grim possibility.

The problem of protecting our national monuments is not an easy one. Merely turning them into national parks, a tempting panacea at first glance, could cause more problems than external pressures. For example, at Arches National Park, formerly a national monument, conversion to park status meant the construction of paved roads and paved foot trails, a giant step backward from the less developed condition of the monument.

In many cases, in fact, monuments retain a more natural, pristine wilderness atmosphere than the national parks because they are generally less developed, less burdened with unnecessary tourist amenities that have little or nothing to do with the whole point of having national parks in the first place. Once an area is designated a national park, there follows great pressure to develop recreational facilities, lodgings, and more roads and parking lots. National monuments, because they usually receive less money for operation, are accordingly less developed and, in this respect at least, are afforded better protection.

The most appropriate and effective means of protecting our national monuments from either outside encroachment or excessive internal development is through the legal process of wilderness designation. National monuments, as well as national parks, were covered by provisions of the



Joshua Tree National Monument

1964 Wilderness Act requiring that all roadless areas on public lands be reviewed for possible inclusion in the Wilderness Preservation System. Most of these areas have had public hearings, but still await congressional action. Others, such as Death Valley, still require public hearings on the Park Service's wilderness proposal. In either case, the participation of conservationists in the determination process is needed to ensure that passage of appropriate wilderness bills is assured, and that any oversights in the various proposals are eliminated. In many cases, expanded wilderness designation is needed within present monument boundaries in order better to protect wilderness values.

At White Sands National Monument in New Mexico, the Park Service study recommended against wilderness designation because of existing missile and space-craft activity in the area. Conservationists feel that such military use should be considered as a temporary nonconforming use, which would not prevent wilderness designation. As a national monument preserving a unique ecosystem, this kind of military use should be phased out,

and most of the monument should be classified as Wilderness.

The Cedar Breaks wilderness proposal is inadequate because it includes only the inaccessible canyons and bluffs, but none of the roadless areas along the rim, which are accessible to hikers.

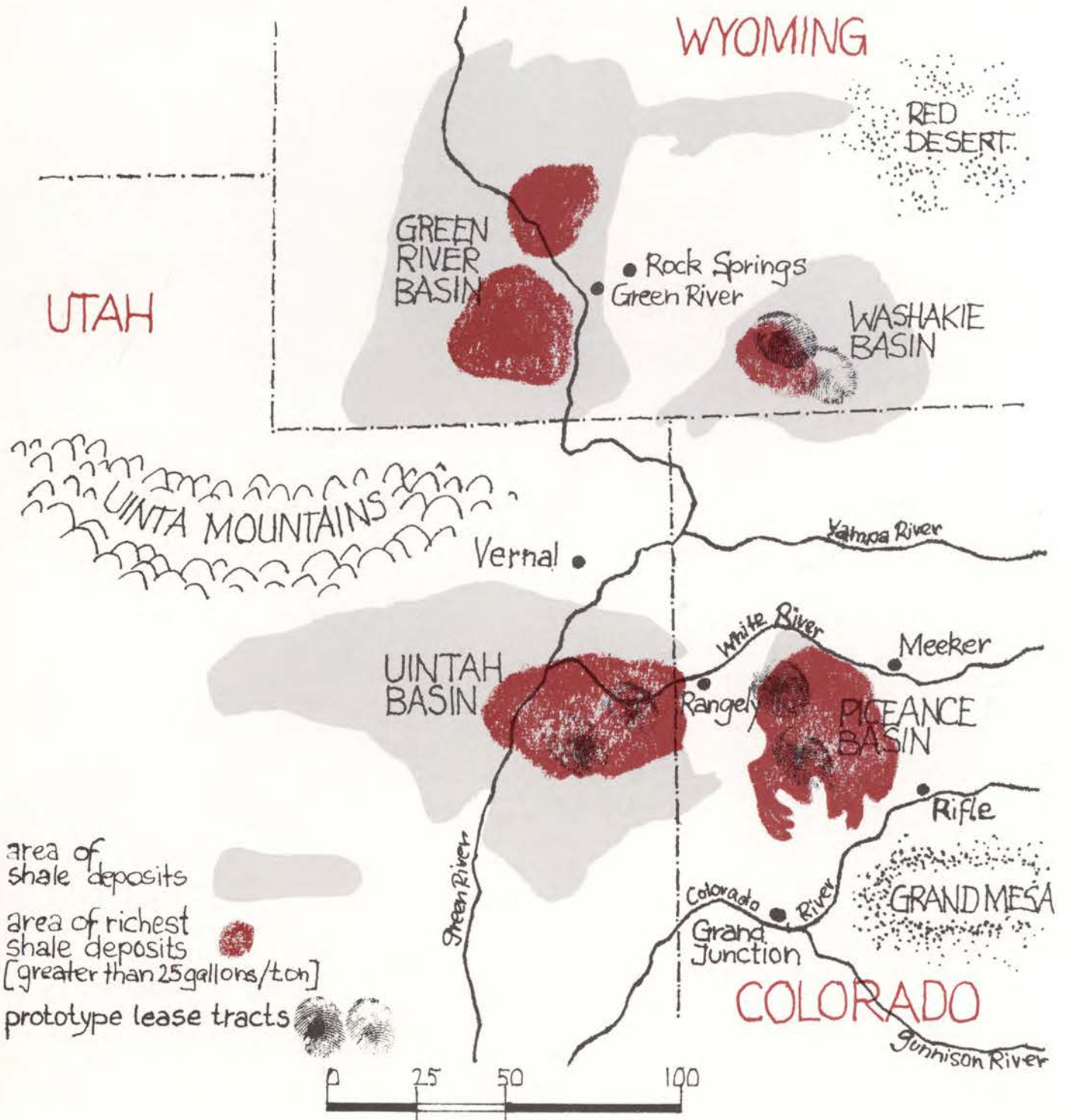
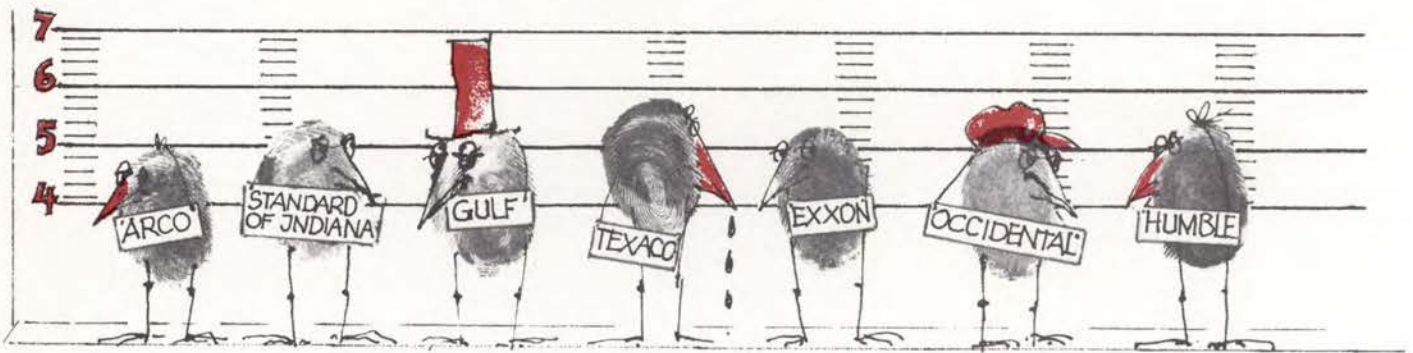
It is rather discouraging that so many prime wilderness candidates, some of the best of which are in our national monuments, are subject to such piecemeal liquidation. Outside incursions and internal "improvements" still endanger our finest national monuments. But we are fortunate that most of our national monument wilderness areas still await congressional review: there is still time for the public to ensure that these areas are kept intact. There is time yet to persuade both the Park Service and Congress that our national monuments deserve better in the future than they have commonly received in the past. Through the Wilderness Preservation System, we have an opportunity not merely to secure our national monuments from outside incursions, but to avoid the mistakes that have too often been made in our national parks.

High Peaks Trail, Pinnacles National Monument





Kelso Dunes, Death Valley National Monument



THE GREAT SHALE ROBBERY

DAVID SUMNER and CAROLYN JOHNSON

HISTORY MAY NOT REPEAT ITSELF, but it often gives us metaphors for our own time. One such is the beginning of the petrochemical industry.

In the middle of the 1840s, a young man by the name of Samuel M. Kier inherited from his father a network of "salt wells" in western Pennsylvania when that region was still close to the cutting edge of the frontier. At that time, salt was produced by drilling for brine, evaporating it, and selling the residue—a generally profitable enterprise. However, Kier's wells had a special problem: many of them had become contaminated by a pungent, black, viscous liquid called "rock oil," fairly common to the area, sometimes bubbling from the ground and often coating ponds, lakes, swamps, and streams.

Being the kind of "go-ahead" entrepreneur common to his times, Kier promptly made the best of his adversity. He bottled the stuff, labelled it "Petroleum, or Rock Oil," and ultimately peddled more than 250,000 pints at a dollar apiece as a revolutionary specific for the relief of rheumatism, ague, corns, neuralgia, piles, chronic cough, and many other aches, pains, and pernicious ailments. To his credit, Kier advised his customers that this remarkable new medicine was to be used as a salve, not to be taken internally.

Such was the start of the oil industry in America. Today, following the impetus of tradition, that industry's latest gimmick is a huge government-subsidized, (and in many respects, government-promoted, development scheme that could not only cheat the people of the United States out of a just return for the use of public lands, but convert the vast, semi-wilderness region where Colorado, Utah, and Wyoming meet into one of the nation's greatest energy colonies—and potentially into a bleak, post-industrial wasteland. A colony in the classic sense, this 17,000-square-mile area could cease to exist in its own right, for its own well being, becoming a subservient land whose only real purpose would be to service this nation's energy demands.

The target of this grand plan is, curiously, not "rock oil" but rather a fine, gray rock that yields oil after specialized processing. The rock is known as oil shale (though geologically it's a marl), and its more ardent promoters are quick to imply its virtue as a significant new cure for the country's energy ills. Critics, among them every major conservation group in the central Rockies, have pointed out that commercial production from this new energy source is at least four or five years off—too late to affect the present "crisis." They have

TO LET

Choice 5120-acre parcels of the Public Domain, ideal for oil shale development. Good short-term profit potential, with spectacular long-run return on modest investment. Billions of barrels/dollars/you name it. Contact Bureau of Land Management for sympathetic hearing of your wants/needs.

ROGERS C. B. MORTON,
Agent

David Sumner, a member of the Sierra Club's National Wildlife Committee, is a noted conservation writer.

Geologist Carolyn Johnson heads the Mining Workshop of the Colorado Open Space Council.

suggested that it will stimulate a maze of ill planned, overnight, rural-industrial slums and that it will inflict irrevocable environmental damage to one of the wild places in the West.

THE EXISTENCE of oil shale has been known for centuries. Ute Indians reportedly used it on campfires, like coal, but an early Colorado white settler, Mike Callahan, learned of this property the hard way: building his homestead fireplace with the rock, he promptly watched the works go up in a pall of thick, black smoke the first time he kindled a blaze.

Oil shale was created by a geologic process similar to that which produced crude petroleum—save for one last step. The rich organic sediments of the Eocene tropics (laden with an accumulation of decayed plant and animal matter) were never subjected to the intense subterranean heat needed to create a free, viscous oil. Instead the rubbery hydrocarbons remained locked within layers of fine organic rock up to 100 feet thick. The richest deposits hold upwards of 80 gallons of oil per ton of rock, but the average is more like 25. These all lie in four large, semi-arid basins which are the geologic remnants of prehistoric lakes and inland seas: the Piceance in Colorado, the Uintah in Utah, the Washakie and Green River in Wyoming.

Reduced to its essentials, modern technology will simply supply that final step omitted in the geologic evolution of the land. Only in practice it isn't that easy. Today's basic method (on which there are many variations, each one engineered and patented by a rival oil company fighting to get the jump on its competitors) begins with conventional mining—either underground or surface, open-pit or strip, depending on the lay of the deposit. The mined rock is then crushed and cooked (or retorted) to about 900 degrees Fahrenheit to free, through vaporization, the "shale oil," which is then condensed and partially refined according to standard commercial processes.

Each of these operations, save the very last, will be performed at the mine sites out in what once were the wilds. Thereafter, the oil will be sluiced via pipelines to link-ups with existing conduits to the East and Southwest. (One preferred industry corridor runs uncomfortably close to Arches

and Canyonlands National Parks in Utah. Superintendent Robert Kerr is already worried about possible spills.)

On the sites themselves, a substantial waste residue known as "spent shale" will remain; it is sterile and rather like granular fireplace soot in consistency and color. Occupying some 15 percent more volume than the in-place rock, the stuff will eventually be produced by the cubic mile. Early on, a small amount of research went into a few possible uses for this infertile waste, such as using it, say, to make cement or as an insulating soil cover to lengthen growing seasons and protect against frost. However, such avenues have been closed off, apparently for economic reasons, and the current plan calls for the expedient piling of spent shale to depths up to 250 feet in conveniently located canyons near the mines, for cosmetic contouring "to blend with the terrain," and for highly chancy revegetation of the surface.

A largely underground mining process—called *in situ* or "in place" mining—could reduce the disposal problem by leaving much of the spent shale underground. But this process also could prove to have more attendant problems than more conventional methods. The first step in the *in situ* process involves subsurface fracturing of the oil shale. Normal methods would include hydraulic

"... far too much is being given for far too little."

techniques and the use of conventional explosives. The second step in the *in situ* process would involve underground retorting of the oil shale through the use of superheated steam or natural gas. In theory, the released shale oil would then be pumped to the surface. To date, however, experiments in Wyoming have been only marginally successful, and though, in Colorado, Occidental Petroleum claims to have perfected an *in situ* process, it remains undemonstrated on a commercial scale. However, in late January, the *in situ* method took on a particularly ominous dimension all its own when Atomic Energy Commission scientist Arthur Lewis revealed that his agency is envisioning up to 5,000 underground nuclear explosions to fracture the in-place shale

prior to retorting. The result would be radioactive shale oil, and all ground water would have to be pumped from the area beforehand to avoid contamination since that water is both plentiful and highly saline, it would have to

"... the scheme now appears to have been rigged from the start."

go either into Utah's Great Salt Lake or the Pacific Ocean. Lewis talked optimistically of producing 200 billion barrels of shale oil at \$3.50/barrel. The prospect of such a grandiose scheme going full bore is probably remote, but there's every good chance the AEC will soon want to experiment in the field.

How much oil could these operations eventually recover? Interior Secretary Rogers C. B. Morton (As will be seen, his agency is deeply entangled in this development.) has called oil shale "one of our big casinos" for energy production, but the phrase seems downright modest in contrast to the apparent extent of this resource and its potential yield in barrels of oil and billions of dollars.

The U.S. Geological Survey estimates the petroleum reserves in the tri-state oil shale area at something in excess of 600 billion barrels. (In rock containing more than 25 gallons per ton, lower grade deposits have barely been assessed.) At present, that figure is highly misleading. Today's most advanced mining technology could extract something like two-thirds of that figure, but prospects for highgrading indicate that as little as 40 percent of the in-place resource will be used. However, even 200 billion barrels is a staggering sum. In comparison, the great and presently embargoed Burgan Field in Kuwait holds 55 to 60 billion barrels, the Alaskan North Slope between 20 and 40 billion barrels and the East Texas-Louisiana-Oklahoma fields (mainstay of the insatiable U.S. economy for decades) a mere six billion barrels.

To get at this bonanza, 80 percent of which lies under public lands administered by the Bureau of Land Management, the U.S. Department of the Interior has, since 1969, pushed along one of its most ambitious crash programs ever. Called the "Prototype Oil Shale Leasing Program," it is an

arrangement whereby six 5,120-acre (or eight-square-mile) tracts—two each in Colorado, Utah, and Wyoming—are to be let out for commercial development to large oil companies under terms that have been the target of increasingly harsh criticism—criticism that commonly invokes such expressions as “deceit” and “giveaway.”

INTERESTINGLY enough, it has taken quite a while for the oil industry and the government to get together on such a proposal as an oil shale leasing program—nor has conservation opposition to the idea by any means been constant throughout its development. Only ten or fifteen years ago, in fact, the late Senator Paul Douglas and other conservation-minded types were calling attention to the nation’s public domain oil shale resources not only as a possible antidote to the uncontrolled spread of oil wells into such environmentally sensitive areas as the country’s tidelands, but as a potentially great source of revenue for needed public programs. There is a double irony here: first, as it became increasingly obvious that oil shale development would have serious environmental effects itself, conservationists in general became more than a little standoffish in regard to the whole business; second, the splendid idea that the people of the United States were entitled to a fair price for the use of their land ultimately did not just fall by the wayside—it was trampled into the dust by a herd of oil corporations and an accommodating Department of the Interior.

Industry developers had been dreaming somewhat vaguely about oil shale as far back as the 1920s, but until recently little along the lines of real development had been done even on those privately held oil shale lands (238,000 acres, most of it in Colorado) some companies had purchased. The reasons were several, simple, and understandable: for decades, there was no crying need for additional oil supplies, the extraction process was too expensive for the idea of serious production to be entertained, and—perhaps most to the point—most of the richest oil shale deposits were under public domain land. So why should the companies start developing their own lands when someday, some way, they might be able to get their hands on the really good stuff?

“... environmental considerations were not part of their deliberations...”

As domestic oil supplies dwindled and the price of imported oil rose higher and higher, the gap between the extraction costs of shale oil and the cost of importation began to narrow to the point where government interest in oil shale development evolved from one of casual experimentation to one of genuine intent. In the 1960s, Interior Secretary Stewart Udall several times tested industry interest and found it waxing. During the same period, various of the larger private oil firms—chiefly Union, Equity, and ARCO—launched test projects on former Colorado ranchlands. (Although, with their eyes on the public domain, they by no means scaled up to full commercial development.) By the end of the decade, the government was on the move, and the result was the oil shale leasing program.

On November 28, 1973, Interior Secretary Morton pulled the plug, announcing that the first oil shale lease would be awarded to the highest private bidder on January 8, 1974, and that the other five “prototype” tracts would be auctioned off at monthly intervals thereafter. What with the concurrent national frenzy over the “energy crisis,” the timing could not have been better.

The Colorado BLM staff had a three-part office pool going for the first round of bonus bids on the premier Colorado lease tract, deep in the western reaches of the Piceance Basin. One kitty was for the highest figure, a second for the total number of bids, a third for the total sum bid by all comers. When it came to dollar signs, everyone fell woefully short.

On the morning of January 8, 1974, BLM conference room number 705 at 1600 Broadway, in Denver, was jammed with a standing-room-only crowd of over 200 onlookers, mostly oilmen, as the bids were opened. Interior Undersecretary Jack Horton dropped in via helicopter for the event, and national BLM Director Curt Berklund was also on hand. *Newsweek* and the *Washington Post* had personal representatives in the press ranks. The whole place bristled with tension.

Everyone laughed in nervous relief

when the first bid—a token, sardonic one dollar, plus 49 percent of the net profits—was announced. When the second sealed envelope was opened, the mood changed sharply. BLM prognosticators had figured a maximum bonus bid of about \$50 million; onlookers gasped and started buzzing when a consortium of Marathon Oil, American Petrofina, and Phelps Dodge came in with a flat \$80 million. The third bid stopped the place cold. The ante of Standard Oil of Indiana and Gulf Oil was announced at \$210,305,600, and as one observer noted, “I thought they’d have to bring in 20 stretchers.”

The bids rolled on—\$175 million from Sun Oil of Delaware; \$63.3 million from the pre-race favorite, a consortium led by ARCO and Ashland

“... the subsidies line up like goodies in a candy store.”

Oil; \$63 million from Shell Oil; \$33 million from Carter Oil; \$16 million from Occidental Petroleum (a company official has since confirmed that this was a “serious bid”).

So Standard and Gulf won the first and richest lease; for big oil, it was a dramatic, but hardly unprecedented, coup (*Colorado Business Magazine* has noted it was also a coup for “two of America’s oldest and richest oil families—the Rockefellers and the Mellons”). And while Colorado Governor John Vanderhoof and the Denver press expressed amazement and booster-style pride, conservationists coolly observed that, in this first round of oil shale payola, two of the majors had calmly knocked off rights to four to five billion barrels (Interior’s estimated reserves in the first lease) at a piddling maximum of 5¢ per barrel, most likely less. As this article goes to press, the second Colorado lease has also been taken by big oil—a consortium of ARCO, Shell Oil, and Ashland Oil bidding \$117.7 million. The only other offer was from the small Geokinetics Group of Concord, California, with \$52 million. “This points out,” said Geokinetics President Michael Lekas, “that a group of independents can’t compete with a group of majors.”

Interior’s program had been called a giveaway before Ohio Congressman Charles Vanik used the term to describe the arrangement whereby

public BLM lands not included in the 5,120-acre leases are to be used without cost as "garbage pits for the shale wastes of the private shale oil developers." But after the Standard-Gulf sale, criticism has grown both more intense and more general. Wyoming Representative Teno Roncalio (also an adamant opponent of any underground nuclear fracturing) charged that "far too much is being given for far too little," and announced he would introduce legislation for higher rents and royalties. Over in the Senate, Henry Jackson and Lee Metcalf (Montana) expressed similar concerns. Most recently, Michigan Congressman John Dingell subpoenaed two high Interior officials—Oil Shale Task Force director Stone, and deputy assistant secretary for minerals and energy Jack Rigg—to appear before his House Small Business Subcommittee. There, the two reluctantly and defensively disclosed that, incredibly, their department had been ready to part with the first Colorado lease for under \$9 million—less than 1/20 the eventual Standard-Gulf bid. Neither would divulge the exact "minimum acceptable bid," nor did they explain how the miniscule figure was reached, nor why. But Stone's and Rigg's limited testimony cast still another pall of doubt on Interior's program.

Despite such revelations, and a slowly rising current of criticism, the "Prototype Oil Shale Leasing Program" is still intact. Right now, this is how it looks:

● First, development on six 5,120-acre BLM lease tracts—two each in Colorado, Utah and Wyoming. The Colorado segment may be the only one to get off the ground as planned. While the state is trying to take over the oil shale program in Utah, there's every good chance that the Wyoming tracts will go begging, because the leaner deposits there require an *in situ* process which is still in the Tinker Toy stage. (Fearing industry neglect, Wyoming Governor Stan Hathaway has offered to sweeten the kitty by allowing successful bidders to work state lands in addition to the BLM tracts.) Whatever happens, first oil production will commence by 1980 at the earliest. Interior projected maximum yield from all six sites at 250,000 barrels per day. At present, that figure is highly uncertain. While Standard-Gulf is aiming for 100,000

barrels daily by 1982, and while the ARCO consortium is sure to push ahead on its recently won tract, what will happen in the other two states remains much in doubt.

● Second, a stepped-up or "mature" industry producing one million barrels a day by 1985 at the earliest. Interior zealously predicts a total of 17 separate mine-plant complexes to achieve this level; some will go on the old Colorado ranchlands, but a second generation of public BLM leases (now four or five years away) will also be required. Many observers believe this goal is highly implausible; it would necessitate something like a five-billion-dollar capital outlay from the oil majors, a sum which may not be forthcoming. A more economic target for 1985 is 500,000 barrels daily from seven to nine plants—if technology and construction (including all support facilities) move ahead without delay.

● Third, sometime next century, a massive, full-scale oil shale industry restricted only by the availability of water (which in typical Western fashion turns out to be the prime limiting factor for development). Present, albeit rough, output estimates range between three and five million barrels daily, or between 35 and 60 plants. The prospect is enough to numb even the most vivid, forestalling imagination: the vision of a stinking, surrealistic industrial world transplanted to the land of the Big Sky.

Today, out in the oil shale country, most of the natives have been sold: "greater job availability . . . improving the economy . . . a beneficial building boom . . . higher wages . . . raise the local standard of living . . . better housing." So reports John Halligan, planner for the Area Council of Governments that oversees the oil shale region. This is a good, tough, demanding land; it forces many just to eke out a living in the American grain, they dream of what they believe will be a better life.

But there are other perspectives on oil shale, and on the blatantly promotional efforts of Interior to hasten its development. In response to both the draft and final environmental impact statements, a broad spectrum of conservation groups has severely criticized the impending program. Early on, there was hope that constructive changes might result; more recently

the tone has shifted toward moral outrage over the fact that the entire flawed and contradictory scheme now appears to have been rigged from the start.

This might well have been evident more than two years ago when Interior initiated the site-selection procedure that eventually pinpointed the six lease tracts now being let for commercial development. Back in late 1971, after a season of sporadic informational core drilling (only one test hole every ten square miles), industry was asked to specify tracts in which it was interested. Thereupon 15 corporations submitted 23 nominations for 18 different sites. Wyoming Governor Hathaway added two more locations in his state when it became evident that industry was disinterested. All told, 13 of the 20 target tracts were in Colorado's Piceance Basin, site of both the richest and thickest oil shale sediments in the tri-state area.

Interior then began screening those 20 sites, evaluating them exclusively on economic grounds (value of resource, geologic features, ease of mining, etc.). Department personnel who worked on this job have indicated that "environmental considerations" were not part of their deliberations, though later government publications have stated that they were—that the environment was considered, albeit not very seriously. The final site selections reflect this bias all too well.

However, if Interior's tract selections are ominous, they pale in light of the actual program, which the Oil Shale Task Force designed, and which Secretary Morton approved. The first thing to understand is that, despite four years' promotional labeling to the contrary, this is simply *not* a prototype program in any honest sense of the word—not a "test," not "experimental," not "pilot."

Instead of exploring and testing a broad spectrum of technologies to develop new data bases for subsequent operation, the Interior's program is simply the initial phase of a massive, multi-plant commercial lease development on the public BLM lands—designed primarily to give industry, and large industry at that, a foot in the door from which it will be very hard to retreat. Among the features of the current program, all suggesting it is hardly a "prototype," are the following:

Continued on page 16

Jewel of the Western Reserve

JAMES JACKSON



NO ONE WOULD CLAIM that the Cuyahoga River Valley in northern Ohio has the grandeur of Yosemite, the splendor of Yellowstone or the mystic allure of the Great Smoky Mountains. Yet here in a 20-mile stretch between the edges of Cleveland and Akron is open space with forest-covered hillsides, meadows on the floodplain, and a winding river that was a thoroughfare for the Indians long before the white man came.

Congress is being asked to make it a national historical and recreation park, a designation for non-wilderness areas of special historical and recreational value. Hearings before the parks subcommittee of the House Interior Committee are expected to be held in February. Representatives Seiberling, Vanik, and Regula of Ohio, with 30 cosponsors, have introduced H.R. 7077, which would authorize establishment of the park. A companion measure has been introduced in the Senate by Senators Saxbe and Taft of Ohio. The proposal's backers, including the Sierra Club, say that this is a perfect opportunity to have a national park closely accessible to people. The Cuyahoga valley is within only an hour's drive of four million persons. Even more significant in these days of gasoline shortages, at least half that number could cycle to it and home again on a Sunday afternoon.

The concept of a national park in the valley is relatively new, but appreciation of the natural attractiveness of the area goes back a long, long way. "The land I live on is as good as any man can wish for," wrote Jonathan Hale in 1810 toward the end of his first year as a settler in the Connecticut Western Reserve. Today, the fine brick home he erected in 1827 is a living museum, surrounded by a growing replica of a Western Reserve village. School children from throughout northern Ohio come to the 160-acre farm to see what life was like during the 1800's. The farm is but one of several of the public and quasi-public facilities already available in the 20,000-acre valley area. The Cleveland Metropolitan Park District's famous Emerald Necklace encompasses several miles of the valley just to the south of the city. It has been said that a national park stretching on southward could be the jeweled pendant hanging from the necklace. In addition, Akron Metropolitan Park District has five separate parks, totaling more than

3,000 acres, in or immediately adjacent to the valley. Nestled in a woodland on the eastern rim is the Blossom Music Center, summer home of the famous Cleveland Orchestra. Boy Scouts and Girl Scouts each have several hundred acres of woodland for year-round camps and hiking trails. There are three smaller summer camps.

Despite proximity to two major metropolitan areas, the valley retains much of the flora and fauna of centuries past. It has been described as a crossroads for plant life of the East, West, North, and South. One botanist wrote of the region: "Northeast Ohio is one of the richest, if not the richest, natural history areas on the North American continent." Flora characteristic of Canada, and representatives of the post-glacial plant successions thrive here, alongside plants more common to the South. The steep hillsides support a thick growth of timber. Beech and sugar maples dominate, but there are also stands of oak, hickory and ash. On the flood plain are sycamores, cottonwoods, box elder, and black walnut. Ohio buckeye is native in the valley, but is close to its northern and eastern limits of distribution.

Accessible only by footpath is Stumpy Basin, with an amazing array of botanical specimens in a 30-acre swamp owned by Kent State University. Once, it was a turning basin on the old Ohio and Erie Canal. Nearby is Lonesome Lock, overgrown with poison ivy. One of the hopes of park backers is to restore a few miles of the old canal, opened in 1827 and washed out by a great flood in 1913. It would be exciting to have a replica of an old canal boat drawn by mules in tandem so that visitors could experience an earlier form of transportation. Several miles of the old towpath are now traversed frequently by hikers on the lake-to-river Buckeye Trail.

The historic village of Peninsula (pop. 682), once a bustling canal town, lies midway in the proposed park area. Otherwise, houses are scattered. A few farmers raise sweet corn and cattle. Suburban dwellers are moving in. Because of steep hillsides and water-supply deficiencies, development has fortunately been slower than on the plateaus at either side, where there is an almost continuous urban sprawl from Cleveland to Akron. But developers now have their

eyes on the valley. One tract for 60 homes was bulldozed out of the forest a year ago. Its promoter wants to go further. On the western rim looms the steel frame of the Midwest Sports Coliseum, which will greatly increase local traffic, not to mention the probable mushrooming of motels, taverns, and gasoline stations. If the remaining valley acres are to be saved as a precious suburban green belt, action must come soon. Only the federal government has the resources.

The two metropolitan park systems have been acquiring land in the valley for almost 50 years, but only a nibble at a time is permitted by limited budgets. The state of Ohio has recently become interested and, with 50-50 matching funds from the Bureau of Outdoor Recreation, now has \$8 million available for land purchases. That's a good beginning, but not enough because prices are rising fast. The best guess now is that \$40 to \$50 million will be needed if the park is to become a reality within the next few years. Beyond that, it would cost more

to get less because developers would have made irreversible inroads.

While the Cuyahoga Valley park would no doubt be used mostly by Ohioans, it could also be a welcome haven of rest and relaxation for transcontinental travelers. It is crossed by the twin bridges of the Ohio Turnpike (I-80) and also by I-271, a northeast-southwest thoroughfare which links central New York state and northwest Pennsylvania with southern Ohio.

Sierra Club members who staged a canoe trip last year through the surprisingly wild Pinery Narrows found the river water a little too smelly for pleasant boating. But with federal and state EPAs insisting on a cleaner effluent from the many sewage plants which dump into the river and its tributaries, it is even possible that the river itself may offer recreational possibilities before 1980. Meanwhile, this is a great open space worth saving for its historic and esthetic values.

James Jackson is president of the Cuyahoga Valley Association.

Oil Shale (Continued)

- A projected development timetable requires the signing of second generation BLM oil shale leases *before* any "prototype" operation has begun to generate significant new data.

- Leases will go to the highest bidder without regard for innovative technologies that might be less environmentally hazardous and more efficient than those now known. Companies wishing to explore new methodologies have no place in the current program.

- Leasing to the highest bidder will also effectively restrict the program to those majors with sufficient bankrolls to enter this high-priced sweepstakes.

- The large lease tracts (all at the maximum set by the Minerals Leasing Act of 1920) with their billion-dollar reserves indicate commercial production rather than experiment. No production ceilings are set; the high bidder simply moves in and mines as much, as fast, and as long as he is able. Standard-Gulf's long-range target for its tract is 300,000 barrels per day.

- Lease supervision by the U.S. Geological Survey will proceed essentially as it has for decades on commercial

coal, oil, and gas leases on public lands.

- The program lacks any built-in "fail safe" provision whereby a lease might be suspended or cancelled should environmental damage become unacceptably extreme.

The "prototype" designation has also given Interior an effective dodge in dealing with its critics. By insisting on the experimental nature of its leasing program, the department has time and again been able to evade full disclosure of various social and environmental impacts. "We don't know the answer; that's what our prototype program is designed to find out," is a shield that has been used with relentless frequency. Both the draft and the final NEPA statements recite this logic almost monotonously—secure in the knowledge that legally it is all but unassailable.

Behind this veil, the subsidies line up like goodies in a candy store window:

- A complex of credits to be awarded to lessees who rush hastily into production. Though at first glance, for example, Standard-Gulf's \$210 million bonus bid seems astoundingly large, it is actually a bargain-basement

price for the right to mine some four-plus billion barrels of oil. Furthermore, it is not even a real figure. Interior's plan calls for the bonus to be paid in five annual installments, but if the companies move quickly into construction, the 4th and 5th payments are cancelled. Standard-Gulf has an \$84 million write-off before it starts; the bonus bid will return the public three whole cents per barrel of their oil.

- An annual tract rental fee of 50 cents per acre.

- An average shale oil royalty of 16.8 cents per barrel; this compares with 58 cents per barrel for crude from the Outer Continental Shelf (Critics maintain that figure is also low.)

- A lease clause which allows all "extraordinary environmental costs" over \$500,000 to be credited against the meagre shale oil royalties. This is another certain write-off. The ironically named Colony Development Operation (an ARCO-led consortium that has engineered a test "semi-works" plant in Colorado) claims to have spent some \$2.5 million on environmental work while only in the experimental stage. It seems a sure bet that, out in the oil shale country, the public will foot the bill for a large part of the environmental protection (much of it probably dubious "minimizing") in the form of lost royalties.

- A bundle of high sounding, toothless environmental provisions which do not even guarantee revegetation, and include no penalties for making or leaving a mess.

Such are the ingredients for the making of this nation's next great energy colony—one that already is beginning to draw workers from the ruins of Appalachia, one that could soon become the Appalachia of the West. Against this grim likelihood stands the fat cushion of government subsidies to the corporations who will make it all possible. As usual in such affairs, the land and the people will pay. They will pay just as surely and as fruitlessly as the purchasers of Samuel Kier's "rock oil" medicine paid, pay until the very last drop is cooked from the very last truckload of the dull gray rock that burns.

"The Great Shale Robbery" is the first of two articles on oil shale.

A Forester's Datebook

Countdown to Clearcut

PEOPLE BEGAN complaining about the U.S. Forest Service in the 1950's, when it began paring down the primitive areas and permitting careless and excessive logging on the National Forests. Distress accelerated as the annual allowable cut of sawtimber was increased from 5.6 billion board feet in 1950 to 11.4 billion in 1969, at which time the Sierra Club became deeply interested in timber management. Our goal for the National Forests is withdrawal of the lands suitable for wilderness classification, the return of submarginal forest land to the status of protection forest—to be managed exclusively for watershed, wildlife and recreation—and integrated multiple-use management of the commercial forest lands. Here is the sequence of events to date:

January 16, 17, 22, and 23, 1968: Senate Committee on Small Business hearings on log exports; industry and its allies apparently join up to convince Congress that we should export logs while increasing the allowable cut on the National Forests.

April 16, 1968: Secretaries of Agriculture and Interior order restriction on export of logs from federal timberlands west of the 100th meridian to 350 million board feet. Nothing was done to reduce export of timber from private land.

November 26, 1968: Senate Committee on Small Business hearings on timber management policies, "to explore the availability of wood to meet the needs of the American people." Industry representatives only; a staged show to get an increase in timber sales from the National Forests.

March 7, 1969: The President appoints a task force on softwood lumber and plywood, to look into the price of and supply and demand situation for lumber and plywood.

March 19, 20, and 21, 1969: Senate Subcommittee on Housing and Urban Affairs hearings to identify the problem of high lumber prices and develop a remedy.

March 24, 25, 26, and 27, 1969: House Committee on Banking and Currency hearings on "rising costs of housing; lumber price increases."

April 27, 1969: Oregon state legislature hearings to get Forest Service to increase the allowable cut.

May 21, 22, and 23, 1969: House Committee on Agriculture hearings on proposed National Timber Supply Act, to vastly increase sale of timber on the National Forests.

June 25, 1969: Regional forester Charles Connoughton of the Pacific Northwest Region announces publication of the *Douglas Fir Supply Study*, which admits publicly for the first time that the National Forests are being excessively logged. The report conservatively estimates that allowable cuts in the Douglas fir region exceed the antici-

pated sustained yield by 61 percent.

October 21, 1969: Senate Agriculture Committee hearings on National Timber Supply Act.

Winter 1969: "Excellent Forestry" published in *Conifer*, newsletter of Sierra Club's PNW Chapter. The essay has become the environmentalists' standard by which forest practices are judged. It is probably the first time the major factors of multiple-use forestry have been put together in a statement of timber-management principles.

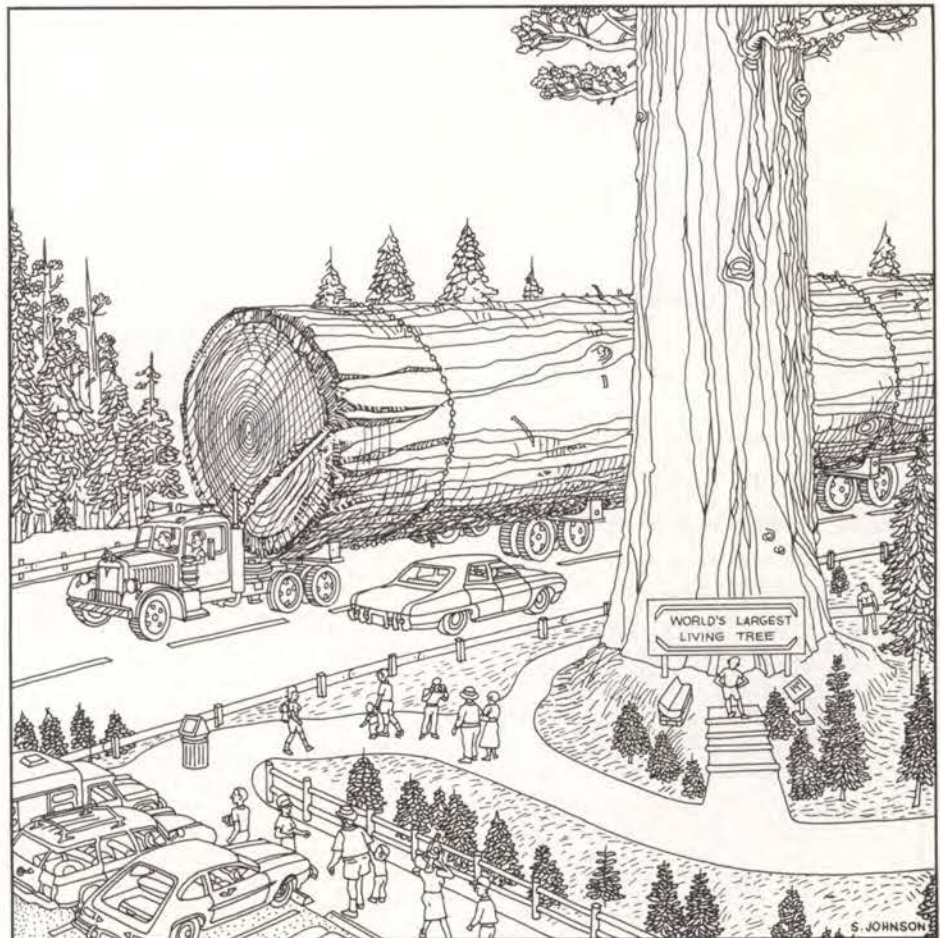
January 1, 1970: Environmental Policy Act goes into effect. Forest Service responds with Environmental Program for the '70's; declares its intention of increasing the allowable cut on the National Forests by 7 billion feet while improving the environment; re-

organizes to employ "multidiscipline teams" for preparing timber sales; and begins preparing environmental impact statements.

February 26, 1970: Timber Supply Act defeated in the House of Representatives by vote of 229 to 150.

March 3, 1970: Sierra Club, *et al.*, files suit against the Forest Service in Alaska to permanently enjoin a 50-year timber sale contract to U.S. Plywood-Champion Papers, Inc. Receives adverse decision, May 20, 1971. Appeal argued September, 1972. Sierra Club enters motion to remand, February 2, 1973.

April 15, 1970: A Forest Service task force publishes appraisal of Management Practices on the Bitterroot National Forest; admits some mistakes, but fails to come to grips with the principal issues: absence of multiple-use and sustained-yield.



June 1970: Public Land Law Review commission publishes report recommending zoning of the National Forests, and dominant use of the commercial forest lands. This would legalize the recent mismanagement of the National Forests.

June 11, 1970: The President's Council on Environmental Quality asks for position papers on even-age management from Society of American Foresters, American Forestry Association, American Forest Industries, Inc., and Sierra Club. According to an official of C.E.Q., Sierra Club's position is only one with substance. The papers are never published.

June 19, 1970: President announces report of the Cabinet Task Force on Softwood and Plywood, which recommends an increase of 7 billion board feet in the allowable cut of the National Forests by 1978; also recommends appointment of a panel to make another study of the timber-supply situation.

August 1, 1970: West Virginia legislature requests the Secretary of Agriculture to suspend letting clear-cutting contracts in the National Forests in that state.

November 18, 1970: University of Montana School of Forestry publishes *A University View of the Forest Service*, in which they report, "multiple-use management, in fact, does not exist as a governing principle on the Bitterroot National Forest."

April 5, 6, 7, and June 29, 1971: Senate Interior Committee holds hearings on clear-cutting practices on national timberlands.

July 23, August 9, and September 24, 1971: Senate Interior Committee holds hearings on opposing bills regarding forestry. S. 350 (Hatfield) is essentially a subtly revised version of the defeated Timber Supply Bill. S. 1734 (Metcalfe) requires ecologically sound forestry on the National Forests, and regulates private forestry. Neither bill is voted out of committee.

September 2, 1971: The President announces appointment of five persons to be members of the President's Advisory Panel on Timber and the Environment. The panel is heavily biased toward industry's point of view.

October, 1971. Intermountain Forest Experiment Station publishes *Stratification of Forest Land for Timber Management Planning on the Western National Forests* reporting the area of forest land suitable and available for timber production on National Forests of the West has been overestimated, probably as much as 22 percent.

1971: In-service report criticizing forest practices on National Forests—*Forest Management in Wyo-*

ming. Another whitewash that does not come to grips with the real issues. Considers the appearance of cutover land as the main problem, rather than the failure of regeneration, and excessive cutting.

November 22, 1971: Regional Forester of California Region approves the new Six Rivers National Forest Timber Management Plan, the first such plan to be revised after passage of the Environmental Policy Act, the first to require an environmental impact statement, and the first to make use of computer technology to develop the allowable cut. Allowable cut is increased, while rotation is lengthened on a reduced land base. Thus, planning is obscured through use of computer technology, with questionable results.

January 11, 1972: American Forestry Association announces President considering an Executive Order limiting clear cutting on the National Forests, based upon the reports of the deans of five forestry schools commissioned by C.E.Q. in 1971 to make studies of clear-cutting practices. Having been notified, industry spokesmen complain to the President, who then withdrew the order.

February 22, 1972: Sierra Club appeals to Chief of the Forest Service to reverse Six Rivers Timber Management plan on the grounds that allowable cut is too high for either multiple use or sustained yield, and silviculture not appropriate for multiple use.

March 29, 1972: Senator Frank Church, Chairman of Public Lands Committee, issues guidelines regulating clear-cutting on the national forests.

March 29, 1972: Chief Ed Cliff announces that the Forest Service will abide by the Senate's guidelines on clear-cutting.

April 29, 1972: Ed Cliff resigns.

September 1972: The Intermountain Forest Experiment Station in Ogden publishes *Forest, Goals and Decisionmaking in the Forest Service* which shows that the mandate of Congress, as expressed in NEPA, the MU-SY Act, and most of the earlier legislation, is to manage the several resources in harmony with one another, so that the end result would be to maximize the sum of all their values. "There is no indication that it was the intention of Congress to call for the maximization of any one of the resources—timber, or outdoor recreation, for example—without considering how such production would affect the total benefit to be derived from the forests." Thus, the MU-SY Act calls for "harmonious and coordinated management . . . with consideration being given to the relative, i.e., weighted, values of the various resources."

February 28, 1973: Senator Packwood introduces a bill to ban log exports. The bill is not passed, but a total ban is subsequently placed on export of logs from federal lands.

March, 1973: Oregon State School of Forestry publishes *Effects of Various Harvesting Methods on Forest Regeneration* by Jerry Franklin and Dean DeBell, concluding there is broad latitude in choice of silvicultural methods that will meet biological or ecological needs for regeneration of most species of trees on most sites. Few situations require either extreme of individual tree selection or large clear cuttings, although both are often possible.

March 1973: Georgia Forest Research Council publishes *The Silviculture of Loblolly Pine* indicating advantages and disadvantages of selection cutting.

"Under the selection method growth tends to be concentrated primarily on merchantable growing stock. Stumpage value is high. The method permits the nurturing of high quality trees and those earning the highest interest rate. The landowner can expect a regular income at relatively short intervals; thus, the method is adapted to management of small holdings. (The national forests are small holdings in the South.) Uneven-aged stands are not as vulnerable to complete destruction by fire as are

young even-aged stands. The stands at all times satisfy aesthetic demands . . . The principal disadvantage is that today's logging methods are not compatible with the selection method."

March 26, 1973: Secretary of Agriculture orders the Forest Service to increase sales during 1973 by 1.8 billion board feet.

April 16, 1973: Cost of Living Council conducts hearings on lumber prices and allowable cuts on the National Forests.

May 29, 1973: Butz and Dunlop jointly announce completion of a detailed plan to assure sales of 11.8 billion during calendar year 1973, and fiscal 1974. Chief John McGuire announces undesirable changes in Forest Service's timber sale procedures to assure sale of 11.8 billion board feet.

September 24, 1973: President announces report of the President's Panel on Timber and the Environment, recommending an increase in sales of timber on the National Forests by 50 to 100 percent.

October 31, 1973: Senate Agriculture Committee hearings on Senator Humphrey's S. 2296, which would require the Forest Service to establish plans to meet the national and international demand for wood, to submit budgets to implement such plans, and set goals for bringing about fully intensified timber management on the National Forests; and would require reconsideration of laws and policies governing management of the National Forests at frequent intervals. Amended and modified version passes Senate February 20, 1974.

May 8, 1973: Monongahela suit filed in West Virginia.

November 6, 1973: Judge Maxwell of the Northern District Federal Court of West Virginia in the Monongahela suit, *Izaak Walton League of America, et al v. Earl W. Butz*, rules in favor of plaintiffs, who had charged violation of the Organic Act of 1897 in that the Forest Service proposed to sell timber other than "dead, matured and large growth trees," that they proposed to sell timber that was not marked and designated, and that they proposed to permit purchasers to cut trees on the National Forests without removing them.

December 2, 1973: Judge Maxwell of the Federal District Court of the Northern District of West Virginia hands down his Court order permanently enjoining the Forest Service from allowing the cutting on the Monongahela National Forest of (1) trees which are not dead, matured or large growth; (2) trees which have not been previously marked; or (3) trees which will not be removed. Defendants must revise the Code of Federal Regulations, Forest Service Manual, and timber sale contracts, not later than July 1, 1974. However, nothing in the order is to be construed as affecting defendant's authority to allow cutting of trees for building of roads and trails; protecting the forest from fire and depredation from insects and disease; managing the forests for multiple uses other than lumbering; thinning and improving the forests within sales areas; and conducting experiments in forest management. The order does not affect existing contracts.

December, 1973: Chief of Forest Service, while acknowledging a few technical errors, rejects Sierra Club's appeal of the Six Rivers Timber Management Appeal.

January 14, 16, 28, and 30, and February 1, 1974: Environmental Protection Agency conducts hearings on the use of DDT to control the Tussock

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The Forest Service "admits some mistakes in the Bitterroot National Forest."

Moth. Apparently this is industry's thrust to break EPA. If industry prevails, either EPA will authorize use of DDT, or Congress will hold hearings on a bill to transfer responsibility for use of herbicides and pesticides on forest and agricultural lands from EPA to the Secretary of Agriculture—H.R. 10796 (McCormack).

February 25, 1974: In response to a suit filed by the Natural Resources Defense Council and the Sierra Club in late 1973, Federal District Court enjoins Forest Service from selling an additional one billion board feet of timber until preparation of an environmental impact statement.

The Forest Service has slowed down its acceleration of allowable cut in some places and has increased it in others. The old-growth timber in the National Forests is still being liquidated. The Monongahela decision will probably be appealed, and the timber industry and the Forest Service will ask Congress for

authority to cut whatever may be sold under their so-called "scientific forest management." Research supporting the Club's view of forest management still leaks out of experimental stations and forestry schools. Our only success in dealing with the Forest Service has been in the courts. We must challenge inadequate environmental impact statements, challenge timber management plans based upon the dominant-use policy and which call for excessive logging, keep our representatives aware of our concern, and respond with knowledge and persuasion when legislation is under consideration affecting the National Forests. Industry is conducting the greatest effort in history to rip off the national forests at an increased rate. Yet, if cutting continues only at the present level, the whole subject will become academic within the foreseeable future.

Gordon Robinson

The Blueberry Birds of Brunswick

NEW BRUNSWICK blueberry growers are learning that tinkering with one part of the environment can trigger problems elsewhere.

The growers claim robins, starlings, and other small birds are eating up to 75 percent of the crop because the forest-products industry is spraying nearby forests for spruce budworm and that the spraying has decimated the bee population, causing an additional 15 percent loss.

Birds like ripe fruit, of course, and growers normally figure to lose two or three percent of the blueberry crop to birds. But since 1970, when the spraying in the southern part of the province began on a large scale, birds have swarmed into the berry fields, and bird droppings are as plentiful as the berries this year, according to one grower. Birds are not a big problem in those parts of Maine and the Maritime Provinces where there is no spraying.

New Brunswick's largest blueberry grow-

er, Cole Bridges of Calais, Maine, is leading the growers' protest. He filed a \$1.5 million lawsuit against Forest Protection Limited, a consortium formed by several paper companies and the provincial government to conduct the spraying. Bridges says he wants the cost in trees would be too high. Historically, spruce budworm erupts on a 36-year cycle: six years of infestation followed by 30 years of dormancy. But by stepping in at mid-cycle, as the paper companies and government did in 1952, the sprayers indefinitely prolong the cycle. The current budworm epidemic began in 1949 and 24 years later continues unabated.

Even forestry officials who support the spraying program acknowledge the budworm probably would eat itself out of food and die off if it were left alone, but they say the cost in trees would be too high. Historically, spruce budworm erupts on a 36-year cycle: six years of infestation followed by 30 years of dormancy. But by stepping in at mid-cycle, as the paper companies and government did in 1952, the sprayers indefinitely prolong the cycle. The current budworm epidemic began in 1949 and 24 years later continues unabated.

International Paper Company used DDT in the province's first spray programs in

1952. But the budworm problem was worse in 1955, so the company increased concentrations of the chemical from 20 to 30 times the initial amount. The insecticide washed into streams and lakes and thousands of fish died. Canada banned DDT in 1968.

Following advice from the Japanese manufacturers, Forest Protection Limited switched in 1969 to Fenitriethion (trade name sumithion), an organophosphate that causes death through muscle contraction. DDT killed 95 percent of the budworm and 50 percent of the non-target parasites and predators, but Fenitriethion kills only 85 percent of the budworm and 90 percent of the non-target organisms, according to Bridges. The result is a thriving budworm population and dwindling numbers of insects that feed on budworm. Bees are especially hard hit.

Bridges says the spraying eventually will be a nightmare for the timber companies too, since it allows only the strongest of the budworms to reproduce, thus creating a "super budworm" that happily chomps away at spruce and balsam fir even in wet weather. Budworms usually eat old dry tree-tops during warm weather.

Last year, some growers tackled the bird problem with shotguns. This year the Canadian federal government heeded pressure from Canadian and American birdlovers and refused to issue shotgun permits to the growers.

However, everyone agrees the berry growers have a serious problem, and Canadian Wildlife Service biologists are proposing a variety of ways to scare birds from the fields. The suggestions include party noisemakers, remote controlled model airplanes, high warbling sound systems to disorient birds, recordings of robins' distress calls, and even teenagers on motor bikes without mufflers. And—in an ironic solution to a problem that exists because of another industry's use of pesticides—they are studying whether a new chemical designed to control blueberry maggot also is repellent to birds.

Jeanne Huber

Going to the Annual Banquet?

SINCE THE announcement for the 1974 Sierra Club banquet appeared in the February *Bulletin*, the following changes have been made in the arrangements for this event: The banquet will be held at the McConnell Center on the campus of the Claremont Colleges in Claremont, California, on Saturday, May 4, but will be \$8.50, not \$7.50, as previously announced. Instead of a no-host cocktail hour at 6:00, there will be a *free wine party* at 6:30 p.m. The dinner itself will begin at 8:00 p.m., rather than at 7:30.

WASHINGTON REPORT

Congress Returns to Reason

WITH THE EBB and flow of life in the capitol, the mood of Congress also rises and falls, although with a good deal less predictability than the tides. The feeling that many observers have is that of a body without much direction or leadership, lurching from crisis to crisis, and responding to whatever particular pressures are brought to bear at any given moment.

This has certainly been the pattern of congressional response to the "energy crisis." A great panic swept over the members in the month between Thanksgiving and Christmas, and the pressure was overwhelming to "do something." The main result was the Emergency Energy Act—a poor law from an environmental standpoint. Under the guise of meeting the "emergency," it actually gave little power to the executive branch that it did not already have under other statutes. The much vaunted disclosure and price rollback provisions, ostensibly aimed at the major oil companies, were vague and ambiguous. But

immediate and direct damage was done to the Clean Air Act, most importantly through the coal conversion provision, which would permit utilities to switch from burning clean oil to dirty coal, for a period (at least five years) far beyond the declared "emergency." This was an outright, and unnecessary, gift to the powerful coal/utility lobby.

It was for this reason that we joined with many urban and health groups around the country to oppose the Emergency Energy Act. But, with the panic mood of Congress in late December, it all seemed hopeless. And then, something happened—Congress adjourned without passing it, and the members went home and sampled their constituencies' sentiments. And they found out that many were not buying the oil companies' line that environmental restrictions were responsible for the "energy crisis." The mood of Congress dramatically changed, and there was less desire to rush through with the "emergency legislation" when congressmen returned in late January.

We had but one precious month to inform the people of what was going on, and the results were gratifying. Everywhere we called, people were ready, eager, willing to respond. The mail started coming in. And it came in very well, enough so that Congress was made much more aware of our concerns and our issue. A number of senators approached Senator Muskie privately to ask him if something couldn't be done. Proponents of the coal conversion provision could not logically justify their position about its "emergency" nature during the floor debate and were required to qualify their position and give environmental guarantees. A great victory was won, when environmentalists' mail stimulated enough

votes to force the recommittal of the EEA in late January—a miracle which never could have happened in the panic atmosphere of a month before.

Thus, as of late February, there still is no Emergency Energy Act, and the environmentally damaging provisions are not law. Even if an act finally passes, such provisions will be greatly weakened or even omitted.

An important message has been delivered to the Congress: that the environmental movement is very much alive and well, contrary to the expectations of much of the press and some politicians. There is no indication whatsoever that our membership, or the membership of any other group, has lost its commitment to a clean environment and a better earth. The flow of mail on the Emergency Energy Act demonstrated this very convincingly. Even John Ehrlichman, President Nixon's former advisor on domestic affairs, was moved to point out at a recent seminar in Seattle that environmentalists do have a lot of clout in Congress, and that environmental laws are very much here to stay.

We need to keep bringing this message home again and again in the coming months, because it promises to be one of the most active springs in environmental history. There is other energy legislation being considered. There is the eastern wilderness bill, and the BLM Organic Act. The critical land-use planning and strip-mining control legislation, on which we have worked for so long, will have their final votes. There will be legislation on deepwater ports, and perhaps on off-shore oil drilling. There will be forestry legislation, and the usual critically important appropriations for these various activities. And there will be the vital house reorganization proposal, which can have a critical long-term effect on many environmental programs. If the message comes through clearly as it did in the Emergency Energy Act, then we should be able to do all right.

Brock Evans



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REGIONAL REPS REPORT

Northwest: Preserving Hells Canyon Wilderness

FOR THE LAST 18 YEARS, Hells Canyon, the deepest gorge on earth, through which flows the last free and wild stretch of the mighty middle fork of the Snake River, has occasioned one of the nation's bitterest conservation struggles. The question: whether to dam our deepest canyon in order to provide electricity to the growing cities of the Pacific Northwest. At first, the battle was

merely over who among the various private power companies, public utilities, and government dam builders was going to get to build the hydroelectric dams that nearly everyone seemed to presume should be built in Hell's Canyon. Then, suddenly, the debate began to shift as local residents started to question whether any dam should flood Hell's Canyon at all. Finally, even as the

EDITORIAL

The Eternal Catalytic

EFFECTIVENESS. What's the formula, the magic combination, that spells the difference between trying and triumphing?

For sure it isn't money; all we've got is shoe leather. Efficiency? Expertise? Tenacity? Integrity? Candor? Idealism? An insistent desire to shape a better world? Each no doubt is an important ingredient in our special Sierra Club formula.

But what about the nutrient medium in which the brewing occurs? What is it that pulls it all together, catalyzes our enthusiasm, enhances our effectiveness? Have we overlooked what is perhaps the single most important factor in the formula: our mutual, human need for affirmation. Affirmation that I'm OK. Affirmation that I do worthwhile things.

Have *you* ever experienced and delighted in a new charge of energy and enthusiasm when someone really notices? Or the isolation sometimes when no one does? And might you then agree that this one thing—*noticing, caring*—may be that secret ingredient we all too often dismiss or ignore? Do we bury it in our hurry, our forgetfulness, our concern with our own ego building? Are we sometimes awed and thus intimidated by especially active and devoted people, thus presuming they don't need our expressions of appreciation?

And how then can we increase our awareness, living out the conviction that we must reach out to each other, not just with information, not just with requests or demands, but with our feelings, truly a gift of ourselves?

Is it enough that we formally present Honors and Awards at the annual banquet? Should each region, chapter, and group promote an active awards program? Do we need to give greater attention to less formal means of recognition? Kudo columns in every Club newsletter? An opportunity at meetings to express appreciation for special individual efforts or achievements? A thank-you incorporated into each letter, each alert, each request? A ready stack of post cards for jotting a quick note of gratitude to a volunteer or staff member . . . or legislator or official? A word or two, or an arm around the shoulder, conveying the message "I noticed," or "You're great."

And have we perhaps grossly underestimated the importance of our meetings, which provide not only a means of exchanging information and ideas, but also a special opportunity to interact at an effective level, building rapport, morale, caring.

Normally, I'm not much on resolutions. But this year I hope that each of us might resolve to become a self-activating catalyst, to welcome each encounter as another precious chance to say, "Thanks for what you do. Thank you for being you."

*Kathleen Bjerke, Chairman
Council Executive Committee*

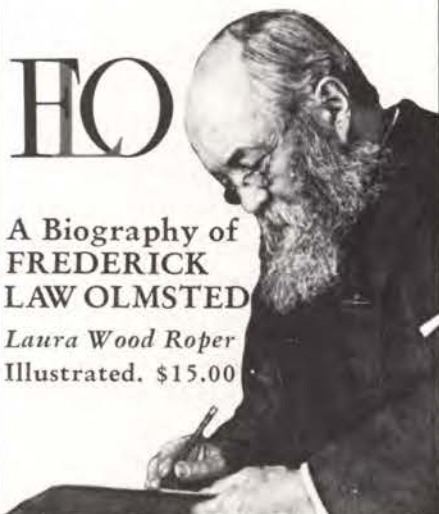
once-bickering dam proponents decided to forget their differences long enough to join together in favor of damming the Snake, public opinion in the Northwest swung decisively against the proposed hydroelectric projects. Now, in 1974, Congress, in response to public opinion, may at last act to protect and preserve the awesome gorge of the Snake.

Last year, in a crucial break-through, the four senators from Idaho and Oregon got together on a common proposal for protecting Hells Canyon. What emerged was S. 2233, a bill to establish the Hells Canyon National Recreation Area, to be administered by the Forest Service, which already controls most of the land involved. A similar proposal was also developed by Oregon Representative Al Ullman. Both bills would protect some 860,000 acres. Potential wilderness within the area would be studied, with the canyon itself (some 280,000 acres) to be designated as wilderness directly by the senators' bill. The Snake River would be designated as part of the National Wild and Scenic Rivers System and, importantly, an overall planning mechanism would be set in motion to develop sound land-use plans for the entire N.R.A. Dams would be outlawed.

After decades of controversy, things are finally looking up for Hells Canyon, although—not surprisingly—the dam builders

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are still singing their sad, insistent song. They were out in force in December, when the Senate Parks and Recreation Subcommittee held field hearings in eastern Oregon and in Idaho. Predictably, they were doing their best to latch onto the "energy crisis" and that almost mystical concept, the "public interest," to justify plugging Hells Canyon with concrete. On this occasion, at least, neither the senators nor their constituents were buying this season's favorite (and already overworked) scare tactic. Other witnesses documented that the hydroelectric production of the proposed dams would be fully absorbed by just seven months of growth in load requirements in the region. Seven months after the dams come on the line, we're back where we started, needing to look somewhere else for additional power (or to curb consumption)—but with the

depths of Hells Canyon drowned.

Except for the local chambers of commerce, the public pretty clearly said "nuts" to the dam promoters at the field hearings. They supported the concepts of the Church-Packwood-Hatfield-McClure and the Ullman bills, thereby offering hope that this year may be the one for Hells Canyon.

What's needed next? Your help. The House Interior Subcommittee on National Parks and Recreation has not yet begun hearings on the Ullman bill, H.R. 2624. Conservationists around the country can help now by letting subcommittee chairman Roy Taylor know that Hells Canyon belongs on his agenda of priorities this year.

The power companies, of course, are disappointed by the broad support for saving Hells Canyon. One representative complained that the Supreme Court decision

blocking licensing of dams in Hells Canyon several years ago (written by Justice William O. Douglas) had raised "the novel concept that the people of Oregon should be permitted to decide whether to keep this last remaining wonder of theirs undeveloped."

To the power monopolies, who are more or less used to pouring concrete with abandon, popular government and public decision-making is perhaps a "novel" concept. But to the public, it is an idea whose time is long overdue.

Douglas Scott

Southwest: An Ounce of Prevention

LAST YEAR, while national attention focused on the still-pending federal land-use planning legislation, Congress quietly passed a law that may do even more for rational land use in flood-prone areas. This law—the Flood Disaster Protection Act of 1973—was signed by President Nixon on December 31. The focus and primary purpose of the new legislation was to expand the federal flood-insurance program and to make it mandatory, rather than relying on voluntary compliance, as is now the case. The intention was to substitute an organized program of federally subsidized flood insurance for the present federal disaster-relief system.

In accomplishing this goal, the law in-

cludes perhaps one of the most far-reaching federal land-use measures ever enacted. Specifically, it defines flood-prone areas as those which would be inundated by a "100-year flood," i.e., the largest flood which, on the average, can be expected to occur once every 100 years. By July, 1975, all communities which contain flood-prone areas must enact new building and zoning codes, which would either prohibit building in the flood-prone area, or require that construction in these areas be adequately flood-proofed or built above the level of the 100-year flood. Persons who live in such communities will not be able to purchase federal flood insurance unless the community has enacted

such regulations. Without such insurance, no federally regulated bank or savings and loan association will be permitted to make any loan on property located in flood-prone areas. The effect of this legislation should be to force virtually all flood-prone communities to adopt meaningful flood-plain zoning regulations.

In the words of Senator Johnston of Louisiana, "The sanctions in the bill are absolute. No community or flood-prone area in the country can afford to disobey the land-use requirements of the bill, since no community can afford to do without federally insured loans." Senator Johnson went on to note: "The bill effectively prevents any building below the . . . [100-year] . . . flood level, unless it is totally flood-proof. Even if a community, or an individual property owner, wishes to forego the benefits of flood insurance, if his property lies within a flood-hazard area, he will not be able to build his home below the . . . [100-year] . . . flood level, since the bill would deny him any loan from a federally insured lending institution."

An opponent of the bill in the House of Representatives argued that "This legislation is so stringent that, if adopted, there

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seemingly would be no future need for flood insurance because the land-use restrictions would prevent any construction in a flood-prone area." Even so, the legislation did pass, and we hope this step will bring about a reversal of the long upward trend in annual flood damages, which has resulted in large measure from uncontrolled development in areas likely to be flooded. The increase in flood damages has occurred in spite of over \$8 billion invested by the federal government in flood-control levees, reservoirs, and other similar projects.

The sweeping new law, which incidentally strongly parallels the recommendations of the National Water Commission, is largely

a congressional reaction to growing demands for federal disaster relief. Forty-five out of 48 presidentially declared disasters during 1972 resulted from floods. The total damages that year were estimated at \$3 to \$4 billion. Administration of the more than \$4 billion in federal disaster relief distributed during the past five years has frequently been far from equitable. Victims of minor floods might get nothing, since no disaster area was declared, even though a few persons might sustain total losses of their property. At the other extreme, a recent study by Howard Kunreuther, of the Wharton School of Finance and Government, found that some flood victims ended up better off

financially after the disaster than before.

The voluntary flood-insurance program of the past did nothing to discourage building in flood plains, nor did it provide enough incentives to property owners to buy insurance in sufficient numbers to substitute for federal disaster relief in the event of a flood. If the expectations of the new law's supporters are realized, we can expect some dramatic changes in the use of flood plains in the future. *Business Week*, in summarizing the law, wrote, "A lot of land in the flood-prone areas will be taken out of development altogether, the cost of building on the rest of such land will rise, and the federal government could save billions of dollars in flood relief." Another welcome result should be fewer proposals in the future for environmentally destructive flood-control projects.

John McComb

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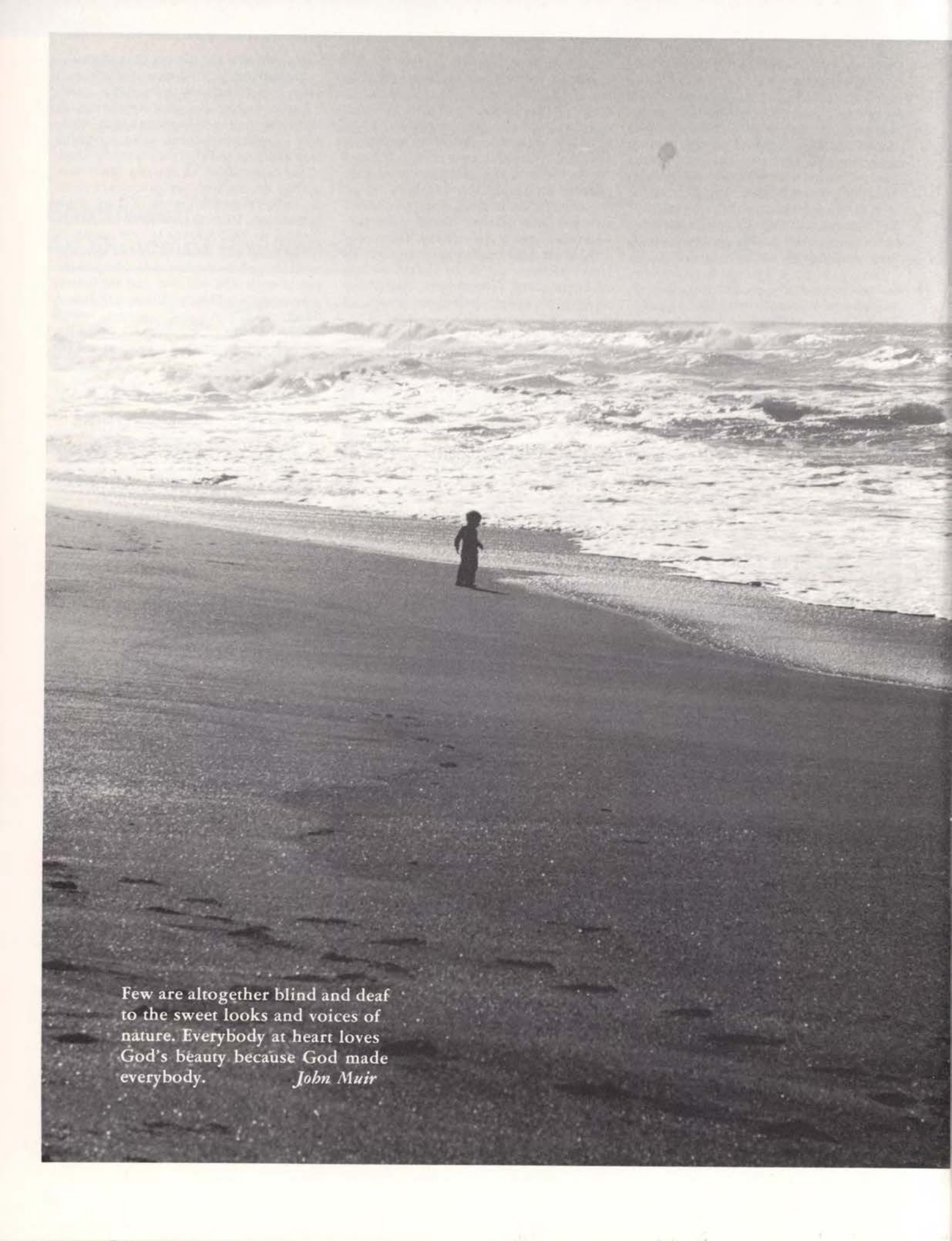
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Few are altogether blind and deaf
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God's beauty because God made
everybody.

John Muir

TRAVELING LIGHT

T. H. WATKINS

By the time you reached the 6,000-foot level, you knew you were in trouble. The sun, whose warmth had been so welcome in the morning, was by now an oppression, sending the temperature well above 100 degrees. Not even the sweat band around your forehead could keep the salt sting of sweat out of your eyes. You had hoped to reach the top of the pass before nightfall, but it was now after three o'clock and you were beginning to wonder. You found yourself forced to stop and rest every fifteen minutes, and you were not making good time. Overhead, a golden eagle wheeled against the hard flatness of the sky, but you did not have the energy to raise your head to watch it. You kept your eyes down, watching one foot follow the other across the sharp, spindly little rocks that littered the slope. You had been walking only ten minutes since your last rest stop, and already your legs were beginning to quiver with the strain. You could feel a blister beginning to form on your heel.

The pack was like a mountain on your shoulders, and the weight you knew you were carrying rang like a litany through your mind: 75 pounds. Seventy-five pounds of necessities, everything the sporting-goods salesman told you was required for a ten-day backpacking trip west from Lone Pine to Sequoia National Park, everything you would need to meet any contingency, everything you would need to make yourself warm and comfortable in the wilderness, a massive

homemaking kit that rose from the small of your back to nearly a foot above your head. Sometimes you felt like an ant carrying a slice of cheese.

It was time to stop again. You found a rock suitable for sitting, wrestled out of your pack, took a long pull from the gallon canteen slung from your shoulder, and sat, breathing heavily. A longtail lizard slithered out from beneath your rock and scuttled down the trail. You watched it dully, wondering if you would have the strength that night to unpack the little propane stove, the pot, the frying pan, the aluminum plate and cup, the utensils, and the food and set up the tent, lay down the foam pad, and arrange the thick, warm sleeping bag. At least you would eat well.

A little cheered by that reflection, you sighed, struggled back into the pack, and set off again, one foot in front of the other. Well, wasn't this what you had come here for. . . .

Don Oliver

IS THIS THE WAY it is supposed to be—is it even the way it has to be? Not according to a young man by the name of Donald W. Oliver. "Taking all that equipment into the wilderness just defeats your purpose," he says. "You're nothing but a pack animal going in to eat your ration, and a pack animal going out with all your garbage. What's the point?"

Oliver's credentials for making such statements are impressive. He is a



walker. Nearly a year ago, he walked away from a lucrative job as an aerospace engineer in Van Nuys, California, and he has been walking ever since. He is a walker in the tradition of Muir and Fletcher, a walker who takes his new profession quite as seriously as he did his old one. "I've decided to give up human engineering and study nature's engineering. I find it optimum engineering to the utmost degree, an engineering based on interacting balance and tremendous intelligence. I've never been poorer in my life," he adds, "but I've never been happier."

In the pursuit of his happiness, Oliver walks. His current project is more than slightly ambitious, for he intends to walk every workable inch of the 15,200-mile border of the continental United States, east, west, north, and south, timing the whole business so that he can stroll up to

Continued on page 30

The Last Patch of Eden

TOM BONNICKSEN



Tule elk, now government-protected refugees in Owens Valley, once roamed the Great Central Valley in herds that matched the bison of the Great Plains.

FIFTY MILES WIDE and 400 miles long, California's Great Central Valley lies in a basin formed by the curving mass of the Sierra Nevada to the east and the roughly folded Coast Ranges to the west. The ragged outline of its underlying bedrock is smoothed by silt and sand dropped in the bed of its ancient seas and the outwash plains of its surrounding mountains. The Coast Ranges drain moisture from winter clouds moving eastward from the Pacific Ocean, leaving the valley beyond with only six to 20 inches of rainfall, almost all of which falls between November and April. Though rainfall is sparse, the Central Valley is well watered by the Sacramento and San Joaquin rivers, and its soil is deep and rich. It is the most productive agricultural region of its size in the nation, producing tremendous quantities of beef, sheep, dairy products, and such crops as alfalfa, wheat, barley, cotton, rice, sugar beets, grapes, and oranges. Such intensive use has left little of the valley in anything like its original condition. Its surface is a checkerboard of fields, orchards, and vineyards, overlaid by a grid of highways, canals, railroad tracks, and transmission lines.

The first Europeans to see the Great Valley beheld a vast sea of grass, which lapped up the foothills of the surrounding mountains. Unlike the grasslands of the Great Plains, which were composed of sod-forming species, with underground rhizomes, the prairies of California were covered by perennial bunch grasses. Audubon recalled these grasslands from his western travels of 1849-1850: "The whole country to the north and east of Stockton through the Calaveras is most rich and splendid soil . . . the grazing was excellent. . . . In many places the grasses were breast high as I waded through them, but generally full knee-deep." This prairie supported an incredible abundance of wildlife, comparable, perhaps, to that of the Serengeti Plain or the short-grass prairie of North America. One early visitor to the valley "saw bands of elk, deer, and antelope in such numbers that they actually darkened the plains for miles, and looked in the distance like great herds of cattle." Troops of grizzly bears roamed among these vast herds, and overhead soared the majestic California condor, a lone sentry in a cloudless summer sky. During the winter,

A former member of the California State Parks Commission, author Tom Bonnicksen has seen the park system of California from the inside and knows whereof he speaks. He is an active member of the Sierra Club Bay Chapter.



the marshes that lined the meanderings of the valley rivers as they approached their great confluence in the Delta supported immense numbers of waterfowl, shorebirds, and cranes. With the arrival of spring, most of the birds would once again move north, and the marshes would grow quieter, but then, the grasslands would begin to come alive with wildflowers, appearing, as they did to John Muir, "... like a lake of pure sunshine."

This spectacle of life survived for thousands of years only to be virtually destroyed in a single century after the arrival of the first European settlers in California. They brought cattle, sheep, horses, and mules, and, trapped in the hair and feed of their animals, the seeds of weedy plants from the opposite side of the world. Unlike the native perennial bunchgrasses that comprised most of the valley grasslands, these alien grasses were hearty an-

nuals, well adapted to the heavy grazing that followed settlement. Aided by a series of severe droughts that increased grazing pressure on the valley grasses, the alien species, able to recover after a single winter, rapidly replaced the natives throughout the prairies of California. Nowhere else in North America did such a complete replacement of native vegetation occur over such a wide area in such a short time.

The first Europeans in the valley also brought their traps and guns to exploit what all perceived as a limitless bounty of food, fur, and hides. By the 1840's, the fur resource was exhausted, the golden beaver nearly gone. During the early 19th century, the Spanish were killing up to 3,000 elk and deer annually to bolster their exports of hides and tallow. Forty-niners in search of gold added to the already substantial hunting pressures

on the great herds of tule elk. For millenia, these herds had moved unmolested up and down the Central Valley escorted by smaller bands of pronghorn antelope and deer. Yet, one by one, these herds were exterminated by hunters and deprived of the habitat they required, so that by 1873, when a law was finally passed that gave the tule elk complete protection, no one knew if any animals had survived. Shortly thereafter, the antelope and most of the deer also disappeared from the valley, along with the California grizzly bear and the mighty condor.

One last band of tule elk—some say only a single pair—was discovered in 1874 or 1875 in the tule marshes of the southern San Joaquin Valley. By 1895, this last remnant of the half million elk that had once roamed the Central Valley had grown to 28 head. Possibly no species of wildlife has

ever come so close to extinction and still, somehow, managed to survive. Today, about 400 descendants of this small herd can be found roaming freely—and these in only two places. The Cache Creek herd of 80 animals lives in one small area on the grass, oak, and chaparral covered hillsides of the northern inner coast range. The largest free-roaming herd—about 300 animals—inhabits the Owens Valley on the east side of the Sierra Nevada in Inyo County. Although this area is outside their original range, the elk seem healthy and well established. A third herd of 35 head is kept in an enclosure at the Tupman Reserve, a unit of the California state park system, in the San Joaquin Valley near Bakersfield. This herd is extremely healthy, but the refuge itself is a poor representative of the primeval Great Valley ecosystem.

The Great Valley of the past is gone. The golden bear and the Indian will not return. The alien grasses, the crops, the farms and cities—they are here to stay. The great herds can never be restored. But even today there is

yet one—and only one—last chance to preserve a portion of the Great Valley as it once was. This opportunity exists at San Luis Island, a relatively untouched parcel of native grassland and marsh cut off from development and history by the San Joaquin River on the east and Salt Slough on the west. Situated about 100 miles east and south of San Francisco, San Luis Island comprises the largest, uncultivated example of the native riverine-marsh-grassland ecosystem remaining in the Great Valley. It consists of a grass-covered upland plain intersected by the twisting paths of shallow sloughs, oxbow lakes, and tule-lined marshes. Stepping out on the grasslands is like stepping back into time. In all directions, spaciousness and solitude stretch toward the horizon, interrupted only by distant walls of riverine vegetation. Plants and animals from the Great Valley's past abound throughout the area. The lowlands contain now scarce bunch grasses and other native perennials. The wetlands include native associations of common tule, cattail, and spikerushes,

which support thousands of resident and migratory waterfowl and shorebirds. Fremont cottonwood, valley oaks, and sandbar willow—remnants of the once extensive valley woodlands—extend along the curving watercourses, cutoffs, and oxbow lakes. Great blue herons, black-crowned night herons, and snowy and American egrets crowd the tops of an isolated patch of trees. Coyotes and smaller animals of the primeval Great Valley grasslands and floodplains live here, but the wild elk and antelope are missing, replaced by domestic cattle grazing the island's pastures.

One of the most exciting aspects of San Luis Island is its potential for supporting large herds of animals without supplementary feeding, which means that antelope, deer, tule elk, kit fox, and other former residents could be reintroduced to the island under conditions approximating those that existed in the entire valley prior to the coming of the white man. The establishment of a wild herd of tule elk on the island is especially important because the elk's survival depends not

Daylight fades over the valley John Muir once called "a lake of pure sunshine." Only at San Luis Island does a bit of brightness remain. Here remains a last remnant of the vast prairie that once filled California's Great Central Valley. Here we can still save a last patch of Eden.



merely on an absolute increase in numbers among the present herds, but on maintaining several, geographically separated herds, so that no single catastrophe occurring to any one of the herds would endanger the species as a whole. San Luis Island not only can provide native feed, but can support the seasonal migration patterns as they were under primeval conditions. During the winter, the elk will be able to move into the upland portions of the island to feed on the young grasses, and during the summer, when the grasses are dry, they will be able to move into the greener areas along the island watercourses.

San Luis Island has been the subject of numerous studies and proposals, all of which have recognized its unique status as the largest remnant of the original valley landscape, but each plan for managing the area advanced so far has failed to grasp the essential point about the island: namely, that San Luis Island cannot be improved—it can only be degraded. Each of the plans proposes developments that would largely destroy the very qualities that justify preserving the area in the first place. One plan, for example, has called for construction of a Central Valley museum; another has envisioned the development of a large recreation complex. Both suggestions are decent enough ideas—for someplace else. For once, at San Luis Island, we should just leave the land alone.

A 1969 staff report prepared by the California Department of Parks and Recreation proposed that 21,000 acres of land encompassing San Luis Island be acquired within five years. So far, nothing has happened. At the same time, however, beachfront property in Southern California has been purchased at prices ranging up to \$250,000 an acre. At such prices, one small beach foregone could pay for the entire 21,000 acres on San Luis Island. Available money, in other words, is being shifted to acquiring land for high-density recreation. Apparently, landscape preservation is no longer considered, by itself, to be a legitimate objective. The recent explosion in demand for facilities to accommodate campers, trailers, boats, dirt bikes, jeeps, ATV's, hotels, golf courses, and other high-impact forms of outdoor recreation seems to have overshadowed whatever intentions the California Department of Parks and

Recreation may once have had of preserving landscape.

On paper, at least, the state park system has three principal objectives: 1) preserving historical sites, 2) preserving natural landscapes, and 3) providing outdoor-recreation facilities. Traditionally, all three objectives are used as criteria for establishing acquisition priorities. The trouble is that a high score for preservation—as in the case of San Luis Island—can be, in effect, negated by a low score for recreation. The alternatives are to reject the project or increase the recreation score by proposing extensive developments. In fact, no choice really exists: in either case, preservation loses. No longer are new acquisitions weighed on the basis of the need for recreation and preservation—that has already been resolved in favor of high-impact recreation. Compromise now occurs only over the degree to which existing areas, originally set aside for preservation purposes, shall be developed. Balance must be restored. Those who desire high-density, outdoor recreation facilities should expect to receive their fair share, but preservation objectives must also be met with an equal share of available resources. The solution to this dilemma is simple. The park system should not expect a given area to satisfy all the criteria, but should instead judge each according to its merits in any *one* of the three categories. Using this approach would not only increase the quality of acquisitions relative to the specific needs to be satisfied, but would also reduce future conflicts over appropriate levels of development within outstanding natural areas.

San Luis Island links two areas presently under public ownership. On the south, the island is bounded by the San Luis National Wildlife Refuge, and on the north, by the Fremont Ford State Recreation Area. The refuge contains 7,600 acres of relatively natural wetlands, and is one of the three or four main wintering grounds for waterfowl in the Central Valley. The total complex would comprise some 29,000 acres of wetlands and uplands. The existing recreation area on the north provides an excellent location for campsites and interpretive facilities that could be used to serve the entire complex. Consequently, San Luis Island itself could remain almost completely untouched—which is as it should be.

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Traveling Light (*Continued*)

Philadelphia's Independence Hall on July 4, 1976, as his own tribute to the nation's bicentennial.

To Oliver, that doesn't mean hiking along roads or trails, it means walking in the surf and following the coastline rigorously wherever it goes, keeping within arms length of Mexico and Canada, climbing cliffs and thrashing through the wilds. He also is making a first-hand survey of the nation's inland and shoreline plants, animals, and birds by photographing nature as he walks. Already, he has marched off more than a thousand miles of the journey; 140 miles across the sweltering Mexico-California border and 1,119 miles up the rugged coast of California to the Oregon border, where he arrived, he notes, on October 15, 1973, at 1:16 and 51 seconds p.m. The precision is characteristic, for Oliver is a methodical and singularly determined individual. Lean and bonehard, with a cinnamon-colored beard that reminds one of the bush that graced the chin of John Muir (a comparison Oliver would welcome), his eyes have the innocent clarity of a man who knows exactly what he is doing—and is delighted to be doing it. You cannot doubt for a moment that he will, indeed, walk up to Independence Hall precisely when he says he will.

When Oliver talks about the backpacker's art, then, it is advisable to listen, for out of his several thousand miles of experience he has refined a

system which—like most other good ideas—is neither new nor particularly complicated: it just works. It also seems to have been lost, or at least obscured, by the curious instinct we have in this age of concrete and plastic to complicate our lives to no given purpose, an instinct which Oliver has shed, or is at least in the process of shedding. "I spent ten years as an engineer," he remarks, "and now I have escaped somewhat from the unending cement. I personally believe that anything man has done to manipulate nature has led to the disturbances which we are only beginning to comprehend. If people would become acquainted with their environment, the natural world all around them, we would all learn to have better judgment."

He has applied both judgment and experience to the act and the art of backpacking, which he is convinced is something most people not only can do, but should do, "even if only for a short weekend hike once or twice a month. In fact," says Oliver, "the best place to start exploring is the canyon nearest your home. If you don't see the wildlife there, you won't see it anywhere else."

What is the Oliver system, then? How, for example, could I, a 38-year-old, overweight and under-exercised writer, set out to accomplish an overnight walking trip into a generally wild area without, 1) pretending I am John Muir, carrying a loaf of bread for rations, a single blanket, and a Swiss army knife, risking chilblains, permanent damage to the lumbar region, and the possibility of my love of nature being impaired for all time, or 2) driving myself to the thin edge of exhaustion by hauling in enough stuff to approximate the living conditions of my average one-bedroom urban apartment, every comfort provided for, assuming I have the stamina to get it all together once I have staggered to wherever it is I want to go?

A reasonable simplicity is at the heart of the Oliver method, predicated on the theory that anyone who hikes out into the wilderness is doing so to get closer to nature, and that he should therefore seek to be only reasonably warm, reasonably comfortable, and reasonably well-fed. The system can be refined to suit individual tastes and conditions, but he warns that every indulgence will be paid for in added weight.

His clothing, which he finds suitable for all normal conditions, includes a simple tufted nylon jacket, a long-sleeved wool shirt, heavy cotton twill pants, shorts, T-shirt, wool socks (including at least one extra pair in his pack), and a pair of ventilated tropical combat boots made of leather, rubber and canvas ("They're a kind of hard-soled military tennis shoe," he notes, "available at most surplus stores"). Holding his pants up is a double-length belt made of strong cotton webbing, which wraps twice around his waist and is useful when he needs a six-foot length of rope substitute.

His simple pack, which weighs less than a pound, holds his lightweight (1-lb. down) sleeping bag, its nylon stuff bag, a bivouac cover, and survival kit. For those who find the ground itself an intolerable bed, he suggests an ensolite sleeping pad, which would add about one more pound to the pack, and for protection against periods of rain, a lightweight nylon poncho could be added ("But that is where you get into the extra weight," he says, "trying to take care of every contingency"). In any case, the weight of the pack (including the pack itself) should range somewhere between five and eight pounds, not including food and optional equipment.

Into his pack goes his food, survival gear, his Olympus OM-1 camera equipment (Oliver said he chose the OM-1 camera because it is the lightest and smallest camera on the market with interchangeable lenses) and navigational aids. To some, Oliver's food requirements may seem to border on the primitive, but he points out that you should not go into the wilderness in order to eat: "The trap to avoid is thinking you have to cook three-course dinners." For himself, a bag of granola, a loaf of unsliced bread, and some sort of protein food is sufficient. "When my energy starts going down, I just go in my pocket and get some granola to munch while I'm going. It keeps boosting you along, gives you a psychological effect. Besides, it takes forever to stop and eat a full cup of granola. Granola all by itself, though, is kind of hard on your insides. You need something kind of smooth, like bread. After a while, you begin to feel like you need some fat foods, too, so I started carrying about half a pound of jack cheese or a small can of tuna." If the need for something hot and comforting becomes overwhelming,



he recommends bouillon, or a packet or two of instant soup. The heating can be done on a simple one-burner propane hand stove, if desired, but he points out that a small twig fire is quite good enough to heat a portion of water in a standard Sierra Club cup, which is the closest thing to kitchen

equipment that he carries.

Slung from his shoulder is a gallon canteen of water, and squirreled away in his pockets is a collection of incidental equipment, including a snake bite kit, a Chapstick, Band-aids, and some useful items on a key ring including safety pins ("Handy if you



Don Oliver's Tote Kit

Clothing

1) Tufted nylon jacket, with hood	1 lb.	2.5 oz.
2) Long sleeved wool shirt, 2 pockets		14.0
3) Heavy cotton twill pants, loose	1	2.5
4) T-shirt and shorts or longjohns		8.0
5) Wool socks, snug (2 pair)		7.5 (2 pair)
6) Tropical combat boots (surplus stores)	3	9.0
7) Short brim hat (E-Z Roll)		3.0
8) 1-in. web strap, doubled for belt, 6 feet long		1.5
Total		8 lbs.

Back Pack

1) Light pack, sleeping bag carrier, no frame	1 lb.	
2) Sleeping bag, 1-lb. down fill (Comfy Mountain Vista, \$50)	2	8.0 oz.
3) Bivouac cover, with stuffbag, nylon (North Face, \$12)	1	
4) Nylon poncho (optional)	1	
5) Ensolite sleeping pad (optional)	1	
6) Survival Kit (In Pack)		
A) Nylon parachute cord		2.0
B) Waterproof match case, wind-proof matches		0.9
C) Penguin aerial flare gun and flare		1.8
Six flare cartridges (red) for emergency use only		
D) Flashlight, high intensity		3.0
E) Water purification tablets in plastic vial		0.4
F) Surgical tweezers (Claus, s-7)		1.7
H) Safety pins, rubber bands, bandages		1.0
I) Disinfectant, foot powder, organic soap		2.4
Total		7 lbs. 8 oz.

Special-Purpose Equipment for Pack

1) Plastic bags, trashcan liners and ties, for crossing water, 1 thin (protects others in pack)	0.9 oz.	
(pack, clothing, cameras, etc. in one water-proof bundle)		
1 medium (outside)	2.0	
1 heavy (inside water-tight)	3.7	
2) Safety goggles (for thick brush in desert and foothills)	2.5	
3) Dial-type thermometer, 25-125 degrees F range (insert horizontally through vent holes in goggles over bridge of nose—easily removed for other readings)		
4) Mosquito net over hat to protect face	1.3	
5) Rubberized garden gloves	4.0	
6) Polaroid sunglasses (in desert a must)	2.0	
Total		1 lb. 1.5 oz.

Extra Equipment

On Belt	
1) Hunting knife, sheath with tight clasp	8.0 oz.
2) Sierra Cup	3.0

In Pockets

3) Chapstick	0.3	
4) Snake bite kit (one in pocket and another in pack)	1.7	
5) Survival key ring: nail clippers, G.I. can opener, pins, and fire starter flint stick	1.3	
6) Wallet	1.5	
7) Kleenex pack, for lens cleaning, etc.	0.5	
8) Nylon comb	0.5	
9) Compass (see navigation materials), tied to button	1.8	
Total		1 lb. 2.6 oz.

Water Supply

1) 2-quart canteen, for short hikes (oasis-type, plastic liner), empty	5.0 oz.	
2) 1-gallon canteen, for long hikes (under 100 degrees F in shade), empty	8.0	
Total		13.0 oz.

Navigation Materials

1) Good azimuth compass (in shirt pocket)	1.8 oz.	
2) USGS topographic quadrangle maps 7½ ft. and 15 ft. (map in use is fastened on canteen strap with a rubber band)	1.0	
3) Small geological map and reference material (tide tables, weather, etc.)	1.2	
Total		4.0 oz.

Camera and Optional Equipment That I Carry

1) Olympus OM-1 single-lens reflex camera (body only)	1 lb. 1.0 oz.	
2) 35mm, F2.8 wide-angle lens (general use)	6.0	
3) 50mm, F3.5 macro (2:1) (for close-ups)	6.0	
4) 135mm F6.3 long telephoto (location wildlife study). Not carried long distances		
5) 21mm F3.5 extreme wide-angle (creative coverage)	6.0	
6) 16mm F3.5 fisheye (180-degree coverage for border smiling from ear to ear)	6.0	
7) Light-weight camera case	8.0	
8) Film, Kodachrome II usually used	1.0 (per roll)	
9) Ektachrome if higher speed is needed	1.0 (per roll)	
10) Zeiss 10 x 40B diat binoculars	1 8.0 oz.	
11) Books I Carry		
A) <i>The Mountains of California</i> by John Muir. Published 1892, reprinted 1961. Anchor Books Doubleday, paperback		
B) <i>Birds of North America</i> by Robbins, Braun, Zim, Singer. Golden Press, New York, 1966		
C) <i>Sierra Nevada, Natural History</i> by Storer & Usinger, University of California Press		
12) Emoscope magnifier; 25 power, 3 power telescope	1.1	
13) Altimeter	3.0	
14) Small notebook (tied to button) or 15-3 x 5 note cards	1.0	
15) Pencil and pen cartridges rubber-banded together. (Parker refills)	0.3	
Total		4 lbs. 13.6 oz.

need to make a large bandage"). For special conditions, he carries special equipment in addition to his usual material: for heavy brush and chaparral, a pair of plastic brush goggles to protect his eyes; in mosquito country, a small piece of mosquito net to protect his face and a pair of rubberized garden gloves to protect his hands; in the desert, a hat to shade his face and protect his head, and an outside thermometer to keep track of the temperature. "If the outside temperature, for example, is 117 degrees and the temperature just under your T-shirt is 93 degrees, you know your body temperature is averaging about 98.6, which is okay. The minute the T-shirt temperature goes above 93, you know it's time to stop and find some shade."

And that is the Oliver system for a tough three- or four-day hike. For more ambitious trips, he would naturally pack more equipment, but the rationale would be precisely the same: a reasonable simplicity at all times and seasons. It is not a system to strike joy into the heart of a sporting-goods salesman, or satisfy the urge many of us seem to have to put a wall of equipment between us and the wilderness whose beauty and freedom we ostensibly seek in the backpacking experience. But it is a system that works, one that strips away the claptrap and gewgaws that can make the experience a waste of time and energy. It may even be that Don Oliver is a walking metaphor for something we had better learn about our lives.

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