

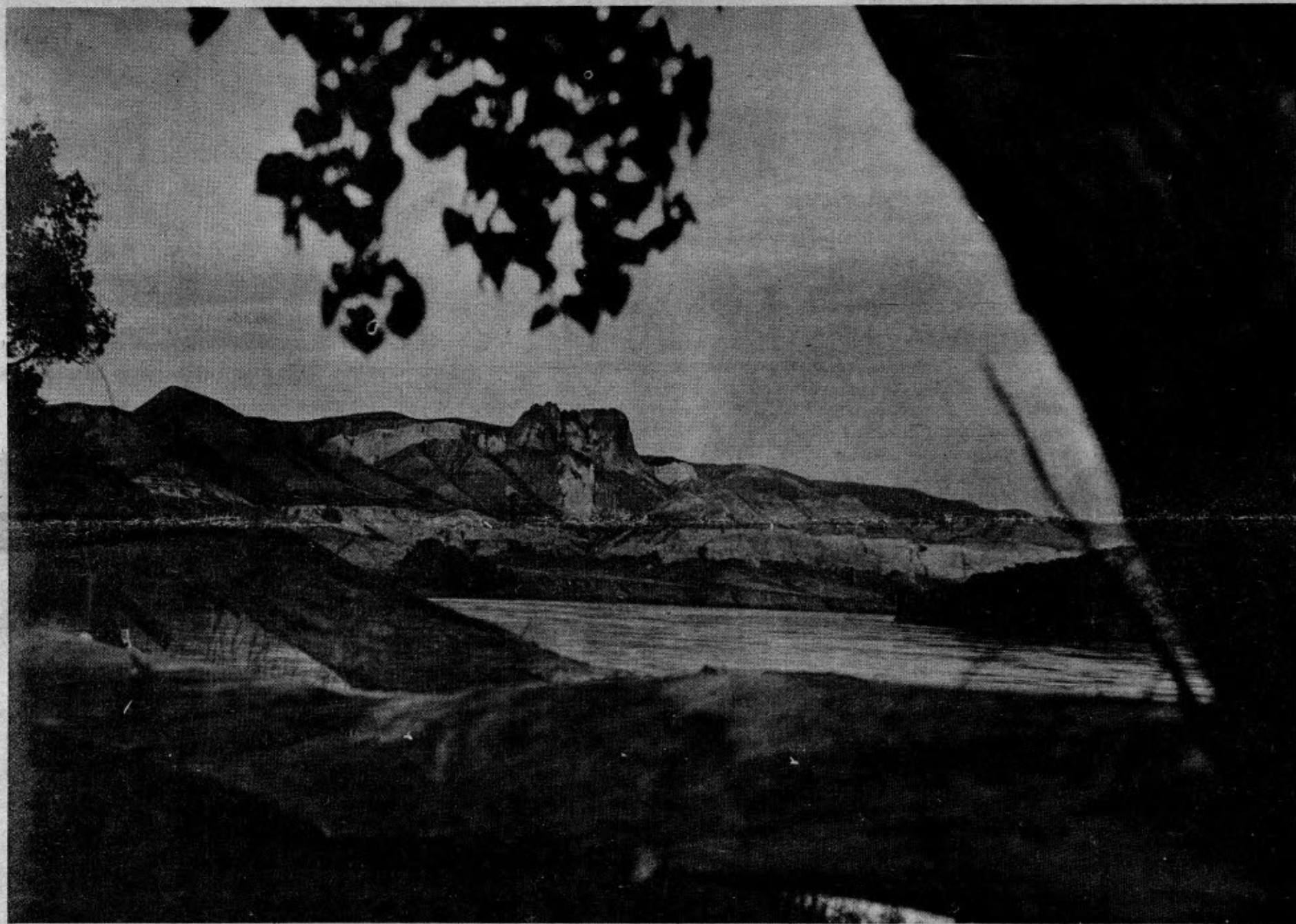
The Environmental Bi-Weekly

High Country News

Vol. 6 No. 9 35¢

Lander, Wyoming

Friday, April 26, 1974



The wild Missouri River in central Montana is virtually un-changed from the days of Lewis and Clark. Above is the May 31, 1805 campsite looking back downriver.

To Dam A River

"The heyday of big dam building may be near an end. Some of us sincerely hope so."

by Carlos David Stern

Few environmental challenges seem as stark as the threat to dam a stretch of wild river. The irreversibility of the loss lends a measure of urgency and emotion that the environmental issues which deal with the more chronic problems, such as air pollution and strip mining, seem to lack. When the disputed reach of river also happens to be the last of its kind, offering historic and cultural values in addition to the scenic, the gap between preservationists and developers looms uncompromisingly wide.

On the Upper Missouri River, the economics of wilderness recreation were easily eclipsed by the benefit-cost ratio that the proponents had calculated for the hydro-power project. The conflict played itself out in the early 1960s, an era just prior to the passing of a number of federal statutes that would alter the process of water project justification so radically that this analysis of a 1960-63 project seems today to be largely of historical interest.

The heyday of big dam building may be near an end. Some of us sincerely hope so. Nonetheless a quick look back may help place today's

developments in perspective. The World War II period saw the revival of depression emphasis on public works projects. The intense activity on the part of the water resources agencies, the Army Corps of Engineers and the Bureau of Reclamation in particular, was resumed. Great plans to dam, levee, straighten and "improve" every worthwhile mainstem river and tributary were proposed and promoted. The annual budget and political muscle of the Army Corps and the Bureau increased accordingly. At the dam builders' peak, serious plans were drawn up and vehemently defended to flood parts of Glacier National Park, Dinosaur National Monument and Grand Canyon National Monument; and a proposal to create a lake larger than Lake Erie on the Yukon River in Alaska in order to generate 40 times more power than the entire state was using at that time. In time, however, support for more and

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HIGH COUNTRY

By Tom Bell

What an opportunity! And we are probably going to muffle it.

The people of Wyoming have decided their highest elected official needs a new Mansion. The present Mansion, built in 1902-1903, is not an outstanding architectural showpiece. Neither is it considered comfortable and adequate for the state's first family by today's standards.

So the Legislature has appropriated \$500,000, land has been acquired at a pleasant site in Cheyenne's city park system, and we are set to have a new Mansion. Beginning on that premise, Wyoming's people have an opportunity to look another 70 years down the road and decide what might be appropriate in our future.

If we are honestly to realistically assess the future, it should be incumbent upon us to consider alternative sources of energy. If you knew the site was Cheyenne, what would be the alternative sources available? Conventional sources, of course, should receive prime consideration. But of these, how secure is the future of natural gas, heating oil or all-electric — and how much the long-term cost?

Considering Wyoming's conservative philosophy, how might you set an example for all to see that would indicate Wyoming people want to retain as much of the good in our present way of life while forging ahead into the future? What better place to show we are not afraid of innovation while holding on to our long-cherished values than a new governor's Mansion?

To a Lander architectural firm's credit, it did this sort of thinking in its design concept for a new Mansion. Corbett-Dehnert-Associates submitted a solar-heated, wind-powered plan in the design competition recently sponsored. The plan didn't even get an honorable mention. A more conventional design was approved.

We are literally on the threshold of the Solar Age. We in Wyoming have an unequalled opportunity to show all the world that we are ready to step into that new age. By doing so, we would put the world on notice that we, ourselves, renounce the justification for massive development of our coal when we have a better alternative. And in this case the alternative is one which we are sooner or later going to turn to anyway.

The latest *Reader's Digest* (May, 1974, p. 31) carries an article on "A House That Runs on the Sun." It tells the story of inventor Harry Thomason and his solar heated houses. The article also says, "The National Association of Home Builders estimates that we will construct 1.6 million new houses in the United States in 1974. If ten percent were to obtain three fourths of their heat from the sun, we would save the equivalent of 180 million gallons of oil a year on them alone." One of the country's large consulting firms, Arthur D. Little, Inc., says that if solar energy provided one percent of the nation's needs by 1983, approximately 100 million barrels of oil per year would be saved.

One of this country's foremost solar energy experts is Dr. George Lof. He is located at Fort Collins where he is professor of engineering and Director of the Solar Energy Applications Laboratory at Colorado State University. He is now perfecting solar heating systems which may be on the market one year from now. He would be handy to help consult on a new mansion.

The choice has been made on a design for a new Mansion. But construction has not begun. How about thinking this one through again? The people of Wyoming might just come off as some of the most forward looking citizens around this energy short country.



Photo by Tom Baugh

Letters



Dear Tom,

Now that our paper is on the stands, I have some time to savor your latest effort. This March 15 Wildlife Week issue is succulent. By far it is your group's best effort.

This brings me to the point at hand. Your point, by the way, I cannot agree more that we of the genus *Homo sapiens*, have put ourselves on the list of endangered species. Our rampant destruction of the world around us has seen to that well enough.

But unlike the many and varied species which we so graciously protect, none exist to organize protection efforts for Man. Only he can stem the tide of self destruction. What we probably need is National *Homo sapiens* Week along with National Wildlife Week.

Better than that, maybe we should set up National *Homo sapiens* Year.

While such suggestions may be overdoing the point, they just might focus needed attention on a problem which promises to be as short lived as Man himself.

Jim Miller
Jackson Hole Guide
Jackson, Wyoming

* * *

Dear Associate Editor:

I enjoyed your article on bighorn sheep in the March 15 issue, but feel I must comment on one point.

I feel you are wrong to blame hunters for the demise of sheep herds, especially trophy hunters. In the first place a three-quarter curl ram is not considered a trophy by serious sheep hunters. They are only concerned with the mature full curl rams nearing the end of their life. These animals no longer contribute to the herd.

Secondly, I would like to point out that the reason sheep are considered great game animals is that they live in the most rugged country there is, and are tough to hunt. Many hunters go home empty handed.

Recently I had the chance to observe a herd of bighorn sheep first hand. They were forced to cross a busy highway to find food. This, it seems

to me is the problem. Man and his "progress" have forced these animals into a very limited range. This range can only support a limited number of animals.

Respectfully,
John Awve
Pinedale, Wyo.



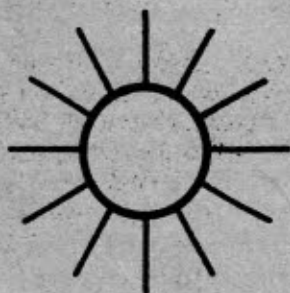
HIGH COUNTRY NEWS

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Editorials



Coal Leasing Helter-Skelter

This past week, Senate field hearings were held in Casper and Billings to hear testimony on the resumption of federal coal leasing in the Northern Great Plains. One by one local residents and industry representatives paraded before Senators Lee Metcalf (D-Mont.) and Clifford Hansen (R-Wyo.). Many called for a go-slow approach to coal leasing, others for the rapid transfer of mineral rights to energy companies in light of the recent energy crisis. Whether or not the land could be successfully reclaimed and how socio-economic chaos could be averted were major topics of discussion.

The Casper meeting proved to be more than a federal hearing — it was also a forum for Wyoming politicians. State Sen. Malcolm Wallop, a gubernatorial hopeful, testified, "A developed coal lease is more than the deliverance of the tonnage involved. It is a license to change the natural, economic and social order of things." Wallop said he feared his state might become "the nation's harlot." "What guarantees have we that we will have earned enough to repair our wounds and balance our economy when our bloom is gone and fresher faces entice you even on?" he asked.

State Sen. Thomas Strook, who has just announced his candidacy for Wyoming's lone congressional seat, stated that the impact of 2,000 workers and their families on the Powder River Basin would be catastrophic unless the state and the federal governments started working together in close cooperation. The remarks of these candidates tell us the environment will be a key issue in upcoming elections. Wyoming will not resign itself to become a national sacrifice area.

While this exchange of ideas about coal leasing was a valuable session for all involved, we raise the question, "Why are we talking about federal coal leasing at all?" Without the benefit of an adopted national energy policy, how can we put federal coal leasing into proper perspective? Wyoming's Department of Economic Planning and Development revealed at the hearings that at least 1,095,900 acres of state coal lands are already leased. When combined with private holdings and existing federal leases we have more than enough coal already in industries' hands to carry us into the next century.

With this bumper of coal already under control, there is no need to talk about federal leasing in an energy-crisis-stimulated panic atmosphere. Now is the time to debate sensibly various alternative energy futures.

Continued coal leasing is being promoted under the banner of Project Independence. The argument goes, if we want to be free of foreign energy sources that are subject to blackmail we must develop our domestic resources aggressively. Project Independence assumes that historic growth in energy demand will continue and in fact is essential for a healthy economy. Hence our only choice is to lease more coal, more oil shale, license more nuclear power plants . . . ad infinitum. The problem with this approach is that our resource base does not go on ad infinitum. In other words, the exponential energy growth future doesn't have a future.

Other possible futures have been outlined in the Ford Foundation Energy Policy Project's new publication, "Exploring Energy Choices." One scenario called "technical fix" calls for an energy growth rate about half that of historic

growth. This choice would give America a greater flexibility of energy supply. "Only one of the major domestic sources of energy — Rocky Mountain coal, or shale, or nuclear power, or oil and gas — would have to be pushed hard to meet the energy growth rates of this scenario," says the Project.

Another scenario called "zero energy growth" would give us even greater flexibility in supply. The Project says this choice would not involve a decrease in our standard of living, in fact every American could enjoy more energy benefits in the year 2000 than he enjoys today. What would be required is a change in our energy-wasteful lifestyles.

Hogwash, says National Coal Association president Carl E. Bagge. The nation must

"solve" its energy problems, not run away from them to a zero energy growth plan which would give most Americans less freedom, he says. "I think if Americans realize what is involved in the concept of zero energy growth, few will find any appeal in this picture of the future," he says. Bagge recommends aggressive development of all domestic resources with "coal as the key."

We disagree with Bagge's contention. But we must give him credit because for a brief moment he has stopped promoting the rapid development of coal long enough to address the energy policy issues involved. We hope Congress will look a little more seriously at "Exploring Energy Choices" than Mr. Bagge did and start debating the real issues. Let's not continue making piecemeal energy decisions before we decide which path we choose to follow and adopt a national energy policy to direct us. —BH

BLM Act Needs Wilderness Study

The Bureau of Land Management may finally come of age through the passage of legislation now in the House Public Lands Subcommittee. We applaud the possibility — and, with a few alterations, urge the passage of the bill, the Bureau of Land Management Organic Act, H.R. 5441.

The BLM, which is responsible for more public lands than any other government agency, now operates under vague authority. A BLM employee is powerless to enforce any government regulation — from the crucial to the trivial. On BLM lands, everything from archeological sites to comfort stations and picnic tables are essentially unprotected. Although protective regulations are on the books, the BLM can do nothing about it when someone breaks the rules. The Bureau has no whip.

The Organic Act would give the BLM enforcement power.

It would strengthen and modernize the agency in other ways as well. It would provide general management authority for land use planning, for public hearings and advisory boards, and for the sale of lands. It would give authority to grant rights-of-way and repeal obsolete and superseded laws.

These provisions are necessary if the 450 million acres of public lands under BLM jurisdiction are to be treated as treasures of the

public, worthy of a strong watchdog. Parallel agencies, the Forest Service and the Park Service, have had these powers from the beginning.

But along with the new powers, the BLM deserves the same responsibilities as the other government land managing agencies. In this area of responsibilities, unfortunately, the organic act legislation under consideration is deficient.

Since the Wilderness Act was passed in 1964 both the Forest Service and the Park Service have been required to make a review of their lands. These reviews have identified roadless areas and assessed their potential for inclusion in the National Wilderness System. As the organic act bill now stands, the BLM would not be required to make a similar review. The bill states that the agency can, but need not, recommend its suitable lands for wilderness.

Remote desert in Arizona, the canyon lands of Utah and glaciers in Alaska are but a few of the treasures at stake. We urge the House subcommittee to include a mandatory wilderness review provision in this important bill.

Citizens alone should not have to shoulder the responsibility of scrutinizing BLM lands and pushing needed bills through Congress. The new BLM, vitalized by an organic act, should lead the effort. —JN

Guest Editorial



Reprinted from the BILLINGS GAZETTE, March 20, 1974

State Served by Water Reserve

The Montana Fish and Game Department is acting in the best interests of all Montanans in seeking to reserve a large portion of the Yellowstone River flow for fishing, wildlife habitat and recreational facilities.

In reserving about 80% of the total average flow at Sidney, near the Montana-North Dakota border, Fish and Game is in effect asking that water be allowed to flow most of the Yellowstone's length without gigantic diversion and loss.

This does not mean there will not be water available for irrigation or for its present uses. It does mean that Fish and Game is attempting to

prove there are other justified needs for the water before industry can succeed in claiming it all.

The reservation of water was made under authority granted in the much-maligned 1973 water use act, an act which in fact was a farsighted move to protect Montana's water.

That the Fish and Game asked to reserve 80% of the Yellowstone flow at Sidney does not mean it will get it.

The reservation request, along with those of other public agencies, municipalities and irrigation districts, means that use must be considered before industry can pump the river dry.

To Dam A River . . .

(Continued from page 1)

more dams and canals lost its momentum and interest in preserving what was left gathered support from a new clientele.

Part of the reason for the decline in support for the dam builders came from the success of their earlier projects. The most important projects were built first. The flood protection of major urban centers, such as Kansas City and St. Louis, for example, was given top priority. The best hydro-electric projects and navigation works were likewise completed early. Although these construction projects were undoubtedly successful, they had their limits and some of the more exaggerated claims were not borne out. Flood damages, for instance, continued to increase annually as more and more development moved into the flood plains. Barge traffic effectively competed with railroads just as railroads were succumbing to trucking. Even irrigation benefits were ill-timed, since commodity surplus programs were introduced just as crop yields were being increased. Nor did the cities and towns near these projects become booming industrial centers. Usually, if they were in decline before the project came, they continued their slide after it was completed.

By the beginning of the '60s, divergent national objectives began to supercede the simple notion that public works could be a panacea for economic and social ills. Not that the agencies had run out of projects. Indeed, the planning sections of these development agencies were still very active and volumes upon volumes of comprehensive land and water plans were drawn up. Assuming the future to be like the past, the agencies projected how many more dams and canals and acre feet of water would be needed by some target year. Their plans were probably obsolete even before the ink was dry, but so long as political sentiment favored public works over non-structural alternatives, the guidelines under which the water resources agencies operated were liberally interpreted to justify new projects.

The criteria for project justification had been more stringent during the Eisenhower years — actually starting at the end of the Truman presidency. Budget Circular A-47 required, for instance, that such items as the taxes forgone if a private project were displaced by a federally financed substitute be counted as a cost of a federal project. But when John F. Kennedy was campaigning for the presidency in 1960, he very much favored a revival of the federal public works program, and with his election a liberalized but at the same time broadened set of procedures was promulgated.

While the importance of preservation and outdoor recreation was explicitly recognized for the first time, as was the need to consider alternatives, Senate Document 97, as this policy came to be known, made it easier than before to justify water resources projects. Tax-exempt foregone procedures were once again eliminated. The agencies were directed to use a formula for computing the interest rate which, by the mid-sixties, allowed them three per cent at a time when the federal government's own cost of borrowing money was twice that and the opportunity cost of capital in the private sector was probably three times as high. A number of projects which were to become quite controversial originated or were revived in this period of changing values and changing rules of the game — among them: the Cross Florida Canal, Dickey-Lincoln Project on the St. John's River in Maine, and Tocks Island on the Delaware.

On the Missouri River, immediately upstream from Fort Peck Reservoir in Montana, a

200-mile reach remained in its natural state, and in 1960 both the National Park Service and the Army Corps of Engineers had decided to study it, the Park Service for development as the nation's first Wilderness Waterway and the Army Corps for hydro-power. The Park Service had, by 1956, released its long-range plan, entitled **Mission 66** and its specific plan for the mission by 1959. The Army Corps was completing work on Big Bend, Garrison and Oahe Dams downstream on the Missouri. The Bureau of Reclamation was about to build Yellowstone Dam on the Big Horn River not too far away. The end of the massive Pick-Sloan Plan was in sight. Moreover, the newly established Outdoor Recreation Resources Review Commission

"The rest were minor variations on the total inundation concept."

(ORRRC) had by 1960 completed the first comprehensive outdoor recreation survey of the nation's supply and demand for facilities such as national parks and reservoirs. Though the Corps and the Park Service started their independent upper Missouri surveys in 1960, they were overtaken by the election of President Kennedy and the arrival of Stuart Udall, the new Secretary of the Interior.

For a number of reasons, the Secretary of the Interior and the Secretary of the Army decided to have the procedures of the yet unpublished Senate Document 97 (S-97) applied to the Upper Missouri project. S-97 delineated several specific requirements, among them, comprehensive evaluation, inter-agency cooperation, recreation as a co-equal project purpose with flood control, navigation, etc., and presentation of alternatives rather than single-development plans. Inevitably when it came to implementation, there was agency resistance. The Park Service, already quite far along in its study, was unhappy about delaying release of its report. They feared that the subtle and sensitive aspects of their study would be swamped if their report had to appear as one section in a

larger volume of principally engineering studies and hydrological statistics.

In its analysis of the area which it referred to as the Lewis and Clark National Wilderness Waterway, the Park Service unequivocally recommended that the section of the river and its surrounding corridor be protected because it was of national significance. The area was rich in history, having a long set of associations with the Indians, the Lewis and Clark expedition, the fur traders, the steamboat era and finally the Gold Rush. In most respects, the area had suffered little from man-made intrusions. In addition, the geology was varied and interesting, the scenery spectacular, and the potential for wildlife outstanding. On the other hand, the

qualities described above are fragile and would certainly not have survived any heavy recreation use, let alone inundation.

The Park Service was brought into line. The Army Corps argued that the presentation of alternatives would make their report unnecessarily complicated for the decision-makers. They thought they had the expertise to select the "best" project. Nevertheless, they too were persuaded to cooperate in what became the four volume **Joint Report on Water and Related Land Resources for Missouri River-Fort Peck Reservoir to Vicinity of Fort Benton Montana**.

In conformance with the instructions in S-97, the Joint Report presented 11 alternative plans for the reach of river and made no explicit recommendation as to which plan should be developed. Throughout much of the report, however, the language makes it obvious that the dam builders favored Plan 4, with a benefit-cost of 2:1, while the Park Service preferred either plan 6 (1.8:1) or plan 7 (0.9:1). Plan 4 comprised two dams which together captured 90% of the maximum potential for power. The plan, however, involved the inundation of the most scenic

Large, free-flowing rivers are nearly a thing of the past throughout the West. Almost every river of any consequence has that ubiquitous plug of concrete inserted by the U.S. Army Corps of Engineers, Bureau of Reclamation, or a power company. Now, energy shortages have once more turned dammer's attentions back to what is left.

The wild Missouri has always been a challenge to the engineers whose concept of duty is to subdue all rivers to a yoke of concrete. How well they have succeeded can be determined by looking at a map. No less than six dams arrest the flows of the great river between Yankton, S.D. and central Montana. Gavins Point Dam is on the river along the boundary between Nebraska and South Dakota. Fort Randall is upstream just inside South Dakota. Big Bend Dam is a relatively small dam near Fort Thompson, S.D., and then come the big ones. Oahe Dam, just upstream from South Dakota's capitol, Pierre, has formed one of the largest reservoirs in the world. It stretches from central South Dakota to south central North Dakota, near North Dakota's capitol, Bismarck. Just north of Bismarck is the equally huge Garrison Dam and Reservoir. Its waters stretch from central North Dakota almost to the borders of Montana. And finally, the fourth largest reservoir in the world, behind Garrison and Oahe, Fort Peck Dam and Lake in Montana.

But upstream from Fort Peck is 180 miles of wild and free-flowing river which the dam builders eye with envy. Two sites have already been chosen — one, the High Cow Creek site near Cow Island, and the other above that, a site near Vingelle, Mont., below Fort Benton. It is this

stretch which Carlos Stern writes of in the following article. The National Park Service says of this area, "The 180 mile stretch of the Missouri between Fort Benton and Fort Peck Reservoir in Montana is the last remaining significant and essentially undisturbed segment of this river. This stretch of the Missouri contains what is probably the most striking scenery of its 2,500-mile course — scenery which elicited glowing description by Lewis and Clark. Geologically, it tells an outstanding story."

Two other great rivers have recently been back in the news. The Los Angeles Water and Power Department, in cooperation with the Arizona Power Authority, is currently considering a 400-foot dam and hydroelectric power plant on the Colorado River in the lower reaches of Grand Canyon. The proposed "Havasupai Dam" was considered as an amendment to The Grand Canyon National Parks Enlargement Act last month. The amendment was defeated, but spokesmen for the proposal say the dam is needed because of the energy shortage.

Two power systems continue to press for more dams in Hells Canyon on the Snake River. Pacific Northwest Power Co. and the Washington Public Power Supply System say the dams are needed now more than ever.

The energy crisis has suddenly loomed larger since Dr. Stern wrote the following article. Nevertheless, his comments are instructive as to what happens in the consideration of development of a free-flowing river.

Hank Rate's article gives more of the human side of the envelopment and destruction of a river ecosystem by man's hand.

The editors.

and historically significant sections of the wild river. Therefore, outdoor recreation in Plan 4 was to focus on reservoir-related activities and, in the initial plans at least, the Army Corps planned a massive investment in man-made attractions at the reservoirs.

Plans 6 and 7 were identical except that Plan 6 comprised a somewhat longer reach of the river and included an additional hydroelectric impoundment upstream of the proposed wilderness waterway. Since that upper reach above the Town of Fort Benton was not considered valuable by the Park Service, the preservation objectives would have been satisfied by both Plans 6 and 7. Of the remaining plans, only one or two could be considered compromise designs. The rest were minor variations on the total inundation concept. But since Plan 4 was easily the best from an economic point of view, the remaining six or seven alternatives could be considered redundant.

Given the remoteness of the area which raised the costs of construction and the expense of transmitting the power once generated, the compromise plans never had a chance. From the engineering-economic standpoint it had to be all or nothing.

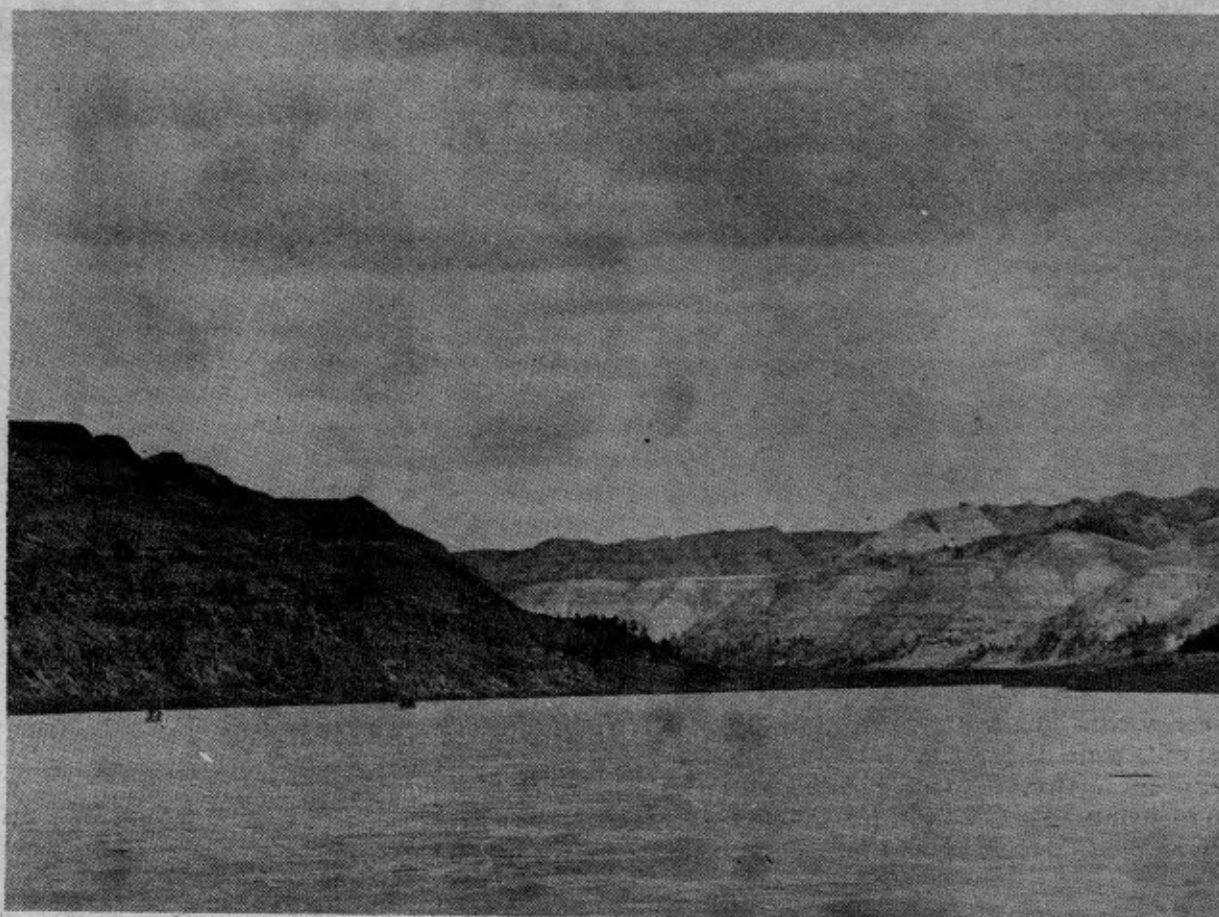
After the release of the Joint Report in 1963, it did not take long for the issues to become polarized and the alternatives devolved into the two original options: electric power generation or preservation. To date no federal action has been taken, one way or the other, although the state has given the reach some protection as a state historic waterway, and the Wild and Scenic Rivers Bill of 1968 placed the reach into a "study" category which temporarily froze any development plans for the area. At hearings held at the time of the release of the report, there was no popular local support for any of the plans, preservation or development.

Above all, the Joint Report presented its 11 alternatives as if they were comparable investments. In fact, the wilderness waterway would have cost only \$8 million, most of which would have been used for land acquisition, and the hydropower projects would have cost \$400 million and more. The question for the decision-makers, then, was not whether they preferred the wilderness to the dam but rather whether they preferred a wilderness waterway plus \$392 million unspent dollars to the dam. This point was particularly important given the unrealistically low interest rate the agencies were using. Had they calculated the real opportunity cost of capital (i.e. that return which the same money invested elsewhere in the economy might have earned), the benefit-cost ratio of the dams would have fallen from 2:1 to well below unity, making them unjustifiable at least on economic grounds.

Had the authors of the Joint Report looked at the needs of a given population, an entirely different set of alternatives would surely have emerged. But the assumption throughout, was that a market would always exist for whatever outputs the agencies could supply, whether highways, electric power, or user-days.

Another of the concessions made by the authors of the Joint Report was that the final analysis of all the alternatives was to be summarized in a single benefit-cost table. Initially, the Park Service had strenuously opposed this, arguing that the values it was trying to protect were not amenable to quantification or economic rigor in the same way that kilowatt hours might be. Nevertheless, under pressure, they acceded and computed a benefit-cost ratio. As it happened, their Plan 7, the Wilderness Waterway, was the only one of the 11 alternatives to be presented in the Joint Report with a benefit-cost below unity.

It is interesting to note how primitive such analyses were only 10 years ago. The Army



Floating the wide Missouri along the proposed Lewis and Clark National Wilderness Waterway is much as it was nearly 170 years ago.

Corps, the Bureau of Reclamation and the Park Service jointly estimated the number of visitor-days that each of their plans could anticipate. The figures ranged from 300,000 to 600,000 per year. The record of their early meetings reveals that each agency felt the other was overestimating visitor-days. Finally, it was agreed that each agency would employ its own estimates for its own projects. The Park Service computed visitor-day estimates based on attendance figures at Glacier and at Yellowstone National Parks, and then allowing for the limited carrying capacity of the Wilderness Waterway and its remoteness from population centers, arrived at their estimate of 300,000. The Army Corps based their estimates on the attendance at Fort Peck and other downstream reservoirs plus the fact that they were planning no less than an \$8 million investment in recreation facilities. Some of the planned recreational facilities, given the remoteness of the area and the short summer season, seemed inappropriate — for instance a polo field, an amphitheatre and a golf course.

By forcing the Park Service into the benefit-cost mold, that agency had to compete in a quantitative procedure that was not well-suited to its mission. In fact, the Park Service was well aware that excess visitation, such as was even by then beginning to occur at several of the more famous national parks, could destroy the very values for which the park was created in the first place.

The contest focused on visitor-days and not on value per visitor-day. Early in the joint study, the Army Corps had insisted that since "recreation was recreation," a visit to a power house or a day of water skiing was every bit as valuable as backpacking or canoeing. A uniform user-day value of \$1.50 could serve as the standard measure. This did not take the recreationists' willingness to pay into account.

Supplement 1 to Senate Document 97, issued one year later, in 1964, determined that the worth of a user-day was to be that which the potential participant should reasonably be prepared to pay in order to have the facility available. Surely there would have to be a different schedule of users' willingness to pay for different types of experience. The new requirement thus mandated different dollar values to qualitatively different outdoor experiences, and recreation was thereafter divided into general

and specialized. Specialized included those activities not dependent on man-made facilities, providing an experience which was to some degree unusual and unique. Since the participants' willingness to pay for such experiences was expected to be high, the user-day value recommended ranged from \$2 to \$6 and up. Backpacking, white water canoeing, big game hunting qualified as specialized recreation.

At the other end of the user-day value scale were the so-called generalized recreation types of activities — less unique, having a greater number of accessible substitutes and less dependency on the natural setting. For instance, while cold-water fishing is an example of specialized recreation, warm-water fishing is general recreation. Had Supplement 1 been in effect one year earlier, the ranking of projects in the Joint Report would have been markedly different, and the Wilderness Waterway would have had the best benefit-cost ratio rather than the worst.

In the following year, 1965, Congress passed the Federal Water Project Recreation Act which was intended to promote federal-state cooperation in planning recreation. The Act, however, also served to constrain the agencies from inflating recreation benefits in order to justify marginal projects, because it required that a non-federal agency, for example state or county, commit itself to meeting one-half the costs of the investment in recreation facilities associated with a federal project. Lacking this commitment, federal agencies were to be enjoined from investing in more than minimal facilities. In the case of the upper Missouri River projects, the State of Montana made clear that it had no intention of paying one-half of \$8.6 million towards the construction of an amphitheatre or a polo field more than 100 miles from Great Falls. As a result, the Corps of Engineers was required to delete most of the facilities upon which its original visitation estimates had been based. However the Corps did not consider it necessary to reduce their projection of 600,000 visitor-days annually, feeling that their original figure included enough slack to allow for such setbacks.

In 1968, under the Scenic and Wild Rivers Act, the upper Missouri became one of the group of 27 rivers designed for study for possible addition to the National Wild and Scenic Rivers

(Continued on page 12)

6-High Country News
Friday, Apr. 26, 1974

by Hank Rate

To Kill A River

"I have watched a river bottom die. It is not a pretty sight."

A prairie gale was raging across the uplands, making life miserable for any man or beast exposed to the elements. It rustled the few shriveled brown leaves that clung to the uppermost branches of the majestic cottonwoods dominating the grove near the river in central Dakota. The wind currents whispering through the brush that fringed the grove were sharp enough to make the boy turn up his collar, but he and his half-beagle sidekick were thoroughly enjoying themselves hunting cottontails. A freight train droned its way along the opposite side of the river, and the road from the main highway down the coulee to the farmstead was just a few hundred yards behind them. But boy and dog were in their wilderness.

The brush cracked, and a whitetail buck broke out ahead of them. The dog's head went up and the boy's heart leaped. The deer sprinted dead away, then launched himself into a graceful arc that cleared a down log with several feet to spare. Gathering his muscles and flicking his white flag, he suddenly threw all four feet out ahead of himself and cut sharply to the left, his body nearly parallel with the ground. A burst of speed took him into the willows and out of sight, but it was the high point of the day for the hunters.

Little did they realize that the death warrant for their wilderness had been signed that day. Seventy miles downstream a ground-breaking ceremony was being conducted. Another dam across the Missouri River was officially under construction.

The decision to build the dam and the arrangements for its construction weren't based on the needs of small boys, or on primitive man's natural relationship to the country. The demands of modern society had obviated these considerations, as far as the planners and negotiators were concerned.

Perhaps man's ideas of what he needs after a hundred years of settlement are adequate to justify completely altering the ecology of the region, as it had affected its human habitants for the preceding 10,000 years. Perhaps man will never again need what has been lost. Perhaps. . .

The planners hadn't considered the Mandan and the Sioux, or Lewis and Clark, or the thousands of explorers and pioneers who followed. The river, with its bushy bottomlands and "breaks," was once the key to human existence. It provided winter food and shelter. And it was often the only highway.

The plains of mid-America can be harsh. True, they can beckon and burgeon and flower and swell, and give forth with their riches of grasses and crops. But even in summer, black-bottomed, billowing thunderheads can cut and slash with their hail or spew lightning and cause fires. In all other seasons, the wind is a way of life. Most of the time it can be endured when there is something to be accomplished, but it is a force to be escaped when the job is done.

Until the settlers brought their sod and log and frame houses to the plains, no one dwelt on the flat lands year-round. Residents and visitors alike were nomads. Indians, hunters, trappers, explorers — all depended on big game meat. And all, including the game, turned to the protection of the river during much of the year.

The river bottom, 50 to 200 feet below the plain, provides a high water table and shelter from desiccation, which sustains a lush growth of timber and brush. Here a man could find snug comfort and open water for a winter camp.

The "breaks," composed of an intricate series of side drainages, provided additional shelter

and protected travel routes to and from feeding and hunting grounds. These breaks are commonly short, v-shaped gashes, but sometimes extend as far as 10 or 20 miles back from the main drainage. The north slopes are often covered with scrubby juniper, pine, or fir, where the ground is steep enough to combine protection from the wind with shelter from the summer sun.

The bottoms of the breaks are usually sharp gullies, choked with buckbrush. Running water is scarce, and they are relatively inhospitable to the occupancy of man. But strong, tall grasses grow in swales and on open hillsides, browse and forbs on steeper, sandier soils. Thus the breaks provide excellent cover and winter range for big game. A nomadic hunter could camp on the river bottom and never need to venture into the wind.

It should be easy to understand that, under natural conditions, only a small fraction of the total area of the plains is habitable. The river bottom and breaks are the heart and arteries of the land. From the sanctuary, primitive man could reach out and reap the harvest of the grasslands, the length of his forays varying with the seasons and climatic conditions, which fluctuated greatly from year to year.



"The reservoirs are summer playgrounds for the urban dwellers who have never tasted the recreation values they sacrificed when they clamored for the drowning of the valleys. . ."

When high water came in the spring, the Indian moved his tipi back from the flood, and the trapper loaded his camp and furs into a bullboat and rode the torrent to market. But modern society functions differently. We have built permanent cities in the path of these floods, and cry for protection.

The dams that provide this protection also water the uplands, so that the naturally irrigated bottoms are not needed for agriculture. The breaks are considered "wastelands." The reservoirs are summer playgrounds for the urban dwellers who have never tasted the recreational values they sacrificed when they clamored for the drowning of the valleys, thereby eliminating almost 100% of the natural timber lands in the flooded drainages. At the end of summer vacation, these people retreat to

their homes and schools and offices and stores. Certainly no one could find a private wilderness or hunt rabbits on the barren, windswept shores of a drawn-down reservoir.

I am told that the social values of the dammed-up drainage far exceed those of its free-flowing state. It is said that population pressures are such that considerations which were valid for small bands of nomadic Indians and early explorers carry no weight today. True, perhaps, but I feel a keen sense of loss when I see, in historical perspective, the heart cut out of the Dakotas. The Missouri bottom is almost completely inundated. The big game range has been severely depleted, and is currently limited to the major side drainages, many of which are also being dammed.

And what of the future? We are now committed to maintaining an artificial environment. When the existing reservoirs are filled with sediment, one might envision the river bottoms as bleak mud flats, slashed by slab-sided canyons as the silt-choked streams cut down toward their original levels. In some places, this is a problem that may be faced sooner than we would like to think. Naturally, there are solutions, but they will be costly and will of necessity compound the artificiality of the current situation.

I have watched a river bottom die. It is not a pretty sight.

For the first few years, the dam site is only a small scar where the river is diverted and the dam itself is under construction. In the perspective of the drainage to be affected, bulldozers and "whirlies" and "dinkies" are little more than unsleeping ants, busily concentrating particles from the surrounding countryside into a single pile athwart the unsuspecting stream.

The last "pour" is completed; the diversion channel plugged; the stream flow checked. The spring runoff accumulates behind the barrier. Beaver runs fill, then coalesce, covering the willows on the low, saturated, intervening ground. The willows are adapted to spring inundation, and proceed to send forth their furry catkins and set seed. Then they leaf out, but the cycle has been interrupted. Slowly the roots are choked off by a protracted lack of oxygen, and the leaves are shed early. Next year there will be no pussy willows, no leaves.

The waters creep up over the sandbar on the big bend of the river, then into the grove of stately, spreading cottonwood trees, their bases

scarred by the crunching impact of ponderous ice floes borne by the flood waters of a hundred spring runoffs. The ground-dwellers and burrow inhabitants of the grove — foxes, meadow mice, bull snakes, deer mice — scurry to higher ground, as they and their ancestors have been forced to do each spring since the river started to flow. But this spring is different. The little animals keep retreating from the advancing waters, waiting for them to recede, but in vain. More and more congregate, and starvation becomes a problem.

The ice chunks do not careen angrily through the grove, short-cutting the main channel around the big bend. Logs and driftwood don't accumulate in rafts in the usual backwaters. Instead, ice and other derelict flotsam drift aimlessly in the currentless waters. For once the

trees are spared their yearly punishment. A few had even been in line for the final blow that would have completely severed their cambium layer and caused death. But they are saved one fate only to succumb to another. A cottonwood cannot live long without air to some of its roots.

The grove and sand bar provided winter shelter for a band of Sioux for hundreds of years. Lewis and Clark camped there on their way into the unknown West. For 80 years, it has hosted the community picnic in August after the crops are laid by and the cattle are on the summer range. The naked stems and branches of the arching cottonwoods have thwarted the whistling winds of winter; their leaves have shaded celebrants and lovers from the scorching sun of summer. No more.

The insidious, unannounced waters creep upstream. They sneak into the side drainages, up the breaks. The brushy bottoms, which are the main travel routes and provide the bulk of the food supply of the breaks, are the first to go. Steep cut-banks and canyon walls are all that remain. The wildlife, particularly the whitetail deer, accumulate in the heads of the side drainages. Under normal conditions, whitetail feed, sleep, reproduce, and die in the brushy cover of the bottoms. The waters are completely eradicating their habitat. Crowded, confused, they race from the head of the draw to the water's edge, then back again. Clustered in a clump of buckbrush, they tremblingly survey the unprotected sweep of open farmland onto which they are being forced. Some will make their way into other drainages. Others will fall to hunters, starvation, or the side effects of nervous maladjustment to an unfamiliar environment. Those that successfully migrate will have to compete with an established population, which probably already is making full use of its habitat. The increased density will result in a buildup of parasites and disease, resulting in death and starvation which will bring the population back into balance with the available cover and food supply. There is no question: numerically speaking, the dam will practically eliminate the whitetail population of the entire drainage.

In a matter of a few weeks, the lower ground near the dam is completely inundated. But at the upper reaches of the proposed reservoir, the transition is glacial. An expansive flat is covered with thousands of cottonwoods, comprising the only forest cover in this part of the state. The first spring, only a few inches of water cover the ground surface. Later in the summer, water is released in order to keep a vestige of moisture in the channel below the dam and to sustain other reservoirs downstream. The forest emerges.

On a distant ridge, circles of stone embedded in the sod tell of a summer Indian camp, from which the braves could command a vast panorama of the river bottom. There they would sit in the sun and chip arrowheads as their eyes swept the countryside for game and watched the stream channel for travelers. The women did not appreciate this camp, as they had to pack water long distances up hill, but they had no say in the selection of the site.

From the Indian camp, the forest looks no different this summer. The trees are leafed out in the verdant glory of the brief growing season of the northern plains. But an irreversible transformation has begun. The meadow mouse returning to his burrow finds it filled with silt. The once-luxuriant bluegrass is yellowed and mud-matted. Standing water and subsequent siltation have starved the roots of the cottonwoods during the short period for manufacturing and storing the food which will sustain the trees through the long leafless period and nourish new buds and leaves next spring.

The following spring, fewer leaves appear. The waters creep a few inches higher than the

year before, and the ground remains covered all summer. All of the ground dwellers flee, never to return. Some will be trapped on submerging islands; many will fall prey to predators in a hostile environment; few will survive.

The third spring poses a puzzling sight from the high promontory of the Indian camp. The shallow waters are not yet visible through the timber cover. In the coulee next to camp, the plum has flowered and leafed out. The ash has cast its tiny paddles onto the warm, soft spring soil. The Junegrass has set seed and the buffalo grass has broken its long period of dormancy to send forth tentative shoots. But the cottonwoods do not leaf out. Summer passes on the

"We are destroying the features that made this land habitable."

hill, but for the majestic denizens of the river bottom, spring never comes. No leaves hide the deep-furrowed gray bark and the arching branches and the network of twigs. There is a weird hibernal aura to the summer's balm.

This forest will never be completely inundated. For years it will stand stark and lifeless against the blue-gray sea of sky and water. In a few years, bark will start to slough off in patchy slabs. Remaining vestiges of the cambium layer will oxidize and blacken the barkless patches. Then the grotesque, leprosy-mottled stems will warn off intruders through the period when the smaller limbs and twigs are rotting and falling silently into the waters. Eventually only ghostly-gray skeletons will remain, standing as vengeful sentinels over the territory that once was theirs, denying the new-born lake the beauty of a natural body of water for many, many years, perhaps for the lifetime of the reservoir.

A nearby town on the reservation is in the path of the waters. The government has constructed a new village on the upland flats. Most of the people have already moved up onto the treeless bench. To the northwest, I can see a windstorm approaching. Soon stinging particles of dust will be tearing at new paint and sifting through window frames. I am reminded of one of the saddest photographs I have ever seen — an Indian woman, swathed in a sheet like an Arab, stands in front of her tipi, which is surrounded by a windbreak of woven willow wands. Her people, the Northern Cheyenne, had been captured and transplanted from a river-break country to the treeless Oklahoma plains. This village has been given the inspira-

tional name of New Town, possibly providing some insight on the frame of mind of its displaced inhabitants.

The boy and his dog are not hunting today. He is helping his family move from the farmhouse, snuggled in the trees at the base of a south-facing bluff that has protected the farmstead from the wind for many years. They are taking their possessions to a new home up on the flat country overlooking the reservoir. The condemnation money has paid for farm and grazing lands that will be flooded. The family will live close to the highway. The wind will be worse, but compensation was adequate to construct windbreaks for the calving pens. And the Soil

Conservation Service will help lay out and plant a carefully cultivated shelterbelt to protect the entire headquarters. But neither father nor adjusters have given a thought to small boys and their dogs. The wilderness is gone.

The Bureau of Reclamation and the Corps of Engineers make much of the recreational opportunities provided by the new reservoirs. Undoubtedly powerboating and water skiing were hitherto unheard of. Small groves of trees will be planted to provide summer shade for campers on the edge of the lake. Perhaps many more people will use this area for recreation during the summer months than ever before. Perhaps the fact that the environment is as artificial as a bowling alley or Disneyland is of little concern in this modern world.

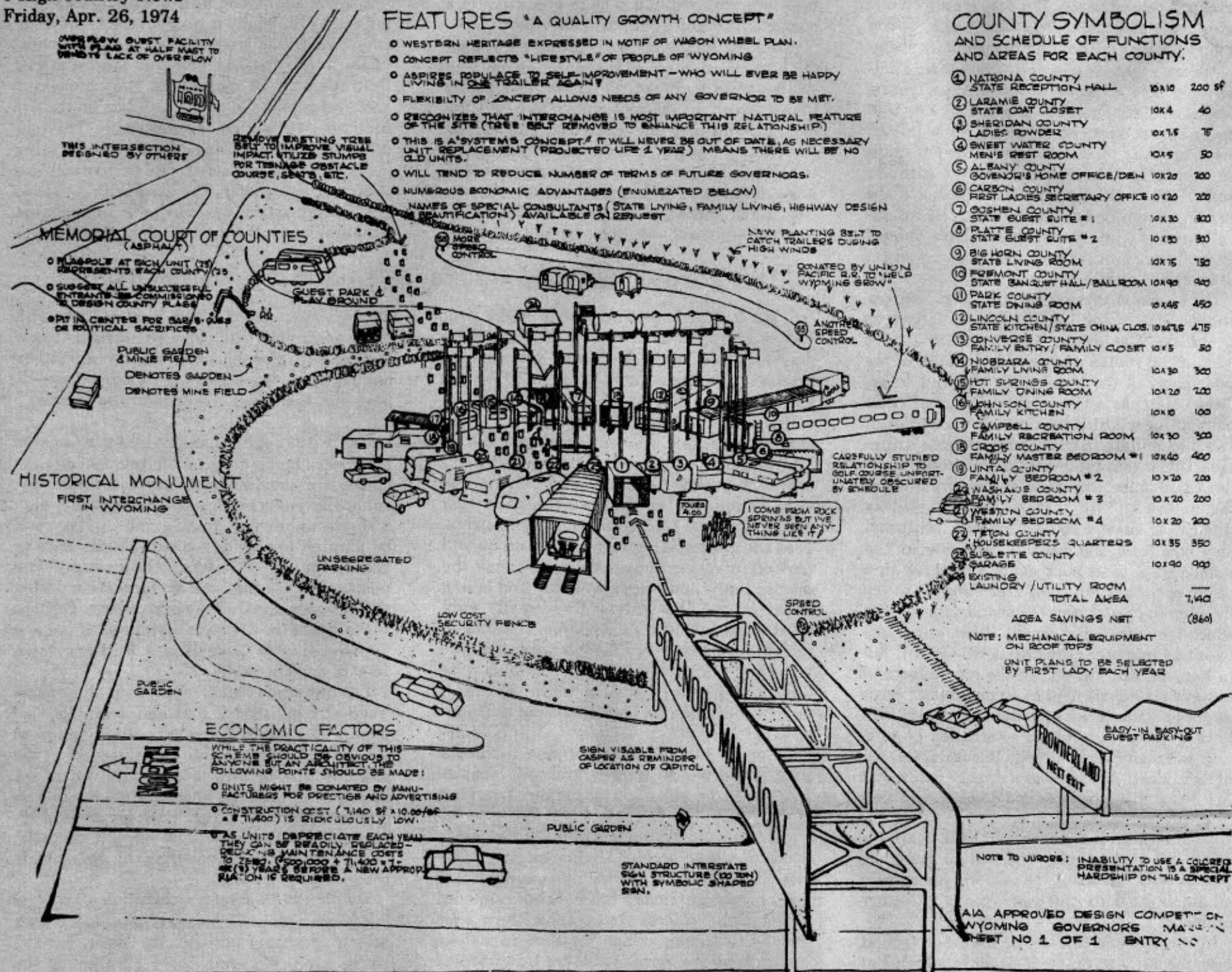
I do not argue that much of what these dams have accomplished is good and desirable. Our population is such that a natural environment will not provide its needs. But I blanch at the attitude that nothing is lost when waters are impounded. I see red when engineers and surveyors suggest that every geologically and topographically feasible dam should be built, based on the assumption that the only risk is the construction cost.

My plea is for greater recognition of what is lost when a prairie drainage is dammed. We are utterly changing not only the river, but the entire area. We are blithely eliminating the principal resource and the natural life blood of the territory involved. We are destroying the features that made this land habitable. And we are infinitely complicating its future management.



"This forest will never be completely inundated. For years it will stand stark and lifeless against the blue-gray sea of sky and water."

8-High Country News
Friday, Apr. 26, 1974



LOST - A CHANCE TO BE DIFF

Wyoming's governor's Mansion was built in 1902-1903 a few blocks south and east of the gold-domed capitol building in downtown Cheyenne. It has served governors ever since except during the extenuating times of the Great Depression. Gov. Frank Emerson died in office in 1931 and the Mansion stood empty until 1933 when Gov. Leslie Miller was elected. Gov. Miller said that in order to save the state money, he would not live in the Mansion. Instead, it was rented to the Federal Relief Administration until 1936. The 1937 Legislature voted \$12,000 to renovate the Mansion and governors and their families have been living there ever since.

Now, Wyomingites feel their governors should have more modern and fitting quarters. The 1973 Legislature voted \$500,000 for a new mansion. State officials traded state land to the City of Cheyenne for about eight acres of City Park land near Kiwanis Lake and Interstate 25 on the west edge of Cheyenne.

Recently, Wyoming architectural firms were asked to submit entries for the design of the new

Mansion. One entry was the tongue-in-cheek design shown above. It first appeared in the **Jackson Hole News** (April 11, 1974) under a bold headline — Quality Growth?

The **News** said the proposal was submitted by "Harvey Q. Anonymous, who lists his address as Frontier Trailer Village, Buford, Wyoming."

The **News** continued, "Building on Gov. Stan Hathaway's theme of 'Quality Growth for Wyoming,' Mr. Anonymous tried to turn that vague concept into a fitting executive mansion. Having visited Gillette, Buffalo and Rock Springs, Mr. Anonymous correctly recognized that in much of Wyoming, a man's home is his trailer. Since the state's chief executive has allowed rapid, unplanned growth in areas hit by mineral development, it seems particularly appropriate that his mansion should be a complex of vehicles on wheels. Unfortunately, the committee did not recognize Mr. Anonymous' creativity and chose a more conventional design for the next governor's house. Hopefully, Gov. Hathaway's successor will be worthy of such confidence."

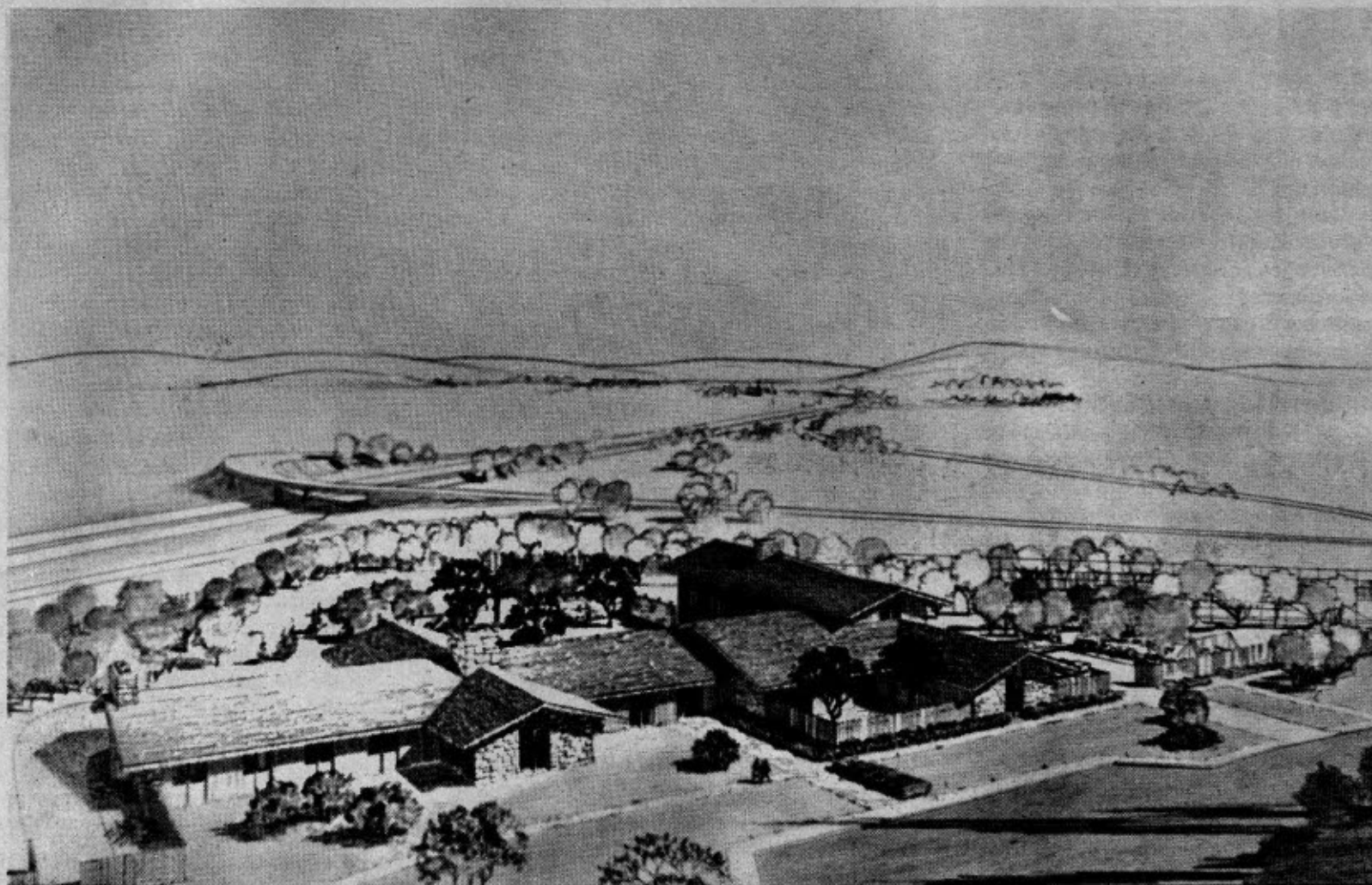
Another design was submitted by the Lander architectural firm of Corbett-Dehnert-Associates. Feeling that the changing philosophy of the state and nation was such that alternative energy should be incorporated in a modern design concept, they submitted the plan at right. It incorporates solar heating and cooling, along with wind-powered generators for a power source. However, auxiliary heating and power sources were included.

The design concept and the siting near Interstate 25 were such that the public could identify with it. The site has a number of trees and the plan provided for the preservation of as many of these as possible. The orientation of the mansion obviously had to accommodate the design for solar heating. But it was also designed for the privacy and aesthetic pleasure of the first family of the state.

The design was not chosen. The more conventional design shown at upper right got the nod from the selection panel.

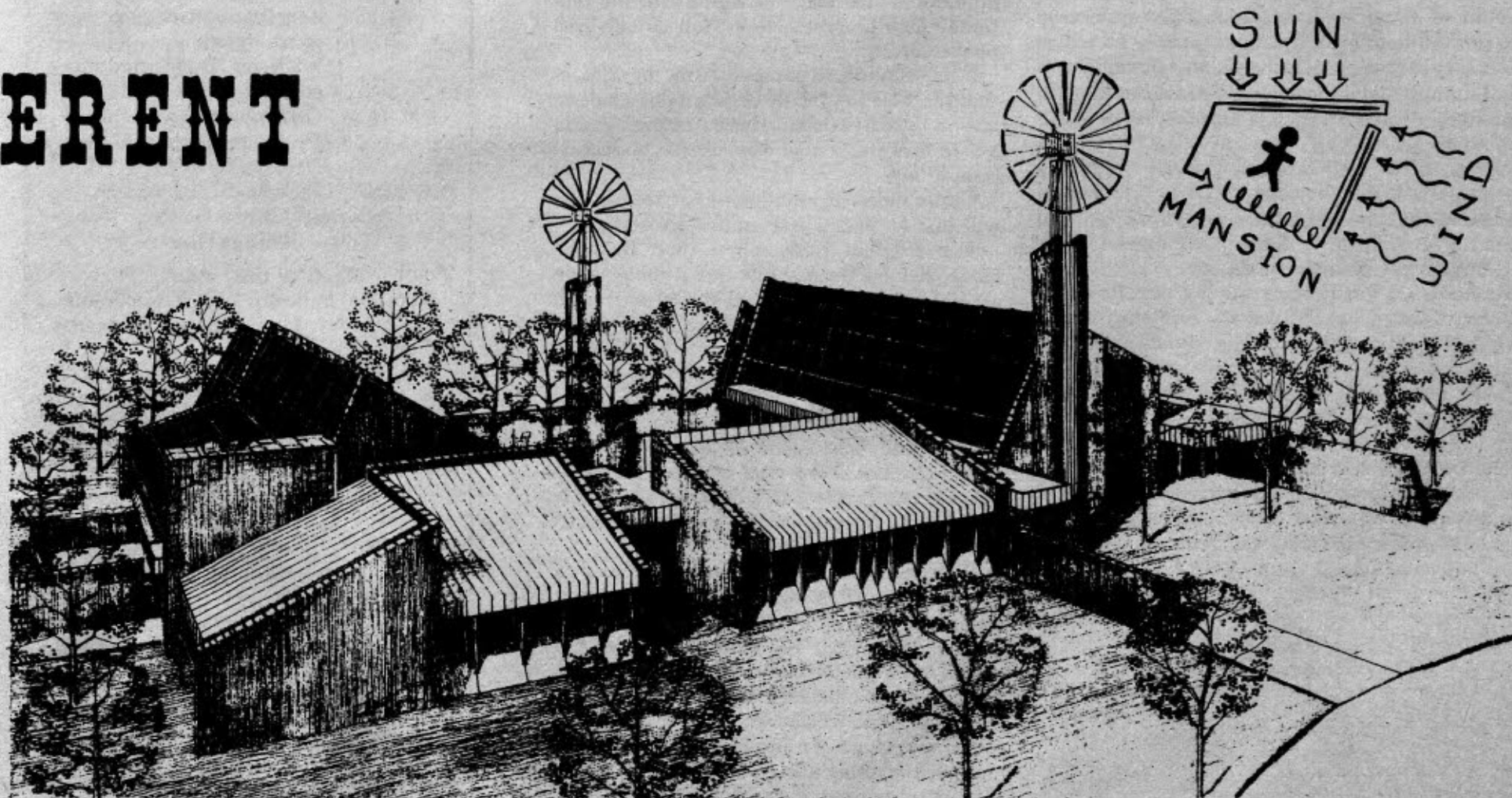
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High Country News-9
Friday, Apr. 26, 1974



PERSPECTIVE FROM SOUTHWEST

FFERENT



perspective view from southeast

10-High Country News
Friday, Apr. 26, 1974

Reckoning from Washington

by Lee Catterall

The federal government has acknowledged that much of the land it leases to ranchers is being overgrazed, but says it's doing a lot to correct that. Its lengthy report comes only a few months on the heels of a law suit demanding it.

The Natural Resources Defense Council, an environmentalist group, charged late last year that the Bureau of Land Management has permitted its land to be abused, water wasted and wildlife threatened because of overgrazing. It insisted that BLM file an environmental impact statement describing its actions.

The statement, issued last week, deplores what it concedes is "widespread" overgrazing. Its remedy: more water, more fencing, more money, eventually even more grazing. With all that, it says, the land will improve and so will ranchers' incomes.

A government study 10 years ago reported that a third of Wyoming's BLM land was in poor condition or worse, and only one acre in six was rated as good. That pretty much reflected the situation in 10 other western states.

A year later, BLM began a new program to upgrade the land — almost all of it — by the turn of this century. Ranchers are supposed to make detailed reports on how they expect to make improvements, and the federal government in turn is supposed to fork over some money — obtained from the ranchers in the form of increased leasing fees for the land — to do the job.

The impact statement predicts that BLM's new policy will do wonders for the land, which people have said for decades is overgrazed.

By quadrupling the amount of fencing that's strung along BLM land now, livestock can be properly rotated so no one area needs to be stomped over, the report says. "Down with the fences" was the government's cry long ago, when it tried to crack down on western ranchers who had enclosed federal land. Now it's "up with the fences."

And up with the dams — to make 9,000 new little reservoirs in the next quarter century to increase the amount of water for livestock. A BLM spokesman told this column that ultimate amount — six billion gallons a year compared to the current five million, is small enough that it shouldn't come into conflict with the pressing water demands being forecast for industrial development.

It should be noted that this glowing statement, praising BLM, was prepared by BLM. The bureau spokesman said he "hopes the overall statement will meet the guidelines" of the Environmental Policy Act, which it was written to satisfy.

He knows it won't satisfy the Natural Resources Defense Council, which filed its suit after having seen drafts of the statement. The council apparently went to court anticipating the thrust of the statement. It believes BLM should be forced to file separate impact statements in each area of the 11-state region, not one comprehensive statement.

The BLM spokesman said the program isn't all that popular with some of the ranchers, either — the "conservative" ones who "don't like being told what to do by the federal government." Whether it's taking down fences or putting them up.



Nuclear v. Hydraulic Fracturing

Water Can Do the Job

The nuclear stimulation of natural gas is more expensive and surrounded by more unsolved problems than gas recovery through massive hydraulic fracturing, a report issued in April by the General Accounting Office (GAO) shows. Sen. Gale McGee (D-Wyo.) requested the GAO study.

The report reveals an argument between the Bureau of Mines and the Atomic Energy Commission (AEC) over results of the three nuclear stimulation experiments already carried out. The report says that Bureau of Mines officials have discovered evidence that the underground

fractures blasted in the first two tests, Gasbuggy and Rulison, are in the process of closing. If this is true, the report says, "the wellhead cost of gas increases significantly, depending on how quickly the fractures close." The Bureau of Mines evidence is disputed by the AEC.

Availability of water is the major uncertainty associated with the hydraulic fracturing technique, according to the report.

Among the uncertainties of nuclear development listed in the report were the effects of the detonation of the 29,680 atomic bombs required for full scale development in the Rocky Mountain states. The federal government and the Congress should have a clear idea of the possible effects of such development on people and property in the area, the radioactive potential of the recovered gas, the possible release of radioactivity into the atmosphere, the disposal of contaminated water separated from the nuclear stimulated gas, and the capacity of the AEC itself to produce the necessary nuclear materials, the report states.

The GAO discussed several estimates of the comparative costs of natural gas recovered through nuclear stimulation and through massive hydraulic fracturing. In almost every estimate, the cost of the gas recovered with massive hydraulic fracturing was either less than or about equal to the gas obtained by nuclear stimulation.

Stripping Pollutes

Strip mining in the Northern Great Plains could cause severe water pollution problems, warns the U.S. Department of Agriculture's research service.

Part of the problem would stem from nitrogen in the shales which overlie about 44% of the nation's coal reserves. These Paleocene shales are rich in the ammonium form of nitrogen. When the shales are exposed to the atmosphere a process called nitrification begins. Some of the ammonium is transformed to water-soluble nitrites and nitrates. High levels of nitrates in well water are known to have caused the deaths of babies.

Crops grown in the Northern Great Plains area can use about 30 to 70 pounds of nitrogen per acre. The content at the surface of lands disturbed by mining has been tested at 200 to 300 pounds of nitrogen per acre.

The government scientists discovered that most of the nitrogen in the top foot of spoils disappears after two or three years of weathering. They believe that, over time, the surplus of nitrogenous compounds escape into the air.

Disappearing Plastic

A Boise company has developed a plastic container that decomposes in sunlight. Although it will not help solve our most basic solid waste problem — too much consumption, the container does promise a reduction of long-lived plastic litter.

The container is manufactured by Biodegradable Plastics, Inc. It begins to break down after a month in the sun, manufacturers say. In six to twelve months, the plastic disappears completely.

Under indoor lighting, however, the package will last for over a year, manufacturers say.

The product costs more than its non-biodegradable competitors, but it could pay in social benefits. It could make the 50,000 tons of plastic littered each year only a short term blight.

Land Use Roundup

Maryland, Maine and Utah are the only states to enact major land use controls so far this year. All three states have passed legislation for the designation and protection of critical environmental areas.

Michigan, Colorado and Iowa have about a 50-50 chance of getting bills passed this year, according to Land Use Planning Reports.

Speculation that the federal land use bill might fail was a principal reason for the failure of many state bills, LUP Reports says.

In Nebraska, for instance, where legislation never moved out of committee, a state official said, "Everything having to do with land use was killed when they heard what happened to the federal bill."

FOURTH WYOMING ENVIRONMENTAL CONGRESS

Sheridan, Wyoming

May 18, 1974

"The Socio-Economic Impact
of Coal Development"

Sheridan Inn

8:30-9:00 Introductions, introductory remarks, etc.

Addressing the Problem

State Sen. Tom Stroock, moderator

9:00-10:30 Carolyn Alderson, landowner point-of-view
Ken Erickson, city manager point-of-view
William Budd, industry point-of-view

10:30-10:45 Coffee break

10:45-12:00 Dr. Dean Kohrs

Dr. Ray Gold

12 - 2:00 Luncheon

Speaker, Duane Bowler,
Editor Billings Gazette

Meeting the Problem

State Sen. Malcolm Wallop, moderator

2:00-3:15 J. Jay Jacobsen, Dartmouth College

Ms. Dorothy Bradley, Montana State Representative

3:15-3:30 Coffee break

3:30-4:45 Rep. Rex Arney, Sheridan County
Mr. Lee Keith, Land Advisory Board, Wyoming EQC

6:00-7:00 Social hour

7:00 Banquet, Historic Sheridan Inn

Master of Ceremonies,
Honorable Teno Roncalio, Wyoming

Speaker,

Honorable Ken Hechler,
West Virginia

(Slide presentation,

Ed Dobson, Friends of the Earth)

The public is welcome.



Questions are now being raised by soil scientists and climatologists alike concerning the effect of wind on plowed and strip mined lands in northeastern Wyoming. This spring high winds caused huge dust storms in the area south of Gillette, in the heart of the coal stripping area (shown above). Scientists fear not only loss of topsoil but possible effects on weather downwind in Wyoming, South Dakota and Nebraska. The problem of air pollution would be further heightened by effluents from large power plants and gasification plants clustered near Gillette.



Emphasis ENERGY

in the Northern Rockies and Great Plains



Both the Republicans and the Democrats in Sublette County, Wyo. passed resolutions against nuclear stimulation of any natural resources in the state. Sublette County is the site of the Atomic Energy Commission's proposed Project Wagon Wheel, the largest experiment yet in the nuclear stimulation of natural gas. El Paso Natural Gas Company is the industrial sponsor of the project. Though they haven't completely ruled out Wagon Wheel, the AEC has no immediate plans to go ahead. In the meantime El Paso has announced its intention to try massive hydraulic fracturing in the area.

Four cities on the Front Range of Colorado are banding together to build a coal-fired power plant in the Yampa Valley near Craig, Colo. The cities — Longmont, Loveland, Estes Park and Fort Collins — call their coalition the Platte River Power Authority. Together, they plan to pay 18% of the \$300 million cost of the generating plant. The rest will be paid by three commercial western power associations.

The Environmental Protection Agency (EPA) has granted three power plants in the Southwest a 16-month extension on the deadline for reduction of sulfur oxide emissions. Under the new ruling the Four Corners plant in New Mexico, the San Juan plant in New Mexico, and the Navajo plant in Arizona must reduce their sulfur oxide emission by 70% by July 31, 1977. The extension will allow the plants "to test sulfur oxides control technology on a small scale before requiring its installation on a plant-wide basis," the EPA says.

Eleven coal gasification plants are under consideration in North Dakota, says the state's governor, Arthur A. Link. In Dunn County, four gasification plants have been proposed by the Natural Gas Pipeline Company of America, a subsidiary of People's Gas Company of America. The El Paso Natural Gas

Company of Texas has proposed four plants in Dunn, Stark and Bowman counties. The Michigan Wisconsin Pipeline Company of Detroit has three plants in mind.

A recent survey indicates that several large consumers of natural gas in Colorado are converting to coal as a primary fuel. The Colorado Department of Health sent out questionnaires to 53 major industries. Of the 31 respondents, Eastman Kodak, Ideal Cement Company and Samsonite Corporation are considering coal. Great Western Sugar said it intends to convert four plants from gas to coal over the next seven years. A health department official predicts that new installations will be either coal or coal standby units. "If this trend continues, air pollution emission standards will, of necessity, become more stringent to protect the quality of our air," the official says.

Water-saving "dry cooling towers" will be tested on a new plant near Gillette, Wyo. by the Atomic Energy Commission (AEC) and two electric utilities. A 330 megawatt coal-fired power plant, scheduled for completion in 1977, will be outfitted with the \$3 million towers. The AEC will pay for construction and five year operation of the cooling towers while testing is going on. The plant will be owned and operated by Pacific Power and Light and Black Hills Power and Light.

It seems clear that at least for the short to intermediate term future the United States cannot domestically supply its fuel and energy needs within the limits of present policy and institutional and legal constraints.

William N. Letson
General Counsel
Department of Commerce

High Country News-11

Friday, Apr. 26, 1974



The Hot Line

across the country

Iceland is using a volcano to heat homes. In January the first home was connected to the giant furnace by means of a waterfilled pipe dug into the edge of the hot lava. By the time it reaches the home, the water in the pipe is 149 degrees. The volcano, Helgafjell, buried one-third of the 1,200 homes on the island last July. Before that outburst, it had lain dormant for about 6,000 years. Scientists now estimate that the lava contains enough heat to warm all the houses on the island for the next 20 years.

The Interior Department will soon seek an industrial partner for the building of a major coal-liquefaction plant. The department says the plant would use between 1,000 and 5,000 tons of coal daily and would produce between 1,500 and 10,000 barrels of low sulphur oil. Interior is also looking for a private firm to help test the Bureau of Mines' coal-liquefaction technique, the Synthoil process. The test would involve the construction of a \$15 million pilot plant.

Canada has invited U.S. Secretary of State Henry A. Kissinger to open talks on the possibility of an international environmental protection agreement for the west coast of North America. Canada's foreign secretary says the coast will be exposed to "major risks" when tankers start carrying Alaskan oil to refineries in the U.S.

In March, Reps. Jerome Waldie of California and Les Aspin of Wisconsin introduced a bill which would halt the issuance of new construction licenses for a study period of five years while nuclear power technology was reassessed. The bill, the Nuclear Energy Reappraisal Act (H.R. 13716), would direct the Office of Technology Assessment to submit an independent assessment for nuclear safety problems, economics, and net energy production to Congress within the five year period.

Indiana has passed a law which will give the owners of solar heated houses a break on their property taxes. The new law, which allows the assessed valuation of solar homes to be reduced by up to \$2,000, passed by a wide margin in both houses of the state legislature.

T. R. Caster, president of Energy Systems Inc., says that he can build solar heating systems for economy homes for as little as \$500. The corporation is building somewhat more expensive systems into all the homes on a 28-acre subdivision near San Diego. Energy Systems, Inc. is a division of Caster Development Corp., 643 Crest Drive, El Cajon, Calif. 92021.

A ton of coal could yield 100 to 150 gallons of oil while a ton of high-grade oil shale yields only 25 to 40 gallons of oil, reports Eric S. Cheney in his new book *U.S. Energy Resources: Limits and Future Outlook*. For this and other reasons Cheney concludes, "Once hydrogen is inexpensively available in large amounts, coal would have a tremendous advantage over oil shale as a source of synthetic fuels."

Canada Wire and Cable is taking a new approach to strip mine reclamation. The company's researchers have come up with a water-soluble plastic sheet impregnated with seed, fertilizer and growth regulators. The seed sheets, made of polyvinyl alcohol with a biodegradable plasticizer act as a mulch and erosion control medium. Cost is estimated to be about five to 10 cents a square yard. Extensive field trials on steep road cuts and mine sites will be conducted this year.

12-High Country News

To Dam A River . . .

(Continued from page 5)

System. (Under the Act, eight rivers were accorded permanent protection but the Missouri was not among these.) The Federal Power Commission was enjoined from licensing the construction of any dam in a study area for a five-year period.

The following year, 1969, the new Congress passed and President Nixon signed the National Environmental Policy Act (NEPA). Though NEPA is much broader in scope than Senate Document 97, applying to all federal actions that significantly affect the environment, not just water-related ones, it logically follows the earlier directive. NEPA also includes an "action-forcing" provision, the environmental impact statement. The environ-

"The present state of the art does not yet enable us to represent sections of wild rivers, regional economic development, interpersonal income transfers, national defense and kilowatt-hours in one common unit of measurement."

mental impact statement provision mandates not only that the anticipated adverse consequences of the proposed action be detailed, but also that the need for the project, in the face of those environmental costs, be justified. S-97 merely directed the agencies to consider the consequences of their actions and to consider alternatives, including those outside the agency's jurisdiction and field of expertise.

One could argue that had the agencies implemented S 97 in good faith, NEPA, at least for the water agencies, might not have been necessary. The key difference is that Senate Document 97 was essentially an administrative procedure while NEPA is a statute. Thus, non-compliance with NEPA is subject to court review, and it is the courts that have put teeth into the new law, as every federal agency would concede. There is not one agency that has not had at least one of its decisions remanded under NEPA.

The impact of NEPA on controversies, such as the one on the upper Missouri, is not merely another refinement of benefits and costs. Rather the environmental impact statement forces the developer to prove either that his actions do not adversely affect the environment or, where damage is inevitable, that the benefits obtained from the environmental disruption are so significant as to offset the environmental costs. If this cannot be demonstrated conclusively, then the project shall not be approved. Since such an environmental analysis must be comprehensive and interdisciplinary, every agency has to develop the skill to prepare adequate impact statements, which may mean hiring or contracting of skills and viewpoints that previously were not present in the agency. Finally, since the tradeoffs must be articulated and made available for public review, the quality as well as the scope of the analysis will have to be better than before.

Had NEPA been in effect in 1963, having the force of the present law in the present political atmosphere, the dam builders would have had to justify far more rigorously their plan to dam the last natural reach of the nation's longest river so as to make available one million kilowatts of electricity for three hours a day, 400 miles from the nearest market. Yet, in the preparation of the Joint Report, it had been the job of the Park Service to show that the benefits of preservation made it worthwhile to forego the financial advantages of hydroelectric power.

Since hydroelectric power is a marketable commodity, it is not too difficult to express its

advantages in dollar terms. The problem for the Park Service at the time of the writing of the Joint Report that still remains unsolved today is how to quantify in a comparable manner the advantages of the wilderness. Supplement 1 to Senate Document 97 put a value on the active use of the wilderness by recreationists by estimating the number of potential users and multiplying that figure by their average "willingness to pay," but this in no way puts a value on the wilderness itself.

This method has serious shortcomings when applied to unique places threatened with irreversible destruction. To count only those who physically use the recreation facilities and to assess only their willingness to pay underestimates the value of the unique resource by a large but unknown amount. There may be many vicarious users, persons who derive some satisfaction from the fact that the resource exists or, conversely, persons who would suffer if

the resource disappeared though they do not and are not likely to use it themselves. This large but diffuse body of non-users who would nevertheless suffer the loss of the resource may well be willing to pay something if necessary in order to keep their options open.

The schedule of various users' or potential users' willingness to pay is usually derived either from direct querying as to how far users have traveled to a particular facility, how much they have spent in getting there, how much more they would have laid out before switching to an alternative, or by extrapolating from attendance at similar sites elsewhere. Where a number of close substitutes exist, this method may give reasonable results. But where the proposed facility is unique, there may be little data to use as a base, no way to get a vicarious users and no possibility of querying recreationists who are not now using a comparable facility in the area.

Moreover, a unique resource may well generate its own demand, or put differently, tap a latent demand. This accounts for the rush on the part of non-users to visit a unique area that is threatened. When people realized that Sunfish Pond on the Appalachian Trail in New Jersey was in danger of being inundated by a pumped storage project, the number of visitors increased phenomenally. The same thing happened at Echo Park in Dinosaur National Monument and the Upper Missouri as well.

There is also a problem when multiplying willingness to pay times anticipated visitation to get at the economic benefits of recreation. The estimated number of visitor-days is based on those who would visit under prevailing user fees, charges which are often either non-existent or are set far below the visitors' actual willingness to pay. The product will depend on the availability of substitute recreation sites, the disposable budget of the user, and other factors that comprise what economists call elasticity of demand.

It would seem highly probable that the demand for reservoir recreation would be more elastic (that is, more responsive to small price changes) than the demand for wilderness, given the uniqueness of the wilderness and the relative abundance of reservoirs in the area we have been describing.

For these reasons the willingness-to-pay approach is less useful for resolving disputes between mutually exclusive demands on a unique resource than the computing of opportunity cost. While the value of the wilderness area

cannot be successfully quantified in dollar terms, in my opinion, the competing use almost always can. Thus, while it would be difficult, if not virtually impossible, to decide how much the Upper Missouri River was worth in its natural state, one could probably quantify what benefits the nation would forego by not generating hydroelectric power in this reach, i.e., the difference in cost between the dams and the next best alternative source of the power. The argument presumes that the hydroelectric development is the least costly source of power available. If an alternative should exist at a lower cost, then the opportunity cost of the hydro would be negative; that is, on strictly economic grounds and even ignoring the environmental consequences, the nation would be better off not to develop the hydro. Accordingly, no dispute as to the disposition of the wild river should arise.

In 1970, writing about a similar conflict on the last natural reach of the Snake River in Hells Canyon, John Krutilla contended that the opportunity cost method presented the only practical approach. Likewise, in the case of the ill-conceived power projects in the Grand Canyon, the National Academy of Sciences (1968) concluded that to evaluate preservation, "the estimate of positive gains from keeping a river untouched may be largely qualitative but the costs of those gains may be measured by the value of benefits that thereby are foregone . . . or by the additional costs involved in a substitute measure."

Finally, when evaluating the benefits that would be foregone, it is essential that the net benefit to the nation be used. This means that all institutional distortions must be factored out. The discount rate used in the computation should reflect as closely as possible the opportunity cost of capital. Due allowance must be made for the probable appreciation or depreciation of the asset during the period of analysis. Nor may a biased treatment of taxes be used to shift the economics in favor of the federal project. If the question of opportunity cost is treated symmetrically, the cost of preservation will accurately be represented by the benefits foregone by non-development.

When the opportunity cost is thus established, the economic analysis will be over and the decision will then be strictly a political one, having to do with whether the nation wishes to forego that amount of benefit in order to preserve some unique natural amenities.

Since 1969 the Water Resources Council has tried to establish new guidelines to supercede S 97. The Council's assessment method is based on four separate accounts: national income (identical with the earlier benefit-cost analysis), regional income, environmental quality and social "well-being." The new criteria are not yet in force despite the fact that they were first proposed over four years ago. One reason for the delay must surely be the problems encountered in attempting to quantify such social values into meaningful units. The present state of the art does not yet enable us to represent sections of wild rivers, regional economic development, interpersonal income transfers, national defense and kilowatt-hours in one common unit of measurement, however much some analysts may wish that this were feasible. The economic criteria by which projects are evaluated cannot substitute for the compromising and horse trading that is the essence of democratic politics.

Carlos D. Stern is an Assistant Professor of Environmental Economics at The University of Connecticut. His Ph.D. is from Cornell University in natural resources conservation, with emphasis on environmental policy and water resources.

Western Roundup

High Country News-13
Friday, Apr. 26, 1974

Seeps Threaten Productive Land

Saline seepage, a soil condition affecting lands used for dryland wheat growing, has affected some 100,000 to 200,000 acres of Montana, North and South Dakota, and three Canadian provinces. And, according to Doug Smith, a Montana agricultural specialist, the seepage problem is growing by about ten per cent a year. Smith estimates that thousands of square miles of productive agricultural land could be lost. He also warns of growing salinity problems in the Yellowstone and Missouri Rivers. (By comparison, a National Academy of Sciences' report estimates that strip mining in the West, to produce coal for powerplants only, could disrupt 188,000 acres by the year 2000.)

Saline seep is caused by the use of summer fallowing to produce wheat only. Summer fallowing is an accepted farming practice used to catch and retain much of the natural precipitation. Water builds up in the sub-surface soils and eventually rises to the surface carrying with it a high content of dissolved salts.

Spokesmen Clash Over Wilderness

Sierra Club and timber industry spokesmen clashed over wilderness management at a meeting in Cheyenne in late March. "I can't agree that to set aside commercial forest lands for nature's harsh and inefficient management is in the interests of the United States. Nor is it prudent. Nobody would advocate leaving a field of wheat standing there, and a forest is the same thing," said Horace H. Koessler, chairman of a Montana timber firm, The Intermountain Company.

"You've got a lion's share and there are other interests open to society," responded Sierra Club executive director, Michael McCloskey. "I think it's clear that the balance has been placed in favor of commercial use."

"You're beating a dead horse," said McCloskey, "by trying to get into park and wilderness lands to manage them. You may not agree with it, but the designation has been made."

Turning Trees into Water Rights

"The poet said, 'Only God can make a tree,' but a water court judge in southeastern Colorado can turn trees into water rights," reports **Colorado Business**. In a landmark decision that could signal the start of increased erosion, loss of wildlife habitat and water pollution, Judge W. L. Gobin held that a farm near Swink, Colo. is entitled to water that would ordinarily be used by trees along the river which were cut down. Sheldon Farms, Inc. will get additional acre-feet of irrigation water for cutting down a grove of water-using trees on its property. The water has to be used between May 15 and Oct 15 — the same period the trees consumed it.

Group Studies People and Pesticides

Researchers at Colorado State University are watching the effects of pesticides on people in the western U.S. The Environmental Protection Agency recently gave the university \$363,000 for the project. At the study center to be started with the grant, farmers and factory workers who are exposed to pesticides will be monitored. Extremely high levels of some pesticides can make people sick, says Dr. John Bagby of CSU's rural environmental health institute. But so far research has not shown "any human health defects due to low-level pesticide exposure," Bagby said. "But, of course, we haven't been able to research possible lifetime pesticide effects."

Grizzly Hunting Questioned

Forest Service Chief John McGuire has refused a request by a U.S. senator to suspend all grizzly bear hunting on the national forest lands surrounding Yellowstone National Park. The senator, Alan Cranston of California, contends that hunting should cease until a study by the Interior Department on the endangered status of the grizzly bear is completed.

In a letter dated March 19 McGuire told Cranston that "the few bears taken by legalized sportsmen hunting is not a threat" to the grizzly population. This contention is supported by officials in the state of Wyoming, McGuire said. The director of the Wyoming Game and Fish Department "would vigorously oppose any attempt by the Forest Service to regulate the hunting of grizzly bears on national forest lands in Wyoming," McGuire said.

Cranston replied in a subsequent letter to the Forest Service chief that "at issue is not the success or failure of the grizzly bear hunt during a particular season but the fact that this animal, which is threatened with extinction and for which we have no accurate population count, is the subject of persecution."



Late in March, the National Audubon Society dedicated a new wildlife sanctuary. It is along the main Platte River between Kearney and Grand Island, Nebraska. The dedication date was chosen to coincide with the height of the spectacular flights of hundreds of thousands of migrating sandhill cranes, great long-legged, long-necked birds with wingspreads of over six feet. The Big Bend region of the Platte is a meandering waterway of shallow sandbars, river-side woodlands and rich wetlands which offer an ideal resting and feeding place for these and other migrating birds. The cranes have been feeding and courting there for centuries. The endangered whooping cranes also use the Platte River through central Nebraska as a stop-over point along with whitefronted and Canada geese, mallards, pintails, teal, widgeon, shovelers and other wild duck species. But it is also through this area that the Nebraska Mid-State Project of the Bureau of Reclamation is proposed. That project could divert most of the water from the area most of the time and drastically reduce the value of this unique habitat on which 75% of the North American sandhill crane population and hundreds of thousands of waterfowl depend.

Downstream from the Audubon sanctuary, the Bureau of Sport Fisheries and Wildlife is proposing a national wildlife refuge. Some eleven miles of river, from Highway 281 between Hastings and Grand Island upstream to a point south of Wood River, would be included. That stretch is considered the best remaining sandhill crane habitat. The proposed refuge covers only about one-fifth of the area traditionally used for staging by the cranes. The Bureau says if this area cannot be preserved in a useable condition, the North American crane population will undoubtedly undergo a drastic change in their migration pattern and will probably suffer a serious decline. From here the cranes fan out in nearly direct flights to nesting grounds scattered from Hudson Bay westward across the North American continent and even into Siberia.

Comments are being solicited by the Bureau of Sport Fisheries and Wildlife on the proposal. Statements should be received by May 8, 1974. Send them to the Bureau at Box 250, Pierre, SD 57501.

Briefly noted . . .

In announcing his candidacy for governor of Alaska, Walter Hickel said he would make land the main issue of his campaign. Hickel is a former governor of Alaska and a former Secretary of the Interior Department. The state is trying to decide which of 103.5 million acres it will choose to receive under its statehood act. Some of the state's probable choices are also being sought by the Federal government, however. Hickel says he will sue, if necessary, to get contested land for the state.

* * *

Dozens of southeastern Colorado families have been warned that their well water is heavily radioactive. The wells are contaminated from radium dispersed naturally in ground water. Wells just across the border in Oklahoma and New Mexico are also dangerously radioactive and the warning is out — change water supplies.

* * *

Two concessions that the public and the park staff say they don't want will remain in Rocky Mountain National Park anyway, the National Park Service has decided. Proposals to eliminate the High Country Stables and reduce the Fall River Pass Curio shop to a rest stop were part of a Park Service Master Plan. Eighty-five per cent of the people commenting on the master plan wanted the concessions eliminated.

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Thoughts from the Distaff Corner

by Marge Higley

I don't remember being afflicted at all last year, but this year I seem to have developed a lingering chronic case. I'm talking about spring fever, of course, and the reason I didn't come down with it last spring was probably because we didn't have a spring last year. (One year ago today Lander had 14 inches of snow on the ground! By the time the snow finally disappeared, summer was upon us.)

But this year — ah, this year it's different! I felt the first twinge one Monday morning in late February. There was snow on the ground, but the sun was bright and warm, and I could almost imagine that the grass was tinged with green at the edge of the melting snowdrifts in my back yard. I was smitten by the spring fever wanderlust, and made plans to spend the weekend with a sister in Rawlins.

Thursday night it started to storm, and by Friday afternoon the road to Rawlins was closed because of blowing and drifting snow. End of that plan, and end of that particular bout of spring fever.

It recurred a few weeks later, on a sunny Monday morning in mid-March. The snow was all gone, and the grass by the patio was definitely green. By Wednesday I was convinced, so I called Pearl.

"Spring is here!" I announced, happily. "Come on up for the weekend, and we'll take our lunch and go up in the hills."

"Great!" she agreed, "but I do have to be home by Monday afternoon."

She arrived Friday evening, just about an hour ahead of the snowstorm. By late Tuesday, the winds had died down and the drifts were cleared from the road. End of that bout of spring fever!

The Monday before Easter was beautiful. So, also, were Tuesday, Wednesday, and Thursday. I asked Mary Margaret if her number two son, Tad, would like to help me rake and mow the lawn on Saturday. (That green grass was starting to get pretty tall.)

"He can't, this week," she answered. "We're going to Salt Lake for Easter."

Well, as it turned out, they didn't go to Salt Lake for Easter. A storm blew in and the road over South Pass was closed. I didn't get the yard raked, either. But I did make another date with Tad, for last Saturday.

As I left the office Friday afternoon it was starting to rain, and the sky was dark and foreboding. It rained all that night, and most of the day Saturday. Long after I went to bed, I could hear the rain pouring over the eaves and splashing into puddles on the ground below.

But miracle of miracles! I awoke Sunday morning to blue sky and brilliant sunshine. It seemed especially bright, reflected on the white snow that covered my green grass!

This is Tuesday and it's a luscious, warm day. Sunday's snow lasted only a few hours before melting into the damp earth. The feel and smell of spring is truly here, but I suspect that my spring fever is abating. I've lost that urge to get out and get busy. This week I won't plan a thing — I'll just sort of wait and see.

I really do enjoy the Coming of Spring, no matter how often it occurs each year. I do wish, though, that it would happen, just once, on a weekend!



The silence that is in the starry sky,
The sleep that is among the lonely hills.

WORDSWORTH: Song at the Feast of Brougham Castle

Bulletin Board

ALTERNATIVE ENERGY

Alternative energy systems will be the focus of a conference in Billings, Mont. May 10 and 11. The conference is sponsored by the Northern Plains Resource Council.

Among the experts invited are: Dr. William Heronemus, who has a proposed wind energy system which could provide the Northern Great Plains with all its electrical needs; Drs. David Klass and Ed Hoffman on methane gas production; Egan O'Connor on politics; and Pat Oliphant, nationally known cartoonist, with a film on energy waste.

Working models of wind generators, methane digestors and solar devices will be on display.

The meetings will be in the Northern Hotel. For more information contact Ms. Kye Cochran, 421 Stapleton Building, Billings, Mont. 59101.

SOLAR POWER

Experts will gather to discuss solar heating, cooling and energy conservation at a conference in Denver May 1-3.

"Actual construction and installation underway will be emphasized," says the group sponsoring the meetings, Environmental Action of Denver.

Over 30 experts in various aspects of solar power technology from all around the country will speak. They include: Steve Baer of Zome-works, Dr. Erich A. Farber of the University of Florida, Dr. George Lof of Colorado State University, Dr. Aden B. Meinel of the University of Arizona, Dr. Jerry D. Plunkett of Materials Consultants, Inc., Robert Ragsdale of the Lewis Research Center of the National Aeronautics and Space Administration (NASA), Roger N. Schmidt of Honeywell, Dr. Peter Teagan of Arthur D. Little, Inc. and Dr. Jerome Weingart of the California Institute of Technology.

The conference will be at the downtown Denver Holiday Inn. For those who register before

April 26 the fee is \$100. Registration thereafter is \$125. For more information contact Environmental Action of Colorado, 1100 14th St., Denver, Colo. 80202.

MONTANA WILDERNESS WALKS

The Montana Wilderness Association is inviting the public to "see, hear, smell, taste, enjoy and learn about the great and good earth."

The association is sponsoring wilderness walks in their state from May to September this year. The group first walked together in the summer of 1960 in the Crazy Mountains north of Livingston, Mont. For a listing of this year's offerings write the Montana Wilderness Association, Box 548, Bozeman, Mont. The walks are free and open to all ages.

WATER WORKSHOPS

Workshops to teach Wyoming citizens how to keep their water clean will be held in Powell on May 4 and in Casper on May 11. Speakers at the workshops will explain how citizens can use the 1972 Federal Water Pollution Control Act Amendments. The meetings are part of a series throughout the state sponsored by the Wyoming Environmental Institute and the Wyoming Coalition of Churches. The meetings begin at 10 a.m. and end at 5 p.m. at local junior colleges.

LAND USE PAMPHLETS

The Conservation Foundation has published separate pamphlets on land use programs in Oregon, Florida and Vermont.

The reports are *The New Oregon Trail* by Charles E. Little, *So Goes Vermont* by Phyllis Myers, and *Slow Start in Paradise*, an account of Florida's land use laws by Phyllis Myers. Copies are available from the Publications Department of the Conservation Foundation, 1717 Massachusetts Ave. NW, Washington D.C. 20036. The pamphlets are \$1 each.

Louise Dunlop and the Coalition Against Strip Mining

For the last three years Louise Dunlop's life has centered around one word — coal. She coordinates the Coalition Against Strip Mining, a group of about 30 organizations across the country. "Farmers, deep miners, environmentalists, land owners . . . a little bit of everybody," says Dunlop.

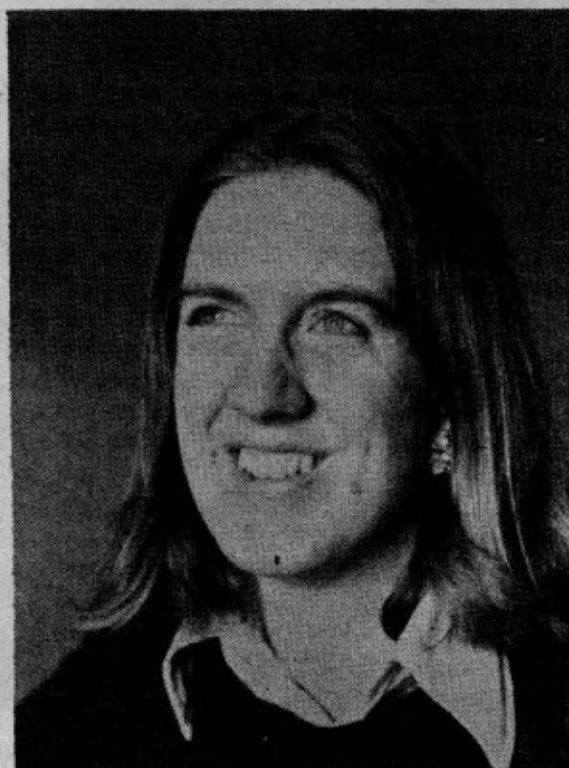
Her work demands that she be lobbyist, public speaker, researcher and writer rolled into one. It's a hard role to play, but Dunlop has adapted to the situation well. In her relatively short time on Capitol Hill, she has become one of the most respected, well-armed environmental lobbyists in Washington.

Dunlop is a political science graduate of Duke University. She worked in Washington with the Department of Housing and Urban Development and the National Parks and Conservation Association after graduation. The furor over the SST (supersonic transport aircraft) lead her to ally with Friends of the Earth and the Coalition Against the SST which successfully defeated congressional approval for the project. This campaign has been heralded as one of the major environmental legislative victories of the decade.

When the Environmental Policy Center (EPC) set up offices in Washington three years ago, she joined their forces. The Coalition Against Strip Mining is directed from EPC. EPC works mainly on energy, land use and water resource issues through their seven lobbyist-researchers. Dunlop's interest in coal melds the three EPC concerns into one united front.

"We are trying to get an orderly phase-out of strip mining passed by the Congress," says Dunlop. "We have also been working on regulatory legislation in the House and Senate Interior Committees, trying to work toward the phase-out."

"We're not hung up on whether the phase-out can be done in a year and a half or whether it takes longer," says Dunlop. "This is because there are considerations about equipment availability, provisions for safety of deep miners, etc. But there is no question that if we are going

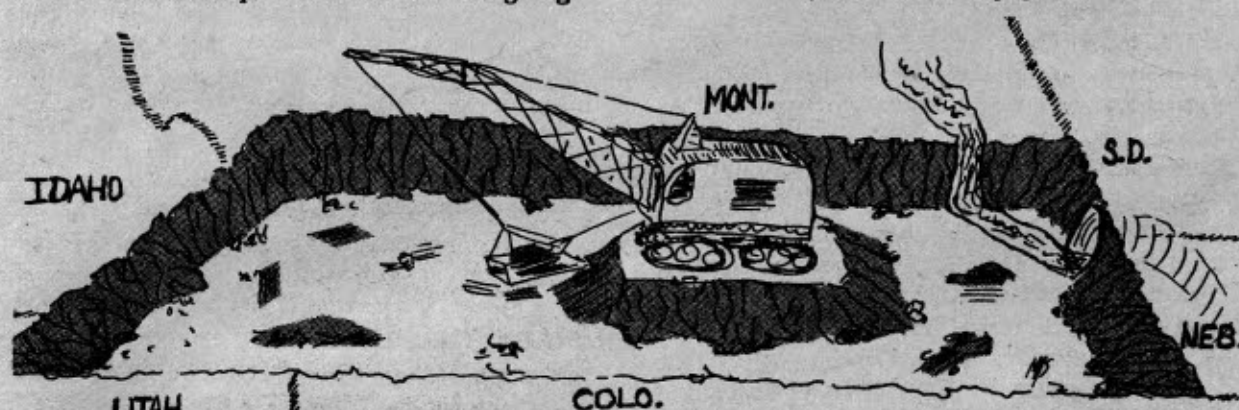


to develop a long-term dependence on coal in this country, then we are going to have to go back to the deep mines."

"Last fall Russell Train, administrator of the Environmental Protection Agency, came to the same conclusion — citing the fact that only three per cent of the coal in this nation can be strip mined. That leaves 97% to be deep mined," says Dunlop.

"At the EPC we have done some calculations that show that, given the Btu (British thermal unit) requirements for coal in the next 25 years, that the life expectancy of intensive strip mining in the West is very short. So for a short period of very intensive strip mining we would be saddled with 100 year commitments for reclamation — and with no guarantee that successful reclamation can be accomplished. And then we would have lost all that time when we could be developing more efficient and more satisfactory ways of deep mining," says Dunlop.

(Continued on page 16)



Reprinted from the Rocky Mountain Union Farmer

High Country News-15
Friday, Apr. 26, 1974

Eavesdropper

LOONEY LIMERICKS

by Zane E. Cology

An Engineer (on government pay)
Spied a free-flowing river one day.
"Aha!" cried he
In tones of glee,
"We will dam it, of course, right away!"

The U.S. is the largest paper and board consuming nation in the world, say officials of the Department of Commerce. The average U.S. citizen consumes 639 pounds of these wood products in a year. The world average is about 50 pounds per capita per year. Despite some tight supply situations, per capita annual consumption increased by 18 pounds last year.

The Penn State Fruit Research Laboratory near Gettysburg is now advising apple growers to cut down on many of the chemical pesticides and depend more on natural predacious insects. Research by entomologists has led to the change in emphasis. Continuing research is being done on natural viruses and other biological controls of pests.

The gadwall duck is increasing in range and numbers in North America, the Wildlife Management Institute says. Biologists report more than 30 new breeding populations, mainly on national wildlife refuges. While the duck has traditionally bred in the West and Midwest, lately the gadwall has found the East to its liking.

A hibernating animal's blood contains a substance that initiates off-season hibernation when injected into an animal of the same species, according to scientists at the American Association for the Advancement of Science meeting. Conversely, an animal in hibernation can be awakened when it is injected with material derived from the blood of an animal that was not hibernating when the blood was taken, the scientists say.

You can sometimes tell a bird's home by its feathers, according to the Wildlife Management Institute. Researchers have developed a technique to find the breeding grounds of geese by the minerals in their feathers. Most wild geese grow flight feathers while near their birthplace. As these feathers grow, minerals ingested with food and water become a part of the keratin of the feathers. Biologists have shown that the mineral composition of the main flight feathers reflect the minerology of the birds' breeding ground.

The Nebraska Game and Parks Commission is using the egg-shaped packages of one brand of panty hose to fool nesting geese. They fill the plastic containers with sand, seal them and trade them for some of the goose's real eggs. The stolen eggs are hatched in incubators. Wild goose production can be nearly doubled by using the panty hose ploy, researchers say.

The poisonous metal cadmium may cause emphysema in cigarette smokers, the American Lung Association says. Only minute amounts of cadmium are inhaled with a single cigarette. But the metal builds up in the lungs and some of it passes on to the liver and kidneys. Unfortunately for nonsmokers, there is probably even more cadmium in the smoke that drifts off the burning end of the cigarette than in the drag the smoker inhales. Cadmium is only one of the damaging chemicals in cigarette smoke, the association says.

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HIGH COUNTRY NEWS

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Photo by Terry Moore

Louise Dunlop...



(Continued from page 15)

Dunlop notes four major trends in the coal industry since World War II: 1) a trend from deep mining to strip mining, 2) a trend from high sulfur coal to low sulfur coal because of air standards, 3) a "very direct and overt attempt" to get away from the United Mine Workers ("We see efforts to work with the operating engineers and those unions which have less demanding royalties and pension funds and fewer obligations."), and 4) a trend from eastern to western mining "that is only becoming evident now but was in the making a decade ago when plans were laid to acquire leases in the West for coal."

On the East to West shift Dunlop says, "They are leaving Appalachia in a disastrous condition. Leaving miners disabled, widows uncared for, streams polluted. . . . There are over 5,700 miles of polluted streams attributable to mine wastes in the region. There are 20,000 miles of highwalls — vertical, raw walls that have not been backfilled and contoured — in Appalachia. And the same companies that created this situation are leaving all this and moving west. Some of them move west under new names but they're still the same companies."

Citing an article in the *Minneapolis Tribune*, Dunlop notes, "Pem Hutchinson, head of Westmoreland Resources (the coal firm that wants to strip the Sarpy Creek Basin in Montana), says on page one that 'We are a new breed of miners. We are not the boys that ruined Appalachia. We are a new breed of miners.' On the next page it tells who Westmoreland is. Westmoreland is located in Philadelphia, Pa. and it is an eastern coal company with a history they'd like to cover up."

One of the reasons the companies are leaving Appalachia is that the life expectancy of strip mining in the region is very short. Dunlop says, "While some states like West Virginia have 90 years of strippable coal left at current production rates, comparatively, Alabama only has six years of strippable coal left." Rather than invest in more deep mining, the companies are pulling up stakes and heading west, says Dunlop.

Dunlop believes that for Appalachia the choice is between a deep mine industry or no industry. "The strip mine industry in the East is a very limited proposition and it has very few days left. In West Virginia, seven per cent of Boone County's remaining coal is strippable

while 93% is deep minable. According to a Stanford Research Institute report that was done for the state legislature in West Virginia, if they strip that remaining seven per cent they will have to 'affect,' we would say 'destroy,' 80% of the surface area in the county. So there are increasing problems with strip mining in the East because of the population problems and competing uses for the land."

"In the Congress," Dunlop says, "a lot of friends of the coal industry have been the senators and congressmen from the eastern states. This is because coal has traditionally been an eastern industry. Now the industry is going to their congressional friends saying, 'Oh, we have to get a weak strip mine bill to stay in business,' when in fact their motivation is to move out of the East and leave Appalachia without a major industry."

"Coal has never been a very good neighbor to anybody, but if they move out of Appalachia, then there will be terrific social and economic problems," says Dunlop. "What do you do with the several million people that have been dependent on coal in Appalachia?"

"So not even considering the impacts on the natural environment, we are opposed to this major disruptive shift from the East to the West for economic, social and political reasons," she says.

Another thing that disturbs Dunlop about the East-to-West shift is that it is based on the idea that there is no low sulfur coal available except in the West. She says, "This is absolutely false. In fact the most inferior coal in the whole nation is the coal found in the Powder River Basin. It is very low Btu, very high in water content, and very high in ash content."

"The water content averages about 20%-30%. . . . so you're shipping water by unit train to Detroit. And if you dry the coal on site the sulfur level goes up to — in most cases — greater than the 1.0% sulfur level. Then you are shipping low Btu, medium sulfur coal. Either shipment would involve a great energy cost because of the diesel fuel requirements involved in shipping to distant markets," says Dunlop.

"While Utah has some higher Btu, bituminous, low sulfur, deep-minable coal, people tend to ignore that in favor of the strippable lower-quality coal. The picture in Washington of the country's coal situation is the one the National

Coal Association perpetuates. It is the illusion that there is no low sulfur coal in the East, that you have to go west to get low sulfur coal, and that the only way to get it out when you go west is to strip mine it. This is false on all counts," she says.

Dunlop says, "There are 46 billion tons of low-sulfur, deep-minable coal just in West Virginia that are economically recoverable and can be extracted with present technology. In 1972, the last year of figures available, U.S. coal production reached 595.4 million tons for the year. West Virginia alone has enough to meet double that production figure for 38 years using just their low-sulfur, deep-minable coal. The region of Appalachia has enough low-sulfur, deep-minable coal (78 billion tons) to supply double 1972 U.S. coal production for 66 years."

"We are trying to show that the economics of Appalachian coal makes more sense for the Northeast and for the Midwest markets. For those areas in the Northwest that cannot expand a great deal by hydroelectric power and even for the Four Corners area, we recommend coal from bituminous, low-sulfur, deep mines in Utah — if there is going to be a heavy dependence on coal," says Dunlop.

"At the very least," she says, "there should be a moratorium on any new strip mining of coal in the Northern Plains until deep mine alternatives are explored satisfactorily. Especially since there is no demonstration that the Northern Plains coal fields can be adequately reclaimed, it's an insane approach to coal extraction." —BH

The realities of world trade and global politics today demand that achieving a high degree of energy self-sufficiency be this nation's foremost goal . . . We are told that national policy, and indeed the national welfare, requires the speedy creation of a coal-based synthetic fuels industry, which in turn will require use of enormous Western coal reserves which can only be extracted by surface mining. . . . Any coal-based synthetic fuel plant requires a huge coal deposit committed solely to the production of synthetic fuel. These plants must operate from 20 to 30 years before costs can be amortized, and no prudent corporation or government would engage in such an enterprise unless a fuel supply can be guaranteed for that period.

Carl E. Bagge
President
National Coal Association

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