

The Environmental Bi-Weekly

# High Country News

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**\$41,000 an acre**

## Oil Shale Fever Rises in West

by Bruce Hamilton

Oil shale fever, the anticipation of gleaning great riches from "the rock that burns," dates back to the 1920s. Development never got off the ground for the early oil shale prospectors, and the speculators that followed them experienced the same frustration.

In 1968, then Sec. of Interior Stewart Udall decided to try "testing the industry's bona fides" by offering an oil shale tract for lease. There were no oil industry takers. A few low bids were offered including a \$625 bid from a man in Oregon. All were rejected since the shale oil they were bidding on was worth billions if it could just be unlocked from the rock.

On Jan. 8, 1974, the Department of Interior tried again. With the present shortage of crude oil, the government felt the time was ripe to start tapping the 600 billion barrels of economically recoverable shale oil on the public lands in Colorado, Utah and Wyoming. Industry agreed this time.

The first of six tracts offered brought a bid of \$210,305,600 for a 20-year lease. This unexpectedly high offer for a 5,089 acre tract took almost everyone by surprise. The second highest bid was \$175,001,190.

If Interior accepts the high bid, Standard Oil of Indiana and the Gulf Oil Co. will be the proud lease holders of a piece of Colorado's Piceance Basin. The land involved is expected to be developed by an open-pit mine at a rate of about 70,000 tons of oil shale daily by 1978.

In the coming months Interior will offer five more tracts — one more in Colorado, two in Utah and two in Wyoming. This could be the start of a new era of energy production. It could also signal a new wave of environmental destruction.

### CROSS-EXAMINING THE CASE FOR OIL SHALE

The Institute of Ecology (TIE) is a prestigious federated system of 65 universities and research centers located throughout the Western Hemisphere. Scientists and technically trained people from throughout the system engage in a broad spectrum of research and oversight in a number of environmental concerns. Recently, the Institute's Environmental Impact Assessment Project reviewed the **Final Environmental Impact Statement for the Prototype Oil Shale Leasing Program**. The Project is funded by the Ford Foundation to "develop scientific critiques and substantive guidelines for environmental impact statements."

Scientists from universities and institutes across the country prepared the scientific and



Over \$41,000 an acre. That's the leasing price of land in Colorado's Piceance Basin if the latest bids for the first oil shale tract are any indication. The reason for this high value is locked up in the rocks that outcrop in the photo above — shale oil — and billions of barrels of it. To a country still recovering from the shock of the Arab oil embargo this unconventional source of energy may seem worth the high cost of development.

The photo shows private land along Parachute Creek on the south edge of the basin. The area has been the location of two private pilot oil shale plants. One of these private operations, the Colony Development Operation (a consortium of Atlantic Richfield Oil Co., The Oil Shale Corp., Cleveland-Cliffs Iron Co., Standard Oil of Ohio and the newest member, Ashland Oil Co.), is expected to lead the way and start construction of the nation's first major commercial oil shale plant this year. The Colony mine would be located further up the drainage. The retort and waste disposal site is expected to be on the mesa top.

Photo by Hubert Burke

policy review of the oil shale impact statement for TIE.

They feel that energy alternatives to the government's proposed oil shale leasing program were "neglected on the basis of incomplete information and unsubstantiated assumptions."

The TIE report says that, "The EIS fails to distinguish between energy need and energy consumption. The statement's projection of energy consumption may well be an estimate of what could be consumed by a given date, but is neither an estimate of our requirements nor a prediction of what will be consumed. It is therefore misleading to imply, as does the final environmental statement, that we need one million barrels a day of oil from oil shale by 1985

unless proven otherwise. Yet this is the Department's approach."

Another sorry aspect of the EIS, according to TIE, is the treatment of energy conservation. The EIS characterizes most energy conservation measures as requiring "intensive social and legal changes." TIE points out that, "the obvious difficulties inherent in attempting to accommodate an almost 50% increase in per capita energy consumption between 1970 and 1985 seem astronomical in comparison to the rather modest efforts at energy conservation which could lessen or prevent that increase."

Interior maintains that "long periods" of time would be required before conservation measures could have a significant impact.

TIE answers this argument by noting that  
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# HIGH COUNTRY

By Tom Bell

Each day the mail brings in one item or another of news which makes you shrink just a little more inside. And then you have the experience of running into intelligent-enough-acting people who are totally ignorant of reality. Compounding the problem is a lack of credibility — of our President, of politicians, of the news media, of oil companies, of authority of almost any kind.

It is a strange, almost alien, situation in which we now find ourselves. We may be on the very brink of one of the most revolutionary and catastrophic eras of human history. And yet the paradox of this situation is that we now find ourselves at the highest culmination of man's ingenuity and resourcefulness. We may go, almost in the twinkling of an eye by historic measure, from the space age to another dark ages.

Telltale signs are all about us. Yet, we refuse to believe. William Simon, probably one of the most credible men in Washington today, says our only way out is through a change in lifestyle. The World Bank says that our overweening dependence upon oil will drag the world down in economic collapse. **Limits To Growth** is looked upon by most businessmen as an overly-publicized piece of science fiction. **Blueprint for Survival** is considered by many to be a sorry hoax. We do not believe!

Those of us who do believe our present course is a suicidal one have an almost impossible task to convince those who don't. (If I thought it **absolutely** impossible, I would seek out a hermitage tomorrow.) But we now have many events which will help our cause.

The ranks grow daily, of dedicated scientists, of enlightened politicians, of knowledgeable people in government, and of businessmen who see unending shortages. The facts will convince many others in the months ahead.

Those of us who do believe there is rough going in the months and years ahead have an advantage. We are already philosophically prepared for the worst. Psychologically, it may be a different matter for we have no idea of how bad it might get.

I was only a young boy when my parents suffered through the dark days of the Great Depression. I remember the worries of my father in trying to support a family and save his land. I remember the frugalities and the utter delight of even the smallest luxury. Ironically, those luxuries are today's ordinary items.

I was a senior in high school (1940-41) before we had electricity in our ranch home. I carried bath water from the creek in two buckets. I earned enough from my trapline to buy my high school graduation suit from a mail order catalog. In short, it wasn't easy but I am prepared to go back to it.

Our drain on the world's resources was almost infinitesimal. And in a finite world that is the way it is going to have to be if the human species is going to survive for a few more generations.



## Letters

Editor:

It is with growing dismay that I find more and more accounts recently of efforts directed toward conversion of animal manures into fuel gas or oil. Your December 21 issue carried, apparently with your blessing, two such accounts: "Montana Men Make Methane" and "Colorado Senator Peter Dominick Research Bill."

On first thought this type of conversion may seem commendable, but in actuality it is deplorable. The return of these "wastes" to our soils, in the long term, is of absolute necessity in the maintenance of soil structure and fertility. Return of these wastes (and indeed our own body wastes) to the soils of the world would yield economic benefits worth many, many times their converted value in gas or oil.

For the past few tens of years we have been ignoring this recycling process, for short term and short sighted expediency. But, just as in our present "fuel crisis," our short sightedness is about to catch up with us. Instead of encouraging the conversion of these basic elements of soil maintenance and food production into a much less productive substance (itself mainly to be wasted) we should be encouraging the basic and proper use of these extremely valuable products.

Would you encourage the conversion of 50 lbs. of hamburger into 2 lbs. of filet mignon? Or, more appropriately, 50 bushels of wheat into 5 gallons of jet fuel? Certainly not. Then why convert a ton of tremendously valuable cow manure into a few gallons of oil, mostly to be wasted in further conversion into energy?

It is much better that we direct our efforts into encouraging the proper beneficial use of all animal wastes, before these experimental projects reach their ultimately wasteful conclusion and can not be redirected. As a geologist, I am convinced that we are going to regret very soon and very deeply our interruption of nature's return of organic materials to the soil. The impending "food crisis" soon is going to dwarf the "energy crisis" partly because of our thoughtless and ignorant waste of organic materials, with consequent soil depletion.

Respectfully submitted,  
Louis A. Bibler  
Geologist  
Kalispell, MT

P.S. For every such criticism, your publication deserves a hundred commendations.

Editor's note: We couldn't agree more with your contention that organic materials should be returned to the soils. However, there are realities that we must also deal with. The huge feedlots of Texas, Iowa and even Colorado concentrate numbers of cattle from the far-flung ranges of cow country. It would be unfeasible to haul the tonnages of raw manure for any distance out to farmlands. But a methane digester reduces the bulk and concentrates the nitrogen-rich organic material in manure to manageable proportions. (It might even be dried and bagged but I am not sure such a technology has been worked out.)

You might be interested in reading of methane-organic agriculture technology now being worked out on a farm in Indiana. **Environment Action Bulletin** (33 E. Minor St., Emmaus, PA 18049), Vol 4 No. 50, Dec. 15, 1973, carries a very interesting article entitled, **An Organic Answer to the Fuel Shortage**.

The methane digester is a way of capturing gaseous materials of a relatively high energy content (700 BTU's per cubic foot) which are normally lost into the atmosphere as manures decompose. You still have an organic residue which can go back on the soil. The same process could be used in treating human wastes and returning them to the soil.

\* \* \*

Dear Editor,

I feel compelled to write in refutation of a statement printed in the Nov. 9 issue. I refer to the inset quoting Daniel Luten, "I am convinced that no one under 30 has ever turned off an electric light."

I consider myself at 25 to be well under 30, and was brought up under conditions Mr. Luten attributes to an "older generation." In fact, my senior year at college, my American roommate and I were shocked at the manner in which our European roommates wasted electricity. Not all of us believe that electricity is free.

Kim Clegg  
University of Hawaii

# Guest Editorial

Reprinted from the DESERET NEWS, Utah, Jan. 10, 1974.

## Dark Mornings Save Energy

For all those mothers of school-age children who are wondering how Daylight Saving Time helps save electricity, a government scientist has come up with some answers.

Dr. Douglas Bauer, an expert on the matter, says it has to do with peak electrical loads. Energy usage, he says, isn't constant during the day, but hits peaks and valleys during a 24-hour cycle. One of those peaks usually occurs during late afternoon, while a valley occurs in the morning hours. Electrical companies normally use their most efficient generators as much as possible to maintain power during most periods

of the day, but must cut in their least efficient generators to boost power during peak periods.

Shifting an hour of daylight to the evening hours cuts down the need for electricity during a peak period and reduces the likelihood of having to use the less efficient generators.

"Even if the amount of savings in the afternoon were only equal to savings in the morning, it's more important to save it in the afternoon," Bauer says, "because the demand on electrical systems in the country tends to peak in the afternoon."

Bauer, who is deputy assistant director of re-

search for the Office of Energy Conservation, says daylight time could cut the nation's demand for heat and electricity by one to three percent. The Edison Electric Institute estimated daylight time during World War II saved substantial amounts of coal. And the energy office figures it could save 150,000 barrels of oil a day this winter.

Since DST helped save energy during World War II, it should also be useful now. If anything even approximating the anticipated savings materialize, it will have been well worth the inconvenience.

\* \* \*

"Mobil contends that pollution control equipment and convenience devices on automobiles are responsible for a large part of this year's increase in gasoline demand. Undeniably, emissions control devices reduce gasoline mileage for some cars. This loss has been about 10 percent for the average on all 1973 vehicles as compared with the average of all models for the last 10 years without emission controls. Small cars have shown no loss at all, but large cars show losses up to 18 percent.

But other factors have had an even greater impact. Air conditioning, in addition to adding to vehicle weight, can cut fuel mileage up to 20 percent depending upon weather and traffic conditions. Weight is another factor to be considered — a 5,000-pound car consumes twice as much gasoline as a 2,500-pound one and the trend has been toward heavier automobiles. Between 1962 and 1972, even with a rise in the number of American-made compacts, average domestic car weight increased from about 3,500 to 3,850 pounds."

— John R. Quarles, responding to a Mobil Oil advertisement

Dear Tom,

Three cheers for Arabia! They are forcing us to search for other energy sources, and we ought to have been about that years ago. The bad side is going to be unremitting pressure to tear up beautiful country to strip mine coal and oil shale. We ought to be far sighted enough to see that these, too, are limited resources, and ought to be used sparingly if at all.

I don't want to see any more country strip mined than is absolutely necessary, and only that if there are adequate arrangements made to restore the mine when the mineral is exhausted. So far, I haven't seen any. Montana's is probably the best, and it doesn't go far enough. I haven't read of any Kentuckians or West Virginians who thought strip mining was a good thing. Even underground mining is bad enough. Remember those cave-ins at Rock Springs? Underground mining is quite likely harder on the people doing the work, too.

In my work, I occasionally get to see papers that seem to me to be important. There is quite a bit of solar, and geothermal experimenting going on here now. I was glad to see wind power mentioned in the last issue of **High Country News**. This is a source that we are almost completely overlooking. We are using less wind power now than we were back in the 1930's.

Once, when I was off on one of my frequent rambles pointing out the possibilities of using hydrogen as a substitute for petrochemical fuels, I got it pointed out to me that hydrogen is an energy-losing proposition, that is, if it comes from the decomposition of water, you give more energy than you get. I responded with an off-the-cuff proposal to use wind machines to generate the electricity to decompose the water. You can store the hydrogen. It is hard to store wind.

I know that we have many problems to whip before we have a truly useable system based on hydrogen, but I'm not alone in advocating it, and at least they are spending some money now to investigate far enough to find out how many benefits might be available in such a system. It could make us independent of Arab oil. If we use our petroleum for lubricating oils and greases first, re-use what we are throwing away, and develop machines that don't take so much of whatever we use, we will be able to get along for

a long time to come. We ought to be getting all the energy we can get out of our garbage dumps, too. Funny, though, in this area it is the skyrocketing cost of land, and the evaporation of suitable landfill sites that are pushing the issue, rather than the energy crisis.

Bill Fry  
Riverside, Calif.



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## Editorial

### The Faith Gap

Watergate may someday be judged as one of the most damaging episodes in America's long political history. But history will not weigh the consequences of dishonesty in high places half so much as the loss of credibility in government.

Congress is now returning to Washington for the session which begins next week. It is widely reported that anti-gasoline rationing sentiment is so high that Congress may reject it outright. If rationing is rejected, it could well be the deciding factor which would determine whether this country is plunged into a searing depression or not.

Mr. Nixon may well have committed one of his most grievous errors (among many) when he failed to act firmly and decisively on rationing and other energy matters. Already so lacking in credibility that the country does not believe him when he says there is an energy crisis, he will sooner or later have to reverse himself on the need for rationing. When he does, he may well have cast the die for his expulsion from office. Where dishonesty could never have accomplished the fact, credibility will do so in a burst of hate and fury.

—TB

# Oil Shale Fever...

(Continued from page 1)

"oil shale development will be far more difficult to accomplish within a short time than will conservation measures. Even a fraction of the savings discussed by the Office of Emergency Preparedness as attainable by 1980 (OEP predicts we could be saving 7.8 million barrels a day by 1980 without great hardship) would obviate the 'need' for one million barrels of shale oil by 1985."

The TIE review also made some interesting observations on supply alternatives to oil shale. Interior went to great lengths to discredit alternate renewable sources of energy as exotic, unconventional and insignificant. TIE says, "It is difficult to distinguish oil shale from other unconventional sources of energy . . . Oil shale technology for the most part is in its infancy and at the very most will contribute one million barrels of oil per day by 1985 — over a decade away."

In their review TIE showed how Interior compared the optimistic 1985 projection for oil shale production to a demonstrated existing capacity for geothermal generation to discredit geothermal. The proper comparison, TIE maintains, is 298 mw of existing geothermal power in 1973 to zero barrels shale oil per day in 1973.

TIE concludes that producing one million barrels of shale oil per day by 1985 "is no more likely to occur than reductions in forecast energy demand and/or development of other 'unconventional' or conventional energy alternatives, and in some cases is even less likely."

## TOO MUCH WATER

It takes a lot of water to change oil shale into shale oil. A single commercial oil shale operation would consume at least three million gallons of water daily. A 100,000 barrel per day plant and its associated urban development could consumptively use 13-20 thousand acre-feet of water per year.

Ordinarily the high water requirement of the prototype program would be cause for concern among other water users in the region. This may not be the case in Colorado's Piceance Basin, where 80% of the high grade oil shale reserves are located. The Piceance Basin, despite its semi-arid climate, is blessed with a superabundance, in fact an overabundance, of deep ground water.

But some of the ground water reservoir could actually be more of a curse than a blessing. Though the prototype operations in the basin may have an adequate supply of fresh water, the disposal of saline waste water encountered during mining operations will be a major problem. A 250,000 barrel per day plant would have to dispose of 25-35 thousand acre-feet of waste water per year. This waste water is three times saltier than sea water and carries about 350,000 tons of dissolved solids per year. That figure is 10% of the total dissolved solids carried by the Colorado River in 1957.

All the data on the ground water situation is still not out in the open. In Nov. 1973 the Colorado Open Space Council (COSC) uncovered documents and correspondence indicating that there is 10 times more ground water in the Piceance Basin than previously believed.

The Department of Interior, the government agency that is leasing the public's oil shale, had reported in the **Environmental Impact Statement for the Prototype Oil Shale Leasing Program** that there is 2.5 million acre-feet of ground water in the basin. Suppressed data uncovered by COSC revealed that there may be 25 million acre-feet present.

Last April, Dr. V. E. McKelvey, U.S. Geologi-

cal Survey director, came across the ground water report and called public dissemination of data "urgent." The data was not made public because it was regarded as confidential "resource data" and not "environmental data."

Ms. Carolyn Johnson, a spokeswoman for COSC, said the information could affect plans to use and store water from streams and rivers, alter the economics of mining oil shale and increase water disposal problems. "For all we know it may be impossible (because of the ground water) to mine in some areas of the Basin," said Ms. Johnson.

What does one do with all that salty water? No one is really sure. The EIS says it would be no problem to reinject it back into the ground. The Institute of Ecology (TIE) in its scientific and policy review of the EIS on oil shale questions this easy solution. TIE points out that "injection wells have been tried experimentally in various parts of the United States and only in exceptional cases have been found to be satisfactory."

Another solution posed by the EIS is demineralization of the waste water. The EIS reports, "Desalting technology is well established for waste waters of the type that may need to be treated." TIE answers, "Desalting technology is indeed available, but is used in practice in only a few places in the world. The cost, in capital expenditure for the plant, in power requirements, and in additional expense of brine disposal, could offset the benefits hoped for in the oil shale operation." (Emphasis added.)

One last ditch approach to waste water disposal has been suggested. Industry representatives are now seriously talking about taking all the waste water produced by mining operations in Colorado and piping it to the Great Salt Lake in Utah.

## THE MORE LUNCH BUCKETS THE MERRIER

Much to-do has been made about the Denver Research Institute's study on the social and economic impacts of oil shale development in Colorado. The projected growth for the area is so startling that you either quote the figures and sound like an alarmist, or you dismiss the whole study as hogwash.

The DRI study shows the present population of Colorado's tri-county oil shale region as about 78,200. Even without oil shale development, the study predicts the population will jump to 148,000 by 1987. With intensive development (1987 production of 750,000 barrels per day of shale oil on public and private lands) the population could reach 310,000 by 1987.

Rifle is perhaps the most important town in the region. It is expected to become a major growth center. In many ways that prediction is already coming true.

Speculators have already begun to take over the economy of Rifle. The First Colorado Corporation, based in Aspen, Colo., has bought up an entire town block. The corporation has proposed constructing an office building for oil shale businessmen in place of the Winchester Hotel where President Theodore Roosevelt once stayed. Bill Dunaway, an Aspen publisher and businessman is purchasing the Midland Hotel in Rifle. "This town was slowly dying over the past 10 years," said Dunaway. "The trend has to be reversed."

Not all the new growth glitters like the proposed shining new office building in downtown Rifle. The Dick Winters Construction Co. of Colorado Springs has plans for a 300-unit mobile home park on the outskirts of town. Robert Meisner, president of the Rifle Chamber of Commerce is all for this kind of development. "When you need quick housing, how do you get it? You bring it in on wheels, that's how," he said.

Most of Colorado's concern for the Rifle area seems to be coming from environmentalists on the other side of the Continental Divide. "You hear those environmentalists in Denver yelling their heads off about what we need in Rifle," said John King, owner of the Shaler Motel. "Well the only thing this town needs is more lunch buckets — lots of 'em."

Pat Halligan, an administrator with the local five-county Council of Governments, feels the lunch buckets are already marching in, and he's worried.

The school system has begun to feel the crunch, he said. Other public facilities will also be taxed. "People are asking how they are going to prepare for all that," said Halligan. "Finally the town is in no position to meet that kind of development."

Somehow in the bustle and excitement of impending development, the environment that has sustained Rifle's residents for so many years seems largely forgotten. One observer feels Rifle's attitude may be summed up in the words of Allen Koenke, the town banker, "The scenery out my front window may be great, but I can't eat it."

## COLORADO PREPARES FOR THE OIL SHALE STAMPEDE

With the sudden growth potential for Colorado's oil shale country looming in the future, the politicians are scrambling for a way to soften the initial blow to the local and state economy. Under the 1920 Mineral Leasing Act, the state is entitled to 37.5% of the payments received by the federal government for oil shale developed within its boundaries. This income, from bonus bids, land rental and royalties, is handed over to the states to offset development impact. Under existing Colorado law, the federal money is returned to local counties in the value of \$200,000. Money over that amount is diverted to the state general fund for public schools on a statewide basis.

This maze of money transfers leaves local and state planners unable to act. No one knows how much money will be available or when it can be expected. Royalty payments may not start coming in for 10 or 15 years. Even then, the payments may be credited against development and operational costs making the state's share negligible.

The local communities need to start getting ready for the boom now. The maximum revenue they are allowed, of \$200,000 at some unforeseen time, will hardly cover the cost of one fire station or hospital. It has been estimated that Colorado's oil shale region will need 239 new school rooms at a cost of \$60-\$70 thousand each. These may be paid for by the swollen general fund for education. But how will the other public facilities be financed?

Colorado Gov. John Vanderhoof hopes to solve the problem by creating a reserve fund. He proposes to change the state law so that 37.5% of the state's share of oil shale revenue can be set aside for such extraordinary needs.

State Rep. Dick Lamm, a gubernatorial hopeful and a leading environmentalist, says he will seek a severance tax on shale oil at the Colorado General Assembly this month. A tax of 30 to 50 cents per barrel would compensate the state for depletion of its natural resources and the social burden that extraction places on public institutions. Lamm's major objections to relying solely on Vanderhoof's oil shale fund plan are: 1. the fund may not be large enough and, 2. the kick-back comes only from federal leases. Development on private land would be relatively unaffected by Vanderhoof's scheme.

## STILL ANOTHER BLIND SPOT

In their rush to tap the oil shale riches of Colorado's Piceance Basin, the Department of

the Interior has overlooked the existence of 94 archaeological sites in the area. Eleven of these sites are on so-called tract C-a, a 5,089-acre tract that has just been leased to oil companies for an open pit mine. Another 83 are on proposed rights-of-way and disposal sites.

The discoveries point out still another inadequacy in the environmental impact statement prepared by Interior on their oil shale leasing program for the region. Interior had reported that no archaeological sites existed in the area. To substantiate their claim they checked with regional archaeological study centers in Denver and Boulder, Colo. and Lincoln, Neb. Interior's reliance on secondary research is questionable since the EIS admits that "archaeological study of the oil shale areas has been very limited."

Calvin Jennings, the archaeologist who studied the area last summer, said little is known about the historical past of the Piceance Basin. "Consequently," he said, "any damage to sites in the area has a high potential for seriously impairing our knowledge of the Basin's prehistoric and more recent occupations."

Jennings made his study known to Fred Glover who is directing a study on behalf of the state of Colorado, industry, and the federal government. When Glover learned of the sites he wrote Interior Secretary Rogers C.B. Morton asking him to reach a decision on salvaging the discoveries. He also sent an outline of Jennings' report to the Bureau of Land Management (BLM) which administers the oil shale lands in Colorado. The Colorado Open Space Council (COSC) got wind of the study and asked the BLM to release it. BLM complied.

COSC has requested that the sites be investigated further. If any prove to be of great value they must be preserved under the Antiquities Act of 1906.

The Denver Post reports that the whole affair has Tom Ten Eyck, Colorado natural resources director, very upset. He views this latest disclosure as "a tempest in a teapot."

"If they are important sites," Ten Eyck said, "we will by all means deal with them under the Antiquities Act. If they aren't, we'll tell the lease holder to be careful."

Ten Eyck would have preferred to keep the study secret. There are people who would seize on a "dead eagle or a (pottery) shard and say, 'here's the end to the oil shale program,'" he said.

#### WHAT WILL SHALE OIL REALLY COST?

The National Audubon Society has found the federal oil shale leasing program "far too awesome to be decided by a promotional agency (the Department of the Interior) and this inadequate EIS (Environmental Impact Statement) for prototype oil shale development." As a result of their in-depth review, Audubon urgently recommends "that the entire question of oil shale development (now or in the future) be thoroughly reviewed first by the National Academy of Sciences, and then by Congress."

The Audubon researchers, C. Eugene Knoder and David Sumner, found the EIS "diffuse and evasive." Concentrating on the wildlife resource and revegetation of mine wastes, the two discovered "acute substantive inadequacies" and, in one case, incorrect data.

The sections covering Colorado's famous Piceance Basin mule deer herd, estimated to be the largest herd in the United States, were "misleading" and filled with "unsupported quantitative disclosures" according to the researchers. Where population figures were given, they were in the form of broad estimates (in this case the herd was estimated at "30,000 to 60,000"). When speculating about the impact of development on the deer herd, the EIS predicts a 10% reduction as a minimal figure and gives no maximum figure. The EIS does not

explain how the minimum figure was derived.

Here it is interesting to note that the Colorado Division of Wildlife (which had no part in providing the above estimate) predicts a 75% to 80% reduction in the herd by the year 2000 because of oil shale development.

Very little attention is given to rare and endangered species which are of major concern to the Audubon Society. The EIS maintains that there are four active golden eagle nests in the Piceance Basin. Knoder and Sumner say a quick check with the Colorado Division of Wildlife would have produced the results of a recent raptor survey in the area which uncovered over a dozen active nests.

Another bone of contention is revegetation. The oil shale lease calls for the lessee to "restore the vegetation of disturbed areas by re-establishing permanent vegetation of a quality which will support fauna of the same kinds and in the same numbers as those existing (prior to development)."

"At a glance, this stipulation appears promising," say Knoder and Sumner. "However, elsewhere, the EIS notes: 'Re-establishment of wildlife food and cover on disposal piles may take from 20-70 years . . . It has not yet been demonstrated that spent shale piles can be revegetated with plant communities that will adequately supply the needs of the fauna presently found in the region.'"

The Audubon researchers were especially disturbed by Interior's plans to dispose of waste oil shale by filling in the region's canyons. "Canyon burial is an environmentally disastrous, unimaginative, and unacceptable solution to the surface disposal problem; even to propose such a backward design in this decade of environmental awareness suggests that environmental considerations had no part in its invention," write Knoder and Sumner.

The two note that Superior Oil is promoting an oil shale development plan that calls for removing the sodium minerals as well. This process enables 100% of the waste shale to be returned to the underground mine. Interior has

ignored the Superior multiple-mineral process thus far.

The waste dumping plans also have Rep. Charles Vanik (D-Ohio) up in arms. In a letter of complaint to the General Accounting Office, Vanik suggested that Interior had overstepped its authority by allowing the disposal of waste on public lands adjoining the lease sites.

Vanik said the present plan "allows private, profit-making industry to use the public's lands as garbage pits for their spent-shale wastes at no cost to the industry."

Legislation has been introduced by Vanik to require that wastes be dumped "only on the leased tract land." Violators could lose their oil shale leases.

The Bureau of Land Management intends to withdraw from mining 6,560 acres of public lands in the Piceance Basin to clear the way for oil shale waste disposal. The six canyons that make up the withdrawal might be used as dumps for 20 years or longer. These canyons are not included in the mine lease since the 1920 Mineral Leasing Act sets the maximum size of a lease at 5,120 acres.

Knoder and Sumner conclude that the leasing program amounts to a dedication of 8,000,000 acres of public lands to the private petrochemical industry. It establishes a "de facto national energy policy committing this nation to dependence on fossil fuels for decades." Furthermore, it establishes in part, a "de facto land use policy committing much of the lands and waters of the Colorado River Basin to a vast and potentially destructive experiment in energy mining."

The oil shale industry would have "unbelievable environmental impacts — a two-million-barrel-a-day industry would be like digging a Panama Canal once a day."

Rollie Fisher      Secretary-Engineer  
Colorado River Water  
Conservation District



The Piceance Basin mule deer herd, estimated by some to number 60,000, is the largest in the country. Ten per cent of Colorado's annual harvest comes from this one herd. Heavy mining traffic, an enormous influx of people, and waste disposal plans that would pave critical winter range with spent shale threaten the herd's future. The Colorado Division of Wildlife predicts that 75% to 80% of the herd will perish by the year 2000 if oil shale development occurs. This is part of the cost of a barrel of shale oil and our high energy lifestyle.

Photo by David Sumner

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Nathaniel Burt, Yarmouth, Mass  
Mr. & Mrs. Dave Thomas, Wilson, WY  
Justice & Mrs. Wm. O. Douglas, Washington, D.C.  
Anthony Criscoula, Lakewood, CO  
Mrs. Edson W. Spencer, Long Lake, MN

It is time for another report to our readers — the stockholders. As we left one year of trials behind and entered another of great uncertainty, we felt you should know our situation.

It has now been well over six months since the paper was rescued so dramatically by so many of you. Expressions of interest and concern, and contributions in support, still come rolling in. We are very grateful.

Friends of High Country News who have contributed beyond a single subscription are listed above. These are contributors since our last listing of Friends in the May 25, 1973, issue.

Three Friends who pledged monthly contributions have faithfully continued to send checks. They are Charles A. (Bill) Bishop of Polson, Montana; Ken Morgan of Kemmerer, Wyoming, and Dr. and Mrs. Howard Smith of Pinedale, Wyoming. Still another Friend, Dick McCutchen of Columbus, Ohio, regularly sends on to us the honorariums which he receives from speaking engagements. J. David Love of Jackson and Laramie, Wyoming, contributed a handsome honorarium.

The old, dear friend, Carroll R. Noble of Cora, Wyoming, passed over the Great Divide in 1973. And in memory of a man who had done so much for conservation in Wyoming and the West, \$340 was sent as memorials by a number of his friends.

Last but not least, full credit has never been given to three persons who put considerable money into the paper and kept it alive when there seemed to be no one else to whom to turn. These were in the months before the final crisis of last spring appeared. Those three are Mrs. Emily Stevens of Aspen, Colorado; Mrs. Margaret E. Murie of Moose, Wyoming, and our own staffer, Marge Higley. Too much credit has been attributed to me as editor and not enough to others whose role was equally important.

I must personally apologize to so many of you

who sent contributions but who did not receive an acknowledgment. That was a task I set for myself but in which I did not follow through. I am most sorry.

Financially, it would appear we are very secure in the near term. We closed out 1973 with no debts (except to former stockholders in the corporation) and with \$14,739.39 in cash assets. We continue to carry \$10,000 of that in a time certificate at our local bank.

However, looking at the longer term, our situation is more uncertain. Our average monthly expenses are \$2,786. Our average monthly income (as determined from July through December, 1973) is \$2,187. The difference of \$600 per month can only be made up from our cash reserves. That would mean a projected life of the paper, assuming no change in cost or income status, of about a year and a half from now.

There is no way we can trim costs further. The likelihood is that they will continue to rise, mainly through costs in printing and postage. I continue to draw \$400 per month salary; Bruce, Joan, and Mary Margaret draw \$300 per month each, and Marge on part-time draws \$200. All other costs are pretty well fixed items which we cannot change except in slight degree.

Now, we are caught between the energy crisis and a paper shortage. Those can only become more acute in the months ahead and could lead to the demise of a number of small papers. There is direct bearing on **High Country News** because we are now drastically limited in the circulation we can attain.

Our thought now is to watch the situation carefully for the next six months and see how

drastically we (and the whole country) are going to be further affected. If it appears possible that we would be able to continue somewhat as we are now, we have an alternative which could help support the paper. The plan is to establish a tax-deductible, non-profit **High Country Research Associates**. The research group could do much of the traveling and researching which is done to develop many of our articles. One of our staff could do this, making information available not only to **High Country News** but also to other regional newspapers. Unless the country is plunged into the depths of another great depression, this could be a way to maintain our circulation at between 3,000 and 3,500 and keep the paper going.

Our circulation now is 3,184 and slowly rising. That is up considerably from the 2,044 on the same date one year ago. We continue to carry on a circulation campaign, although somewhat limited.

I can't tell you how much better our situation has been with financial problems relieved and additional staff to put each issue out. Joan Nice and Bruce Hamilton are two competent, dedicated young people who have lifted much of the worry and responsibilities from my shoulders.

Late in the fall, we were able to make one move which saves us about \$100 per month. We went from an IBM typesetter to a Fairchild type-puncher. The IBM was more convenient and had some advantages but was more than offset in cost. Mary Margaret quickly made the transition and has become an expert.

Our situation was rather unique a year ago, and as a result gained national attention. Now, we may be no different than many other small businesses faced with some awfully difficult decisions in the months ahead. We can only trust that leadership in the months ahead will be wise enough to save all our institutions, including small newspapers.



## Council Moves to Protect Land

The following article is a reprint of Montana Environmental Quality NEWS (Vol 1, No. 2, Aug. 15, 1973). We reprint it here in order to indicate the lengths to which the State of Montana is going to learn what is happening to its land. Once that is done, it is indicated that some measures will be taken to protect the land. These are the steps that could well be emulated by other states.

The editors.

Problems resulting from the rapid division of land and the alteration of its patterns of use affect the quality of virtually all environmental resources. Particularly important in this division and alteration of use pattern are recreational and residential subdivisions and transportation and utility corridors. Survey work performed by the Environmental Quality Council (EQC) staff indicates that the interstate highway system alone has preempted about 14,000 acres of land in the Kalispell, Missoula, Helena, and Bozeman areas. Also, approved subdivision plans filed with the Department of Health and Environmental Sciences during the first seven months of 1972 were 22 percent above those filed for the same period in 1971.

Recognizing this increasingly rapid transition in land use in Montana from agricultural to urban, the Montana legislature last session directed the EQC through House Joint Resolution 9 (HJR 9) to undertake a far-ranging study of Montana land use policies and practices. The legislature also mandated the preparation of recommendations and legislative proposals based on the findings of that study to provide for the protection of the land and associated resources that are in themselves such attractive incentives to development. The EQC land use report, recommendations, and legislative proposals will be completed before the 1975 legislative session.

The EQC has initiated work on the statewide study of land use. Parallel to the study of statewide policies and practices will be a review of land use policies nationwide and of Canadian policies relevant to Montana. Major study objectives include determining the present status of land use in Montana, trends and prospects of conversion of that land to other uses, and pressures on Montana's land and associated resource base.

The initial phase of the study will identify existing land ownership patterns and the changes which are occurring in those patterns. An attempt will then be made to determine and gauge environmental conflicts and public cost that may result. This assessment will require the projection of both resident and transient populations and the identification of secondary effects of population growth. The study will include an attempt to devise a formula "for converting numbers of people into demand as acres of land," as a means of measuring external development costs.

The rationale for land use policy will be reviewed in light of existing state and federal statutory regulations. The conflicts and deficiencies which exist among these statutory controls will be identified. Land use control approaches such as taxation and economic incentives will also be examined. Each review will detail the effectiveness of that technique for evaluating environmental conflicts, and its cost.

By this point in the study a picture of Montana's land supply and the demands for it will

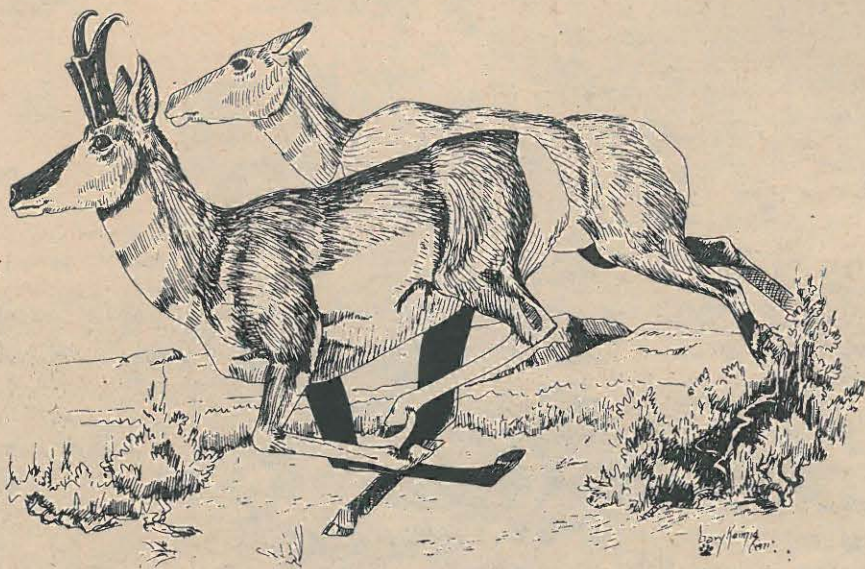
have been developed, along with some information on secondary impacts of land conversion. Various implementation options for control will be developed in view of the statewide picture, detailing in part the tools available or needed, the procedures required to implement various options, and the responsibilities of the governing agencies involved. The options range from the extreme of "status quo" to that of no growth. Legislative proposals for promulgating the various policy options will then be drafted to offer a variety of approaches for legislative consideration.

In addition to the HJR 9 mandate, the legislature requested that the governor appoint an interdisciplinary, interagency advisory com-

mittee. In accordance with this request Governor Thomas L. Judge appointed (July 31) a 13-member Interagency Land Use Advisory Council. The Advisory Council will be working with the EQC in studying Montana's land use problems and in formulating recommendations for the implementation of a land use policy for the 1975 Legislature. Steven Brown of the Governor's Office was appointed to chair that council.

Citizen comment about the format and direction of the study is encouraged.

Help is needed to identify areas suitable for case study analysis. Please address comments to: Fletcher E. Newby, Exec. Director, Environmental Quality Council, Capitol Station, Helena, Montana 59601.



## Stahr Says Environment Needs Money

Elvis J. Stahr, president of the National Audubon Society and a member of the U.S. delegation to the UN conference on the environment last year, has criticized the Nixon administration and Congress for inadequately funding and implementing environmental programs.

In his recent annual report, Dr. Stahr charged that "pollution control programs are understaffed." He said earmarked funds to acquire new national parks, recreation areas and wildlife refuges are being cut and then partially impounded. Dr. Stahr also said that "older national parks and refuges are neglected as operating and development funds lag."

Dr. Stahr warned that "the environmental backlash is alive and well in government and industry ranks." He accused the administration and "a paper-thin majority" of the Congress of teaming up "to put the Alaska pipeline project beyond judicial review under the National Environmental Policy Act, establishing an ominous precedent."

He noted that environmental protection laws are being attacked as too stringent even before they are properly funded or implemented. But, he said, "fortunately, growing numbers of corporate and governmental leaders are showing a willingness and even determination to go to bat for sound ecological values. They deserve our support."

"The environmental movement is falsely blamed for energy shortages and accused of endangering our economic system — even while energy and other companies report record profits," he added.

Dr. Stahr disagreed with those in government and industry who are trying to equate "good environmental housekeeping with economic

stagnation." We can and must have "a healthy, liveable ecosystem along with a healthy, vigorous economic system," he said.

Dr. Stahr criticized the administration for "pressing feverishly to exploit the already depleted traditional energy sources but giving only token lip service to the need for energy-saving programs." Also, he said, "billions of dollars continue to flow into new highways while mass transit programs receive more rhetorical than substantive assistance."

Before becoming president of the National Audubon Society five years ago, Dr. Stahr was a university president and served as Secretary of the Army.

## Fight Energy Crisis With Vitamin C

Vitamin C will not only prevent people from catching colds — as Linus Pauling demonstrated — but will even help fight the energy crisis this winter by keeping everybody's body temperature warmer.

The latest claim for Vitamin C was announced by Dr. Marie Schonbaun, an assistant professor of pharmacology at the University of Toronto. She says that Vitamin C is to the body what anti-freeze is to a car. How it works, she says, is still a mystery, but it appears to have something to do with helping the body achieve better circulation, and consequently, a higher body temperature. So when the fuel disappears this winter and the furnace goes off, just stock in a good supply of everybody's favorite vitamin. : : EARTH NEWS

# MINING the M



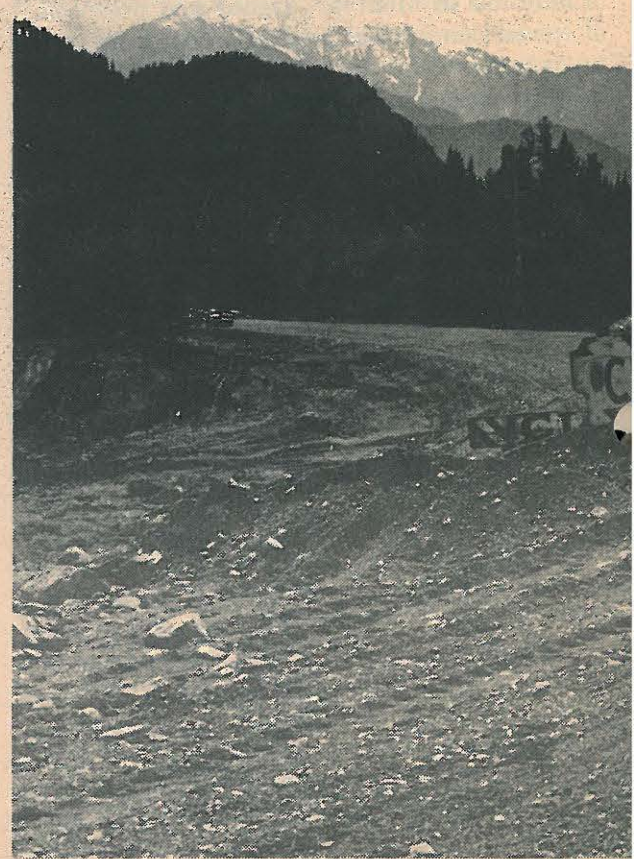
Road on east face of Galena Peak.



An access road into Silvertip Basin angles along the east face of Galena Peak.

Mining ventures in Wyoming are not limited to the stripable coal deposits of the Powder River. Northwest of Cody and just south of Yellowstone National Park, in the high Absaroka Mountains, copper and silver is found. So far the deposits are economically marginal but active prospecting is going on. Several companies including American Chemical and Molybdenum, are interested.

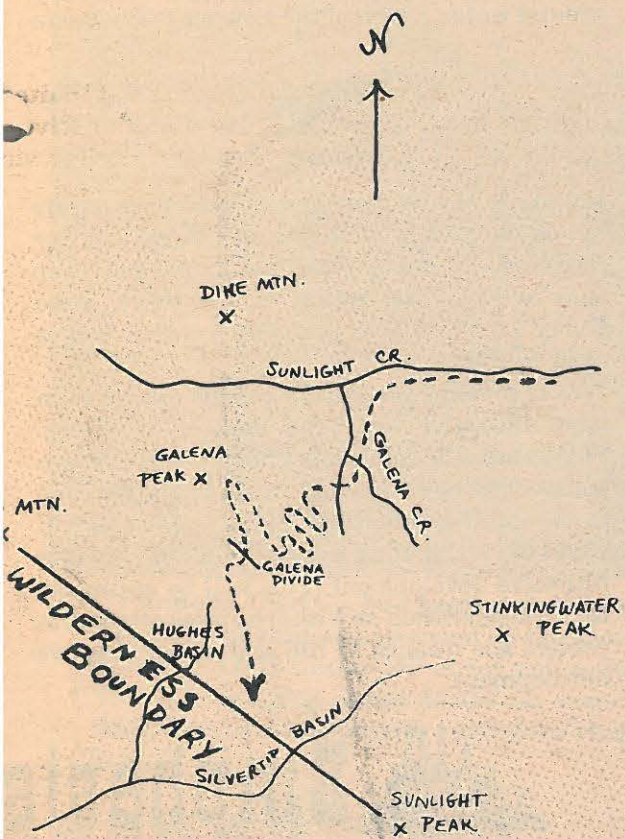
Recently, the Chief of the Forest Service proposed regulations to protect the environment during prospecting and mining operations on national forests. The proposed regulations were printed in the Federal Register, Dec. 19, 1973. Interested citizens can comment on them until Feb. 15, 1974. The Forest Service should be supported in this effort to protect the land. Write Chief of the Forest Service, U.S. Department of Agriculture, Washington, D.C. 20250.



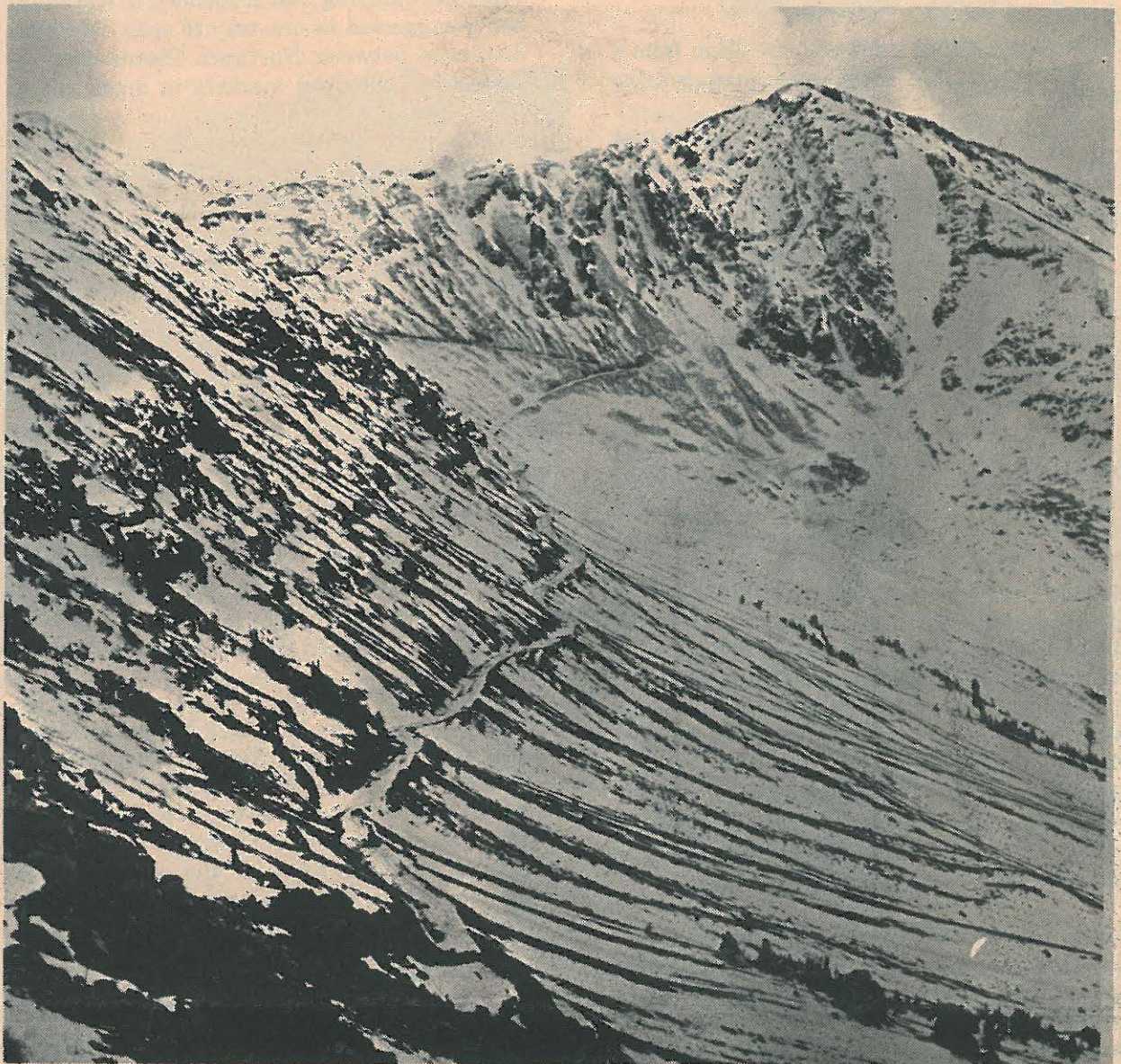
Main access to the high peaks

# MOUNTAINTOPS

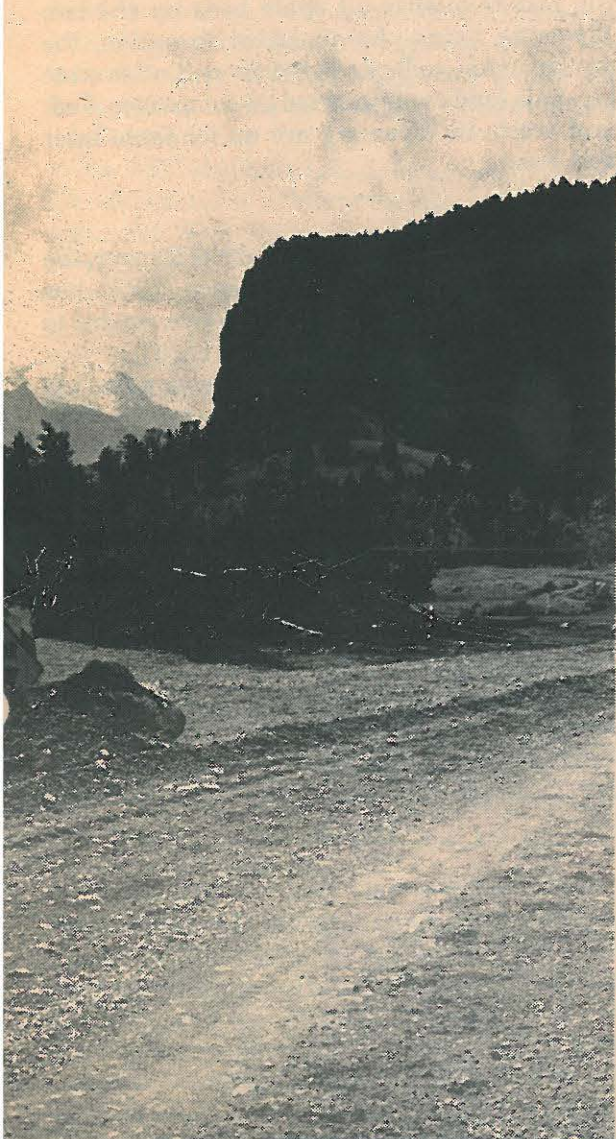
High Country News-9  
Friday, Jan. 18, 1974



s by Lynne Bama



Road into Silvertip Basin, seen from Galena Divide.



ng a road up Sunlight Creek.



Hughes Basin.

# Reckoning from Washington

by Lee Catterall

Some small items that are worth recalling from a year of headlines, lest we forget and take everything too seriously:

A Washington newspaper columnist reported that Sen. Gale McGee "said he will seek legislation. . . which would require federal and postal workers to vote in national elections in order to hold their jobs." Noted the columnist in objecting to such a proposal: "Some may feel like the old lady who, asked before last year's election if she was going to vote, replied, 'No it will only encourage them.'" McGee's office later denied the Wyoming senator ever said people should be forced to vote.

\* \* \*

Last June, Sen. Clifford Hansen and Rep. Teno Roncalio inserted identical "speeches" into the Congressional Record on their proposal regarding tax treatment of the trona mining companies. It included the following forecast: "The Treasury Department has specifically allowed this (favored) treatment for over 15 years and will allow it through 1970."

Confused by the prediction in 1973 that something "will" continue in 1970, this column asked for clarification: A Roncalio spokesman loyally spent several minutes trying hard to explain his theory of retroactive grammar, stoutly denying there was anything wrong with the statement. Hansen's man quickly acknowledged the speech was one that had been put in the Record "routinely" for years and had never been updated. And the truth shall make you fret.

\* \* \*

After being depicted as a demon who wants to rock Sublette County with atomic blasts to shake loose natural gas, Hugh Steen, president of El Paso Natural Gas Company, complained to residents, "You don't think we want to go up there and spoil your spring, kill your cattle. That's ridiculous. I'm even getting a humanitarian award. From the National Association for Christians and Jews, whatever that is. Ain't that a helluva note."

Apparently feeling likewise maligned, Howard L. Edwards of the Anaconda Company, in his testimony on strip mining, placed himself at the right hand of Steen. "These are the lands where God saw fit to deposit the minerals," Edwards said, "and He has not yet revealed all of His hiding places." Ain't that a helluva note.

\* \* \*

Rep. Craig Hosmer (R-Calif.) has compiled a list of gross national products of the world's 42 largest nations, 50 U.S. states and the District of Columbia, and the 39 biggest multinational corporations. The listings total 132. Wyoming is ranked 132nd. . . but we try harder.

\* \* \*

Having experienced empty gas pumps and barren meat counters, a Wyoming native now living in Washington returned from the state last summer distressed nearly to tears. His complaint: liquor stores in his home town refused to sell Coors beer to anybody who couldn't prove residence in Wyoming. The salesman said some people were smuggling the stuff east, creating a shortage for regular customers.

\* \* \*

A federal official trying to mollify Wyoming ranchers upset about sheep-killing coyotes, suggested — hopefully in jest — that castration might be a good method of coyote population control. A rancher, so it is reported, snapped that coyotes want not to mount sheep but to kill them.



## Slurry Pipelines

# Future Energy Movers

Coal slurry pipelines are slated to become a hotly debated subject in the near future. Pipelines carrying coal suspended in water are being suggested as one way to span the great distances between Northern Plains coal reserves and potential markets in major cities. Right now, there are 381 miles of coal slurry pipelines in operation in the U.S. carrying over six million tons of coal per year. Many more are planned, including a 1,000 mile, 38-inch diameter line that could carry 25 million tons a year.

Wyoming Gov. Stanley K. Hathaway has already spoken out against slurring coal from his state. He doesn't want to see Wyoming's water leave the state. Nor does he want the potential revenue from power plants and gasification plants lost to the states with the load centers.

Two Bechtel Inc. engineers, E. J. Wasp and T. L. Thompson, provide a different perspective in the Dec. 24, 1973, **Oil and Gas Journal**. The two maintain that slurry lines are economical, technologically feasible, and environmentally superior to the available alternatives. They call coal slurry pipelines the "energy movers of the future."

Wasp and Thompson cite the success of the slurry line between the Black Mesa Strip Mine and the Mojave Power Plant (1,500 mw) near Bullhead City, Ariz. The line runs for 275 miles with three intermediate pumping stations at about 80 mile intervals. Over five million tons of coal per year move to the plant by this pipeline. There has been no measurable breaking up of the coal particles in transport.

The Mojave plant is located on the Colorado River because of the large amounts of cooling water needed for thermal power generation. Wasp and Thompson point out that the slurry line "provides about 15% of the plant makeup water requirements." (Water separated from coal slurry replaces some of the water consumed by the cooling process of the power plant. However, the source of the slurry water near the coal fields loses the water permanently.)

The Bechtel engineers compare the impact of mine mouth gasification plants in the Northern Plains with slurry lines to plants near the load centers. They estimate each gasification plant will require a new community of 15,000 people.

"It makes more sense to locate these plants near the load center where the people and the support facilities exist," conclude Wasp and Thompson.

Slurrying coal and then gasifying it uses more water than gasifying the coal on site. Still, Wasp and Thompson see slurry lines as the best alternative for semi-arid regions like the Northern Plains. Their reasoning is that the water consumed by a gasification system is more than that required for a slurry pipeline. In other words, it would cost Wyoming or Montana less water to slurry the coal out of the state than it would to gasify it in state even though the total amount of water used up in the end by all the states involved will be more. They foresee slurrying the coal to water abundant areas where the water consumption impact of gasification would be negligible.

The water requirement figures run like this: If the coal is gasified at the mine site, the figure is 30 gallons per million BTU delivered. It costs 12 gallons of water to deliver a million BTU of coal by slurry pipeline. The water figure drops to 7 gallons if the slurry is an extract slurry (a high BTU coal product which has most of the ash removed and the coal molecules upgraded.)

A coal slurry pipeline for moving 25 million

tons per year would require about 10,000 gallons of water per minute. According to Wasp and Thompson this quantity is only equivalent to the water required to irrigate a 5,000 acre ranch.

One possible source of slurry water is deep ground water. Much of the Powder River Basin



is underlain with deep ground water reservoirs — too deep to be economically tapped by agricultural interests. Wasp and Thompson claim that much of the water for the Black Mesa slurry line to the Mojave Plant comes from a deep aquifer.

"The pipeline is capital intensive rather than labor intensive," say the Bechtel engineers. This means the relatively unpopulated western states that hold the coal could enjoy revenue from capital expenditures in the region and still avoid the social and economic problems of labor intensive development. This will be an important consideration as western states attempt to protect the quality of life and invite massive development.



## Emphasis

in the Northern Rockies

After hearing about the highly competitive bidding for a federal oil shale lease in Colorado (see cover story) Wyoming Gov. Stanley K. Hathaway said he hoped at least a couple of companies were interested in Wyoming oil shale leases. Hathaway said it was possible there would be no interest expressed because of the poorer quality oil shale beds on the two Wyoming tracts. As an added incentive, the governor has indicated that he will offer state oil shale lands to interested oil companies. Federal tracts in Wyoming are up for lease later this year.

— — —

At a nuclear power plant north of Denver, the Environmental Protection Agency (EPA) has left the job of regulating radioactive wastes to the Atomic Energy Commission (AEC).

EPA issued a wastewater discharge permit to the Fort St. Vrain plant last month. The agency had announced that it would regulate radioactivity as well as heat discharge through the permit. But when the AEC claimed its traditional authority to set radioactive waste limits, the EPA backed off. The EPA permit, in its final form, regulates only the amount of heat which can be discharged in the water.

Environmentalists have filed suit in Denver U.S. District Court contending the EPA should set radioactive waste limits. Plaintiffs are the Colorado Public Interest Research Group, Inc., and Colorado Environmental Legal Services, Inc.

— — —

North Dakota State Sen. Francis Barth reported that El Paso Natural Gas Co. is planning three gasification plants in his state. Barth learned of El Paso's plans while on a tour of power plant facilities in the Four Corners area of New Mexico. The plants would be fired by North Dakota lignite coal. El Paso has tested the state's lignite and estimated each gasification plant would require 15,000 acre-feet of water annually.

## The Hot Line

across the country

At their January meeting, the Sierra Club Board of Directors called for a moratorium on additional nuclear fission reactors. The resolution, which passed 9-4, stated that the Sierra Club "opposes the licensing, construction and operation of new nuclear reactors utilizing the fission process, pending:

"1. development of adequate national and global policies to resolve problems resulting from energy over-use and unnecessary economic growth;

"2. resolution of the significant safety problems inherent in reactor operation, disposal of spent fuel, and possible diversion of nuclear materials capable of use in weapons manufacture; and

"3. the establishment of adequate regulatory machinery to guarantee adherence to the foregoing conditions."

Sen. Birch Bayh (D-Ind.) has charged some major oil firms with using part of their "record profits in a massive public relations campaign to deny their true role in contributing to the energy crisis." Bayh and five other members of Congress are joining a public interest group in petitioning the Federal Trade Commission to adopt new rules on energy advertising. "It is absurd," Bayh said, "to subject tens of thousands of small businessmen in this country to rules prohibiting false and deceptive ads, but not to insist that huge, multi-national oil companies adhere to regulations."

The Atlantic Richfield Co. (ARCO) is advocating a phase-out of the oil depletion allowance. Spokesmen for the company called the 22% tax write-off "an absolute battlefield for the industry" and "an albatross around our necks." The depletion allowance was designed to compensate oil producers for using up a finite resource. Critics of the institution feel it is a give away that contributes to the oil companies' inflated profits. Ending the depletion allowance will not shrink the profit margin if ARCO is insisting on an elimination of price controls on oil and natural gas.

Wyoming Rep. Teno Roncalio has called for a joint industry-federal government effort to develop energy resources. He said the effort should be similar to the World War II joint program to develop synthetic rubber.

"It's got to be done in a new direct partnership venture with the government and its people because the government owns the resources. If you go too far in one way you get nationalization and destroy the profit motive," he said. "If you go too far the other way you give away the resources to the big companies."

The energy crisis may be the kiss of death for the fuel guzzling SST-type aircraft. The British government is facing a major decision on when and how to end production of the **supersonic Concorde aircraft**. A majority of British ministers, including the trade and industry secretary, are convinced that rising oil prices have killed the last remaining prospect of overseas sales. The Concorde is a joint English-French business effort. Currently, there are only nine orders (five British, four French) for the 16 Concorde being built.

Harry Perry of **National Economic Research Associates** in Washington feels the **coal industry** can expand to meet the new demand for its product. The nation's present output of 600 million tons of coal a year could be doubled by 1980 and tripled by 1985. This expansion would involve an increase in both strip mining and deep mining. Stripping would jump from present production of 300 million tons to a billion tons in 1985, according to Perry. Deep mining would increase from 300 million tons to 800 million tons.



Peabody Coal Co. has been granted a permit to disturb some 400 acres of land during 1974. The permit was granted by the Montana Land Department for the mining site near Colstrip. Only about 150 acres will actually be disturbed by mining. Peabody posted bonds averaging about \$4,450 an acre. The company says it will actually cost about \$6,500 an acre to reclaim each acre stripped, with other disturbed land costing much less.

## ENERGY



### Great Plains

The Atomic Energy Commission (AEC) is proposing a full-scale **federal strip mine** in eastern Montana. The mine, which might produce four million tons of coal a year, would "demonstrate to the world a national commitment to achieve . . . energy self-sufficiency as soon as possible." The AEC indicated that the federal project might be expanded to include three to five mines in Montana, Wyoming and the Dakotas.

One AEC objective is to demonstrate successful reclamation of strip mined land in the semi-arid West. "A convincing demonstration of successful land reclamation would help greatly to overcome resistance to an expanded surface mining industry in the West," said the AEC in a discussion paper. Social and economic planning for the consequences of coal development was considered inappropriate for study by the AEC.

News of the AEC proposal shocked Edwin Zaidlicz, state director of the Bureau of Land Management (BLM). His agency is already extensively involved in reclamation planning. "If something like this actually happens a lot of work is going to be jeopardized," he said.

Montana Lt. Gov. William Christiansen was disappointed with the AEC's lack of interest in basic reclamation research. "I support any plan for more dollars in reclamation research," he said, "because I don't think we have found all the answers yet. But the AEC was actually resentful of the word research."

The **Michigan-Wisconsin Pipeline Company** has launched environmental studies on **coal gasification** in North Dakota. Environmental studies on the projects, conducted by Woodward-Envicon, Inc., will result in a preliminary impact statement to be filed in Nov. 1974. Michigan-Wisconsin applied a year ago for 375,000 acre-feet of water to feed 22 gasification plants near Lake Sakakawea. The company subsequently amended its application to 68,000 acre-feet for four plants.

Oil shale development in Colorado will demand power from a new generation of **coal strip mines** in the state. Officials of **Utah International, Inc.**, revealed plans for a 6,000 acre strip mine near Craig, Colo., last week. The mine, estimated to tap 98 million tons of coal, will feed a mine-mouth power plant. Water for the operation will come from the Yampa River.

"Depending on how fast oil shale development takes place we may have to provide power to that area," explained a spokesman for Utah International "We have had inquiries from practically every oil company about the availability of power."

Wyoming Gov. Stanley K. Hathaway has announced the formation of a new task force to plan orderly coal development of the **Powder River Basin**. The task force would be headed by Don Brunk, executive director of the State Department of Economic Planning and Development. Other members would include the heads of various state agencies including the Department of Environmental Quality, and Game and Fish. "What we really need is an action plan for implementation of development," said Hathaway. He added that the task force would take the Northern Great Plains Resource Program (a federal regional study) and bring it down to the level of Wyoming.

The **Department of Interior's oil shale leasing program** offers the oil industry "much for little in return," according to two U.S. senators. Sen. Henry Jackson (D-Wash.) and Sen. Lee Metcalf (D-Mont.) have joined the growing ranks of the critics of oil shale. The two senators say they have "serious doubts" that the present lease arrangements will provide necessary answers on the "economic and technological feasibility and the environmental impacts of oil shale development." Jackson and Metcalf were critical of a provision in the lease which allows for federal assumption of extraordinary environmental costs associated with the lessee's operation. They also questioned the legal basis for permitting use of federal lands outside the lease area for waste disposal sites.

# U.S. Caught in Wrenching Change

"We face a time of wrenching change," John Quarles, Jr. of the Environmental Protection Agency told a convention of magazine publishers in Bermuda. Quarles, EPA Deputy Administrator, said, "The choice is emerging with irrepressible force." The "wrenching change" he referred to is, "A time when we must violently turn ourselves around and alter our course lest we plummet into the maws of disaster. And we must act quickly, for we have years of exploitation and neglect to overcome."

Quarles painted a bleak picture of shortages in the U.S. beyond the present energy shortage. "We are at a stage," he said, "where we can truly thank our technology for being able to obtain many of the metals which are still available and mined in this country. Because most of the best sources are now exhausted. Such is the case with the great Mesabi Range of Minnesota which for so many years was our prime source of high grade, direct shipping iron ore. No longer. Low grade ore, which was once considered dregs and discarded, is now being processed for the minerals it contains. And this practice is being repeated around the country."

Quarles shocked many in the audience when he told them point blank, "The simple truth is that we are running out. Running out of pure air. Out of pure water. Out of virgin timber. Out of hydroelectric dam sites. Out of natural gas. Out of quiet. Out of minerals. Out of room. But most of all, we are running out of time. And at an alarming rate. We are literally outstripping ourselves in our headlong rush along the wake of progress."

Many industry and business spokesmen have been trying to pin the blame for the shortages on environmentalists. Quarles refuted this con-

tention. "For several years now environmentalists have been warning of an impending environmental Armageddon," he said. "The handwriting was on the wall, they said. Some of us were convinced, others were not, but most simply ignored the whole thing and continued to get on with the business of living."

"It now appears that the environmentalists are correct. We are heading for a showdown. In facing this prospect, the gravest threat to our ultimate survival and well-being is, I suspect, the average citizen's inclination to ignore the facts and 'get on with the business of living' which we call progress."

## Environmentalists Win Awards

Idaho's Gov. Cecil D. Andrus won the Rocky Mountain Center on Environment (ROMCOE) government award for his efforts to protect and enhance the quality of life in his state. ROMCOE presented the awards to Andrus and several other Rocky Mountain area people Jan. 10.

In making the award ROMCOE mentioned that Andrus has publicly supported a ban on further dam building on the Middle Snake River. He has also placed environmental advocates in leadership positions in state agencies. He has vetoed bills that would have stripped the state of pollution-control powers.

At the awards luncheon the Northern Great Plains Resource Council was recognized by ROMCOE as the outstanding citizens organization. The Resource Council is a group of Eastern Montana residents who have joined to confront the problems of energy development in their region. Many of the members are ranchers whose lands may be affected by coal development.

ROMCOE awarded environmental media honors to both newspaperman Kenneth Robinson, editor of the Idaho Statesman editorial page, and to KAET television station at Arizona State University, Tempe.

Dr. John Bartlit, a chemical engineer from Los Alamos, N.M. was recognized for outstand-

## Wyoming Legislature May Act on Siting Bill

Wyo. State Representative Rex Arney (R-Sheridan) will prefile a bill for the 1974 state legislature which would require utilities to give "adequate" notice of energy development plans. Arney said, "there are already obvious potential emergencies of this nature throughout the state. We need something on the books now before the influx of construction and development is a reality in the state of Wyoming." Because this session is a budget session Arney's bill will need a two-thirds majority vote to be considered by the legislature.

The bill would create a review board under the existing Department of Environmental Quality that would review energy development plans and grant certificates for development. Each application for a certificate would go through a review and public hearing process. Energy companies would be charged an application fee scaled according to the size of the development. The certificate, if granted would require an annual filing by the industry of 10 year plans for expansion and modification.

Montana already has a Utility Siting Act. It requires a two year notification period and the preparation of environmental impact statements on proposed projects at the utilities' expense.

Quarles made a pitch for more environmental awareness and protection, not less, in this time of change.

Quarles concluded, "One fact is becoming unmistakably clear. We cannot continue indefinitely on the course on which we are now set. Our use of electrical power cannot continue to double every 10 or 12 years. Our consumption of other materials also projects a demand in excess of any realistic supply. Sooner or later our society will be forced to change. If we do not prepare to cope with these necessities they can have severe if not disastrous repercussions throughout our society."

ing environmental achievement as a citizen. Bartlit has won the respect of environmentalists and industry representatives, through his leadership in New Mexico Citizens for Clean Air and Water, Ed Conners, chairman of the awards committee, said.

ROMCOE also honored Charles Lewis, president of Copper Mountain, Inc. near Frisco, Colo. for environmental accomplishment by industry; Dr. J. Calvin Giddings, professor of chemistry at the University of Utah for environmental education; and the Barrow Mesa 4-H Club in Hotchkiss, Colo. for environmental activity for youth.

Mrs. Margaret Murie of Moose, Wyo. won the Edward Hobbs Hilliard Award for her many years of work for wilderness appreciation and preservation. She and her late husband Dr. Olaus Murie, were leaders in obtaining creation of the Wilderness Society and the Arctic National Wildlife Range. The award is in honor of the late Ed Hilliard, a Denver industrialist and conservation leader.

## The Whales Need Help

Japanese and Russian whaling industries relentlessly pursue the great whales throughout the oceans of the world. In addition, the Japanese are estimated to have killed as many as 200,000 dolphins and porpoises during a recent season. A number of the great whale species are facing imminent extinction because of continued unrestricted whaling by the two nations.

The U.S. Fisherman's Protective Act of 1967 provides the U.S. government with authority to refuse fisheries exports from nations that flout international agreements. Neither Russia nor Japan have abided by the moratorium called for by the International Whaling Commission. Japan exports large amounts of fish products to the U.S. and could be significantly affected by an embargo.

Americans can express their concern (or outrage) to the Japanese through letters to: Commercial Attache, Office of the Embassy of Japan, 2520 Massachusetts Ave., N.W., Washington, D.C. 20008; or to Ambassador Anatoli Dobrynin, Embassy of the Soviet



Union, 1125 16th St., N.W., Washington, D.C. 20036. Or you could suggest to the U.S. State Department that we stop importing all Japanese fisheries products. Write Secretary of State Henry Kissinger, Department of State, Washington, D.C. 20520.

## Roncalio Pushes for Public Oil Shale Firm

Wyoming Rep. Teno Roncalio has joined an effort to set up a public corporation to explore and develop oil shale reserves on public lands.

The bill, introduced yesterday by Rep. Patsy T. Mink (D-Hawaii) and co-sponsored by Roncalio and five other members of Congress, is based on hearings held by the Subcommittee on Mines and Mining of the House Interior Committee November 29, 30, and December 1.

"Creating such a public corporation will insure rapid development of this very important energy source and prevent excessive profits by private energy companies," Congressman Roncalio said today.

The measure would establish an Oil Shale Mining and Energy Corporation modeled after the Tennessee Valley Authority. It contains a number of stringent environmental requirements aimed at assuring that the land, air, and water resources of public oil shale lands be fully protected under provisions requiring public disclosure of development plans and review by a broad-based environment advisory committee.

"The environmental problems presented by oil shale retorting and nuclear stimulation of in-situ oil shale mining can be overcome only if shale development is in the public's hands," Roncalio said today. "I believe this is the best way to guarantee the nation's need for this important resource will not result in despoiling our public lands in the West."

Oil shale reserves in Colorado, Utah, and Wyoming are estimated at 1.8 trillion barrels of oil. Eighty percent of the reserves are on public lands.

# Western Roundup

## Central Utah Project Challenged

Environmentalists filed suit Jan. 7 to block continuation of the Bureau of Reclamation's Central Utah Project (CUP). Plaintiffs in the suit are the Sierra Club, Trout Unlimited, Natural Resources Defense Council and the Environmental Defense Fund.

CUP entails the development of more than half a million acre-feet of water. One highly controversial section of the project, the Strawberry Collection System, would transfer 130,000 acre-feet of water annually from the Uintah Basin in Eastern Utah to the Bonneville Basin, the region west of the Wasatch Mountains which includes all of the drainage into Great Salt Lake.

After a period devoted to environmental review, Secretary of the Interior Rogers C.B. Morton reopened the project last November. But environmentalists claim he's ignoring devastating impacts.

"We consider it especially unfortunate that the Bureau (of Reclamation) has ignored the great possibilities of ground water supplies and other alternatives of water supply and continues to turn to our mountains drying up the streams and constructing aqueducts across pristine lands," says David Raskin, vice-chairman of the Uinta Chapter of the Sierra Club.

The plaintiffs say that the BuRec is violating both the National Environmental Policy Act and the Water Resources Planning Act, if CUP goes ahead.

## Can Denver Divert for Suburbia?

An environmental coalition has challenged the Denver Water Board's right to use money from the bond issue passed in Denver this fall for additional trans-mountain diversion. The group has filed suit in Denver District Court.

They charge that the water board will exceed its legal powers if it diverts western Colorado water to eastern Colorado, when present supplies are adequate to meet the projected water demand within the Denver city limits. The plaintiffs claim that the water board lacks authority to divert water for suburban customers. They also note that the election authorizing bonds for the diversion deprived non-Denver residents of a right to vote on an issue of statewide importance.

Plaintiffs in the case are the Sensible Water Use Coalition, the Colorado Open Space Council, Zero Population Growth of Denver, Trout Unlimited and four individuals.

## Politicians Fear Missile Tests

An Air Force plan to test-fire Minuteman missiles from a Montana base has stirred up opposition in the West. The \$26.9 million intercontinental ballistic missile test firing would take the missiles from Montana over Idaho, Washington, Oregon and California to a target point in the Pacific's Phoenix Islands.

Sen. Henry M. Jackson (D-Wash.) normally a supporter of Air Force missile operations said, "I have a serious question in my mind that this is really necessary."

Gov. Tom McCall of Oregon called the proposed test "a \$27 million exercise to prove what the Air Force already knows."

The Pentagon test-firing plan was announced last week but must pass through the Senate Armed Services Committee, of which Jackson is a member, and gain Congressional approval.

Sens. Frank Church (D) and James McClure (R) and Gov. Cecil Andrus, all of Idaho, oppose the tests. If the fail-safe system to destroy the missile in flight is operated, the missile will come down in 100-pound bits. Andrus fears that "the Idaho skies will be raining parts. Chicken Little couldn't be so lucky."

The Air Force says the main reason for the Minuteman test is "to demonstrate its capabilities under the most realistic condition possible."

## EPA Calls a Halt to Salt

A recent EPA ruling will prevent people in Colorado from "putting one further acre-foot of water to use" according to the Colorado Water Conservation Board.

The ruling states that salinity in the lower part of the Colorado River should not exceed 850 parts per million — about the level it is now. Since each time water is used it picks up extra salts, some Coloradoans fear that they will never get to use the extra million acre-feet of water they're entitled to under the Colorado River Compact.

Colorado contributes about five of the eight million tons of salt which annually pollute the river. About 70% of Colorado's share comes from natural sources. The Bureau of Reclamation is looking at ways to remove the natural salt — but at present they say removal of only about 400,000 tons is feasible.

If the EPA ruling holds and natural brine can't be stopped, new water projects — such as the Denver Water Board's planned diversions — would have to be equipped with their own desalinization facilities.

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Friday, Jan. 18, 1974



Photo by David Sumner

The spire-topped ridge (above) is part of the Uncompahgre Primitive Area. The region, in southwestern Colorado near the towns of Ouray and Telluride, is under Forest Service, mining industry and citizen scrutiny this month.

The Forest Service held hearings on wilderness potential of the Uncompahgre and adjacent Wilson Mountains in Ouray and Grand Junction earlier in January. Anyone else interested in the destiny of the area should send comments before Feb. 15 to Regional Forester W.J. Lucas, Building 85, Denver Federal Center, Denver, Colo. 80225.

The Forest Service has recommended that 80,150 acres be classified as Wilderness under the 1964 Act. A coalition of citizens' groups has recommended 172,000 acres. The major conflict with wilderness use in the area is mining.

"Forest Service boundaries (for the proposed Wilderness) exclude even the least feasible mineralized areas, leave corridors open for access that may well never be needed, and relegate 97,000 acres of existing wilderness to the type of use and management that has degraded much of the present Primitive Areas," says the Wilderness Society, a group endorsing the citizens' proposal.

A second part of the citizens' proposal calls for a moratorium on surface disturbance by mineral development activities within the boundaries of the wilderness areas. Existing laws state that mining activities may proceed as usual in a wilderness area up until 1984.

Groups endorsing the citizens' proposal for the Uncompahgre and Wilson Mountains are the Telluride Environmental Action Council, the Denver Sierra Club, the Colorado Mountain Club, Friends of the Earth, Grand Junction Environmental Action Council, University of Colorado Wilderness Group, the Colorado Sierra Club, and the Colorado Open Space Council Wilderness Workshop.

## Briefly noted . . .

Utah will consider important land use legislation at its budget session of the legislature beginning this month. One bill would set up a land use planning commission which would prepare a master plan by 1975, list sensitive areas and provide for enforcement procedures. Another bill to be introduced suggests state purchase of the Deseret Live Stock Co. for \$8.5 million and a five-year study of the property. The 200,000-acre parcel stretches from the Wyoming border to within 65 miles of Salt Lake City.

\* \* \*

The Idaho Legislature will consider a state trails system this session. Trails will be established for non-motorized travel including hiking, bicycling, horseback riding, cross-country skiing and snowshoeing. The bill would unify fragmented efforts around the state and connect small trail sections into a statewide system. Federal matching funds would be available for the project if it passes.

\* \* \*

Wyoming's Conservation and Land Use Study Commission is polling some 10,000 residents for a sampling of opinion on land use attitudes. Public hearings will be held in the spring and all public input will be incorporated into recommendations to the Governor. The Study Commission has invited public comments on land use planning. Comments and suggestions may be addressed to William E. Smiley, 720 West 18th St., Cheyenne, WY 82002.

## Thoughts from the Distaff Corner

by Marge Higley

A couple of recent letters to HCN have mentioned windmill electricity. Reading those letters, I could almost hear the "clank-thud-screech-whirr" as the wind stirred into motion the blades of a windmill. A windmill which, thirty-odd years ago, spelled the one luxury of our first winter on the desert.

We had been living in a small apartment in town, where we took for granted gas heat, gas cooking, electricity, and running water. Then suddenly, we moved to a new life in a new place. We soon came to love both the life and the desert — but we had a lot to learn that first winter.

Headquarters, which was 60 miles from anywhere, consisted of a cluster of buildings. There was a log house, cook house, bunk house, warehouse, root cellar, barns, combination shop-garage, and the old rock house which was to become our home for the next eight winters.

It was easy to learn to live without gas. In our living room was a square coal-heating stove, and the tiny kitchen was dominated by a large Round Oak coal range, complete with warming ovens and hot-water reservoir. In a place where the temperature often drops to 30 below, even a couple of greenhorns soon learn to become experts at building and banking a fire!

Learning to live without running water was more difficult. The water was pumped from the well to a storage tank, to the stock water troughs, and to a large wooden barrel at the side of the pumphouse. From this barrel we carried it by bucket to the house. A hatchet was always left at the barrel, to be used in breaking through the icy crust. You can believe that I soon learned to be pretty economical in my use of water!

The worst part of no running water was the lack of indoor plumbing. Now a Chic Sale, on a balmy spring day, can be quite comforting. But in the dead of winter, with a blizzard howling through the cracks, it can be downright unfriendly!

We did have one luxury — electric lights. Admittedly, the main purpose was to run the pump, but it was also available to light the buildings. Since it was only 32-volts, we used no refrigerators, toasters, or other appliances, but we did have lights.

In the center of the headquarter compound was the wind charger, towering over the pumphouse. On a shelf inside stood a row of storage batteries, which were charged whenever the wind turned the blades of the windmill. This operation was overseen by one "Mac" McGregor, the old Scotch caretaker who had emigrated from his home in Scotland to Australia, and finally to this remote spot in Wyoming. Sometimes I think he kept that light plant going by a strange combination of tender loving care, pure hate, and plain old Scotch stubbornness!

When a blizzard would blow in from the North, Mac knew exactly when the time was right to bundle up and go lash the brake down tightly, so that even the harshest gust of wind wouldn't spin the blades off. During exceptionally calm periods when, day after day, the windmill moved not an inch, he would grow irritable and make dire predictions of what would become of the whole outfit if even one of us used a drop of unnecessary water — or stayed up late enough to need a light.

During such times, Mac would arise early and go to the pumphouse to check the batteries. Then he'd look up toward those motionless blades, shake his fists in anger, and utter blasphemies in his thick Scotch dialect. I was never



sure whether he was addressing the windmill, or Someone Up There in that cloudless blue sky beyond, but apparently it worked. His calamitous forebodings never did come to pass. We didn't run out of either lights or water.

In fact, when the ground thawed out in the spring, we piped water from the storage tank over to the little rock house. The rest of our winters on the desert were, by comparison, pure luxury. Not only did we have electric lights — we even had indoor plumbing!



Here is my imagination realized to its whole potential. Nothing of what I behold is lost upon me here; the wilderness fulfills my sphere of instinct, and I am as intensely alive as I ever was or will be.

N. SCOTT MOMADAY: Colorado

## Revolution by Shortage

by Ernest H. Linford

Although there is still much groping about in the energy crisis, history teaches us that man can cope with serious emergencies and in the long run can benefit from them.

For example, a shortage of wood, the predominant fuel at the time, led to the Industrial Revolution some 400 years ago. Coal reluctantly was put into extensive use, and a multiplicity of innovations resulted.

Now petroleum and natural gas which have been so readily available, clean and relatively cheap, are running short. And although alternative sources of energy have been tragically neglected, there are signs they will now be utilized.

### PALEOLITHIC ENERGY CRISIS

The first "energy" crisis occurred during Paleolithic times, the result of men's too-heavy reliance on hunting. Faced with severe shortages of animal food, man eventually developed farming methods. So says, Andrew Hardy in *Natural History Magazine*.

Thousands of years later, ancient Rome met an energy crisis — a manpower shortage — by developing waterpower, and 1,200 years later the shortage of wood laid the foundation for the industrial revolution, Hardy reports.

During the Renaissance, wood was used for practically everything — buildings, furniture, containers, ships, machines, weapons, fuel and other things too numerous to mention.

As the wood shortage became acute, people even destroyed their parks. Meantime, governments imposed conservation restrictions. An act of 1593, for example, set the pattern for today's aluminum salvage program. Beer exporters were required either to return original

barrels or bring back foreign clapboard for making new barrels.

Crippled by lack of wood, industries began using more and more coal in the 17th century, although new manufacturing techniques had to be developed.

As coal was successfully utilized, factories were able to produce better wares in greater quantity at less cost.

Iron began to be used extensively in the construction of machinery. Iron machines are not only much stronger than wooden ones, some machines, such as steam engines, can only be made from metal.

### STEAM ENGINE PAVED WAY

Many incidental problems, such as high overhead costs — expense of pumping out coal mines and transportation of coal and products — had to be solved before the Industrial Revolution really got into high gear.

The invention of the steam engine in 1698 went a long way to cut the cost of pumping and eventually to transporting by land the coal and iron in bulk.

Thus the pressures generated by the wood scarcity led to widespread use of coal and the eventual invention of a worldwide network of railroads, powered by the steam engine.

To secure alternative sources of power, people had to come to grips with their environment, Hardy emphasizes. The discoveries they made in the process of adapting the new power sources to society's needs bred a host of technological refinements.

Surely man is no less inventive and resourceful today than in the 17th century. He has just been spoiled by too-easy and too-cheap energy sources.

## Book Review

# Hut Hopping in the Austrian Alps

by William E. Reifsnyder A Sierra Club Totebook, 176 pages, \$3.95.

Review by Verne Huser

**Hut Hopping in the Austrian Alps** not only brings to the American reader an interesting insight into hiking in Europe, but it introduces a new concept in outdoor use that we here in the New World have not fully accepted: the idea of concentrating use in certain areas to prevent impact in more delicate areas.

Because we have always had so much wild country in this nation, we have used it without realizing that the very use makes it less wild.

But in the Alps where populations have long been more dense than ours here in the United States, the people seem to have created a compromise that allows wild areas to remain wild even under heavier impact than most American wild areas. "Maintaining the semblance of a pristine wilderness," says author William E. Reifsnyder, "in the face of heavy recreational use by hikers, requires the kind of intensive management that has developed in the Alps."

He points out that "Even though Alpine trails receive very heavy use, the impact of the hiker is minimal" because "he does not pitch a tent, build a fireplace, gather wood, trample the earth around his campsite, leave his debris." He suggests that by keeping people on well-developed and well-maintained trails and by having them overnight in strategically-located huts, the Europeans can handle a lot more people with less impact on the resource. Of course it is an entirely different experience, one that perhaps abuses our American pioneer spirit.

"The impact is concentrated at the huts, where it can be dealt with adequately," says Reifsnyder. "Although many parts of the Alps are more heavily used than sections of the Sierra, the visible impact of man's recreational use is less." One of his basic points is that "unregulated use by large numbers of people, no matter how sensitive they are to wilderness values, can only result in heavy impacts and destruction of the wilderness."

**Hut Hopping** is certainly a valuable book to read for its ideas even if you never plan to hike

## Try Writing on Kenaf

If pulpwood becomes scarce, we may look to a plant called kenaf to supply newsprint.

Kenaf is a hibiscus plant which requires much less processing and chemical treatment than pulpwood to be turned into paper. Since it can be harvested once a year rather than once every 15 years, it also provides more cellulose per acre than pine trees.

Dr. Gordon B. Killinger, assistant chairman of the University of Florida Agronomy Department says, "Kenaf could be the biggest thing since we learned how to make paper from pine trees back in 1928."

Killinger is growing and processing kenaf into paper on his one-acre plot near the university.

But the professor warns that the plant has a long way to go before it could compete with pulpwood as a source of newsprint. "Until the wood supply gets low, I don't see much chance of kenaf being mass produced," he said.

Kenaf's entry onto the market may be slowed by agricultural drawbacks. The seedlings must be imported from Guatemala and El Salvador. Then the seedlings are extremely water sensitive and must be planted in raised beds. The crop must be rotated with other crops such as cotton or corn. And kenaf is susceptible to root knot nematodes and the parasitic pink bollworm.

the Austrian Alps, but it is a must if you do. Predicated on the assumption that you have some experience in hiking and-or backpacking in the United States, the book provides the information you will need to take a trip: "where to go, how to get there, what to take, detailed trail descriptions for three tours."

You don't even have to carry sleeping gear or heavy packs of food. You simply hike from hut to hut enjoying "the comfort and camaraderie of the Alpine hut, good food, good drink, and a comfortable bed in which to dream of the next day's adventure."

The book gives geologic and geographic background, floral and faunal patterns, information on transportation and accommodations, a brief bibliography and even hints on the language. It describes the huts in detail as well as the trails, and it deals specifically with three areas: the Schladminger Tauern, the Lechtaler Alps, and the Stubai Alps. The book is pocket-sized (4 X 6 inches).

Hut hopping might be worth trying. Instead of finding parties spread out all over the landscape, as you so often do in American backcountry areas, in the Alps all will be concentrated in the huts. And as the author of this handy little guide book points out, huts can be fun.

## High Sulfur Fuel May Cause Deaths

Relaxation of air quality standards in the Los Angeles area could cause serious health problems, air pollution experts and health officials agree.

If fuels with a high sulfur content are used in the L.A. area, "People will get sick and those who are sick will get more sick," said Walter J. Hamming, chief air pollution analyst for the Los Angeles Air Pollution Control District.

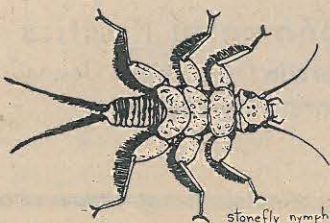
Sulfur smog has a direct and relatively well known effect on human health.

"SO<sub>2</sub> grabs you right in the throat," Hamming says. A sufficient concentration of the gas in the air causes the smooth muscles in the trachea and the large bronchi to constrict.

If utilities have to use high sulfur fuels to fill the energy gap, sulfur dioxide emissions from the country's power plants would leap from 83 tons per day in 1972 to 548 tons per day next year, according to Los Angeles Air Pollution Control District officials. In L.A. next year, officials estimate that the sulfur dioxide readings might rise as high as .3 parts per million (ppm) during 24-hour periods with the right weather conditions. This would exceed the National Air Quality Standard for sulfur dioxide, which is set at .14 ppm for 24 hours (not to be exceeded more than once a year).

According to the U.S. Public Health Service the following effects could be expected at various sulfur dioxide concentrations for 24 hours:

- .11 ppm to .19 ppm: increased hospital admissions of older persons.
- .19 ppm: increased mortality rates.
- .25 ppm accompanied by high particulate levels: increased daily death rate.



High Country News-15  
Friday, Jan. 18, 1974

# Eavesdropper

LOONEY LIMERICKS

by Zane E. Cology

When oil from shale they do make  
Lots of deep, salty water 'twill take.  
When they're through with it  
What can they do with it?  
Maybe pipe it away to Salt Lake!

To lure riders onto mass transit during off-peak hours, the Golden Gate, Calif., Transit District is using the carrot-on-the-stick approach. Ads promise that fresh fruits and vegetables will be passed out to people using the buses and ferries during off-hours.

Six Spaniards have pioneered a motorcycle route along the flanks of Mt. Everest from Lukla to Chukhung. The cyclists obligingly took Nepalese villagers for sprints along the rocky trails. Most of the villagers had never seen a motorcycle before. Conservationists are reported to be worried — not so much about the six trail bikes, but about the gleam of admiration they left behind in the eyes of the villagers.

An Ohio man will go into business this month removing emission control devices from automobiles. He'll call the firm Fuel Savers, Inc. The man, Daniel J. Furey, says the enterprise is legal because he can find nothing in Environmental Protection Agency regulations which prohibits a vehicle's owner from modifying emission control equipment. EPA does forbid manufacturers and dealers from tampering with the devices.

Hard times have hit the snowmobile industry. The 60 companies making and selling snowmobiles in 1972 have dropped to fewer than 20 concerns. By mid-1974, industry leaders say, there probably won't be more than 8 to 12 manufacturers of any size still marketing snowmobiles in North America. Two of those to remain will probably be Japanese firms.

Buffalo are alive and well in America. Reduced to 50 in 1900, the herd now stands at 25,000 and is increasing by 5,000 each year. The National Buffalo Association predicts that buffalo meat will one day be a major part of the American diet. The meat is said to be higher in protein than beef.

An international group called Project Jonah sponsored international demonstrations Dec. 12 to protest the continued whaling operations of Japan and the Soviet Union. At the United Nations environmental conference in Stockholm in 1972 a ten-year moratorium on commercial whaling was approved 53-0.

Keep apace with the times. — Read

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# The Colorado Open Space Council

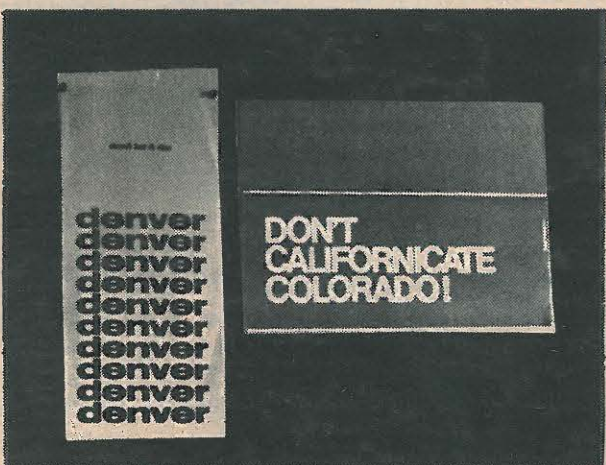


The Monday-after-Thanksgiving in an old house which environmentalists in Denver call their office: One person at a typewriter. Bold blue and white and yellow inside walls. Half a dozen empty desks.

The five groups centered here fought the Denver water bond earlier in the month. The \$160 million bond issue was to bring water from the Western slope of Colorado for anticipated growth in the greater Denver area. Environmentalists claimed the diversion wasn't necessary. They cited two Denver economists with evidence to show that, with water conservation, further diversion of water to Denver wouldn't be needed until the year 2000. The result of the diversions, environmentalists claimed, would be more dry streams in the Western Rockies, more pipelines through the mountains and a larger megalopolis in Eastern Colorado.

The fight and the holiday feast have scattered the volunteer staff that usually mans these desks. If you want the Denver Audubon Society, the Sierra Club, Citizen's for Colorado's Future, or the Colorado Citizens for Clean Air today, you're out of luck.

**The lull after the defeat inspires philosophy:**  
**"For environmentalists to win in the next few**



She and COSC's paid lobbyist, Jim Monaghan, will spend much of their time working on environmental legislation for the state in the coming months. Marilyn will do the capitol

—JN



One manufacturing company is already negotiating to produce the electric moped, and the inventor says he has orders for several hundred models. : : EARTH NEWS

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