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The Environmental Biweekly of the Rockies and Great Plains



Vol. 10 No. 8

Lander, Wyoming

Friday, April 21, 1978

McGrew calls insulation push 'a consumer ripoff'

by Joan Nice

It's easy to find someone who will tell you how much insulation to put in your attic. In Denver, the state energy office, the local utility, and various manufacturers will make a recommendation without even looking at your house.

The trouble is, they each recommend something different. They make the recommendation in terms of "R" values, a measurement of resistance to heat flow commonly used to grade various types of insulation.

The state of Colorado requires an R-19. If you live in the Denver area, Public Service Company of Colorado will tell you to insulate more heavily, to an R-30. Owens-Corning, a company that manufactures insulation, will probably recommend R-33.

So if you want to conserve energy, whom do you believe? Manufacturers claim that if R-19 is good, R-38 will be better. But according to an independent energy conservation consultant, Jay L. McGrew, insulating to an R-38 will save you neither significant amounts of money nor energy.

"Every house is different," he says. "But an absolute minimum, R-11 or R-19 at the most, is probably enough."

McGrew calls the push for greater thicknesses "an absolute consumer ripoff. Homeowners pouring money into the burgeoning insulation industry won't see the savings they have been promised."

McGrew, an easy-going, articulate engineer, works in a ranch-office in the foothills near Denver. He has a bachelor's degree in civil engineering, a master's degree in mechanical engineering, and a doctorate in chemical engineering.

McGrew says he appreciates the value of insulation. He studied it and used it as a heat transfer specialist for Martin Marietta Aerospace Corp. His main point is this: "Insulation is a very good material,

"The insulation business is a little bit like the insurance business. The salesmen always want to sell you more than you need."



Photo courtesy of Pacific Power and Light
HOW MUCH INSULATION IS ENOUGH? The answer is more complicated than most people have assumed.

and 6 inches can do the job nearly as well as 16 inches."

The insulation business is a little bit like the insurance business, McGrew says. "The salesmen always want to sell you more than you need."

"MC GREW IS NOT POPULAR"

In a survey of 31 homes in Adams County, Colo., he found that adding insulation was only rarely the best solution to home energy conservation problems. Better solutions involved putting dampers in vents and chimneys (which added up to a gaping hole that averaged 95 square inches in area), adjusting furnaces (which sent more than 50% of their heat up the chimney); and teaching people how to manage their homes to conserve energy.

In a nation sold on insulation, these views are considered heretical by some.

"Believe me," he says, "McGrew is not popular."

He pulls out an angry letter from a government official. He says he also has upset Public Service Company of Colorado and insulation manufacturers.

But he has not been ignored. Everyone HCN interviewed about insulation in the Denver area knew about McGrew. Owens-Corning took him on a tour of their facilities. Many government, utility, and manufacturing executives seemed irritated by him, but unable to refute his findings. An increasing number of people and groups around the country are looking to him for energy conservation advice.

"I become more and more of a believer in him as time goes on," says Phil Stern, who handles consumer affairs for the district attorney's office in Boulder, Colo. "Putting

an R-40 in the attic of a house that doesn't have any sides, for instance, doesn't make sense."

McGrew's firm is called Applied Science and Engineering. Most of its revenues come from royalties on oil skimmers that McGrew designed to clean up spills on the ocean.

"We don't focus on energy conservation," he says. But after the Adams County study, "we got hooked. The first thing we discovered was that the problem was tremendously complex."

John Hanson of the U.S. Community Services Administration in Denver says his agency has changed its approach to energy conservation in response to the complexities pointed out by McGrew. CSA funds the insulation of low-income people's
(continued on page 4)



Rocky Mountain Sun Day features a bike race, building, teach-ins, and Jimmy Carter

See the centerspread, pages 8 and 9.

HAPPY BIRTHDAY, JOHN

Dear HCN,
 April 21 is John Muir's birthday. Sadly, he would have been 140 if he hadn't taken that train trip to Southern California and got that cold. And then the ultimate insult: to die in a L.A. hospital! Could you wish him a happy birthday in HCN?

Phil White
 Simpson Springs, Wyo.

DIE NEEDLESSLY

Dear friends,
 Phil White's recent article on the Endangered Species Act (3-24-78) and its apparent success failed to mention an ironic conflict which involves the U.S. Fish and Wildlife Service and federally-licensed falconers. The Endangered Species Act protects the anatum peregrine and its more numerous arctic cousin, the tundra peregrine.

These two subspecies of peregrine were hastily protected when falconers realized that the anatum population was in a drastic decline. As a result, peregrine falcons from the wild population cannot presently be used in falconry and severe limitations have been placed on the use of captive reared birds due to their endangered status.

However, current population studies suggest that the tundra peregrine population is large and moderately stable, in spite of an immature mortality rate of around 80%. Efforts by falconers to obtain permits which would allow them to trap, train, and release healthy peregrines after the first critical year have been blocked by administrative policy.

The end result, of course, is that many young peregrines die each winter rather needlessly. The present policy is the result of protectionist and anti-hunting pressure on the Department of Interior.

Most people fail to realize that the falconers in this country, more than any other group, want to see the peregrine's continued survival. We wholeheartedly support the Endangered Species Act, but feel that it is contrary to the act's purpose to allow a high percent of the immature population to die needlessly.

Randy Shaw
 Falconer's Defense Fund
 Buford, Wyo.



Photo by Randy Shaw
PRAIRIE FALCON with prey. Steve Duffy is the trainer.



HCN Letters

FOSSILS PROTECTED

Dear HCN,
 This is in response to the article by Karen Reichardt, February 24, on the Pawnee Buttes Area in Colorado. As the article recognizes, the Forest Service administers land in this area as part of the Pawnee National Grassland.

The article suggests that the subject area is suitable for fossil collecting. While that is true, under the Federal Antiquities Act of 1906, fossil collecting — or artifact collecting, for that matter — on federally administered lands requires a Federal Antiquities Permit. Such permits are issued only to recognized scientific and educational institutions.

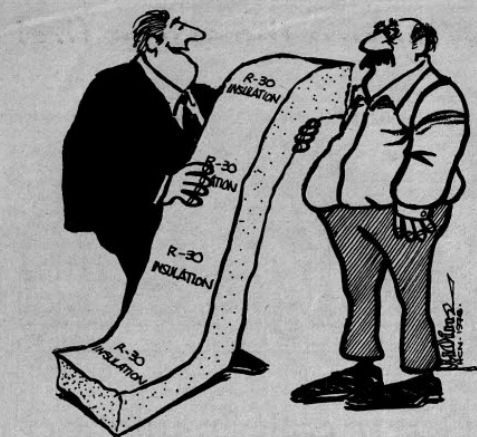
As stated in your article, the area does contain large populations of raptors, and many people do come to the area to observe them. It is not uncommon to find raptors that have been shot or to find people have caused abandonment of nests. All raptors are protected by federal and state laws which prohibit killing, capturing, or harassing them.

George W. Tourtillot
 Director, Recreation and Lands
 U.S. Forest Service
 Lakewood, Colo.

WOOD STOVE DEFENSE

Dear Editor,
 Larry VanDusen's letter to the editor (HCN 3-24-78) raises some important questions of real concern. We'd like to respond.

There are now numerous municipalities that, because of air pollution, have banned (or are considering banning) fireplaces in new construction. Aspen is one of these. There are no known (to us) bans on stoves.



"WE LIKE TO THINK OF IT AS OUR CHICKEN SOUP - IT MAY NOT HELP BUT, AT THE SAME TIME, IT WON'T HURT."

The following paragraph was taken from *The Woodburners Encyclopedia* by Professor Jay W. Shelton — the definitive work to date: "Nature has been growing and decaying trees for hundreds of millions of years. The solar energy locked into chemical form in the plants through photosynthesis has always been released mostly as heat during decay. By taking the wood and burning it in a stove, the heat is released in a home rather than on the forest floor. The stored solar energy ends up in the same form in either case; burning the wood merely reroutes the energy through a house on its way back into the atmosphere and eventually back into space."

Our ancestors were ecstatic when gas and electricity replaced wood stoves because the appliances they used were very crude in function (though often beautiful to behold), wasteful, dirty, and sometimes dangerous. Our modern air-tight, efficient woodburners may not be as ornamental or

graceful, but they are not dirty, are relatively un-wasteful, are not dangerous when properly installed and are much, much less time consuming.

As for supply, we give free firewood to all our customers. Our supply is 20 tons per week of clean two by four cutoffs that used to go to the local landfill for burial. Fort Collins has many manufacturers with a scrap wood disposal problem. Thousands of tons go to the dump each year. Fort Collins is certainly not unique in that regard.

We agree with Mr. VanDusen about the feasibility of large cities being able to switch to wood heat. Storage and supply would limit wood use before pollution could become a problem. While parts of New England are currently almost 100% wood heated, it would be staggering if Chicago ever made it to 5%.

There must be some validity to the basic concept of wood heat. The National Solid Fuel Trades Association has just predicted 10 million new woodburners will go into operation between now and 1985.

Wm. S. Eckert, President
 Friendly Fire, Inc.
 Fort Collins, Colo.

HIGH COUNTRY
 By Jane Bell

How green is our valley. The soft tints of spring extend even to the tops of the high hills which directly ring this place. The rains have done their life-giving work.

Biscuitroot and balsamroot alike add their hues of yellow to the flanks of the hills. The camas will soon be adding a touch of blue to the virgin valley floors. It is a glorious, colorful time of year.

But, alas, there are interlopers in our hills. The grass that now greens so much of the landscape is that import from the Mediterranean, cheat grass. It has replaced the more beneficial native grasses that once graced the land. Its spread across the western United States was due in great part to the grazing excesses of the past. Now, it has become a part of the vegetative pattern.

At this time of year, cheat grass can provide at best a second-rate forage to what was once here. Later, it is of value only to the chukar partridge, which eat the barbed seeds with relish.

White-top, a vigorous, perennial weed, is now growing rapidly. Within weeks, it will whiten whole valleys and hillsides. It, too, has replaced valuable, native vegetation.

Here on our acreage, the white-top vies with Canada thistle and teasel to see which can wrest control of the land from us. At this time of year, I can almost concede. At

best, it is a difficult, discouraging, and, at times, seemingly hopeless battle.

In the irrigated pasture below the road, grasses hold their own. By merely chopping occasional weeds with a shovel as I do the irrigating, they are kept in check. But on the dry slopes above and below our terraced garden, the weeds are almost a nightmare.

There may be a solution for us. A sprinkler irrigation system will allow us to get a grass cover on most of the steep slopes. And then a small flock of sheep should help control the worst of the weeds.

The weed problem is a bad one. Canada thistle, white-top, leafy spurge, and tansy ragwort are only a few of the noxious pests which now infest Western rangelands. Not only do they infest the high deserts, hills, and plains but they have been carried into or invaded mountain fastnesses.

Weed infestations violate the ecological integrity of native plant communities. They also diminish the value of grazing lands for both domestic and game animals.

The spread of unwanted weed pests should be of concern to everyone. Many of the lands invaded by the exotic species are public lands. Unfortunately, there doesn't seem to be much anyone can do about those already established over thousands of acres.

Research fund has

Regional reach

The High Country News research fund pays for phone, travel, and other research expenses for many regional stories.

In this issue the fund paid for all or part of several stories, including: Insulation: how much is too much?; Don MacLeod, Jackson activist; and New Mexico uranium mine.

To help HCN provide information for a concerned public, donate to the fund. Donations are tax-deductible.

Make out a check to Wyoming Environmental Institute—HCN Research Fund, and send it to: WEI, P.O. Box 2497, Jackson, Wyoming 83001. Thank you.

Enclosed is a donation to the HCN Research Fund from:

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Why are the tribes first to seek air protection?

No doubt there will be some Congressmen who are surprised when they see that tribes on three Montana Indian reservations are taking advantage of the opportunity Congress offered to protect air through Class I redesignations. Not that they won't remember allowing tribes that authority—it was a hard battle in committee and few will forget it.

But the fact is that the tribes are the only ones—so far—to take advantage of that section of the Clean Air Act.

Of course, there are many possible explanations. The most obvious one is the tribes' sovereignty. If a city or a county government wanted redesignation, it would have to go through the state. The tribes, on the other hand, have exclusive jurisdiction over their air and have to answer only to the Environmental Protection Agency, which determines whether they have followed the right procedures in making their decision to change designation.

The states haven't been focusing on redesignation, primarily because they have many other requirements under the Clean Air Act, according to EPA. EPA says the states have a "tremendous workload" of tasks to complete by January 1979. Indians, on the other hand, can concentrate on redesignation.

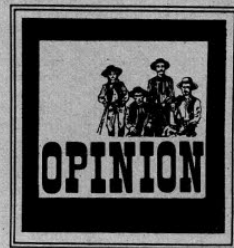
So far, only one state—North Dakota—has provided a mechanism for citizen

groups to seek redesignation, and that process is so cumbersome and so expensive that it has thwarted the one citizens' group that has tried it. No one else is likely to attempt it until it is changed. The Dunn County citizens were told that they must prepare the equivalent of a social and environmental impact statement without any funding from the state.

Since the tribes don't have to answer to another level of government, their decision-making sounds simple. However, it's not a decision the tribes take lightly. They must conduct the lengthy, costly studies required by EPA. Fort Peck figures its study might cost the tribes as much as \$50,000.

In addition, tribal councils are subject to the same types of political pressures that local governments are from industry and from some laborers scared of losing jobs. The unemployment rate is higher on reservations than anywhere else. (The median family income at the time of the last census was close to \$5,000 for both the Fort Peck and the Flathead Reservations.)

Not all employable tribal members would want to work at the industries off the reservation that may be affected—even if they had the opportunity. But some of them do. Bearhead Swaney admits the Salish-Kootenai council may be in trouble with some of their tribal members if the



Horner-Waldorf pulp mill is affected. And the councils know that potential development on the reservation is also affected by the clean air restrictions.

However, the tribes are willing to buck these pressures, partially because it offers them a theoretical opportunity to control development outside the reservation. The tribes feel they are being loaded up on the hurtling coal train with everyone else no matter what they decide to do with their own energy resources. They have no power over draglines just outside their boundaries nor over the social disruption that energy development there causes inside the reservations. Under the Clean Air Act,

no major source anywhere is to be allowed to degrade Class I areas (although the Northern Cheyenne tribe is questioning whether their decision had any effect at all now that Colstrip 3 and 4 have gotten the go-ahead—see page 10).

We think Bearhead Swaney gets a little carried away when he refers to everyone else—presumably all non-Indians—as The Exploiters. Obviously, not every tribal council is going to put such stringent controls on reservation development. But there is some truth to his inference that Indians might be less interested in exploitation of resources than in preservation—at least for these three reservations.

Indians' cultural heritage demands that they protect the land. And if that voice gets lost in the din, they're reminded daily that they live on a finite piece of ground with only so many possibilities, only able to give so much.

For non-Indians, it's just the far-sighted few who can see the boundaries. For the Indian living on the reservation, it's a constant reality.

—MJA

THE REAL STORY

Dear HCN,

I'd like to urge HCN to print a responsible article explaining the realities of where weather modification is at today. The series of articles by Myra Connell was filled with emotional hunches and very few facts, if any.

It is unfortunate that such articles can lead responsible officials to discourage weather modification in cases where it might help increase water supplies or alleviate hail damage to crops.

Let's get the real story before we judge.

Timothy C. Spangler
North American Weather Consultants
Salt Lake City, Utah

POLLUTION

Dear HCN,

After HCN has vanquished the promoters of nuclear power plants, open-pit coal mines, and Disneyland wilderness parks, would you be able to do something about the pollution of the English language?

Note the following ad that was printed in HCN: "Tired of sharing High Country News with someone? Lay this ad on their desk."

With all good wishes,
Henry Mead
Seward, Neb.

ALARMED

Dear HCN,

Congratulations and thank you for your article-issue on uranium. It was most informative.

I have recently relocated to Canon City, Colo., and am very alarmed about the growing development of uranium in this area and possible contamination to ground water (the Arkansas River), surface, and air. I am hopeful your article will help me

generate some local concern for this most serious environmental impact.

Joseph Pierce
Canon City, Colo.

HOPE FOR THE BEST

Dear HCN,

I received your complimentary copy of High Country News dated Oct. 7 and have enjoyed reading it very much. I think you have a very sane and sensible approach to the problems you are seeking the answers to.

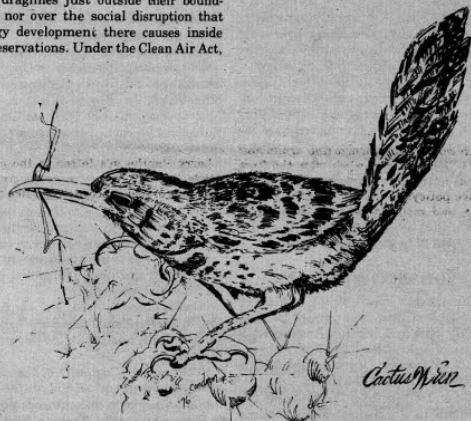
Remember that the only guy that ever told us a good way to live and showed us how to do it got nailed onto a cross, so hope for the best and try to keep from getting hanged.

In 1935 I bought two and one half acres of a hillside that had been farmed in such a way that all the topsoil had been washed away leaving nothing but red sandrock on which nothing would grow. Today it is about three feet to rock on most places, and the soil is very productive. I have found that organic gardening will really pay off. I grow fruit without any sprays or worms. I have grown peaches six inches in diameter.

Last year I bought three geese to eat the grass and am now hot in need of a lawnmower. I realize every service rendered carries its own price tag, and the service animals and birds render is not exempt from that law. It is always cheaper to work in harmony with nature than to interfere with those natural laws.

I don't claim to know much about farming but I am sold on the idea of working in harmony with nature's laws, whether it be called organic or dirt piddling.

John M. Depute
Mustang, Okla.



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Write Box K, Lander, Wyoming 82520.

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Insulation push...

(continued from page 1)

homes through "community action programs" around the country.

"Around the office we call it the Zen approach to conservation. Each house is an individual entity," Hanson admits that in the past, "We may have been overinsulating."

In the 31 Adams County houses McGrew found that houses with 1-3 inches of insulation didn't use any more energy per square foot of living space than did houses with 4-10 inches of insulation. In fact, they often used less.

This trend was confirmed by McGrew's

"A lot of people are sitting back with an R-30 in their attic thinking that makes their house energy efficient. And that may not be true."

subsequent studies of 60 more houses in Salt Lake City, Denver, and in the Pacific Northwest.

Factors that had a major effect on energy consumption were: how many people lived in the house, how many appliances they used, and how the house was managed.

One home with only one inch of insulation in the attic was among the lowest consumers of energy per square foot of living space, McGrew says. It contained only one inhabitant, a woman who opens her drapes in the morning and closes them in the afternoon.

"She knows a lot about energy conservation," McGrew says. "It would be wrong to tell her that the only way she can be a good American is to insulate her attic."

YOU SHOULD INSULATE

Uninsulated homes in the study lost about 23% of their heat through the ceiling. By adding 3 inches of insulation or approximately an R-11, this loss can be cut to 11%, he says. So, "if you don't have insulation in your attic, you should."

In the Denver area "by doubling the thickness to 6 inches (or R-19), you can take that down another one or two percent, but anything beyond 6 inches is unnecessary overkill with little measurable effect," he says.

If your home already has some insulation, adding more will probably not be worth the cost, McGrew says. If the cost of natural gas in Denver tripled, doubling the thickness of insulation in your attic by going from R-11 to R-19 would save you less than four cents per square foot per year—or about \$8 a year for a 2,000 square foot house, McGrew says. "That still is not where most of your bill is going," he says.

McGrew has been criticized for his concern about cost-effectiveness. Phil Stern says, "Cost-effectiveness is what got us into this mess in the first place." When energy was cheap we used it lavishly, but today, he says, "You should do everything you can to save energy and forget about its cost-effectiveness." While insulating to an R-30 or R-40 may not be cost-effective today, it will be a few years from now, he believes.

McGrew, on the other hand, sees cost-effectiveness as a convenient way to measure energy savings. The cost of an energy conservation device reflects the amount of energy it took to manufacture it, he says. Therefore, he says, "Does it save money?"

and "Does it save energy?" are essentially the same question.

Studies on inhabited houses that would either confirm or dispute McGrew's findings on insulation are hard to find. Insulation companies have done many studies, but most have been performed under lab conditions or in unoccupied houses.

HCN did find three studies—one funded by the state of New Mexico, one by Princeton University, and one by the federal government—that are consistent with McGrew's conclusions. The Princeton researchers found that energy use in a given house varied up to 300%, depending upon its occupants. In the Three Rivers Project in New Jersey, federally-funded researchers found that energy conservation efforts, including insulation, did not bring the savings they theoretically should have. (For more on the New Mexico study, see story, page 5.)

BETTER QUESTIONS

Paul Robinson, an engineer for Owens-Corning in Toledo, Ohio, agrees with McGrew that each home is different in its requirements. When a customer asks how much insulation to buy, he should be given "a very qualified answer," Robinson says. Nevertheless, Owens-Corning sales representatives and advertisements recommend R-33 to R-38 for homes in the Northern Rockies. Robinson says he knows that some people take these values "as law, but they should take them as recommendations."

"The consumer should be learning to ask better questions," Robinson says.

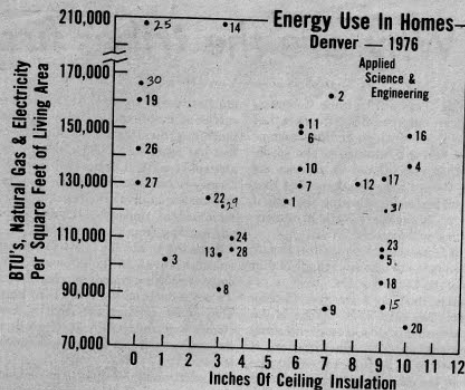
Among the questions the consumer should be asking, it appears, is: Upon what assumptions did Owens-Corning base its recommendation of an R-33 and an R-38? According to Tom Ulrich of Owens-Corning, the company assumed that you are building a new home and that you are heating it with electricity. (Electrical heat is more expensive than other sources in most parts of the country and new houses are cheaper to insulate than old ones.) If, however, you are insulating an existing house that you are heating with a fuel cheaper than electricity, a lower level of insulation than Owens-Corning's recommendation would be the wisest investment.

"Owens-Corning does not emphasize that in its promotional material," says Dan Quigley, policy analyst for the Department of Energy.

Public Service Company of Colorado, a utility that has branched out into the home insulation business, recommends an R-30 in Denver-area attics. That's a more modest estimate than Owens-Corning's, but it



DAVID DAVIA of Public Service Company of Colorado says the company's energy conservation program has cut participants' natural gas consumption by 12%. He doesn't know how much of that savings is attributable to insulation, however.



IN THE ADAMS COUNTY STUDY, Jay McGrew found that houses with 1-3 inches of insulation didn't use any more energy per square foot of living space than did houses with 4-10 inches of insulation. In fact, they often used less. The chart shows that house number three, for instance, with one inch of insulation, used about 50% less energy than house number 16, which has 10 inches of insulation.

still looks wasteful to McGrew. David Davia, a spokesman for the utility, says it bases its recommendation on advice from the federal government and the manufacturers.

The utility added insulation to 13,800 homes in 1977. Most had an R-11 in the attic, which the utility upgraded to R-30. Natural gas consumption has been cut by about 12% in these homes, Davia says, "but we're not saying insulation has done this entirely."

The utility pushes a package of energy conservation ideas. One—turning down the thermostat from 72 degrees to 68 degrees—could save as much as 10%, according to a Public Service Company brochure.

Davia says that while there may be no noticeable savings in going from an R-24 to an R-30, "We feel that R-30 is good anyway." In terms of labor costs, the last bit of insulation is the cheapest, he says, and it may prove valuable in the future.

Like the Public Service Company, Colorado and Wyoming state officials seem to be ignoring McGrew's message. The Colorado building code requires an R-19 in all new buildings. Wyoming's legislature has taken no action on the issue yet. But an official at the Wyoming energy conservation office suggests that "if you insulate to an R-30, you won't be overinsulating."

This kind of recommendation angers McGrew, who says that "without any technical ability or adequate test data, they tell us how much insulation should be put in buildings. Every building is different. How do they know what is really useful for the citizen?"

Colorado's R-19 isn't as arbitrary as McGrew makes it sound, however. It is part of a federally sponsored "model building code" that has been offered as an option to many states. It was based on performance standards developed by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE). The standards are not based on the kind of field data being collected by McGrew, however. They are based on "standard engineering practices," according to Dan Quigley of the Department of Energy.

He admits the ASHRAE standards are far from perfect. "We are finding out that, while the standard practices save a lot of energy, more could be saved."

"We (federal agencies) have helped develop this mystique about ceiling insulation," Quigley says. "And that's unfortunate."

A lot of people are sitting back with an R-30 in their attic thinking that makes their houses energy efficient. And that may not be true."

Quigley says the department is shifting its emphasis away from attic insulation. "We will certainly talk about insulation, but not until we've talked about a lot of other things."

The energy department is developing improved standards in cooperation with the American Institute of Architects. The standards are expected to be complete in a year or two. But those recommendations will be based on architectural theories about what saves energy, not tests in real, lived-in houses.

"The next step is beginning right now—funding more empirical studies about

"We call it the Zen approach to conservation. Each house is an individual entity."

energy conservation," Quigley says.

In the meantime, Colorado is stuck with what Quigley feels is an imperfect, ASHRAE-based energy code. Richard Schneider of the Colorado Energy Conservation Office says he doesn't think Colorado's requirement is excessive, however. It allows exemptions from the R-19 requirement if an architect or an engineer can show that a home can perform well enough without it.

But Schneider admits it is hard to find answers to the questions that McGrew is raising. "Most of our technical information came from industry. That's all the information there was available when the big rush for insulation came."

"REVOLUTIONARY"

McGrew has had his greatest influence in the U.S. Community Services Administration. Based on McGrew's Adams County study, CSA has produced a manual that will be used nationwide to train its "weatherization" crews.

John Hanson of CSA calls McGrew's study "revolutionary." He says it has gen-

continued on page 5.

Insulation push...

(continued from page 4)

erated both cynicism about insulation and criticism of the agency. Nevertheless, CSA is acting on the findings in the Adams County study. To make the "Zen" or individualized approach to energy conservation feasible, Hanson hopes to train VISTA volunteers to do energy audits for low-income people.

In McGrew's own energy audits, he discovers how much energy a home is using and then compares that with the norm for the area. If a home's consumption is considerably higher than it should be, he searches for a major problem.

In a fuel-guzzling school in Oregon, for instance, he discovered that he could make an 80% reduction in heat demand by making "minor changes" in the heating system.

More than half of the heat produced by the average furnace goes straight up the chimney, McGrew says. Furnaces "were designed in an era of cheap gas, when fuel efficiency wasn't an important matter. As the furnace is burning, room air is drawn into it far in excess of what is needed for combustion. The flow of air is unregulated. It is like running a car without a carburetor.

"For years we have had the technology to mass produce more efficient furnaces. As gas becomes more expensive, this technology certainly will be put to use," he says.

In the meantime, McGrew says considerable savings can be achieved through furnace tune-ups and automated damper valves that close the flue when the flame is off.

The "river of air" that flows up this flue and other vents accounts for about two-thirds of a home's heat loss, he says. He recommends that, wherever possible, flues and vents be fitted with dampers.

Hot water heating also accounts for a big portion of a home's energy demand, McGrew says. In the Adams County study, he found that hot water heating consumed about 31% of the homes' total gas budget. To cut down on consumption, McGrew recommends lowering the temperature and,

if practical, reducing the size of your water tank.

He says that lowering the temperature of tap water from 140 degrees to 130 degrees could cut the heater's gas consumption by 60%.

"You can save more money by turning your water heater from hot (150 or 160 degrees) to warm (about 120 degrees) than you can from reinsulating your attic from 3 inches to 13 inches," McGrew says.

What about insulating walls? "If you are building a house, three inches of wall insulation will be helpful," McGrew says. "But if you are considering insulating the walls of an existing home, remember that the



— from a Public Service Company of Colorado brochure

total heat loss through an uninsulated wall is only about five percent. The addition of insulation will only trim this figure by one or two percent, meaning that the annual savings on a \$400 heating bill would be less than \$10. It is highly unlikely you would ever regain the cost of such a project," McGrew says.

LASTING INTEREST

McGrew doubts that funding will be available for his firm to do extensive energy conservation studies in the future.

"There's no group in this country with a lasting interest in finding out the best way to conserve energy," he says. He has received funding from a variety of sources, including the Colorado Masonry Institute; homebuilders associations in Colorado, New Mexico, and Oregon; the Colorado

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JAY MCGREW says, "I'm not on a crusade for or against insulation. I'm not Ralph Nader. It's just that insulation is not the whole answer."

State Extension Service; a log cabin organization; the Montana Energy Research and Development Institute; and the National Center for Appropriate Technology. But he does not anticipate being able to concentrate on energy conservation in the future. Even now his company spends most of its time on other projects.

But his concern about the situation remains. "I object as a citizen," he says. "The government has this so screwed up that this whole energy deal is going to grind to a halt," he says. "I'm not on a crusade for or against insulation. I'm not Ralph Nader. It's just that insulation is not the whole answer."

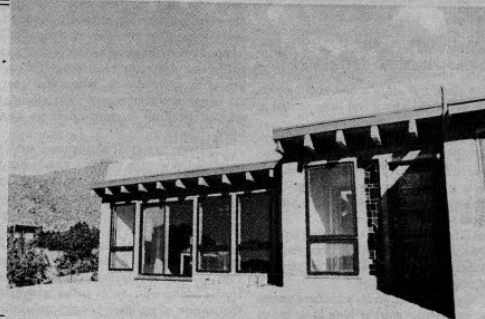
New Mexico researchers debunk insulation myth

Adobe and sunlight save more, they say

by Dede Feldman

ALBUQUERQUE, N.M. — A growing number of New Mexico energy consultants, researchers, and engineers are saying that here in the land of solar energy, adobe structures, and extreme daily temperature variations, insulation is not the solution to energy conservation problems.

Why debunk the nation's most highly promoted energy conservation technique? The main reason is a study undertaken



NEW MEXICO has refused to adopt an amendment to its building code that would have discouraged houses like this — with lots of windows on the south side. The windows are used in conjunction with thermal mass in the house to store the solar heat. The overhang shades the windows in the summer, when the sun is high in the sky.

by two local energy specialists, Wybe Van der Meer and Larry Bickle. The study, which looked at heat transfer through walls over long periods of time rather than at peak energy use periods, used both computer simulations and experimental data. The data was based on a survey of actual

energy consumption for heating in 30 homes in the Albuquerque area.

Results of the study were startling. They included the following conclusions:

—There is little if any correlation between increased insulation and reduced energy consumption.

—There is a definite correlation between increased glass area and reduced average energy consumption for winter heating.

—There is a definite correlation between color and average winter energy consumption. Dark houses require less energy.

While these findings came as a shock to some, in New Mexico they seemed like common sense to many traditional adobe builders and passive solar enthusiasts. In fact, the controversial study grew out of the uproar created by these groups as they confronted the state's proposed adoption of amendments to its building code (Chapter 53 of the Uniform Building Code) in 1976.

The 1976 code included standards developed by the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) in 1973 aimed at stimulating energy savings in new buildings in the face of the Arab oil embargo. If adopted without modification in New Mexico, the new code would have made it difficult or prohibitively expensive for many masonry structures, adobe buildings, and passive solar homes to comply.

This logic seemed to fly in the face of the intuitive wisdom of native New Mexican builders who maintained that adobe was an energy conservative material. In addition, the code bothered the state's growing number of solar builders, who maintained

(continued on page 6)

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Insulation myth ...

(continued from page 5)

that if the code were adopted the result would be a net energy loss.

KEY CONTRADICTION

In response to the furor, the state agreed to study the problem, figure out whose energy conservative ideas made sense, and modify the new code accordingly.

Research projects funded by the New Mexico Energy Resources Board were immediately initiated through the New Mexico Energy Institute at the University of New Mexico; Van der Meer and Bickle's project was one of them.

Basically, the studies found that the key contradiction between the proposed energy standards and the intuitive feelings of many builders was a matter of when heat loss was measured. The building code requirements were based on measuring heat transfer through walls (U value) at a peak energy period; local assumptions about adobe and solar were based on average energy consumption over a whole heating season.

Viewed in this light, the arguments

tion campaign — was that this would save energy. Even more important to the average consumer, it would save money on mounting heat bills.

"Wrong on both counts," many of the energy researchers who had worked on New Mexico's energy code cried.

"According to our studies, it's doubtful whether you'll be saving either energy or money with additional insulation," says Mike Dexter, one of these researchers.

Dexter believes that insulation above 2

It might be better to spend your money on a solar water heater than on additional insulation.

inches in the wall and 3½ inches in the ceiling in New Mexico is not worth the cost. Instead of adding insulation to these areas, he advises those who want to save money to insulate their heating ducts and pipes — especially those coming from the water heater.

In terms of actual energy use many of the experts interviewed by High Country News feel that, in many ways, insulation can be counterproductive.

"Stuffing insulation on south walls is a bad idea because glass or adobe are good

insulation is based on differing interpretations of what energy conservation means.

"Do you mean reducing energy consumption in the individual building or at peak periods in the system as a whole? You've got to look at the different objectives that people have. The Public Service Company is talking about conserving energy at times of peak energy use in the entire system. In this sense, adding lots of insulation and reducing the glass area makes sense. But if you're talking about conserving energy

stratification techniques like the ones proposed by Jay McGrew in Colorado. (McGrew suggests using a fan to bring warm air that has risen to the ceiling to the floor, where it can be enjoyed.) Our tests concur with his that destratification can save as much as 20-30% of your heat."

Even more cost effective is simple weatherstripping around doors and windows, the installation of heavy drapes that can be drawn at night, and turning down the thermostat at night, many of the experts say.

"Just getting people to think about energy conservation and modify their behavior patterns (i.e. closing the door, sealing off doggie doors, etc.) makes the biggest difference," Dritt says.

"Painting south walls a dark color is so much cheaper than insulation and it can reduce heat loss by as much as 60%," Dexter says.

Dexter also says that a galvanized tin roof is a good idea to minimize heat loss in the ceiling.

"A corrugated tin roof absorbs solar

Dexter believes that insulation above 2 inches in the wall and 3½ inches in the ceiling in New Mexico is not worth the cost.

radiation and reflects heat from inside," Dexter says.

"It's all a question of where you want to invest your money," Bennett says. "It might be better to spend your money on a solar water heater than on additional insulation."

The controversy surrounding the effectiveness of insulation here in New Mexico is perhaps only the first manifestation of an even larger controversy over energy conservation in general. According to Bickle, the controversy has been characterized by several problems.

"We don't yet have the analytical tools to deal with energy conservation," Bickle says. "Although it appears to the layman that there is an abundance of technology in this field, this is deceptive because most of these tools were developed during periods of abundant energy. At that time the main focus was the fear that the furnace would break down at the peak load period, leaving the contractor liable for damages." Consequently 90-98% of home heating technology is based on making sure the furnace will provide enough heat at peak periods, rather than on making sure it will work efficiently on the average, Bickle says.

Secondly, Bickle says that the U.S. does not face an energy crisis, but an oil and gas crisis.

"It's not clear whether we actually want to reduce energy consumption or simply switch to more plentiful sources of fuel like coal, solar or nuclear," he says.

Bennett points to another underlying problem. In teaching the revised code to builders and inspectors throughout the state this fall, Bennett noticed that many bought the "Smart Home" idea and the more-is-better insulation theory without knowing much about energy.

"People should learn energy fundamentals and principles of heat flow, then they'll use common sense in insulation and even more important, in design," he says. "Unfortunately, that's the type of practical knowledge that usually doesn't come out of books, but from hard experience and lots of mistakes."

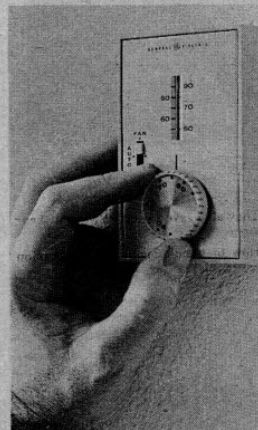


Photo courtesy of Pacific Power

and Light **ONE OF THE MOST EFFECTIVE WAYS to save energy is to turn down the thermostat. As much as 10% of the fuel you use for heating can be saved by turning the dial from 72 degrees to 68 degrees, according to a Public Service Company of Colorado brochure. The utility insulated 13,900 homes in the Denver area in 1977. It also disseminated energy conservation tips to thousands of homeowners.**

started to fall into place. Take the case of the south-facing window.

Looking at net energy gain, the solar enthusiasts had said south-facing glass with thermal mass inside to store the heat, perhaps a stone floor or fireplace, made sense. The ASHRAE people said no — windows would lead to heat loss at night. Better to eliminate all windows, even those on the south, they said.

Using two different definitions of energy conservation, both were right — each on its own terms. On a cold winter night following a cloudy day, when the house's demand for heat would be at a peak, the windows would lose a lot of heat. Over the course of an entire winter, however, they would gain more than they would lose.

When it came to insulation, the controversy became even more intense — particularly since the state was then in the midst of a promotional campaign staged by the Public Service Company of New Mexico. The design of the media blitz was to sell the public the latest in energy conservative housing — the "Smart Home."

According to the ads, the "Smart Home" was smart because it had 6 inches of insulation in the walls and 12 inches in the ceiling. The ads' implication — which was buttressed by a mounting federal insula-

solar heat collectors, and insulation can block the solar transmission," says Rick Bennett, who has been teaching professionals about the state's new code, which has been revised along the lines of Bickle and Van der Meer's thinking.

"You can't just look at a building material like adobe and say it has a lousy R factor (ability to block heat flow in a wall) so let's insulate it," says James Dritt, senior research associate at the New Mexico Energy Institute.

"An R factor is not the beginning and the end. Adobe, cinderblock, or logs may be even better than insulation because of their mass," he says.

"If the sun shines on it, and there's some mass, you better wait a long time before you insulate," Bickle says.

Bickle also thinks that much of the controversy surrounding the effectiveness of

The "Smart Home" was smart because it had 6 inches of insulation in the walls and 12 inches in the ceiling.

Two more reservations want Class I air quality

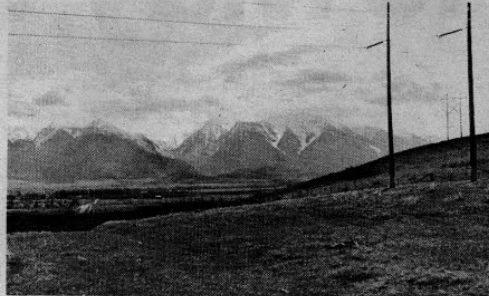


Photo by Richard Eggert

LIKE THE ALPS. Tribal chairman Bearhead Swaney says people think the Flathead Reservation is as beautiful as the Alps in some places. In the background are the Mission Mountains. In the foreground are Montana Power Co.'s 230 kilovolt transmission lines.

by Marjane Ambler

Two tribal governments in Montana have decided to seek Class I protection for their air. The tribal councils on the Flathead and the Fort Peck Indian reservations both voted unanimously to begin

studies necessary for the change in air classification. Their requests will eventually go to the U.S. Environmental Protection Agency.

Although any state or tribal government in a clean air region can request such a change, so far only the Northern Cheyenne

Tribe, also in Montana, has requested it. The Northern Cheyenne request was approved last summer after a year-long study. Residents of Dunn County, N.D., have asked for Class I protection, but the state government has not forwarded the request to the EPA.

Bearhead Swaney, tribal chairman of the Confederated Salish and Kootenai Tribes on the Flathead Reservation, says the tribes see no immediate threat to their reservation's air quality.

However, Norman Hollow, tribal chairman of the Assiniboine and Sioux tribes on the Fort Peck Reservation, sees threats from three sides. The most immediate is the Poplar River coal-fired power plant north of the reservation in Saskatchewan. Area ranchers have been fighting the plant for years. The plant is already under construction, and the Saskatchewan Power Co. plans to use no sulfur dioxide scrubbers to reduce air pollution. The Fort Peck tribes hope their air designation might force the plant to limit its emissions, although there are no legal precedents for such international pollution control.

In addition, the state of Montana is considering a large energy complex at the Glasgow Air Force Base two miles west of the reservation, and Burlington Northern wants to build a coal gasification plant to produce fertilizer a few miles south of the reservation.

Fort Peck tribal planner Ed Bauer says the council considered requesting Class I last fall, but decided against it because members were afraid it might limit the tribes' own development too much. The tribes own both coal and oil. However, with all these projects surrounding them, they decided they needed protection.

Bauer says, "I think there may be a move for all the reservations in Montana to go for Class I. I can't say for sure, but that's what I've been hearing. That could affect a lot of the state." There are seven Indian reservations in Montana.

Salish-Kootenai Tribal Chairman Bearhead Swaney says the tribes know of no immediate threats to air quality over their land, the Flathead Reservation. "But in this day and age, you never know what will happen," he says.

There is oil exploration on the reservation. Swaney says there is also a possibility that the Horner-Waldorf pulp mill in Missoula (about 20 miles from the reservation) or the Anaconda aluminum smelter in Columbia Falls (about 40 miles north of the reservation) would be affected. However,

others who live on the reservation say this is unlikely because of prevailing wind patterns.

Swaney says the designation might also force the agencies regulating logging in the area to stop burning slash in areas that have been cut.

"People refer to this area as the Alps of the United States. It's a very beautiful place, and we want to keep it that way," he says.

He says the tribes want to control future growth. One of the tribes' biggest battles to date has been with the Montana Power Co., which wants to string two 500 kilovolt transmission lines across the reservation to connect its Colstrip power plant with the Northwest. Swaney says the council members are 6-4 in opposition to the lines.

The tribes have taken other actions showing environmental concern, including



forbidding motorized boating on the lower Flathead River during the waterfowl nesting season.

They also gave \$27,000 to a grizzly bear study team for work on the reservation.

How to handle logging in the Mission Mountains on the reservation is the subject of much tribal controversy. For now, the tribal council has approved a three-year timber sale preparation plan. The council still has the power to nix sales before the Bureau of Indian Affairs advertises them, however.

The only other areas with Class I air in the country besides the Northern Cheyenne Reservation are national parks and wilderness areas over a certain size, which were protected by Congress.

Asked why he thinks no others have made the request, Swaney says, "It's because the others are exploiters. They're dominated by Chambers of Commerce, who will do anything for progress. . . . But we can't carry on the way we're doing. We can't cut down the last tree or kill the last animal or use the last drop of water."

Permit system has advantages over zoning for local planning

by Lee Nellis

Communities can and should shape their future through land planning, according to Kirk Wickersham, Jr., an attorney from Boulder, Colo. They can go so far as to attempt to shape the next generation. "You can even have a policy saying you want to have another generation of cowboys," he says.

For managing growth at the local level, Wickersham is an advocate of development permit systems as alternatives to zoning. Zoning divides an area up according to where industrial, residential, commercial, and agricultural uses should take place. Zoning assumes certain capabilities for pieces of land. Under permit systems, decisions about where development can occur are made on a case-by-case basis.

Wickersham has just helped institute a permit system in the resort town of Breckenridge, Colo. He described the concept at a recent meeting of the Montana Association of Planners.

Wickersham says that development permit systems are "geared to change" and recommends their use in areas experiencing growth rates over 2.5%. Such systems are based on community goals adopted into law by local elected officials. They depend on case-by-case review of new development proposals using the community goals — or "policies" — as guidelines. If a development isn't compatible with community policies, it isn't granted a building permit.

The Breckenridge plan, for instance, contains more than 80 policies. Only a few policies are absolute. Most of the policies are relative — they encourage or discourage certain kinds of development. The planning commission or its staff evaluates the proposed development using a point system: minus two points for failure to fulfill the intent of a policy, plus two for full compliance. The idea is that all new de-

velopments must score at least zero. Higher scores result in bonuses to the developer allowing him to build at higher densities.

A chief concern of those listening to Wickersham was arbitrariness. Can each development be treated fairly under a permit system? Wickersham responded by noting that the Constitution requires fair and equal treatment of people, not pieces of ground. In fact, one of Wickersham's criticisms of zoning is that it does treat all parcels of land within a zone alike.

"Each parcel and each development is unique," according to Wickersham. Developers supported the Breckenridge permit system because it is flexible and, above all, speedy. The time from application to approval of a project is only 40 days.

The policies used to evaluate new development in Breckenridge varied. They include economic considerations. Breckenridge is trying to become less dependent on the ski industry. Also, design is important. New developments must be compatible with the area's traditional architecture. Neighborhood planning groups helped draft policies to protect or promote neighborhood values. Wickersham made it clear with his "cowboys" quote that policies can be tailored to fit any community or neighborhood.

Development permit systems are not common in the Northern Rockies area at this time. The Breckenridge system is the most complete one that Wickersham knows about. Others are used in Teton and Big Horn Counties, Wyo. Given the unpopularity of zoning in much of the region and the rapid growth that seems to be occurring everywhere, the kind of system Wickersham advocates might be a lot more common in the near future.

Copies of the Breckenridge ordinance are available for \$15 from the City Planner's office, Breckenridge, Colo. 80424.



THREE INDIAN RESERVATIONS, two of them in the midst of the coal fields of Montana, have decided to seek Class I air protection. The only other areas in the country with that protection are national parks and wilderness areas over 5,000 acres.

Sun Day is May 3

Q. What gets up before you do and spends the whole day looking for work?

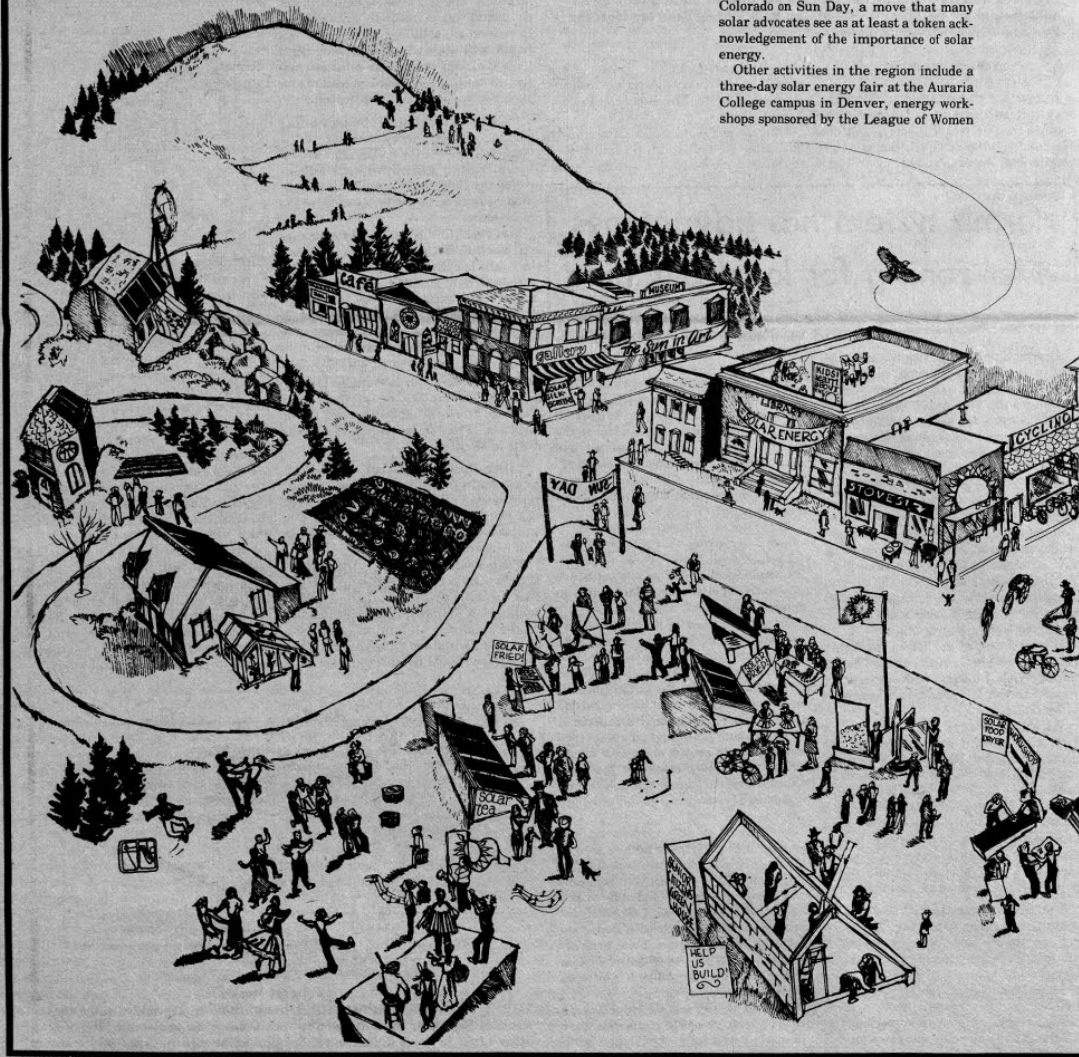
A. The sun. It's our most underemployed energy source.

Just as Earth Day 1970 is often referred to as the birthday of a wider public awareness of environmental concerns, organizers hope that Sun Day May 3 will be remembered as the one single event that brought solar energy into the public's eye.

Sun Day planners hope to make it a joyous occasion — one that will attract people of all interests. People have been celebrating the sun for eons with songs, dances, and worship ceremonies. For just as long, they've praised the soaring birds, and later the windmills that utilize another form of solar energy — wind currents.

President Jimmy Carter will be coming to the Solar Energy Research Institute in Colorado on Sun Day, a move that many solar advocates see as at least a token acknowledgement of the importance of solar energy.

Other activities in the region include a three-day solar energy fair at the Auraria College campus in Denver, energy workshops sponsored by the League of Women



3

Voters in Salt Lake City, open house at a community-built solar greenhouse in Cheyenne, a bike marathon in Boise, solar speakers at the Fort Berthold Indian Reservation in North Dakota, construction of solar collectors in Missoula, Mont., and teach-ins in Albuquerque, N.M. Labor organizations, farm groups, Scouts, women's groups, schools, churches, and libraries throughout the region have plans for the day.

It's getting late for ordering materials and for elaborate planning, but Harold Leibovitz, Sun Day coordinator for the Rocky Mountains, Northern Plains, and Midwest, says there is still time to put together community celebrations.

Some people who live in isolated areas and have no group to rally for a cooperative effort can do some things on their own. They can call local radio and television stations and tell them they want to hear the Public Service Announcements for Sun Day. All the radio and television stations in the country have received brochures describing the announcements that are available. Individuals can also write letters to the editor, drawing attention to Sun Day

and to the importance of solar energy. Letters can also be written to U.S. and state legislators in support of legislation introduced by the Solar Coalition, an ad hoc group of senators, members of Congress, and public interest groups.

Sun Day organizers in Washington, D.C., hope many people will think of such long-term goals and not just of the one day. In fact, they already have tentative plans to bring state coordinators together after May 3 to come up with longer range objectives and strategies for attaining them.

SUN DAY COORDINATORS

Sun Day coordinators have been set up in each state. They can tell you what activities are already planned, help you set up activities in your own communities, and tell you if there is another coordinator in your part of the state. Leibovitz points out that many state governments are coordinating Sun Day activities — Montana has three state staff members working full time on Sun Day. In some states, he says there was some resistance from utilities and mining companies that thought state government shouldn't be involved in promoting solar energy.

State coordinators in this region are:
Arizona — Darlene Ventrella, Arizona Sun Day Office, 618 N. Central, Verde Room, Phoenix 85004. (602) 253-2295 or (800) 325-5499.

Colorado — Mary Ann Van Buskirk, 1325 Delaware, Denver 80204. (303) 572-0704.

Idaho — Ted Engelmann, Office of Energy, State House, Boise 83720. (208) 384-3800.

Montana — Jay Cooke, Montana Energy Office, 1426 9th Ave., Helena 59601. (406) 449-3940.

New Mexico — David Miller, New Mexico PIRG, 139 Harvard SE, Albuquerque 85028. (505) 277-2757.

North Dakota — Clay Dunlap, North Dakota Energy Conservation, 1533 N. 12th St., Bismarck 58501. (701) 224-2250.

FILMS AND SLIDES

The National Solar Heating and Cooling Information Center has a list of several films and slide shows for Sun Day telling where they're available and how much they cost.

The center is offering free rental on "The Dawn of Time," which gives an overview of the utilization of solar energy throughout history, and "The Solar Builders," which shows a New Jersey builder and a Colorado

builder talking about their experiences in building solar homes.

Most of the other films and slides are available for a fee. The topics include technical discussions of solar equipment, general discussions of solar energy, formats designed for school children, and step-by-step instructions for how to construct solar heaters.

Call the center for the catalog: National Solar Heating and Cooling Information Center, Box 1607, Rockville, Md. 20850. Toll-free phone number: (800) 523-2929.

SUN DAY RESOURCES

Resources available from Sun Day (1028 Connecticut Ave., NW, Room 1100, Washington, D.C. 20036 (202) 466-6880):

"So You Want to Have a Fair" by Gwendolyn B. Moore and Francis P. Koster. Escorts you through the planning process, suggesting where to get money, how to treat speakers, how to schedule ahead, why to have an advisory board, and what to do if it rains. 14 pages long.

Sun song list — song suggestions for local musicians or your radio station to play.

Fact sheets on solar energy and jobs, energy conservation, solar photovoltaic energy, selected state solar legislation, wind energy, consumer tips for buying solar.

Sun Day education packets for all ages.

Sunrise ceremony idea sheet.

"Sun Day Press Handbook" includes advice on how to work with newspapers and radio and television stations to get the best coverage, including how to get free Public Service Announcements.

Sun Day buttons saying "Solar Energy" or "Sun Day is May 3" for \$25 for 250.

Sun Day posters, T-shirts, and bumper stickers. The bumper stickers say "Sun Day is May 3" and cost \$6.25 for 25.

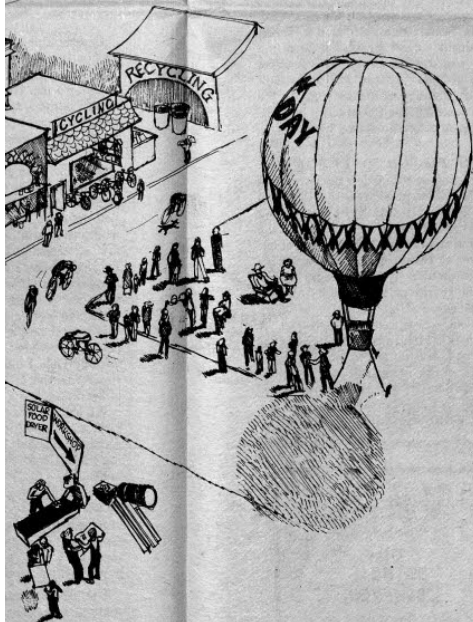
Large Sun Day flags (\$35).

A solar handbook, *Sun!*, published by Friends of the Earth. Contains a collection of solar articles by Denis Hayes, Amory Lovins, Barry Commoner, William Shurtleff, and others. Price is \$2.95 per book unless you order more than 10.

"Welcome to Sun Day!" brochures for you or your group to distribute at Sun Day. Tells what the individual can do to encourage use of solar energy in the future.

Speakers list. Gives names and phone numbers of possible speakers along with their subjects of expertise. (Most are located in the East or in California but a few are listed in Colorado and Montana.)

Ask to be put on the mailing list. Much of the above information is free from Sun Day, but contributions are appreciated.





energy news of the Rockies and Great Plains

GERMANS STUDYING WYOMING. A German uranium firm is among several that have recently announced plans for opening uranium mines in Wyoming. Urangengesellschaft-USA has been exploring in the area around Baggs, Wyo., since 1976 and plans a small mine and mill. Conoco has confirmed that it is planning a mine near Midwest, Wyo., as a joint venture with Kerr-McGee. Their mine, which would be about 1,280 square acres, is in the same general vicinity as 20 new mines planned by Cleveland Cliffs Iron Co. of Casper, according to the *Casper Star-Tribune*.

MPC CONSIDERS COALGAS. The Montana Power Co.'s long-range plans filed with the state Department of Natural Resources and Conservation indicates that the company is considering joining Montana-Dakota Utilities in the construction of a coal gasification plant. MPC says that it is considering the feasibility of such a plant but currently has no plans for engineering, locating, siting, financing, or constructing one. Possible sites identified are the Colstrip area, east of Great Falls, near Cascade, near Whitehall, and near Hardin.

UTAH STUDIES NUCLEAR. The Utah State Energy Conservation and Development Council has agreed to state participation in a study of the possible effects of a nuclear power park near the town of Green River, according to the *Deseret News*. The council stressed that the action does not represent a commitment to study the feasibility of the Green River site. Some council members were reportedly concerned that state participation would lock the state into using Green River as its only nuclear site. Consequently, the state will study the impact of the park if it were sited near any of Utah's smaller communities. The nuclear park proposal would place 10,000 megawatt power plants in the state.

WINDPOWER OPERATING. A 200 kilowatt wind turbine will provide about 15% of the electric power to Clayton, N.M. The generator, which was started up on Jan. 28, will be tested for two years to determine the performance and economics of such a project when connected to a conventional power plant. The blades of the windmill are designed to rotate when the wind speed reaches eight miles per hour. Peak efficiency is reached at wind speeds between 18 and 20 miles per hour.

ANDRUS LAUDS IPP SITE. Interior Secretary Cecil Andrus told Utah Gov. Scott Matheson that the new Lynndyl site is the best proposed site for the Intermountain Power Project's 3,000 megawatt power plant. Andrus had opposed the original site at Salt Wash, Utah, because of its proximity to Canyonlands and Capitol Reef National Parks. Andrus says that he has ordered accelerated environmental studies of the Lynndyl site.

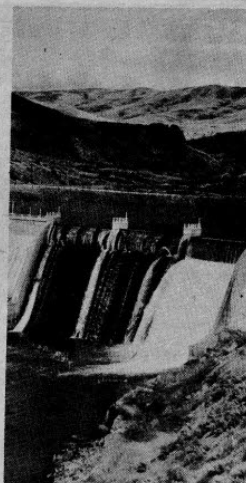


Photo courtesy Idaho Dept. of Commerce and Development

DISTRIBUTION OF cheap hydroelectric power from the Bonneville Power Administration to four states of the Pacific Northwest is generating controversy among the states' governors. Washington wants to retain its current share, while Idaho, Oregon, and Montana are demanding more.

BPA POWER HAGGLING. The governors of four Pacific Northwest states have failed to reach agreement on the allocation of cheap hydroelectric power from the Bonneville Power Administration. The center of controversy in a Boise meeting was Washington Gov. Dixy Lee Ray, who said

she would oppose any attempt to siphon off her state's share of the BPA power or to create any new government body to forecast loads and determine where power should be distributed, the *Idaho Statesman* reports. Idaho Gov. John Evans was optimistic, saying that the governors of Oregon, Washington, Idaho, and Montana "are closer to agreement than appears on the surface." Ray said, however, at the close of the conference, "I don't believe we are any closer to agreement than when we started." Three of the four governors favor the concept of a regional power authority to manage and allocate power, the *Statesman* says. Ray was the lone dissenter to the idea, saying she favors cooperation, but not the formation of an official body.

EDF LAWSUIT FAILS. A U.S. Court of Appeals has ruled that the Environmental Protection Agency was acting within its power when it set March 1, 1978, as the date when new clean air rules covering the prevention of significant deterioration would go into effect. The court overturned a restraining order issued by the Environmental Defense Fund. EDF maintains that the PSD rules should have become effective when President Jimmy Carter signed the new Clean Air Act on Aug. 7, 1977. The decision clears the way for EPA to begin granting about 60 applications for PSD permits, including one for Montana Power Co.'s Colstrip power plant.

COLSTRIP CONSTRUCTION OKAYED. The Montana Supreme Court has overturned a lower court decision that has been holding up construction of Colstrip power plant units 3 and 4. The decision will allow the building of the units to begin, while the issue is being examined. The lower court had ruled that a Health Department permit granted to Montana Power was invalid because the hearing process had been "procedurally defective." The Supreme Court did not rule on the issues raised by the lower court, but will allow construction to start.

IDAHO POWER OVERPOWERS. Witnesses appearing before the Idaho Public Utilities Commission say that the Idaho Power Co. is substantially overestimating the amount of generating capacity that the state will require by 1990. An economics professor at Idaho State University says that the company did not consider the impact that energy prices would have on demand for power. This makes the company's projections "worthless," he told the PUC. A University of Idaho agricultural economist said that the company is projecting too high an increase in agricultural energy use for irrigation. In all, the company's demand figures may be as much as 35% too high, the witnesses said.

poetry of the earth

William Stafford's latest book of poems is *Stories That Could Be True*, published by Harper & Row late last year.

Cheat Grass

If you are reading this, please turn toward a window. Now think of a field of cheat grass in a storm, those little heads doddering and shining their hint of purple, but you can't tell why.

If you are still reading this maybe something about that grass comes back: it was a trembling day with strange noises. Whatever next thing was coming, nobody knew

No need to read any more — now the cheat grass is still running with the wind, rippling purple waves. You could see it if you still lived there. And whatever the next thing was, it has already happened.

—William Stafford

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Apr. 21, 1978 — High Country News-11

N.M. uranium mine may pollute river

by Dede Feldman

Seventeen miles south of Santa Fe, N.M., lies a landmark that the Spanish named La Bajada because it marks the steep descent from the high plain around Santa Fe to the desert below. The area is rich in folklore of both Spanish and Indian origin. There are petroglyphs, ruins, and clay deposits still used by local Indians for pottery. Crumbled adobe walls and an old mission church serve as reminders of the Spanish land grants that once flourished in the area.

But La Bajada hill is rich in more than just folklore — it is rich in minerals as well. Perhaps the oldest mining district in the country, the area was copper mined by the Spanish, and later coal mined. In the 1950s and '60s, there was a large open pit uranium mine located on Santa Fe National Forest land in the Santa Fe River Canyon.

Operated on a lease obtained by Lone Star Mining and Development Corporation in the 1950s, the mine produced as much as

1,500 tons of ore a month at its height.

By the late '60s, the government's demand for uranium had dropped, and Lone Star Mining abandoned its La Bajada mine. The reason — economics.

According to officers of Lone Star, the ore in the vicinity was "complex" ore — valuable but difficult and expensive to separate from the cobalt and copper that appeared in the same deposit.

However, now things have changed. The price of uranium has skyrocketed, which has radically altered the economics and made uranium companies reevaluate old mine sites. Lone Star Mining and Development Corp. has requested that the U.S. Forest Service renew its old lease.

Local environmentalists and others concerned with the possible radioactive contamination of the Santa Fe and Rio Grande rivers got wind of the project late. The Forest Service had already conducted its own environmental analysis and recommended Lone Star's project to the Bureau of Land Management.

Angry that there had been no opportunity for public input into the plan, members of the Southwest Research and Information Center, the Central Clearing House, Concerned Citizens of Cerillos, and the Rio Grande chapter of the Sierra Club have called for public hearings on the mine and written to Interior Secretary Cecil Andrus requesting an environmental impact statement.

ENVIRONMENTAL IMPACT

Although the environmental analysis report already prepared by the Forest Service contains several serious reservations about the project, Don Alexander, from the minerals division of the Forest Service office in Albuquerque, says that the project has been approved by the Forest Service with certain stipulations. He says the BLM usually goes along with recommendations made by the Forest Service although the BLM has indicated it may hold public hearings.

One of the most serious environmental dangers examined in the Forest Service's environmental analysis is the possibility that the proposed uranium mine could contaminate the Santa Fe and perhaps the Rio Grande rivers.

The proposed pit is located in the middle of the Santa Fe River floodplain. The river floods annually both above and below the



Photo by Dede Feldman

ABANDONED ADOBE in the vicinity of La Bajada.

pit, and downstream it flows into the Cochiti Reservoir and then into the Rio Grande.

In addition, the report cites an erosion and landslide problem along the sides of the Santa Fe Canyon. It says the planned mining and exploratory activities can have an irreversible effect on surrounding vegetation.

Forest Service officials say that if the lease is approved, Lone Star will have to submit a detailed operating plan, obtain a water discharge permit from the Environmental Protection Agency, and submit a discharge plan to the state before the operations can begin.

A problem not noted in the Forest Service's report but present in similar mining operations in the Grants area is air pollution. Large quantities of mine air with an extremely high radon content are routinely exhausted into the air surrounding uranium mines. According to the New Mexico Environmental Improvement Agency, these airborne releases represent a risk to the health and well-being of people living in the immediate vicinity. That would mean the residents of the town of Bajada and Santa Domingo Pueblo.

Eloy Montoya has watered his horses and tended to his cattle in the open country at the mouth of the Santa Fe Canyon for years. Montoya remembers the Lone Star

Operation from the 1960s.

The main thing that concerns Montoya is his water.

"We use the river for irrigation. It's already contaminated from the sewage they dump in it in Santa Fe, and you can smell it here in the summer. This would even be worse," he says. "I'm against it. I'm just against it."

The Santa Domingo tribe is also concerned about the effects on the water. Ernest Lovato, executive director of the tribal office of the pueblo, says, "We use that water for everything — livestock, irrigation, drinking — this is going to affect us directly."

"We have every right to be concerned with encroachment on resources on or near the reservation," he adds. However, the tribe had not been informed by any state or federal agency of the proposed uranium mine.

"There it is again," he says, "it's a surprise. Just like Oxymin (Occidental Petroleum) and Union Carbide (two other companies interested in mining in the area), we have to learn from the media about these things. It's a good example of how the BIA (Bureau of Indian Affairs) and the state government are not looking out for our interests."

"The state government should be concerned with these companies that come in here from out of state, disturbing the land and then taking the money home."

Noting that the area around the proposed mine contains Indian ruins and petroglyphs, Lovato says he is deeply hurt by anyone — even anthropologists — who dig up the ruins and disturb the land.

"We don't do that," he said.

In response to the contentions that an expanded uranium operation at La Bajada could contaminate the Santa Fe River, Joseph Brousseau, president of Lone Star, says that the pollution of the river from the city of Santa Fe's sewage dumping upstream is of greater concern than "a little radiation."

"I used to run cattle in the canyon several years ago, and they died from drinking water polluted with sewage," Brousseau says.

In addition, he says that mining operations such as Lone Star's have to adhere to strict controls promulgated by the New Mexico Environmental Improvement Agency. "A company can't just go out and wantonly damage the environment," he says.



The **HCN**
Hot Line

energy news from across the country

SUN POWER BRIGHTENS. The U.S. Council on Environmental Quality says that the prospects for increasing use of solar power are "brighter than most imagine." CEQ says that solar technologies could supply one-fourth of the country's energy needs by 2000. CEQ member Gus Speth says, however, that reaching such levels of use would be difficult and would require strong energy conservation programs and an end to subsidies for conventional fuels.

NUCLEAR WASTES POLICY. President Jimmy Carter has promised that his administration will have a plan for disposal of nuclear wastes by the end of the year. He has set up an interagency task force headed by Energy Secretary James Schlesinger to recommend solutions. Carter's announcement follows completion of a Department of Energy study that said that a majority of technical experts conclude that the wastes can be safely stored in geologic formations such as salt or granite caverns. The Department of Energy also said the federal government should assume responsibility for permanent disposal of all forms of nuclear wastes, including those stored in commercially operated facilities.

ENERGY MONOPOLIES EXAMINED. Federal Trade Commission officials will recommend to Congress that it limit the amount of coal and uranium that big oil companies may own, according to a United Press International report. An FTC staff analysis has concluded that competitiveness among fuels is being threatened by the increased involvement of oil and gas firms in other fuels. If Congress goes along with the FTC recommendation, it could force more than \$108 billion in divestitures.

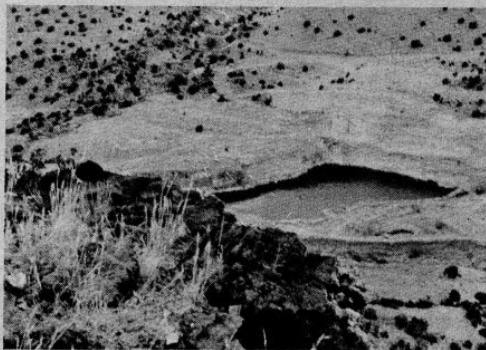


Photo by Dede Feldman

OLD URANIUM PIT MINE, now filled with water, in the Santa Fe River bed. A Forest Service environmental analysis says the reopening of the mine might result in contamination of the Santa Fe River.

12-High Country News — Apr. 21, 1978



Hour of Trial

by G. Michael McCarthy, University of Oklahoma Press, Norman, 1977. \$12.50, hard cover, 327 pages.

Review by Peter Wild

The Republican side of the aisle burst out with "Marching Through Georgia." Democrats answered with the "Doxology" as the 1891 session of Congress adjourned. In the final rush, the legislators had just passed a number of bills. Among them was the General Land Law Revision Act. One of its many items—undebated and unnoticed by most—gave the President of the United States the unprecedented power to set aside timber lands as preserves.

Soon after, Benjamin Harrison withdrew from settlement 13,000,000 acres of public land—all of it in the West—and declared them forest reserves, the forerunners of today's national forests. It didn't take Congressmen back home long to realize that they had been hoodwinked. Because of the new restrictions on their activities, ran-

chers, miners, and lumbermen fought the reserve concept with a bitterness that sometimes broke out in violence.

Especially in northwestern Colorado, wild even after the turn of the century, herdsmen considered the public's land their exclusive domain. Near guerrilla warfare reigned as cowhands fired potshots at forest rangers. Yet the insurgents never were in the majority. Agricultural areas, notably Delta and Montrose, supported the reserves. Metropolitan Denver considered its recently denuded mountains and also realized that in the West, life depended on a reliable water supply. It could be had only by proper management of the forests that spawned the state's rivers.

To one degree or another, all the states west of the Great Plains resisted the reserves, though G. Michael McCarthy focuses on Colorado as typical of the controversy's development. Yet the groupings of a rancher in Steamboat Springs were much the same as those of his counterpart across the Divide in Ft. Collins. After several chapters of this, the details become more repetitive than enlightening, though Coloradans might appreciate the coverage.

In their place the reader would be better served by a background chapter or two on the fascinating "conspiracy" of Eastern conservationists. They had worked for years to bring off their 1891 coup over the exploiters in Congress. Secretary of the Interior John W. Noble, for instance, responsible for appending the forest rider to the

General Revision Act, is nowhere mentioned.

Then, too, one might form the false impression that the battles over forest reserves tell most of the story of conservation in the West around the turn of the century. To the contrary, in Colorado itself irascible Enos Mills campaigned for preserving the Longs Peak area as a national park. Unlike the reserves, where the government allowed supervised mining, lumbering, and

grazing, the parks remained wilderness. Though the author touches on the movement for parks, the book needs a longer discussion of it to create the general context for McCarthy's more limited area of concentration.

Nonetheless, these are faults of omission rather than commission. Hour of Trial contains a choice selection of period photographs. All in all it is a useful contribution to an aspect of conservation history that others have passed over.

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Eavesdropper

ENDANGERED SPECIES ATTACKS. The U.S. Senate is now considering amendments to the Endangered Species Act, including an amendment by Sen. John Culver (D-Iowa) that would set up a committee with authority to grant exemptions in special cases. Other amendments include one that would limit the number of species protected by the act. Another would give governors of the affected states final say over whether disputed projects should

be built, according to the Associated Press.

CARTER DEMANDS TREES. President Jimmy Carter has instructed the Agriculture and Interior departments and the Council on Environmental Quality to report within 30 days on ways to step up tree-harvesting. Carter wants to slow down the soaring inflation in lumber prices. Environmentalists say that a major increase in cutting on public lands would have a serious environmental impact without doing much to cut inflation. Carter says he wants the increased production to be "environmentally acceptable and economically efficient."

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CANYON COUNTRY GUIDEBOOKS. For a list of 12 guidebooks and maps describing the canyon country of southeastern Utah, write Wasatch Publishers, P.O. Box 963H, Moab, UT 84532.

STAFF OPENINGS. The Dakota Resource Council has openings for two full-time field persons. The DRC is a recently organized citizens organization of farmers, ranchers, and other citizens working on energy and coal development issues in North Dakota. Send resume, writing sample, and references to DRC, P.O. Box 254, Dickinson, ND 58601, (701) 227-1851.

UTAH WRITERS sought by HCN. We are interested in stories from Utah on air pollution, alternative energy innovations, coal development, and people making the news. Pay is two cents to four cents per word for fair, accurate news reporting. One-sided diatribes unacceptable. Contact Joan Nice, Box K, Lander, Wyo. 82520 with story ideas.

SHOW YOU CARE. Become a member of National Parks & Conservation Association. For over 50 years NPCA has been a leader in the continuing battle to protect our environment. Join with us today in our fight for a better tomorrow. Members receive our fascinating, monthly magazine. For membership information write to: NPCA, Dept., M, 1701-18th St., N.W. Washington, D.C. 20009.

HELP WANTED. Mature volunteers to serve as summer Campground Hosts in Colorado. Retired couple preferred (will consider other couples with appropriate background). Applicants must have small camper vehicle and CB (free campsite provided). To be considered for this rewarding experience, please send detailed letter to: PO Box 1792, Fort Collins, Colorado 80522.

FIELD WORK. Volunteers needed to inventory roadless areas in northwest Wyoming. Should be able to read a map, hike, take slides, and prepare a brief written report. Contact Bart Koehler, The Wilderness Society, Box 1184, Cheyenne, Wyo. 82001.

FAMILY PLANNING CENTER. Providing responsible counseling, thorough educational classes, clinics. Costs no more than you can afford. Anyone is eligible. Serving eight Wyoming counties with outreach RNs. NOWCAP, 268 Main Street, Lander, Wyo. 82520. (332-9315).

CITIZENS' FOOTRACE. High Country News is sponsoring the Second Annual Lander Citizens' Footrace to be held June 3. (The date has been changed.)

To enter, come to the southeast end of City Park between 5 and 5:45 p.m. The fee is \$1. Starting time is 6 p.m. Classes of competition will be based on interest and number of entries. For more information call Sarah Doll at 332-3929 or Joan Nice at 332-4877. (Classes last year ranged from youth to over-40, including a walking class.)



Western Roundup



Apr. 21, 1978

Canadians demand talks on Garrison

The Canadian government has told the U.S. State Department that they should "sit down and start talking" about the Garrison Diversion irrigation project in North Dakota, according to a copyrighted story in the **Bismarck Tribune**. The Canadians say the revised proposal by Interior Secretary Cecil Andrus cutting the project down by 250,000 acres does not address Canadian concerns.

The International Joint Commission, which is composed of both U.S. and Canadian representatives, said in September that Garrison could ruin Canadian fisheries. The Boundary Waters Treaty of 1909 provides that the United States will

not pollute waters going into Canada.

The U.S. State Department says it will stand by the treaty obligations. However, the department says it is too soon to tell whether the revised project would still violate the treaty.

Garrison is one of the several projects that environmentalists had hoped the Carter Administration would eliminate funding for. However, according to Elvis Stahr of the National Audubon Society, the administration's efforts to mollify Garrison project proponents were the first clue that the administration would "knuckle under to election year politics" and change other water policy reform ideas.

Absaroka-Beartooth wilderness passes

President Jimmy Carter has signed a bill creating a 904,500 acre Absaroka-Beartooth Wilderness Area in Montana, the largest single addition to the wilderness system since passage of the Wilderness Act in 1964.

The bill passed the House by a vote of 405-7 on March 14. The only votes against the bill were by Reps. Ron Marlenee (R-Mont.), Steve Symms (R-Idaho), George Hansen (R-Idaho), Bob Stump (D-Ariz.)

and representatives from Georgia, Illinois, and Oklahoma.

The area earned a rating of 200, a perfect score, in the 1972 RARE I Forest Service inventory of roadless areas, according to The Wilderness Society. The wilderness designation will protect habitat for the grizzly bear and for the northern Rocky Mountain timber wolf (see HCN, 3-10-78).

The High Lakes area of Wyoming was not included in the bill.

Yellowstone grizzlies holding their own

Researchers with the Interagency Grizzly Research Team say grizzly population levels are holding steady in and around Yellowstone National Park.

In fact, Dick Knight, team leader, says the reproductive rate is high enough to justify hunting to control the size of the population outside the park, according to the **Billings Gazette**. The Wyoming Game and Fish Department is now considering a proposal for hunting.

Knight says the field studies indicate

about 350 grizzlies inhabit the 8,000 square mile area in Montana, Wyoming, and Idaho. Knight says the cub-sow ratio is a little lower than what earlier researchers found, but the survival rate of cubs is higher.

The interagency team was funded by the National Park Service, the Forest Service, the U.S. Fish and Wildlife Service, and game and fish departments in the three states. The study will continue for another five years.

Hearings planned on monuments' air

Public hearings have been scheduled to determine if the air over national monuments in the Rocky Mountain region should be given Class I protection. When an area is redesignated Class I, deterioration of air quality by major sources is prohibited.

When Congress passed the Clean Air Act amendments last August, it designated all existing national parks and wilderness areas as Class I and said monuments should be further studied.

The areas of primary interest include these monuments:

- Colorado — Black Canyon of the Gunnison, Colorado, Dinosaur, Florissant Fossil

- Beds, Great Sand Dunes, Hovenweep, and Yucca House.
- Montana — Custer Battlefield (on the Crow Indian Reservation).
- South Dakota — Badlands, Jewel Cave.
- Utah — Cedar Breaks, Dinosaur, Hovenweep, Natural Bridges, Rainbow Bridge, Timpanogos Cave, Pipe Spring (administered by Zion National Park).
- Wyoming — Devils Tower, Fossil Butte.

The hearings will be May 1 at the Utah Division of Wildlife Resources auditorium in Salt Lake City at 7 p.m. and May 4 in Lakewood High School in Lakewood, Colo., at 7 p.m.

Utah group urges no more wilderness

The Utah State Wilderness Subcommittee has taken the position that no more wilderness areas should be designated in the state at this time, according to the **Deseret News**. The group was established by Gov. Scott Matheson to prepare a state position on the second Roadless Area Review and Evaluation (RARE II).

Local government representatives will attempt to further identify areas that would receive additional wilderness study.

The **News** reports, however, that most of these officials say that they don't want any areas designated wilderness because the state already has too much. One commissioner said, "We lock up, lock out, and hold these areas for less than one per cent of the state people. We already have hundreds of thousands of acres of wilderness in Utah."

The only designated wilderness in Utah is Lone Peak, which totals 29,567 acres.

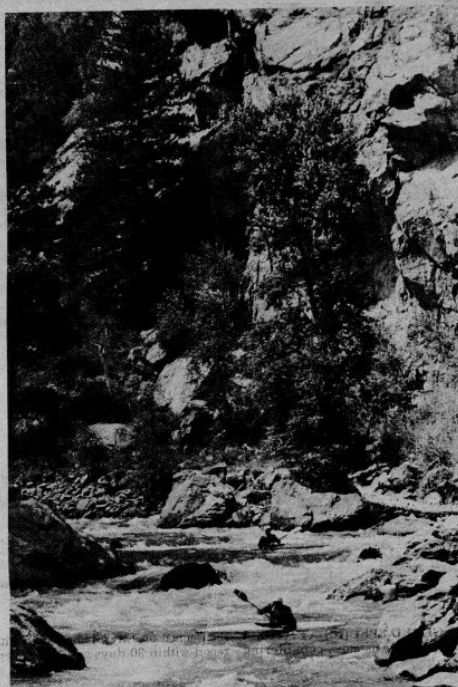


Photo by Sue O'Brien

KAYAKERS in Waterton Canyon on the South Platte River.

Hearings planned on Foothills dam

Although the Foothills Water Treatment project received approval from the Bureau of Land Management (BLM) last month, Colorado environmentalists are still hoping they can stop a dam in Waterton Canyon that would serve the plant.

Ben Harding of the Water Users Alliance says the Environmental Protection Agency must approve a dredge and fill permit for the dam and has scheduled public hearings to look at alternatives. The plant would serve the Denver area and is located about 25 miles from the city.

"Politically, this is very important since it's the first time the plant and the dam issues have been studied separately," Harding says. The Denver Water Board has said the dam is essential for the plant. However, the Water Users Alliance says there are alternatives, such as using a pumping station at the bottom of the canyon instead of the dam at the top of the canyon for supplying the plant with water.

EPA Director Alan Merson opposes the Foothills project because the additional water it provides will encourage metropolitan growth, leading to more air pollution. He hopes that the question of water conservation will be dealt with at the dam hearings.

The manager of the Denver Water Department says the delay caused by the additional hearings could add \$10 million to the cost of the \$135 million project and could mean work will have to be postponed until next summer.

People on the Western Slope, where the water originates, will have an opportunity to speak at a hearing in Dillon at the Ramada Inn at 7 p.m. on April 25. The other EPA hearing will be in Denver at the U.S. Post Office Auditorium at 7 p.m. on April 27.

More information is available from the Water Users Alliance at 2239 E. Colfax Ave., Denver, Colo. 80206 or call (303) 355-1627. Written comments on the issue should be sent to EPA, Room 900, Lincoln Tower Building, 1860 Lincoln St., Denver, Colo. 80203.

Harding says letters should also be sent to Sen. Floyd Haskell (D), Rep. Tim Wirth (D), and Gov. Dick Lamm (D). A protest picnic is planned April 22 to show Lamm that some people are upset with his acquiescence to the Denver Water Board on this issue, Harding says.

ZPG's unique prize

First prize in a Zero Population Growth money-raising event in Denver will be a vasectomy, and second prize will be a six months' supply of the winner's choice of contraceptives.

The booby prize is free diaper service for one month. The drawing will be held on Father's Day, June 18. ZPG president Joyce Laman says winners can get the cash equivalent of any of the prizes instead. "There will be no arm-twisting," she says.

14-High Country News — Apr. 21, 1978



by Myra Connell

"The year's at the spring" — time to tackle the annual task of clearing away the winter's debris from my yard. Under the influence of exercise, fresh air, and blue sky, my mind turns from the weighty complexities of weather modification and wind power to contemplation of elemental things like trees. They are such interesting creatures.

While working, I amuse myself by matching various types of trees to people whom they resemble.

A pair of European cut-leaved birches stand at the front corners of the grounds. Like bejeweled ladies whose main reason for existence is looking ornamental, they grow there year after year, producing nothing tangible. Their white bark is greatly admired by passersby. After rain the slender twigs gleam with reflected light and resemble the delicate web of the orb spider.

Who could say that their contribution has no value?

Like many people that I know the Russian olive tries to compensate for its lack of beauty by being a hard worker. It produces a profusion of fragrant blossoms, fruits that feed both squirrels and birds, as well as shade that shields the house from the fierce summer sun. However, like most worthy persons, it has its shortcomings — it litters the lawn with untidy leaves all summer and reminds me of people who strew their belongings about.

In the back yard, a mishapen green ash shows the effects of several severe winters. In my fancy it is a weather-beaten old peasant woman whose bent shoulders and gnarled joints tell a story of lifelong hardship.

A Douglas fir reaches out with pliant branches to caress those who brush past. It brings to mind the gentle, soothing hands of warm, caring persons.

The Colorado blue spruce nearby is a sharp opposite to the fir. Its needles are so stiff and prickly that one avoids getting near. In my imagination this tree is the fellow who badgers others by making pointed, sarcastic remarks.

A little Scotch pine with a less than perfect shape is like a child who has suffered underprivilege and neglect. This tree

nearly died when quite young; but tender care revived it, and it grew into a charming character after all.

On the tree farms of the Northwest I have seen closely ranked, monotonously uniform evergreens, indistinguishable in size, shape, and color. In them I see the conformists, especially teenagers, afraid to deviate from the behavior of their peers. These trees, having been given ideal conditions of soil, moisture, and climate, will surely end up as a pile of good lumber;

likewise the people whom they resemble.

In contrast, the grotesque old pines that so frequently grace the crests of rocky ridges in the West develop character and individuality. They remind me of tribal patriarchs, monarchs of all they survey. With their roots firmly anchored in the ground, their limbs embracing the winds, their heads turned toward the sky, they grow sturdy and tough by struggling against adversity of storm and drought, and ancient and wise in the ways of the woods.

Guess Who's in Town

This album's query: "Guess Who's in Town?" is answered with such a variety of musical styles and songs that one knows Tim O'Brien and friends must be in town.

O'Brien is a fine singer and a triple-threat instrumentalist. He plays fiddle, mandolin, and guitar. His voice is a haunting tenor.

There are 15 selections on this album. Side one is fiddle-filled, with eight tunes from the country. Side two vocals include some sweet, vibrant, swing numbers like "Guess Who's in Town" and "Cadillac-in'" (with the Ophelia Swing Band).

To order: send \$5 to "Guess Who's in Town," Tim O'Brien, 1251-A, Verbera Street, Denver, Colo. 80220. (Biscuit City Records — BC 1317) HCN is sharing the profits on sales of this album.



Tim O'Brien — Eclectic fiddle

STATE OF WYOMING PUBLIC NOTICE

PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTE WATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT (92-502 et. seq., WYOMING STATUTES 1967, CUMULATIVE SUPPLEMENT 1973).

IT IS THE STATE OF WYOMING'S INTENTION TO ISSUE WASTE WATER DISCHARGE PERMITS TO (1) ONE INDUSTRIAL DISCHARGER, (2) TWO COMMERCIAL DISCHARGERS AND (3) TWO OIL TREATER DISCHARGERS, TO RENEW (1) ONE MUNICIPAL AND (1) ONE STATE GOVERNMENT DISCHARGE PERMIT, AND TO AMEND (3) THREE MUNICIPAL DISCHARGE PERMITS AND (2) TWO INDUSTRIAL DISCHARGE PERMITS WITHIN THE STATE OF WYOMING.

APPLICANT INFORMATION

(1) APPLICANT NAME: KERR-MCGEE NUCLEAR CORPORATION
MAILING ADDRESS: P.O. BOX 188
GLENROCK, WYOMING 82637
FACILITY LOCATION: SECTION 16, T35N, R74W,
CONVERSE COUNTY, WYOMING
APPLICATION NUMBER: Wy-0027740

The Kerr-McGee Nuclear Corporation plans to open a new underground uranium mine to be known as the "A" Mine, which will be located in the "uranium mining district" north of Glenrock, Wyoming. Groundwater which is encountered while mining will be pumped to the surface and treated with barium chloride for removal of radium. The water will then be routed to 2 settling ponds which will discharge to Potts Draw (Class III stream) via an unnamed drainage.

The proposed permit requires compliance with effluent standards considered to be "best practicable" effective immediately. Since the discharge is to a Class III stream, it is not necessary to include additional limitations to assure compliance with Wyoming's water quality standards. The proposed permit contains standard working conditions which requires control of runoff from disturbed areas and includes an exemption clause should a precipitation event greater than the 10 year-24 hour storm occur.

The permit requires periodic self-monitoring of effluent quality with reporting of results quarterly. The permit is scheduled to expire March 31, 1983.

(2) APPLICANT NAME: PAUL J. MCGEE

"NORTHLAND MOBILE HOME PARK"

MAILING ADDRESS: 605 MILLER AVENUE

GILLETTE, WYOMING 82716

APPLICATION NUMBER: Wy-0027834

Northland Mobile Home Park is a proposed development of 229 spaces to be located north of Gillette, Wyoming. Wastewater treatment will consist of an extended aeration package plant with a capacity of 60,375 gallons per day.

A public notice of intent to issue this permit was issued on March 10, 1978. The public notice resulted in numerous comments objecting to the issuance of the permit. The primary objections were that the discharge would raise the water table in an existing subdivision called Heritage Addition and that the effluent would constitute a health hazard.

In considering the objections, the Department concluded that the possibility of damage due to raising the water table does exist. Therefore, the Department has revised the proposed permit to require that the actual point of discharge conform with the following statement: "The official point of discharge shall be the end of the underground pipe which carries the effluent to an outfall point equal to or lower in elevation than the outfall from the Heritage Addition wastewater treatment plant."

The proposed permit continues to require the effluent quality to be in compliance with National Secondary Treatment Standards and Wyoming water quality standards effective immediately. Periodic self-monitoring of the effluent quality is required with reporting of results quarterly. The permit will expire April 30, 1983, and authorizes discharge to Little Rawhide Creek (Class III stream).

(3) APPLICANT NAME: A & T ENTERPRISES, INC.
"A & T MOBILE HOME PARK"
MAILING ADDRESS: BROADWAY AT PARK
RIVERTON, WYOMING 82601
APPLICATION NUMBER: Wy-0027758

A & T Enterprises proposes to construct a mobile home park with an ultimate capacity of 290 units, northeast of Riverton, Wyoming. The proposed wastewater treatment facility will consist of an aerated 3 cell lagoon with discharge to Spencer Draw (Class III water).

The proposed permit requires compliance with National Secondary Treatment Standards effective immediately. Because the discharge is to a Class III water, there is no need to require treatment higher than secondary to achieve in-stream water quality standards. The discharge is in a populated area, therefore, a strict secondary limitation on fecal coliform bacteria is included in the permit. Because the treatment system will be a lagoon designed to meet a BOD5 effluent limitation of 30 mg per l, the limitation on total suspended solids in the proposed permit is 100 mg per l (as agreed to by EPA Region VIII and the State of Wyoming).

The proposed permit requires self-monitoring on a regular basis with reporting of results quarterly. The permit will expire April 30, 1983.

(4) APPLICANT NAME: OIL DEVELOPMENT COMPANY OF TEXAS
MAILING ADDRESS: AMERICAN NATIONAL BANK BUILDING
P.O. BOX 12066
AMARILLO, TEXAS 79101

FACILITY LOCATION: STATE 30 LEASE No. 70-1284,
SW¼, SECTION 30, T48N, R103W,
PARK COUNTY, WYOMING
APPLICATION NUMBER: Wy-0027751

(5) APPLICANT NAME: PHILLIPS PETROLEUM COMPANY
MAILING ADDRESS: P.O. BOX 2920
CASPER, WYOMING 82602

FACILITY LOCATION: GOLDEN EAGLE LEASE, BATTERY No. 2,
NW¼, SECTION 12, T45N, R97W,
HOT SPRINGS COUNTY, WYOMING
APPLICATION NUMBER: Wy-0027600

Facilities are typical oil treaters located in Park and Hot Springs Counties. The water is separated from the petroleum product through the use of heater treaters and skim ponds. The Oil Development discharge is to the Greybull River (Class I stream) via an unnamed drainage. The Phillips discharge is to Cottonwood Creek (Class III stream) via an unnamed drainage.

The discharges must meet Wyoming's Produced Water Criteria effective immediately. Semi-annual self-monitoring is required for all parameters with the exception of oil and grease which must be monitored quarterly. The permit will expire December 31, 1981.

Chapter VII of Wyoming's Water Quality Rules and Regulations infers that every produced water discharge is beneficially used if the total dissolved solids content is 5,000 mg per l or less.

(6) PERMIT NAME: TOWN OF DIAMONDVILLE, WYOMING
MAILING ADDRESS: P.O. BOX 281
DIAMONDVILLE, WYOMING 83116
PERMIT NUMBER: Wy-0029303

The wastewater treatment facility serving the Town of Diamondville, Wyoming, is a single cell lagoon with 3 separate outfall pipes to the Hama Fork River (Class I stream). Discharge point 001 is the gravity outfall, discharge 002 is the easternmost pumped discharge and discharge 003 is the westernmost pumped discharge.

Current plans call for the Towns of Kemmerer and Diamondville to jointly construct a new or upgraded facility, the Diamondville lagoon will be abandoned. Therefore, the proposed permit simply requires the Town to operate the existing facility at maximum efficiency until such time as the new or upgraded plant is completed, at which time Diamondville will be required to have no discharge. Definite dates for achieving no discharge cannot be included in the permit due to Federal construction funding uncertainties.

In the interim, Diamondville is required to monitor the quality of its effluent on a regular basis and to report the results of such monitoring quarterly. The permit will expire June 30, 1983.

(7) PERMIT NAME: TOWN OF ELMO, WYOMING
MAILING ADDRESS: P.O. BOX 244
HANNA, WYOMING 82327
PERMIT NUMBER: Wy-0026328

The wastewater treatment facility serving the Town of Elmo, Wyoming, consists of a 3 cell lagoon. The first 2 cells are aerated. Any discharge from the facility will be to Big Ditch (Class III stream) via an unnamed drainage. A discharge permit for this facility was originally issued in November of 1976, however, it was later determined that future discharges would be unlikely and the permit was inactivated in March of 1977. A re-evaluation of the project has determined that an occasional discharge is now possible, thus it is now proposed that the permit be reissued.

It has been determined by the State of Wyoming that lagoon systems cannot economically achieve the national secondary treatment standard for total suspended solids. Therefore, the permit contains the less stringent limitations agreed to by EPA for Wyoming lagoon systems.

Because the discharge is to a Class III stream, there is no need to evaluate the need for tertiary treatment at this facility, however, the permit does require compliance with National Secondary Treatment Standards (with the exception of total suspended solids) and Wyoming water quality standards effective immediately. Periodic self-monitoring of the effluent is required with submission of results quarterly. It is proposed that the permit expire March 31, 1983.

(8) PERMIT NAME: TOWN OF HANNA, WYOMING
MAILING ADDRESS: P.O. BOX 8
HANNA, WYOMING 82327
PERMIT NUMBER: Wy-0027475

There are 2 wastewater treatment facilities serving the Town of Hanna, Wyoming. The "old" facilities consist of a 2 cell lagoon in which the first cell is aerated. The "new" facilities are located further west of the Town and consist of a 2 cell lagoon in which the first cell is approximately 12 surface acres and the second is approximately 7.5 surface acres. Both facilities will discharge to Ditch Creek (Class III stream).

The existing discharge permit for the Town of Hanna allows a discharge from only the "old" lagoon (discharge point 001), therefore, it is now necessary to modify the permit to allow discharge from the new lagoon as well

HCN Bulletin Board

Apr. 21, 1978

LOONEY LIMERICKS

by Zane E. Cology
There once was a man named McGrew
Who said, "Take a look at your flue.
That hole is so gaping
Your heat is escaping
And sucking your money up, too."

SOUTHWEST WYOMING COAL EIS

Copies of the draft environmental impact statement on proposed federal coal development in southwestern Wyoming are now available. The EIS analyzes the environmental effects of proposed development of coal reserves in Lincoln, Sweetwater, and Uinta counties. A limited number of copies are available from the Bureau of Land Management, Box 1828, Cheyenne, Wyo. 82001 or the BLM District Manager, Box 1869, Rock Springs, Wyo. 82901. Public hearings are scheduled in Rock Springs on May 16 and in Kemmerer on May 17. Those unable to appear at the hearings should submit written comments to Team Leader Coal ES Team, at the BLM Rock Springs Office by May 31, 1978.

USED OIL RECYCLING

The largest single source of oil pollution in the waters of the U.S. is automobile crankcase oil. One solution to the problem of disposing of used oil is to recycle it. To find out how to get a state or local government to adopt such a recycling program, write for "A Model Used Oil Recycling Act," from the Used Oil Recycling Program, Department of Energy, 12th and Pennsylvania Ave. N.W. Rm. 645, N.P.O. Building, Washington, D.C. 20461.

STALKING EDUCATION

An outdoor education workshop, "Stalking Education in the Wild," will be held May 5 to 7, 1978, at the Colorado Education Center near Florissant, Colo. Over 250 events dealing with many aspects of the out-of-doors and education are planned for school teachers, administrators, camp leaders, and naturalists. For more information contact Roger A. Sanborn, Colorado Outdoor Education Center, Florissant, Colo. 80816.

N.D. SUN DAY COORDINATORS

Clay Dunlap of Bismarck and Mike Jacobs of Mandan, N.D., are setting up a committee in the state to coordinate Sun Day activities. Sun Day is a nationwide observance on May 3 that has been endorsed by a broad coalition of farmers, trade unionists, consumers, environmentalists, social activists, and independent businessmen. For more information, contact Dunlap at the Office of Energy Management and Conservation, State Capitol, Bismarck, N.D. 58505 or Jacobs at Box 10, Mandan, N.D. 58554.

AMORY LOVINS IN MONTANA

Amory Lovins, physicist, environmentalist, and author of *Soft Energy Paths*, will take part in a public forum on energy in Helena, Mont., on April 26 and 27. The forum will deal with energy policy options for using both conventional and unconventional forms. It will be held in the Civic Center in Helena and is free to the public. The forum is being sponsored by a number of government, industry, and public interest groups.

MONTANA ENERGY PROJECTS

The Montana Energy Office has prepared a directory of ongoing and recently completed energy-related research projects relating to Montana. The guide describes over 600 projects, telling who is involved, what they are investigating, and how to obtain further information about their results. For copies of "Directory of Montana Energy Research and Development Projects," send \$3.00 to the Montana Energy Office, Capitol Station, Helena, Mont. 59601.

BLM PLANNING

The Bureau of Land Management (BLM) is seeking public input on policies and procedures for both multiple use plans and for resource inventories. A discussion paper that can be used in preparing comments is available from the BLM Director (220), BLM, Department of Interior, Washington, D.C. 20240 and from the BLM field offices. Written comments will be accepted until May 15.

(discharge point 002). It is the intention of the Town to split the flow between both lagoon systems so that both will have a discharge.
Since the existing lagoon does not have the capability of meeting National Secondary Treatment Standards and since the new facilities were not constructed with EPA construction grant funds (and thus were not designed to meet National Secondary Treatment Standards), the proposed permit requires only that both be operated at maximum efficiency. Upon completion of new or upgraded facilities built with EPA grant funds, the discharges must then meet National Secondary Treatment Standards and Wyoming's in-stream water quality standards. Because both discharges are from lagoons and because it has been determined that lagoon discharges cannot economically meet the national secondary standard for total suspended solids, the permit contains a less stringent total suspended solids limitation which has been approved by EPA for Wyoming lagoon systems.
The discharges are to a Class III stream which must flow approximately 25 miles before entering the North Platte River.
Definite dates for achievement of secondary treatment are not included in the permit due to uncertainties in the Federal construction grant program.
Self-monitoring of effluent quality is required with reporting of results quarterly. The permit is scheduled to expire March 31, 1983.

(9) PERMIT NAME: TOWN OF TORRINGTON, WYOMING
MAILING ADDRESS: P.O. BOX 250
TORRINGTON, WYOMING 82240
PERMIT NUMBER: WY-0029231

A discharge permit was issued to the Town of Torrington on July 1, 1976. That permit allowed a discharge from the second cell of a 2 cell lagoon system to the North Platte River (Class I stream).
The Town is now in the process of modifying its lagoon system as follows: Two new cells (No. 3 and No. 4) have been constructed below lagoon No. 2. Effluent from cell No. 2 may be routed to either cell No. 3 or cell No. 4. It is planned that cells 3 and 4 will be used in turns (i.e., cell No. 3 will be filled, then effluent from No. 2 will be routed to No. 4; while No. 4 is being filled, the effluent in No. 3 will be allowed to stabilize before discharge, etc.). In order to operate in this manner, the Town has requested that the permit be modified to add discharge point 002 (the outfall from cell No. 3) and discharge point 003 (the outfall from cell No. 4). The Town has requested that the existing discharge point 001 (the outfall from cell No. 2) be maintained so that it may be used in an emergency situation. All discharges would be to the North Platte River (Class I stream).
Upon receipt of Federal construction grant funds, the Town will be required to construct new or upgraded facilities designed to meet National Secondary Treatment Standards, plus Wyoming's in-stream standards for residual chlorine and fecal coliform. Due to the extremely high dilution factor (131:1), it appears that Wyoming's in-stream standards for dissolved oxygen will not be violated, provided National Secondary Treatment Standards are achieved. However, this position will be re-evaluated and the permit modified if necessary as more information becomes available. In the interim (prior to receipt of grant funds), the Town will be required to operate the existing facilities at maximum efficiency.
Definite dates for achieving compliance are not included in the permit due to uncertainties in the Federal construction grant program.
Self-monitoring of effluent quality is required with reporting of results quarterly. The expiration date of the permit has been extended to March 31, 1983.

(10) PERMIT NAME: WYOMING INDUSTRIAL INSTITUTE
MAILING ADDRESS: P.O. BOX 870
WORLAND, WYOMING 82401
PERMIT NUMBER: WY-0021844

The wastewater treatment facilities serving the Wyoming Industrial Institute near Worland, are a single cell lagoon followed by a leach field. Because the system incorporates a leach field, under normal operation there is no surface discharge to waters of the State. However, the Superintendent of the Institute has requested that the discharge permit for this facility be reassessed in case, during an emergency, discharge to the surface should become necessary. Any surface discharge would be to the Big Horn River (Class I stream). It is anticipated that emergency discharge to the surface would be controlled through the emergency bypass provisions of the permit.
Since, under normal circumstances, there is no wastewater discharge, the permit requires compliance with National Secondary Treatment Standards effective immediately. The proposed limitations on fecal coliform bacteria and total residual chlorine are more stringent than necessary to meet in-stream water quality standards, however, as long as the system is properly operated, there will be no discharge, thus these more strict standards will be met.
Periodic self-monitoring of any discharge is required with reporting of results quarterly. The permit is scheduled to expire March 31, 1983.

(11) PERMIT NAME: FEDERAL AMERICAN PARTNERS
MAILING ADDRESS: GAS HILLS STAR ROUTE
RIVERTON, WYOMING 82501
FACILITY LOCATION: URANIUM POINT ZONE MINE
FREMONT COUNTY, WYOMING
PERMIT NUMBER: WY-0025976

The uranium mining operations of Federal American Partners, in the Gas Hills of Wyoming, consists of 3 separate mines. The Uranium Point Zone Mine is an underground mine which is currently in existence and water from this mine constitutes discharge point 001. The Bus-Cap Mine is a proposed open pit mine and discharge water from this mine will constitute discharge point 002. The Muskrat Mine is a proposed underground mine and water from this mine will constitute discharge point 003.
All locations water from the mines will be routed to a barium chloride feed plant for removal of Radium 226.

The water from the barium chloride plants will then be routed to settling ponds prior to discharge to the West Canyon Creek drainage (Class III stream).
The proposed permit requires all discharges to meet effluent limitations considered to be "best practicable" effective immediately. Because the discharges are to a Class III stream, effluent limitations more strict than best practicable are not considered to be necessary. Since the water quality data submitted with the application indicated levels of iron and Aluminum higher than would normally be expected, the permit requires that these parameters be regularly monitored. If levels of these parameters remain high, it may be necessary to modify the permit at a later date and include specific limitations on these constituents.
Periodic self-monitoring of the effluent is required with reporting of results quarterly. The permit is scheduled to expire April 30, 1983.

(12) PERMIT NAME: HUSKY OIL COMPANY
MAILING ADDRESS: CHEYENNE REFINERY
P.O. BOX 1658
CHEYENNE, WYOMING 82001
PERMIT NUMBER: WY-0000442

As of July 1, 1977, all wastewater produced at the Husky Oil Company refinery located in Cheyenne, Wyoming, has been routed to complete containment evaporation ponds located southeast of the City. The company will continue to utilize its wastewater treatment system located at the refinery, which consists primarily of oxidation ponds and oil removal equipment. The Company has requested that it be issued a discharge permit so that in case of an emergency situation it would have authorization to discharge to Crow Creek (Class III stream). The question of whether Husky may be required to discharge into Crow Creek to satisfy downstream water rights is now being decided in the Courts.
The last discharge permit for this facility was issued in November of 1977, however, the Company has now contacted the Department and requested a permit modification due to the fact that modifications to the refinery October 1, 1978. Because Federal regulations allow an increase in pollutant discharge with an increase in refinery capacity and because the discharge is to an effluent limited stream, it is proposed that the required modification be granted.

The modified permit will contain the following basic effluent limitations: Effective immediately and lasting through September 30, 1978, the effluent must meet National Best Practicable Treatment Standards based on the present refinery capacity and configuration; effective October 1, 1978, and lasting through December 31, 1980, the effluent must meet National Best Practicable Treatment Standards based on the modified configuration and the increased refinery capacity; and, effective January 1, 1981, and lasting through April 30, 1983, the effluent must meet National Best Available Treatment Standards based on the modified refinery configuration and the increased refinery capacity.
Any effluent discharge to Crow Creek must be monitored on a regular basis with reporting of results quarterly. The permit will expire April 30, 1983.

STATE-EPA TENTATIVE DETERMINATIONS
Tentative determinations have been made by the State of Wyoming in cooperation with the EPA staff relative to effluent limitations and conditions to be imposed on the permits. These limitations and conditions will assure that State water quality standards and applicable provisions of the FWPCA will be protected.

PUBLIC COMMENTS
Public comments are invited any time prior to May 21, 1978. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits Section, Hathaway Building, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80203. All comments received prior to May 21, 1978 will be considered in the formulation of final determinations to be imposed on the permits.

ADDITIONAL INFORMATION
Additional information may be obtained upon request by calling the State of Wyoming, (307) 777-7781, or EPA, (303) 327-3574, or by writing to the aforementioned addresses.
The complete applications, draft permits and related documents are available for review and reproduction at the aforementioned addresses.
Public Notice No. WY-78-005

REQUEST FOR PROPOSALS.

The Wyoming Energy Conservation Office is seeking an individual or a group who is interested in working as a consultant to its office on about a 20 person-hours per week basis through the rest of 1978 and all of 1979.
The consultant's job would be to facilitate the development and start-up of ongoing community-based energy conservation and alternate energy programs, by broad-based community boards.
If you or anyone you know would be interested in such a project, contact Richard D. Rich, Program Manager, DAFC-Purchasing and Property

Control Division, Room 301, Emerson Building, Cheyenne, Wyoming, telephone (307) 777-7253, or Lynn Dickey, Energy Conservation Coordinator, Energy Conservation Office, Capitol Hill Office Building, Cheyenne, Wyoming, telephone (307) 777-7131, for further information and/or a Request for Proposal form.

Sealed Proposals will be received in the Office of the Division of Purchasing and Property Control, Room 301, Emerson Building, Cheyenne, Wyoming, until 2:00 p.m., May 10, 1978, at which time they will be publicly opened and read for furnishing the above referenced services.
STATE OF WYOMING

16-High Country News — Apr. 21, 1978

MacLeod says human species endangered—by us

by Jill Bamburg

"Doc" MacLeod does have a first name, but you don't hear it much in Jackson Hole, Wyo., where the retired physician is still affectionately known by the service he began providing the community in 1937.

A "one-horse town" when Donald MacLeod first came, Jackson and the surrounding area were served by a log hospital. Now there are 15 doctors in Jackson Hole, but there's only one "Doc," and that's Doc MacLeod. He began his career in medicine when a badly broken leg ended his first brief career as a Forest Service forester. His work moved indoors, but his heart remained outside in the mountains and forests he first came to love during a boyhood in Canada. Over the years, he's spent a good bit of his time in the out-of-doors and devoted a great deal of his indoor time to defending the values he finds outside.

Currently, he's concentrating on the issue of oil and gas development on the Bridger-Teton National Forest near Jackson. For 40 years, he's watched Jackson Hole's local battles turn into national issues, because of the extensive federal holdings here. But he's never seen a more serious threat.

"We've had local fights here, a good many of them," he says. "But none of them had the potential for permanent interference in this country like the oil and gas development.

"It's going to necessitate roads into a great deal of the area that we can now classify as a roadless area. It's going to increase the traffic in those areas and have



Jackson Hole Guide photo
DOC MACLEOD'S work moved indoors, but his heart remains outside in the mountains and forests.

an effect on streams. And there's no question in my mind that it's going to interfere with our game population, because they just don't thrive on close contact with people all the time."

MacLeod favors a wilderness designation for much of the Gros Ventre area of the Bridger-Teton National Forest because it's one means of protecting a place that he'd particularly hate to see disturbed. But he points out that there are larger energy is-

suces behind the current Bridger-Teton debate.

"People are running scared," he says of the energy issue. "To me it's a real wide conflict. It's international already. It can lead to war. It can lead to destruction of the country and maybe to large numbers of the human race before we're through.

"In our country . . . I can't see where the American public so far has made very many sacrifices to conserve energy.

"Our local Chamber of Commerce comes out in the morning news and says there's going to be more traffic out here than ever. Gas guzzlers. Our local utilities preach conservation in the morning, and yet they're only too willing to put electric heat in any type of facility that is built regardless of where they may be getting their power five years from now."

Although he says he can't offer any solutions, MacLeod, at 73, does remember a way of life that wasn't so dependent on electricity and gasoline. As a boy in Canada, there were no autos, homes were heated largely by coal, a single light bulb was a pretty big deal, and irons were heated on the top of a stove.

But MacLeod, like many old-timers who actually lived through "the good old days," is quick to point out that we also have easier lives and more leisure time now. One of the results of this is more use of energy, however.

"People, when they went on a vacation, didn't try to chalk up 2,000 miles on a car on two weeks' time. They went someplace with their families and stayed put. People

are restless now. They've got to be on the move.

"This restless spirit has not been conducive to contentment. I think there are a lot more stresses now than there used to be. I don't think there's any question that our types of illness have changed.

"I think, frankly, the human race has a definite cycle ahead of it. We're an endangered species, endangered by ourselves.

"We've been on an uphill population cycle too long and something is going to whittle us down. I don't know whether it's going to be war, famine, pestilence, or dying through some of our own worries, fears, and neuroses."

That's a rather bleak view on the ultimate questions and Doc MacLeod will admit to being something of a pessimist. But pessimism has little to do with the day-to-day conduct of his life. He claims to be "a hell of a letter-writer" on environmental issues and the time he spends just talking about the issues with interested people is, in itself, an expression of hope that views might be changed and those changes in views would be important.

The real key, however, appears to be his enjoyment of the outdoor world he fights for. "I can get out and go cross-country skiing or go up a peak and forget about 90% of it while I'm out," he says.

A robin landing outside the window stopped our discussion for a moment. When the robin left, MacLeod wanted to know, "Now what were we talking about?"

Nothing as significant as the year's first robin.

Dear Friends

If Jay McGrew has made government and industry people squirm with the message in the story on page one, they're not alone. He makes us squirm, too.

It isn't mentioned in the article, but conservation organizations and **High Country News** are among the organizations out on a limb over insulation. We pushed the idea of insulating heavily without questioning whether it would do any good. If the adjective "kneejerk" ever suited us, it is in this context. We are guilty of having been kneejerk energy conservationists.

This is a crisis, we said. If somebody says insulation saves energy, then buy

it. And even worse, we said: if a certain level of insulation sounds energy conservative, then legislate it. Make everybody get up in their attics.

It's easy to understand why we felt a sense of urgency. We heard voices shouting: "You're against nuclear power, against coal power — and we're standing in gas lines. What are you for?"

We leaped at a techno-fix — an easy, technological solution to the energy crisis. We said, "We're for energy conservation." We assumed that meant plenty of insulation, without knowing that the two might not always be synonymous. We believed everything the salesman said. Everybody knows we wouldn't take that kind of nonsense from a nuke salesman or a coal shark. We'd be critical.

If conservationists and HCN sincerely wish to be national leaders and policy shapers as well as critics, we'll have to approach our apple pie issues with the same jaundiced eye that we use on the issues that instinctively put us on guard. Had we done so in this case, we could have not only avoided embarrassment. We probably also could have saved more energy.

McGrew may or may not be exactly right in his proclamations about what will and what will not save energy. Either way, he's taught us a valuable lesson. Public policy-makers cannot afford to let even the most popular proposals go unexamined. If they do, they risk losing their constituency to frustration and disappointment.

It is demoralizing for people with

good intentions to discover that their efforts have been in vain. That the money and time they have spent trying to do something good haven't made a bit of difference. That they've been misled.

They are likely to abandon their do-gooding instincts, lest they be proved fools again. It's safer to be apathetic.

We hope that people in government as well as conservationists, will take a serious look at the points raised by McGrew and others. Obviously, some of them have. A Community Services Administration official admits, "We may have been overinsulating." The Department of Energy says it is shifting its emphasis away from insulation alone to a whole bag of energy conservation tricks.

But we are discouraged by the number of energy conservation advisors we talked to who refused even to



consider McGrew's arguments. We fear for them and the public they serve as they move farther and farther out on the insulation limb. The unfolding science of energy conservation is fascinating — partly because the human factor is involved and, therefore, the system is not as simple as the computer predicted. We'll do our best to keep you informed.

—the editors

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