

The Environmental Bi-Weekly

High Country News

Vol. 8 No. 25

Lander, Wyoming

Friday, December 17, 1976

Air heaters, greenhouses, showers



MALCOLM LILLYWHITE

by Joan Nice

BAILEY, COLO. — It looks like an adult recess. Men and women pour out of a classroom. They pick up wood, hammer, saws, and nails from a shed and they go to work, many of them awkwardly. Almost as many people are taking pictures of the primitive pounding as are actually working.

What is worth preserving on film is not immediately apparent.

Laboring bureaucrats? A coalition of housewives and carpenters? A class in beginning carpentry?

The simple satisfaction of building something contributes to the excitement here. The leader of the group, Malcolm Lillywhite, makes it clear that the event means much more than that, however.

Lillywhite is teaching solar energy technology. The way he teaches it, it's a tool with revolutionary potential. It gives people survival skills at a time when energy prices are making it increasingly difficult for them to make ends meet. Lillywhite is convinced that simple technology exists which people can use to produce quality food and shelter at a low cost — "domestic technology," he calls it.

For middle class people, domestic technology sounds handy. For low income people, it sounds like deliverance — and that is exactly the group Lillywhite says he is trying to reach.

As any oil company advertisement will tell you, solar energy systems are very expensive to buy. But not these handmade models. Lillywhite figures that, Btu per dollar, he's at least 30% ahead of even the most reputable solar collector manufacturers.

Lillywhite has no aversion to commercial collectors. He just thinks they're too expensive for most people right now.

According to Lillywhite's calculations, materials for a solar water heater cost about \$119, for a 64-square-foot forced air heater — \$123, and for a greenhouse that will produce vegetables for 10 — \$1,359.90. He proves in his course that these devices



BUILDING IN BAILEY. These people are "community energy engineers." One is also a plumber and two are carpenters. In November they added a knowledge of low-cost solar energy devices to their skills during a week-long course in Bailey, Colo., led by the Domestic Technology Institute. All hope to share their skills with low-income people in their community. They are (from left) Bob Bueno, of Brothers Redevelopment, Inc., in Denver; George Bolte of the Community Action Program in Girard, Kans.; and Janice Gift of the Center for Social and Environmental Concerns in Salt Lake City.

work and that just about anyone can build them.

Most commercial collectors are only slightly more sophisticated than Lillywhite's. An insulated black box covered with glass or other clear material (the basic design of any flat plate solar collector) produces more or less the same re-

sult, no matter who makes it. Lillywhite is searching for the cheapest, simplest way to produce that box. Once a solar physicist in the aerospace industry, Lillywhite is now determined to be earthbound and practical.

After an intensive week at a camp in the mountains outside Denver with Lillywhite, his students emerge weary, some-

what confused by the flood of information they experienced, but apparently still eager. They say they want to take over tasks most of them have been leaving to specialists — not only heating their own homes, but growing and drying their own food.

They know they can do it. In their week in Bailey, they have collectively designed and built an air heater, a solar shower, a

Over a 20-year period, we'll all pay more to heat our homes than we paid to buy them.

food dryer, and the beginnings of a greenhouse. They helped install commercial solar collectors; they've toured solar facilities in Denver and Evergreen, Colo.; they've been taught basic thermophysics, community organizing, solar economics and design, and greenhouse management; and, through slide shows, they've viewed and analyzed a broad range of solar projects across the country.

Members of one group of Community Action Program officials from the Midwest he trained this fall were so enthusiastic they started building solar greenhouses the week they returned from the course.

Just how valuable are the skills, the building plans, and the knowledge they brought home with them? Over a 20-year period, we'll all pay more to heat our homes with fossil fuels or electricity than we paid to buy them, Lillywhite says.

One of Lillywhite's greenhouses will pay for itself in about a year if lettuce is grown year round and sold at current Denver prices. Eventually such a greenhouse could become an important resource for a low-income community, Lillywhite suggests.

Attractive as these figures sound, Lillywhite does not dwell on them. Once a student is interested, cautionary tales play a bigger part in the course than solar salesmanship.

At one evening session, his economist points out to the group that in the Denver area it doesn't pay to install even a homebuilt solar air heater with a fan if you

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HCN

Letters

MATHER BOUNCES BACK

Dear HCN,

Conservationists are known for their ability to come bouncing back in the face of adversity, but to credit Stephen Mather with dying two years in a row before his actual death may be carrying things a little too far (see the last two paragraphs of the article in the 12-3-76 HCN).

Upon reading that, I broke out into one of those horrible sweats. Checking my typescript didn't help. I am responsible for the 1928 date, though I don't know how 1929 got in there. At that point I jumped into my swimming trunks and ran five miles through the chill Arizona night. However, it didn't do any good; when I got back the dates were still there.

For the record, Stephen Mather died of a stroke in the Corey Hill Hospital in Brookline, Mass., on January 22, 1930. (Steve Mather Of The National Parks, by Robert Shankland, p. 287, and the photograph of the plaque opposite page 307.)

Peter Wild
Tucson, Ariz.

CHRISTMAS GREETINGS

A very Merry Christmas to all of you at HCN from one of your avid subscribers. Keep up the good work, it is well appreciated by the thousands of us who still respect this tired old terra firma. May your pleasures be many in the coming years. God bless you all!

Tim J. Curns
Susanville, Calif.

OBJECTS TO SEXISM

To High Country News:

Congress's proposal to reactivate and update the Civilian Conservation Corps (C.C.C.) sounds like a sound plan environmentally.

My argument is not with the C.C.C., but with the very biased presentation of the plan in your article. You make the assumption that only males are victims of unemployment, and only males have the potential for knowledge and skills necessary to benefit the C.C.C.

As a woman who has done just the type of work you mention by serving the U.S. Forest Service in a traditionally male-oriented capacity, and by living as I do close to the earth, I challenge your sexist position!

My three young daughters have a growing knowledge of the sensitive balance between plants and animals and their environment, most particularly the impact of the human animal upon our Mother Earth.

I personally know many women skilled as I who would welcome the opportunity to better their environment by serving a program such as the C.C.C., and at the same time enjoy the dignity of helping to support their families.

Mary Jane Wright
Davenport, Wash.

(Editors' note: This letter was written in response to a "High Country" column printed in HCN several weeks ago and recently sent out to prospective subscribers as a sample copy.)

MORE AD POLICY ADVICE

Editors' note: To our delight, we're still getting letters from readers concerned enough about High Country News to offer advice on what our ad policy should be. As explained in the Oct. 22, 1976, "Dear Friends" column, we are now reevaluating our policy on advertising. Presently, we refuse all advertising that does not agree with our editorial bias.

CENSORSHIP ABHORRENT

Dear HCN:

Except in cases that are libelous or where the "facts" are incorrect, I personally find censorship a thousand times more abhorrent than the most "objectionable" of ads.

Geoff Tischbein
Montrose, Colo.

INFORMATION NEEDED

Hi,

I have one request: Can you periodically list people and places who are resources? For example, where to order books on certain topics such as strip mining, building a log cabin, etc. A section set aside would be alright.

Vance Gillette
Denver, Colo.

Editors' note: We periodically list new sources of information in our bulletin board column or through book reviews. We hesitate to offer too much news of this type since so many good catalogs are already available. If you're after updated lists of access to tools, we recommend the CoEvolution Quarterly (Box 428, Sausalito, Calif. 94965) or The Workbook (Box 4524, Albuquerque, N.M. 87106), or RAIN (2270 N.W. Irving, Portland, Ore. 97210).

STILL SMARTING

Dear HCN,

I have been constantly pleased and impressed by the quality and integrity of the publications of the High Country News. It stands alone in a field where many publications and businesses have already fallen from that "funny grey area" you mentioned into falling over each other to sell themselves to whomever has the price.

I am still smarting from the embarrassment of the last election in my home state of Colorado where the anti-environmental forces just succeeded in buying an election with Madison Avenue double-talk and scare tactics. The people of Colorado have suffered a great disgrace to have been so flagrantly prostituted. Since the environmental groups will never have the money or resources to match that of industry and the anti-environmental groups, you should not have to look too far down the road to see how shortsighted accepting money and ads from anti-environmental groups would be.

In short, you must be selective in the ads that you run so that neither quality or integrity is diminished. Since this will mean that you may have to bite the financial bullet a while longer, it is not fair that you should have to bite it alone, so here is a small bullet for your research fund.

Kimery C. Vories
Fort Collins, Colo.

HCN AS ETHIC

Dear friends,

In response to your question about censoring ads: Please do! We do not subscribe to the paper merely for "news," but as a tangible expression of the environmental ethic.

Please continue to share with readers appropriate advertisements for companies that support the environment and free us from the drudgery of scanning inappropriate ads.

Lee M. Schmidt
Sitka, Alaska

WATCHING 'PROGRESS'

Dear HCN,

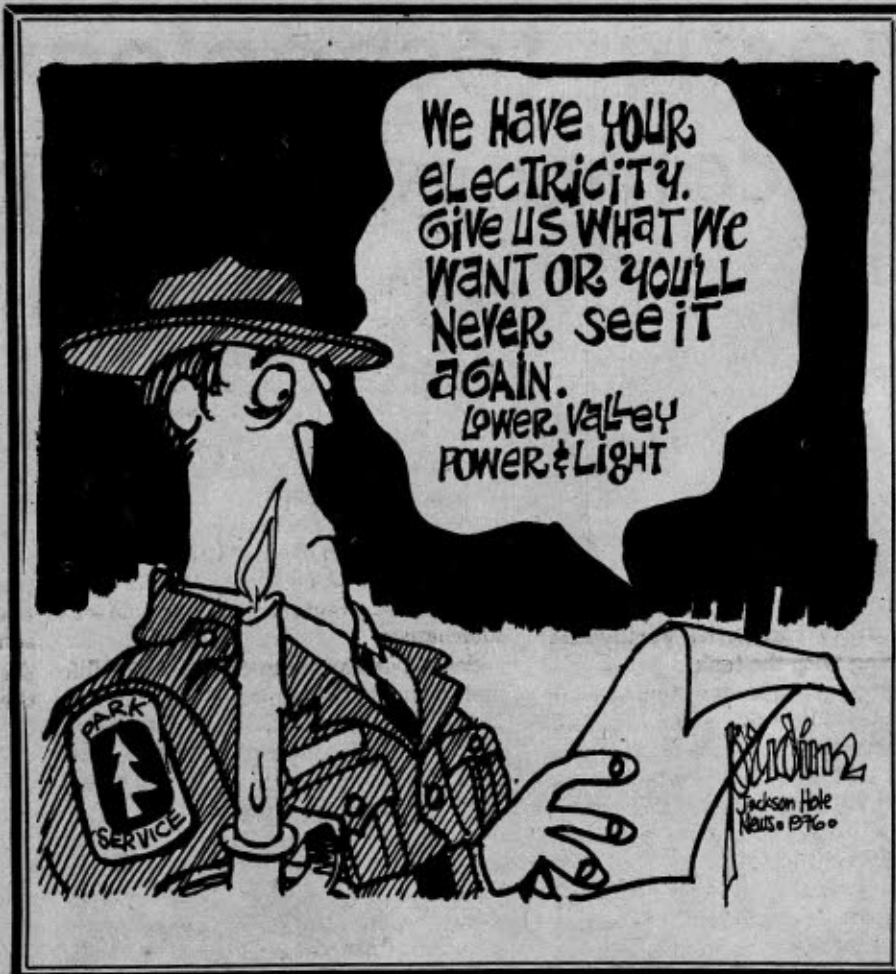
Even though I don't agree with your environmental philosophy, I feel that I should subscribe for another year just to see the "progress" taking place in Wyoming.

I grant you that "Big Business" has a reputation for ruthless disregard for the local taxpayer — in that the company must make a profit for its stockholders (more than 55% of whom are women). However, my dealings with them while in Wyoming most often found executives who were intelligent and very informative relative to conservation of natural resources.

Maybe I am biased, but I think that if Wyomingites had accepted the zoning philosophy back as far as 1970-71, Wyoming wouldn't have the problems with new industries — including strip mining. There was an opportunity given Wyoming officials to accept the "conditional use permit" concept which provided for public hearings to allow local input. There would not have been need for a state siting law.

As a planning and zoning law specialist, it was impossible to get certain responsible people at high level to accept zoning. Since most court decisions are based upon California and New York legal zoning interpretations, Wyoming's planning and zoning legislation must accept sophisticated input to stand the legal testing that is bound to come.

Johnston C. Craig
La Verne, Calif.



DEVIL'S CAUSE?

To the editors:

I should hope that the editors and readers of HCN are not in the naive position that industry is Bad and environmentalists are Good. Some advertising fulfills its stated purpose of informing the public. This includes industry advertising. (Industry is used as representative of the broader class of non-environmental people.)

Even where advertising is less than honest or is misleading (how much does not come under these two categories?) the articles and editorials can set the record straight. Maybe this interplay can even move the discussion on to real issues for a change.

Is there a fear that industry advertising in HCN will convert some of the "saints" to the devil's cause?

Advertising that doesn't agree with our biases might even help to get us out of our secure ivory tower of being smugly right and into a real debate about what's going on and where we should be going. It is not enough to assert the rightness of the cause. We must prove it to people who really believe something else. Ignoring their opinions won't help.

Bret Brunner
Greybull, Wyo.

DON'T ADD QUANTITY

Dear HCN,

Please don't add more pages to the paper, try to stay within the advertising budget your 16 pages allows. Hopefully in that way your quality to quantity ratio will remain high.

Bob Carlson
Port Angeles, Wash.

AGAINST CENSORSHIP

Dear HCN:

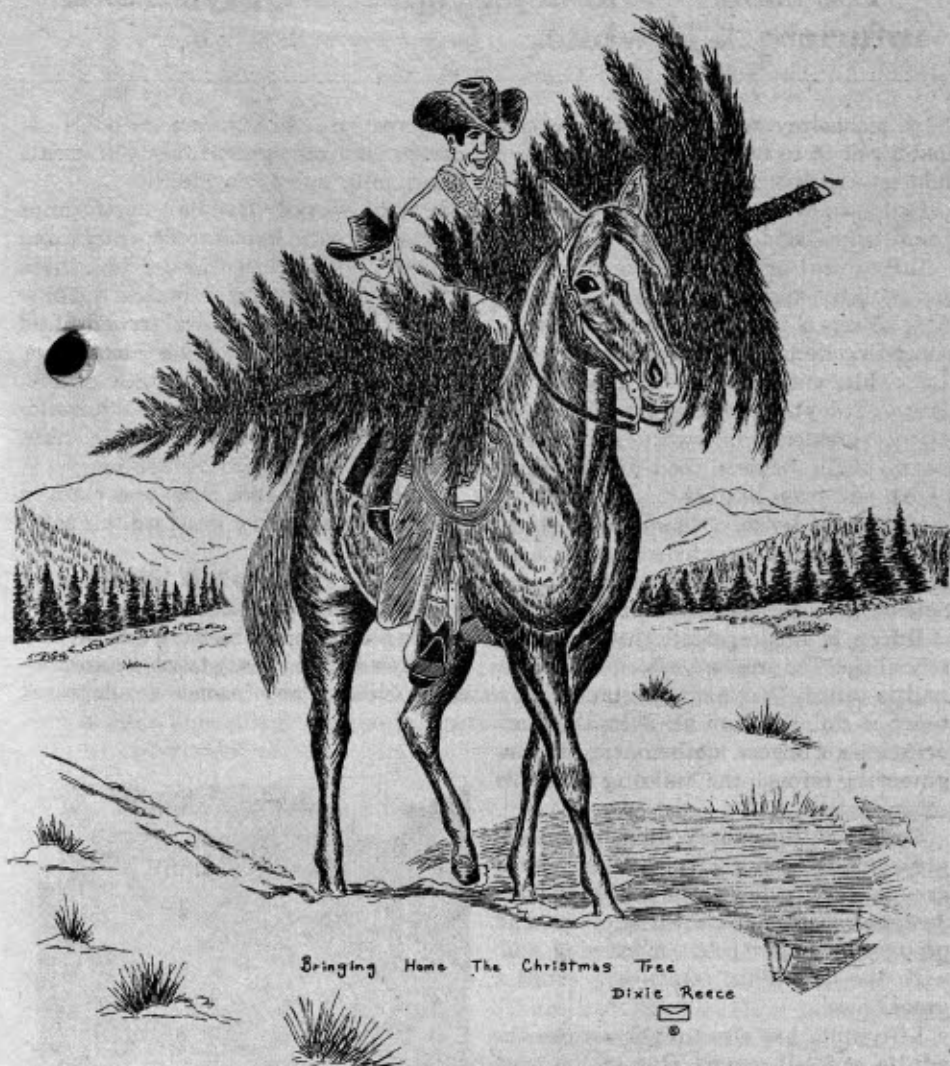
Here is my vote against censorship of any kind. I believe that most HCN readers are smart enough to know the difference in factual and not-so-factual ads. Besides, I don't expect to see many anti-environmental ads in HCN anyway; the sponsors of such ads must know by now what sort of people read HCN.

It's also nice to see what the other side is dreaming up now; that can only help us.

HCN should also consider raising subscription prices to \$12.00 or \$15.00 a year; maybe we ought to vote on that, too.

As for censoring ads, if any censoring is necessary — let the HCN readers do it!

John A. Heiser
Grassy Butte, N.D.



Drawing by Dixie Reece

Deck the tank with insulation

Deck the tank with insulation. Fa-la-la-la-la.

In lieu of tinsel on a tree, how about a little foil on your hot water tank this year? It may sound uninspiring esthetically, but architect Dave Elfring of the Domestic Technology Institute claims foil and insulation can save you 15-20% on your bill for hot water heating. Since hot water heating probably

accounts for about one-third of your total utility budget, it's worthwhile tinkering with the tank.

Elfring recommends wrapping your hot water tank with aluminum foil, the shiny side facing the tank. If you have a gas heater, be sure to leave a skirt (that is, don't wrap up the bottom of the cylinder) so that the heater is properly ventilated.

Then wrap the heater with 3½ inch rock wool or fiberglass insulation, again leaving a skirt if you have a gas heater.

If you're worried about appearances, make a burlap wrap to cover the bundled up tank.

For even greater savings, turn the thermostat down to "low," or around 120 degrees.



DAVE ELFRING, DTI architect. He recommends wrapping your hot water tank in foil and insulation to save 15-20% on the fuel you use to heat it.

Solar School

This issue of **High Country News** is available in quantity at the reduced rates listed below.

Send copies of HCN to:

- Friends
- Congress
- Local newspapers
- Labor unions
- Business associates
- Students, teachers
- Local officials
- Bookstores, newsstands
- State legislators
- Church groups, garden clubs

Special rates on quantity orders:

1-5	40c each
6-10	30c each
11-25	26c each
26-100	21c each
101 or more	18c each

Prices include U.S. postage.

Enclosed is \$_____ for _____ copies of the High Country News.

Name _____
Address _____
State _____ Zip _____

Box K, Lander, Wyo. 82520

Bulk prices are applicable for one month after issue publication date.



Editorial

HCN

Congratulations Mike Comola

A toy dump truck and a hard hat with his name on it were recently given to Mike Comola of Noxon, Mont. — the winner of the Montana Wilderness Association's Art Sedlack Award. Sedlack, you will recall, is the Glacier National Park ranger who shot a trespassing snowmobile to win the first Sedlack Award last year.

Comola, a truck driver, was cited for his courageous desire to commit outrage in the name of responsible environmental extremism. As founder of the Northwest Citizens for Wilderness, Comola has been monitoring ASARCO (American Smelting and Refining Company) copper and silver exploration activity in the Scotchman's Peak wilderness study area. He has also set up a competing mining firm — the North-

west Citizens for Wilderness Mining Co., Inc.

Comola and his cohorts have been staking claims and reportedly have enough volunteers to prove up on the claims by doing yearly required work. If minerals are found in sufficient quantities, the environmentalists plan to develop the ore by pick and shovel technology and give all profits to the wilderness cause. ASARCO is starting to worry and sent a representative to Comola's home to find out if the eco-miners are serious. They are. Recently Comola sent a letter to ASARCO complaining of claim jumping by ASARCO in the area.

Mike Comola and friends, we salute you.

—BH



Guest Editorial

HCN

Time to save the James River

by Esther Edie
S.D. Environmental Coalition

At a 1972 hearing on the environmental impact statement for the Oahe Diversion Project in South Dakota, there was very intense and almost unanimous opposition to channelization of the James River. (See HCN, 3-26-76) As a result, the Bureau of Reclamation announced that it would seek alternatives.

South Dakotans who care about wildlife and the unique recreational opportunities of the James River are being lulled along by the periodic reiteration that alternatives to channelization are being considered. We all need to wake up and realize that the Bureau of Reclamation is still committed to channelization. According to the Bureau, a decision on whether or not to channelize the James does not really have to be made for several years. But it is highly doubtful that the natural channel of the James can carry return flows from the Oahe Project, plus the huge amounts of dilution water that the Bureau hopes will make the heavily polluted return flows look more respectable.

An additional but still unknown factor is

the volume of return flows from the Garrison project. Canada is still refusing to accept those polluted flows and South Dakota via the James River is the most likely candidate to bail the Bureau out of its pollution difficulties in North Dakota. What seems to be happening is that the Bureau and its supporters are hoping that all these months and years of bureaucratic bush-beating and foot-dragging will produce some fairy godmother to rescue them from their dilemma — or maybe they hope that their critics will become so frustrated and tired that they will pack up their slingshots and join that army of citizens whose apathy and disinterest in public affairs seems hardly disturtable by a stick of dynamite.

South Dakotans and others need to face squarely the question: Do we care about wildlife and rivers in their natural state? If the answer is "yes," action needs to be taken immediately to preserve the most outstanding wildlife corridor in the state, the James.

State law provides for the designation of selected rivers as scenic and recreational river areas to be preserved as part of South Dakota's diminishing resource of free flowing streams.

If you agree, write to the Department of Game, Fish, and Parks, Sigurd Anderson Bldg., Pierre, S.D. 57501.



SUN SIGN MESSAGE

If there's a "1-77" after your address label, then thank your lucky stars: you're a Capricorn subscriber. Capricorn subscribers are among our most reliable readers, and they usually renew their subscriptions promptly in January. But many "1-77" subscribers don't realize they can send in their renewals early and save us the cost of sending out a reminder.

Many Capricorn subscribers are miserly so it's often hard to get them to send in their renewals early. But when we remind them about what a bargain HCN is at only \$10 per year, they make the prudent decision and renew. So, if you're a Capricorn subscriber call on the positive virtues within you and send in your \$10 renewal today.

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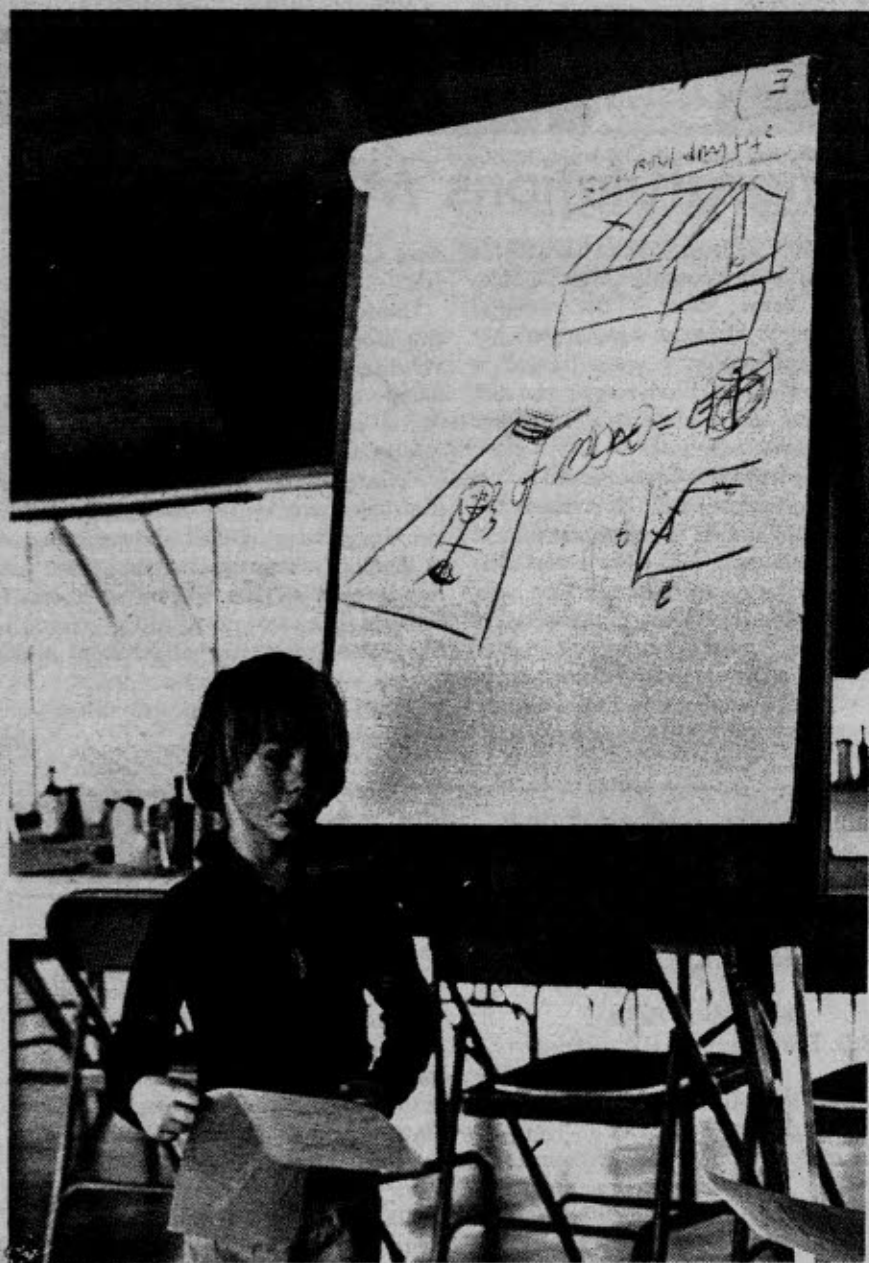
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Box K, Lander, Wyoming 82520

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SIMPLE. Malcolm Lillywhite contends that laymen can understand and learn how to design many simple solar devices. Even five-year-old Tagore was able to lecture intelligently on the workings of a solar greenhouse on the final day of the course. Tagore half-heartedly attended most of the sessions with his mother, Miranda Smith, of the Institute for Local Self Reliance in Washington, D.C.

Technology. . .

(continued from page 1)

are using natural gas to heat your home. Natural gas is still cheaper than even most homebuilt solar heaters. It may make sense morally to forgo the natural gas, but it doesn't make sense economically yet. If you are using propane or electric heat, on the other hand, Lillywhite's devices probably make sense.

In other discussions Lillywhite shocks his students with pictures of polyethylene collector coverings in tatters and greenhouses produce covered with aphids. He also offers advice on how to avoid these problems.

It soon becomes clear that low-cost solar devices take a considerable investment in time. Even after a greenhouse is built, managing it can be a half-time job for one person, Lillywhite estimates.

His own greenhouse is a sprawling structure built out of pine poles which produces an impressive quantity of tomatoes, squash, broccoli, lettuce, onions, and other vegetables. It is also a bit sloppy — probably because of Lillywhite's demanding teaching schedule. He explains that it requires daily management — not only to attend to gardening tasks, but to open vents in the morning and close them at night to avoid scorching or freezing the plants. He also recommends insulating the clear walls of the greenhouse at night,

another morning and evening chore.

After a week's immersion in both the theoretical and practical side of domestic technology, course graduates are given a "diploma" and the slightly pretentious title of "community energy engineer." While nobody gains a solid engineering background, all seem eager to begin and, with their knowledge of the basics, learn by trial and error.

THERMOPHYSICS BACKWARDS

Lillywhite teaches thermophysics backwards in his courses. That is, you build things before you've mastered the physical principles that make them work.

He learned it the other way around, however. He is a registered thermophysicist with B.S. and M.S. degrees in physics from the College of William and Mary in Virginia.

He has roots in two incongruous places — the aerospace industry and the counter-culture. Eight years ago while working on a solar simulator for Martin Marietta Aerospace, he was also the breadwinner for a commune on his land near Evergreen, Colo. The group built a greenhouse to try to make ends meet at their high-elevation home near the base of Mount Evans. When things didn't work out in the group, Lillywhite found himself left alone with the chickens, goats, a horse, and a cow — and a solar heated greenhouse.

That's when Lillywhite shifted from technologist to teacher. He abandoned

The money-is-no-object, spacecraft syndrome infuriates Lillywhite.

high technology, because ordinary people can't put it to use, and moved toward domestic technology.

He began by teaching children. He found them to be confident innovators.

Lillywhite transformed the commune site into a solar demonstration park. One of the first objects of interest placed there was a solar air collector designed and patented by Lillywhite and a 12-year-old boy and his father. Today the park displays many other projects created by Lillywhite and his students — air heaters, food dryers, grow holes, and water heaters.

Lillywhite devised a solar energy education program and won a federal grant to try it out at Evergreen, Colo.'s, Open Living School, an experimental public school for children of kindergarten through high school age. The program, which still exists and is called "Operation Sundance," now teaches children from all over the state principles of science, mathematics, and engineering through the building of simple solar devices.

Operation Sundance's most ambitious project has been a large, solar heated greenhouse. Using popsicle sticks students designed a structure. Then they cut and prepared their own poles for framing, and, with the help of the community, built a greenhouse.

Lillywhite has also taught courses for adults and 4-H groups. One of the most lively adult groups he ever worked with met on Saturdays at a small college in Colorado's San Luis Valley. People who took that course less than a year ago have now formed their own solar energy group (see HCN 7-2-76). And, Lillywhite says, they are installing more systems than the two major solar collector manufacturers in Denver.

This fall he set up his own education team by creating the non-profit Domestic Technology Institute (DTI). He also maintains a profit-making consulting firm called Solar Power Supply which is currently involved in the engineering and architecture on 10 homes and businesses in the Denver area.

EMPTY WOW

For several years now, Lillywhite has been a popular speaker at energy conservation and solar energy conferences in the region. He is authoritative, enthusiastic, and full of otherwise unpublicized success stories which give his audiences the delightful impression that they could do it themselves.

Nevertheless, Lillywhite believes that his introductory slide shows have been of limited value. People are excited by solar energy concepts and then leave with, at most, an empty "wow." If there is no follow-up, they don't know enough to do it themselves.

The next logical step is absorbing much

HOW TO DO IT

Booklets on how to build low-cost water heaters, air heaters, food dryers, greenhouses, and methane digesters are available from the Domestic Technology Institute. The booklets cost from \$1-\$2 and bulk rates are available.

HCN will feature some of these plans in a special section this winter. For more information write DTI, Box 2043, Evergreen, Colo. 80439.

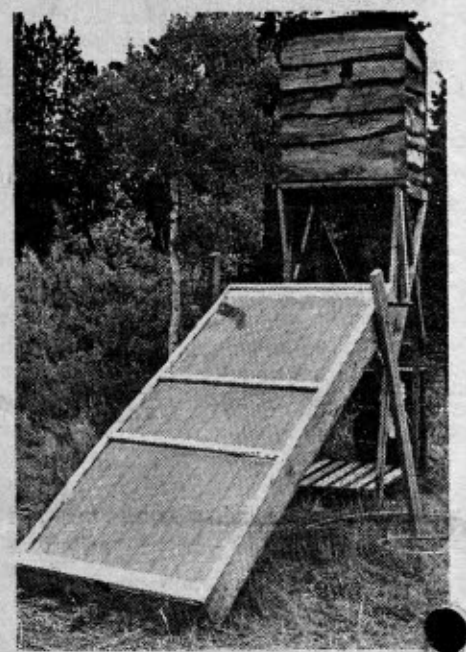
of Lillywhite's attention now — DTI's intensive training sessions that will create "community energy engineers."

In some ways Lillywhite's work camps are like Outward Bound's outdoor training program. The element of danger isn't there for the community engineers. And the blisters are replaced by bruised thumbs and caulking compound under the fingernails. But both programs are confidence builders.

For many of Lillywhite's students, building a successful solar device is a thrill akin to that of a first day rock climbing.

A solar energy slide show or a class in thermophysics cannot generate the same enthusiasm.

Nine years after he built his first solar greenhouse, Lillywhite is obviously beginning to see a shape to his work that pleases him. He's forging a way to solve community problems, "an economic development



SOLAR SHOWER. Water is heated in an array of copper pipes attached to corrugated metal roofing material, all painted black. The heated water rises by natural forces to the top of a storage tank in the insulated wooden box above. A person in need of a shower would stand warily on the wooden platform at ground level. On a clear, warm day — watch out — the water can be scalding hot.

program for people of need based on solar energy."

Despite Lillywhite's personal dedication to low-income people, most students at the Domestic Technology Institute workshop aren't poor. Most of those who attended a session in early November were sent by their employers to the tune of \$250 tuition and \$98 room and board for a week's workshop.

Lillywhite says he can't do intensive training for less. DTI is a non-profit firm operating without the aid of any grants. Lillywhite has also hired a staff of six people to keep the classes running smoothly.

Despite the cost of tuition, he has been able to reach, if not low income people themselves, people who work with low income people. In particular, he has attracted large numbers of professionals in the federally-funded CAPs (Community Action Programs) around the country. He has also worked with the state energy office in Idaho.

Lillywhite is training messengers, many



VETERAN. The solar heated greenhouse shown here is Lillywhite's own, a veteran of nine year's production. While this one is leaky, made out of pine poles, plastic, and a fiberglass roof, Lillywhite's more recent designs are nearly airtight. He generally recommends an insulated slab foundation, 2 x 6 construction in the walls, an R-19 in the north, east, and west walls, and an R-30 in the ceiling. The clear, south-facing wall is covered with fiberglass and polyethylene.

of whom are successfully reaching low-income people.

SICKENED BY WASTE

Sickened by the waste he saw in the aerospace industry, Lillywhite now places cost very high in his list of design criteria. The size and shape of things are often determined by available building materials. His air collectors are eight feet long simply because plywood, 2x4s, metal lath, and many other materials come in eight foot lengths, for instance. To avoid building tilted stands and reinforcing a roof, Lillywhite often recommends installing vertical collectors propped up against an exterior wall. The heat lost by not being exactly at the optimum angle for solar heat collection can be regained by adding a few extra square feet of collector space.

On a tour of solar facilities in Denver, Lillywhite is particularly critical of signs of impracticality. The windows in one solar heated office building are triangular, designed to let in sunlight only at certain times.

"They're a beautiful architectural solution, but who knows how much they cost," Lillywhite mutters. He sees such things as part of the money-is-no-object, spacecraft syndrome which he finds infuriating.

Lillywhite's staff says he's a "visionary." They apparently work out the details. Architect Dave Elfring, economist Rod

Roberts, and community organizer Andrea Dunn share the morning, afternoon, and evening teaching sessions with Lillywhite. All had previous experience with solar energy work before they joined DTI this fall. Roberts also has the distinction of coming from Gunnison, Colo., where the proprietor of the La Veta Hotel promises to buy guests a steak dinner if the sun doesn't shine sometime during the day.

At the session in November students were aggressive learners. They demanded numbers, details, the works.

"I have to prove this works. I'm going to write a grant proposal on this thing," one told Lillywhite.

They grilled their teacher relentlessly the first few days. He proved a match for their questions and seemed disappointed toward the end of the week when the students seemed saturated and the sessions were quieter.

It was a diverse group: a master plumber who works with a public interest group called Brothers Redevelopment in Denver, a mother of six, a young Utah legislator, an official from the regional office of the Community Services Administration in Denver, an agricultural consultant from the Institute for Local Self Reliance in Washington, D.C., and a number of people associated with Community Action Programs in North Dakota, Iowa, and Kansas. Several were experienced construction workers who occasionally challenged

Lillywhite's and other students' construction techniques.

Scant advice during the building and design sessions forced students to try out

Btu per dollar, he's 30% ahead of even the most reputable solar collector manufacturer.

their own ideas — and make their own educational and time-consuming mistakes. This approach left some students complaining about lack of organization and others feeling like they were in the forefront of domestic technology research.

Lillywhite rented an energy-guzzling camp in the mountains near Denver for the week-long session. His vision for the future is to establish a self-sufficient research

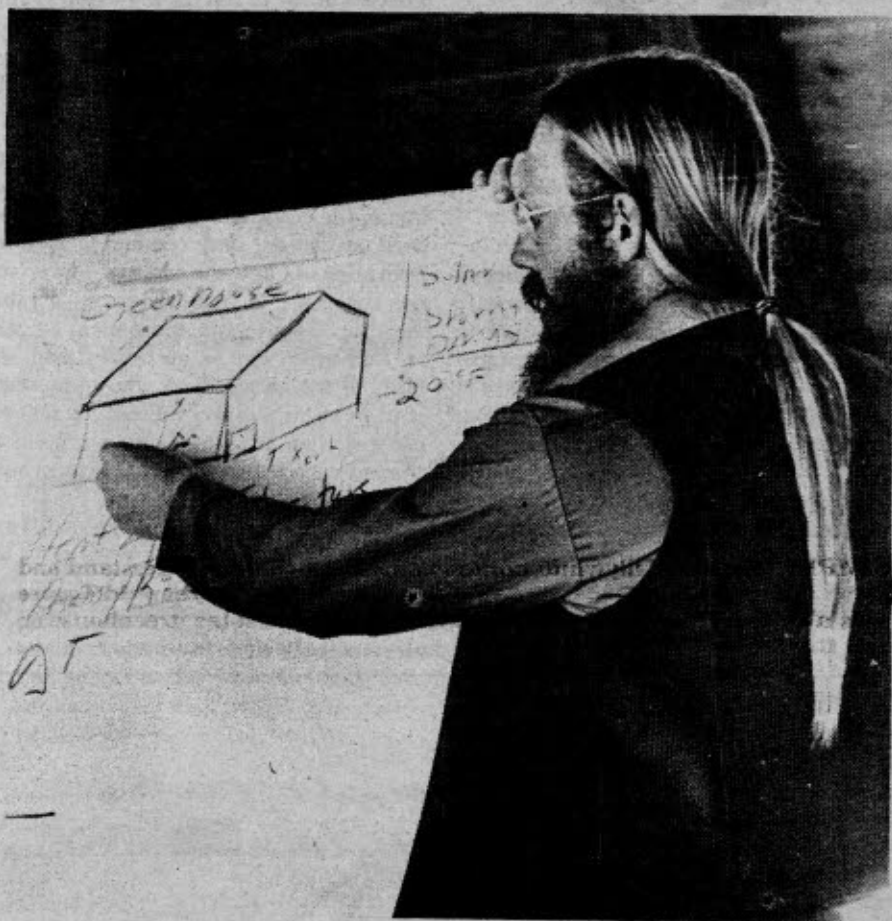
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community equipped as a conference center for groups interested in energy, small-scale food production, and nutrition. While living there and taking courses, students would get the feel of living better on less.

DTI's goal for 1977 is to move into more research on food production and nutrition. The group's financial future is uncertain, however.

"You find you are fighting lots of people when you advocate technology that is easy enough for people to do themselves," says Andrea Dunn. Architects, energy specialists, and others have a vested interest in making domestic technology look complicated, she points out.

Whether or not the institute lasts, it seems clear that Lillywhite and some of his staff will continue to have influence on an increasingly large community of people who are willing to take their food and shelter problems into their own hands.



THRILLS AND HEAT CALCULATIONS. Lillywhite says that not even the best lecture on heat calculations can match the thrill of constructing a successful solar device. So, he balances theory with hammering and sawing sessions in his community energy engineer training program.

DTI workshops

Domestic Technology Institute has the following workshops in the Denver area scheduled for the first half of 1977:

—Jan. 24-31. Community Energy Engineer Workshop. Tuition ranges from \$200-\$550. Room and board \$17 per day. Registration deadline Jan. 7.

—Jan. 22. Solar Reliant Greenhouse Workshop. \$15 for pre-registration and \$20 for late registration. Deadline Jan. 10.

—Jan. 24. Domestic Solar Energy Technology Night Class begins (10 weeks). 7:30-10:30 p.m. \$35.

—Jan. 29, 30. Low Cost Solar Heating and Cooling Workshop. \$50 pre-registration and \$75 for late registration. Deadline Jan. 17.

—Feb. 13-19. Community Energy Engineer Workshop. Tuition ranges from \$200-\$550. Room and board \$17

per day. Registration deadline Jan. 18.

—Mar. 6-13. Community Energy Engineer Workshop. Same costs as above. Registration deadline Feb. 11.

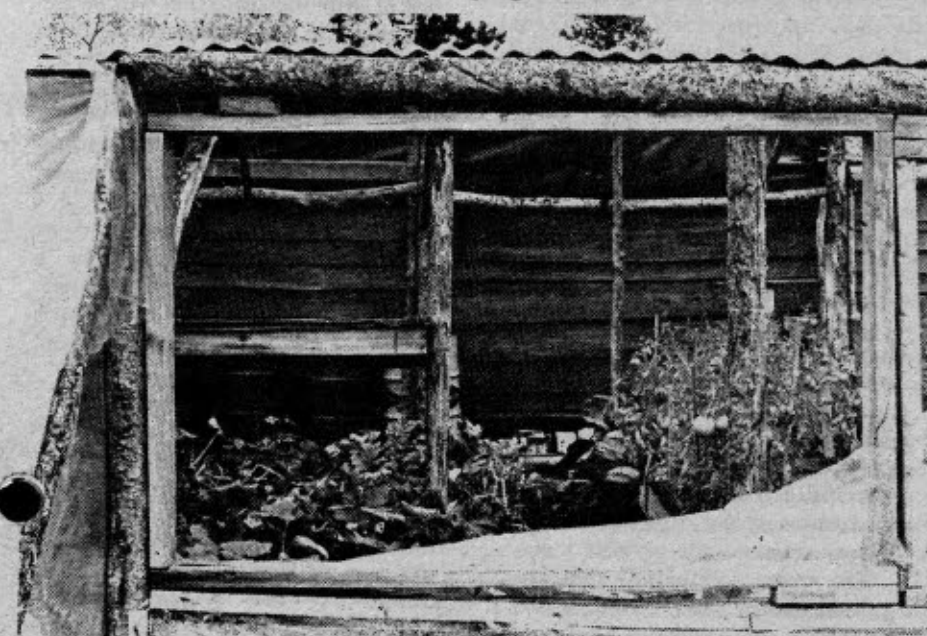
—Mar. 20-21. Solar Reliant Greenhouse Workshop. \$30 for pre-registration and \$40 for late registration. Registration deadline Feb. 14.

—Apr. 3-9. Community Energy Engineer Workshop. Tuition ranges from \$200-\$550. Room and board \$17 per day. Registration deadline March 2.

—May 15-22. Community Energy Engineer Workshop. Costs same as above. Registration deadline April 14.

If you are interested in taking one of these courses, call or write DTI for more information: Domestic Technology Institute, P.O. Box 2043, Evergreen, Colo. 80439, telephone (303) 674-6826.

Below, a peek inside Lillywhite's first greenhouse. Even in October at 7,200 feet elevation in Colorado, a simple greenhouse can extend the season.



6-High Country News — Dec. 17, 1976



A River Runs Through It and other stories



by Norman Maclean, The University of Chicago Press, Chicago, 1976. \$7.95, hardcover, 217 pages. Illustrations by R. Williams.

Review by Peter Wild

The snowcapped mountains along Montana's border with Idaho are still pretty heady stuff. Norman Maclean, a retired professor, gives us a striking picture of what it was like to grow up in them 50 years ago. We can be grateful to Maclean that this is no flaccid "Little House on the Prairie" reminiscence of childhood, no nostalgic trip designed to stimulate lachrymose hearts at the sacrifice of reality. Instead, he remembers the wild forests and towns with the same grit and rough humor, the same sensitivity to nature and pluck

that the region demanded for survival in those days. He does this with three autobiographical tales, each a synthesis of people and place.

In the first, Maclean's father, a Scot Presbyterian minister, views God, fly fishing, and the Big Blackfoot River as one inseparable whole. When the minister buttons on his fishing glove and stands in his favorite stream, he is near to God; the rod trembles before him "with the beating of his heart." "My father," the author recalls, "was very sure about certain matters pertaining to the universe. To him, all good things — trout as well as eternal salvation — come by grace and grace comes by art and art does not come easy." The minister's sons learned to fish "Presbyterian style," eschewing Izaak Walton, not only because he was an Episcopalian, but, worse, because he was a bait fisherman. People knew who they were in those days.

In contrast, Maclean adds his brother Paul, an alcoholic newspaper reporter. Paul and his Cheyenne girlfriend can't bear to let a Saturday night slip by without a decent brawl to top off the week, ending in the inevitable trip to the hoosegow. But Paul also is the best fly fisherman west of the Big Belt Mountains; he fits naturally into the rough-and-tumble whole.

Maclean next conjures up a summer spent as a teenager in a logging camp. This was in the days before loggers had wives, lived in houses, and commuted to work from Missoula in their pickups. The principal character is Jim Grierson, a rabid socialist. Despite his theoretical concern for humanity, Jim is an ornery man, the bully of the camp. And when the woods shut down in winter, he sees no political contradiction in establishing himself as the entrepreneur of a rather bizarre business in town.

Most exciting and revealing are Maclean's recollections of working for the Forest Service in the wild Bitterroot Range. The men fight fires and patrol the

lines armed with pistols against the Wobblies they suspect are starting them. The crew hates the aloof cook, who, in addition to the disgrace of wearing tennis shoes, is the favorite of the district ranger. Then they learn that the cook is a card shark. They make a deal with him: at the end of the season he will multiply their earnings in a blitzkrieg card game in Hamilton, Mont. They spend the rest of the summer dreaming about the fortune they'll make, scheming how they'll fight their way out of

the rigged gambling house with their winnings. The tense game becomes the tragicomic high point of the book and the dramatic end of the crew's bittersweet summer together.

For insights into how people lived in and around the wilderness 50 years ago, the book rings true all the way through. Reading it can't help but please, while heightening our awareness of the mountains when we walk through them today.

The Costs of Urban Growth

by Richard C. Bradley, Pikes Peak Area Council of Governments, Colorado Springs, Colo., 1973. \$2.00, paperback, 55 pages. Charts and graphs.

Review by Peter Wild

In newspapers, on television and radio, some business leaders still wave the old banner of growth. They argue that more people, more industry, and the things that inevitably come with them, will magically generate lower tax rates, plentiful jobs, and a better life for the community. The assumptions are wrong on every count. In the last decade, for instance, the Colorado Springs region grew by 63%. While keeping the typical promises of boosters in mind, let's look at a few results in significant areas.

The tax rate rose as the city scrambled to provide more sewers, roads, and schools. Yet higher taxes weren't enough. Finding itself near financial crisis, Colorado Springs imposed a sales tax in 1972. However, the increased cost of living did not improve the lot of the average citizen. Instead, as his expenses went up, the quality of his life deteriorated.

The crime rate grew by 177%. Schools groaned under the burden. The number of hospital beds per capita declined by 28%.

Colorado Springs once took pride in its parks and recreational facilities. Because essential services screamed for attention, parks suffered. The city expanded in area by 500%, while park acreage gained a mere 6%. Public baseball facilities per capita declined by 21%; golf by 50%; swimming by 65%.

All this, of course, is not to mention other factors in day-to-day living more difficult to measure: subdivisions and concrete webs spreading over the landscape, fear of crime, snarled traffic, noise and air pollution.

Undoubtedly, some people did make money from the expansion. However, while staggering under new financial and spiritual negatives, Mr. Citizen saw the biggest promise of most boosters go unfulfilled. Growth did nothing to decrease unemployment. The residents of Colorado Springs are far worse off now than before the population explosion.

A good portion of Dr. Bradley's study illustrates that the case of Colorado Springs applies in its general outlines to communities across the nation. The concise text and clear charts offer excellent material for those who want to prevent similar disasters from visiting their towns. **The Costs of Urban Growth** is available by mail from the Pikes Peak Area Council of Governments, 27 East Vermijo, Colorado Springs, Colo. 80903.

People's corporation to build solar, methane greenhouses

The Laramie County Community Action Program is using the skills of the Domestic Technology Institute to help them build and maintain an array of solar-reliant greenhouses in Cheyenne, Wyo. One of the greenhouses will contain a methane digester, which will transform manure into burnable gas — a supplemental heat source for the greenhouses. The digester will also supply high quality fertilizer for the plants.

Food produced in the greenhouses will go first to the elderly and to a food co-op. What's left will be sold in commercial markets and restaurants.

Domestic Technology Institute will serve as technical consultants and a management review team. Fred Varani of Biogas, Inc., in Denver is doing the mechanical design for the digester.

From there on everything is up to the 35 volunteers organized by Laramie County Community Action Program Director Al Duran. The group includes four high school students and more than a dozen senior citizens. They are now in the process of forming their own corporation to build and manage the digester and the greenhouses.

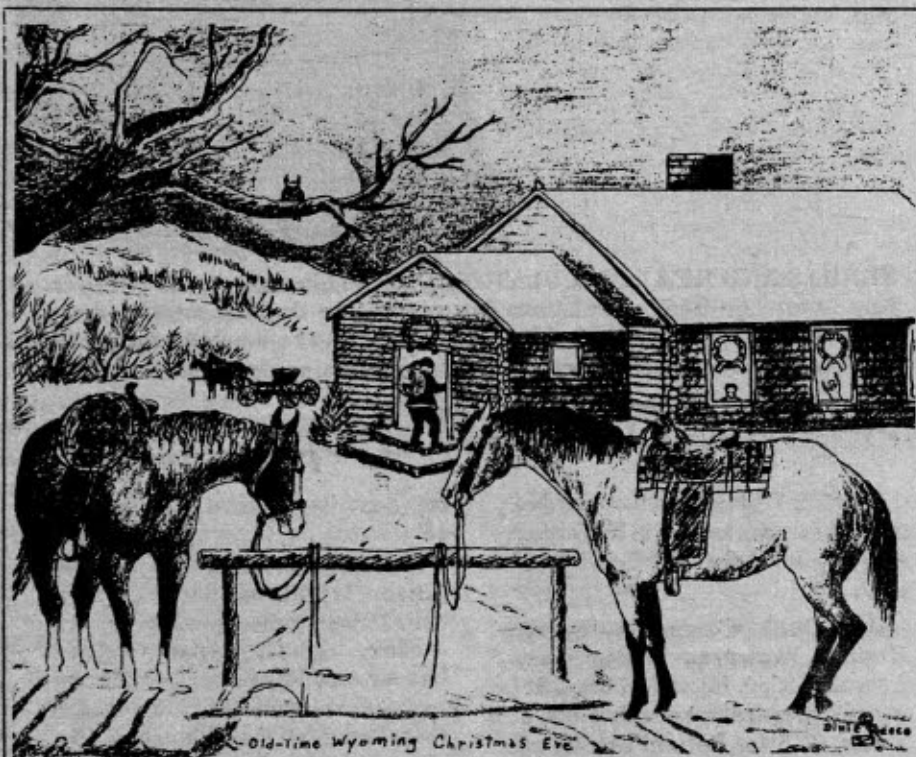
The project will include four small greenhouses attached to homes and a cluster of three larger greenhouses,

each 48 feet by 32 feet, one of which will enclose the methane digester. The project is partially funded by a \$42,000 grant from the federal Community Services Administration's food and nutrition program. The group still needs donations of labor and materials, however.

Ground-breaking on the project will be March 1, and the first planting is scheduled for mid-summer.

A number of lucrative crops are being considered for the 3,600 square feet of growing space that will be available. The theoretical output from such greenhouses is, for tomatoes, 2.8 pounds per square foot per year — or a possible income of \$18,000 per year if only tomatoes were planted, according to Malcolm Lillywhite of the Domestic Technology Institute. About 1½ pounds of onions could be produced per square foot of growing space, for a maximum income of \$8,500 per year. A lettuce crop could generate as much as \$4,000 per year and a carrot crop, \$16,000, Lillywhite estimates.

Lillywhite is fairly sure the Cheyenne project is a first. Both methane digesters and solar-reliant greenhouses are well-tested systems but they've never been tried in combination before. The project is also creating a new kind of capitalist — a community-based people's corporation.



Through HCN's Research Fund you can

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Actually you give yourself two gifts when you contribute to the HCN Research Fund. First, your donation is tax deductible. Second, your dollars may show up in print as a photograph, a drawing, or a story.

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The High Country News Research Fund

Ranchers challenge Montana reclamation study

by Marjane Ambler

As thousands of acres are being strip mined, researchers continue to wrestle with the question of whether or not semi-arid lands in the West can be reclaimed.

A researcher in Montana says reclamation is possible within a certain definition — but perhaps not within the definition of Montana's reclamation law.

Some Montana ranchers whose land is likely to be strip mined are challenging the statements of the researcher, Richard Hodder, and questioning whether he should be lobbying to change the law, which they helped to pass.

The controversy also raises the questions of whether the state should have a say in federal-private research and whether a researcher should release preliminary findings in hopes of influencing decisions.

The Montana Environmental Quality Council (EQC) has now entered the year-long dispute, a conflict that is becoming increasingly bitter. The ranchers see Hodder as a strip mining advocate and feel their livelihoods are at stake if they can't continue ranching on land which he says can be reclaimed.

On the other hand, Hodder's reputation as a researcher is at stake when his objectivity is challenged, and he accuses the ranchers of conducting a "smear campaign."

Consequently, when the two faced each other at an EQC meeting in October, the atmosphere was tense. According to observers at the meeting, Hodder and fellow researchers from the Montana Agricultural Experiment Station were "very disturbed" with an EQC staff report by Loren L. Bahls which was critical of Hodder's research.

The council, which is a legislative watchdog agency composed of private citi-

zens and legislators, adopted the resolutions proposed by Bahls, although it deleted language which criticized the ag experiment station directly. The council called for an audit of Hodder's grazing study, more involvement by ranchers in designing studies, and a restructuring of the present study.

The controversy centers around whether Hodder, whose research has in the past been funded largely by industry, is being objective. The Rosebud Protective Association (RPA), a ranchers group, says the grazing study in question, which is funded half by Western Energy Co. and half by the federal government, has a built-in bias. "The study was designed — PURPOSEFULLY — to come up with misleading results," according to Sarah Ignatius, a staff member from the Northern Plains Resource Council. (RPA is an affiliate of the Northern Plains Resource Council.)

The ranchers say the study doesn't represent actual ranching conditions since only steers and not cows and calves were used. Intensive management such as was used with the study would be impossible for a large rancher, they contend. Because of the grasses used, grazing would be possible only during the spring and the fall, which would require rotating stock twice as often as normal.

Hodder says the study wasn't meant to recreate actual ranching conditions. The ranchers counter that from Hodder's and the mining company's communications with the public, the layman would get the impression that the research proves mined land can be returned to productive grazing land.

The ranchers and the EQC accuse Hodder of publicizing results of the study prematurely — before they are conclusive — and of implying that the results can be transferred to all mine spoils and used to judge the effectiveness of reclamation rules. They say Western Energy misrepresents the study in its brochures, showing cattle grazing on the reclamation plots and implying that that in itself is proof that reclamation is working.

Hodder has been quoted in headlines across the state as urging that the reclamation law be changed, attacking the native species requirement in particular. Montana's reclamation regulations say that the company will "establish a permanent diverse vegetative cover of predominantly native species." This requirement reflects the opinion that native species have more year-round durability through regional climatic fluctuations such as droughts and remain palatable to cattle year-around. In addition, since native grasses are harder to grow, they prove that land has retained its self-sustaining capability.

POLITICAL PRESSURE

Hodder says this requirement reflects "political pressure" rather than practical reality, and he was quoted in the **Helena Independent Record** as advocating that the law be changed. The EQC and the Northern Plains Resource Council, both of which were instrumental in getting the reclamation law passed, are apparently infuriated by Hodder's attacks.

Asked by HCN whether he thought a researcher should lobby the public on a state law, Hodder said he thinks it is the responsibility of the researcher since he would realize shortcomings and foresee reactions to the law.

Hodder says the vegetation in the study was planted in the spring of 1972 — before



Drawing by Dixie Reece

the Montana Strip and Underground Mine Reclamation Act was passed in 1973. Coincidentally, Hodder says, predominantly native species were planted, but more introduced species (primarily crested wheatgrass) survived.

Responding to the criticism that his study does not further knowledge necessary to comply with the state law, Hodder told HCN that more research was needed on non-native species. "We're evaluating plants — not legislation. We're the only state that I know of that insists on this percentage (of native species). Perhaps we could be selfish or narrow and direct our research at only Montana's law," Hodder said, but other states need information, too.

"I would guess that in time, we would change our law, and we would be up a creek if we didn't have this information then," Hodder added.

The state, however, sees a need for research that applies to Montana's law. Dick Juntunen, chief of the coal and uranium bureau of the reclamation division for the state, tells HCN that the Montana Department of State Lands thought it premature for Hodder to discuss results of an experiment that was not performed on land reclaimed to state specifications.

SEEKING NEWS COVERAGE?

"We see headlines saying that reclamation is possible. We don't know where it's coming from — whether he (Hodder) is soliciting (media coverage) or whether he is being solicited," Juntunen says.

In its resolutions, the council recommended that an outside professional audit be conducted by a panel of nationally recognized experts and that the panel be retained to critically analyze any proposals for reclamation research.

In addition, the council said the state should prepare a list of research priorities, which relate to the reclamation act. To assure state influence, EQC recommends that the state help fund research. Ignatius says these funds could come from reclamation fees charged to the companies.

Another resolution calls for a committee of ranchers and county conservation officers in the locality where research is practiced to provide local input on the research design.

Hodder, apparently insulted by the request for an outside audit, says peer review is always a part of research to some extent, adding that it had been a part of this grazing study, too — before the EQC action. In response to the EQC, Hodder asked all the experiment stations in Western coal-producing states and several government agencies familiar with Hodder and his staff's work to submit reviews to the chairman of the EQC. "These experiment stations have a better knowledge than any

of the government agencies . . . and invariably better than the state," he says.

Asked about charges of bias in the experiment's design, Hodder said it was designed by many different people with various areas of expertise, including representatives of Montana State University, the University of Montana, and federal researchers.

Hodder objects to the suggestion that the state develop a list of research priorities and fund research. "My immediate reaction is that if the state funded research, the money would come through various departments, each with its own particular interests and motives. . . . This would lead to a biased program — not a rounded program," he says. In addition, he fears that there would be less money since each department would get some.

STATE TOO BIASED

Reversing the charge of bias leveled against him, he says the list of research priorities should come from experts in the field — not from "politically oriented groups." Although he says there is expertise within state departments, he thinks it is sometimes constrained by political decisions.

"The prerogative of scientists to conduct independent research is basic and mandatory. We feel that if this is interfered with by government, the long-term result will be stifling of research progress and a stagnation of creative endeavor," the researchers from the ag station said in a letter responding to the EQC resolutions.

Hodder told HCN, however, that he would have no objections to having both state funded projects and federal-private funded research projects. "If the state wished to have a specific research project conducted, it would have the prerogative to establish the goals and objectives of such a project as is the case with any funding agency," the letter to EQC said.

This compromise wouldn't satisfy all of the ranchers' objections, however, since they think there should be some state control of any research.

Responding to the final EQC resolution, Hodder agrees there should be local participation in choosing the subject for reclamation studies. However, he doesn't think the ranchers could help design the study because he doesn't think many of them would have the technical backgrounds necessary for designing statistically sound experiments. "We have trouble with companies in this regard," he says, since the company representatives also often lack the technical background.

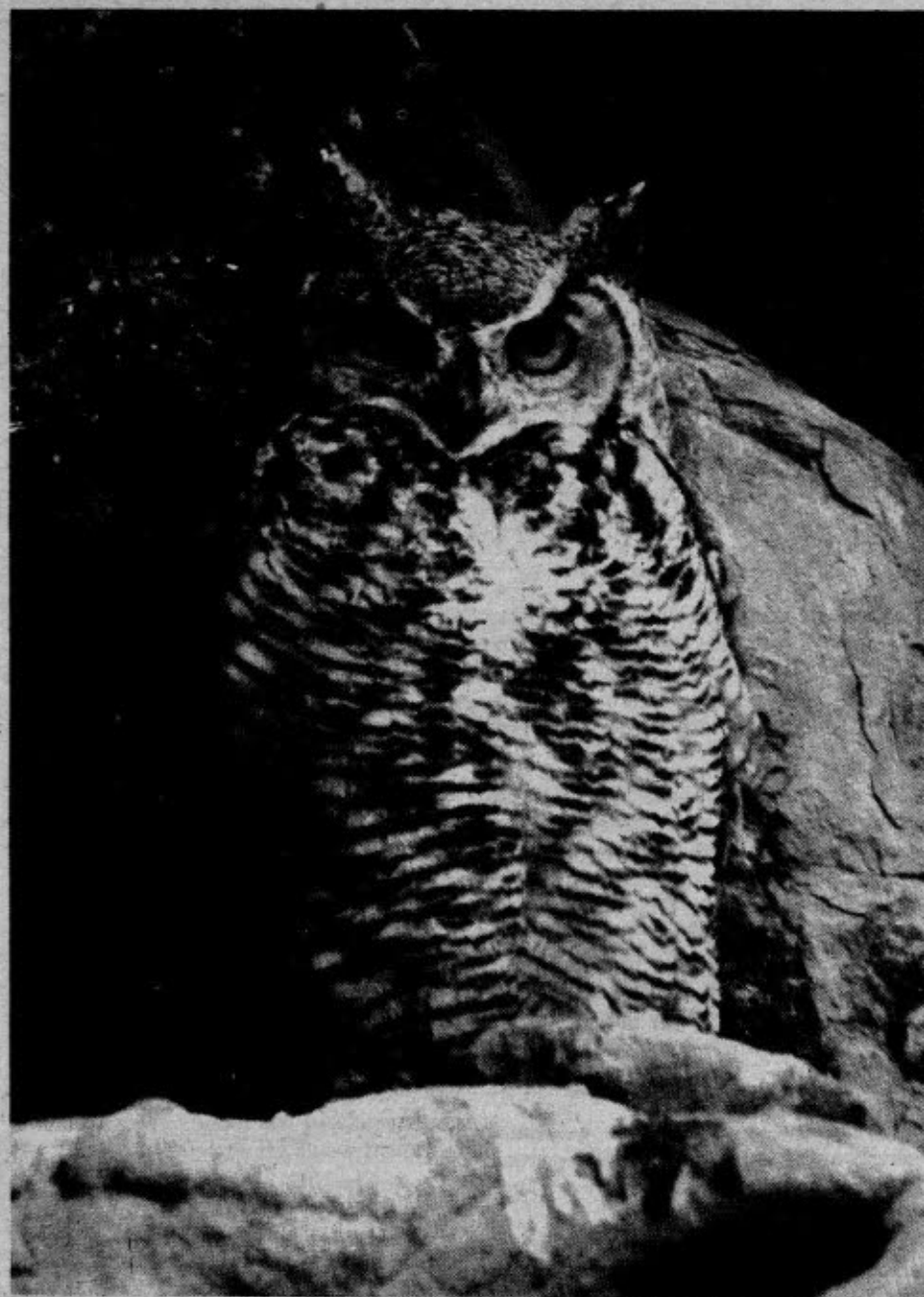
Since the EQC is only an advisory group it is now apparently up to the legislature to make decisions on the resolutions and to determine whether or not the state will want to become more involved in research and put its money on the line in an attempt for more objectivity.



BLUE GRAMA

Drawing by Gary Nabhan

8-High Country News — Dec. 17, 1976



Great horned owl



Lewiston, Wyo.



Ron Mamot celebrates well-loved Wyo

Ron Mamot stepped into the professional photography business a couple of years ago, when he realized that the lifetime he had spent in Wyoming and had begun to record on film was worth something to other people.

His photos reflect a fascination with the state's traditional riches, its mountains, its wildlife, its flowers, its vestiges of pioneer days. Just as the Tetons and Yellowstone are favorite places for most Wyomingites and visitors, they are frequently photographed by Mamot. He records on film, not the shocking or the unusual, but sights we've all seen and enjoy seeing again.

He gained experience in photography while working in the development office at St. Stephens Mission near Riverton, Wyo. He currently serves as photographer and business manager for the mission's publication, **Wind River Rendezvous**.

In addition, he has recently started his own photography business called Nature Window.

In the field, Mamot usually carries two cameras — a light, 35 mm for wildlife shots and a bulkier one that produces a 2½ by 2¾ inch negative for high quality scenic shots — both Mamiyas. For wildlife, he uses both a 400 mm and an 800 mm lense. He says he often discovers his subjects while cross-country skiing.

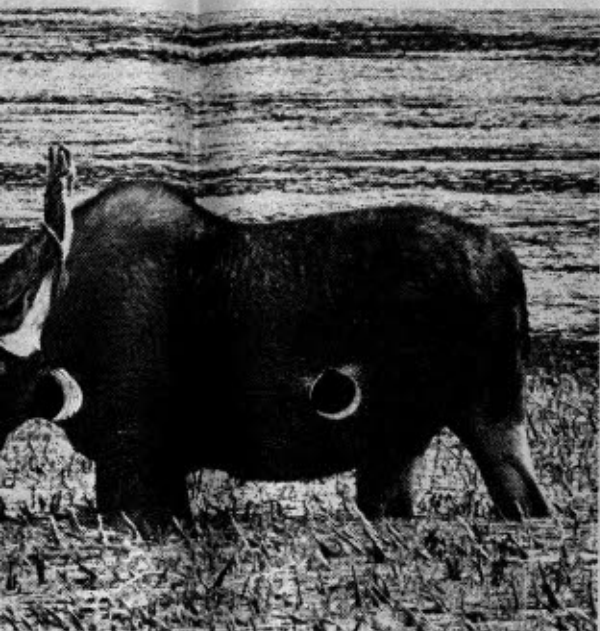
Mamot was graduated from St. Stephens High School and Casper Junior College. He won second place and honorable mention in the national photo competition sponsored by the school of Modern Photography in 1974 and 1976 and was three times first place award winner in the annual exhibit of Shoshone First National Bank of Cody, Wyo.

Mamot is among the artists who are offering their wares to HCN readers for Christmas (see page 15).

For more information write Mamot at Box 352, St. Stephens, Wyo. 82524.



Moose in Yellowstone



brates d Wyoming sights



Wild rose



Twin Lakes in the Beartooths, near the Montana-Wyoming border.

Mercer County, N.D., approves rezoning for gasification plant

In a sudden decision that shocked the community of Hazen, N.D., the Mercer County Commissioners last week granted rezoning of 1,575 acres for a giant coal gasification plant. Community newspaper editor Sheldon Green says the decision took the community by surprise since the county commissioners had assured them that they would make no decision until after the legislature meets and considers impact alleviation legislation.

Presently, there is no legislation to help Hazen, a town of 2,000, prepare for the influx of 3,000 construction workers who will be needed to build the gasification plant, according to Joe Crawford, superintendent of schools in Hazen. Two 440 megawatt coal-fired power plants and more mines are also planned as part of the energy complex.

Crawford says that without legislative help, the community is "totally unequipped" to handle the influx of workers. "The police department isn't even open on Sunday," he says. He compares the situation in Mercer County with the effects of the Alaskan pipeline. While admitting that the scale might be smaller, he says it's a similar "massive influx of people into an area totally unable to cope."

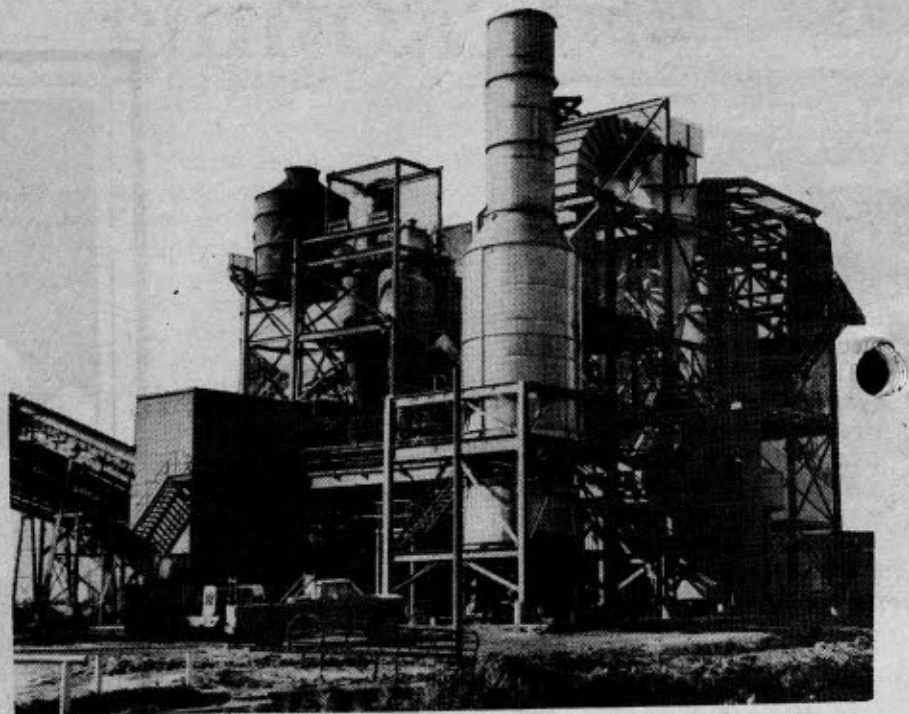
One reason the community didn't expect the rezoning decision from the county at this time is the fact that the commissioner who made the proposal, Ed Schulz, may be pulled out of office by the courts. Schulz is

to appear in court January 13 on charges that he violated the Corrupt Practices Act in the election last November. His opponent, who opposed the plant and lost by only 52 votes, is bringing the charges. The opponent has promised to try to reverse the rezoning if he wins the court fight.

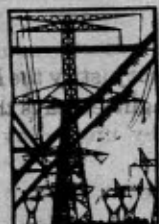
The big "if" now hanging over the future of Mercer County is whether or not ANG Coal Gasification Co. will be able to get the financing necessary to build the plant. ANG is hoping to get money from the state, the U.S. Congress, or from a cooperative project with Peoples Gas, which was recently refused a water permit for its own gasification plant, according to Green.

Presently, there are five power plants operating in the immediate vicinity and another three are planned in the near future. Hazen is 80 miles from the nearest town of 2,000 people, but the area has "plenty of coal and plenty of water" which makes it attractive to energy developers, according to Crawford.

Crawford has been active in the fight against the gasification plant. He says his school district was the first in the nation which appeared as an intervenor before the Federal Power Commission. While the area has been getting national press attention from the New York Times, Walter Cronkite, and the Washington Post, he says they're still hoping to get some support from environmentalists and activists in the region. "We haven't got the bottom line: help," he says.



CHUTZPAH? OR FOUL-UP? Colorado state officials have discovered that a \$1.2 million coal dryer for which they are now processing permits is already 80% complete, according to an article by Robert E. Cox in the STRAIGHT CREEK JOURNAL. A potter, who is also an engineer and formerly worked for Shell Oil Co., led the state to the discovery. According to the article, it is unclear whether Mid-Continent Coal and Coke Co., the operator of the largest underground coal mine in the state, failed to obtain the necessary state and federal permits because of an administrative foul-up between the company and its contractor or if it was because of a deliberate strategy to complete the plant before tackling the paperwork. The facility is expected to emit 102 tons of sulfur dioxides per year as well as other pollutants in a scenic area near Aspen, Colo., where air quality is currently very high. The company voluntarily stopped work on the project, and the U.S. Environmental Protection Agency is now contemplating formal action under the federal clean air regulations.



The HCN Hot Line

energy news from across the country

AEP OUT OF JUICE. American Electric Power Co., the nation's largest producer of electricity, says it can't supply all its customers by the winter of 1982-83. Some of the customers which would be cut off are complaining to the Federal Power Commission, according to the Rocky Mountain News. Ten communities have asked the FPC to investigate the alleged shortage and to devise an equitable solution. The investigation could be precedent-setting since FPC has not previously tested its authority to decide how electricity is to be distributed. AEP says it is having "financing difficulties" because it can't get rate increases approved, and indicates it wants to get out of the wholesale power business.

TVA CONTRIBUTIONS QUESTIONED. The Tennessee Valley Authority has contributed over \$174,000 in a nine year period to a nuclear power promotion group — the Atomic Industrial Forum, according to The Mountain Eagle. Since TVA is a federal agency it is prohibited from lobbying Congress, so AIF has been ineffectual in influencing national nuclear legislation, some AIF members say. One top utility told the Eagle, "Look, we pay them (AIF) \$14,000 a year to produce pretty coloring books while the Naderites slaughter us on nuclear power. If the TVA would withdraw its support and allow us to become a congressional lobby, we could turn this thing around."

ALTERNATIVES INTEREST LAGGING. A study on alternative energy progress says the systems are still years away from making a major impact. "These systems are 'alternative' and not commercial largely because corporations cannot make a profit by selling them," the study authors say. "In general, corporations

work on technologies best suited to their short-term interests. They do not research and develop energy technologies to solve national problems," according to the study, which was conducted by a non-profit research group, Inform. The study surveyed 142 corporations in the energy field to assess their work on solar, geothermal, nuclear, synthetic fuel, and other energy sources.

OIL INTO CARTER'S SLAP. Recognizing that any solution to the problem of transporting Alaskan oil will be controversial, the Federal Energy Administration (FEA) is leaving the decision up to the Carter Administration. FEA administrator Frank Zarb has released an 800-page government study of the problem of what to do with the surplus of oil which will be shipped to California. Zarb personally favors shipping the oil in tankers from the West Coast through the Panama Canal to Gulf Coast refineries. Another possible solution is trading the oil to Japan for Japanese-bought Mideast oil, a proposal that the Wall Street Journal says would be more

acceptable to Congress if Carter suggests it. Less than half a mile of the pipe remains to be installed although faulty welds still plague construction.

FIRST LIQUEFACTION PLANT. Construction has begun on this country's largest coal liquefaction plant near Catlettsburg, Ky. The plant will convert 600 tons of coal per day into oil and other petroleum products. It is jointly funded by the federal government, the state, Ashland Oil, Standard Oil of Indiana, and the Electric Power Research Institute. No one is sure if the synthetic oil can be produced cheaply enough to compete with domestic and imported oil.

POWER IN THE NEIGHBORHOOD. The Carter administration is reportedly seriously considering a proposal to substitute small, neighborhood energy production systems for large, centralized power plants. The architect of the proposal is Amory B. Lovins, a physicist who is the British representative of Friends of the Earth, an international conservation group. Under the proposal, the emphasis would be on solar energy and other renewable sources and on coal, oil, and natural gas during the transition. Nuclear energy would be de-emphasized. Lovins says most industry could generate its own electric power and supply a surplus to nearby homes and businesses, according to the Denver Post.

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Reckoning

from Washington

NEW COAL POLICY

by Lee Catterall

Interior Sec. Thomas Kleppe's agreement with Wyoming over coal policy may not bring the "stability" to the state's coal picture that he said he envisages. The accord is made fragile by questions over its legality, discontent by conservationists, and uncertainty about what the Carter Administration plans.

Kleppe and Wyoming Gov. Ed Herschler agreed that Wyoming's reclamation law will apply to federal lands in the state if they are more stringent than the Interior Department's regulations. Kleppe said he hopes similar agreements will be reached between the department and other Western states with large federal coal deposits.

He added that the policy "negates" the need for Congress to act on strip mining legislation.

Congressmen who have battled for the past four years for enactment of a federal strip mining bill are not likely to agree with Kleppe. They are more likely to agree with Louise Dunlap, head of the anti-strip mining lobby in Washington, who said in an interview, "It in no way changes the need for a federal strip mining bill."

The bill before Congress contains a provision identical to the Kleppe policy regarding state v. federal jurisdiction. However, the reclamation standards in the bill are much stiffer than those in the department's regulations.

"If there were a good federal strip mining bill on the books," Dunlap said, "it (Kleppe's policy) would have greater meaning."

Environmentalists plan to push to further strengthen the twice-vetoed bill when Congress convenes in January.

When Kleppe first proposed the policy early this year, he drew fire from Rep. John Melcher (D-Mont.), who said he doubted whether Kleppe could legally require companies to meet certain standards for reclamation of federal coal in one state and different standards in another.

"Secretary Kleppe has some sort of idea that he can institute actions on the executive level that will take the place of Congressional action," Melcher said in an interview then. "That isn't the case."

Asked in a press conference last week if he was assured of his legal authority to adopt such a policy, Kleppe said he was not sure, adding wistfully, "I don't believe the industry is going to pick on us legally."

He said there is no precedent within the Interior Department for allowing varying state laws to apply to federal property. Later, a department official said the Clean Meat Act was used as precedent. However, that was an act of Congress so doesn't answer Melcher's objections.

One important area addressed by the strip mining bill in Congress but not by the Kleppe-Herschler agreement is the controversy over surface owner consent — the right of landowners to prohibit the strip mining of federally-owned coal beneath their property.

Wyoming state law includes such a provision, but Interior's regulations don't. Congress is likely to retain the landowners' consent provision from the old strip mining bill when it puts together a new bill in January.



CONFLICT? Opponents of the transmission line across Grand Teton National Park say the visual impact of the line will conflict with the scenic resources that attract tourists to the area. Photo courtesy of Grand Teton National Park.

State approves transmission line through Grand Teton Nat'l Park

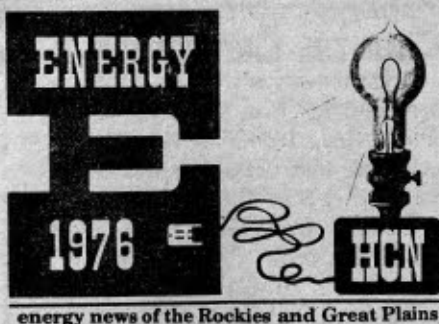
A group of Jackson, Wyo., residents are protesting the Wyoming Public Service Commission's decision to allow the Lower Valley Power & Light Co. to build a transmission line through Grand Teton National Park. LVP&L contends that the line is needed to improve reliability of the electrical system in Jackson. The protesters say that the company hasn't considered other routes that the line could take. Interior Department approval is still needed. Hank Phibbs, attorney for the protesting residents, says the power company wants

to construct a power line between the Teton substation and the town of Kelly, across the Snake River and up the Gros Ventre River, through the national park and across the National Elk Refuge.

The group contends that there are alternatives to the line across the park. A higher voltage line could be built parallel to the existing line or the line could be buried to relieve the scenic impacts.

Phibbs says the power company has admitted under oath that the electrical needs of the town of Kelly did not justify the line. The company's chief engineer says these needs could be served by upgrading the existing line. The existing line between Kelly and Jackson has been out of service for only 14 hours in the last five years, giving it a reliability of 99.955%. The Jackson protesters contend that "a reliability factor of .045% is questionable justification in light of the environmental impacts on the area."

LVP&L has told Interior Secretary Thomas Kleppe that unless Interior approves the line, there can be no additional power in that area. The Interior Department has indicated it will not allow the line to cross National Park Service land.



energy news of the Rockies and Great Plains

SLURRY WATER DENIED. The South Dakota Water Rights Commission has rejected a proposal to take 20,000 acre-feet of water per year from the Missouri River for a coal slurry pipeline. Energy Transportation Systems, Inc. had requested the water for a slurry line which would start in Wyoming. Commission members said there should be a water plan for South Dakota before any water goes out of the state, according to the Associated Press. The state legislature will also consider the request and may reverse the decision.

SPRING CREEK MINE PROPOSED. Pacific Power & Light Co. has proposed a mine near Decker, Mont., which would open in late 1979 if the necessary permits are approved. Mine production is scheduled for 10 million tons in 1982 and thereafter, and the mine life is estimated at 30 years, according to the mining plan as reported in the *Sheridan Press*. The decision to build the mine was independent of PP&L consideration of a power plant which may be nearby, according to PP&L. But if the power plant is built there, the two projects would "undoubtedly be interrelated."

ADVISORY BOARD QUESTIONS NEED. A Bureau of Land Management (BLM) Advisory Board in Rawlins, Wyo., is asking the Carter Administration to give "highest priority to making a determination of the need (for coal leasing), in the context of setting a national energy policy." Joan Nice, an editor of *High Country News* and a member of the advisory board, made the motion, noting that the Rand Corp. Report estimates that 47 billion tons of coal are already under lease. Within the Rawlins BLM District alone, 200,000 acres are covered by nominations for leasing. BLM officials indicated at the meeting that BLM has identified several critical areas where mining should not be allowed.

REA REPS GET PEP TALK. Rural electric power leaders from four states were urged to fight for continued expansion of nuclear and coal-fired power plants recently by the National Rural Electric Cooperative Association manager, Robert D. Patridge. "Nuclear power is the most reasonable alternative from the standpoint of economy and abundance, but the militancy of the anti-nuclear lobby is threatening to stymie the solution to our energy dilemma," he said. "We have no other choice but to fight for our position as vigorously as our opponents. . . ."

IPC WON'T PARTICIPATE. Idaho Power Co. won't participate in a proposed joint-venture coal-fired power plant with Washington Water Power Co., according to the *Idaho Statesman*. An engineering firm has been hired to locate a suitable site for the plant — probably in North Idaho or Eastern Washington. The plant would be completed in the late 1980s.

CUT TO INTERVENE. When the Colorado Public Utilities Commission meets in January to consider rate reform, a new group will appear at the hearing on behalf of citizens. The Colorado Utilities Taskforce (CUT) has had its petition approved to represent citizens at the hearing and is now raising money for expert witnesses. For more information on CUT contact John Volkman, P.O. Box 361, Commerce City, Colo. 80022 or call (303) 629-7270.

IPP APPLICATION FILED. The Intermountain Power Project has filed an application for rights-of-way with the U.S. Bureau of Land Management. The proposed 3,000 megawatt coal-fired power plant would be built in southeastern Utah. A final environmental impact statement on the plant is expected in June 1978, according to the *Deseret News*.

COMMISSION DELAYS PAWNEE. The Public Service Co. was on the verge of receiving its last permits for the 500 megawatt Pawnee Power Plant near Brush, Colo., but the Colorado Land Use Commission has asked the Public Utilities Commission to delay final approval. Due to the county's apparent lack of concern with water availability and social impact, the state is threatening to invoke emergency powers to designate the plant — and perhaps the whole section of the state — as a matter of state concern. Unlike other states which have siting laws, Colorado has no control over power plants — other than certifying need and issuing air and water permits — unless it calls on emergency powers. A decision on using emergency powers will be made in January.

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12-High Country News — Dec. 17, 1976

Joint Atomic Committee abolished, Morris Udall to head Interior

by Lee Catterall

House Democrats reduced Rep. Teno Roncalio's work load last week, and Roncalio wasn't complaining.

The Wyoming Democrat joined other reformers and voted to strip the Joint Committee on Atomic Energy of its power. Roncalio agreed that the committee, of which he is a member, had become too cozy with the nuclear industry it is supposed to oversee.

The group of nine senators and nine congressmen has been the only congressional committee with the power to introduce bills into both chambers.

The action by the Democratic caucus to strip it of that power followed a report by Common Cause, the self-styled citizens lobby, that urged Congress to abolish the committee.

Complaining about the committee's "bias and power," the report called the committee "a bankrupt institution which, by its actions, has forfeited the right to make energy policy and should not be permitted to further obstruct the formulation of such policy."

Roncalio called the Common Cause as-

sertions "harsh, unfair and typical of Common Cause." However, when asked about the substance of the charges, Roncalio seemed to agree, saying the committee had become a group of "inside, back-room types" who tended to be a rubber stamp for the nuclear industry.

As the Common Cause report makes clear, Roncalio was not one of those types. He and Sen. John Tunney (D-Calif.) often found themselves at loggerheads with the committee's majority. It describes how the two fought attempts by the committee to push through a proposal to make the federal government the principal insurer in cases of nuclear accidents.

That is not to say that Roncalio opposes nuclear energy; he is a believer. He, like Common Cause, opposed the way the committee operated.

Some of the functions of the joint committee will be assigned to the House Interior Committee, of which Roncalio is also a member, so he'll be able to continue his activities on the issue.

"The substance is what's important," he said of the issue, "not the form."

Environmental Rhapsody — Environmental legislation will get an important boost from the musical chairs created by last week's elevation of Rep. Jim Wright (D-Tex.) to House majority leader.

When the music stops next month, Rep. Morris Udall (D-Ariz.) will be sitting in the chair of the House Interior Committee. Conservationists have reason to sing about such an event, because Udall's presence will turn what they regarded as their sorest spot into their brightest.

Rep. Harold (Biz) Johnson (D-Calif.) had been slated to head the Interior Committee. Johnson has been disliked by environmentalists for his support of industrial projects and his opposition to strip mining controls.

When Wright becomes majority leader in January, he'll leave the chairmanship of the Public Works Committee. In terms of

seniority, Johnson is next in line, a fact quickly noticed by Udall, who is next in line to Johnson on Interior.

Udall quickly arranged a meeting with the 69-year-old Californian to urge him to



choose the Public Works Committee chairmanship. Johnson complied in an announcement Friday.

The Democratic caucus will vote on those assignments when Congress convenes next month to make it all official.

Utah ORV regs, maps ready

by Ann Schimpf

Almost a year after the closing date for receiving public input, the internal machinery of the Forest Service has succeeded in producing its off road vehicle plans for the Intermountain West.

Maps of official travel plans for the Toiyabe Bridger-Teton, Wasatch-Cache, Payette, and Targhee National Forests should be available by the first of the year, according to the Forest Service. Other forests in the Intermountain Region will have maps available sometime soon after that date.

The executive order which mandated ORV plans on public lands is a long way from fulfillment, however. According to Regional Forester Dave Karling, the next steps for carrying out the executive order are: First, maps must be made available in an area. Then, proper signing must be put up. Finally, enforcement personnel must be on the job.

Citizens can be of assistance in speeding up the wheels of government. Requesting a

copy of the forest travel plan from your local ranger district office may help.

Local snowshoeing, cross-country skiing, or snowmobile groups can volunteer to put up signs. (If an area is not signed, regardless of whether or not travel plan maps are available, ORV use is not restricted.)

For some time the most effective enforcement will probably be citizen reporting. If, for example, a cross-country skier is passed by a snowmobile in an area signed for the restriction of snowmobiles, he can take down the license plate number and description of the vehicle and report it to a local Forest Service officer. The citizen must be willing to co-sign the violation notice and appear in court if action is to be taken.

The Forest Service ORV plans also detail limitations on operating conditions of the vehicles.

ORV travel plans on the Rocky Mountain region forests were completed in 1973. The Northern region is just now completing its plans.

Conservationists say

FS plans endanger wilderness

Conservationists in the Southwest are protesting the U.S. Forest Service's proposed off-road-vehicle (ORV) management plan for Arizona forests, because they fear it may be the death knell for certain wilderness areas. The groups, the Arizona Wilderness Study Committee and the Southwest Office of the Wilderness Society, have called the plans "thoroughly inadequate."

"The Forest Service does not propose to limit the destructive practice of cross-country vehicular travel on the vast majority of this fragile landscape," says Dave Foreman of the Wilderness Society. "For all practical purposes, the Forest Service is condemning their wilderness study areas and other potential wilderness."

Foreman explains that any "parallel wheel track which remains visible into the next season" is defined as a road by the Forest Service. If ORVs are not banned from potential wilderness areas, they will not remain roadless and, therefore, they

may be disqualified from wilderness classification, he says.

Foreman is calling for an environmental impact statement on the proposed ORV management plan.

For more information write: USFS, P.O. Box 2151, Tucson, Ariz. 85702 or Dave Foreman, P.O. Box 38, Glenwood, N.M. 88039.

Classifieds

HELP WANTED. The Idaho Conservation League has a full time staff position available for a community organizer to work with citizens on conservation-resource issues and information in North Idaho. Skills preferred: writing, public speaking, research, organizing, public relations. Some travel required. Please send resume or call: ICL, Box 844, Boise, Idaho 83701. (208) 345-6933.

Governors disband WGREPO

The Western Governors Regional Energy Policy Office WGREPO is no more. In an effort to eliminate duplicated efforts and several thousands of dollars in dues, governors of Western states decided last week to consolidate the functions and the staffs of the Western Interstate Nuclear Board, the Western Governors Conference, and WGREPO. They decided to dissolve the Federation of Rocky Mountain States.

The new regional organization will encompass not only energy but water and agriculture as well as other areas of multi-state interest, according to Wyoming Gov. Ed Herschler. No decision has been made on where the new organization will be based, what states might be included, nor on the exact organization of the staff, Herschler told HCN. He expects the gov-

ernors to make those decisions when they meet for the National Governors Conference in Washington, D.C., in February. Attending Friday's meeting in Denver were governors from Colorado, Wyoming, Alaska, Arizona, Idaho, Montana, Nebraska, Nevada, New Mexico, North and South Dakota, and Utah.

The decision last week resulted from a task force report discussing 96 multi-state organizations which held meetings involving more than 1,100 man days of the time of state personnel, according to UPI. The study was headed by Roy Romer of Colorado Gov. Dick Lamm's office. Lamm said some of the existing groups were doing "good things, but certainly nobody is going to say all those organizations are necessary or operate effectively."



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Western Roundup

HCN



National Audubon Society photo

The Interior Department has launched a study of the North Platte and South Platte Rivers in Colorado, Wyoming, and Nebraska on behalf of sandhill cranes. The rivers are important resting or "staging" areas for the birds during their migration. Water depletions in the Platte drainage are threatening essential crane habitat, according to Interior. Asst. Secretary Jack O. Horton says the study may show that management of water projects and timed release of water for wildlife purposes could reduce water development's impact on the cranes. The U.S. Geological Survey, with help from the Bureau of Reclamation and the U.S. Fish and Wildlife Service is conducting the study.

Lake Catamount dam halted by EPA

For the second time this year, federal authorities have halted construction of a dam on the Yampa River in Colorado. The dam is designed to enhance a 2,800 acre subdivision near Steamboat Springs, Colo., by creating what the developers call Lake Catamount. The U.S. Environmental Protection Agency stopped construction at the dam site in December, saying the project was illegally polluting the Yampa River. In August, the U.S. Army Corps of Engineers issued a cease and desist order stopping construction until state water pollution control officials certified the project. But EPA insists that a Corps permit is also required. EPA is concerned about Catamount's impact on fisheries, downstream flow, and water temperature. EPA has also questioned the dam's impact upon the salt content of the Colorado River. The dam builder, Pleasant Valley Investment Co., filed suit in U.S. District Court in Denver against the EPA, but the judge refused to block EPA's shutdown order.

To testify, Mont. groups need lawyers

An advisory opinion by the Montana State Bar Association may effectively block citizens groups from testifying before administrative agencies, according to Rick Applegate of the Center for the Public Interest, Inc. The association opinion says that corporations cannot be represented in administrative proceedings by non-lawyers. "To compel citizen groups — most of which are corporations and are covered by this opinion — to secure legal counsel for each and every administrative appearance is an onerous and unnecessary requirement," Applegate says. While the ruling is only advisory, "it is almost universally the case that Montana attorneys will abide by this opinion." Applegate believes the opinion should be overturned.

Desert land request denied in Idaho

In what conservationists have called "a courageous stand," the U.S. Bureau of Land Management in Idaho has denied a request for a Desert Land Entry development in the Grindstone Butte area southeast of Glenns Ferry. The decision will preserve 480 acres of wildlife habitat on land that had been withdrawn from agricultural development to protect wildlife values, according to the Idaho Conservation League. The developers are expected to file a protest with the Secretary of Interior.

More bear-people problems predicted

A National Park Service board of inquiry which investigated the death of a 21-year-old Illinois girl in a grizzly bear attack in Glacier National Park reported her death was the first such incident to occur in a major park campground and lacked any apparent explanation or motive. "The evidence is that there were more people-bear encounters within the park this year, and in the Many Glacier area in particular, than in any previous year," the board said in its final report. "With increasing visitation in the park . . . this trend can be expected to continue, with the possible result of more management problems and more incidents." The board of inquiry said Mary Patricia Mahoney of Highwood, Ill., and her four companions had followed or exceeded all recommended safety precautions prior to the fatal attack. The board reported that because public safety is the primary responsibility of park managers, the fact that the grizzly bear is considered a threatened species under the Endangered Species Act of 1973 should be no deterrent to actions required to assure the safety of visitors. These actions should include the "timely removal of problem bears," the board said.

Two agencies want water—in the river

Hoping to get in ahead of the developers, two Montana state departments have filed for water reservations to protect water of the Yellowstone River. A state-imposed moratorium on diversion from the river expires in March. The average annual flow of the river is estimated at 8.8 million acre-feet, and the state health department has asked that 6.6 million be left in the river to maintain water quality. The fish and game department asks that 8 million be left for fish, wildlife, and recreation. Aside from the two reservations from state agencies, there have been 2.97 million acre-feet of water filed upon, according to the Associated Press. The moratorium was imposed in 1974 by the legislature when it discovered that industrial developers had filed for up to a third of the river's flow.

Stateline dam construction begins

Construction of the Stateline Dam, just south of the Wyoming-Utah line, is expected to begin this spring. The site is four miles downstream from China Meadows, an earlier site choice which was protested by environmentalists concerned about fish and wildlife habitat. The dam, which is part of the Lyman Project, will provide water for the irrigation of the Bridger Valley. The dam will be on the East Fork of the Smith's Fork in the Wasatch National Forest. A construction contract was awarded to a California firm in December.

Competition to get hot for Utah water

Utah, the second driest state in the union, has eight million acre-feet of water. Presently about six million are in use, and competition is hot for the remaining two million. State Engineer Dee Hansen estimates that unapproved applications for five to six million acre-feet are on file at his office, according to the *Deseret News*. Criteria for allocating the water are now the subject of controversy since environmentalists and farmers object to encouraging the highest economic use of water. Ninety per cent of the water now used goes to agriculture. Water officials say options for additional water include cloudseeding (which they say will increase the total supply by 10-15%), desalinization, importing water from Canada, mining deep ground water, recycling, and conservation.



The U.S. Fish and Wildlife Service was recently surprised to receive \$1.1 million from the Office of Management and Budget — a sum it apparently never requested — for coyote killing in Western states. The Washington-based conservation group, Defenders of Wildlife, was outraged by the action. "While endangered species dwindle for lack of federal funds, coyote killing receives a Christmas bonus," said John Grandy of Defenders. Grandy says that a \$3.7 million appropriation for endangered species and law enforcement programs which the agency requested has never been funded. Grandy is also critical of what he sees as OMB's attempt to dictate programs through the grant. Conservationists have suggested that the money was a political payoff to the supporters of President Ford in the Western states where stockmen strongly back coyote-control programs.

Wyoming Game & Fish Dept. photo

14-High Country News — Dec. 17, 1976

DISTAFF CORNER

WITH TONGUE IN CHEEK

by Myra Connell

When it comes to Christmas, I think we are all children at heart. Consequently, I wrote a letter to Santa Claus:

Dear Santa, It's that time of year again when you'll be making the rounds with your reindeer and sleigh. I will be looking for you and so will all the other children. But we have been hearing about a big disturbance called the Alaska Pipeline up your way. We hope it hasn't kept your reindeer from getting to their pasture. Imagine how disappointed the children would be if Santa never arrived. If your reindeer are too poor and starved to travel you will never get the gifts delivered.

Santa, we were taught that you would bring whatever anyone wanted if he asked for something good. I've heard rumors that some of the things people want might cause a lot of harm; so Santa, I ask you to be very careful about what you take to those people.

For instance, there are Wilderness Associates and Four Seasons Inc., who want a ski area near Provo, Utah. If they get it there will be a big airport expansion near Utah Lake and a village on Maple Flat. The natural feeding grounds of peregrine falcons and other birds and wildlife will be endangered. Maybe you shouldn't take these people what they want.

Near your own home, Santa, in Alaska, some people want the hides and scalps of 80% of the wolves on 144,000 acres of the Brooks Range. Killing all these wolves is supposed to protect the caribou. Maybe you will think carefully, Santa, before you deliver this present.

Some other people, in Idaho, want more dams like the one called Little Goose. Dams like these have brought chinook salmon near to extinction. Maybe you shouldn't bring any more big dams to anyone. Why, there are even people who want a dam that would destroy part of the Grand Canyon!

ETSI and a man named Frank Odasz want a little bit of ground under the railroad tracks for a thing called a slurry line. It might be all right to let them have this. Frank seems to be one of the good guys.

Some other good guys that I know ought to have something nice for Christmas. They have probably been so busy being good guys that they haven't had time to write to Santa so I'm going to speak up for them.

Please take the Laramie River Conservation Council a 7.5 earthquake at the proposed site of Grayrocks Reservoir.

For the Wilderness Society, please bring 100 whooping cranes to the Aransas Refuge.

Please bring High Country News a thousand new subscribers.

Don't forget our wild friends, either, Santa. Maybe you could find a critical habitat for the grizzly bears, some area that people don't have to overuse themselves. Please bring a new lease on life for the black-footed ferrets and all the other endangered species. And a law for mourning doves, placing them on protected song bird lists.

For myself, please, a box of smart pills so I'll be able to write as clever a column as Marge Higley used to write.

Love to Santa, Myra



HCN

Bulletin Board



LOONEY LIMERICKS

by Zane E. Cology

Citizen Jones built a new solar heater,
Told Public Service to come get its meter.

Unplugged from the line,
He thought he'd do fine,
Til he tried his electric egg beater.

IMPACT ECONOMIC ASSESSMENT

Increases in population, employment, and economic activity are only a part of the economic impacts of energy development on a community. An equally important variable is the "quality of life," says Erik Stenehjem. Stenehjem has written a report describing a new approach to economic impact assessment in small communities, "Forecasting the Local Economic Impacts of Energy Resource Development: A Methodological Approach." His ideas will be tested in Mercer County, N.D., where a coal gasification plant has been proposed. For a copy of the report, write Lynn Cassidy, Energy and Environment Systems Division, Building 12, Argonne National Laboratory, 9700 S. Cass Ave., Argonne, Ill. 60439.

PIONEER LAND USE PLAN

The land use plan and final environmental statement for the Pioneer Mountains has been released. The planning unit lies within the Challis and Sawtooth National Forests in Idaho. The final plan calls for 180,400 acres for wilderness study areas. Copies of the plan and statement may be obtained by contacting the Ketchum District Ranger, Sawtooth National Forest, Ketchum, Idaho 83340.

RECLAMATION OF MINING LANDS

The Rocky Mountain Center on Environment has released a paper on reclamation of land disturbed by surface mining. The cost is \$2. Copies are available from: ROMCOE, 1115 Grant St., Denver, Colo. 80203.

BRUNEAU RIVER

The U.S. Interior Department has issued the final environmental impact statement on its proposal to add the Bruneau River of southwestern Idaho to the National Wild and Scenic Rivers System. The department proposal would allow grazing activities to continue. It would add 121 miles and 57,000 acres along the river and two of its tributaries to the national system, under the administration of the Bureau of Land Management. Copies of the statement are available from the Bureau of Outdoor Recreation, 915 Second Ave., Seattle, Wash. 98104.

COLO. LEGISLATIVE BULLETIN

Anyone interested in a weekly analysis of Colorado legislative action on environmental issues can contact the Colorado Open Space Council, 1325 Delaware, Denver, Colo. 80204 or call (303) 573-9241. The cost for the weekly bulletin and an analysis of votes at the end of the session is \$10 for non-members or \$5 for members. Subscriptions and contributions help support a full-time environmental lobbyist. In addition, the COSC Legislative Workshop meets weekly at the capital during the session to provide a forum for a public environmental caucus on bills. During 1977, the legislature is expected to consider measures affecting energy conservation, wildlife, land use, energy impacts, conservation, and air pollution.

ENERGY CALENDAR

A 1977 Family Energy Watch Calendar has been prepared by the Oregon State Department of Energy. The calendar has been designed to help families monitor and systematically reduce their personal energy use. It contains information on alternate and traditional energy, a home and a garden section, and a bibliography. The Household Energy Game, included in the calendar, allows families to determine their energy use and then compare their usage with other families. The 16 page calendar opens to 14 inches by 22 inches. Write to the Department of Energy, 528 Cottage Street NE, Salem, Ore. 97310. Cost is \$1.50 each, shipping included.

MINING REGS CHANGE

The U.S. Bureau of Land Management (BLM) is seeking comments on its proposed changes in mining regulations under the 1872 mining law. According to BLM, the changes require mining operators to file a notice of intent with a description of measures to protect the environment. Any mining that would cause significant disturbance would have to have an approved plan of operation detailing reclamation plans. Bonds would be required from miners, based upon an estimated cost of stabilizing, rehabilitation, and reclaiming all disturbed areas. The proposed regulations are published in the Dec. 6 Federal Register. Comments should be sent to the BLM director, Washington, D.C. 20240 before Jan. 6, 1977.



Eavesdropper

environmental news from around the world

NEW TUSsock MOTH WEAPON. The U.S. Environmental Protection Agency has approved a virus pesticide to combat tussock moths in Western national forests. The virus is naturally occurring and is harmless to everything except tussock moths, according to the U.S. Forest Service. EPA Administrator Russell E. Train said the virus pesticide "marks the beginning of a promising new chapter in the handbook of forest pest management. I certainly hope it will be the death knell for DDT in forest use." In 1974, Train had reluctantly agreed to allow the use of DDT in the Pacific Northwest to combat tussock infestation of Douglas fir forests.

CORPS REFORMS. One of Jimmy Carter's campaign pledges was to "get the corps (U.S. Army Corps of Engineers) out of the dam building business. Now that Carter is President-elect, the corps is busy cleaning up its environmental image. "The corps recently revised its guidelines for civil works projects, requiring that environmental factors be considered equally in the planning process along with economic, social, and engineering considerations," according to **Land Use Planning Reports.** Army Assistant Secretary Victor Veysey says the revised guidelines do not constitute a "confessional."

The corps relatively new chief, Lt. Gen. John W. Morris suggests that the corps might assume future roles involving wastewater management, strip mine reclamation, hydropower development, wetland preservation, and water resource surveying.

CITIZEN ENERGY CONTROL

"Solar Energy: One Way to Citizen Control" is a report by the Center for Science in the Public Interest which outlines a scheme for making more energy planning decisions on the local level. The report foresees local governments and citizens doing community energy planning the way they do land use planning now. CSPI hopes to form a citizen group to implement the plan. Copies of the report are available for \$8, or \$4 for public interest groups, from CSPI, 1757 S. Street, N.W., Washington, D.C. 20009.

CONSERVATION DIRECTORY

The 22nd edition of the Conservation Directory is now available from the National Wildlife Federation at 1412 16th St., NW, Washington, D.C. 20036 for \$3. The directory is one of the nation's most comprehensive listing of organizations, agencies, and officials concerned with natural resource use and management. Included are lists of international, national, and interstate conservation organizations, members of Congress, Congressional committees, and federal agencies. It also contains a separate listing of Canadian fish and game administrators, a guide to major colleges and universities offering professional training for careers in conservation and environmental matters, an index of periodicals and directories of interest, a list of foreign government conservation or environmental offices, references to certain audio-visual materials, and a list of U.S. National Wildlife Refuges.

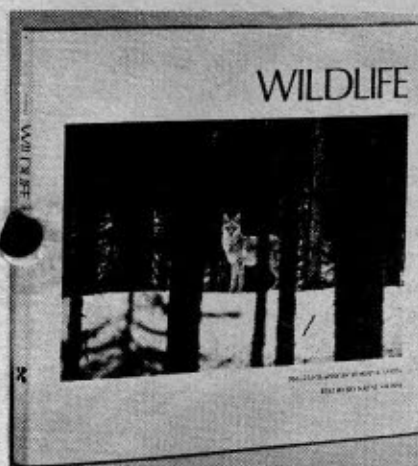
RADIATION STANDARDS QUESTIONED. A 12-year, government-financed study indicates that national radiation standards may seriously underestimate the risk of cancer arising from exposure to low-level radiation. The study of 3,883 deceased atomic workers showed that exposure well within present government standards results in some increase in cancer deaths. An official of the Nuclear Regulatory Commission, Roger Mattson, has said that while the study deserves serious attention, a preliminary review has "raised questions concerning the scientific methods used in the study." The study was done by Dr. Thomas F. Mancuso of the University of Pittsburgh; Dr. Alice Stewart, a British physician and epidemiologist; and George Kneale, a research statistician.

PEABODY SALE AGREEMENT. Kennecott Copper Corp. has agreed to sell Peabody Coal Co. to a holding company headed by Newmont Mining Co. for \$1.2 billion. The holding company is owned by Newmont, Williams Co., Bechtel Corp., Fluor Corp., and Equitable Life Assurance. The sale is subject to approval of the Federal Trade Commission, which ordered Kennecott to divest itself of Peabody in 1971. Newmont has interests in metals and oil and gas throughout the world — including Magma Copper Co. in Arizona. Bechtel is an engineering and construction company involved in, among other things, the Energy Transportation Systems, Inc., coal slurry pipeline proposal from Wyoming to Arkansas.

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IV Wind River Tie Drive. Railroad ties cut in the forests around Dubois, Wyo., were floated 95 miles down the Big Wind River to the railhead at Riverton, Wyo., 1916-1947.



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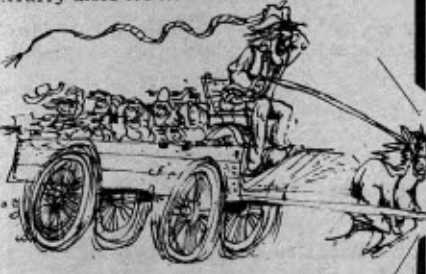
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Holly Merrifield, wildlife artist and friend, has designed these note cards for High Country News. These cards were so popular last year, we're trying them again. Ready for your personal notes, the cards are 3 1/2 by 7 inches on ivory stock with gold envelopes. Designs are in wheatfield gold. A handsome complement to any message. (Please specify Moose or Eagle.)



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16-High Country News — Dec. 17, 1976

N.D. Health Officer Weisbuch says:

Air, water concern won't hamper development

by Mike Jacobs

Pipe smoking Jonathan Weisbuch, a native of Boston, is North Dakota's state health officer.

Before he assumed the position June 1, Weisbuch had been in the state only once — in January to interview for the job. Nevertheless, he's happy to be here. In fact, he thinks the job has placed him "right on the cutting edge of the next 50 years of history."

This is true, the doctor says, because North Dakota's state health officer oversees administration of most of the state's environmental laws.

North Dakota offered the chance "to really do something," Weisbuch adds. "In Massachusetts and New York, one man can't do anything. The 'thing' has its own momentum." In North Dakota, this isn't the case. "Your political situation makes it possible for one man to really do something . . . Not many people have that kind of return on their own career investment."

He says his interest in the relationship of the environment to human health crystallized aboard a nuclear submarine, on which he was a medical officer. "The crew members were young men in prime physical condition," he says. "Whatever illness we had was usually related to something in the craft's environment. Monitoring the environment was an important part of the medical officer's job."

On the submarine, which has a completely closed environment, clean air is essential to excellent health. "We were constantly trying to purify the air even further," Weisbuch says. His experience on the submarine led him to consider the environmental causes of human illness. "I learned to look at health in the big picture," he says. "I learned that your health is related to the community where you were raised and to the water you drink."

Eventually, this realization led to an interest in environmental regulation and to a job as executive officer of a department charged with overseeing the purity of North Dakota's water and air — which are among the nation's cleanest.

Weisbuch believes North Dakota can keep that clean air. He outlined the Health Department's three step approach to air pollution regulation. The first is to approve

an industry's plans for air pollution control, the second to evaluate its completed facility to insure "they're able to do as well as they said they could," and the third to "continually check to see that our standards are being met."

"That's the kind of control our state law demands . . . control at the front, in the

But what that limit might be "is not clear." He explains that pollution control technology is improving and that determining how many electrical generating plants, for example, could be built, would ignore possible technological breakthroughs. But he concedes, "Assuming that stack gas technology doesn't improve, one



Dr. Jonathan Weisbuch: State health officer

building stage and in operation," Weisbuch says. But he concedes that the department can't always conduct the monitoring program that rapid development of coal reserves demands. "We'll be at the next legislative session asking for a lot of bucks," he says. "We're going to ask for money to do the job the legislators asked us to do." But he didn't say how much money that would be.

North Dakota's air quality standards are "fairly tough," Weisbuch says. They govern both point source emissions and ambient air quality. No industrial plant can produce more than a given amount of any pollutant and no combination of plants can degrade the ambient, or surrounding, air beyond legislated standards. That means, Weisbuch says, that if one source degrades the air to ambient standards, no other polluting facility could be built. "The cushion would be used up," he says. That also means that air quality standards could be used to fix a maximum limit on the amount of industrialization permitted in the state, he says.

could quantify development levels. . . . People should expect that kind of determination."

Water pollution potential could also be used to determine a maximum level of development, both of industrial and residential projects, he says.

But Weisbuch adds he doesn't believe that either air or water quality will provide constraints on development. The state's air and water can accommodate much development without posing threats to human health.

Instead, he says, "Social disruption is a primary constraint." He suggests that the state could adopt regulations which set "a maximum level of social change." He said such an effort would be "complicated," but maintained that the number of farms to be destroyed by an industrial development and the number of trailer camps required to house new residents might be among factors to be considered.

Companies should be required to submit social impact information with their applications for permits to build energy conversion facilities, Weisbuch said, "so we could

evaluate not only the impacts on air and water quality but on available medical care, long term health care needs, transportation, schools, agriculture."

This would be a difficult task, he admits, and might involve conflicts between private rights and public needs. He says, however, "At some point we can say, 'In perspective of the goodness of your project, we want no more social change.'"

Weisbuch says the time dimension might become part of an equation to control development. "Maybe it's rapid social change we are attempting to control."

Weisbuch says he is both frustrated and often mistrustful of government regulation but, "I am a realist. The only clout we have against the kind of exploitation planned for North Dakota is laws and regulations. We can rely on good will in many instances, but we can't rely on good will in every instance, so we have to be on guard."

Weisbuch stresses that "I don't feel that industrial development is inimical to environmental protection. I don't feel environmental protection is inimical to economic growth — if we approach it with good sense."

The state of North Dakota has an opportunity to guarantee itself economic growth in a quality environment because "our laws have come in advance of major developments. We can proceed with caution. If the rest of the country had done the same, much of America wouldn't be in the situation it is today." Citizens would not feel "pressed down" by regulations designed to govern industry and big business and Americans would not have been cheated of a clean environment.

Such a situation, Weisbuch says, "is consistent with a civilized approach to solving man's problems."

This article is excerpted from a longer profile in the June 21, 1976, issue of **The Onlooker**, a biweekly newspaper published by Jacobs. **The Onlooker** delves into North Dakota politics, history, and cheeseburgers and is available for \$10 per year from Box 723, Mandan, N.D. 58554. Jacobs is also the author of **One Time Harvest**, a book about North Dakota coal development.

Dear Friends,

People wonder how a handful of staff and volunteers in Lander manage to put together so much news every two weeks. We won't say it's easy, but we do have a secret — readers.

We keep getting the feeling we're not a business — we're part of an extended family.

This past year we've had readers build us office filing shelves, clip papers, fix the plumbing, help design and

build alternative energy projects, send out sample copies, put us up for the night, take us on a raft trip, take photographs for the paper, drive us around on stories, write stories and book reviews, run ads for us in their local papers, even request that we raise our subscription rates!

Last week we held a Christmas party to thank people in the Lander area who had helped us during the last year. We were going to provide the main dishes — turkey and ham — as a sign of our thanks, but a generous

reader volunteered to pay for them as well.

You're an unusual lot and it's great to work for you. As you can see, our rewards are measured in more than salary and we're reminded of them every year at this time when we realize we've managed to put out another 25 issues.

We have another exciting year ahead of us. We'll try to make HCN even better in the coming year. We welcome your continued criticism and support. Thank you, and holiday greetings to you all. —the staff

Happy Holidays

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