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High Country News

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Friday, Feb. 8, 1980

High heating costs fire up consumers in Rockies

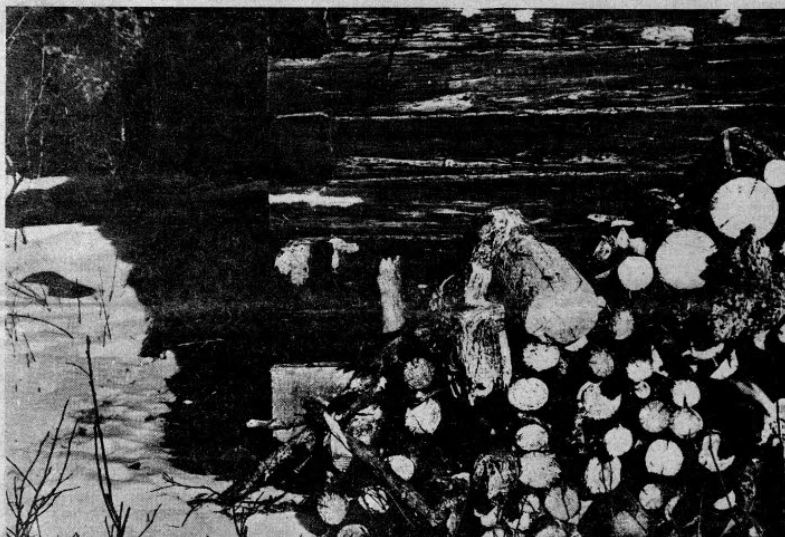


Photo by Sara Hunter-Wiles

WOOD PILES are becoming de rigueur outdoor decoration in the Rockies.

by Philip White

LARAMIE, Wyo. — Back in the 1950s and 60s, Northern Gas Co. here always gave its customers a warm greeting even before they entered the office.

Outside, above the sidewalk, the company had a powerful gas heater that was fired up day and night all winter, giving students, shoppers and bums alike a patch of Florida weather as a respite from Laramie's frigidity.

Northern Gas doesn't burn its outside heater anymore.

Most of the customers coming in these days are hot enough without it, heated not by the gas but by the gas bill.

According to figures compiled by Frank Rauchfuss of the Wyoming Public Service Commission in Cheyenne, the average winter gas bill for Laramie households went from \$30 a month in 1973 to \$80 in early 1979 and has risen another 30 percent since then.

In Riverton, Wyo., the average winter bill has gone from \$20 a month in 1973 to \$111 in December 1979. Riverton is located only a few miles from a very productive natural gas field.

Since 65 percent of the homes in the northern Rockies (excluding Idaho) are heated with natural gas, the story is much the same everywhere: the party's over. Costs are even higher for those who use propane, fuel oil or electricity for heat.

Naturally, the customers want an explanation. But the issues are so complex that the average Joe will probably be pacified, in the end, more by confusion than enlightenment.

Northern Gas tells the customers that the increases result from price hikes being charged by Northern's wholesale supplier, Amoco Production, and that Northern has no choice but to pass those increases on, dollar for dollar, to its customers. "None of the increase," a Northern spokesman says, "is profit to us."

Amoco, in its turn, says that federal and state suppression of gas prices from 1954-1974 kept revenues so low that producers had little incentive or capital to maintain supplies. As consumption grew, reserves dwindled. When supplies got so low that gas was being rationed to schools and industries, the federal government finally removed price controls on newly-discovered gas to spur production.

The recent increases were drastic, an Amoco representative argues, because of 20 years of federal interference with the laws of supply and demand. Even after the increases, Amoco says, Riverton and Laramie natural gas customers are paying

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HCN Special Winter Edition



Snow Camping 16

If you care to indulge, a plastic bag on your foot and a hunk of paraffin in your pocket become standard equipment. A helpful new book offers these ideas and more.

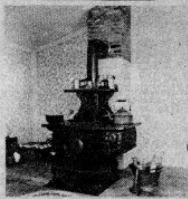
The bite of this winter's chilly winds may soon be a memory, but has the season's biggest fuel bill hit you yet? It's likely to blow you over. While some have switched to wood heaters, researchers predict problems for them, too.

Just how does one stay warm in the winter? Have a look inside the News....

Wildlife In Winter 8

How do wildlife while away the winter? They've neither fuel bills, nor ski waxes, nor wood stoves to worry about — just survival in its most basic sense. In excerpts from John Jerome's *On Mountains*, we look at the amazing ways deer, bears, pikas and carp cope with the cold months.

In the News



Wood Stove Woes 7

Have we been so busy toasting our toes that we failed to wonder what was wafting out of our chimneys? Government and university researchers agree, somewhat belatedly, that woodstoves offer more than romance and economy — there's also that old bugaboo, pollution. In some places in the West, such as Reno, Nev., Missoula, Mont., and Vail, Colo., the problem is serious.

Opinion



William O. Douglas

(1898-1980)

"Far across the basin came the yapping of a coyote. Then from the mountain at my back came the most fearful sound of the woods — the blood-thirsty screech of the mountain lion....All that lives on the mountain — rabbits, javelinas, deer, and quail — must have then stood still...Death began to stalk all life as darkness descended."

— William O. Douglas
East to Katahdin

When William O. Douglas died last month, many who had intensely disliked him during his long career on the U.S. Supreme Court lined up to praise him. They called him a genius, a philosopher; those who still choked on his views could at least regurgitate memories of his tenacity and determination.

How we admire that old fox when we finally find him dead by the chicken coop! Douglas was often a lonely voice for the causes he championed. One of those causes was wilderness. Most of his work for wild places was done outside the court: tramping through many of the world's unspoiled preserves and writing books in praise and defense of them. He even helped out *High Country News* by sending donations and words of encouragement.

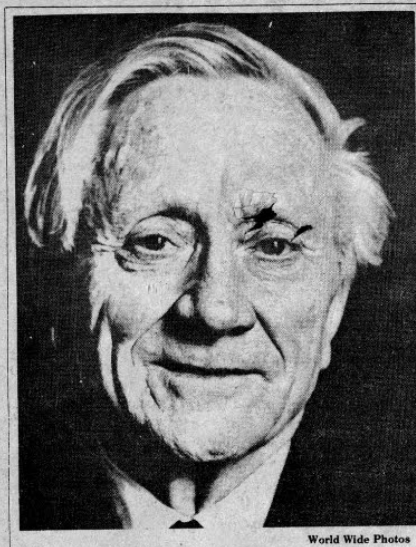
His most famous stand in the field of environmental law was a dissent written in 1972 when the court reviewed a Sierra Club suit attempting to block resort development in California's Mineral King. Douglas argued that inanimate objects, such as trees, deserved "standing" before the courts — they should have legal representation, he said, when they were threatened.

It was not Douglas' idea — he got it from a California law professor. Nor was it entirely germane to the case, which turned on the Sierra Club's right to standing, not trees'. A Sierra Club Legal Defense Fund lawyer today calls it "a philosophical flight of fancy" of questionable value.

But Douglas' dissent made newspapers all over the country. It provoked a strong reaction.

In fact, Douglas often made the headlines and airwaves, whether by walking the C & O Canal along the Potomac to urge its preservation or as the object of impeachment attempts.

He was neither a great legal scholar nor a very thorough legal writer. No one



World Wide Photos

doubted his intelligence or imagination — but many felt he could have been a better judge had he concentrated more on the law.

But Douglas should be remembered more as a public man, a politician of sorts. He championed individual rights, privacy and the preservation of wilderness, and he breathed into these causes something of his own robust personality. Judges sometimes hide behind their shrouds, but Douglas never did. When the odds were against him, his ardor and irascibility increased. If his style did not fit well into the sedate, reflective chambers of the nation's highest court, it nevertheless made issues come to life and inspired others to fight.

— GOG

Dear Friends,

February 22nd is Managing Editor Marjane Ambler's departure date. We're both proud and chagrined.

We're beaming because Marjane is among five writers in the country to win an Alicia Patterson Foundation journalism fellowship. With support from the foundation she'll begin in March a year-long writing project on Indian energy policies and their effect on tribal self-sufficiency. HCN will bring you parts of her research as it emerges in the foundation's bimonthly magazine, so we won't be without her good writing.

We will sorely miss her presence, however. She'll be based in Houston, Tex., along with former staff member Dan Whipple.

If you've never shared an office with Marjane, you may not understand what her move means to us. She's been here since 1974 before most of us had ever picked up a copy of *High Country News*. She describes herself as "a compulsive organizer." That's accurate. She's been a vital part of League of Women Voters, feminist and legislative action groups in town. She's also

made a commendable effort to keep HCN staff members on speaking terms. She's shepherded us into potlucks, car-pools, cleanup crews, ski trips and other joint efforts that, in retrospect, must have been exasperating for her at times. While heaps of clippings, files, photographs and running garb lay in wait around her desk, she has taken the time to be gentle in her suggestions to others, at times seeming more concerned about our egos than her own time. When she's feeling snowed under, she alerts us gently by donning a striped wool touring cap, a symbol of her need to shut out distractions.

She says that the amount of time it takes her to put together a story is frustrating. But she persists until she's organized the facts in an effective way, even if it takes evenings and weekends to do it. Her patient nature has been extremely valuable on her favorite beats: Indian resources and agriculture. She's gotten to know her often reticent sources at their kitchen tables, in bars, on tractors, in exercise class — wherever. As a result she has produced lively, important stories where reporters from other news organizations



MARJANE AMBLER

have said there were none. She has been trusted and, therefore, privy to information withheld from others.

Her latest major piece, the story on the radioactivity report the feds forgot (HCN 1-25-80), has been quoted in newspapers throughout the region.

In August of 1978 she crushed her leg and hand in an auto accident near Lander. Ten months later, after hours of tedious physical therapy, she was out running in the HCN 5-mile footrace. Near the finish line, spectators applauded her.

Raised near Denver, Marjane has left the mountains only once before — to take a job as editor of the *Seward County Independent* in Seward, Neb. from 1971-1974.

We're confident that the mountains will lure her back sometime soon. In the meantime, our longtime friend and co-worker has some exciting work ahead that we hope to share with you.

—the staff

Our thanks to Vickie Sutherland of Salt Lake City, Utah. An able, generous volunteer, she produced the Index to 1979 HCNs that appears in this issue.



NOT MY COMMENTS

Dear editor,

I read with regret that part of Tim Lange's lead article on Mountain States Legal Foundation in the January 11, 1980, issue of *High Country News* where a member of the environmentalist bar in Denver anonymously commented on MSLF.

I have sent the enclosed letter to MSLF, and I respectfully ask that it be printed in your next issue.

H. Anthony Ruckel
Rocky Mountain Office
Sierra Club Legal Defense Fund
Denver, Colo.

James G. Watt, Esq.
Mountain States Legal Foundation
Dear Jim,

I read the article about your outfit in the *High Country News* issue of Jan. 11, 1980.

In the article there appears a statement attributed to an environmentalist lawyer in Denver who requested anonymity. Assuming the author is correct, I want to assure you that this was not myself. I was interviewed, but apparently, as near as I can tell, none of the stuff I commented on was used.

At any rate, you and I have emphatically disagreed in public face to face. We will, no doubt, continue to do so. Our respective positions on the record speak for themselves. Be assured that such is my style, and neither I nor my office will engage in, or resort to, anonymous shots at your operation.

H. Anthony Ruckel

PREDATOR STORY,
LETTER 'BIASED'

Dear Editor:

Your recent article (see *HCN* Nov. 30) and letter to the editor (December 28) on predator control both present an extremely biased and incomplete picture of the program and Secretary Andrus' decision regarding the future of the program.

The Animal Damage Control program has not significantly reduced livestock losses, nor helped to hold down meat prices; it has caused an immeasurable amount of unnecessary death and suffering and wasted millions of tax dollars in the process. There are options which are both more realistic and humane. Secretary Andrus directed that other non-lethal control measures such as improved husbandry techniques and educational extension services be used to humanely reduce predator-livestock conflicts.

I, for one, strongly support the Secretary's decision.

Dennis Sohecki
Denver, Colo.



FREEDOM TO 'WELSH'?

Dear HCN:

New Mexico Citizens for Clean Air and Water is presently engaged in litigation opposing Mountain States Legal Foundation which speaks louder than professed philosophies (see *HCN* 1-11-80).

The issue is one of sulfur dioxide scrubbers on the giant Four Corners Power Plant, but paradoxically it is not an issue of air rules, nor of growth, nor of government regulation. The issue is breach of contract.

In June 1978, after seven months of intense legal negotiation, Arizona Public Service Co. and Public Service Co. of N.M. signed a 235-page compromise settlement agreement with New Mexico Citizens for Clean Air and Water, the Sierra Club and the state of New Mexico agreeing to install scrubbers to remove not less than 67 1/2 percent of the sulfur dioxide emissions from Four Corners. The companies have reneged on that contract, and citizens and the state are in court trying to enforce it.

MSLF has entered the issue in support of APS' position that the signed agreement should be junked. The foundation speaks for the noble virtues of "private rights, private freedoms, and private enterprise." In the "orderly" development of Western energy resources, which MSLF advocates, there is no place for the private freedom to welsh on contracts, which MSLF now supports in the Four Corners case.

Dr. John R. Bartlit, state chairman
New Mexico Citizens for Clean Air and Water
Los Alamos, N.M.

Dear HCN,

Mountain States Legal Foundation has represented our organization in addition to its own members in the matter about which Dr. Bartlit wrote, and I would like to provide our perspective.

We are neither contesting nor supporting the validity of any contract which may exist between Arizona Public Service and the other parties; any implication that we applaud breach of contract, or "welshing" as Dr. Bartlit puts it, is, quite simply, not fair.

Our position is this: Ambient air monitoring data indicate — perhaps to the surprise of all parties — that operation of the plant does not cause air quality to fall below state and federal air standards.

Modification of the plant should be required only if, as and when it can be de-

monstrated to be necessary using the best available data.

John H. Dendahl, president
New Mexicans for Jobs & Energy
Santa Fe, N.M.

Mr. Dendahl cites ambient air monitoring data purporting to show scrubbers are unnecessary. During the six-month period of those measurements, the plant was run less than half its usual amount. On the day of highest sulfur dioxide readings, three-fourths of the plant was totally off. Had the plant been turned on as it normally operates, allowed levels of sulfur dioxide in the air would have been far exceeded.

Dr. John R. Bartlit

SURVIVAL GAME
GOALS SIMILAR

Dear HCN,

As energy became the critical factor, many environmentalists moved into direct participation to help take off the pressure energy shortages were placing on the environment.

In 1969 while touring leading universities and colleges in the U.S. and Canada with an environmentally-oriented art show housed in an artmobile, I took up Survival for health reasons. This period represents the beginning of better life through good health manifestation. At this date, this movement has a growing number of the population of the country in diet and exercise programs.

My 10 year Survival playing record (with very few violations of the game rule forbidding players changing the natural temperature of air and water in their living spaces) has saved about 17,200 gallons of oil for essential use.

Having played Survival in the North, including four winters in Washington, D.C., I wanted to avoid all heated interiors. Now I am laboring in an unheated packing plant to maintain my full survival exercise program. In central Florida, here we can expect 30 degree F. temperatures during the winter. Unheated living spaces and unheated work places provide ideal conditions for "Survival" game.

As you can see, the goals of the environmental and better life through health movements converge in the game Survival. Consequently we are in the process of increasing the number of Survivalists.

Steve Kek
Weirsdale, Fla.

High Country News

The independent
natural resources biweekly
of the Rockies

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The high cost of heating homes...

(continued from page 1)

less for heat than many gas users elsewhere in America and much less than folks who heat with propane, fuel oil or electricity.

The Public Service Commission says that a 1976 decision by the Wyoming Supreme Court denied the agency any jurisdiction over wholesale prices and that the PSC's control over utility prices has been almost completely eroded by federal energy legislation.

Finally, into the arena come various consumer groups who say that the legislatures have failed to adequately fund the utility commissions so that the "public"

interest could be properly considered. They say that the gas industry and the regulators have a duty to provide a basic amount of fuel at an affordable price so that low-income people, especially the elderly, don't have to choose between heating and eating.

PAYING THE PIPER

At least one message comes through clearly: the world of dirt-cheap fuel is gone. Not only will prices not return to the accustomed levels, they'll continue to go up indefinitely. The best hope is that

through conservation and increased production, the price of energy may level off toward the general inflation rate in three to five years.

For a low-income household, there are virtually no alternatives. Various federal and state programs do provide some subsidies and weatherization help. But typically, the people hit hardest by the price increases are least able to respond. They live in older homes or mobile homes that are poorly insulated, and they can't afford to insulate or install wood stoves. They simply must reduce other expenditures or hope the utility doesn't shut them off.

According to a Nov. 19 article in the Missoula, Mont., *Missoulian*, a study by the New England Congressional Caucus predicts that the average low-income Montana household that heats with fuel

oil will spend 33 percent of its annual income for fuel this winter. That doesn't leave much for rent, food and clothing.

Customers who are better off, on the other hand, are taking steps to reduce the price impact. They're installing insulation, storm doors and windows and automatic set-back thermostats. In the Treasure Valley area in Idaho (pop. 175,000), 5,000 wood stoves have been sold in less than two years. Wood stove retailers are popping up everywhere. Five years ago, it was hard to find a good wood-burner for sale anywhere.

In some places, people are switching back to coal furnaces (see accompanying story).

SUDDEN AND SEVERE

Customers of Northern Utilities in Wyoming were hit with dramatic price hikes shortly after the Federal Power Commission lifted price controls in 1974. During the past year, gas customers throughout the region have felt the pinch.

According to Tim Funk of the Utah Coalition of Senior Citizens in Salt Lake City, natural gas in his area climbed 102 percent between 1975-79 and has shot up another 26 percent during the past year.

Wayne Gustin of Cheyenne Light, Fuel and Power says his customers are paying 31 percent more this winter for the same energy they used last winter. Rates for Colorado's largest utility, Public Service Co., went up a similar amount.

The gas companies aren't completely innocent. During the buoyant period of

Coal burning makes an unexpected comeback

By 1973, the energy pendulum had swung so far away from Henry Montgomery that he could barely see it. Now it's coming back.

For 45 years, Henry and his brother James have operated the Gem Coal Co. in Cheyenne. They sell coal and firewood and the appliances to burn those fuels.

"In 1940," Henry says, "there were 12 good coal yards in Cheyenne selling 100,000 tons a year to a population

a third what it is now. Since 1955, we've been the only coal company and we hit rock bottom in 1973."

They stuck it out, though, by painting roofs and making home repairs. Now the business is picking up, Henry says, "things should be really humming within five years."

Last year they sold 3,000 tons of coal, and sales of wood and coal were up 20 percent over 1978. "In the past 2½ years," Henry says, "we've sold 30 or 40

new coal furnaces, mostly for new homes outside the city limits where propane or electricity are the only alternatives. Coal is way the cheapest."

Demand for lump coal for small stoves has increased enormously, he says, "but it's hard to get. The mines are geared to selling to power companies."

Gem Coal Co. sells Prill coal furnaces which are made in Sheridan, Wyo. Jack Sarvik, office manager for Prill Manufacturing, says the company began making coal furnaces the same year Montgomery's business hit rock bottom.

"Since Sheridan and Gillette are sitting on top of coal fields, there's always been a certain demand for coal up here. Six years ago, coal was \$6.50 a ton if you hauled it yourself. You'd only need 10-12 tons for the winter," Sarvik says.

"Instead of buying furnaces elsewhere, the Prill brothers decided to make them here," Sarvik says. Their new, patented system is "quite an improvement over World War II days," Sarvik says. By 1979, they were manufacturing 15 forced air furnaces a week for residential use. Output has doubled in the past year. The furnaces are selling in Wyoming, Idaho, Montana, Alaska, the Dakotas, western Nebraska and in northeast Colorado.

"We're still selling most of these furnaces to rural people since the delivered prices of coal and natural gas are about equal in town," Sarvik says. "Our biggest market right now is in the coal areas of North Dakota where natural gas is 40 percent higher than in Wyoming but lignite coal sells for \$9 a ton and you can heat the whole winter for \$100 to \$150."

"At that rate, you can pay for the coal furnace in two years," Sarvik says. "In Sheridan and Gillette, it takes about four years."

Recently, the company discovered that wood pellets being made from lumbering wastes in the East work just fine in Prill coal furnaces. "We've opened dealerships in Tennessee, Maine, Minnesota and Wisconsin where wood pellets are available," Sarvik says.

At Gem Coal in Cheyenne, a 200,000 BTU Prill furnace which will heat a 14-room house is available for \$2,600. The 80,000 BTU model for a "house without a basement" sells for \$1,300.

Henry Montgomery says he wouldn't be surprised if the pendulum's return even brings back the coal-fired steam locomotive. "But I'm no railroader," he says.

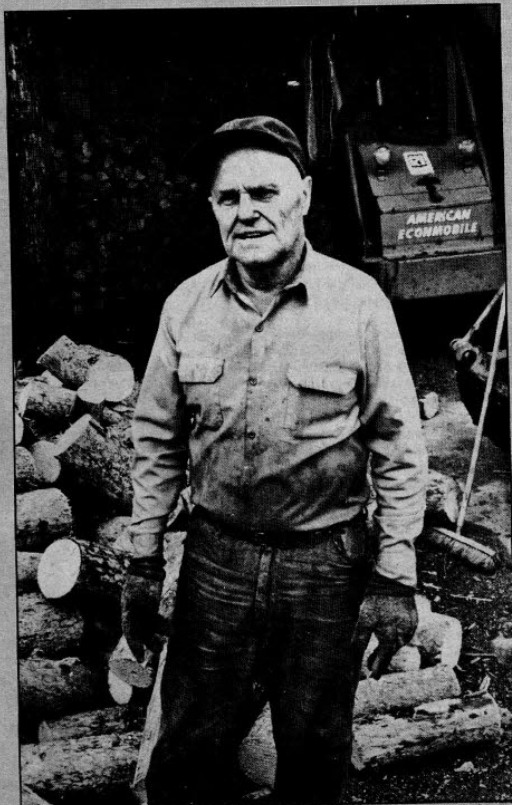


Photo by Phil White

HENRY MONTGOMERY, age 70, in the yard of Gem Coal Co., which he and brother James, now 67, founded in 1935. For the first time in recent years, business is humming again.

Senior citizens

by Philip White

Consumer activism in utility rate cases "has really taken off in the past year," according to a Denver lawyer who represents senior citizen and low-income groups. "We have at least two rate increase protests pending in every state in the region."

The lawyer, Bruce Coles, says the groups he represents are working in three areas: rate structure reform, protection from shutoffs and rate increase intervention.

"All of these groups are advocating lifeline and inverted rate structures," Coles says.

Under the lifeline concept, an essential amount of energy would be provided to households at affordable rates.

With inverted rates, customers would pay more per unit as consumption increases. Advocates claim this would encourage conservation and make energy affordable to small residential users. Historically, large users of energy such as industrial plants have paid much less per unit than a residential user because utilities claim that their costs of supply decline when they sell large amounts of energy at one location.

"Credit for starting the utility reform fight in this region must go to senior citizens in general and the Utah State Coalition of Senior Citizens in particular," says Jim Smith, deputy director of the Region 8 Energy Advocacy Project in Helena, Mont. Smith's group is coordinating utility information and rate reform activities for senior organizations and Community Action agencies in Colorado, Utah, Wyoming, Montana and North and South Dakota. The group is funded by the federal Community Services Administration,

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cheap gas, they advertised low rates and encouraged consumption. Colorado's PSC's average residential rate was 60 cents per thousand cubic feet (MCF) in 1959. During the next 10 years, the rate actually declined, until, in 1969, it was down to 57 cents. But the honeymoon was over. By 1978 the rate was \$1.64, and it's up around \$2.40 now.

Idaho was gung-ho for heating with electricity. Cheap hydroelectric rates encouraged 25 percent of Idaho households to use all-electric heat by 1976. (Only about five percent of the houses in the rest of the region are heated electrically.) Soon, though, demand outstripped the hydropower capacity. The utilities turned to coal-fired electric generation. That has meant a tripling of electricity rates since 1974, and "people are really worked up and hostile up here," says Al Fothergill of the Idaho Citizens Coalition in Boise.

"Two years ago, when Utah Power and Light requested a huge rate increase, a primarily agricultural group in Menan, Idaho, the Utility Consumers Defense Committee, collected 33,000 angry signatures in protest," Fothergill says.

Gas is no alternative. "We have the second-highest natural gas rates in the country, second only to a New Jersey utility," Fothergill says.

The end is not in sight, anywhere.

"The really astounding thing is that our so-called plentiful 500-year resource, coal, is following the cost of oil because the big oil companies control most of the coal," Fothergill says. "In November, coal was \$58 a ton here, and now it's \$75 a ton."

Gustin of Cheyenne Light, Fuel and Power says "our corporate customers have been told to expect a 30 percent increase in the cost of energy for each of the next two to three years. I hope that the free enterprise system will bring a leveling off after that. We're still recovering from the years when the rates were under price control."

Jim Smith of the Community Action Advocacy Project in Helena, Mont., expects sharp increases each year at least until phased deregulation is completed in 1985.

The Wyoming PSC's Rauchfuss says there's no light in the tunnel. "Deregulation of the industry is causing the massive increases. We're faced with monthly and often twice-monthly increases. The Federal Energy Regulatory Commission now controls all the field prices of energy, and since prices are tied in with OPEC rates and with the inflation rates, I'm not sure they'll ever level off."

Jack Cutter, district superintendent for Amoco in Casper, gives a brighter forecast. "These huge increases came because we were playing 20-year catchup, and I don't look for that to continue. The greater revenue is causing more activity. We have more rigs, we're drilling deeper and we're recovering gas from tighter sands and marginal areas that wouldn't have provided a return when gas was 50 cents per MCF," Cutter says.

"The increasing supplies will soften the need for future increases. Also, people are more interested now in conservation and in developing alternative energies such as oil shale, coal gasification, wind and solar," Cutter says.

The University of Wyoming

Burned by gas, back to coal

Until World War II, king coal did most of the winter heating in the northern Rockies. After the war, though, natural gas pipes reached more and more cities and towns. Gas was cheap, clean and convenient: no more coal bins, coal dust, clinkers, gargantuan boilers and stokers. A mere twist of the dial to the "comfort zone" was all the work required to bring heat aplenty.

Gas was so cheap, in fact, that it was economically foolhardy for homeowners or institutions to include insulation, storm windows, weatherstripping and other energy savers in new houses and buildings. It was even more ridiculous to retrofit older structures for energy conservation. In short, energy consumption was the last thing designers worried about.

But today, householders and institutions who went too far out on the natural gas limb are in a real predicament.

Take the case of the University of Wyoming for example. The cheap and plentiful gas of years past caused UW to switch entirely to gas for its central heating plant. Prior to 1970, UW was paying 22 cents per thousand cubic feet

(MCF) for gas. In 1971, the rate jumped slightly, to 28 cents.

But in 1976, UW's retailer, Northern Gas, informed the college that Northern's chief supplier, Amoco, was raising its wholesale prices and these increases would be passed on to UW. Almost overnight, the rate rose to \$1.30, a 364 percent increase.

UW had budgeted \$350,000 to pay the biennial gas bill. Suddenly, the folks in Old Main were looking at a \$1.5 million bill.

By December of 1979, the average gas rate had gone to \$2.13, an 868 percent increase within a decade. The bill for December alone was \$138,000.

Now the university is going back to coal.

UW plans to build a \$16 million heating plant in Laramie which will be primarily coal-fired. It will also be able to burn gas, fuel oil or a coal-wood waste mixture. According to Karl Harper of the UW news service, the plant's pollution controls will be 99.5 percent effective.

Harper says UW's fuel price projections indicate that by returning to coal UW will save \$150 million over 20 years. The university expects the new heating plant to pay for itself in fuel savings in five years.

lead battle against utilities for affordable energy

which also funds the Community Action programs.

Tim Funk, executive director of the Utah seniors coalition, says campaigners in Utah have lifeline advocacy as a top priority. "Utah Power and Light will be applying for another general rate increase and we'll intervene, seeking a lifeline ruling. If that fails, we'll go to the Legislature next January. If we still get no response, we'll start a lifeline referendum."

Funk says consumer advocates haven't had big successes yet in rate reform. "But consumer pressure has helped make the PSC (Public Service Commission) more aware of consumer interests. The PSC used to be the dumping ground for political appointments. Governor Matheson has made two good appointments and we're seeing headway on consumer service regulations and better PSC staffing."

Another sign of change in Utah was the recent establishment of a five-member Citizens Consumer Committee, an independent state agency funded by the Legislature that represents consumer interests in PSC rate hearings. A similar agency is working in Montana and will soon be operating in Colorado, according to Jim Smith of Energy Advocacy.

Funk says Utah consumer groups won a big victory in January when the U.S. Supreme Court refused to hear an appeal in the Mountain Fuel Supply-Wexpro case. "Since Wexpro's oil and gas exploration was funded by Mountain Fuel rate payers, we claimed that profits from the sale of oil properties, as well as gas, should be considered when Mountain Fuel applies for rate increases. They wanted to cut off the oil properties from the ratepayers. The Utah Supreme Court ruled that the ratepayers

have a full interest in the oil properties," Funk says.

"It's the biggest decision we know of in the past five years and could save consumers from \$150 million to \$500 million on utility bills," Funk says.

Funk says 45,000 senior citizens are now benefiting from a senior lifeline rate

in one part of Utah. "But the Mountain States Legal Foundation (see HCN 1-11-80) has challenged that rate, claiming it is illegal under the state constitution to prefer one group over another."

"If the rate is declared illegal, there will be such an outcry that it'll probably result

in rate reform across the board," Funk says.

A lifeline rate has also been established in Montana. "Because of intervention by Community Action, Montana Power Co. was ordered by the PSC to institute a

(continued on page 6)

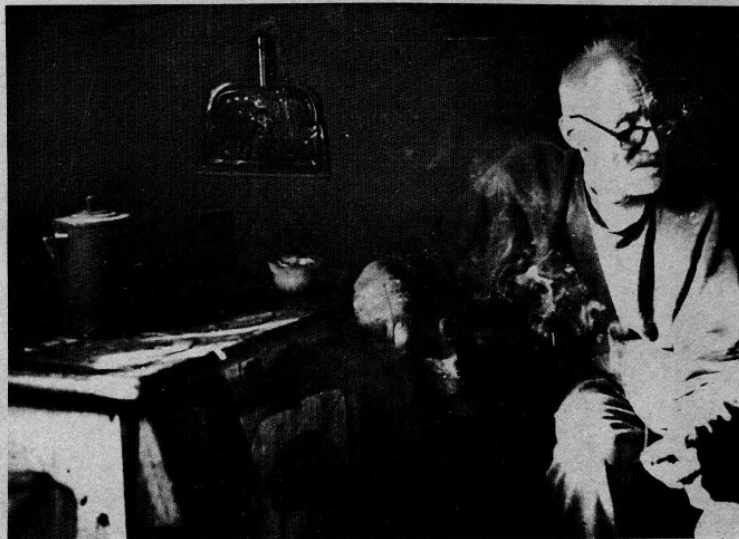


Photo by Sara Hunter-Wiles

BURNING WOOD, an old tradition, a way around high fuel prices.

6-High Country News — Feb. 8, 1980

Photos by Sara Hunter-Wiles

HEATING THE OLD WAY. The late Tom Burlingham, a rancher and cowboy, sawed, cut and burned wood most of his life. Burlingham was only the second white child born at the Shoshone Agency in Fremont County, Wyo., and lived near Burris and Dubois most of his life. In his small cabin, heated entirely by wood, Burlingham died in his sleep last year at 87.



Seniors lead ...

(continued from page 5)

lifeline rate in Western Montana," Smith says.

Lifeline rates have few defenders outside the consumer groups. Both Frank Rauchfuss of the Wyoming PSC and Jack Cutter of Amoco in Casper, Wyo., think

federal and state subsidies to low-income people is a better approach.

"Lifeline means you're selling energy at a loss to low-income people and having the other customers pay the bill," Rauchfuss says.

"You can't look to producers or utilities to handle this problem," Cutter says. "Government payments to those with a demonstrated need, administered on a

state level, or some sort of tax relief, are the best ways."

Alfredo Duran, director of Community Action in Cheyenne, says government subsidies to help pay utility bills of low-income people diverts attention from the real issues.

"When I say lifeline I mean a restructuring of the energy pricing system," says Duran. "A basic lifeline block of energy should be available to residential users at an affordable cost. The cost per unit should rise as consumption rises. This would mean that large consumers such as industry would have to pay the true cost of that energy unit. Then, it would become economical for industry not only to conserve energy but to switch to cheaper fuels and to develop alternative sources. Supplies of natural gas would increase and the price pressure would lessen," Duran says.

Duran says lifeline rates would also preserve "people's integrity and pride. Every American citizen has a right to receive essential energy at an affordable cost and shouldn't have to become dependent on government handouts."

Duran says the lifeline system would encourage residential users to conserve too. "They would pay a higher rate for energy used above the lifeline amount," he says.

Energy Advocacy's Jim Smith says all six states in his region have started state energy advocacy programs. In Wyoming, the program is funded for \$28,000 in its second year. George Lovato recently took over as director.

"With that much funding, we certainly can't take on every rate increase. We're simply trying to learn in months what the utilities have been learning for 50-75 years," Lovato says.

Smith says a number of other agencies are involved in utility work. "The Legal Services offices in each state are getting into it. Legal Assistance of North Dakota set up the Consumer Utility Law Project in 1977 and attorney Susan Rester in Bismarck works full time on energy and utility rates," Smith says. ACORN, a private membership group doing neighborhood and low-income organizing, is pushing rate reform in Colorado and South Dakota.

A number of groups are fighting rate increases in Idaho, chiefly the Citizens

Energy Alliance and the Idaho Citizens Coalition. Al Fothergill of the ICC in Boise says there is strong support for lifeline rates and for ways to fund alternative energy applications, especially solar water heaters.

"Our PUC is trying to persuade builders to stop putting all-electric heat in new homes," Fothergill says. "And recently the head of the PUC said all new Idaho homes should have solar water heaters."

Bruce Coles is working with Wyoming Legal Services attorneys protesting Amoco Production — Northern Utilities' rate increases as well as Northern Utilities' latest general rate increase petitions. "The price of gas in the Riverton area could be called the worst overcharge in the country," Coles says. "Amoco is charging \$2.50 per MCF (thousand cubic feet) for old gas that couldn't be sold anywhere outside of Wyoming for more than 60 cents per MCF."

Northern Utilities itself is fighting the Amoco price. Harlan Hansen, Northern vice-president in Casper, says his company has sued Amoco in U.S. District Court in Cheyenne challenging Amoco's interpretation of its 1970 contract with Northern.

"In exchange for Amoco's agreement to reserve gas for us," Hansen says, "we agreed that beginning in 1976 we would pay three cents per MCF more than the best price for gas moving in interstate commerce. That was a good contract for our customers in 1970 because federal price controls had kept interstate prices down. Then in 1973, the Federal Power Commission began lifting price controls on new interstate gas and in 1976, Amoco raised its prices under the contract."

The price went from 29 cents to the current \$2.40 per MCF, which Northern pays under protest. In its suit, Northern claims that Amoco can charge only three cents above the best interstate price for Beaver Creek (old) gas. Amoco has always claimed that the contract provision means three cents more than the highest price for any gas, new or old, moving in interstate commerce.

Hansen says \$25 million is involved in Judge Clarence Brimmer's interpretation of that provision. If Northern wins, Amoco would have to refund that amount and it would be rebated to Northern's customers.

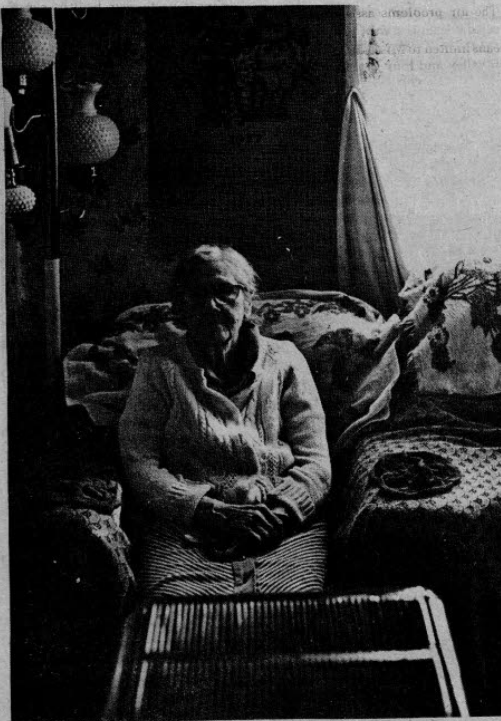
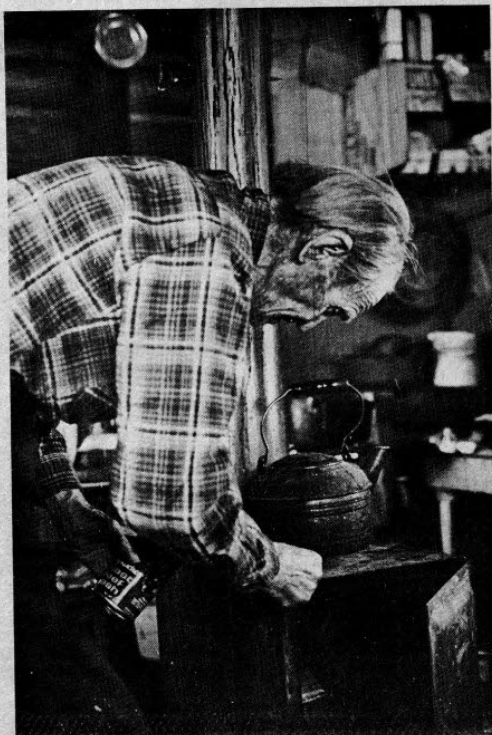


Photo by Sara Hunter-Wiles

ELDERLY PEOPLE on fixed incomes are among those hardest hit by fuel price increases. In Utah, they are also among the leaders of the rate hike battles.

Feb. 8, 1980 — High Country News-7



The wood stove: cozy, self-reliant...and deadly?

by Geoffrey O'Gara

Marjory McGregor opened a window in her home in Missoula, Mont., one morning this winter to let in some fresh air. "What came in was a lot dirtier than what I let out," she recalls. "I remember going out, smelling it, and I was flabbergasted."

Her husband, a graduate student at the University of Montana, went running that day. "My eyes started to water," he said. "That hasn't happened since I went to school in Southern California."

The McGregors were experiencing what Missoula County officials expect to see more and more of in the next few years: an air pollution alert. And though many Missoula residents blame nearby wood product mills for the haze that settles over their heads during cold weather inversions, the major culprits are, in fact, fireplaces and woodstoves.

According to a 1979 survey by the county health department, over half the residences in Missoula are now burning wood for heat, up from 37 percent two years ago. There have been three air alerts this winter, during which woodburners have been asked to douse their fires, but county air pollution specialist Jim Carlson says the weather has been unusually kind. "When it gets back to what's considered normal," Carlson says, "we'll have many more problems."

The air problems associated with increased residential woodburning are by no means limited to Missoula, though its narrow valley and long winters make it particularly vulnerable. Towns throughout the Rocky Mountain region, from Vail, Colo., to HCN's home, Lander, Wyo., are just beginning to breathe the results of the woodstove craze.

ROMANCE AND ECONOMY

The allure of woodstoves is part romance, part economics. Utility bills and heating oil prices are rising faster than inflation, and woodstove sales are jumping as a result. Consumers have come to fear dependence on foreign sources for scarce fuels. Add to that the rustic coziness of home fires and the pleasure many take in being "heated four times" by wood: cutting it, carrying it, splitting it and burning it.

Over \$1 billion worth of stoves and equipment were sold in the United States in 1978, according to the Department of Energy, and the market continues to grow.

Airtight stoves are certainly more efficient than fireplaces, which suck warm air out of a home. And when well-designed airtight stoves are allowed to burn hot, with a good flow of oxygen to burn gases before they escape, they are fairly efficient, clean heat-producers.

But that's not the way most home stoves burn. Shoppers look for a stove that will hold a fire all night or longer, one with a thermostat control that they can turn down low. "The public has no perception of this (pollution) problem," says Bill Eckert, a wood stove dealer in Fort Collins, Colo. And the government is going ahead with programs to encourage wood burning.

Scientists studying the effects of wood combustion think the wood cart is being put before the horse. With no federal regulation and little enforceable state or local law, authorities cannot control air pollution from fireplaces or wood stoves. Nor is there, for that matter, complete data on just what comes out of stoves, and there won't be for two or three years.

Studies are now underway, though, and early indications are that woodstoves, particularly the airtight kind much praised for their burning efficiency, can be dangerous to your health, especially in mountain valley towns or cities.

John Cooper, a researcher at the Oregon Graduate Center in Beaverton, Ore., lists 17 major pollutants, 14 of them carcinogenic, which pour out of chimneys from woodburning stoves. "A sawdust cigarette," he says, "could produce the same rate of cancer as a tobacco cigarette."

"If you fill an airtight stove full of wood in the evening," says E. Lawrence Klein, a Tennessee Valley Authority woodburning expert, "and turn down the thermostat (cutting off oxygen), you set up a mini-pyrolysis system, making charcoal. Over 200 compounds of tar and gases go up your chimney... There's everything in the world in there — you could make gasoline. And if you drank some of that, you would no longer be with us."

But scientific evaluations of such dangers are still in the early stages. And na-

(continued on page 14)

The year we switched back to wood

Everyone who installs a stove has a horror story about the accidents, unexpected costs, and trauma he experienced making the conversion. Herewith a compilation of several "true cost" evaluations of first-year wood-burning expenses:

Stove, pipe, installation — \$600
Fireplace tools — \$50
Chain saw — \$190
Axe, maul, sledge, wedges — \$155
4-wheel drive pick-up — \$9,000
Annual pick-up maintenance, insurance — \$400
Chains for pick-up — \$60
Towing charge (creek-bed) — \$50
Gas, oil, chain sharpener for saw — \$40
Gas for driving to and from forest (4 trips) — \$240
Broken toe, doctor's bill (log) — \$110
Safety shoes — \$55
Side mirror — passenger's side — \$30
Side mirror — driver's side — \$30
Fine for cutting green wood — \$200

Two cases Michelob — \$25
Log splitting machine — \$1,150
Splinter in eye, doctor's bill — \$70
Safety glasses — \$30
Days lost from work (eye, foot) — \$200
New livingroom carpet — \$600
Chimney cleaning tools — \$50
Roof repair after chimney fire — \$700
Ceiling and wall paint cost (after fire) — \$75
Fine for assaulting fireman — \$100
Divorce settlement (out of court) — \$25,000

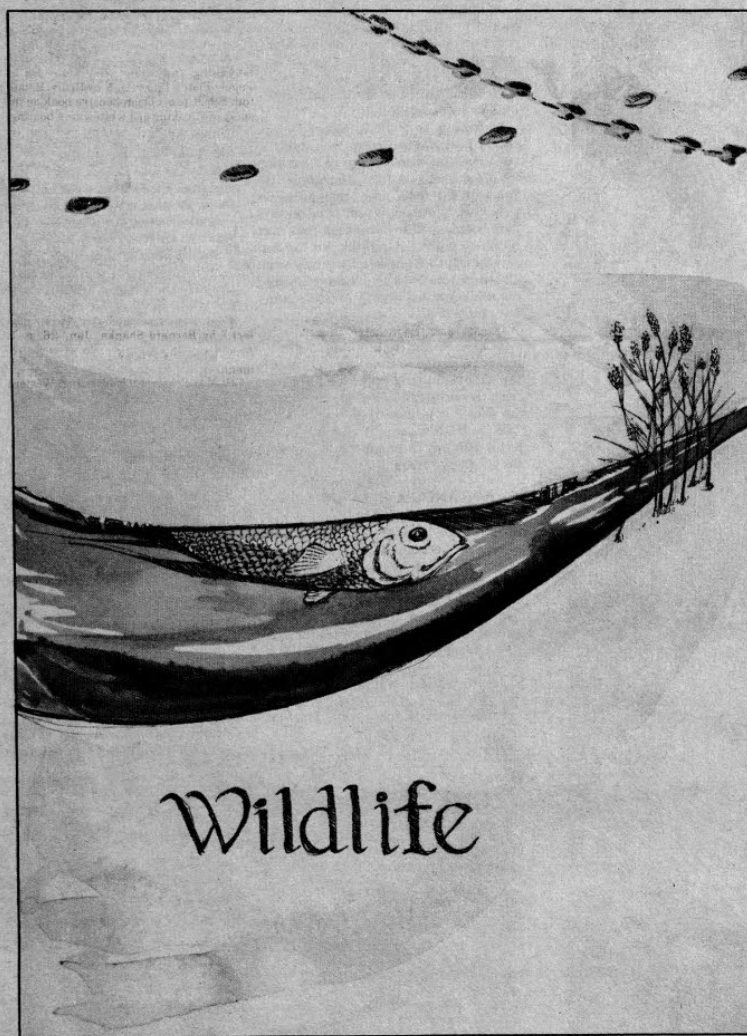
Total costs first year — \$39,210
Previous annual heating bill — \$500

SAVINGS — \$38,710

Thanks to the American Forest Institute, the Wood Energy Institute, and A. Lawrence Klein for their contributions to this list.

8-High Country News — Feb. 8, 1980

Alive and well in winter~



Wildlife

Excerpted and reprinted by permission of Harcourt Brace Jovanovich, Inc., from *ON MOUNTAINS: THINKING ABOUT TERRAIN*, copyright © 1978, by John Jerome.

Deer pass the hard part of the season as close to the pilot light level of metabolic activity as possible, since simple maintenance of life makes a high demand on energy in the extreme cold. The deer move little, deliberately parceling out the available forage.

The danger to deer from marauding dogs or other predators — or mountain visitors, particularly cross-country skiers, whose movement is silent — is that when the deer are startled into flight, they expend energy beyond amounts they can easily make up at winter forage levels. Thus, even if they escape the predator, they may eventually starve from the exertion.

The problem is compounded by the deer's anatomy. Deer don't have the teeth for the stem — you can recognize areas where deer have been browsing by the distinctively ragged, stripped-down shrub ends. To utilize this very rough roughage, deer have a complex arrangement of stomachs, and for digestion to take place certain bacteria, called "commensals," must be present in their systems. The commensals are specific to certain plants. Once a deer starts to starve, it may lose the commensal relationship. Once that happens it does no good to provide the deer with alfalfa or other rich foods: the deer will starve to death with a full stomach if it doesn't have the commensals specific to the new diet. Deer must eat all year — they can neither hibernate nor store much food. They do get a heavier coat in winter, with increased numbers of hollow hairs for improved insulation. And then they drift downslope to where the snow isn't so deep and become very quiet. And wait.

The pika — so close a cousin to hares and rabbits that it might best be considered a true mountain rabbit — has an even stranger dietary habit. Pikas winter under the snow, living primarily on dry grass fodder that has been carefully gathered all summer long. This limited diet is augmented by "refection" — consumption of fecal material which contains essential vitamins. The pika leaves dry, green droppings during the day, but its night droppings are covered by a layer of mucus that keeps them moist. While these night droppings are exposed to air, bacteria in them form the necessary vitamins. The pika then swallows them, to mix them with fresh food in a redigestion process. It's a nutritional form that may offend the weak of stomach, but without the vitamins formed thereby the pika would be dead in about three weeks.

Carp spend the winter half-buried in mud in the stream bottom, their metabolism cued to the temperature around them. At thirty-eight degrees the carp breathes about thirty times a minute; below thirty-two it does not breathe at all. But it is not dead; it is in a state of suspended animation and can survive that way for up to twenty-nine days. (Other species can survive as long as a year.) Even if frozen into a solid block of ice, so long as

the tissues are not frozen, the fish can revive.

The black bear, found throughout both eastern and western mountains in the United States, eats roots, pine needles, hair, and other indigestibles in the late fall; these form the "tappen," an intestinal plug that stops digestive action for the duration of the bear's reduced winter activity. Hikers may find expelled tappen in the springtime woods; the size of the tappen can indicate how long the bear slept the previous winter. Once the tappen is formed, the bear spends the winter drowsing, waking, stirring, drowsing again — but not eating. With the spring thaws the bear becomes active again, but can't resume normal habits — and gets very cranky — until the tappen is passed. Springtime bears are to be avoided.

Books



On Mountains: Thinking about Terrain, by John Jerome, McGraw-Hill Book Company, 1978, 272 pages, \$4.95, paperback.

John Jerome came to Colorado from Texas one summer to cool off. His flight from heat led him to the woods — and to a lasting and cerebral love affair with the mountains.

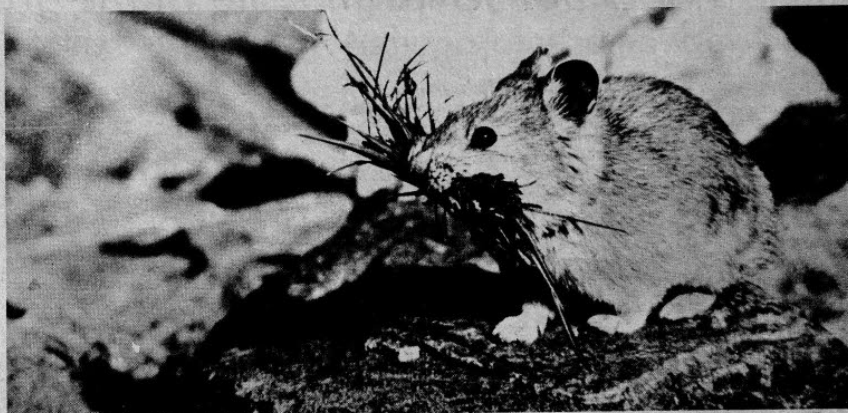
"Dry pine scent and springy footing and — my God — patches of dirty snow in deepest shade. In June. Then I topped a minor rise, and trees parted and... mountains."

Though at 17 he was deliberately callous about the experience, he later moved to Denver and became an unabashed connoisseur of mountains. As editor of *Skiing* magazine, he wrote entertaining but fact-filled prose about the objects of his fascination. Such were the beginnings of *On Mountains: Thinking about Terrain*.

The book is not for those who are satisfied with a pretty view or practical details or those who want meat, glory or gold. "This book is for people like myself, who have never quite gotten over the thrill of having something huge and solid and natural out there making the horizon interesting, who have an irresistible urge to seek high ground... simply in order to see farther from it. Seeing is the key," Jerome says.

If this sounds slightly wide-eyed and superficial, the rest of the book is not. It offers an engaging, thorough discussion of mountain geology and intriguing tidbits about other mountain disciplines, including weather, botany, zoology, recreation, snow and avalanches. The story on this page about winter adaptations is excerpted from a chapter on mountain wildlife entitled "All the Little Live Things."

Clambering to the top of a heap of material, Jerome is able to stir thoughts and senses in a way that most of his sources would not. He offers solid satisfaction for those whose fondness for high ground — be it in backyard hills or the Himalayas — has set them to asking questions. — JN



Wyoming Travel Commission photo



Photo by David Spear

Pika: strange composting habits

Mule deer: can starve on a full stomach

Black bear: eats indigestibles in the fall



Defenders of Wildlife photo by Dick Randall

10-High Country News — Feb. 8, 1980

Idaho tells feds: 'stop dumping radioactive wastes into aquifer'

by Lonnie Rosenwald

Idaho citizens and political leaders are battling federal energy officials in an effort to halt pumping of radioactive wastes into the Snake River Plain Aquifer, a 200-mile-long underground reservoir that supplies much of Idaho's drinking and irrigation water.

Federal officials have said the state's drinking water is not — and will not be — contaminated by the wastes, which contain small amounts of plutonium, iodine 129, strontium 90, tritium and other radioactive isotopes. The wastes are produced at a fuel reprocessing plant at the Department of Energy's Idaho National Engineering Laboratory near Idaho Falls.

But state officials are not convinced. They worry about an accidental release of major radioactive materials through a 210-foot well that carries the wastes into the aquifer.

The issue was raised in November when a news report of a five-year-old federal study was discovered that said 300 million gallons of water contaminated with radioactive and chemical wastes were discharged into the INEL well each year.

Tritium, which remains radioactive for 120 years, has traveled at least 7½ miles from the discharge well.

Two thousand copies of the report by the U.S. Geological Survey had been circulated when it was published in 1974, but it received little attention until late last year.

According to the report, between 1952 and 1970, 16 billion gallons of water containing 100 million pounds of chemicals and 70,000 curies of radioactive materials were discharged into the INEL well.

The waste water is produced at INEL's Idaho Chemical Processing Plant where fuel from U.S. submarines is reprocessed.

Each year about 4.5 million acre-feet of water passes through the aquifer, which supplies water to individual homes and towns across the Snake River Plain and combines with other water supplies to irrigate 3 million acres of farm land.

The complex, little understood aquifer percolates through basalt fissures and underground riverbeds before dumping into the Snake River 180 miles southwest of INEL, at an area known as Thousand Springs. Thousand Springs feeds about 4,000 cubic feet per second into the Snake, or more than 80 percent of the river's flow during irrigation season.

MIGRATING RADIATION

Routine monitoring of the aquifer by federal officials has shown tritium — which remains radioactive for about 120 years — has traveled at least 7½ miles from the discharge well. Plutonium-radioactive for 240,000 years — has traveled at least 1½ miles, but monitoring officials say they need to do further testing to determine exactly how far the plutonium has moved. In neither instance has the water reached towns in the area.

But tritium in concentrations three times the Environmental Protection Agency's standards has been found in

wells that supply drinking water to INEL. The EPA says the concentrations aren't illegal because the standards apply only to residences where the water supply is available around the clock.

Idaho Gov. John Evans demanded Dec. 13 that INEL stop dumping the radioactive wastes. U.S. Department of Energy officials agreed to meet with the state but refused to promise to halt the injections. They said the discharges are the safest way to dispose of the wastes and accused Evans of bending to political pressure.

Evans, in turn, blasted the "arrogance" of INEL officials and threatened to file a lawsuit against the federal government unless the dumping is stopped.

Since then, INEL Manager Charles Williams wrote to Evans promising to try to "reduce or eliminate" use of the well. INEL has contracted for a feasibility study of alternatives for disposal of the wastes, which is to be completed by Oct. 15.

State and federal officials agree the wastes pose no imminent health hazard, though they have reached a stalemate over how much of a threat they may be in the future.

JURISDICTION

The issue has turned into a state vs. federal rights matter, with INEL officials staunchly insisting that they will not be regulated by Idaho.

INEL is considered a defense installation, a label that in some minds means "handle with care." The Atomic Energy Act of 1954 exempts nuclear sites from state law. In 1972 the law was sustained by the U.S. Supreme Court after Minnesota tried to force a utility to stop nuclear discharges which violated state environmental laws.

On the other hand, in 1978 President Carter signed a proclamation ordering all federal facilities and agencies to comply with environmental requirements "as a private person must." State officials are interpreting this to mean complying with state environmental requirements. The officials also say INEL is violating a state law that requires all waste wells to be licensed by the state, although EPA hasn't given Idaho such authority yet.

Evans is pushing for independent state monitoring at INEL at an annual cost of \$300,000. During the first week of the fiscally conservative Idaho legislature, debate arose on the House floor over whether such a program is necessary, with an INEL employee-legislator leading the opposition.

But Evans is supported in his actions by agriculture, the frozen trout industry and a broad base of citizen groups.

Opposing Evans is much of INEL's mammoth work force, with 9,500 on- and off-site employees. The site employs more Idahoans than any organization except the state government. The \$390 million 1979 payroll exceeds Idaho's general fund budget of \$358 million in 1979-80.

The INEL controversy has fueled a fledgling anti-nuclear movement in Idaho, a state which has no commercial nuclear facilities. Three anti-nuclear groups have formed in the past six months.

— Lonnie Rosenwald is a reporter for the Idaho Statesman who specializes in agricultural and environmental issues. Research for this article was paid for in part by the HCN Research Fund.



From the Source



The Rockies and Great Plains

URANIUM TRACT DISCOVERED. A potentially large tract of uranium mineralization has been discovered just south of Jeffrey City in Wyoming, according to Anaconda Copper Co. Anaconda Co., a division of Atlantic Richfield, will share the 300-acre find with Pioneer Nuclear Inc., a subsidiary of Pioneer Corp., and Texas Eastern Nuclear Corp., a subsidiary of Texas Eastern Corp.

MINING RESEARCH INSTITUTES. The federal Office of Surface Mining is providing start-up money for nine mining research institutes. The institutes will each receive an initial grant of \$110,000 for start-up expenses and a \$160,000 scholarship and fellowship fund. Among the campuses that will host the institutes are the University of North Dakota, the South Dakota School of Mines and Technology, and the University of Nevada at Reno.

ARCHEOLOGICAL PEARL. Shell Oil Co.'s plan to operate the massive Pearl Mine on the Montana-Wyoming border is being challenged by archeologists and historians who want to protect prehistoric artifacts in the proposed mine area. Four sites in the vicinity of Shell's coal lease, including a stone quarry and rock shelter used by ancient man, are being considered for inclusion in the National Register of Historic Places. A spokeswoman for the federal Office of Surface Mining told the Billings Gazette the mine application could not be approved until the potential historic sites had been fully evaluated.

PIPELINE PLANS CARGO. The Trailblazer, an 800-mile pipeline system, will be used to carry natural gas from the Overthrust Belt to urban areas in the Midwest and East, it was announced in December. The Natural Gas Pipeline Co., one of four partners constructing the pipeline, has agreed with Amoco Production Co. to transport 1.5 cubic feet of natural gas from the Wyoming-Utah border to a site near Beatrice, Neb. The pipeline is scheduled to begin operating in 1981 if necessary permits are acquired.

POWER PROJECT SABOTAGED. Copper tubing in the unfinished Missouri Basin Power Project in Wheatland, Wyo., was damaged by saboteurs, according to MBPP officials, who are offering a \$10,000 reward for information about the crime. The damage to one of three 500-megawatt coal-fired generators under construction will cost the company about \$25,000, said a spokeswoman. The plant is still expected to begin operation later this year.

IDAHO GOV. URGES GEOTHERMAL. Gov. John Evans (D) wants state funding to drill for geothermal power beneath the Capitol Mall in Boise. Evans, noting that it cost about \$200,000 to heat state-owned buildings on the mall in 1979, said it would have cost only a third of that if available geothermal resources were tapped. Evans, however, may have trouble funding such a project, with a Republican legislature that has refused for six years to fund the governor's proposed State Department of Energy.

URANIUM OPEC. The United States will turn to foreign sources for uranium to supply its nuclear plants in the 1980s, according to a copyrighted series in the Denver Post. That could put the country at the mercy of an OPEC-like consortium formed by Australia, Canada and South Africa. According to the series, this country's nuclear utilities have commitments for only about 45 percent of their uranium needs through the year 2000.

Feb. 8, 1980 — High Country News-11

Group objects to agency delaying strip regs

The Public Lands Institute has gone to federal court to force the Interior Department to begin immediately enforcing permanent regulations under the federal strip mining act.

Interior's Office of Surface Mining, in response to complaints from several coal-producing states, decided in December to delay implementation of permanent regulations in states where a suitable state regulatory program is not yet in place. In the meantime, "interim" regulations will be applied.

The delay will not be long, said Bob Uram, an Interior attorney in

Washington, D.C. While the two major coal-producing states, Montana and Wyoming, have not yet set up acceptable regulatory programs, Uram said he expects those states to sign cooperative agreements soon. Interior will have made final decisions on all state programs by late this year, he said.

Uram argued some mines that included both state and federal lands would have been subjected to two different sets of regulations if the permanent regulation program had been implemented last Oct. 1, as originally planned. Uram said Interior be-

lieves its new timetable conforms with Congress' intent, will have no serious environmental consequences and responds to the states' complaints. "All major environmental standards are also provided for in the interim regulations," he said.

However, the Public Lands Institute, a Denver based conservation group, says Congress did not give the department such discretion when it passed the federal surface mining act.

Carolyn Johnson of the Public Lands Institute said, "He doesn't have a leg to stand on when he says there will be no serious environmental consequences." She said the agency cannot regulate several differ-

ent environmental impacts without the permanent regulations. It cannot require the mining company to supply adequate information on the mine's effects on adjoining landowners' water or the potential for revegetation nor can it require plans for air pollution control, blasting, fish and wildlife protection or subsidence control, she said.

In addition, she said the interim regulations require inspections only twice a year instead of once a month, which the permanent regulations require.

Several other environmental groups support PLI's stand on the regulations.

SOLAR PAY OFF. Last June, President Carter unveiled a solar water-heating system for the West Wing of the White House, promising that it would pay for itself in a decade. The *New York Times* reports that the system is operating well, supplying 75 percent of the wing's hot water. But with the rise in oil prices recently, it will probably not meet the 10-year deadline. "We're sorry to say," said a White House aide, "it will probably pay itself off sooner than we expected."

OIL CHEMICAL IN WATER? A chemical used to inhibit corrosion in oil drilling pipes may be contaminating water in western North Dakota, but experts disagree on its possible effects. The chemical, sodium chromate, which the Environmental Protection Agency says is associated with cancer, was found in a stock watering pond not far from an oil field in the Williston Basin. A North Dakota Health Department expert told the *Dickinson Press* he did not think the contamination levels were "serious." There were no plans to alter drilling techniques in the area. Water monitoring will continue.

COAL SLURRY ADVENTURES. The Wyoming Department of Environmental Quality has okayed building three coal-crushing plants in Campbell County, which would reduce coal to the consistency of sugar for transportation by slurry pipeline to Arkansas, Oklahoma and Louisiana. The plants would be built by Energy Transportation Systems, Inc. At the same time, the quest of a group of Wyoming water right owners to gain approval of new slurry legislation for a second pipeline came up short with Sheridan County officials. County commissioners refused to endorse the latest proposal to take water from the Little Bighorn River for a coal slurry pipeline to Texas but passed a resolution instead saying they would "endeavor to protect the environment" if the legislature approves a slurry bill.

HIGHFLYING URANIUM SEARCH. Way overhead, a camera is pointed at Wyoming and Montana. It is looking down at the Powder River Basin from a National Aeronautics and Space Administration satellite in search of vegetation patterns indicating geologic formations. Certain formations, according to evidence gathered in the past, are likely to contain uranium. NASA and the U.S. Geological Survey are concentrating on the area between the Bighorn Mountains of Wyoming and the Black Hills of South Dakota.



Across the nation and around the world

COAL, NUCLEAR GET BOOST. After four years of study, the National Academy of Sciences has concluded that for the next 20 years, nuclear power and coal are a must for meeting the nation's energy diet. NAS' 783-page report says that given current trends in electricity use, the controversial fast-breeder nuclear reactor must be developed. The report says that the high cost of solar power and the still-uncertain future of nuclear fusion make conservation and the rapid development of synthetic fuels essential. It predicts, however, that burning coal for electrical generation may have to be cut back in the 1990s, partly because coal will be in demand for synfuels and partly because coal's carbon dioxide emissions may by then be affecting weather patterns around the globe.

NEW ALASKA DISCOVERY. Besides the soon-to-be-developed Beaufort Basin offshore oil fields, there are five oil basins off the Alaska coast that could yield enormous amounts of crude, according to the U.S. Geological Survey. One of the biggest, the Navarin Basin, extends 150 miles across the Bering Sea into Russian territory. It may hold up to four billion barrels of oil, say USGS officials, considerably more than the Beaufort Basin north of Prudhoe Bay. Oil companies recently bid over \$1 billion for Beaufort Basin leases, which have been held up by a federal judge pending environmental studies.

CLOSING THE DUMP. Washington Gov. Dixie Lee Ray, former Atomic Energy Commission chief, has announced her desire to stop other states from dumping their nuclear wastes within Washington's borders. Ray told the state legislature she wants dumping at the Hanford federal nuclear facility in eastern Washington phased out over the next three years. However, states' jurisdiction over nuclear wastes is unclear. In addition, Ray said she wanted any future nuclear plants in the state built only within the fences at Hanford.

FUEL AT 20 CENTS A GALLON? Consumers Solar Electric Corp., a Culver City, Calif., firm, says it can produce a hydrogen-based fuel for automobiles for less than 20 cents a gallon. As a test, six U.S. Postal Service jeeps will be motoring around Los Angeles this month using the fuel. The company uses inexpensive solar cells to get hydrogen from water by electrolysis, then makes it into a liquid compound to power vehicles. Converting a vehicle to use the fuel costs less than \$400, according to the company. Already, a Boise, Idaho potato company has signed up for five years worth of the fuel at 50 cents a gallon.

DANGEROUSLY BEHIND. Although their Jan. 1 deadline has passed, half of the nation's nuclear plants have yet to make the safety improvements required by the government in the wake of Three Mile Island accident. Nuclear Regulatory Commission Director Harold Denton said he will give the plants extensions of various lengths. But all of them must comply by June 1 or face shutdowns. As late as mid-December eight utilities were still fighting the commission's request, but now all have agreed to comply.



Photo by David Spear

LESS GAS is being consumed by Americans, according to the U.S. Department of Energy. Use has dropped six percent from a year ago, and even oil industry officials are saying gas consumption peaked in 1978. Rising prices and a sluggish economy are the causes.

12-High Country News
Feb. 8, 1980



Bulletin Board



LOONEY LIMERICKS

by Zane E. Coloy

Soon Marjane will be moving to Texas
And we hope that she knows it affects us
For five tireless years
She gave love sweat and tears
And beers! (and curtailed our prolixity)

AUDUBON CONFERENCE

The sixth annual regional Audubon conference will be in Logan, Utah, May 2-5. It will include birding trips, a canoeing trip, natural history discussions and a variety of social activities. Registration is \$5. For housing information, contact USU Life Span Learning Program, Gary Chambers, UMC 01, Logan, Utah 84322.

ENERGY DIRECTORY

The "Montana Renewable Energy Business Directory," which lists businesses concerned with alternative energy sources, is available, free of charge, to Montana residents. To order, contact Department of Natural Resources, 32 South Ewing, Helena, Mont. 59601.

TRANSPORTATION SYMPOSIUM

Sen. Max Baucus (D-Mont.) and the Associated Students of Montana State University are sponsoring a transportation symposium Feb. 15 at the Strand Student Union on the MSU campus in Bozeman. Federal transportation policies and problems of transportation in Montana will be examined. For further information call John Flink, (202) 224-2651.

WESTERN WILDLIFE PUBLICATIONS

The U.S. Fish and Wildlife Service is offering seven new technical publications on the effects on wildlife populations of developing Western energy resources. Single copies of each may be ordered free from the USFWS Western Energy and Land Use Team, Creekside Building 1, 2625 Redwing Rd., Fort Collins, Colo. 80526.

OIL SHALE COURSE

Mesa College is offering a 3-day intensive course (\$295 per person) on the history of oil shale in the world, the resources of various countries and the level of development or current activities. A booklet containing the basic data and discussion will be used so that extensive notes won't be necessary. "Western Oil Shale 1980: The Birth of an Industry" will be held at the Holiday Inn, Grand Junction, Colo., May 7-9. For further information, contact Keith Miller, Mesa College, Grand Junction, Colo., or call (303) 248-1476.

1872 MINING LAW MATERIALS

Informational materials on the reform of the 1872 Mining Law including a 25-minute slide show, brochures, booklets and a bibliography are now available to the public. To order these materials or for further information, contact the Sierra Club Public Lands Committee, 4269 Rideway, Los Alamos, N.M. 87544. They will be offered free of charge, but contributions are appreciated whenever possible.

FUEL FROM GRAIN

The Department of Energy's Solar Energy Research Institute is offering a guide to ethanol production, free, to the first 100,000 people who request it. "Fuel From Farms: A Guide to Small-Scale Ethanol Production" can be ordered by writing: U.S. Department of Energy, P.O. Box 62, Oak Ridge, Tenn. 37830.

RIVER RUNNING PERMITS

Commercial river runners interested in the Upper Missouri Wild and Scenic River can apply to the Bureau of Land Management until March 10, 1980, for a special permit. Applications are available from BLM, Drawer 1160, Lewistown, Mont. 59457. For more information, call Clark Whitehead at (606) 538-7461.

UTAH WATER CONFERENCE

The League of Women Voters of Utah will sponsor a conference, "The Challenges of the Future for Utah's Water Policies" on March 18, 1980, at the Ramada Inn in Salt Lake City. For further information, contact G.G. Brandt (801) 582-1102 or Sara Michl 583-9838.

SOLAR CONSUMER TIPS

"Don't get Burned with Solar Energy," a brochure on solar consumer protection, has been published by the state district attorney's office in Colorado. The brochure advises consumers of ad claims to watch out for, tells how to check out the company and how to choose a contractor, and discusses tax incentives and how to write the contract. Single copies are available free from the District Attorney's Office, Justice Center, P.O. Box 471, Boulder, Colo. 80306. The brochure is illustrated by HCN's Rob Pudim.

CLEAR AIR

The U.S. Environmental Protection Agency is developing regulations to protect the visibility over national parks and wilderness areas. "An EPA Report to Congress" is available through Joseph Padgett, Director, Strategies and Air Standards Division, U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711.

UNDERGROUND COAL MINES

An Environmental Protection Agency report, "Dewatering Active Underground Coal Mines: Technical Aspects and Cost-Effectiveness," is available to the public, free of charge. To order, contact the National Technical Information Service, Springfield, Virginia 22161.

1872 MINING LAW

An occasional newsletter concerned with issues relating to the reform of the 1872 mining law, "Mine Mouth," is available from the Sierra Club Public Lands Committee, 4269 Rideway, Los Alamos, N.M. 87501, free, but donations are welcome. Also included is a directory of organizations involved in hard rock mining issues.

NEW DAY FILM

The film, "Song of the Canary, A Film About the Dangers of the American Workplace," by David Davis and Josh Hanig is available for rent. The film is about workers in a California chemical plant who have become sterile from handling pesticides and southern textile workers who are battling for compensation and safer working conditions. The 16 mm color, 58-minute-long film is \$65 rental (reduced rates available for high school and community groups). Contact New Day Films, P.O. Box 315, Franklin Lakes, N.J. 07417 or call (201) 891-8240.



FINANCIAL SOLAR WORKSHOPS

Ten one-day workshops presenting the most recent information on financial incentives on solar energy installations will be offered across the country in March and April. For a list of locations, dates and further information, contact Solar Workshops at 1522 K Street NW, Suite 600, Washington, D.C. 20005 or call the SEIA National Office at (202) 293-2981.

WILDERNESS INVENTORY

The Bureau of Land Management has completed one stage of its wilderness review of public lands in Colorado. The proposed wilderness study areas are contained in a document available from the BLM, Colorado State Office, Room 700, Colorado State Bank Building, 1600 Broadway, Denver, Colo. 80202. The formal 90-day public review period began Feb. 1, 1980, and ends April 30, 1980.

SUMMER FIELD SEMINARS

The Aspen Center for Environmental Studies (ACES) in Aspen, Colo., will sponsor a series of field seminars this summer. Topics will include alpine ecology, field ornithology, ecology of the Roaring Fork Valley and wilderness ethics. Graduate and undergraduate credit is available through California and Colorado universities. Write or call ACES at Box 8777, Aspen, Colo. 81611, (303) 925-5756 for more information.

THE ENERGY CONSUMER

To help you stay informed about federal energy activities, the **Energy Consumer** is published monthly and offered free of charge by the Department of Energy Office of Consumer Affairs, Room 8G082, Washington, D.C. 20585.

PASSIVE SOLAR FOUNDATION

A bi-monthly, four-page newsletter, **Soft Solar Notes**, is available, free of charge, to people interested in a nationally-based solar organization. The Citizens' Energy Project is trying to set up the Passive Solar Foundation to educate, advocate and lobby for solar energy. Anyone interested in working as a local contact should write: Passive Solar Foundation, Citizens' Energy Project, 1110 6th St. NW, Washington, D.C. 20001.

TOXIC SUBSTANCES

A report, "Toxic Substances," prepared by the Council on Environmental Quality, is available for 40 cents from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

CLEAN AIR

People wishing to participate in air quality control processes may find "A Citizen's Guide Clean Air" a valuable guide. Write to the Conservation Foundation, 1717 Massachusetts Ave. NW, Washington, D.C. 20036. Free of Charge.





Agency dubs 10 'least likely to succeed'

The U.S. Fish and Wildlife Service has named the 10 plant and animal species that it says are least likely to survive the '80s.

A team of biologists from the federal agency, state conservation departments, universities and private groups are working together to save the species. But there are problems. Some of the 10 most endangered species can't find suitable mates. Several will soon lose their homes and will have to be moved to new wild sites or kept in captivity.

The following plants and animals were included:

Most endangered mammals — the black-footed ferret of the plains and the red wolf of the South.

Most endangered fish — the snail darter of the Little Tennessee River.

Most endangered mollusk — the birdwing pearly mussel of the Tennessee River.

Most endangered insect — the lotis blue butterfly of Mendocino, Calif.

Most endangered birds — the dusky sea sparrow of Cape Canaveral, Fla., and the Kauai-oo of the Hawaiian Islands.

Most endangered amphibian — the Houston toad of southeastern Texas.

Most endangered reptile — Kemps Ridley sea turtle of the Caribbean, Gulf and the Atlantic.

Most endangered plant — clay-loving phacelia of Utah County, Utah.

Interior's fishery rescue plan may sink

U.S. Interior Department officials have proposed a way to protect the nation's finest fisheries — including the Yellowstone River in Montana — but the plan will have few teeth in it.

The National Fisheries Recognition System, which is expected to get the approval of Interior Secretary Cecil Andrus, would promote conservation of waterways which represent special natural or cultural values.

But Interior's proposal would give the agency no protective power — except that of suggestion. Inclusion of a stream in the system "should promote conservation efforts" between the Department of Interior and the state or landowners affected, says Robert L. Herbst, assistant secretary of interior.

"The federal government will not thereby acquire a possessory interest in the land, waters, or fishery resources so designated," he says.

The Fish and Wildlife Service Act of 1956 gives the agency the authority to set up such a system, Herbst says.

The new process includes identification of a National Fishery Area, its listing in a registry, posting signs, and the issuance of certificates to the area's owners.

"Recommendations for designation can be submitted by any government agency, organization or individual," Herbst says, "and formal nominations by states will be given high priority consideration."

He says review of nominations for National Fishery Area status will be con-

ducted by a Department of Interior committee.

"With regard to fisheries, the time is later than it was for land," Herbst says. Traditional fisheries in the U.S. have been degraded by pollution, overfishing, habitat destruction and the invasion of new species, according to Herbst.

The Yellowstone River and the Cape Hatteras area in North Carolina are prime candidates for inclusion, Herbst says.

New Mexico

Mineral oil may help erase man's mark

Researchers at New Mexico State University have found that mineral oil, an old-fashioned home remedy, may help rid animals of toxic chemicals, such as pesticides, herbicides and PCBs.

Dr. Stan Smith, an animal nutritionist at the university, says that once an animal eats contaminated products, the toxic elements are carried throughout the animal's body and stored in fat tissues, where they remain until they are gradually excreted. During this process, any products from the animal, such as meat, eggs or milk, are also contaminated. The normal detoxification process can take many months, but mineral oil speeds it up by one third or more.

Mineral oil experiments on sheep, rats and monkeys did not affect digestion. However, Smith and his fellow resea-

Western Roundup

U.S. House funds Burlington Dam but not Libby

The Libby Rod and Gun Club won an important battle Feb. 5 in its efforts to block construction of a reregulation dam on the Kootenai River. The House passed the Water Resources Development Act without authorizing the dam. However, Libby was one of the few victories in the bill for conservationists. Another dam that has been fought by Western conservationists, Burlington Dam in North Dakota, was funded.

The \$4.3 billion bill, which includes nearly 200 projects, has been criticized by the Carter administration as well as conservationists. The heads of the Interior Department and the Army Corps of Engineers told the House they could not support the bill; the corps had not even completed making recommendations on more than half the projects.

Rep. Pat Williams (D-Mont.) warned his colleagues that the Libby dam would return only 58 cents for every dollar spent on its construction. The dam would have reduced fluctuations in Kootenai River levels caused by four proposed new generators at the main Libby Dam. Without the dam, the generators, which were designed to add power for the Pacific Northwest, probably can't be used, according to both Williams and Sen. John Melcher (D-Mont.). Melcher had supported the reregulation dam.

Williams said he supported the dam until he investigated questions raised by the Libby Rod and Gun Club, which objected to the dam primarily because of its impacts on wildlife. An injunction stopped construction on the dam after a federal judge ruled that Congress had never authorized the project.

North Dakota farmers were not so successful in fighting Burlington Dam, which would damage a National Wildlife Refuge

and inundate valuable farmland. Proponents of the dam say it is necessary for flood control. The House authorized a total of \$92.6 million for Burlington, although more will be spent if necessary.

Ed Osann of the Coalition for Water Project Review said the House disregarded all the water policy reforms recommended by President Carter except one — cost ceilings were set for new construction projects. In the past, the Army Corps of Engineers has estimated costs for projects, and Congress has allowed cost overruns. On the other hand, the Bureau of Reclamation (now the Water and Power Resources Service) has set cost ceilings, and congressional action was necessary to change them.

The House did not agree with Carter's proposed policy to require states to share costs for building water projects. In fact, local cost-sharing requirements were reduced on more than 30 projects — including two in the Rocky Mountains, according to Osann. This means the Corps will be picking up tabs that were previously paid by local communities for operating and maintaining certain dams.

Western projects affected by this provision include Haise-Roberts in Idaho and the Jackson Hole Snake River Protection Project in Wyoming.

Other Rocky Mountain and Northern Plains projects mentioned in the bill include Springfield, S.D., (water supply intake — \$2 million); Chatfield Dam near Denver (reduces storage requirements for flood control, no cost estimates); and Lucky Peak Lake in Idaho (modify the outlet, no cost estimates).

President Carter is expected to veto the bill if it is not changed dramatically by the conference committee following Senate action. Senators, especially Pete Dominici (R-N.M.), Alan Simpson (R-Wyo.) and Daniel P. Moynihan (D-N.Y.), are more inclined toward reforming water policy than most House members, according to Osann.

The House did deauthorize 19 projects, including the Dickey-Lincoln Dam in Maine, which has long been opposed by conservationists.

North Dakota

Garrison Diversion almost dead again

For the second year in a row, the U.S. Office of Management and Budget has recommended zero funding for North Dakota's Garrison Diversion project. According to Sen. Milton R. Young (R-N.D.), "the project will be about dead" if funds aren't appropriated. The U.S. Power and Water Resources Service, formerly the Bureau of Reclamation, had requested \$50 million for the 1981 project year, which starts this summer. Work in the 1980 pro-

ject year was done with carryover funds from 1979.

According to Young, too much has been invested in the project — about \$140 million — to drop it. He estimates the cost of repairing the environmental damage already done, which would involve filling in canals, to be at least \$115 million.

The OMB's recommendation now goes to President Carter, who will make a budget proposal to Congress.

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Wood stoves...

(continued from page 7)

tional policymakers, who were slow to recognize the potential of biomass fuels, now seem equally tardy in acknowledging the dangers.

President Carter, with great fanfare, recently had airtight stoves installed in the White House. And a citizen who calls the Department of Energy's National Energy Information Center to inquire about heating with wood is likely to hear what I heard: "Wood is organic, it can go back into the soil...Ash and carbon from wood burning don't hang in the air as long as the inorganic emissions from coal burning, and when they fall, it's similar to a mulch, good for the soil."

There is in fact much more than good mulch coming out of stoves. John Milliken, a chemical engineer and EPA researcher, reports that dangerous pollutants such as phenols, aldehydes, carbon monoxide, methane, and nitrogen oxides are emitted; and polycyclic organic compounds, some of which, like benzopyrene, though produced in small amounts by wood stoves, can be carcinogenic for animals and possibly humans.

CONVINCING STATISTICS

But wood has a lot going for it, too. While it releases much more soot and ash into the atmosphere than natural gas or oil, it compares favorably to coal as a polluter, particularly because of its low sulfur content.

And with Americans searching desperately for cheap ways to heat their homes and fuel industry, wood seems a logical choice. Economically, at least, the statistics are convincing.

A squirrel can no longer hop from tree to tree from Maine to the Mississippi River, but this country still has 740 million acres of forest land, over 60 percent of it "commercial" — that is, it can be harvested without great difficulty, and it will grow back. Half of that is owned by individuals; almost one-third is owned by the federal government and managed primarily by the Forest Service; and the rest belongs to the forestry industry.

In 1976, according to the American Forest Institute, commercial timber grew by 21.9 billion cubic feet, while 14.4 billion cubic feet were harvested. Forests are still being cut faster than they can regenerate in some parts of the country, and environmentalists wonder if increasing demand for both construction and energy may mean net losses of timber in future years. Government and industry spokesmen, though, are confident there is plenty of wood to go around.

"There's more resource than we can use for energy out there," says Forest Orr, a wood energy consultant at the Department of Energy. Orr and other foresters interested in energy uses are particularly high on "junk" — deadwood in forests, the leftovers on the ground after timbering, the wood residues from mills.

DOE forecasters think as much as 10 percent of the country's heating needs can be met by wood. Presently wood supplies two percent of our energy, about half what nuclear power provides.

And economically, wood is more than ever competitive with fossil fuels as a source of heat and power. The Northeast Solar Energy Center in Cambridge, Mass., calculated last year that wood cost \$2.84 per million Btu (British thermal units), compared with over \$3 each for equal heat from gas, oil, and anthracite coal. Waste wood sold in chips or pellets costs even less.

Prices for different fuels vary around the country, but in those areas where wood is available nearby, it is now considered a bargain, even though its cost is going up, too.

In the Northeast, wood is playing an expanded role as an industrial energy source. Most pulp and paper mills use wood residue for power, and the state hospital in Waterbury, Vt. heats with wood. Small power plants in Maine and Vermont are also switching to wood, which, kept to a small scale that allows them to use nearby wood supplies, often cuts their electricity costs in half.

BUT NOT IN HOMES

What works for industry, though, does not necessarily work in someone's home. Researchers in universities and at EPA say that industrial woodburning is efficient and relatively non-polluting because wood is burned at extremely high temperatures. The high heat necessary to ignite and burn carbon monoxide, benzopyrene and other wood stove pollutants — well over 1,000 degrees F. — would drive you out of your living room if it didn't burn your house down.

"These devices (efficient, big woodburning systems) do not scale down economically," according to Prof. Richard C. Hill, one of several researchers at the University of Maine who are working on home heating systems.

Government studies on pollution from wood stoves — how much there is, how dangerous it is to humans and how to control it — are just now getting under way, according to the EPA's Milliken. But that has not stopped the feds from encouraging greater residential wood use.

President Carter has endorsed wood heat as a step towards energy independence, and Congress is following up with a proposal for a tax credit of up to \$300 on wood stove purchases. The Tennessee Valley Authority, a federal utility, has offered interest-free loans to help people in its region install 6,000 wood heaters.

To researchers such as Cooper at the Oregon Graduate Center, such moves invite disaster. His studies in Portland indicated that wood stoves were causing over

one-third of the city's air pollution. "We're creating a tremendous problem by allowing many of the stoves on the market now," says Cooper. He foresees a time when industry, tired of installing more and more pollution controls as air quality around cities deteriorates, will balk and point the finger at residential wood burners.

Running down a list of Western towns that face woodburning pollution problems, Cooper mentions, in addition to Missoula and Portland, Santa Fe and Albuquerque, N.M.; Lake Tahoe, Calif.; and Denver and Vail, Colo.

TVA's Klein agrees with Cooper that the current stove craze will lead to problems. He feels qualified optimism about the future: "Eventually, we'll come up with a new design to solve this problem — but what are you going to do with all the stoves that are already out there?"

Most experts agree with Klein that the recent flurry of research in the wood combustion field will discover better ways to burn. The most promising approach for relatively clean residential wood-burning systems in the near future appears to be a heat-storage system.

In such a system a steady supply of wood and oxygen would be automatically supplied to a furnace, which would burn at a rate of 200,000 Btu an hour or more. By burning the wood at a high temperature and supplying plenty of oxygen, few pollutants would escape.

The heat would be stored in a water tank, which, according to Hill of the University of Maine, would not have to be very large — five cubic feet — to handle the heat needs of a small home in moderate weather. In addition, Hill says such a tank could assist with heat for the hot water system.

But such a system for a new house would cost around \$2,500, according to government experts, and the work and expense of retrofitting older houses, many of them with conventional wood stoves, discourages even TVA's Klein.

Those who sell stoves either don't know or aren't likely to tell what pollution airtight stoves can cause, but Eckert, the Fort Collins dealer, says the pollution is "more than we want to admit." He thinks the

better airtight stoves now on the market can still be burned efficiently and cleanly, if their owners can get over the obsession with an all-night fire.

"Small, hot fire," recommends Eckert. "We fire ours up at dinner — fire it hot — and then just let it die out at midnight. If the house is cold in the morning, we just accept that."

Experts around the country say it is virtually impossible to get both a comfortable level of heat and the exact amount of air necessary in stoves now on the market to burn most of the dangerous gases. But they agree with Eckert that the best approach is to burn hot and fast — and not to close up the damper and air intakes to keep a fire smoldering all night.

For the moment, the problem continues to grow — unregulated, inadequately researched and driven by the rising cost of energy. Those who have romantic ideas of retreating to a little cabin in a mountain town and nestling in front of a small fire will realize soon enough that they have not escaped the big city bugaboo of pollution.

Recently Lee Gribb, who has been testing air quality in Lander for the Wyoming Department of Environmental Quality, was surprised at the particulates he found in his air filter on the roof of city hall.

Gribb had expected particulate readings to drop in the winter, when no fields were being plowed, traffic was reduced and dust was lying low. Lander has no heavy industry. Instead, his readings were very high in November — high enough to violate the 24-hour air pollution standards for Wyoming.

"It's not an emergency situation," says Gribb. He has noted the increase of wood stoves in Lander, but feels his research is not complete enough to point conclusively to them. "But down the road, two or three people will die early because of this air."

Jim Verley assisted with research for this story.



Photo by David Spear

THE MISSOULA SKYLINE is obscured by air pollution during a winter inversion, when warm higher air holds cold dirty air down. Missoula sits in a small valley, six miles by 10, that makes it susceptible to such problems.



Photo by Mike McClure

CLASSIC STOVE, from a bygone era when wood stoves were used for both cooking and heating in the West. Few homes now depend exclusively on wood heat, and in only a handful do the eggs boil over crackling pine.

Keeping home fires burning: a strain on public lands?

"The easy-to-get-at wood is gone," declares Sandy Brown, a public information specialist at the Sawtooth National Recreation Area in Idaho. Where folks from Ketchum and Sun Valley go, permits in hand, to gather wood for their fireplaces and stoves, there's not much deadwood left near the roads.

"Of course there's still plenty of deadwood," says Brown, "but it's over the hill." Driving deeper into the woods takes gasoline and makes wood gathering questionable economically. Plus, at Sawtooth, there aren't many roads.

In 1979, the Forest Service reported that in 15 Northern Region national forests, 57,000 people got permits to take up to five cords of deadwood each from public lands. That was a 35 percent jump in permits over 1978.

The increasing use of wood stoves for heat has caused shortages of and high prices for delivered wood. As a result, more families are piling into four-wheel-drive vehicles and heading for public lands.

The movement has caused concern among environmentalists, who think the combination of federal timbering policy and increased fuel gathering may eventually put a strain on forest resources.

But government officials insist increased firewood gathering is no threat to abundant public forests. They acknowledge that sloppy wood gathering has had some impact on public lands in the West. But they worry more

about mismanagement of privately-owned woodlands in the Northeast and will spend almost a million dollars this year to advise private owners on how to cultivate their woods.

Officials at regional forest offices say they now have to cope with wood-hunters who drive off roads and across streambeds, cut green wood and leave a mess behind.

Sawtooth is a 754,000-acre preserve including designated wilderness and wild and scenic rivers. There, the damage from careless off-road activity has been "noticeable, but not horrible," according to Brown.

A four-person committee has been formed to figure out what might be done at Sawtooth if the problem worsens in the future. Officials considered limiting permits to persons from surrounding counties, but then they found that was where most of the wood-hunters were coming from. They will consider further road-building, restricting the number of permits issued, and limiting wood gathering to certain days of the week.

Although wood-hunters at Sawtooth and elsewhere began finding this year that they had to drive longer and carry wood farther to get the cords they wanted, forest officials do not expect their numbers to decline.

"Heating fuel is never going to be cheaper," says Brown. "And besides, wood gathering may not be economically viable, but these families make a picnic out of it."

BRANCHING OUT



by Myra Connell
BAH! HUMBUG!

At Christmas time a 3-year old child asked me "Grammy, where is your Christmas tree?"

It was a simple question that required a simple answer, so I said, "I don't have one."

To an older child I might have elaborated: "I have many Christmas trees. Every pine standing in the forest growing cones for the hungry squirrels is my Christmas tree. Each fir that shelters a chickadee from winter's blasts and all the gnarled junipers that clothe the rugged ridges are my Christmas trees."

"When snow lies deep on the forest floor and the trees are dressed in white mantles all covered by sparkling poor man's diamonds I have many Christmas trees."

Of all the Christmas traditions that have passed down the generations from ancient times, the custom of the cut evergreen seems to me most nonsensical.

Hundreds of years ago, when the Scandinavians decorated a small evergreen at the time of the winter solstice, the custom had spiritual significance. The live tree represented all living things that were dormant but not dead during the long dark winters. The ceremony reminded people that the sun was about to begin its return journey from the south. There were few people in proportion to the extensive forests so cutting a few young evergreens represented only a minor waste.

However, given the burgeoning population of our times plus the attendant shrinkage of our forests and land resources, I feel that Christmas trees are an appalling extravagance.

When I was a child the Christmas tree at the school house was the only one in the neighborhood. No one had one at home; cabins were too small to accommodate such non-essentials.

Nowadays virtually every home has its own tree, every grade school classroom an individual tree, every town square an extra big one, and the White House the tallest to be found.

The other day I saw a truckload of un-

sold trees ready to be taken to the dump. Not nearly all trees cut are used.

I called on a friend a few days after Christmas. On her porch there lay a beautiful 3-foot juniper, forlorn and rejected, now that Christmas was past. A few tag-tails of tinsel still clung to its branches. A count of its rings would probably show 15 or 20 years' struggle, at least, for a foothold on a dry rocky ridge.

I try to visualize the truckloads of unsold trees in all the towns and cities of the U.S., to calculate the number of trees destroyed each year to satisfy sentiment and tradition. The figure staggers my mathematical abilities.

Will someone with a computer please figure it out?

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BLACKIE. The spirit of the apidistra is infective, and yet I wonder: Tondri? Inoculant? No, no, say not so; but, rather: glabrous. — Camquat.

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Photo by Phil Schofield

TRICKY. A camper places the final snow blocks in the dome of an igloo. Igloos take time and skill to build but offer greater warmth than tents.

SKI CAMPING

by Ron Watters, Chronicle Books, San Francisco, Calif., 1979. \$7.95, paperback, 154 pages. Photographs and drawings.

Review by Bruce Hamilton

Have you ever considered wearing a plastic bag as an inner sock? How about putting candle wax on your zippers? While hardly vital for daily living, these odd suggestions can be life-saving advice for those who indulge in a very specialized sport — ski camping.

Some of my most frustrating experiences have occurred while camping on ski trips. Once the mercury dipped to -30 degrees F. and the propane in my gas cartridge stove solidified. I couldn't get the stove going, and almost all the food I'd brought required cooking.

Another time I brought safety "strike anywhere" matches, but I couldn't find a single object around camp rough enough to start them. All the pots were smooth. All the zippers were plastic. All the rocks were buried under four feet of snow. I'd spent half my match supply trying to start one on my fingernail when I remembered I had a rough file edge on my Swiss army knife.

But ski camping has provided some of my most rewarding experiences, too. Watching coyotes howl outside my tent in the moonlight. Waking up to a blanket of fresh powder snow and realizing I'm one of

the only skiers for miles. Scaling a mountain. Tracking a mountain lion, spotting an ermine, feeding a camp robber from my hand.

But it isn't easy. In retrospect there's a lot more I should have known before I headed out on my first trip. *Ski Camping*, for instance, might have kept me out of a lot of trouble.

Reading this new book was like comparing notes with someone who'd just been through a similar experience. By the end of the book I had a long list of refinements to try out. For instance, next time I'll remember to tie pull loops on all my zippers so I don't have to remove my mittens to open and close them. Also, the author confirmed my fear that the only way to have tolerable ski boots in the morning is to sleep with the soggy cold things inside your bag.

I especially appreciated the frankly indecisive comparison of waxable v. waxless skis, breathable v. vapor barrier clothing, down v. synthetic insulation and standard grocery store v. freeze-dried foods. The conclusion is that there is no one right way to run a ski camping trip.

This book tries to cover all relevant aspects of the activity — from avoiding avalanches to melting drinking water, from reading snow structure to waxing skis. It's not the last word on any of these subjects. However, it's a good first word on all of them.



freeze, crystals of frost grow up perpendicular to the overflow surface, sometimes in clusters that look like young cabbages.

The Wild Game Feast in Atlantic City transpired during this cold spell. At least 50 people crowded into the old log schoolhouse. If anyone went outside for a breath of air they experienced a temperature difference of about 100 de-

grees, since it was 30 below outside. Inside, they helped themselves to elk chile, venison meatballs, moose stew, moose-antelope meatloaf, sage hen pilaf and other dishes prepared from animals killed this year in Wyoming. The good fortune of living here allowed us a brief exposure to what was once the condition on this continent: natural bounty that could provide for a human population in balance with it.

The next day we skied towards Slaughterhouse Gulch in the flat light that baffles the eyes and deceives the sense of balance. Snow in the draw, though, was freshly fallen, deep and dry, counteracting the steepness of the slope. We surprised a snowshoe hare, the whole line of us drifting down without a word as we listened to a raven croaking hidden in the clouds.

by Hannah Hinchman

FREMONT COUNTY, WYO. — In this part of the West a spell of deep, immobilizing cold came with the January full moon. The Popo Agie River funneled -35 degree temperatures through the valley, while the water that continued to flow sent up steam from its relative warmth, whitening the trees above it with frost. The river's elaborate ice topography tempts one to climb around on it, peer into the caverns formed where former water levels have left shelves of ice. Sometimes it looks like a cutaway view of a many-floored building or the layered mesh inside a bone. Dippers still carom up and down the river. They must be able to evaluate the areas of open water and take care not to come up under a layer of ice.

Water that overflows the ice forms terraces like the travertine from Yellowstone's hot springs. In the quiet deep

