The Environmental Bi-Weekly

High Country News

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Boise rediscovers geothermal

by Bruce Hamilton

Using geothermal energy to warm your home and heat your water may sound like a far-fetched idea, but many of the residents of Warm Springs Avenue in Boise, Idaho, are sold on it. They know using naturally-occurring hot water is a cheap, renewable, practical energy source because it's been used in their neighborhood for over 85 years.

Boise's geothermally-heated homes look the same as homes in other parts of the city heated with gas or electricity. Radiators in each room provide even, reliable heat. The only detectable difference is a slight sulfur odor when you first enter a geothermally-heated home. The other difference is heating bills. Residents on the geothermal line pay less than one-half as much as Boise residents who heat with natural gas. And geothermal rates are more likely to remain relatively low.

WARM SPRINGS AVENUE. Most of the older homes along Warm Springs Avenue in Boise are heated with geothermal water. Some of the oldest homes have been on the system since the 1890s.

'RIGHT FROM HADES'

Indians were the first to use Idaho's geothermal resources for bathing and cooking. Later, when white settlers traversed Idaho on the Oregon Trail, they stopped to cook meals in hot springs about halfway between Snake River Crossing (near Glenns Ferry) and Boise.

As Boise developed, two rival companies fought for control of the municipal water business. One, Boise Water Works, decided to go into the hot water business as well to gain an edge on their competition. In December 1890 the company drilled a well that produced hot water with enough sulfur that the whole supply was identified as coming "right from Hades."

Later, the company ran a wooden pipe full of 178 degree water from the well field to Warm Springs Avenue residences and businesses. The wooden pipe didn't last long, and was soon replaced by a metal one. An 1892 issue of the **Idaho Daily Statesman** reported: "In time, this hot water will come into general use. All houses will be heated by it, and the heating will be done without care or annoyance on the part of the occupants, while the savings in expense will be enormous."

The system did expand, and at its peak it served about 400 residential and commercial customers, including the original Boise City Hall and Boise's famous Natatorium. However, when cheap natural gas was introduced to Boise in the early 1950s, geothermal use declined. In 1972 Boise Water Company had fewer than 200 geothermal customers and planned to cap off the wells and discontinue hot water service.

The company's decision to cap the wells could have ended Boise's geothermal era, but residents on the line organized to save the system. In 1974 local residents set up the Boise Warm Springs Water District (BWSWD) and acquired the geothermal assets from Boise Water Company.

"We could see fossil fuel energy costs were rising, and we liked being on geothermal heat so we decided to band together and save the system," says BWSWD President Joe Hansen.

EXPANSION PLANS

Hansen says his organization is ready to extend its service to other customers whenever the market develops. One new customer has already signed up for service — the state of Idaho.

With a $355,000 grant from the Pacific Northwest Regional Commission, the state plans to convert three state buildings near the BWSWD wells to geothermal heat. The buildings contain offices and labs for the state departments of Health and Welfare and Agriculture. Solar and wind energy systems are also being studied to complement the buildings' new geothermal system.

"Estimates indicate the geothermal water will heat the building complex at

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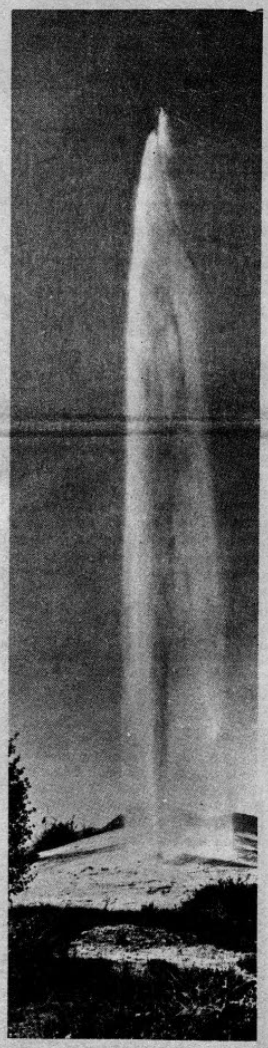

NATURAL HOT SPRINGS are found all over Southern Idaho. In Boise, hot springs are used for space heating and hot water. Photo of springs at Soda Springs, Idaho, by the Idaho Department of Commerce and Development.

U.S. brings Agent Orange back home

During the Vietnam War, the United States spread 11 million gallons of a chemical containing one of the deadliest poisons known to man over the South Vietnamese countryside. When the war ended, one of the first nations to ask the Air Force whether it would sell surplus stocks of the chemical was North Vietnam.

The answer was no. The chemical no longer was considered safe for use, not even by a former enemy. And so, for almost six years now, 47,500 steel drums, each containing 55 gallons of the chemical, have been lying in orderly ranks almost half a mile long like soldiers on perpetual parade, while the sun scorches them, the sea spray corrodes them, and the Air Force and the Environmental Protection Agency try to decide what to do with them.

Its name has changed. It used to be called Agent Orange. But both the Air Force and the EPA now insist it should be called Herbicide Orange, as though by changing the name they could change the substance. The Air Force does concede, in an October 1976 environmental impact statement, that the chemical was developed in 1962 "for military use as a defoliant."

In this article, then, it will retain its original name, Agent Orange, because it was orange and was used as an agent for chemical warfare.

The U.S. stopped spraying Agent Orange over South Vietnam in 1970. By that time, a committee of the American Association

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HIGH COUNTRY

By Tom Bell

From our kitchen window I look out upon a benign landscape. It is a scene of beauty and serenity. The panaromic view is one of brown fields rising to grey-brown hills with dark, brooding mountains to the east in Idaho. In the foreground is a ribbon of white ice, the meandering course of Eagle Creek. Along it stands groves of grey-black cottonwood. The vaulted blue sky is touched with only a few puffs of white above yonder mountains.

The scene is disarming — deceptive in what is not "normal." Normally, those distant mountains would be white at this time of year. The deeply creased hills would be a variegated pattern of brown and grey with white. And the view of them would be contingent upon a break in the recurring storms bringing still more snow or rain.

It is dry, but it is not unique to this area. Drought, some of it already very bad, stretches from the Mississippi River in Minnesota to the Pacific Ocean, and southward into parts of the Southwest. The long-range forecast is not optimistic about any break in the weather pattern very soon.

Views of the situation in the Northwest range from, "It always has rained and I figure it will again," to a very sobering appraisal of continued drought. The consequences of no rain for the next nine months could be devastating. And that is the long-range outlook.

Our problem here is that there has been no appreciable precipitation since August. The soil surface is powder dry. Mountain roads are dusty in February. Forest fires have already occurred.

People are already beginning to hunker down in anticipation of a long dry spell. Some wells have already gone dry; some municipal systems are taking steps to conserve or even ration water.

The problem of drought over so wide an area is that there can be no relief from all the effects. Economic consequences could be severe. Throughout the wide West the livestock industry will have neither summer range nor winter hay — not for any price. Drastic reduction of herds would have long-term effects. The same effect could extend to dairy operations.

Severe drought in the great food producing valleys of California and frost in Florida are sure to produce great increases in food prices. Some fresh fruits and vegetables may not be available for any price.

Here in the Northwest, the timber industry may be greatly curtailed by reason of tinder dry forests. Similarly, recreational use of forest and mountain lands will undoubtedly be reduced. Great losses of fish and wildlife may be in the offing. Coastal streams are already so low that salmon cannot run up them.

All of this becomes the more grim in the light of what we know of the past. Peter Wild's review of **The Genesis Strategy** (HCN, Feb. 11, 1977) is timely. As he says in discussing great changes in climatic patterns, "A change of a few degrees one way or the other can torpedo a technology designed to operate only under 'normal' conditions."

We may be vulnerable to disaster because of our arrogance. As Wild says, "Our culture's blind faith in technology reflects a simplistic approach to the environment. We feel that technology can manipulate the earth for any end we choose."

So cloud-seeding efforts are already gearing up in Washington and Oregon. We await the results. But it is as one cloud-seeder has already put it, "This won't do any good unless God sends the clouds."

"DOES IT WORK? WHY IN NAM, IT NOT ONLY KILLED THE JUNGLE, BUT THE V.C.'S IN THEIR HOOTCHES, THE BUGS... EVERYTHING."

HCN Letters

13 CENTS WORTH

Dear editors:

Congratulations to Mr. Hamilton on an excellent article on an important topic. Having helped people heat (air and water) with wood for years, I'd like to put in my 13 cents worth.

A pound of wood, **any species,** contains 8,600 Btus. Our Rocky Mountain softwoods are just as good as East Coast hardwoods for heat production, it just takes a larger cubic volume.

The Forest Service no longer requires a permit (at least in Colorado) to gather firewood. They ask only that you determine you are not on private property and take only dead wood.

The caption "Woodburning doesn't provide even heat," under the picture of the potbelly (the stove with open door) is not true of the better thermostatically-controlled stoves.

Cast iron is better at retaining heat only by virtue of its thickness. Cast iron and sheet steel of equal thickness are equal in heat retention and-or transfer.

Stove black is a terrible product because of its temporary nature. VHT engine enamel is much better and some brands now contain no fluorocarbons.

Bill Eckert
Friendly Fire
Fort Collins, Colo.

ENJOYED BLAST

Dear Bruce:

Enjoyed your "blast" at the snowmobile use in Grand Teton National Park, which really means that I'm mad all over again. We went through this once with Glacier and I hope that the Superintendent at Teton will be so sensible. In that same issue I also found Peter Wild on Aldo Leopold to be mighty fine.

Ed Foss
Condon, Mont.

WOOD HEAT ADVICE

Dear Mr Hamilton:

I want to complement you on your recent story on wood stoves for residential heating.

Your emphasis on the problems of creosote will, I hope, help your readers avoid real dangers and potential tragedies. I have found, in trying to explain the creosote problem to new owners of airtight stoves, that it is difficult for people to understand just what it is they are dealing with. One young man to whom I demonstrated an airtight stove in action and what must be done for safe installation and operation went back to his new home and promptly connected his airtight up so improperly that he immediately had creosote all over his roof and exterior walls as well as his floor. Fortunately, the creosote did not ignite and he may have learned his lesson.

Your article is so comprehensive I hesitate to submit any suggestions. However, inasmuch as we have been using wood for a substantial part of our home heating for several years now I have an intimate acquaintance with Ashley, Jotul and, just recently, Riteway.

1. I have the impression that two full years of drying time is necessary to make the wood of this region truly satisfactory for airtight stove use. On top of that, I find that two weeks in an absolutely dry, warm environment to finish the wood off is helpful.

2. Single-wall pipe, if it connects vertically to, say, a Metalbestos-type chimney, must always be installed with the crimped end down. That is to say, the top of the lower section fits over the bottom of the upper section. Furnace cement must then be used around the joint to obtain a tight seal. Where the single wall pipe connects with the insulated chimney a special fitting should be used to ensure a similar connection. The purpose, of course, is to make the creosote drip back down inside the flue, not outside.

3. Chimney caps are necessary, particularly where a downdraft and puffback situation exists. However, all of them to some degree and some of them to a very great degree act as condensers with varying effects on creosote drippings down the exterior chimney above the r oof. About the best I've seen so far is the so-called "rooster tail" cap which lets the smoke out without condensing it and steers itself into the wind to prevent downdrafts. But it does let some moisture in.

4. Coal is dirty stuff. Anyone who was sickened by the fallout from barracks stoves in cold climate army cantonments will know what I mean. Nonetheless, in an airtight like the Riteway, which is designed to take either coal or wood, the amount of coal used is so small to heat, say, a small average sized home properly insulated to highest standards that I feel its use is legitimate where population is not dense.

5. Ski resort air pollution from wood burning is an obvious caution on the future of wood burning. However, it is my understanding that a good airtight wood burner with properly aged fuel emits mostly moisture and sulfur dioxide which would be released anyhow in the rotting process. Nonetheless, I am troubled by the amount of smoke given off by our Ashley and Riteway when we are firing up, morning and afternoon. It is not something we care to see.

6. Your observations on the Ashley solved a mystery I have been puzzling over for several months since our Ashley apparently did "run away." I had thought at the time I must have goofed somehow, although the ashpan door was closed tight

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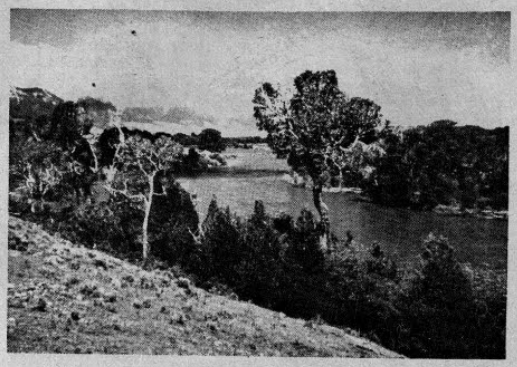
Guest Editorial HCN

Using Yellowstone is losing it



YELLOWSTONE RIVER. It's no crime to let a river flow wild and free. Photo courtesy of Montana Department of Fish and Game.

(The following comments by Jim Posewitz of the Montana Fish and Game Department respond to the often repeated admonition about water — "use it or lose it." The comments were made at a legislative hearing following the department's request that 8.2 million acre-feet be reserved in the Yellowstone River for fish and wildlife. See related story.)

by Jim Posewitz
Montana Fish and Game

Flowing water is not an evil thing. It is not a crime to allow a river that served us well to flow across state lines. "Use it or lose it" is a five-word slogan — nothing more.

When do you measure the success of the program driven by that slogan? It implies at least that we are losers unless we consume all our water.

Apparently a Yellowstone River oozing a salty trickle, mingling with industrial and municipal wastes, would be hailed by the slogan worshippers as a success story. Perhaps a Bitterroot River with its streambed gravels parched in the sun would be cheered as a victory.

Perhaps if we could somehow reduce the meandering, cottonwood-lined Big Hole to slack water ponds and concrete ditches, the use it or lose it worshippers would then celebrate an accomplishment. Picture their relief in all these cases to learn that downstream states would then get nothing.

It is curious to note some of the interested groups that extoll us to "use it or lose it" also warn if we don't, those evil downstream states will get our water. The curious thing is that they are some of the same groups who also argue we must accommodate strip mines, power plants, and high voltage transmission systems to help our sister states.

The Yellowstone River will be of principal concern this legislative session. The river is now somewhat protected by a moratorium, judiciously imposed, that terminates (on March 11). The time is upon us when decisions regarding its future are at hand.

The Department of Fish and Game is dedicated to the preservation of a free-flowing Yellowstone River. It is our contention that this free-flowing character can only be preserved if future depletion of the river is tempered. Our reservation of flow in the Yellowstone is for that purpose.

The Yellowstone River is one of the last free-flowing rivers left on earth. It is surely the last resource of its type where industrial-agrarian man still lives in a state of reasonable compatibility with a natural, free-flowing system. We could do much worse than to aspire to its preservation.

Do not dismiss as alarmist the contention that we could destroy such a resource. The Colorado, a river mighty enough to carve the Grand Canyon, no longer flows to the sea. We bequeath to our Mexican neighbors a salty water allocation and plan desalinization projects to meet our responsibilities.

In conclusion, the Montana Department of Fish and Game pleads for your understanding and hopefully your commitment to preserving not only the free-flowing Yellowstone River, but a natural stream resource statewide. Our state is no longer hidden in the isolated West, but is now subject to the same pressures that destroyed other flowing water resources in other places.

Historically, the Montana Legislature has acted in defense of the fish and wildlife of this state. The decisions you face in this session are again of historical significance.

In many respects, the future of Montana's stream resource — and fish and wildlife dependent upon it — is now.

and the thermostat was also closed when I became aware of the problem. Your article indicates to me that the thermostat on that occasion — it has only happened once — was much too tardy in closing. The Ashley is a lovable animal, but it is also volcanic and this newly discovered trait makes me even more ginger in my approach.

7. It seems promising that solar energy heating as the primary source would go well with wood stove heating for backup. Any home designed and insulated to solar standards would be a piece of cake to heat with a good wood burner. I am in the process of trying to achieve just such a happy blending, but the reality is at least two years away.

8. To return to Ashley, I believe you may err in the statement it has no device for secondary burning. The Imperial model has a secondary draft which is supposed to supply oxygen for burning off the volatiles. Whether it works or not is something else.

9. In buying a wood burning airtight the dealer is a lot more important than the fellow who sells you the routine home appliance. You are going to be on your own in operating it and maintaining it — and until you have absorbed an encyclopedic amount of lore and technical problems you are going to have problems. Years back, when we were looking for a Jotul, Kristia Associates referred us to Harvest Homestead in Grand Marais, Minn., from which we obtained our Jotul and, later, a Riteway. The people there are first class and very helpful.

It has been my experience that wood stove dealers are normally much better acquainted with their product than, say, the outfit which sold you your gas furnace. They have to be. But the market is expanding so fast, there are so many new designs coming out, that a real potential for trouble exists. I wouldn't buy from a dealer who doesn't heat his own home with the stove he recommends to you.

Mike Leon
Story, Wyo.

MOVEMENT NEEDS OUTRAGE

Dear **HCN:**

Am thoroughly enjoying my first subscription to your excellent newspaper. Wish our beautiful state of Nevada could be included in your coverage, but realize you already have a lot to do.

I especially like your "Conservation Pioneers" series.

Regarding Edward Abbey; while I take issue with many of his tactics, I do find him a delightful writer, ("bad" language and all) and appreciate his spirit. Perhaps the movement needs more people who are outraged (and outrageous) to the extent that Abbey is.

What I wish we would all do (I haven't yet) is disconnect our toilets, build composting privies, and hook all our drains up to storage tanks. Until then, pee in the bushes whenever you can.

Jack Riske
Reno, Nevada

P.S. Have some nifty ideas for crippling snowmobiles should such become necessary.

LOST ART

Dear Friends,

We approve the raise in price but being in the 70s and on a fixed income, the chance to save by renewing now is appreciated.

It is heartening to have a publication about the Western States come in with reliable news from many viewpoints. We're "brainwashed" in so many media to the extent that thinking for ourselves is a lost art.

Stanley and Dorothea Mulaik
Salt Lake City, Utah

BLM HAS 42 CENTS PER ACRE

Dear **HCN:**

The last thing I want to do is become embroiled in a great controversy over the Bureau of Land Management, but I think Mr. William Voight has missed my point (see "Letters," **HCN** 2-25-77).

I would like to quote a short passage from a very timely and valuable book by T. H. Watkins and Charles Watson published by the Sierra Club. It's titled **The Lands No One Knows — America and the Public Domain.**

"Even now, when the Bureau has acquired the image of a steward of the land instead of a disinterested observer, it is understaffed, underfunded, and underpowered. It has 4,752 full- and part-time employees, and its budget for fiscal 1974-75 was set at $194,520,000. Just taking the 453 million acres for which it has full responsibility and ignoring its administrative duties on other federal lands, those figures indicate that the Bureau has one employee for every 96,000 acres and an operating budget of 42 cents per acre. By comparison, the Forest Service, has 9,415 full- and part-time employees and a budget for the current year of $544,260,310, which gives it one employee for about every 20,000 acres and an operating budget of $3.00 an acre. This is not to suggest that the Forest Service is overstaffed and overfunded; as it doubtless would be happy to point out, it too, is probably short of what it needs. What this does suggest, however, is that the Bureau of Land Management is expected to operate in the real world on a staffing and funding system developed in some legislative wonderland."

Efficiency, yes; simplicity, of course; but money best of all. We can afford it. I'd much rather have my tax dollars spent on rehabilitating the public domain than shot off into the ozone on the back of a B-1 bomber.

Jeff Gailiun
Springdale, Utah

SUN SIGN SUBSCRIBER MESSAGE

Aries subscribers (by our definition, subscribers with a "4-77" on their address labels) love freedom and independence so much that they may resist our efforts to make them renew their subscriptions. Since they're pugnacious, they may even be offended by our reminders.

However, most Aries subscribers will admit they've found **HCN** information valuable to back them up when someone challenges them on a brash statement. They want everything NOW and so won't risk missing a couple of issues by not sending in their renewal check soon. That way they'll also save having to pay the new, higher subscription rate.

Agent Orange. . .

(continued from page 1)

for the Advancement of Science (AAAS) had reported that Agent Orange may "expose the entire region and its inhabitants to grave physiological, genetic, and ecological hazards;" hundreds of thousands of acres of forest and swamp land had been denuded and showed no sign of returning to life; residues had shown up in fish; and Vietnamese women had suffered abnormally high rates of stillbirths and birth defects in provinces that were heavily sprayed.

There was no national constraint against its use in war by the United States. True, the Geneva Protocol of 1925 had declared the use of herbicides a war crime and a crime against humanity, and the United Nations General Assembly's main political committee had voted 58-3 in 1969 to uphold that view. But the U.S. did not sign the Geneva Protocol. And the U.S. was one of the three dissenters in the U.N. vote.

As much as any other factor, public outcry forced the Air Force to stop using Agent Orange in Vietnam. It pulled the defoliant out of that country in 1971 and stored it, 1.4 million gallons on Johnston Island in the Pacific, and 860,000 gallons at the Naval Construction Battallion Center at Gulfport, Miss.

Since then, the Air Force and the EPA have been bouncing the question of what to do with the Agent Orange mainly between two alternatives — incineration at sea and reprocessing. Presently, the Air Force is almost committed to reprocessing. But sources both in the EPA and the Air Force have indicated the Air Force may, again, revise its plans and choose incineration.

If it chooses incineration, the Air Force will be burning up stocks potentially worth about $30 million, and running the risk of leaking an extremely toxic poison into the ocean environment. If the Air Force chooses reprocessing, it will be left with as much as 640 tons of coconut charcoal saturated with the poison. No one, as yet, has figured out what to do with the charcoal, other than store it until someone does figure it out.

BIRTH DEFECTS

Agent Orange is basically a 50-50 mixture of two phenoxy herbicides — 2,4,5-T and 2,4-D. Both these, separately, have been used in the U.S. for about 30 years, mainly to kill broad-leaved weeds and woody brush and thus, theoretically, increase agricultural production and improve rangeland. Even in a pure state (and technology is not yet adequate to produce 2,4,5-T in a pure state), in large doses both are toxic and cause birth defects.

For example, Dow Chemical Co., of Midland, Mich., the country's major producer of herbicides, says three-quarters of an ounce of 2,4-D could kill a 165-pound human.

The same quantity of TCDD could do between 5,000 and 500,000 times as much damage, Dow says. The 2.26 million gallons of Agent Orange at Gulfport and Johnston Island contain 50 pounds of TCDD, the Air Force estimates.

In a "fact sheet" handed out in October 1976 the Air Force said, "Variations in the manufacturing procedures of 2,4,5-T, during the 1960s, caused certain lots of the herbicide to contain a small amount of a toxic substance, TCDD (Dioxin)."

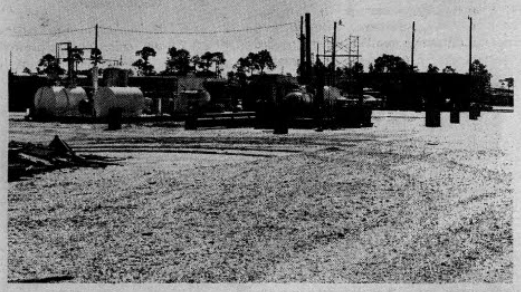
The "fact sheet" was wrong. The fact is that TCDD is an unavoidable impurity of 2,4,5-T. The dioxin, which looks like tiny shavings of glass, is a by-product in the manufacture of trichlorophenol, an essential ingredient of 2,4,5-T.

Before scientists discovered the presence of TCDD in the late 1960s, 2,4,5-T often contained between one and 80 parts per million (ppm) of the dioxin. That was the 2,4,5-T, mixed with an equal part of 2,4-D, that was sprayed over Vietnam, and sprayed at least 10 times as heavily as normal domestic use.

WEB DESTROYED

As a result, Dr. Arthur H. Westing, director of the AAAS Herbicide Assessment Commission, wrote in **Natural History** in March 1971 that, "Tens of thousands of acres sprayed years ago still have no sign of green on them. The web of life on these vast stretches has been destroyed, with ecological ramifications — and even geologic ones via marine erosion — not yet possible to fathom."

Since then, the manufacturing process has improved and can remove more, but not all, of the TCDD. Presently, the EPA will not register for sale or use any 2,4,5-T that contains more than 0.1 ppm of TCDD.



DEADLY POISON STORED HERE. Naval Construction Battallion Center at Gulfport, Miss. (shown above). Official U.S. Navy photo.

Most presently produced stocks, the EPA says, contain about half that amount.

But there is still a substantial question as to whether even that is safe.

Dr. Jacqueline Verrett, a supervisory chemist at the Food and Drug Administration's Division of Toxicology, has found that eight parts per trillion of TCDD can kill chicken embryos. Dr. Diane Courtney, chief of the EPA's Toxic Effect Branch, told a Senate subcommittee on the environment in 1974 that the dioxin causes birth defects "at doses so low we can't measure them," and that, despite restrictions, it was finding its way into the human food chain.

"Tens of thousands of acres sprayed years ago (in Vietnam) still have no sign of green on them. The web of life on these vast stretches has been destroyed. . . ."

Dr. Theodore Sterling, a professor at Simon Fraser University in Vancouver, B.C.; consultant to industries, government agencies, and environmental groups; and the lone dissident when the National Academy of Sciences Advisory Committee recommended in 1971 that the EPA lift restrictions on 2,4,5-T, said TCDD accumulates and stays in the environment.

"Even in a 'technically pure state,' Sterling told the Canadian Royal Commission's Hearings on Herbicides and Pesticides in July 1974, 2,4,5-T "definitely" caused birth defects and still births, and may well cause cancer.

"The accumulated evidence makes it increasingly certain that the widespread use of 2,4,5-T may have serious consequences on the health and well-being of the population of North America, especially on the well-being of pregnant women and their offspring," Sterling said.

No one denies that TCDD is among the world's deadliest poisons. But Dow consistently has maintained that there is so little of it — and this spread around so widely — that the chances of TCDD poisoning food crops, animals, and humans is virtually zero.

The Council for Agricultural Science and Technology, a private group made up almost exclusively of agricultural interests, reported in 1975 that TCDD is of "academic rather than practical interest" because, "Evaluating the hazard of TCDD in the environment is largely a problem of comprehending numerical values far removed from common experience."

NOT IMPARTIAL

If the use of 2,4,5-T were banned, the cost to its users in the U.S. for alternatives would be $52 million per year, the Economic Research Service and the Agricultural Research Service said in a joint report in 1969. Allowing for inflation, and including the other pesticides and her-

War poison looks like a good buy to Platte County, Wyo., weed official

Towards the end of 1974, Buddy Hohnholt, weed and pest commissioner for Platte County, Wyo., asked Sen. Clifford Hansen to see if the Air Force would sell surplus stocks of Agent Orange.

The request touched off a two-year exchange of Dear Russ, Dear Cliff, and Dear Buddy letters among the Wyoming Republican senator, Russell Train, then the Environmental Protection Agency's (EPA) administrator, and Hohnholt. The end result of all this correspondence proved to be that, even if the Air Force were willing to sell, and even if the EPA were willing to let it, the chemical first would be offered to federal agencies, and Platte County's chances of getting any were slim.

Hohnholt's request was based on economics. He had been using 2,4-D to spray rangeland near Wheatland. He felt 2,4,5-T could do a better job, but cost almost twice as much. Surplus Agent Orange stocks, he estimated, would save the commission about $2 million per year.

Besides, he felt it was safe. "They're (environmentalists) shooting at all pesticides," he said in a telephone interview. "That's like shooting at motherhood.

"It's just like aspirin. You've got to use it right for it to be beneficial. Anything that's misapplied is dangerous. A table saw is more toxic than any pesticide.

"A pregnant woman woman would have to drink 9,000 quarts of milk a day to ever get a high enough concentration (of TCDD) to effect her baby. Whether a guy's dealing with pesticides or selling wheat to Russia, or autos, it's easy to get somebody against a thing."

It was necessary, he said, to look at the facts. The facts, he said, were that 2,4,5-T, if applied properly, was not dangerous; that the dioxin was very short lived in the environment. Those facts, he said, came from Dow Chemical Co., from the Air Force, and other people he had talked to.

But, by that time, Dow was saying that TCDD could persist in the environment for up to two years; some researchers said traces of it were beginning to appear in human milk; and it had been found in fish and beef tissue.

Asked about endangering health, Hohnholt said, "Definitely not. I don't think that saving $2 million is worth (creating) potential health hazards. If it isn't a safe product, we don't want to use it. But Herbicide Orange has not been deemed harmful."

Dr. Arthur Westing, director of the American Association for the Advancement of Science's Herbicide Commission, disagrees. "One would have to have criminal intent to use it on rangeland or farms."

bicides that contain TCDD, that figure soars to the hundreds of millions of dollars.

The agriculture industry's, and Dow's, interest in continuing use, then, is hardly impartial.

In 1970, reacting to a report by the Surgeon General that "exposure to this herbicide may present an imminent hazard to women of child-bearing age," the Secretaries of Agriculture, Interior, and Health, Education and Welfare suspended the use of 2,4,5-T around homes, recreation areas, lakes, ponds, and ditch banks.

The EPA announced in July 1973 that it would hold hearings on a proposal to cancel the remaining uses of 2,4,5-T and other pesticides and herbicides containing TCDD. On June 24, 1974, after the hearings had been delayed for almost a year, the agency announced it was canceling them.

"Under the circumstances," said EPA Deputy Administrator John Quarles, "it does not seem appropriate to continue administrative proceedings when the evidence which would largely determine the outcome of those proceedings remains scientifically unavailable."

That meant the EPA was giving herbicide manufacturers the go-ahead to use the environment as their laboratory, said William Butler, counsel for the Environmental Defense Fund (EDF). "The EPA apparently has decided that the EPA (rather than a manufacturer) must shoulder the burden of proving or disproving the safety of 2,4,5-T and related compounds; and that continued use should be allowed as long as the severity of the hazards remains uncertain," said EDF.

As a result, tens of millions of pounds of 2,4,5-T and other chemicals that contain less than 0.1 ppm of TCDD now are being used on forests, rangeland, rights-of-way, and rice crops; in pulp mills; and to kill fungi and algae.

Those are the registered uses. There is no guarantee — and little effort at enforcement — that anyone buying those chemicals will put them to their registered uses.

PHILOSOPHICAL PEAK

Government's and industry's attitude toward TCDD was summarized, perhaps unconsciously, by the Air Force in its impact statement on reprocessing Agent Orange. "Benefits are to be expected from the continued use of 2,4,5-T," the statement said.

"The necessity of making a value judgment of benefit versus risk, therefore, must be accepted, not only for this herbicide, but for numerous valuable drugs, some natural nutrients, and many other chemicals, some of which are known to be teratogenic (cause birth defects; literally, produce monsters) in laboratory animals."

Proceeding from this philosophical peak, the Air Force described how it intended to reprocess Agent Orange. In the course of conducting other research, chemists at the U.S. Fish and Wildlife Service Fish Pesticide Lab at Columbia, Mo., discovered in 1974 that coconut charcoal could remove TCDD from herbicides.

During the pilot plant operation, thistles and a tomato plant 1,600 feet from the project were damaged.

Informed of that discovery, and under prodding from the EPA, the Air Force signed a contract with Agent Chemical, Inc., of Houston, Tex., to build a pilot plant at Gulfport, Miss., that would test the feasibility of the process on Agent Orange.

Its early tests were unsuccessful. In a letter of Feb. 25, 1976, Russell Train, then administrator of the EPA, told Sen. Clifford Hansen (R-Wyo.) that only two barrels of Herbicide Orange had been processed and that the dioxin had not been reduced as efficiently as had been hoped.

"The still unanswered contingency," Train went on, "in the reprocessing question is the disposal of the dioxin-carrying charcoal. It is intended that the charcoal will be incinerated on a test run, and a calculation made of the environmental hazards that might result. Any final decision on the disposition of the Herbicide Orange would depend on the results of the pilot project."

In July of 1976 Agent Chemical reported greater success. It said it had reduced the level of TCDD in a 200-gallon batch of Agent Orange from 3.71 ppm to 0.1 ppm.

A few months later, Jay Stevens, the staff member of the EPA's Office of Federal Activities who reviewed the Air Force's environmental impact statement on reprocessing, said that Train's position on disposing of the impregnated charcoal had changed.

"Our solid waste people feel that technology is either available or at the late development stage to properly incinerate the charcoal contaminated with dioxin," Stevens said. "Having that kind of confidence, we feel safe in letting the Air Force store it" under secure, monitored conditions.

The California State Department of Health does not have that kind of confidence. When it finished the pilot project, Agent Chemical had nine charcoal columns rich in TCDD. It delivered those to BKK Co., a firm in Wilmington, Calif., that specializes in getting rid of dangerous wastes.

Last September, the California agency told BKK it could not dump them in a landfill site in West Covina, near Los Angeles. The directive was moot, since BKK already had decided to ship the canisters back to Gulfport because it wanted to be a "good citizen" in the community, said Leonard Tinnan, an official of BKK.

A month later, Dr. Gerald E. Walsh of the EPA's Environmental Research Laboratory, told the Air Force, "No matter how carefully (the TCDD-fouled charcoal) is stored it will always remain a potential hazard."

The Center for Law and Social Policy, speaking on behalf of the Environmental Defense Fund and the National Audubon Society, said, "The Air Force is proposing to dispose of a hazardous, stored waste of 2.3 million gallons of herbicide by generating an even more hazardous, stored waste of 650 tons of dioxin-contaminated carbon.

"In sum, the Department is not resolving the problem; it is merely changing it."

REMOTE SITE SOUGHT

The Air Force has not yet chosen a specific storage site. But some good guesses can be made from its description of the desirable location. The Air Force says it should be remote; have "controlled and limited access;" be clearly marked; have no other purpose than to store the charcoal; be in a dry climate and an area of low seismic activity; and be "designed to preclude any impact on municipal water supplies, shellfish beds, wildlife, fisheries . . . recreational areas" and farmland.

By the end of reprocessing, there would be about 1,000 charcoal cartridges, each 10 feet long and 30 inches in diameter. They will be encased and sealed in steel cylinders three-eighths of an inch thick. These in turn would either be treated to prevent corrosion or encased in one-inch thick polyethylene cylinders, an alternative preferred by the EPA.

The cartridges then would be housed in specially built chambers at the storage site. They would be inspected twice a year.

But the Air Force made no mention of an emergency plan to cope with accidents during the shipping of the cartridges, and the EPA asked for one.

Agent Chemical estimated it would reprocess about 10,000 gallons of Agent Orange per day, and that the entire operation could take 86 days at Gulfport and 140 days at Johnston Island. To reprocess, the Agent Orange would be poured out of the drums and into a storage tank. It would be heated to about 100 degrees Centigrade to reduce its viscosity, then pumped through the charcoal and into a storage tank.

For some batches, more than one run may be required, since the TCDD content in the Agent Orange ranges between less than 0.1 ppm to almost 50 ppm, with an average of 2 ppm.

Workers would wear special protective

(continued on page 6)

Agent Orange made simple

To help you struggle through the technicalities of the Agent Orange story, here is a glossary:

TCDD — Its proper name is 2,3,7,8-tetrachlorodibenzo-p-dioxin. It is an as yet unavoidable contaminant produced during the manufacture of trichlorophenol, which is an essential ingredient of 2,4,5-T, and some other phenoxy herbicides. If the temperature during the manufacture of trichlorophenol goes above 160 degrees C., then particularly high concentrations of TCDD occur.

PHENOXY HERBICIDES — A family of weak acids with similar chemical and biological properties but different effects on plants. They are used primarily to kill broad-leaved plants. Grasses and conifers tend to resist them.

2,4,5-T — Its proper name is 2,4,5-trichlorophenoxyacetic acid. It has been used in the U.S. to control broadleaf weeds and brush since the 1940s. It contains TCDD.

2,4-D — A phenoxy herbicide that does not seem to contain TCDD.

AGENT ORANGE — A mixture of equal parts of 2,4-D and 2,4,5-T, and used as a defoliant to deprive Viet Cong troops of ground cover.

USE OF AGENT ORANGE IN VIETNAM — "A largely political controversy," according to a 1975 report by the Council for Agricultural Science and Technology.

SOLUTION CREATES PROBLEM. The Air Force discovered that Agent Orange could be made less dangerous by filtering through coconut charcoal. That technological breakthrough led to the current problem: how to get rid of the contaminated charcoal. For now, it is kept in canisters as shown above.

HCN Books

The Bluebird

by Lawrence Zeleny, Indiana University Press, Bloomington, 1976. $7.95, hard cover, 170 pages. Photographs and diagrams.

Review by Peter Wild

Some readers may remember when a resident bluebird enriched their lives with his predawn warblings, his darting through their back yards like "a flying piece of sky." Now all three species, eastern, mountain, and western, are in severe trouble. With the rest of the country's wildlife, this colorful and agriculturally beneficial bird suffers from the asphalting of America and the deadly insecticides that the nation strews on its earth.

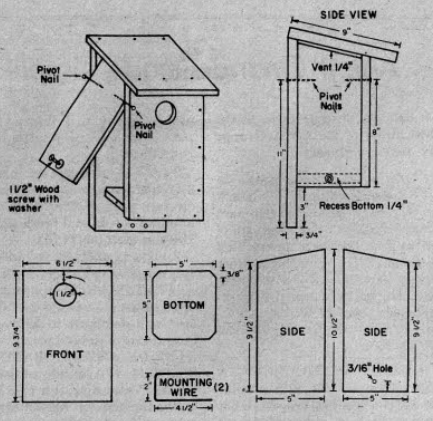
However, the bluebird has a more difficult time of it than other animals. In 1851 someone brought the English sparrow to North America. In 1890 another well-intentioned soul released European starlings in New York City's Central Park. Spreading westward, the two birds have overrun the United States. The aggressive, alien species kill the gentle bluebirds or evict them from their nests. Where the sparrows and starlings go — which is almost everywhere — they doom the "sun-bathed flash of pure blue," the "living poem," the "crystal note."

Yet unlike the answers to most environmental problems, the key to helping the bluebird survive is simple: provide him with safe houses. The bird soon will begin looking for a home. Why not get ready for spring by building him one? It should bring results if there's even a remnant bluebird population in your area. If not, then other desirable birds will appreciate the nesting box.

The easy-to-build house shown in the diagram was designed by the author to keep out the bluebird's enemies. Try to follow the dimensions as closely as you can, paying attention to the size of the entrance. Feel free to use just about any kind of scrap wood, though don't paint the house on the inside or use toxic preservatives.

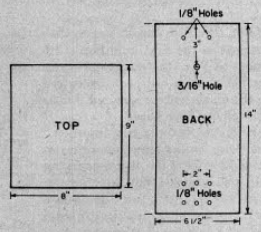
It is best to mount the house on a pole three to five feet off the ground. A man in Ohio graces his mailbox post with one, though he suggests placing them under mailboxes and on the backs of posts so that passersby won't disturb the birds. At any rate, bluebirds prefer their houses out in the open but close to trees with low branches. Sheet-metal guards may be a good idea if climbing predators — house cats, raccoons, and snakes — are around.

That's all there is to it, though **The Bluebird,** a book for anyone interested in nature, describes alternative designs and explains the whys and wherefores of bluebird lore in detail. Store-bought nesting boxes often are satisfactory, though some have entrances that are too small for the western and mountain species. Bluebird houses can be ordered from the Audubon Naturalist Society, 9840 Jones Mill Road, Washington, D.C. 20015.



Plans for a side-opening nesting box

Dimensions shown are for boards ¾" thick.
Use 1¾" galvanized siding nails or aluminum nails.
Pivot nails must be located exactly opposite each other as shown for proper opening of side board.
Cut top edges of front and back boards at slight angle to fit flush with top board.
Cut ⅜" off each corner of bottom board as shown.
Insert bottom board so that the grain of the wood runs from front to rear of box.



Agent Orange. . .

(continued from page 5)

clothing, the Air Force said. "Undoubtedly," it said, "there will be small quantities of herbicide released into the atmosphere during reprocessing." During the pilot plant operation, thistles and a tomato plant 1,600 feet from the project were damaged.

"Considering that tomato plants are very sensitive to Orange herbicide in the low parts per trillion range and the fact that the damaged plants recovered following shut-down of the pilot plant, the airborne levels were very low at the damage sites," the Air Force said. For the actual reprocessing, carbon air filters would be installed, and leak-free pumps used. The operation would be shut down if a problem developed that could not quickly be solved.

No water would be used during reprocessing, and none of the Agent Orange would be discharged into water, the Air Force said. But there was a possibility of spills during handling and transportation, and even a remote possibility that a ship may have to dump its Agent Orange cargo.

"Such an event in the harbor at Johnston Island would present a very grave situation," the Air Force said. "The island's water supply (ocean water for distillation), portions of the fringing reef, and the biological reef communities would be adversely affected."

"NO SIGNIFICANT EFFECTS"

All in all, though, "No significant unavoidable adverse environmental effects from the reprocessing of Orange Herbicide are expected," the Air Force said.

The National Institute for Occupational Safety and Health (NIOSH), for one, disagreed with that assessment. Del Hightower, of Agent Chemical, had written on Oct. 19, 1976, that the company was unaware of all the regulations concerning safe reprocessing and handling of Agent Orange, and its position is that it has "no responsibility for environmental monitoring to insure that there is no danger to the health of persons, or property or the environment."

Paul E. Caplan, a senior reviewer for NIOSH, told the Air Force that, "These and other statements . . . indicate to us that ACI lacks both the awareness of their responsibilities to insure the health and safety of their employes (and of the community of Gulfport, Miss.) and the technical and professional competence to carry out their responsibilities."

Mrs. Lila Redmond, who identified herself as secretary-treasurer of Agent Chemical, refused to make any comment, "And you can't quote me on that," she said.

The debate between incineration and reprocessing has been kicking around for years, said the National Wildlife Federation. So, "Why the sudden rush to proceed?" it asked. "Is there an insurmountable obstacle to spending a few more months in testing disposal techniques before proceeding with the project. . . ?"

The Air Force's reasons, adopted at least in part as a result of EPA suggestions, for reprocessing are largely economic. Frank Shrontz, assistant secretary of the Air Force, two years ago said the Agent Orange, which originally cost the Air Force about $17 million, had a potential market value of $80 million.

He did not say how he arrived at that figure. The current price for 2,4,5-T is about $17 per gallon, and about $9 per gallon for 2,4-D. The stocks, then, do not appear to be worth much more than $30 million, even if prices rise slightly by the time it is reprocessed.

What the Air Force's share of that may be depends on what kind of contract it negotiates with Agent Chemical, which, after reprocessing, would be owner of what then may accurately be called Herbicide Orange.

And Agent Orange, after all, may not be reprocessed. It is possible that the Air Force may again look at incineration. After that, it may again look at reprocessing. And so on.

In the meantime, the Air Force estimates that 2,260 gallons of Agent Orange already have leaked onto the ground from faulty and corroded drums. At that rate, within 5,000 years there would be no Agent Orange left to incinerate or reprocess.

The Air Force's only problem then would be: What to do with the ground the Agent Orange has leaked on.

Boise. . .

(continued from page 1)

one-half the cost of the current gas-fired steam heat system," says Ralph Comstock of the Idaho State Office of Energy.

Comstock says converting the three state buildings to geothermal is only the "first stage of what may become the largest geothermal space and water heating project in the Western Hemisphere."

The Idaho National Engineering Laboratory (INEL) prepared a report last year on an expanded Boise Space Heating Project. The report stated that for $5 million, 38 large buildings or the equivalent of 4,000 average homes could be served with geothermal energy from another geothermal well field near the city. The study recommended heating buildings at the state capitol complex, the Veterans' Administration grounds, and Boise State University.

"INEL has concluded that no major resource or engineering difficulties exist that would prevent this project from being completed successfully with a significant long term savings in both scarce fossil fuels and total heating costs to the state," the report stated.

EYES ON BOISE

Dr. Kenneth Hollenbaugh, head of the geology department at Boise State University, says the plan to heat 38 buildings with geothermal "is just phase one of what will surely be a very long and continuing" project. "I'm sure we will be able to supply all kinds of nonprofit businesses . . . as well as the private sector," he told the **Idaho Statesman.**

Already subdividers are trying to cash in on the renewed interest in Boise's geothermal resources. A recent ad in the **Statesman** read: "Geothermal Heat!!! You've heard about it! You've read about it! Nature's answer to high heating costs! It could be available to you in your new home in 'Morningside Heights' in the near future."

The city of Boise is also anxious to see geothermal development. Lee Post, head of the Boise City Energy Task Force on geothermal energy, says, "Boise's leadership has determined that now is the time to thoroughly study geothermal as an important alternative energy source for the city. It appears that the abundant hot underground water can be transported to heat the Boise City Central Downtown Business District. Boise has a unique and ideal market and should develop the resource to its fullest extent."

Post says there are geothermal hot spots all over Southern Idaho with similar potential for development. "The rest of Idaho and the whole nation are waiting to see what happens in Boise w ith geothermal," she says.

LEE POST, head of the Boise City Energy Task Force on geothermal energy, says citizens from other geothermal hot spots in Idaho are waiting to see how Boise's system works before they proceed with their own development.

THE C.W. MOORE HOUSE on Warm Springs Avenue was the first house in Boise to be heated with geothermal energy. Moore, one of the developers of the system, began heating his home geothermally in 1892.

LEGAL QUESTIONS

In October 1976 Boise received a grant from the U.S. Energy Research and Development Administration to investigate and define the legal and institutional problems related to geothermal development. Post, who is heading up the study, says many legal questions remain unanswered because the courts have not dealt with geothermal energy issues.

Idaho law treats geothermal resources as neither water nor mineral but "sui generis" — a thing unto itself. The state claims police power authority to oversee development and make sure it does not damage public health and safety or the environment, but ownership of the resource is still in doubt. Both the state and the federal government have leased surface lands for geothermal development. But whether geothermal rights are linked with surface rights or with subsurface mineral rights is still undetermined.

Matt Mullaney, an attorney who has held positions with the state Department of Lands and the Public Utilities Commission, says he doesn't think the question of who owns the resource is substantially holding up development. People will assume ownership until a test case is brought, he says.

ENVIRONMENTAL PROBLEMS

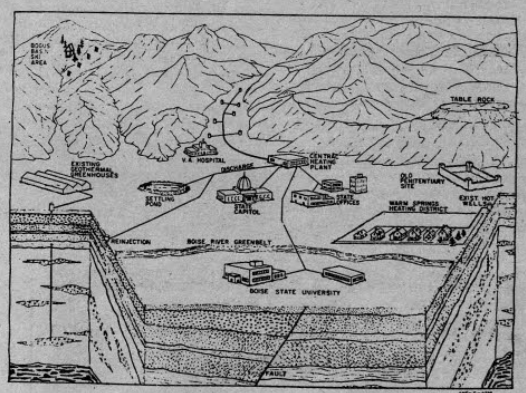
Geothermal development in the Boise area seems to have few environmental problems. The key problem seems to be how to dispose of geothermal water after it is used. The water from the BWSWD wells is potable except for a high fluoride level. Present users dispose of their waste water in the city sewer system, in irrigation ditches, or in reinjection holes. Disposal is the responsibility of the individual user.

Mullaney says future development will have to involve delivery and disposal of geothermal water. He notes that the city has objected to receiving any more geothermal effluent from new installations.

Comstock reports that the three state buildings that will be hooked up to the BWSWD system will either discharge their waste water into the Boise River or reinject it. If river disposal is chosen a series of spray fields and settling ponds will be used prior to discharge to lower the effluent temperature and to raise the dissolved oxygen content. The water is expected to be 120 degrees F. when it leaves the state buildings.

INEL notes that reinjection is probably the "most environmentally suitable method of disposal. This method will increase the number of wells required, and will increase pumping costs. Reinjection has increased the seismicity in some areas. However, the Boise area does not appear to be seismically active."

INEL believes that most potential environmental problems associated with Boise geothermal development can be avoided "as long as proper project management is maintained. There has been no indication of seismic activity, subsidence, or aquifer interference resulting from operation of the Warm Springs Avenue System during the past 86 years. The production from the wells supplying this system has not measurably changed with years of use; thus it appears the geothermal reservoir would be capable of sustained long-term production at the levels proposed."



BOISE SPACE HEATING PROJECT. At right, the existing geothermal wells by the old penitentiary. These wells serve residences in the Warm Springs Avenue area and will heat three state laboratories. In the middle, the Idaho National Engineering Laboratory has proposed developing a new well field to heat the Veterans Administration grounds, the Capitol Mall area, and buildings at Boise State University.

In Klamath Falls, Ore.

Individual wells prove expensive

Klamath Falls, Ore., is the only other U.S. city besides Boise, Idaho, where geothermal heat is used extensively. Dr. John Lund with the Geo-Heat Utilization Center at the Oregon Institute of Technology in Klamath Falls notes that geothermal heating has been used since the turn of the century in his city, but development has been largely unplanned, inefficient, and marginally economic.

Most Klamath Falls residents using geothermal have individual wells which only serve one or two houses each. At a cost of $4,000-$5,000 per well it takes 10 years to pay back the cost of the well, he says. Residents pump cold city water down into their wells which is heated and pumped back into their homes at up to 170 degrees F.

Lund says "district heating" — having a central well and heating plant which served a neighborhood — would be more attractive.

The university in Klamath Falls uses the geothermal water directly rather than pumping city water into its well. The university system not only heats the buildings, but also is used to heat greenhouses and raise shrimp.

Lund says it would cost $250,000-$300,000 per year to heat the university with fossil fuels — but the geothermal bill is one tenth of that. Half the geothermal bill is for maintenance of the system and the other half is for amortization.

The university has just finished a feasibility study on geothermal district heating for the city. Also, the Oregon legislature just passed a geothermal district heat law which allows residents to band together to develop a geothermal resource by selling bonds and purchasing or condemning land.

30 Western rivers under consideration

Wild river system beg

The National Wild and Scenic Rivers System is finally starting to grow, after a lull following passage of the bill that created the system in 1968. The bill included eight rivers in the system initially. Seven of the 11 new rivers in the system have been added during the past two years.

While the number of river-miles in the system is greater in the West, 10 out of the 19 rivers in the system are in the East. In addition, 30 of 56 rivers scheduled to be studied for possible inclusion are east of the Rockies.

Western water, because of its scarcity, is always a hotly contested item. While extensive public land in the West would seem to make federal river protection easier than in the East, river guide Verne Huser says the West's problem is "special interests — interests that exert massive economic pressures, at times in direct opposition to wild and scenic rivers."

The West's four most recent additions to the National Wild and Scenic Rivers System are: the Snake River between Oregon and Idaho in Hells Canyon and the Rapid River in Idaho (both part of the Hells Canyon National Recreation Area) and 159 miles of the upper Missouri River and 219 miles of the Flathead River in Montana.

Five Western rivers were included in the original act: the Middle Fork of the Clearwater and the Middle Fork of the Salmon, both in Idaho; the Feather in California; the Rio Grande in New Mexico; and the Rogue in Oregon.

The act establishes three categories of protection — wild, scenic, and recreational — depending upon the chara the river as measured by accessibility, shoreline de ments, and dams.

Of the 1,655.15 river-miles now included in the sy 689.05 are "wild," 462.7 are "scenic," and 503.4 mil "recreational."

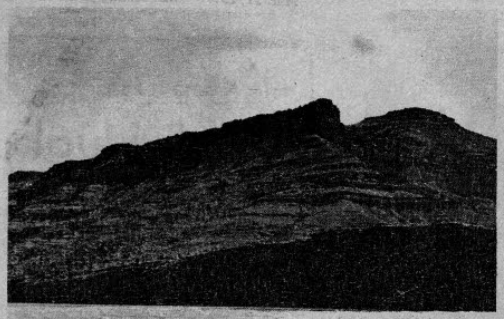
Some Western rivers being studied for inclusion system are:

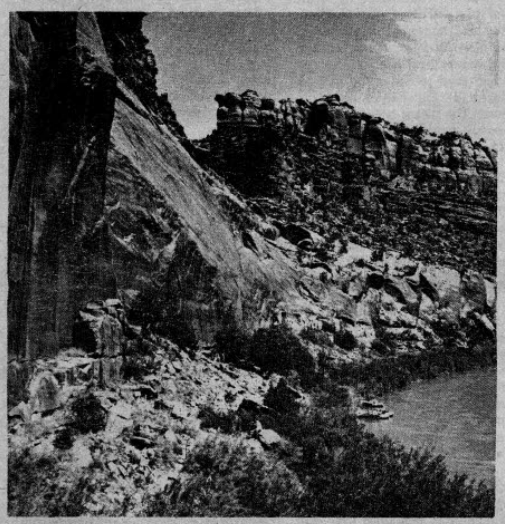
THE DOLORES

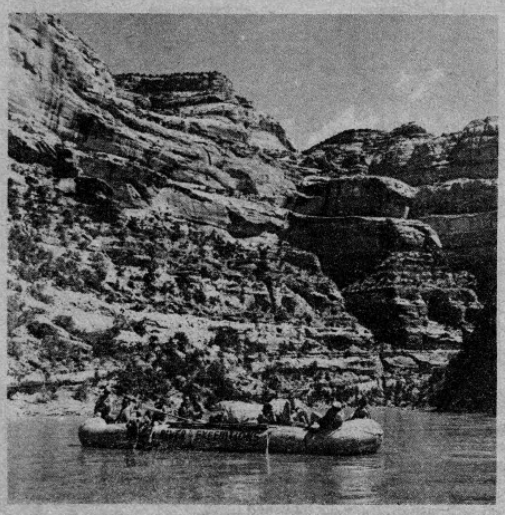
After a study of the Dolores River in Colorado, t partments of Agriculture and Interior have jointly osed that 105 miles of the Dolores be added to the na system — 33 miles "wild," 41 miles "scenic," and 31 "recreational."

YAMPA AND GREEN

Preliminary recommendations of a Yampa and River study team call for a 16-mile stretch of the from Flaming Gorge to Indian Crossing to be protec "scenic," the 30-mile stretch from Indian Crossing th Browns Park to the Gates of Lodore to be protect "recreational," and the 46 miles of the Yampa and miles of the Green within Dinosaur National Monum be classified as "wild." Various conservation groups that the first stretch is worthy of "wild" status ar second of "scenic" status.

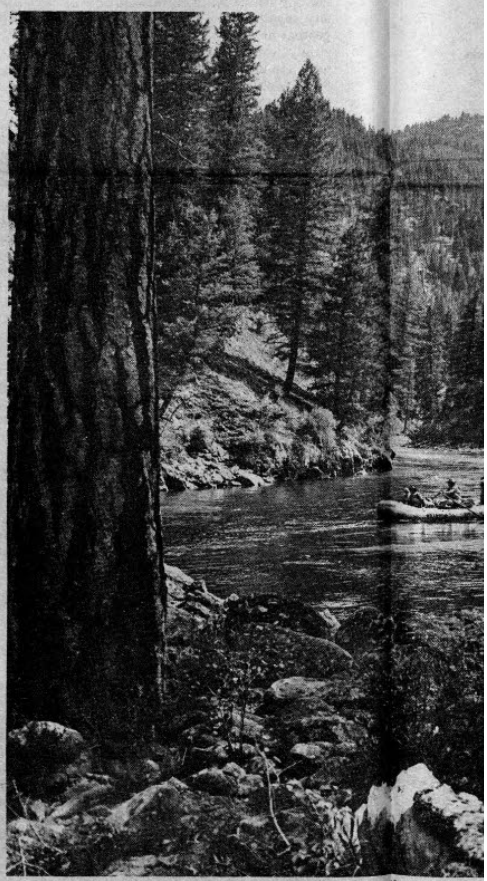






At left:
—Desolation Canyon on the Green River in Utah.
—A study team on the Dolores River in Colorado has recommended that 105 miles of it be included in the national system. No action has been taken by Congress, however.
—The Yampa River in Dinosaur National Monument is being studied for designation as a wild river.

Photos by Verne Huser



One of the original wild rivers in the national system, the Middle Fo Primitive Area. This shot was taken near the Marble Creek cam

...tem begins to grow

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...iver-miles now included in the system, ...462.7 are "scenic," and 503.4 miles are

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THE COLORADO

The Colorado River from 16 miles upstream from the Utah-Colorado state line to the mouth of the Dolores is also being studied for possible inclusion in the system. This short stretch includes Westwater Canyon.

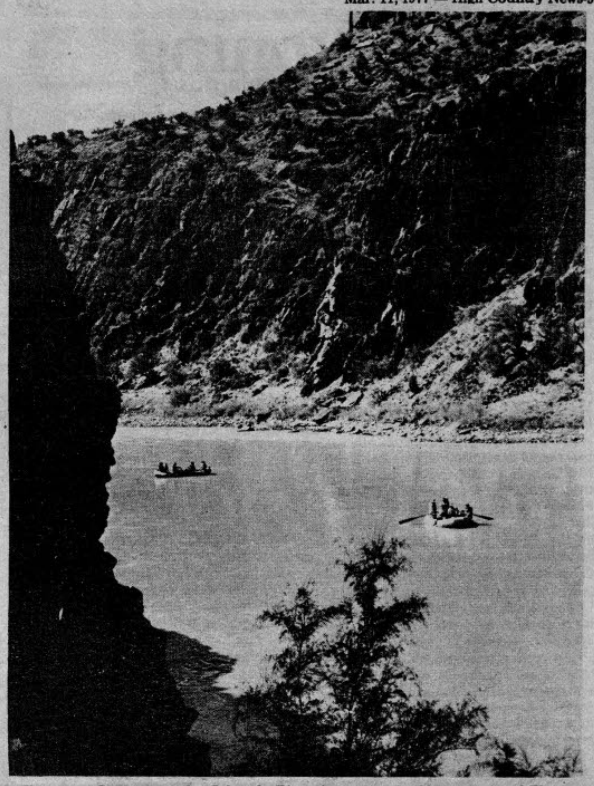
OTHER WESTERN RIVERS

Additional studies are under way on the American and Tuolumne in California, the John Day and Owyhee in Oregon, the Skagit in Washington, the Snake, Sweetwater, and Clarks Fork in Wyoming, and the St. Joe, the Priest, the Moyie, and the Bruneau in Idaho. Two hundred thirty-seven miles of the Salmon River has been studied and recommended for inclusion in the system, but no action has been taken on the proposal for two years.

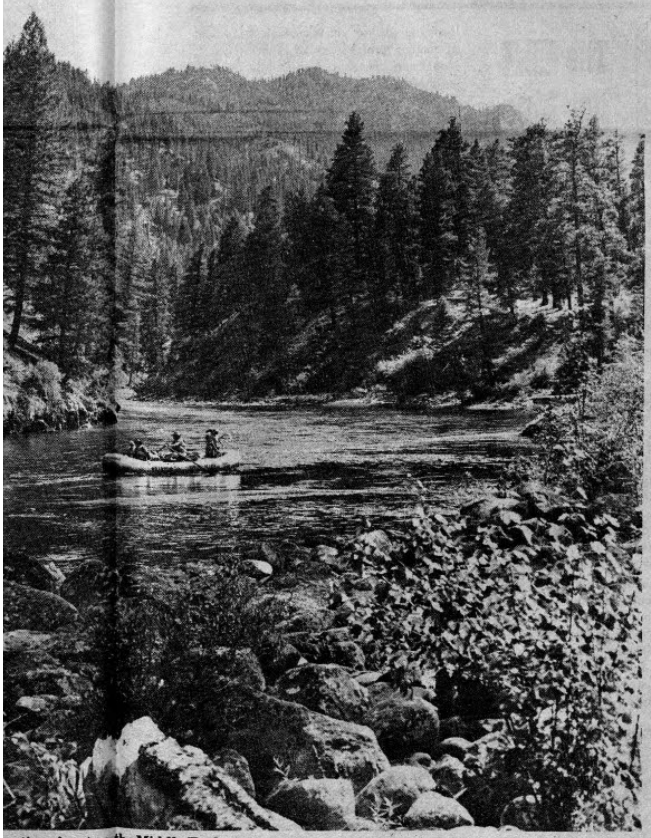
The West's ambivalence about river regulation is revealed at the state level as well as the federal. Although over 20 states have their own protective river systems, only two, California and Oregon, are in the West. The Western border states of North and South Dakota and Oklahoma also have systems. But the Intermountain area, which has some of the nation's finest rivers, is devoid of state systems.

Western river protectionists are encouraged, despite general resistance in their states, by a Washington, D.C., lobbying group, the American Rivers Conservation Council (317 Pennsylvania Ave., S.E. 20003).

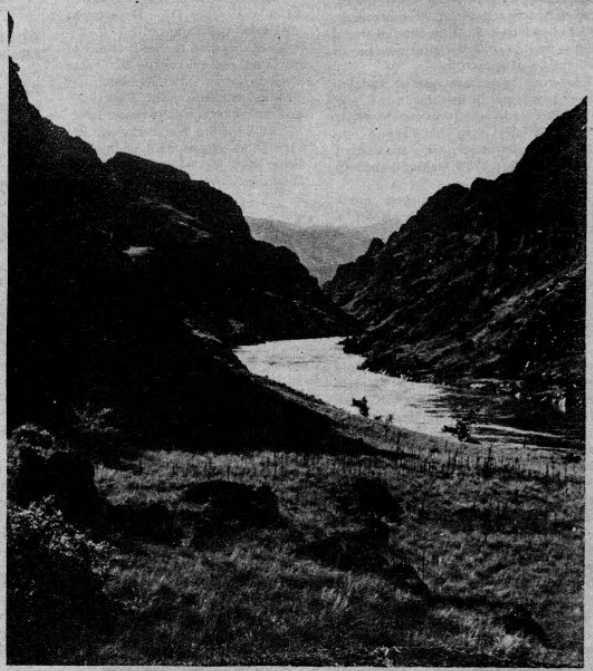
"This lobbying group has been one of the most effective conservation organizations on the Hill," Verne Huser says.



Westwater Canyon on the Colorado River is among the 30 segments of Western rivers under study for wild and scenic classification.



...national system, the Middle Fork of the Salmon Ri...er flows through the heart of the Idaho ... near the Marble Creek campsite.



Hells Canyon on the Snake River was added to the system in 1975 when the Hells Canyon National Recreation Area was established by C...ngress.

Reckoning from Washington

OTHER WATER PROJECTS ENDANGERED

by Lee Catterall

Western water projects not included on President Jimmy Carter's hit list are likely to be endangered by policies resulting from it.

The President called for re-evaluation of 19 Bureau of Reclamation and Corps of Engineers projects before deciding whether to recommend putting corks on them. However, others — including the Polecat Bench Project in Park County, Wyo., and the Lyman Project in Uinta County, Wyo. — may be doomed later.

"The significance of this re-evaluation isn't solely on these projects," an Interior Department official explained. "It's on the long-range effect."

Not that the environmentalists who oppose the 19 dams named by the President have anything against Polecat Bench and the Lyman Project, as they do against the Savery-Pot Hook Project in Carbon County, Wyo., which was included on the hit list. However, their main attack on Savery-Pot Hook also applies to Polecat Bench and Lyman and, if translated into policy, could hold up those two as well.

Their attack is based on economics, having to do with the formula used to determine if the benefits to be derived from a project will outweigh its cost. Since those benefits are long-range, and the money being spent on the project could be drawing interest if it were invested, a formula is used to determine how much money should be discounted from the total benefits figure.

For example, when the Savery-Pot Hook Project was first authorized in 1964, it was given an annual "discount rate" of 3.125%. Subtracting that percentage from the expected benefits, government economists determined that $2.40 in benefits would accrue from every dollar spent, resulting in a benefit-cost ratio of 2.4.

However, costs have spiraled, and the figure now is put by the administration at .9, or 90 cents in benefits from every dollar spent. Actually, even that figure is unrealistically optimistic, since the current discount rate is 6.375%, making the benefit cost ratio .7.

The low benefit-cost ratio made Savery-Pot Hook "immediately suspect," a White House advisor said. Environmental concerns — increased water salinity, destruction of wildlife habitat, and loss of "good fishing streams," according to the President's Council on Environmental Quality — made it a natural for the President's list.

Environmentalists think the use of a discount rate that is no longer current should not be used in current benefit-cost ratios to determine if a project should be continued. If only the current discount rate were used, many of the environmentalists' favorite targets — the Central Arizona Project and the Garrison Diversion Unit in North Dakota, for example — would be economically "marginal," the Council on Environmental Quality figures.

The Polecat Bench and Lyman Projects were marginal to begin with. If a new standard were to be used in future years as those projects progress, supporters would be hard-pressed to justify their continuation.

Environmentalists believe even the current interest rate, the way it is determined, is too low. The 1974 bill that created that formula probably would have been vetoed by President Richard Nixon, had it not been for his Watergate problems. The Office of Management and Budget had recommended a much higher discount rate.

In addition, environmentalists are critical of the heavy financial burden on the federal government for paying the costs of projects. President Carter can be expected to propose that states share more of the costs.

Those kinds of technical things — discount rate and cost-sharing — are being talked about in the back corners of the Washington bureaucracy, as the realization begins to sink in that the environmentalists are in power.

However, congressional committees that rule on such technicalities remain dominated by Westerners who are as fond as ever of projects that bring water to their arid districts. Match a budget-conscious Georgian against a thirsty Westerner and you're likely to have a battle, Democratic Party politics aside.

WATER PROJECT HEARINGS

The Interior Department is holding hearings on water projects recently targeted for zero funding by the Carter Administration. The schedule is as follows:

—Colorado and Wyoming projects, March 21 and 22 in Grand Junction, Colo., at the Ramada Inn Convention Center.

—Central Utah Project, March 23 at the Salt Palace in Salt Lake City, Utah.

—Owyhee, March 21 in Pierre, S.D.

—Garrison, March 22 in Bismarck, N.D.

—Central Arizona Project, March 21 in Washington, D.C., Department of Interior Auditorium.

Those who wish to speak at any of the hearings should notify the Water Projects Review Office by March 16. Written comments on the projects are due the first of April. For more information write the Water Projects Review Office, Department of Interior, Room 6616, Main Interior Building, Washington, D.C. 20240.

CARS OF THE FUTURE are being driven now around Boulder, Colo. The three vehicles above are all electric. The two Renaults were donated by the Public Service Company of Colorado. Pictured with the vehicles are two professors, Jackson F. Fuller and George E. Gless.

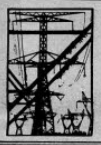
CU watches electric vehicles

Students at the University of Colorado (CU) are learning first-hand about the feasibility of electric cars. A CU professor, George Gless and his wife, Jean, have been driving a converted Renault given to the school by Public Service Company of Colorado. Engineering students at the school modified the car to travel a top speed of 35 mph and go 25 miles without recharging.

Since then, a second Renault, an electric truck for university deliveries, an electric van, and a student-built motorcycle for two people have been added to the university fleet.

Gless says electric cars could replace approximately 25 million cars that are now used as second cars in this country and are driven up to 50 miles a day. He says electric vehicles are non-polluting and can use other forms of fuel such as propane, solar energy, wind energy, methane, coal, or water power to charge their batteries.

The interest in electric cars has spurred formation of the Denver Electric Vehicle Council, which Gless is president of.



The HCN Hot Line

energy news from across the country

DOLLARS PULLED FROM NUCLEAR. Expressing doubts about the use of plutonium as a power source, the Carter Administration has cut $200 million from the nation's fast breeder nuclear reactor program. The money from this and other cuts in the nuclear power budget are shifting toward energy conservation, coal, and boosting oil reserves to cushion the impact if another Arab oil embargo should occur. Americans must cut their energy consumption by 20-30%, while the nation simultaneously tries to increase coal production and keep oil and gas production stable, says James R. Schlesinger, who is slated to be head of the proposed Department of Energy.

EIGHT SOLAR BILLS. Eight solar energy bills were presented to Congress at the end of February by a coalition of seven senators and 15 congressmen. The measure considered most likely to pass would provide tax credits to homeowners who install solar or energy conservation devices on their homes. The other bills would:

—establish a cooperative program with developing countries to encourage alternative technologies;

—promote solar energy in agriculture through Farmer's Home Administration loans and demonstration farms;

—promote solar energy and conservation in federal buildings;

—and make loans to small businesses involved in solar energy or conservation.

FORBES CHANGES NUCLEAR STANCE. Malcolm S. Forbes, publisher of **Forbes** magazine and long-time proponent of nuclear power, has joined the ranks of those concerned about the impact of increasing dependence upon nuclear reactors. Speaking in Helena, Mont., Forbes said, "I've been a long time to come around. . . .But the questions (about nuclear power) are growing and not diminishing." "People don't buy" the assertion that since so far nobody's been killed by a leak, then nuclear power is safe, he said. Montana Gov. Thomas Judge, speaking at the same forum, said he doesn't foresee the need for nuclear power plants in Montana. "Although there may be a time in the future when research can make nuclear power safe . . . there are many serious problems right now."

Roncalio says Herschler bending to pressure on strip mine bill

by Lee Catterall

On the verge of its enactment by Congress, the federal strip mining bill is undergoing a barrage of criticism, not only from its traditional opponents but from those who have been sympathetic to strip mining controls.

Gov. Ed Herschler (D-Wyo.) was not alone in his shrill plea to the Senate Energy and Natural Resources Committee that states be allowed to control mining operations on both state and federal lands in the states.

Both the House and Senate bills, Herschler said, "as they are currently drafted, may not be in the best interest of either Western states, like Wyoming, or the nation as a whole."

Rep. Teno Roncalio (D-Wyo.), who has labored more than four years on the bill, defends it. Herschler "keeps getting the pressure from the big companies in Wyoming" to weaken it, Roncalio said in an interview. Herschler suggested in his testimony that the proposal is "an inflexible federal program which is administratively infeasible from the state's viewpoint, and economically disastrous from a national viewpoint." Roncalio, however, believes it is a good bill, which might, he concedes, be made better if it were "reduced in size and bureaucratic bulkiness."

The Wyoming governor's objections to the bill were specific and somewhat technical, as were those of other governors, including Gov. Jay Rockefeller (D-W.Va.), who wanted states to have more flexibility to allow mining in the mountains of Appalachia.

How much Congress is willing to budge from its defense of a bill it has been arguing for so long is a question that remains. Supporters of the bill point to this summer for enactment, but objections to the details of the bill may keep it on the drafting table longer than that.

"The forces of opposition to this are never-ending," Roncalio said.

New energy agency to absorb FEA, ERDA, FPC

The Carter Administration's proposed Department of Energy (DOE), unveiled early this month, will mean the consolidation of the energy responsibilities of nine government agencies. The new department, Carter says, will have "the broad authority needed to deal with our energy problems in a comprehensive way."

The new department will take over the responsibilities and abolish three existing agencies — the Federal Energy Administration, the Energy Research and Development Administration, and the Federal Power Commission. In addition, it will take over the energy regulation tasks of the Interstate Commerce Commission, the Securities and Exchange Commission and the Departments of Defense, Commerce and Housing and Urban Development.

The proposal gives the Secretary of Interior and the Secretary of Energy joint responsibility for leasing energy resources.

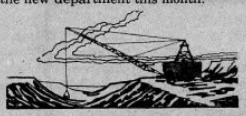
Two regulatory agencies, the Environmental Protection Agency and the Nuclear Regulatory Commission, will remain separate from the DOE, Carter says, because "health, safety, and environmental regulation relating to energy" w ill not be the business of the new department.

Some regulatory functions would be performed by the new agency, however, in what the **Wall Street Journal** considers one of the more controversial aspects of the plan. The proposal creates an Economic Regulatory Administration within the Energy Department. This department would set pricing and allocation of petroleum and regulate interstate power rates. "Some lawmakers are known to oppose putting regulatory functions into a department whose main responsibility would be to promote energy development," reports the **Journal**.

Carter is believed to have tried to reach a compromise on the controversial issue of which arm of government should control mineral leasing on federal lands. Under the Carter plan, the Energy Secretary would regulate bidding systems, eligibility for a lease, rates of production, and disposition of royalties. The Interior Secretary would regulate land management and conservation, lease-sale schedules, and environmental impact statements, because, Carter says, "responsibility for multiple use of public lands, and for their environmental protection, belongs in one department that can reflect a broad spectrum of concern." The Interior Secretary also has the power to overrule the Energy Secretary and cancel a lease, in the Carter plan.

Environmental groups had vowed to oppose any plan that stripped Interior of its leasing responsibilities.

Congress seems to favor the consolidation. Sen. Henry Jackson (D-Wash.), chairman of the Senate Energy and Natural Resources Committee, says he thinks the Senate will authorize creation of the new department this month.



ENERGY 1977 HCN

energy news of the Rockies and Great Plains

COAL BLOOM OFF? While production of low-sulfur Western coal is expected to more than double by 1985, "The bloom is off Western coal," Steven Rattner said in a recent copyrighted **New York Times** article. Rattner blames slower-than-predicted development rates in the West on environmental lawsuits, which slowed down work on both mines and a rail line in the Powder River Basin; utilities' reluctance to switch from oil to coal; coal transportation that is "uncertain and expensive;" and waning interest in synfuels. In the center of Western coal development country, Dave Bell of the Campbell County, Wyo., Chamber of Commerce disputes the article's conclusions. "There are already eight mines under construction in the area and if the bloom is off Western coal development, why are these major energy companies sinking millions of dollars into mine construction?" Bell asked in a **Casper Star-Tribune** article.

CLASS ONE FOR DUNN. In an effort to head off larger power plants and other polluting industries, some citizens of Dunn County, N.D., have begun circulating petitions to secure what the federal government calls Class I air. Dunn County and all the rest of the clean air regions in the country were declared in the Class II zone by the Environmental Protection Agency (EPA) in 1974. EPA encouraged localities to put themselves in a more restrictive (Class I) or less restrictive (Class III) zone if they wished. The North Dakota Health Department will hold a hearing on the redesignation if it receives petitions with the required number of signatures — 20% of the number of voters in the l ast gubernatorial election.

IDAHO-UTAH NUKE PLANNED. Idaho Power Co., thwarted in its effort to build a 1,000 megawatt coal-fired power plant near Boise, is now making plans for a large nuclear plant in southern Idaho or northern Utah. The utility has asked the Idaho Public Utilities Commission if it can recover the $200,000 it plans to spend on a feasibility study from its customers' electric bills. Utah Power and Light would be a partner in the project.

CABIN CREEK IMPACT. The Cabin Creek coal development's impact on Montana is expected to be minimal — if the Canadian government enforces its environmental rules and if workers live in a new town in Canada, according to a report just published by the Montana Department of Natural Resources. The proposed project would be just north of the Montana-Canadian border in the Flathead River drainage near Glacier National Park. Nevertheless, some pollution in the Flathead River is likely, according to the report, from settling pond seepage, erosion of soil, waste and spoil materials, and toxic minerals. If no new town is built at the mining site, as many as half of the workers might choose to live on the U.S. side, the report says.

TRAIN TROUBLE. One or two mile-long coal trains rattle through Denver every day. By 1985 the number of trains could increase from 13 to 25, according to a study funded by the Four Corners Regional Commission. The trains would be carrying coal from Wyoming, Montana, Utah, and Colorado through Denver to southern Colorado and Texas power plants. The trains are expected to bring noise, traffic delays, and other problems.

70% SOLAR SUBSIDY? Stanford Research Institute says that a 70% subsidy of solar electric power would allow it to replace the need for more nuclear power by 2020. "A nation that wanted to ensure against foreclosing of future options would make a social decision to implement solar technology far more rapidly than economic decision making would otherwise warrant," says a draft SRI report.

Forbes calls 'small is beautiful' baloney

by Robin Tawney

Montana environmentalists, labor and business people, farmers and ranchers recently sat down for two days at public forums to discuss the future of a common concern — Montana's economy. Hefty debates arose between those who ascribe to traditional laissez faire economics and those attuned to the "small is beautiful" approach espoused by E. F. Schumacher, one of the forum's featured speakers.

Schumacher, director of the International Development Group, Ltd., and author of **Small Is Beautiful,** and the other featured speaker, Malcolm Forbes, publisher and adventurer, epitomized this clash in philosophy. Montana Gov. Thomas Judge's office organized the "Public Forum on the Future of Montana's Economy."

Responding to workshop reports, Forbes and Schumacher both agreed private enterprise is more efficient and more accountable than government, but they differed on what the scale of business should be.

Schumacher called for a break from "internal colonialism" in America and a shift to an economy in which exporting areas like Montana would process their own raw materials to meet their own needs and thus break with metropolitan domination.

Energy shortages underscore the need for Montana to build a truly solid economic base so the state will have more strength to deal with those who would exploit it, he said.

"Most of the things we need can be made on a small scale," he said. For example, much of Montana's timber is shipped out-of-state for the production of furniture, and some of the final products eventually are returned and sold in state. Montana, Schumacher said, could build furniture for its own needs without wasting fuel and possibilities for employment because its timber was processed elsewhere.

In his presentation, Forbes attacked Schumacher's philosophy. "There's an awful lot of baloney in the idea that small per se is beautiful," he said.

One of the great contributions big business has made to the world is in reducing the intensity of labor, he said. Now, one person pushing a button can take the place of 10,000 coolies building a wall, he said.

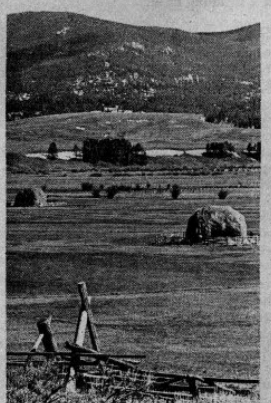
He said we can now do with machines "things that would take the sweat of a man's and a lady's brow from dawn to dusk where there is no time to debate their future, where their future consists of absolute labor of the most onerous sort."

Forbes agreed with Schumacher that waste is "largely an unaffordable commodity" because of energy shortages.

But Montana is a "vast storehouse of a nonreuseable resource (coal) which, even with profligate use, w d db e an awful long time running out of," Forbes said. He predicted that technology will come to the rescue by the time nonrenewable resources are "remotely beginning to be in short supply."

Forbes urged conference participants to help direct the future of their state, but cautioned them against picking big business as the villain and turning back the clock.

"Montana was raped rather thoroughly by some robber barons, but I think you're a little too smart to be taken on again, and maybe a little too old to be that attractive," he said.



"INTERNAL COLONIALISM." The author of SMALL IS BEAUTIFUL, E. F. Schumacher, visited big sky country last month. Schumacher called for a break from "internal colonialism" in America and a shift to an economy in which exporting areas like Montana would process their own raw materials to meet their own needs. Photo courtesy of Montana Department of Highways.

States take bigger bite of coal money

by Dan Whipple

Mineral severance taxes continue to be a hot topic among state legislators. North Dakota is debating a near doubling of its tax, Wyoming has raised its severance by 4.5% and Montana has beaten back an attempt to lower its 30% tax.

Montana's tax is held up by both proponents and critics as an example of the good or evil that severance taxes do. Proponents say that the tax has brought the state revenue without affecting the amount of mining in the state. Critics say that mining has been affected because there haven't been any new applications filed or permits issued since the tax went into effect.

Either way, the tax is popular with legislators. An attempt to reduce the bite of coal companies was defeated by the Montana state legislature, who feared the loss of a portion of the $16-million in revenues over the next two years.

An additional problem for some companies is a 25% severance tax that will be levied on coal mined on the Crow Indian Reservation in southeastern Montana. The application of this tax is still unclear, but it is possible that both the state and Indian tax would apply to companies mining on the reserv ation, for a total severance tax of 55%.

In North Dakota, the legislature is locked in a bitter battle over increasing the severance tax to one-third of the value of the coal. Presently, there is a flat rate tax of 50 cents per ton with an increase of one cent for every three point rise in the wholesale price index.

Governor Arthur Link says, "33.3% suggests a heavy tax, but in terms of passthrough to the kilowatt prices it is really very modest."

The tax, if passed, would bring in about $1.09 per ton, for a total of $34-million over the next two years.

But North Dakota has found a way to "export" the tax to out of state consumers. The state has eliminated the sales tax on electricity for North Dakota consumers. "If we balance this," says Link, "it results in a slight saving for the North Dakota consumer in the total electric bill."

The increased costs resulting from the severance tax are then paid by the consumers of power generated by North Dakota coal in other states. And, North Dakota sends about 90% of its coal out of state.

Governor Link is optimistic that his tax will be passed by the legislature, but other observers say that the Republican-controlled State Senate will not allow it to go through.

Wyoming passed a 4.5% increase in the tax on coal and a 2.5% increase in the uranium tax, bringing the state's effective taxes to 17% and 15% respectively. Even these levels give it the lowest severance tax structure of the North Plains coal states.

Bill Budd, head of the Wyoming Mining Association, says, "Wyoming definitely has a more favorable climate for coal mining than Montana, and these increases won't stop development." Environmentalists have argued all along, however, that the lower taxes are an invitation to coal companies to give Wyoming "more than its fair share" of strip mining.

According to Budd, it is the consumer who ultimately pays for increases. But, research prepared for Wyoming State Representative John Vinich, indicates that Detroit consumers of Montana coal have paid only a penny a day in additional electric costs resulting from Montana's tax. And, according to a study prepared by the Montana Energy Policy Office, only 10% of any severance tax increase is passed along to the market price of the coal. Consumers' electric bills increase by only one-third of that 10%. Thus, an increase of 12% in the severance tax would increase an electric bill by only 0.4%.

Wyoming solons came 'programmed against bills'

Wyoming's legislature proved, among other things, that the state has come to that sad pass of being controlled by a computer. The session's end was delayed for two days by a machine that refused to print up the bills as written by various committees. Environmental lobbyists say that actually, that was a fitting end to the session. They are convinced many of the members came to Cheyenne pre-programmed to oppose bills to protect the state's environment.

This was true of almost all of the important environmental issues, such as severance tax increases on minerals, a mineral export policy, land use planning, scenic easements, and stream preservation, all of which failed except a small tax increase for minerals.

The Wyoming Outdoor Council worked on each of these issues, and the Powder River Basin Resource Council joined their efforts on the coal bills.

The mineral severance tax increase bills were probably fought the hardest and the longest. They weren't finally agreed upon until the final hours of the session. (See separate tax story.) Environmentalists had mixed feelings — at best — about the results since they wanted a 12% increase on the coal tax for a total of 24%. Instead, the increase on coal was 4½%. Adding to the environmentalists' lack of enthusiasm are the legislators' choices for distribution of the tax monies. None of the new monies will go for energy impacted areas. One and a half per cent will likely help industry, in fact, since it will go for water development projects. Another 1% goes to highways, ½% for the mineral trust fund, and 1½% for capital facilities, including state office buildings and a penitentiary.

The legislators did have impact problems in mind when they voted on distribution of royalty payments from the federal government. The U.S. Congress voted last year to increase the percentage of royalties on federal minerals that are returned to the states. The increase — from 37½% to 50% — will mean about $12 million in additional revenue for Wyoming.

The legislature gave 30% of the royalty money to cities and towns; 30% to impact grants to cities, towns, and counties; 16% to public school construction; and 24% to highway funds.

EXPORT POLICY

The mineral export policy was lost again. The proposed bill said any facility, such as a power plant, that would send more than half of its product out of state would have to prove that it would not cause major socio-economic or environmental impact and that it could get enough water without jeopardizing other users. However, several legislators voiced the fear that exporting Wyoming coal would export all the state's sons and daughters within a week after they finished high school.

This argument that Wyoming needs the jobs had strong support, despite environmentalists' argument that heavy industrialization based on mineral conversion would cause more problems than it would solve. The environmentalists said that mining, transportation, and support services would provide jobs, not only for Wyomingites entering the work force but for several thousand additional people moving into the state. The legislators received telephone calls from throughout the state supporting the bill — some said more than on any other bill.

Nevertheless, when the issue was finally taken to the floor as an amendment to another bill, it lost.

A scenic easement bill was another victim of misrepresentation. The bill clearly stated that involvement was voluntary, and it was supported by some landowners, including the Wyoming Woolgrowers Association. However, some legislators tried to paint the bill as an open door to land seizures by wealthy environmental groups, and it lost.

Other environmental losses:

—no guarantee of minimum stream flows or stream protection.

—the bobcat is still on the predator list.

—Texaco received a five year extension for a water permit, despite Wyoming's law that a water right must be put to a beneficial use or forfeited. Texaco said it isn't ready to develop the water yet.

—no additional funding or time extensions were approved for county land use planning although a move to repeal the land use act was successfully defeated.

Analyzing the generally negative outcome, Colleen Kelly, executive director of the Wyoming Outdoor Council, said that after the gains in 1975, they should have been prepared for some regression and entrenchment. She added that the widening margin of Republican control in the Senate and heightened pressure from coal interests also affected the results.

She also pointed out the beneficial bills that were passed that provided for:

—dam safety.

—landowners having more say on where and how transmission lines will be sited.

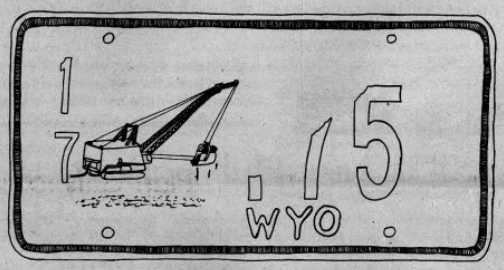
—plugging abandoned drill holes from uranium exploration.

—railroads participating in the cost of putting in separated-grade crossings and safety equipment.

—state engineer conducting a water availability study for proposed facilities.

—public agencies considering energy efficient factors for new buildings.

A legislative analysis with the votes of each legislator will be available from the Wyoming Outdoor Council by early April. The address for the council is Box 1184, Cheyenne, Wyo. 82001.



NEW LICENSE PLATE. Following the 1977 legislative session, the favorite sport for frustrated environmentalists became designing new license plates with symbols to replace the cowboy on a bucking bronc.

Legislative center aids S.D. citizens

The South Dakota legislature is considering a number of key environmental bills this session including: 1) energy facility siting, 2) nuclear waste disposal, 3) scenic-recreational designation for the James River, 4) industrial water marketing, and 5) alternatives to the Oahe Diversion.

The Citizens' Legislative Center in Pierre (phone 224-7014) is coordinating citizen action on these and other bills. The center follows the progress of bills and notifies citizens when action is needed. The center is sponsored by We the People, the Association for Citizens Training, the S.D. Environmental Coalition, the S.D. Consumers League, the S.D. Soils Assoc., the S.D. Drought Assoc., Friends of the Earth, the Sierra Club, CRUD (Community Recyclers of Usable Discards) of Sioux Falls, and Father Jerry Kroeger.

Western Roundup HCN

RECREATION AREA — NOT PARK

Interior Sec. Cecil D. Andrus has sent a message to Congress opposing plans for a new national park in Idaho's Sawtooth Range (see HCN 7-30-76). While governor of Idaho, Andrus had opposed creation of the new park, preferring management by the U.S. Forest Service as a national recreation area. Andrus has said he would support wilderness or park designation of the high alpine areas if such designation was needed to prevent mining the high peaks. Some of the reasons for Andrus's opposition to park status include the estimated $1 billion cost of buying out mining claims and the possible curtailment of grazing, hunting, logging, and vacation home building in the area, according to the IDAHO STATESMAN.

Photo of Stanley Peak by Idaho Department of Commerce and Development.

Drought could destroy Snake fishery

Drought conditions in the Snake River drainage could destroy fishing in Idaho and Wyoming. Idaho Fish and Game biologists say that if there isn't enough water in the Snake by April, 90% of the salmon smolts could be lost to dams. This is because if the water is low, the smolts will be swept through the dams' turbines instead of over the top of dams. Department officials are gearing up for an emergency project to truck as many smolts as possible around the dams. In Wyoming, the cutthroat trout fishery of the Snake River is in danger because of reduced flows being let out of Jackson Lake Dam in Grand Teton National Park. Idaho irrigators have insisted that the Bureau of Reclamation hold water in the reservoir for future use, but U.S. Fish and Wildlife Service biologist Tom Pruitt says the reduced flows may destroy the cutthroat fishery, according to the **Casper Star-Tribune.** A court suit is expected between the irrigators and BuRec. The normal flow of 300-350 cubic feet per second (cfs) has already been cut to 100 cfs, and the irrigators want further reductions.

Feds to kill coyotes on game range

The Montana House has passed a resolution, 71-20, favoring aerial gunning to reduce coyotes on the Charles M. Russell National Wildlife Range in Eastern Montana. The U.S. Fish and Wildlife Service (FWS) says it will proceed with the extermination program, weather permitting. FWS claims coyotes have been chasing deer onto the ice of Fort Peck Reservoir in the wildlife range where the deer are easy prey. Conserv ation groups protesting the coyote killing program say that the coyote population has been falling on the refuge for the last two years, observed deer kills are down, and complaints of livestock losses have been practically non-existent this winter. The aerial hunt was originally scheduled for last month when cold weather coupled with snow cover on the ice made conditions excellent for coyote hunting. A two-week delay in the hunt to allow FWS to review conservationists' complaints may have had the effect of canceling the hunt since a change in the weather has eliminated the ideal hunting conditions.

Forest Service denies AMAX permit

The Forest Service has denied a grazing permit to AMAX Corp. for public land near Meeteetse, Wyo. The denial was based on AMAX not complying with several requests for additional data to prove the corporation had complied with all the requirements for grazing permits, according to Forest Service Ranger Dalton Ellis. There was a question of whether or not AMAX had owned cattle that were grazing on the permit. AMAX wanted the grazing permit as part of a ranch the corporation purchased to get one of its potential tailings pond sites for a copper mine it proposes nearby. A Meeteetse area rancher also wanted the permit (see **HCN,** 12-3-76). AMAX officials could not be reached for comment about how the denial would affect their plans, if at all. The deadline for an appeal has passed.

Evans won't sue over cloud seeding

Idaho Gov. John V. Evans has recommended that his state not file a lawsuit to stop cloud seeding in Washington state (see **HCN** 2-25-77, page 13). Evans says he decided not to file suit when information from state and federal weather modification officials indicated that a cloud seeding program in Washington would not have a measurable detrimental environmental or economic impact on Idaho. Cloud seeding began Feb. 28 in Washington.

Lamm gets power to protect ag water

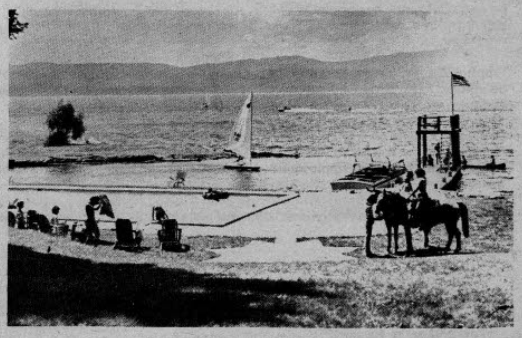
In an effort to protect agricultural water from industry, Colorado Gov. Dick Lamm has signed an agreement with Interior Secretary Cecil Andrus giving Lamm veto power over the sale of water from federal reservoirs in the state if it's not going to be used for irrigation. Lamm was concerned that the U.S. Bureau of Reclamation would sell too much water that was originally intended for agriculture to electrical generating plants or other industries. Lamm says most agricultural water in the state is now in danger, according to the **Denver Post.** The agreement, the first of its kind in the nation, was signed specifically to cover the Savery-Pot Hook Project in northwestern Colorado and Wyoming, which has since been delayed by President Jimmy Carter (see separate story). But Lamm indicated that the agreement could be applied to other similar projects. He explained that the agreement doesn't prevent him from agreeing to the conversion of agricultural water to other uses. It merely gives him the option.

Injunction stops Alaska wolf hunting

A federal judge has stopped wolf hunts underway on public land in Arctic Alaska following a suit filed by Defenders of Wildlife, the Natural Resources Defense Council, and 12 other organizations and Alaskan citizens (see **HCN,** 2-11-77). The plaintiffs argued that the U.S. Bureau of Land Management (BLM) must prepare an environmental impact statement on the proposed wolf kill and take responsibility, not allowing the state of Alaska to proceed with the hunts. The organizations had filed four lawsuits in three years attempting to save the wolf before the injunction was granted.

Plan calls for jets in Grand Teton

A revised master plan for the Jackson Hole Airport in Grand Teton National Park in Wyoming recommends extending the existing runway to accommodate commercial jet aircraft. Environmental groups have opposed the runway extension and the introduction of jet landings within the park because of noise pollution (see **HCN** 10-24-75). An environmental assessment of the master plan will be finished shortly, and public hearings will be held in April.



TRIBES WANT CONTROL

The Confederated Salish and Kootenai Tribes of Montana are working on at least three fronts — including legal action — to protect their water rights. The tribe's decision to seek administration of the giant Flathead Irrigation Project has the most potential for dramatic impact. The project now occupies mostly tribal land and uses water that the tribes claim is theirs. However, only an estimated six to ten per cent of the water users served by the project are Indian, according to the MISSOULIAN. The project is now administered by the Bureau of Indian Affairs.

In another action, the tribes have filed suit against a marina operator who they say has erected structures on tribal land above the highwater mark of Flathead Lake. The tribes question how reservation lands can be used by non-Indians for docks, breakwaters, and other structures without the consent of the tribes. A court had already ruled in an earlier case that non-Indians have the right to construct lakeshore facilities, according to the MISSOULIAN. The tribes are also threatening to close the southern half of Flathead Lake to kokanee salmon fishing.

Photo of Flathead Lake courtesy of Montana Department of Highways.

HCN Bulletin Board

LOONEY LIMERICKS
by Zane E. Cology

There was a young man named Sam Towers
Who wanted to harness earth powers.
He sunk down a well
That went near to Hell
Just so he could splurge on hot showers.

WYOMING ENERGY SYMPOSIUM

Dr. Calvin E. Anderson, president of the National Institute for Energy Management in Englewood, Colo., and Wyoming Gov. Ed Herschler will be among the speakers at an energy symposium at the University of Wyoming on March 28. The symposium will focus on where the state and the university stand on energy use and misuse and will provide individuals and organizations a forum to express their concerns. There is no registration fee. A no-host luncheon will cost $3.25. To register, write to: Dr. Everett D. Lantz, Room 415, Old Main, University of Wyoming, Laramie, Wyo. 82071. Write before March 25. The symposium lasts from 10 a.m. until 5 p.m.

LET CARTER KNOW

President Jimmy Carter is writing letters to 450,000 citizens asking them what they think the country's energy policy should be. About 300,000 of the names were selected at random and the rest were chosen for their experience in fields such as business, conservation, and state and local government. If you aren't asked, write anyway, says a White House spokesman. The address is P.O. Box 2778, Washington, D.C. 20013.

BROWNS PARK PLAN

The Vernal District of the Bureau of Land Management is updating its land use plan for the Browns Park Planning Unit in northeastern Utah. "The public can help us identify facts, land uses, and values with which we may not be familiar, and propose uses of the resources within the unit," says Ralph Heft, BLM planning coordinator. Heft invites the public to stop in the district office at 89 West Main St. in Vernal or send comments to the District Manager, Bureau of Land Management, P.O. Box F, Vernal, Utah 84078.

YELLOWSTONE PARK

The superintendent of Yellowstone National Park will speak at a public meeting in Wheat Ridge, Colo., sponsored by the Izaak Walton League and the National Park Service. The superintendent, John A. Townsley, will discuss critical habitat for grizzly bears, man-bear relationships in the backcountry, snowmobiles in parks, concession management, and the park's fishery program. The meeting will be April 5 at 7:30 p.m. at Wheat Ridge High School, 9505 West 32nd Ave., Wheat Ridge, Colo.

TIMBER HEARINGS

The U.S. Forest Service is holding hearings on proposed regulations governing the sale of timber from national forest lands. The proposed regulations were published in the **Federal Register** on Feb. 23 and copies are available from Forest Service headquarters in Missoula (Northern Region) and Denver (Rocky Mountain Region). Written comments are due March 25. Hearings will be March 14 in Missoula, Mont., and Denver, Colo.; March 15 in Cheyenne, Wyo., Phoenix, Ariz., Boise, Idaho, and Juneau, Alaska; and March 16 in Rapid City, S.D., Albuquerque, N.M., and Salt Lake City, Utah. The new regulations, which were required by the National Forest Management Act, will affect bidding methods and other sale procedures for timber.

MONTANA WILDLIFE PLAN

The U.S. Forest Service and the Montana Fish and Game Department have published a five-year plan for wildlife management on national forests in Montana. Copies of the publication, "A Program for Fish and Wildlife Habitat on the National Forests in Montana," are available at Forest Service ranger stations, national forest headquarters, and Northern Region headquarters in Missoula.

HORSEPACKING

The Montana Wilderness Association is selling a **Guide for Using Horses in Montain Country,** a 15-page booklet by Robert W. Miller. Single copies are 75 cents each, 2-10 copies are 50 cents each, 10-100 copies are 35 cents each, and over 100 copies are 20 cents each. Write MWA at Box 84, Bozeman, Mont. 59715.

Public Notice

Notice is hereby given by the Governor of the State of Wyoming that funds shall be available under Title VI of the Comprehensive Employment and Training Act for public service projects to be operated by general local units of government and non-profit private organizations.

Public Service Project is defined as a specific task involving the delivery of a service which is normally provided by government. For example — work in such fields as beautification, conservation, crime prevention and control, education, child care, environmental quality, fire protection, health care, housing and neighborhood improvements, manpower services, parks, street and other public safety, recreation, rural development, solid waste removal, transportation, veterans outreach, and other fields of human betterment and community improvement. Projects will not exceed 12 months in duration; therefore, the task should be one which may be completed within one year or less. Excluded are building and highway construction work and other work benefiting a private profit making organization.

Emphasis is placed on the creation of real, new jobs. These federal funds may not be utilized to expand existing or ongoing services customarily provided by local government.

Generally, clients eligible for projects are low income persons who have been unemployed for at least 15 weeks and receiving unemployment compensation, who are ineligible for unemployment, who have exhausted their unemployment benefits, and-or who are public assistance recipients.

More specifically, organizations which are eligible to apply for funds under this program include:

1. Units of general local government and their agencies — city government, fire, police, and other city agencies; county government, and county library, health-welfare, hospital, airport, fair, courts, clerk, treasurer, fire, recreation and parks agencies.

2. Combinations or associations of units of general local government when the associations assist those local government units in providing public services — joint fire districts, joint planning offices, and any associations created under the Joint Powers Act.

3. Special purpose political subdivisions (with the power to levy taxes and spend funds or serving a special purpose within an area served by units of general local government) — fire, hospital, health, water conservancy, cemetery, recreation, water and sewer, and weed and pest districts.

4. Local educational agencies (Section 801 (f) of the Elementary and Secondary Education Act of 1965) and institutions of higher education (Section 1201 (a) of the Higher Education Act of 1965) — elementary and secondary school districts, community colleges, the University of Wyoming.

5. Community based organizations which represent a community or a significant segment of a community and which provide manpower services — Community Action Agencies, Jobs for Progress, and other community organizations.

6. Community development corporations — a public or private agency engaged in activities directed towards economic residential and especially industrial development. Chambers of Commerce, economic development agencies, also may include recipients of EDA funding.

7. Non-profit groups and organizations serving Indians or Native Hawaiians.

8. Other non-profit private organizations engaged in public service — Goodwill, Salvation Army, Developmental Disabilities Centers, etc.

Interested parties should mail a completed copy of the form included below or a similar letter of intent to the Division of Manpower Planning, State of Wyoming, Boyd Building, 1720 Carey Avenue, Cheyenne, Wyoming 82002, phone 777-7671, no later than March 21, 1977. Further program information and an application package will then be sent to you by return mail.

NOTICE OF INTENT TO APPLY FOR FUNDS

We are interested in the CETA Public Service Employment Projects Program and would like to submit an application and project proposal for funding. Therefore, we are requesting an application package.

Organization Name _____
Contact Person _____
Address _____

We are:
——A unit of general local government, a local government agency, or a combination of local government units.
——A special purpose political subdivision.
——A local educational agency or institution of higher education.
——A community based organization.
——A community development corporation.
——A non-profit private organization involved in public service.

_____
Name of Chief Elected Official, Chairman of the Board or President of the Corporation

_____
Signature of Chief Elected Official, Chairman of the Board or President of the Corporation.

DISTAFF CORNER

by Marge Higley

Of all the household chores I know, cleaning the oven is the one about which I can wax most unenthusiastic!

My oven is an ordinary, middle-aged electric wall oven which just happened to come with the house. It has no fancy gadgets with which to turn itself on or off. I turn it on by setting a knob to the proper temperature. It has no fancy timer, either. It does have a buzzer with such a raucous voice that I drop, instantly, whatever I'm doing to hurriedly twist the dial back to the OFF position. It doesn't have fancy removable wall liners or door, to facilitate cleaning. And the very fanciest thing it doesn't have is the ability to clean itself!

Since reading the **Consumer Report** on oven cleaners (July, 1970) I hesitate to don face mask and rubber gloves, and open wide all the doors and windows; so when I deem it absolutely necessary, I use scouring pads, dull razor blades, and good old "elbow grease." Should I, perhaps, yield to the temptation of one of those shiny, expensive, power-consuming self cleaners?

As I think about it, my mind drifts back a good many years, and I remember, with a feeling of nostalgia, one of the first stoves I ever owned.

As a young wife I spent my winters in the southern part of the Red Desert. (Not to be confused with the hot sandy deserts of the great southwest. Where we lived, winters were cold and the snow was deep!) Our electricity consisted of a 32-volt "Windcharger" with paddles that turned when the wind blew, and stored up energy in a row of batteries lined up on a shelf in the shed. Needless to say, we didn't cook electrically! We used coal and wood for both cooking and heating.

After I got acquainted with it, I loved that old coal stove! It had only two drawbacks — hauling the coal into the house, and hauling the ashes out. Other than that, I can't think of any way that a modern stove can beat it. Admittedly, the heat was not as instantaneous, but on the other hand, it was continuous. If neighbors dropped in the coffee was ready, because it was always on the back of the stove. (The nearest neighbors were about 20 miles away — a trip that normally took about an hour, but during a winter storm or a spring thaw could take as long as three or four hours.) There's nothing that warms up chilled toes as satisfactorily as propping them up on an open oven door while sipping that good hot coffee! Nothing really unsanitary about that, either, for the coal stove had the original self-cleaning oven!

At night, we would "bank" the fire by closing the drafts and putting in a few largish-sized chunks of coal. In the morning, the drafts were opened, we'd give a quick shake of the grates, and add a few sticks of cedar kindling. Soon the griddle was hot enough for sourdough pancakes, and the house was warm and filled with the smell of fresh coffee and bacon.

And cooking a big "company" meal was a cinch. (Maybe it just seems that way now, because I was younger then!) It was usually a big turkey dinner, with all the fixings.

The evening before, I would get the turkey ready by plucking the pinfeathers and filling the bird with stuffing. (I don't remember pin feathers lately — do they breed them differently now, I wonder?) The turkey was placed in the big oval-shaped blue enamel roaster with the high-domed lid, and put into the oven after the fire was banked. We would awaken in the morning to the wonderful aroma of turkey which had been slowly cooking throughout the night. When the fire was stirred up for morning, the bird browned beautifully, and by noon, when friends and relatives arrived, it was done to a "T."

Meanwhile, the top of the stove was no mere four-burner surface. There was room for several cooking pots, plus the ever present teakettle and coffee pot. Over and above all this was the warming oven — one of the most useful things ever invented by man! When the roaster came out of the oven it was placed toward the back (meaning the coolest) part of the stove (oh yes — there was still some room there!) and the rolls were popped in. Dressing, potatoes and vegetables were dished up and placed in the warming oven. By the time the gravy was made, the rolls were done, appetites were ravenous, and we were all ready to enjoy the feast!

No, I don't believe I want one of those new-fangled self-cleaning ovens. What I'd really like is an old-fangled coal burner!

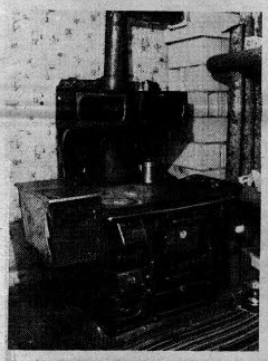


Photo by Mike McClure

Classifieds

GUIDE FOR USING HORSES IN MOUNTAIN COUNTRY SECOND PRINTING — 15 pages; available from The Montana Wilderness Association, Box 84, Bozeman, Montana 59715. Single copy $.75, 2 to 10 $.50 ea, 10 to 100 $.35 ea, 100 plus $.20 ea. Postpaid. (Proceeds go to MWA.)

HELP WANTED. Administrative secretary. Send resume to Rod Roberts, Domestic Technology Institute, P.O. Box 2043, Evergreen, Colo. 80439. Receptionist, with office skills to include typing. Interest in alternative energy desirable.

INFORMATION. Could your problem be solved by a county, state or federal agency, if you only knew which one? Call the Wyoming Information and Referral Service. We will help you contact the right persons in the right agency. Cheyenne residents may call 635-4105. All other cities, dial 1-800-442-2744. It's a free call. Either direct dial or through the operator.

Audubon teacher takes nature lab to students

by George H. Harrison
Reprinted from Exxon U.S.A.
Fall 1976

Nephi's big brown eyes sparkle as he places a small, bleached bone in Jay Reed's hand.

"What do you think this is, Nephi?" Reed asks.

The eight-year-old thinks for a minute and shrugs, too shy to speak.

Other kids at the Skull Valley, Ariz., elementary school gather around to see what Nephi has found. Reed questions them about the bone. Soon, young minds become engrossed, and naturalist Jay Reed has turned another group of youngsters on to the wonders of their environment.

Encouraged by his classmates, Nephi gains confidence. "I think it is a fox bone," he blurts.

Reed nods approvingly. "You may be right." He promises to check and let the children know.

Back in his Boulder, Colo., office, the National Audubon Society representative checks his texts and identifies the bone as the jaw of a kit fox, a rare and diminutive creature of the Southwest. The class of 80 youngsters is thrilled when he writes them a letter confirming the identity of Nephi's schoolyard find.

Now, a year later, Reed still receives small, mysterious packages containing tiny bones of desert animals. He knows his young friends at Skull Valley Elementary School have not forgotten him or his lessons.

He knows, also, that his Audubon Mobile Environmental Education Project (AMEEP) has succeeded once more in stimulating young minds to be more conscious of the natural environment of which all life is a part. Were it not for AMEEP, remote and tiny communities such as Skull Valley might be denied an important element in modern education. Where people can't get to a nature center, AMEEP brings a nature center to the people.

Serving Audubon's Rocky Mountain Region, Reed has taken AMEEP more than 100,000 miles and contacted over 40,000 people since he first rolled his trailer out of Billings, Mont., in 1974. In the states of Arizona, Colorado, Idaho, Montana, Utah, and Wyoming, he carries out a program designed to aid public school teachers, civic groups, governmental agencies, community environmental education committees, and industrial leaders in understanding the environment and communicating its lessons.

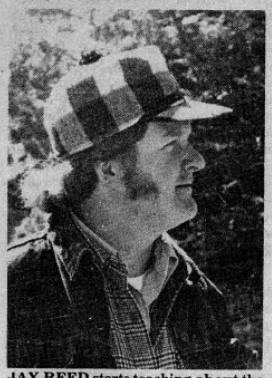
Whenever possible, Reed works through local Audubon chapters, where he gets help in notifying media, setting up meetings, and conducting sessions with interested groups.

"I really don't teach environmental education," the 29-year-old redhead says. "I help teachers develop techniques of their own for teaching environmental education." Reed finds that many teachers are lost outside the "four walls, textbooks, everybody-in-his-seat" classroom situation, and welcome guidance in the art of teaching in the great out-of-doors. Reed helps through a series of intermediate steps. First, he takes a class through a "field trip" in the classroom, then a field trip in the hallway, and finally, a field trip in the schoolyard. Reed shows teachers how students become aware of the validity of the field trip as a learning experience as opposed to a recess for fun and games.

AMEEP is not a mobile nature center in the strictest sense. It is more a resource center from which Reed helps people to relate to their own environment. The nature center in reality is wherever he happens to park — a school yard, a mountain stream, a vacant lot, a summer camp, or even a city park.

When Jay pulls up to a school for a day of teaching, he often has to explain the purpose of the trailer. It is not a walk-through nature exhibit containing stuffed animals. Rather, it is a training facility containing 500 reference books, and many file drawers of teaching aids and research materials.

Any discipline may serve Reed in his environmental teaching. In a language arts class, he turns out the lights and lights a candle. In its flickering glow, he delivers a spine-tingling rendition of "The Cremation of Sam McGee," by Robert Service. Then he asks charmed students if they can draw word pictures as Service did.



JAY REED starts teaching about the environment with a field trip through the classroom.

A Montana high school teacher asks Reed to talk to her class about energy. He begins by asking students to list all the alternate uses for the land being surface-mined for coal in their part of the state. This done, he has them make a list of energy needs in the United States, and current sources of energy, such as the fossil fuels and alternates to them such as solar, thermal, wind, and nuclear. A question-and-answer dialogue follows, which leads students to conclude that the country's energy needs cannot be met without coal.

"Then, how do we get the coal out of the earth," Reed asks. "What do we do with the top soil?" (With younger children, Reed has them put a piece of scrap paper on their heads to represent the top soil. Then they lift the paper off their heads and set it aside for reclamation.)

"What effect does this mine have on all living creatures, including the humans who live around it?" Reed challenges his class. Gradually, in their own words, the students work out the answers to the process of extraction and reclamation. Reed does not prosyletize. If students favor surface mining, he opposes it; if they oppose surface mining, he favors it . . . "so that students are exposed to the many facets of this complex issue," he says.

The role of teacher comes naturally to Reed. He is the son of J. O. Reed, superintendent of schools in Gillette, Wyo. During summers as a schoolboy, Reed worked as a ranger and guide for the Boy Scouts of America at its Philmont Range in Cimarron, N.M. At other times he worked as a research assistant for the Department of Agriculture's Horticultural Field Station in Cheyenne, Wyo.; as a forest fire fighter for the U.S. Forest Service; and as assistant regional planner for the Pikes Peak Area Council on Government.

Along with these activities, he somehow found time also to direct summer recreation camps for mentally and physically handicapped children and serve as a teacher and practitioner in the Outward Bound Program.

Reed was teaching sixth grade in Colorado Springs in 1974 when Audubon Rocky Mountain Regional Representative Robert Turner asked him to investigate the feasibility of a mobile environmental education program.

During the first year, AMEEP was financed with $50,000 in grants from two private sources, the Edward John Noble Foundation and the Estate of George Whittell. In 1975-76, Exxon Company, U.S.A., contributed $30,000 to AMEEP. For 1976-1977 Exxon is again contributing $35,000 for operating costs plus a share of the costs of a new rig. The George Frederick Jewett Foundation gave a quarter of the rig's cost, Exxon another quarter, and Arco half.

Hopes that the program "would accelerate environmental understanding of the Western environment and provide a better base for public decisions affecting environmental management of Western lands" are being fulfilled . . . and much more. Through the dedication and ingenuity of Jay Reed, anyone may learn about, or learn to teach about, "the stuff our world is made of."

Dear Friends,

Writing sometimes is the easiest part of newspaper work. The challenge of many stories is in getting the information — even when the primary sources are government agencies, charged by law with providing information for the public.

Work on the Agent Orange story in this issue began in May of 1976 when we first learned that the deadly chemical was being considered for use as a herbicide in the West. A routine phone call was made to a Dr. Ralph Ross in the pesticide office of the Environmental Protection Agency. But Dr. Ross said he was busy — and he continued to be busy each of four times the reporter, Glen Dodge, called. He advised Dodge to write a letter, but when the letter was written, he didn't bother to reply. In the following months, Wyoming Sen. Clifford Hansen was recruited to reprimand EPA, and a damning report by a Senate committee investigating EPA's regulation of pesticides was released. Still later, after more calls, the information was pried loose — information that was not classified as secret and that should have been readily available under criteria spelled out in the Freedom of Information Act.

Our new landlord, Bern Prideaux

We've moved! Two months ago we were notified that our rent was raised again — the second time in three months. That was enough to propel us out the door in search of new quarters. After thinking about investing in a comfortable old house, we settled on new rental space. It's an appealing place with skylights and windows that is slightly smaller and much less expensive than our old office.

We spent several weekends painting, pounding nails, and plumbing our new darkroom — and then we were ready for the move. Overwhelmed by the sight of our own files, books, impact statements, and heavy mailing machinery, we figured it would take us all weekend and maybe even some professional movers' help.

However, our loyal Lander friends came through. When we arrived at 9 a.m. on Saturday, things began to happen quickly. Staff and Friends carried all our information and equipment down the street and, with a little more effort, up the stairs to our new office overlooking Main Street in a matter of hours.

Thanks to Jack, Mary, and Molly Morehouse, Mike Weber, Pam and Will Bassett, Dan Whipple, Kim and Kristi Nations, and Bob and Terry Davis for the muscle they provided. Thanks to our new landlord, Bern Prideaux, for tolerating the chaos.

If you need us, we're now at 331 Main St., upstairs.

In The News