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North Dakota's delegation listens to agriculture

by Marjane Ambler



(Editors' note: This is the first in a series of articles on the environmental records of the members of Congress from Rocky Mountain and Northern Plains states.)

All three of North Dakota's representatives in Washington, D.C., were first elected before the environment was a major political issue in this country. Because the state has such a strong tradition of returning incumbents to office, all three continue to be re-elected each term despite their generally poor environmental re-

ords, according to Mike Jacobs, publisher of a weekly North Dakota newspaper called the Onlooker.

Sen. Quentin Burdick (D) is North Dakota's only member of Congress serving in the last 15 years who could be considered a moderate on environmental issues. According to his ratings from the League of Conservation Voters and the Environmental Policy Center in Washington, he votes with the environmentalists on an average of 62% of the issues tallied between 1967 and 1976.

His two fellow congressmen from North
(continued on page 7)



Photo by Ernie Day

MORE DUCKS are produced in North Dakota wetlands than in any other state in the lower 48. Sen. Quentin Burdick of North Dakota supported wetlands protection only when he was convinced the state's farmers could live with it.

horror movie. It is studded with experimental animals born dead, or with club feet, cleft palates, deformed skeletons, or their brains oozing outside the cranial cavity. It is spotted with the deaths of birds, chickens, rodents, horses.

It is punctuated with shootings and court suits. It is credited with changing American conduct of the war in Vietnam, and with precipitating a political and religious crisis in Italy.

And running throughout the story is a steady stream of charges and countercharges, accusations and denials, alleging incompetence and downright deceit on the part of scientists, industry, and government officials.

"The buildup of this material (TCDD) in the food chain... and its impact on nonhuman and human ecologies may have severe consequences for man's survival," said Theodore D. Sterling, a stubborn opponent of 2,4,5-T and director of the Computing

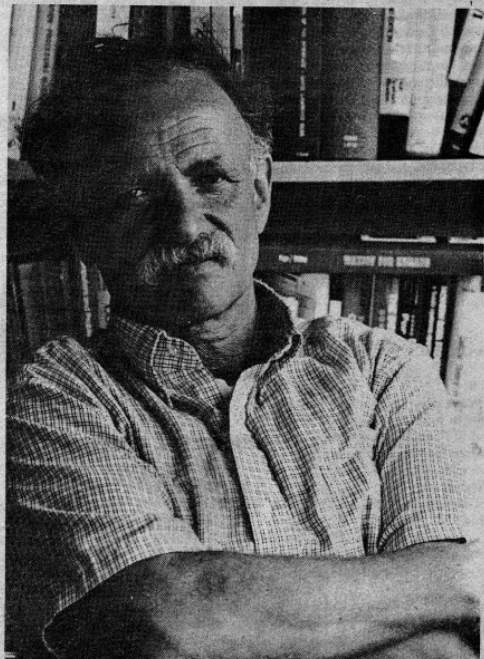
(continued on page 4)

The Environmental Bi-Weekly

High Country News

Vol. 10 No. 4 Friday, February 24, 1978 Lander, Wyoming

Side effects of herbicide shake EPA



THEODORE D. Sterling of Simon Fraser University fears that continued use of herbicides like 2,4,5-T "may have severe consequences for man's survival." An industry spokesman says that, used properly, 2,4,5-T is safe.

But industry maintains it's safe

© 1978 by Justas Bavarskis

For almost four years, the Environmental Protection Agency (EPA) has resisted banning the herbicide 2,4,5-T because, although there was strong suspicion that a crime had been committed, the body could not be found.

The "bodies" may have started to show up.

The fact that they are still alive makes little difference, in this case. What matters, according to preliminary results that the pesticide industry disputes, is that three women — two in Texas and one in Oregon — have traces of the killer dioxin TCDD in their milk.

If these findings by Harvard biochemists Matthew Messelson and Patrick O'Keefe hold up, they will constitute the first hard evidence that 2,4,5-T and its unavoidable TCDD contaminant have worked their way through the food chain and into the human body.

Even if they don't hold up, there is little doubt that TCDD already is showing up in cows raised for human consumption. Most of the 2,4,5-T used in the U.S. is sprayed over rice crops in the Southeast, on range and pasture lands in the Rocky Mountains and Texas; on forests in the Rocky Mountains and the Northwest; and on highway, railroad, and electricity rights-of-way.

The 2,4,5-T-TCDD story (apart from sounding like something out of "Star Wars") reads like the script for a Japanese

2-High Country News — Feb. 24, 1978

HIGH COUNTRY

By Jane Bell

It is mid-February and storms still wrack much of the eastern half of the country. A half-million auto workers are faced with layoffs because of power shortages. Some industries are already stopped. Drastic weather problems are compounded by a paralyzing coal strike. Federal disaster and emergency aid could come close to one billion dollars as a result of the winter.

Except for the coal strike, this winter is virtually a re-run of the very bad winter of 1977. People are already wondering if two tough winters in a row are a portent of the future.

Whether or not they are, a great many people are getting a taste of what may lie ahead. With or without extreme weather conditions, shortages are one of the circumstances we face in the years to come. A severe climatic change could only add to our problems.

But the bad winters may be teaching us some valuable lessons. How do you cope with shortages? In a land blessed with so many resources and advantages, it is difficult to envision a time when we could run short.

No amount of jaw-boning by a President can convince an affluent populace of the realities of an energy shortage. Two bad winters in a row may be having an effect far more powerful than words.

Good, solid information on resource and energy shortages is available to all policy-makers. That includes the Congress, where an energy policy is now under debate. But politicians will move no farther nor no faster than their constituents are willing to let them. And a majority of the public is not yet ready to face the painful realities of a future short of the "big" American dream.

Nearly every kid since the days of the Depression has had it in his heart to own a Cadillac some day. The dream is not restricted just to a big car. It is only symbolic of the bigger dream promoted by the continuous hard sell we have all come to accept — and believe.

But dreams die hard. They become a part of our very nature. It is innate in man to always better his condition — and good thing. So it is that our dreams drive us onward and upward.

It is in the discrimination between a need that can fulfill a better life and a desire for a pure luxury that we get into trouble. And it is here that Madison Avenue

has led us astray. Bigger is better has become our collective, national touchstone.

Now, the painful withdrawal process must begin. Many people have already begun the process. Small European and Japanese cars line the highways. Here in the hills of eastern Oregon there are a surprising number of couples who have reverted to a much simpler life.

A young forester and his wife (a registered nurse) live in a snug log cabin — without electricity or telephone. An energy shortage is going to be far less painful to them than to the New York City penthouse dweller.

When you sit in a cold, dark house, cut off from Washington by the snowdrifts outside, life becomes more basic. It also becomes more precious, even if somewhat uncomfortable.

Blizzards may be blessings in disguise. They may be demanding teachers but we should be much wiser in facing coming trials.



"I'M CUTTING OUT THE MIDDLE MAN."



MORE FROM MOAB

Dear HCN,

This shocking development began with the publication in the January 13 issue of High Country News of our letter concerning a problem with the Atlas Minerals uranium processing plant in Moab.

Shortly after that letter was sent, ISSUE (Interested in Saving Southern Utah's Environment) received a draft environmental statement for review from the federal Nuclear Regulatory Commission, concerning the renewal of Atlas Minerals' license to operate its Moab plant. We found, from extensive knowledge of local conditions, that the draft statement was very weak, incomplete, and heavily weighted in favor of license renewal. Further, it had completely ignored two major threats to the health of local residents and visitors to Arches National Park that the plant poses.

We then prepared detailed comments on the draft document and sent them to the Nuclear Regulatory Commission in Washington, D.C., which routinely sent Atlas Minerals a copy for their comments.

Someone within Atlas then decided to use our comments for purposes other than objective analysis and gave a copy of them to the local development-commerce oriented Chamber of Commerce. The Chamber chairman then read selected excerpts from our comments before a general meeting of the Chamber. The same comments, again taken out of context, were read verbatim over the local radio station as "news."

Within minutes of the radio broadcast, local Atlas employees began an intensive campaign of telephone harassment and threats of violence against known members of ISSUE, with one caller promising to dynamite the home of ISSUE's executive director.

As of this writing, three of those involved in the telephone harassment-and-threat campaign have been positively identified by police surveillance techniques, and local

officials are trying to keep a lid on the affair, to prevent violence and bloodshed. Efforts are being made to determine just who decided to instigate the trouble by "going public" with deliberately selected excerpts from our comments on the relicensing analysis.

It might be noted that from our viewpoint, this event illustrates one of the classic limitations to freedom of speech. As a Supreme Court Justice once noted (we paraphrase) — no one has the right to yell fire in a crowded room, when there is no fire. In sum, freedom of expression does not take precedence over public safety, a principle certainly applicable to the Moab situation, in which it takes very little to enflame certain irresponsible elements of the mining community to violence.

We hope our frightening experiences with the volatile and violent elements of the mining community will serve as a warning to grass-roots environmentalists elsewhere. We were forced long ago to go "underground" by keeping our meetings closed and private, and our membership secret — all but our executive director, who is now a target. But at least our other members are still safe in their anonymity.

F. A. Barnes
Executive Director
ISSUE, Moab Chapter

RESPONSIBLE PROTECTION

Dear HCN,

Many years ago, I suggested that the area between highway 26-287 to Moran (Wyo.) and the Gros Ventre River be given wilderness status because this area, or at least much of it, contained substantial wilderness resources.

I was pleased that portions of this area were included in the RARE I inventory. However, of course, I was disappointed when it was deleted from the RARE II inventory, except for one small area south of Togwotee Pass.

May I suggest that efforts be initiated to protect the roadless lands remaining in this area so that some responsible wilderness analysis can be completed, and that a citizen group become responsible for this area and work toward protection of its remaining wilderness resources?

Also, I certainly imagine that a citizen

group will be developed to protest the oil and gas "rush" in Bridger-Teton National Forest and elsewhere in the Overthrust Belt. Such activities could well doom this and other national forests such as the Rocky Mountain Front area of Lewis and Clark National Forest, another outstanding wilderness, scenic, and wildlife area.

Perhaps we need, rather than a Forest Service, a "National Forest Preserve Service," that will protect and enhance all of its remaining wilderness, scenic, wildlife, and botanic resources.

I would be interested in hearing from any groups formed to protect these areas, because I wish to participate in the responsible protection of them.

John R. Swanson
Box 922
Berkeley, Calif. 94701



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To the tune of mining industry

Feb. 24, 1978 — High Country News-3

Colorado, Wyoming legislators march backward

It's state legislature time in the Rockies — a season that fills us more with trepidation than with hope. Granted, state legislatures in the region have passed a number of good environmental laws in the past few years. But now it seems they will not let the new laws work; they are intent upon doing everything they can to weaken them.

Colorado legislators have taken their share of steps backward. This year, they've targeted for dismemberment the rules promulgated by the state Mined Land Reclamation Board. Similarly, the Wyoming legislature has decided to attack regulations adopted by its Industrial Siting Council.

Colorado has been slower than most states in the region to pass a good mined land reclamation law. Environmentalists called the state's first act, passed in 1969, the "hunting permit law" because it required little more than signatures on a sheet of paper. A 1973 law proclaimed that

"a gently undulating skyline" was the state's major reclamation objective. This law required mine operators to knock off the top few feet of their spoils piles, but demanded little else.

A reclamation law passed in the 1976 session of the Colorado legislature is considered by environmentalists to be a major improvement over earlier acts. Unlike the earlier versions, it covers hardrock mining as well as coal and sand and gravel operations. It requires that mining companies establish a "diverse, effective, and long-lasting vegetative cover" on the areas they have affected. Regulations based on the 1976 law, which were adopted by the Colorado Mined Land Reclamation Board, were judged by the U.S. Interior Department to be at least as stringent as federal strip mining regulations.

Over approximately the same period of years Wyoming, too, has been improving its environmental laws and corresponding

regulations. The state passed an Industrial Siting Act in 1975 that requires state review of the siting of major industrial facilities with construction costs exceeding \$50 million. The state's Industrial Siting Council decided that this law applies to large mines as well as power plants and other industrial facilities.

But that was before the legislatures of Wyoming and Colorado settled down to work this year. Now, the environmental backsliding has begun.

In Colorado, the Senate committee on local government is considering a joint resolution (SJR 3) that would gut the Mined Land Reclamation Board's regulations. In Wyoming, the Senate has approved a legislative order that may make large mines exempt from the state siting review.

In both cases some legislators are objecting to regulations that give teeth to the general goals they set by law. While they claim they do not wish to gut these laws,

some of the legislators pushing the destructive bills were the same ones who were opposed to the siting and reclamation acts in the first place.

We will not address the question of whether it is the job of legislators or the job of the courts to judge the legality of regulations promulgated by the governor's appointees. Others in both Colorado and Wyoming have raised this important legal question.

We are more concerned about the legislators' regrettable tendency to undermine in one year the environmental safeguards they've inspired the year or two before. To some of their constituents, it looks like the legislators are afraid to face the mining industry and say, "We expect the best from you." In states with a land base as precious as Colorado's and Wyoming's, such a commitment is the least they can do for the people they represent.

—JN

West has a stake in the coal strike

The United Mine Workers of America (UMWA) represents primarily underground coal miners in the East. The union has struggled through the coal companies' reign of terror and has developed a solidarity rare in modern labor organizations.

The UMWA has also developed a well-deserved reputation for intransigence in labor negotiations and volatility in strikes. The union is once again displaying these qualities in its current contract strike, now under way for nearly three months. The UMWA bargaining council has rejected a proposed pact hammered out by union president Arnold Miller and the companies. Despite headlines screaming out about the threat of massive job losses, electricity cutbacks, and industry closures — not to mention three months without paychecks — the miners are holding out for a right to conduct wildcat strikes during the term of the contract, a provision unparalleled in other major labor settlements.

The wildcat strike has traditionally been the way that miners have brought on-the-job grievances to the attention of management. The contract now contains a grievance mechanism, however, so it should make the wildcat a weapon of the past. For whatever reasons, the miners are tenaciously holding on to their right to strike,

despite an offer of a 37% increase in benefits and wages. Presidential action to end the strike is reportedly imminent.

So, what does this Eastern controversy have to do with the West? A close look at the trends in the coal mining industry indicates that it has a great deal to say about the West's future.

While Eastern UMWA members have been on strike, most union members in the West have stayed in the mines after negotiating separate agreements. Most of the West's coal production is unaffected anyway, because the majority of miners are not organized by the UMWA.

Now there are indications that Eastern and Midwestern utilities are looking to this region for coal to keep their power plants burning. The Tennessee Valley Authority, for example, has agreed to buy 40,000 tons of coal a week from a Kerr-McGee mine in the Powder River Basin. This trend could place the Western UMWA in the uncomfortable position of playing the strikebreaker to the Eastern miners.

Coincidentally, the National Coal Policy Project released its recommendations for future coal policy during this labor struggle. The committee, composed of some environmentalists and some industrialists, proposed that most increased coal production come from the East, not the West. This

solution would certainly gladden the hearts of many Western environmentalists.

However, a look around the region indicates that coal companies aren't exactly eager to depend upon the Eastern fields. And the United Mine Workers are a major cause. The companies that are opening mines in the West are employing various tactics to avoid signing contracts with the UMWA. For example, using the right-to-work laws of many states, the companies will simply hire non-union employees if protracted negotiations develop. By avoiding the UMWA, they also avoid the union's costly wildcat strikes and extended contract strikes.

The importance of this stable labor situation in the West should not be underestimated. Amax Coal, for example, is one of the leading Western holdouts against the UMWA, even though the company operates several Midwestern mines with UMWA miners. By 1985, Amax's Powder River Basin mines are expected to be producing 35 million tons of coal annually — more than all of Amax's other mines combined. At that production level, a strike of the duration of the current one could cost the company close to \$100 million in lost



production at current coal prices. Without UMWA miners, this risk is virtually eliminated.

If the UMWA agreed not to conduct the costly wildcat strikes, at least one barrier — a significant one — to relying more heavily on Eastern coal would be removed.

There are, of course, many other factors that contribute to the Western coal rush, of which the labor situation is only one. But, if the UMWA will give in on the strike issue, it will bring the pros and cons of Eastern versus Western coal more closely into balance. Perhaps then, as the National Coal Policy Project suggests, we can turn back the rush from the East.

—DSW

Mining law changes crucial; another field hearing, please

by Bruce Hamilton
Sierra Club Representative

Recent controversies over mining proposals in the Black Hills of South Dakota, the Stillwater Complex in Montana, and the Kirwin area in Wyoming illustrate the intense interest of citizens in the Northern Plains and Northern Rockies in hard rock mining.

Congress is considering bills that would overhaul the antiquated 1872 Mining Law that covers hard rock mining on public lands. But despite their demonstrated interest, the citizens in this region are not being given an adequate chance to be heard.

The House subcommittee on mines and mining is holding field hearings on two reform bills — H.R. 5831 (backed by the American Mining Congress) and H.R. 9292

(backed by the Carter Administration and environmentalists). One hearing was held in Grand Junction, Colo., on February 18. But it's an expensive and difficult place to get to from northern Wyoming, Montana, or South Dakota in the middle of the winter.

Any change in the existing mining law could have a tremendous impact on the future of hard rock mining and the future of the public lands in the Northern Rockies and Northern Great Plains. I believe we ought to have at least one field hearing on this important legislation within this region — in Billings, Mont. If you agree, write Rep. Abraham Kazen, Jr., chairman of the subcommittee on mines and mining, House Interior Committee, Washington, D.C. 20515, and let him know your feelings.

Then, if we can get a hearing, let's have a strong turnout.

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Doug O'Looney photo

4-High Country News — Feb. 24 1978

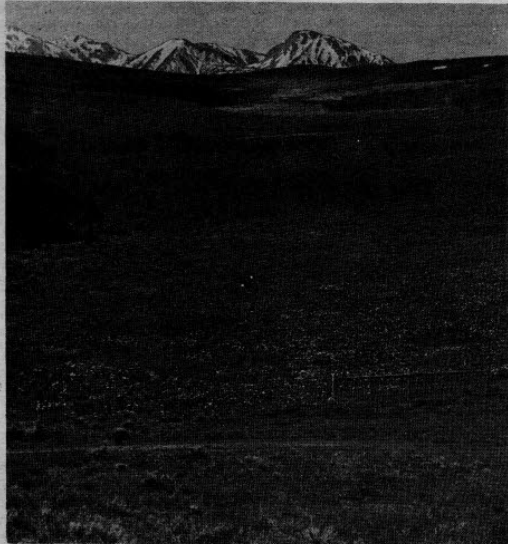


Photo courtesy of Dow Chemical Co.

HERBICIDES ARE USED extensively in forests and range land in the West. High in the Beaverhead National Forest in Montana, this wyethia-infested range was treated in the foreground. Wyethia is shown behind the fence line where it was not treated.

Side effects of herbicide . . .

(continued from page 1)

Science Program at Simon Fraser University near Vancouver, B.C.

"We believe 2,4,5-T is one of the safest of all herbicides and its TCDD content is so tiny that it is of no toxicological significance when used as a herbicide," said William Seward, a public relations officer for Dow Chemical Co. of Midland, Mich.

Until recently, despite repeated pleas by some of its own scientists, environmentalists, and senators and congressmen, the Environmental Protection Agency has refused to ban 2,4,5-T, saying there was not enough evidence to show that the risks attendant upon its use outweighed the undeniable economic benefits.

New research and a semi-routine reviewing process, however, have now led EPA to prepare, very carefully, to take the first step toward banning, first, 2,4,5-T, then other chemicals which also contain TCDD.

Within the next month or two, according to two EPA officials involved in the program, the agency will issue a Rebuttable Presumption Against 2,4,5-T. This will mean that, if the pesticide industry fails, through a lengthy process of statements, reviews, hearings, and, quite likely, court suits, to prove that the herbicide when used according to directions is as harmless as industry says it is, then 2,4,5-T no longer will be used in the Rocky Mountains or anywhere else in the U.S.

CRIME AGAINST HUMANITY

During the Second World War, Sterling has written, Dr. E.J. Kraus at the University of Chicago suggested to Secretary of War Henry L. Stimson that some herbicides could be used to destroy crops, and thus become powerful military weapons.

Since the U.S. had not signed the Geneva Protocol of 1925, which declared the use of herbicides a war crime and a crime against humanity, the government encouraged research on the project.

The resulting phenoxy herbicides — 2,4-D and 2,4,5-T — were not developed until the war had ended, and so went on the market for civilian, rather than military, use.

Phenoxy herbicides essentially are weak acids, slightly soluble in water and petroleum products. Of these, 2,4-D is by far the most widely used. Critics argue that, even though 2,4-D does not contain the TCDD dioxin, it nonetheless poses serious environmental and health hazards. Industry disagrees with those arguments.

2,4,5-T (its proper name is 2,4,5-trichlorophenoxyacetic acid), does contain TCDD, which bears the unwieldy proper name of 2,3,7,8-tetrachlorodibenzo-p-dioxin.

In its pure form, TCDD looks like tiny shavings of crystal. It is an unavoidable contaminant of 2,4,5-T and creeps in during the manufacturing process. When manufacturers first started making 2,4,5-T, its TCDD content was sometimes 800 times higher than it is today. With modern processing techniques, TCDD content is kept down to less than 0.1 parts per million — that is, 0.1 milligrams of TCDD for each kilogram of 2,4,5-T.

While there is vigorous argument over whether even this minute quantity is safe, the herbicide industry and its critics agree on one point: TCDD certainly is one of the deadliest substances known to man.

TCDD appears not only in 2,4,5-T, but also in pentachlorophenol, Silvex, Ronnel, Erbon. Altogether, as of 1976, TCDD appeared in 39 different herbicides, pesticides, rodenticides, insecticides, and fungicides.

Until recently, now-born babies were bathed in hospitals in a hexachlorophene solution. Hexachlorophene contained TCDD. Some flea collars for dogs contain TCDD.

At first, chemicals containing relatively high proportions of TCDD were spread over

pastures, food crops, forests, gardens, waterways, livestock, fence posts, to the tune of several million pounds a year.

Then during the Vietnam War, the military sprayed about 11 million gallons of Agent Orange, made of equal parts of 2,4-D and 2,4,5-T, over the South Vietnamese countryside. (For a discussion of Agent Orange see HCN 3-11-77.)

BIRTH DEFECTS

In 1966, the Bionetics Research Laboratory in Bethesda, Md., reported that 2,4,5-T caused birth defects in rats and mice. Three years later, the President's science advisor said there were indications that experimental animals fed with 2,4,5-T produced offspring with cleft palates and kidney troubles. At the same time, reports

Why must there be catastrophic evidence before a pesticide is cancelled?

started filtering in from South Vietnam. An unusual number of stillbirths and birth defects were occurring among Vietnamese who lived in heavily sprayed areas, the reports said. The accuracy of those reports still is disputed, however.

In April 1970, Surgeon General Jesse L. Steinfeld told a Senate subcommittee that 2,4,5-T containing one part per million TCDD had produced birth defects in experimental animals. The Department of Agriculture promptly banned the use of 2,4,5-T around lakes, ponds, and ditch banks.

Almost four years ago, the EPA announced it would hold public hearings on the remaining legal uses of 2,4,5-T and other TCDD-contaminated pesticides with an eye to banishing the herbicide from rice paddies; about 3.5 million acres of range, pasture, and forest; and 4.5 million acres of rights of way.

A series of delays, motions, and meetings followed this announcement. On June 24, 1974, almost a year after the EPA had declared its intention to hold the hearings, it canceled the proceedings, saying, "The evidence which would largely determine the outcome of those proceedings remains scientifically unavailable."

The Environmental Defense Fund asked EPA to reschedule the hearings. "The mere existence of substantial doubt as to whether a pesticide is injurious to public health is . . . sufficient grounds for . . . cancellation of registrations of the pesticide," said EDF attorney William Butler. "The EPA is willing to permit continued use of the environment as registrants' laboratory, and the population at large as their unwilling guinea pigs."

Four senators in September, 1974, also asked EPA to reinstate the hearings. "We believe a 'substantial question of safety' has been raised under any reasonable meaning of these words," the senators said in a letter. EPA already has the information it needs to determine "the benefits associated with the continued use of the herbicide as compared to the risks of that use however imperfectly known at this time," they said.

Two years later 21 congressmen sent EPA another letter. "In the past only catastrophic evidence has precipitated cancellation of a pesticide, often after irreparable damage has already been done," they said. "Why must there be catastrophic evidence before a product (2,4,5-T) is cancelled?" they asked.

EPA did not begin new hearings. Instead, it plugged ahead with a dioxin monitoring program. The essential aims of the program were to determine how persis-

tent TCDD was; whether it built up in the food chain; whether it could be found in plants, fish, wildlife, and livestock; and, most important, whether it was showing up in human beings.

Today, more than two years later, only 85 beef fat samples have been analyzed for dioxin content, EPA says. Hundreds of other samples, including human milk, have been collected. But difficulties with the expensive and extremely complicated procedures employed to accurately detect TCDD in the low parts per trillion range have delayed the analysis of those samples, the agency says.

TODAY — ON FIELDS, FORESTS

The industry in 1971 stopped publishing figures on 2,4,5-T production "for competitive reasons," so it is difficult to determine how much of it has been used in recent years. William Seward, a public relations man for Dow, said five million pounds would be a ballpark figure for 1977.

The U.S. Forest Service alone, in 1976, spread almost 39 tons of it over 47,000 acres of land to control weeds and brush and to promote the growth of harvestable timber. It used an additional 12 tons of a 2,4-D-2,4,5-T mixture.

Silvex often serves as a substitute for 2,4,5-T, and the Forest Service used 2.5 tons of that in 1976. Silvex also went into waterways to control weeds and onto lawns and gardens. Pentachlorophenol goes onto fence posts, telephone poles, and railroad ties to preserve the wood. Ronnel is sprayed over livestock to control insects. 2,4,5-trichlorophenol is used to treat wood pulp at paper mills.

A 1975 report entitled "The Phenoxy Herbicides" published by the industry-sponsored Council on Agricultural Science and Technology (CAST) is treated like the Bible by the U.S. Department of Agriculture and state agriculture departments. "Present evidence indicates that the dioxin contaminant in 2,4,5-T and Silvex is a matter of academic rather than practical interest," the report said.

CAST said, without explaining how it arrived at the figure, that no more than eight ounces of TCDD are spread through the U.S. each year, so "there is no substantial supply of the chemical in the environment. . . ."

The crucial question, say both industry and EPA, is how much TCDD people are actually exposed to. Industry contends there is so little TCDD that it poses no harm. Sterling disagrees. He maintains



REP. JOHN MOSS looked into the herbicide question when he served as the chairman of the House subcommittee on oversight and investigations. EPA may not have been completely forthright with him, recent congressional investigations indicate.

that, because TCDD is so toxic, it is dangerous no matter how little of it there may be in the environment.

As industry has steadfastly denied that 2,4,5-T could cause any significant problems, the charges against it and TCDD have kept mounting. One researcher reported he had fed pregnant mice with minute doses of TCDD. With a dose of three micrograms (a microgram is one-billionth of a kilogram) per kilogram of body weight, some offspring had cleft palates and kidney disorders. At the lowest dose, one-thousandth of a microgram, some mice were born with their brains misplaced. "Whether these latter observations were due to chance rather than treatment with TCDD is now under investigation," the report said.

Sterling in 1974 presented the Royal Commission Hearings on Herbicides and Pesticides in Vancouver, B.C., with a selection of studies, some conducted by the manufacturers themselves, that showed, Sterling said, the toxic effects of the herbicide and its dioxin.

Dow Chemical Co. reprinted Sterling's 27-page testimony together with a 73-page rebuttal. Sterling, Dow said, frequently had quoted questionable studies, misinterpreted other studies, and ignored mitigating portions of yet other studies.

"It is clear that when 2,4,5-T is used according to official registrations in the

The 2,4,5-T story reads like the script for a Japanese horror movie.

U.S.A. and Canada that there is no unreasonable risk to man or the environment," Dow said. "Sterling may not agree with this, but a large majority of the expert scientists who are familiar with the data do agree."

Sterling, indeed, did not agree. "Not all scientists adhere to professional ethics," he wrote in the magazine *Humanist* in Canada in February, 1976. "Some suppress data, make incorrect reports, or at least fail to report unfavorable observations," he said.

OUTSIDE THE LABORATORIES

The mounting allegations against 2,4,5-T were not confined to the laboratories. For years, reports had been trickling in of birds and sheep found dead in areas sprayed with 2,4,5-T and of horses sickening from rubbing against corral fences treated with pentachlorophenol. These reports were sometimes disproved, and sometimes, for lack of verification, treated as anecdotes rather than scientific studies.

After all, the amounts of TCDD being dealt with were minute — in the parts per trillion range — and very few laboratories in the country had the sophisticated equipment required for such delicate analysis. Dow's was among the finest of those labs, so what Dow said had to carry weight.

In the meantime, though, Matthew Messelson and his colleagues at Harvard were developing a technique to detect these minute quantities of TCDD. Now, industry and the EPA agree that the Messelson technique can accurately detect TCDD in quantities as minute as 10 parts per trillion.

Spurring on the research were several disturbing incidents involving TCDD.

It had been known since the 1890s that workers exposed to chemicals similar to 2,4,5-T developed chloracne, a skin disease far more severe than teen-age acne. Dow in 1964 shut down its trichlorophenol plant because 69 workers contracted chloracne.

A new plant has been built and Dow has encountered no new problems with the workers there, Seward said.

In 1971, a truck sprayed 2,000 gallons of what the driver thought was waste oil on a horse corral at a farm owned by Judy Piatt and Frank Hempel near Moscow Mills, Mo. Later, it turned out that the oil had been stored in tanks previously used to make Agent Orange. The waste oil sprayed on the arena contained about 32 parts per million TCDD.

A few days after the spraying, sparrows and barn swallows began to die. Soon, the corral was littered with the bodies of birds, chickens, and rodents. Cats and dogs died. Forty-five horses died. Piatt's daughter, Andrea, 6, was hospitalized for several weeks with a kidney ailment.

In 1970, Donald Lee, a British chemist, made some TCDD for experiments he was conducting on 2,4,5-T. Within five weeks, Lee noticed his skin was getting oily. Soon, large blackheads spread over his face and neck. The chloracne disappeared, only to be replaced within a year by stomach upsets, bowel disturbances, and a feeling of general apathy. Normally a mild man, Lee became irritable. He developed headaches. The hair started falling from his head, and coarse, black hair grew on his back and shoulders.

Lee was one of the experts the Italian government called in when an explosion occurred in a vat containing trichlorophenol at a Swiss-owned factory 20 miles from Milan. A cloud of vapor formed and settled around the town of Seveso. Many of the town's pregnant women, the vast majority of them Catholics, demanded abortions. The Vatican, which has a significant say in Italian politics, opposed the abortions, and urged instead that any deformed babies be adopted. Several members of Italy's Christian Democratic government uncharacteristically opposed the Vatican.

Concern about 2,4,5-T was rising in the U.S., too. Hermon Seaver, an organic farmer near Grand Marais, Minn., said in 1976 that the Forest Service had been spraying Silvex and 2,4-D near his farm. His children, Seaver said, developed diarrhea, headaches, and emotional problems after the sprayings. The next time the Forest Service helicopter floated by, Seaver shot at it.

He was afraid, he told the jury, that the spraying would contaminate the stream his family used for drinking water. The jury deliberated eight hours before it acquitted him of a charge of aggravated assault. The Minnesota Health Department found 0.26 parts per billion 2,4-D and 0.5 parts per billion Silvex in a pond near Seaver's home.

In Oregon, shots were fired at a plane swooping in to spray the Siuslaw National Forest. Citizens Against Toxic Sprays filed suit against the U.S. Forest Service and won an injunction that halted the spraying. Similar suits have been filed in Wisconsin, Michigan, and Arkansas.

In all four cases, the courts ordered a temporary end to the spraying. But, in each case, the court acted on the very narrow grounds of the adequacy of an environmental impact statement, rather than on the pros and cons of the spraying itself.

A similar dispute is taking shape in Idaho, where the state fish and game department is objecting to Forest Service proposals to spray timber with 2,4,5-T.

CONGRESS LOOKS AT PESTICIDES

Sen. Edward Kennedy's (D-Mass.) subcommittee on administrative practice and procedure took up the general pesticide regulation problem in Washington.

"Scientific research undertaken by the pesticide industry, as well as by govern-

ment agencies, demonstrates that possibly a substantial number of pesticides have the potential for causing in humans cancer, birth defects, damage to the nervous system, genetic mutations, interference with biological reproduction, and other harmful effects," the subcommittee said in a staff report entitled "The Environmental Pro-

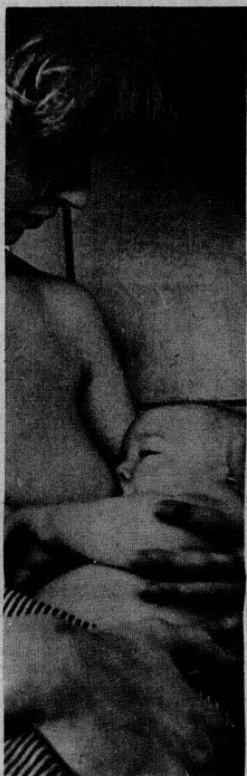


Photo by Mike McClure

MOTHER'S MILK has been found to be contaminated with herbicide poison.

tection Agency and the Regulation of Pesticides," released in December 1976.

"In an almost classic example of poor governmental regulation, EPA's pesticide program has struck an incorrect and dangerous balance between the sometimes conflicting demands of limited resources, bureaucratic efficiency, and public health," said the report. "EPA for six years has paid too little attention to warnings of government investigators, congressional reviews, and even some of its own officials."

Worse than that, the subcommittee alleged that "The EPA has misled the Congress, the General Accounting Office, and the public regarding its pesticide programs."

The allegation was based partly on EPA's statement to Rep. John Moss (D-Calif.), chairman of the House subcommittee on oversights and investigations, that, "Data submitted in support of new or continued registration are all reviewed to

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determine whether or not the product would pose unreasonable risks." A draft statement said that data were "all reviewed completely."

Russell Train, then EPA's administrator, removed only the word "completely" from the final statement he sent Moss, even though Irwin Auerbach, an EPA program analyst, had reviewed the draft and said it was questionable because "EPA's review for reregistration is cursory. It does not include in-depth examination and evaluation of data previously submitted."

Train told Kennedy in a letter that he had a "particularly vehement objection to your staff's findings . . . that EPA misled Congress and the public. He said 'a careful reading of the draft and final response to Chairman Moss will reveal substantial changes'."

UP FOR REVIEW

Meanwhile, 2,4,5-T was high on the list of suspect chemicals EPA had drawn up for review.

New studies also were coming in. Some said that TCDD did not leach into the soil. One reported it decomposed in the soil within three months. Others said it did not easily dissolve in water. Another said TCDD decomposed in ultraviolet light within six hours. Yet others argued fire built up TCDD, and expressed fears that a forest fire in a sprayed area could produce the dioxin.

Two University of Wisconsin researchers found that rats fed as little as five parts per trillion TCDD developed tumors. The EPA itself reported that, of 85 beef fat samples taken from cattle grazing on sprayed land in Texas, "one shows a positive TCDD level of 60 parts per trillion (ppt); two samples appear to have TCDD levels at 20 ppt; five may have TCDD levels which range from 5-10 ppt."

Dow, too, submitted the results of a two-year feeding study on rats. Seward said the preliminary results indicated there was "no increase in the incidence of tumors in rats." The rats' bodies are still being examined, he said.

Finally, Harvard's Messelson and O'Keefe took "about 24" samples of human milk from the Boston area, where no spraying had occurred, and from three areas where spraying had occurred — Springfield, Mo., San Angelo, Tex., and near the Siuslaw National Forest in Oregon.

They chose to look at the whole milk, rather than milk fat, because TCDD tends to concentrate in fat. About one part per trillion of TCDD showed up in three of the samples, O'Keefe said. Two of these were from women in Texas, and one was from a woman in Oregon. When he later retested the Oregon woman, O'Keefe said he could detect no TCDD, though the detection limit was 0.4 parts per trillion and "maybe we could have found something if it had been lower, or maybe she excreted it."

Carolyn Offutt, EPA's dioxin project manager, said, "I don't believe it's impossible to detect TCDD at those levels, but until we have confirmation of such low levels I'd have trouble supporting the measurements."

Dow's Seward said, "We don't believe there's been a demonstrated capability to detect TCDD in such small amounts. . .

(continued on page 6)

Banning the use of 2,4,5-T could make a sizeable dent in the pesticide industry's \$2 billion per year worldwide business.

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Residents tackle North Platte River conflicts

The North Platte River near Saratoga, Wyo., is known to tourists and many Wyomingites mainly as a favorite place for raft and canoe trips. Yet conflicts are developing among recreational users, ranchers, towns in the basin, and the city of Cheyenne on the other side of the mountains.

These potential conflicts — and possible cooperative solutions — were explored Feb. 11 by participants in a river planning workshop in Saratoga sponsored by the Wyoming Outdoor Council. John Eckhardt, head of the local organizing group for the workshop, says a permanent committee has been formed to try to deal with many of the problems identified at the workshop.

The workshop attracted Saratoga city officials, ranchers, environmentalists, and several state and federal agency representatives. Some of the participants were aware of problems prior to the workshop but viewed them fatalistically. "Now

they're not exactly running to get in the traces," Eckhardt said, meaning that not everyone is eager to jump into activism. "But at least they're not all going to lie down and roll over," Eckhardt said.

Mary Chillemi, who grew up along the river, said she was pleased with the results. "It shows people can get together and sit down and be civilized and work things out."

Participants asked the followup committee to keep them in touch with schedules for other water meetings. "No matter who is sponsoring the meeting, if the subject is water, you better be there," Vern Vivian, one of the workshop planners and a local sheep rancher, instructed the group.

Uppermost in most of the participants' minds was the impact of recreational water users. One rancher along the river said he was upset with people he considered "environmentalists" who float down the North Platte leaving litter but who complain about water pollution from livestock. Recreational users at the workshop also said



JOHN ECKHARDT hopes local residents won't "lie down and roll over."

the river was becoming too crowded at some times of the year to be enjoyable. "We've got half of Colorado on that river every Fourth of July," one man said.

Eckhardt said the followup committee will put a high priority on looking into management possibilities for recreational users. A permit system was suggested at the workshop.

Colorado was blamed for some of the North Platte's pollution. Although a section of the North Platte is being considered by Wyoming for designation as a Class I stream, residents along the river say they sometimes see a milky runoff from tailings ponds near the river's headwaters in the Colorado mountains. There are several mines there, Eckhardt says. While participants' attitudes toward mineral development varied widely, all seemed to be concerned about the effects of the Colorado development on the North Platte in Wyoming.

Water development plans for the city of Cheyenne were also criticized by workshop participants since the plans include diversions from the North Platte basin.

Many of the workshop participants were surprised to learn that municipalities such as Saratoga, which has a water right to only two second feet of water, could condemn agricultural water. While they didn't argue with the fact that people need water, they were concerned that Cheyenne, for example, might sell its water to industry or that Saratogans would use much of the water for lawns. Saratoga Mayor Kathy Glode said the city is attempting an aggressive water conservation program, in an attempt to live within the limits of its present water right and water treatment facilities.

The workshop was the last of three sponsored by the Wyoming Outdoor Council with a federal grant from the Department of Health, Education, and Welfare.

The first was held in Pinedale, Wyo., to discuss the Green River. That group decided to seek funding for small agricultural water storage projects. They also are interested in finding ways to preserve agricultural lands along the Green and its tributaries.

A Kemmerer workshop came up with several recommended changes in state water law, such as designating irrigation as a preferred use and requiring that any change in use be accompanied by a statement of intended use.

The group also voted to urge Gov. Ed Herschler to adopt a state water policy, using input from local citizens.

Colleen Kelly and Don Snow of the Wyoming Outdoor Council said the council staff will continue to work with the three groups to find ways to manage the rivers as the local people would like to see them managed.



RESIDENTS OF THE NORTH PLATTE basin broke into groups to discuss industrial, municipal, recreational, and agricultural demands on the river.

Side effects of herbicide...

(continued from page 6)



Photo courtesy of Dow Chemical Co. **DOW CHEMICAL** reported no increase in the incidence of tumors in rats after a two-year feeding study involving TCDD. However, University of Wisconsin researchers did find a correlation between TCDD and tumors in rats.

They didn't offer those samples to other labs to check their results. The results haven't been published; they haven't gone through the scientific review process. We don't put much stock in them."

"WE NEED HERBICIDES"

"We need herbicides," says a booklet Dow has put out as part of its \$1 million effort to keep 2,4,5-T on the market. "to reduce the cost of agricultural crops, to renew grass cover on our prairies, to restore the flow of water in once-dry creek beds, to improve the shrinking habitat of our nation's wildlife — to enhance the quality of our environment."

Two government organizations, the Economic Research Service and the Ag-

ricultural Research Service, in a joint report that dealt with 1969 figures, said a ban on 2,4,5-T would cost "domestic users" \$52 million or \$172 million, depending upon whether other phenoxy herbicides still were legal. It cited additional costs to farmers, government agencies, and utility companies that could bring those figures up to \$96 million and \$300 million, respectively.

That could make a sizeable dent in the pesticide industry's \$2 billion per year worldwide business. Nonetheless, EPA now seems determined to proceed with its first steps aimed at taking chemicals off the market.

"If they do it, we'll fight," said Seward. "Definitely."

Is there TCDD close to home?

Here is a summary of replies provided by the Rocky Mountain states when asked about their use of chemicals containing TCDD.

Arizona: 800 pounds of 2,4,5-T and 1,000 pounds of Ronnel in 1975.

Colorado: 72 gallons of 2,4,5-T and 301 gallons of Silvex around ornamental shrubs, plus 1,600 acres treated with 2,4,5-T and another 100 with Silvex to control woody plants, brush, and broad-leaf weeds. Four pounds and six gallons of Ronnel used as insecticide by ranchers. No statistics on the use of pentachlorophenol and Erbon.

Idaho: no statistics kept

Montana: statistics started to be kept last year

New Mexico: unknown

North Dakota: no statistics kept

South Dakota: no reported usage

Wyoming: no firm statistics kept, though 2,4,5-T and Silvex were used for experimental purposes, and there was fairly widespread use of pentachlorophenol and Ronnel

All the states said their records were by no means complete. In addition, all the states said they had neither the money nor the equipment needed to monitor plants, animals, and humans for TCDD residues.

Justus Bavarskis is a freelance writer living in Hudson, Wyo.

Research for this article was paid for by the HCN Research Fund.

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N.D. delegation listens to farmers. . .

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In environmentalists' ratings over the past decade, Andrews averaged 36.5%, Burdick 62%, and Young 10%.

(continued from page 1)

Dakota, however, are much lower on the LCV ratings. Sen. Milton Young (R) has averaged 10% since 1967. Rep. Mark Andrews (R) has averaged 36.5% since 1971, with a high of 53% in 1974. Young was elected to the Senate in 1945 and Andrews to the House in 1963.

A staff member in Andrews' office says, however, that Andrews is sensitive to environmental issues. "He wouldn't consider himself anti-environmentalist. You should see the ratings from the John Birch Society!" the staff member says.

Both Andrews and Burdick voted for final passage of the federal strip mining bill, although they didn't support all the amendments that environmentalists supported. Young was absent for the vote.

Jacobs says that their votes aren't surprising. Andrews campaigns as the "farmers' friend," and in North Dakota, there are a lot of conservative farmers and ranchers who are very upset with strip mining.

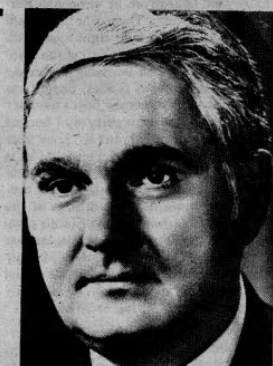
"Voting in favor of controlling the coal

ily labeled pro-agriculture or pro-environmentalist. The amendment was introduced to eliminate federal protection of wetlands, which are important as waterfowl habitat. Burdick voted with the environmentalists against the amendment, but only after he was sure farmers in his state could live with the amendment. According to a committee staff member, he was the only Northern Plains senator who voted with the environmentalists on the issue. Young voted for eliminating federal protection.

BURDICK RESPONSIVE

Burdick also heard from some farmers and ranchers in the state when he was voting on amendments to the Clean Air Act. The United Plainsmen, a landowner-conservationist organization in the state, is active in trying to maintain clean air in the state.

Burdick, Jacobs says, is very responsive to his constituents on issues on which he



REP. MARK ANDREWS doesn't consider himself anti-environmentalist.

ments on auto emissions, however. Jacobs explains, "What can you expect from a North Dakota senator? You can only deliver a man on issues that are close to his heart or at least to his constituents' hearts." Auto pollution is considered a California issue by most North Dakotans.

Young voted to weaken both the auto emissions and the nondegradation sections of the Clean Air Act amendments. In fact, on eight major votes tallied by the Sierra Club during 1977 including nuclear breeder reactor funding, the national energy act, the Clean Water Act, water projects, the Clean Air Act, and the strip mining bill, Young voted wrong on all except the strip mining bill, for which he was absent.

Andrews had a similarly dismal record in the House, according to the Sierra Club. Nine votes were tallied there, including locks and dams on the Mississippi, the Montana Wilderness Study Act, breeder reactor funding, energy conservation, water projects, Clean Air Act, and the strip mining bill. Andrews' only correct vote in the eyes of environmentalists was on the strip mining bill.

Both Burdick and Andrews support the development of nuclear power. An An-

draws staff member explains that Andrews has also voted for solar power and other alternative energy legislation.

Nuclear power has not been given much emphasis by North Dakota environmentalists, according to Jacobs. "It breaks down to the peacenicks, who are against nuclear power, and the Rural Electric Cooperatives, who are for it," Jacobs says.

ANDREWS UNBEATABLE

Prospects for getting candidates who would have better environmental attitudes elected in the near future in North Dakota appear to be practically nil. While Andrews, a Republican, will be up for election this year, he is considered "unbeatable" by the Democrats, Jacobs says. He usually wins 60% to 70% of the vote cast. His only serious challenge was in 1974 when he faced Byron Dorgan, who is considered the friendliest of North Dakota politicians toward the environmentalists, according to Jacobs.

"If anything, Burdick's been better on the environment than his recent opponents," Jacobs says. In 1970 he faced Thomas Kleppe, who many environmentalists know for his poor record as U.S. Secretary of Interior under Gerald Ford. In 1976, Burdick defeated Bob Stroup, a former state legislator who is considered pro-development. However, Burdick made no attempts to campaign as an environmental candidate.

An environmental candidate, Jim Jungroth, ran against Young in 1974 on the Independent ticket, primarily to make sure Bill Guy, former head of the Western Governors Regional Policy Office, wasn't elected, according to Jacobs.

Young's term expires in 1980. Since he just turned 80 years old, he may not run again. If he does run, however, North Dakota voters may very well return him to office. Jacobs illustrates the state's fondness for incumbents by pointing out that in the state's 88-year history, only 17 senators have served, three of them for less than a year.

Research for the article was paid for in part by donations to the HCN Research Fund.

Burdick reportedly went to the National Clean Air Coalition and said, "My people say I'm important on this issue. What do I do?"

industry is not going to cost any votes in North Dakota," Jacobs says. While non-resident coal companies might have opposed the bill, the rural electric cooperatives did not actively oppose it, he says.

BLACK MARKS

The North Dakota delegation consistently earns black marks from environmentalists over one issue. That issue is the Garrison Diversion, a massive project for redistributing water in the state. Environmentalists and some landowners have opposed the project because, they say: it will take more land out of production than it will benefit; landowners' rights aren't being given proper consideration; acres of wildlife habitat will be lost; and polluted return flows will go into Canada.

However, all three congressmen, the governor, and the state legislature have consistently supported expansion of the project, which was included on President Jimmy Carter's list of projects that should not get full funding from Congress.

Andrews conducted a poll that showed 79% of the people in the state support the diversion. "You can't tell all those people that it's a bad idea," one member of Andrews' staff says. Another said that, in fact, the issue has tainted the word "environmentalist" so much that a congressman would rather be labeled anti-environmentalist than anti-Garrison.

One vote in 1977 that pitted some agricultural sympathizers against environmentalists was the bill to authorize locks and dams on the Mississippi River. Andrews voted for the measure because he said it would be important for moving grain grown in his state.

The vote on an amendment to the Clean Water Act on wetlands could not be eas-

ily formed strong positions. A good example is the Clean Air Act Amendments of 1977. When Congress adjourned for Christmas recess in 1976, the National Clean Air Coalition told North Dakota environmentalists that they needed Burdick's votes as a member of the Senate Committee on Environment and Public Works. "As a result, Burdick was the target of one of the most organized efforts that landowners and environmentalists in the state have ever put forth," Jacobs says.

The effort paid off. The air coalition reports that when Burdick returned to Washington, he went to them and said, "My people say I'm important on this issue. What do I do?" Overall, he voted with the environmentalists on seven of twelve amendments before the committee.

Burdick supported weakening amend-



LISTENING TO THE AGRICULTURAL VOICE in North Dakota sometimes puts North Dakota's congressmen at odds with environmentalists. But on the

strip mining bill, landowners and environmentalists told their delegation they wanted controls.

Photo by Mike Jacobs

8-High Country News — Feb. 24, 1978

THE OLD WAYS

GARY SNYDER



by Gary Snyder. City Lights Books, 1977, \$2.50.

Review by Don Snow

At the center of the conservationist cause has always been the assumption — sometimes just a vague uneasiness — that something is wrong with us, with our relationship to the land, to each other, and to our very selves. The work of many conservationists has consisted of changing hearts and minds, by suggesting that we step out of our anthropocentric minds long enough to admire the other people: Standing Tree

Poet Gary Snyder speaks of "re-inhabitation" — of the means by which countless Westerners who have given up the land, farming, peasantry, daily contacts with wild nature, can live again on the planet.

People, Flying Bird People, Swimming Sea People. Such has been Gary Snyder's lifelong task as a writer.

Snyder's most useful work as a scholar and poet has been to identify exactly where and how we are going wrong, and then to prescribe the cure — "healing, not saving," as he says. He is, then, a sort of shaman to his culture, singing it back to health. Spiritual alternatives are necessary in this age of change, and spokesmen ranging from Bucky Fuller to Alan Watts have addressed the need to re-conceptualize our egocentric delusions about the earth and our relationship to it.

Snyder's latest book, *The Old Ways*, picks up some themes established and tentatively explored in his earlier books (*Myths and Texts*, *The Back Country*, *Regarding Wave*, and *Turtle Island*, winner of the 1975 Pulitzer Prize for poetry).

The Old Ways will be especially helpful to those who find his poems difficult to enter, not only because the book is prose, but also because the six essays included in this book re-open and clarify the subjects of his earlier poems. Snyder has long maintained that poetry remains valid and necessary as dream-voice-art, that which speaks best to the intuitive half of the mind. Yet perhaps the sense that so few

people read poetry leads him to turn his best ideas more and more into prose.

Four of the six *Old Ways* essays originally were talks given at various universities and institutes. Those who have heard the poet speak will leap right along with these pieces, for they are full of the spontaneity, fluency, and learning that make him such a powerful reader. Snyder has resisted the contemporary poet's tendency to fasten onto a university and become another faculty bureaucrat living on state payroll and canned beer. Formally, he is not a teacher (has no certification, credentials, Ph.D.); informally, he is teacher nonpareil, in the oldest traditions of the teacher-student relationship. That's probably what prompted Alan Watts, another great teacher, to say of Snyder, "My only regret is that I cannot formally claim him as my spiritual successor . . . he is exactly what I have been trying to say."

Snyder is a poet of lifestyle and experience, sharing his life in the Northern California foothills with his readers. He speaks in *The Old Ways* of "re-inhabitation," of the means by which countless Westerners who have given up the land, farming, peasantry, daily contacts with wild nature, can live again on the planet. In the essay entitled "Re-inhabitation," Snyder discusses growing up in Kitsap County, Wash. during the Depression. To the young Snyder, poverty consisted of not knowing where you are, what ecosystems you belong to, what trees shade you, and what plants feed you. He goes right to the source of what many have described as 20th century fragmentation:

"There are many people on the planet, now, who are not 'inhabitants.' Far from their home villages; removed from ancestral territories; moved into town from the farm; went to pan gold in California — work on the Pipeline — work for Bechtel in Iran. Actual inhabitants — peasants, peoples of the land, have been snuffed at, laughed at, and overtaxed for centuries by the urban-based ruling elite. The intellectuals haven't the least notion of what kind of sophisticated, attentive, creative intelligence it takes to 'grow food.' . . . the differing regions of the world have long had their own precise subsistence pattern developed over millennia by people who had settled there and learned what kinds of plants the ground would 'say' at that spot."

In the same piece, he cites Raymond Dasmann's distinction between ecosystem-cultures and biosphere-cultures. Translation: those that never "outgrew" the tendencies toward stewardship at the ecosystem level, where the people realized that this hunting ground was the only hunting ground and could not be despoiled; as opposed to those groups that learned that spillover into other ecosystems was "profitable" in the short term, and therefore free of responsibility as well as guilt.

Snyder is careful to point out, however, that the tide is changing: "we once more know that we live in a system that is enclosed in certain ways . . . and that we are interdependent with it."

He continues: "The biological-ecological sciences have been laying out (implicitly) a spiritual dimension. We must find our way to seeing the mineral cycles, the water cycles, air cycles, nutrient cycles, as sacramental . . . The expression of it is simple: gratitude to all, taking responsibility for your own acts; keeping contact with the sources of energy that flow into your own life (ie., dirt, water, flesh)."

Snyder's work appeals because it tends to move the reader outward, past the foggy windows and into fields and forests beyond. Somehow, Snyder makes one want to be there in wild nature, with our living fellows, resurrecting some of the old ways of

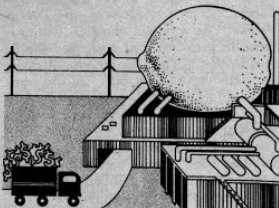


"primitive" cultures. Yet a major part of his poetry derives from the consummately civilized nation of Japan and the ancient wisdom-teachings preserved there in Rin-zai Zen monasteries.

His Rocky Mountain and Pacific Coast writings contain unusual flavors and combinations. Amerind-like song merges with Buddhist mantra; salty old cowboy and logger yarns spin out crisp as koans; Magpie sings to us a quiet song of ego-displacement and not-worrying-about-death: "Here in the Mind, Brother, Turquoise Blue."

The Old Ways permits access into a leading mind and a body of poems which will be admired, loved, and used by generations of re-inhabitants. If you never get the chance to hear Snyder speak in person, this book will bring some of his living personality to you.

NUCLEAR POWER: THE BARGAIN WE CAN'T AFFORD.
RICHARD MORGAN
Foreword by Russel Train



by Richard Morgan, The Environmental Action Foundation, Washington, D.C., 1977, \$3.50, paperback, 96 pages.

Review by Peter Wild

My father gathered us around the old Zenith radio. Something momentous was about to happen. He explained that off in the Pacific Ocean, sheep and goats milled on abandoned battleships. Then the radio vibrated with a long roar, the sound of an angry bear in his cave. That was the best I could do to conceptualize an early broadcast of an atomic bomb test. It seemed less real, more eerie, than the regular radio diet of Sky King and Jack Armstrong.

A few years later President Dwight D. Eisenhower announced that, "The greatest of destructive forces can be developed into a great boon, for the service of mankind." That was a relief. World War II had brought us blessings beyond peace. By 1953 I was old enough to understand that

nuclear power — so cheap it wouldn't even be worth metering — would help make our generation's lot a sustained technological dream. What a lucky stroke to be growing up in the '50s!

Since then there's been some reckoning, specters of nuclear plants dissolving into mushroom clouds, of constant radiation leakage, of nuclear wastes that remain lethal for thousands of years. Just a few months ago, police arrested 1,400 people protesting what they saw as the insanity of constructing a new nuclear power plant near Seabrook, N.H.

Yet the nation as a whole seems unmoved, unconvinced of the dangers. Sixty-one per cent of those surveyed in a Harris poll favor more nuclear facilities. However, by a margin of two-to-one they also say they don't want nuclear power if it costs more than conventionally produced electricity. Apparently, the public worries more about its pocketbook than the fish in the seas and increased rates of leukemia for its children.

Richard Morgan acknowledges this ignoble but time-honed attitude by attacking the economics of nuclear power. According to his analysis, the industry-government propaganda machine is hoodwinking the public into a monstrous and unnecessary nuclear utility bill. The how of it is fairly simple in the outlines, though so complex in the details that proponents have had an easy job of covering up the nuclear rat hole.

Their play appeals to human nature. We all like things that are new and supposedly free — cornerstones of American advertising, if not of Western history. In an age that tends to lack religious miracles, the nation has mesmerized itself with the miracles of science — wonder drugs, jet travel, and the infinite power in atoms. Duped by blind faith in science, we insist on free lunches.

Far more than mass self-deception is involved. After pouring billions of tax dollars into the nuclear commitment, neither government nor industry leaders want to admit the gargantuan blunder — even though plant after plant continues to gurgle and clunk along, spewing radiation while producing only a trickle of the power awaited by a believing public.

The plot thickens. As government-controlled monopolies, utilities receive a percentage of their investments as profits on a cost-plus basis. The main way to increase profits, then, is to increase expenses. With their astronomically expensive but hidden price tags, nuclear plants do this beautifully.

Back in 1966, for instance, the Consumers Power Company promised Michigan customers cheap nuclear energy for the price of \$93 million. Six years later the completed Palisades facility had cost them twice as much. In the scheme of things, however, it doesn't matter much when such a plant has to be shut down most of the time because it keeps blowing gaskets — as happened with Palisades. The company

simply passed the loss on to customers with rates that went up 600%. They could either pay or try lighting their homes with pine knots.

Meanwhile, utilities keep breaking ground for more nuclear plants that will dig deeper into our pockets and further mortgage our environmental future. They are part of our broader energy idiocy, which includes the belching coal plants on the plains. The only sane alternative, as overweight people know deep in their fat-laden hearts but find hard to admit, is conservation, slimming down our energy diet. It's a solution that the utility industry, with rate structures based on growth, finds especially distasteful.

The unique and concise economical analyses make up for the somewhat steep price of Nuclear Power. Copies may be ordered directly from Environmental Action Foundation, 724 Dupont Circle Building, Washington, D.C. 20036.

JOBS & ENERGY

energy and the economy/the substitution of energy for labor/productivity and jobs/energy growth and prosperity: the myth/energy inefficiency and waste/capital investment/energy efficiency/energy efficiency and jobs/solar energy/solar energy and jobs/the politics of solar energy/

ENVIRONMENTALISTS FOR FULL EMPLOYMENT
Since 1977

by Richard Grossman and Gail Daneker, Environmentalists For Full Employment, Washington, D.C., 1977. \$2, paper, 21 pages.

Review by Peter Wild

You walk back to your seat, aglow at your performance. You've just lambasted a planned coal-fired power plant with arguments appealing to the nobler sentiments of the hearing officers.

Still musing on your victory, you hardly notice the next speaker. He seems to be taking a somewhat different tack. He doesn't know anything about oxides and particulate matter, he says. All he knows, he continues, becoming more earnest, is that he has five kids at home who have to eat and another on the way. "Pleasantville needs jobs, not preservationists," he concludes to rousing cheers and stamping feet.

In the pause that follows there's a general grumbling, hostile eyes turned your way. You might as well have advocated the slaughter of puppy dogs or the defenestration of grandmothers. You measure the distance to the nearest exit.

Your opponent has touched on a potent argument, yet the scenario doesn't have to go that way. His thinking is based on the myth that industrial growth, with its high energy use, spells increased jobs. In fact, the reverse seems to be true today: "current high unemployment, along with a succession of economic crises, have been taking place while national energy use has been at an all-time high, and increasing."

The trend in most industries is to replace workers with machines. In the Pacific Northwest, the aluminum corporations wield a great deal of political clout, but they use 25% of the area's electricity while providing only one-half of one per cent of the jobs in the region. As to the electric industry itself, "From 1961-1973, electric utilities increased their kilowatt output about 130%, their revenues about 280%, their construction costs about 340%. But employment in electric utilities increased

only 21%." That's not much of a return in employment for massive, and sometimes permanent, damage to the earth.

The proposed power plant you oppose will create a few temporary jobs, mostly for outsiders. Later, the automated electric factory will be run by a handful of technicians. Quite probably its construction will bring higher taxes, higher rates of insanity, alcoholism, and crime to your rural community — to say nothing of pollution.

Heavily subsidized by tax dollars, the energy industry, however, prefers the myth to the reality. And it goes out of its way to perpetuate it. While giving lip service to conservation "the industry spends eight times as much money on advertising as it does on research and development of energy-efficient consumer goods," according to **Jobs & Energy**.

All this, when about a year ago none other than Sen. Charles Percy (R-Ill.) stated, "Solar energy is not an exotic dream of the future. Rather, it is workable today." The jobs created by refitting the country to solar energy would wipe out many unemployment lines. Yet the coal, petroleum, nuclear, and energy companies shudder at the prospect.

In short, people deserve to know the truth. Those who would like to debunk the myth and turn around our energy excesses will find much handy ammunition in **Jobs & Energy**. The price of the 21-page, oversized pamphlet is not high for the concise approach backed by solid documentation. Copies, \$2 for individuals, \$5 for institutions, may be ordered from Environmentalists For Full Employment, Room 300, 1785 Massachusetts Avenue, NW, Washington, D.C. 20036.

NATURE'S ECONOMY

by Donald Worster, Sierra Club Books, San Francisco, 1977. \$15.00 hard cover, 404 pages.

Review by Peter Wild

Over 300 years ago Francis Bacon looked into the future and saw "a manmade paradise, to be rendered astonishingly fertile by science and human management." The Renaissance was sloughing off bondage to nature's whims. Reason and technology at last seemed to promise control of humanity's fate through control of its environment.

In 1789 Gilbert White published **The Natural History of Selborne**, a celebration of his native English countryside. To the retiring vicar nature was a delight as he found it. He enjoyed nothing more than to observe swallows mating in flight or earthworms going about their business of improving the soil. In contrast to Francis Bacon, White considered man and nature a benign whole reflecting God's wisdom.

Donald Worster uses Bacon and White as convenient points of departure for his history of ecological thinking over the last three centuries. At first it would seem the story is simple in its two main divisions: the utilitarianism of Bacon, Lester Ward, Thomas Huxley, and Gifford Pinchot on the one hand; and the organic or arcadian philosophy of White, Thoreau, John Muir, and Aldo Leopold on the other.

Yet concepts rarely develop according to the neat patterns later imposed on them. Worster shows how the two opposing traditions at times became strange bedfellows,

at other times competed for prominence. He is especially good at linking the changing views of ecology to larger cultural movements: Romanticism, Marxism, Darwinism. As a result, we are enriched by an intellectual history drawing on developments in economics, sociology, literature, biology, and art — an impressive synthesis based on the writer's grasp of many disciplines.

Just one word of caution, however. Worster tends to gloss over the frequent gaps between theories and practices. Society, for

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example, often has lauded the virtues of untamed nature while at the same time exploiting it apace — as is the case today.

In the best tradition of publishing, handsome type on quality paper makes this long-needed study a pleasure for the eye. A wealth of footnotes and an extensive bibliography encourage further exploration of the cultural labyrinths that lie beneath the surface of our present environmental concerns.

Art Anatomy of Animals

Review by Hannah Hinchman

by Ernest Thompson Seton, Running Press, 38 S. 19th St., Philadelphia, Pa., 1977, 96 pages, \$5.95 (plus 25 cents postage).

"Anatomy is like a virulent poison — when judiciously administered it is a powerful stimulant to art, but in an overdose it is death," says Ernest Thompson Seton in his introduction to **Art Anatomy of Animals**.

Seton is best known in this country for his beautifully illustrated wild animal adventure stories. Youngsters with an interest in natural history usually discover **Wild Animals I Have Known** or **Two Little Savages**. He was a popular author, a noted artist and naturalist, and a contemporary and friend of the likes of John Muir, John Burroughs, and Frank Chapman.

Running Press of Philadelphia has issued a large, handsome reprint of the first of Seton's 41 books, **Art Anatomy of Animals**, originally published in 1896. Seton says he wrote it out of necessity; the sources he searched through to back up some dictionary illustrations treated the anatomy of animals from a surgical point of view only. He found them of little help to someone interested in why living animals appear and move the way they do. He says that his is the first attempt to study the arrangement of fur and hair in animals. He is puzzled that an aspect so important to artists had never been studied before.

The book contains 100 of Seton's black and white drawings. Four of them, including a superb drawing of a wolf, illustrate the patterns, ridges, whorls, and directions of animal's fur. He treats birds' feathers similarly, showing the basic theme of the wing as it appears in a sparrow, a falcon, and a quail.

Another series of plates illustrates musculature and bone structure. He notes the points of the skeleton that show through



the skin and would be of importance to artists. He diagrams and describes the proportions of various animals, using the length of each animal's head as the unit of measurement. If an artist in the field develops an accurate eye for it, this way of appraising will be a valuable skill.

His remarks on the arrangement of hair reflect his naturalist's ability to observe: "The direction of the Hair is determined by two laws. First, the necessity of offering the least possible resistance to the air, and to grass, brushwood and other obstacles, while the animal is in motion. (This may be illustrated by the well-known fact that the hunter can readily drag, nose first, a dead deer which, heels first, he could scarcely move, for the obvious reason that it would be against the grain.) Second, the necessity for running off the rain, especially while the animal is lying at rest. The first law gives a backward, the second a downward direction to the Hair."

Seton is careful to label all the bones and muscles, and yet he warns that the artist who dwells too much on anatomy "produces mere diagrams, and loses sight of the greater essentials of light, color, and movement."

Seton's combination of the viewpoints of artist, scientist, and naturalist make this book an excellent supplement for wildlife artists who have concentrated on drawing from life. Anyone who admires animals and insightful portrayals of them will also be pleased with it.

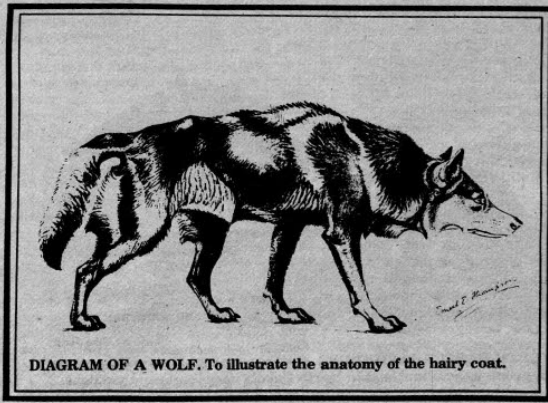


DIAGRAM OF A WOLF. To illustrate the anatomy of the hairy coat.

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Colorado solons attack reclamation regs

Colorado's mined land reclamation regulations are under attack in the state senate. Lawmakers claim that the state bureaucracy made life tougher for the mining industry than the legislature intended by promulgating rules that go beyond the intent of a 1976 reclamation law. Lawmakers have introduced a joint resolution, SJR 3, to delete certain sections of the rules.

The state attorney general says the regulations, which were adopted by the Mined Land Reclamation Board last spring, are within the intent of the law.

In addition, the proposed deletions could severely limit or destroy the state's ability to prevent mining damage, state officials say.

The bill has been introduced in the Senate Local Government Committee. Committee Chairman Don Noble (R-Norwood) says the committee particularly objects to rules that require mine operators to file a detailed description of the pre-mining condition of the land and a detailed reclamation plan. According to the *Denver Post* Noble says, "The thing that's killing the American public is these damnable rules and regulations."

Environmentalists say the rules are essential to the protection of lands in the state. "This resolution leaves the Mined Land Reclamation Board incapable of insuring reclamation of mined lands in Colorado," says the Colorado Open Space Council (COSC). Lands affected by

uranium, oil shale, and sand and gravel operations are particularly vulnerable to this attack, says COSC, since they are not protected by any federal laws. Federal law will protect the state from damages incurred by coal strip mining, however.

One mining firm, Energy Fuels, is also opposed to the Senate resolution, but for different reasons than the environmentalists. The company owns a large coal strip mine near Steamboat Springs, Colo. It fears the passage of SJR 3 might mean a federal takeover of the state's coal strip mining regulatory work. Congress allows state control of strip mining activities only in states with laws at least as stringent as the federal government's. An assistant solicitor for the U.S. Interior Department has

said that if SJR 3 is passed, the state might lose its power to enforce the federal strip mine bill.

The backers of SJR 3 have also been criticized for trying to review the regulations at all. "The courts are the logical place to take these things if the legislature isn't satisfied with them, rather than holding a kangaroo court of its own," says Brad Klafehn of COSC.

Also at issue, according to the *Denver Post*, is whether the legislature can change rules adopted by the executive branch without the governor's consent. Lawmakers proposed SJR 3 as a resolution and not a bill to avoid a veto by the governor, according to state Senate President Fred Anderson (R-Loveland).

Environmentalist's statement stirs bomb threat in Moab, Utah

A Moab, Utah, environmentalist received threats of violence after his comments about a nearby uranium processing plant were aired on local radio.

The environmentalist, Fran Barnes, is executive director of ISSUE (Interested in Saving Southern Utah's Environment). He had mailed comments on behalf of the group to the U.S. Nuclear Regulatory Commission regarding Atlas Minerals' uranium processing plant outside of Moab.

According to Barnes, the commission sent a copy of his comments to Atlas Min-

erals for review. Atlas Minerals in turn sent them to the Moab Chamber of Commerce, where they were read aloud at a meeting. A local radio station, KURA, covered the meeting and broadcast some portions of the ISSUE statement.

According to KURA, Barnes said that the uranium plant was an "eyesore" adjacent to Arches National Park and that "an out-migration of the kind of people employed at Atlas Minerals" would not be a detriment to the community, but would ease pressures on the schools, the police department, and other community ser-

VICES. He recommended that the plant be shut down.

Immediately after the radio news broadcast, Barnes said that he began receiving irate phone callers. One of the callers threatened to dynamite his home; another asked him to leave town; another was not a human voice, just the sound of a clock ticking.

The Moab Police Department put a device on Barnes' phone to try to trace future callers. Several days after the news broadcast, the excitement died down, according to the police dispatcher. "As far as we're

concerned the situation now is not serious," she said. "It all happened because 'he (Barnes) is kind of an ecologist, and he called the Atlas Minerals employes trash.'"

Barnes says that when he wrote to the Nuclear Regulatory Commission he never dreamed that his comments would reach the local community. "We hope our frightening experiences with the volatile and violent elements of the mining community will serve as a warning to grassroots environmentalists elsewhere," he said in a letter to *High Country News* (see letters, page 2).



energy news of the Rockies and Great Plains

MORE COLSTRIP DEBATE. The Northern Plains Resource Council (NPRC) and the Northern Cheyenne Tribe have told the Environmental Protection Agency (EPA) that their own studies indicate Colstrip power plant units 3 and 4 will violate the Cheyenne Reservation's Class 1 air. EPA has tentatively found that the power

plant could meet the air standards. An independent air quality expert, Dr. Michael Williams, says the studies that EPA used to determine whether the power plant would exceed allowable pollution levels were "worthless." EPA used low level wind data — at about 500 feet — rather than data from higher elevations — 1,100 to 1,600 feet — where the "pollution plume" stays as it travels toward the reservation. Williams says that, based on his studies, EPA's preliminary decision to grant the Colstrip air quality permit must be reversed. The testimony was presented at a public hearing in Billings, Mont.

UTAH GEOTHERMAL PLANT. Four companies hope to develop a second geothermal power plant in Beaver County, Utah. The project, proposed by O'Brien Resources, AMAX Exploration Co., Thermal



Photo by Lynne Bama

GEOTHERMAL STEAM will produce power in Utah.

Power Co., and VTN Corp., would produce 55 megawatts of electric power by 1982. The plant would be built at the Roosevelt Hot Springs where Utah Power and Light and Phillips Petroleum are also planning a facility. UP&L and Phillips have called for a management plan for the hot springs. A spokesman told the *Deseret News*, "It's like having a group of straws in one glass of water. If we all sip at once, we won't be able to drink for very long."

N.D. AMENDS PRIME FARMLAND RULE. Under a recent decision by the North Dakota Public Service Commission, energy plants and transmission facilities can be placed on prime agricultural land if only a small amount of such land is involved. The rule represents a weakening of the commission's previous stand that all prime farmland were to be avoided as energy facility sites unless no reasonable

alternative was available. However, the commission added a category of "unique" farmlands — those not quite as good as prime lands — from which energy facilities may be excluded. Commission president Richard Elkin says that this change will keep many additional acres from being considered for energy sites.

FORT ST. VRAIN RESTARTED. The Fort St. Vrain power plant was restarted at two per cent of capacity on Feb. 11. This is the first time the plant operated since an accident Jan. 23 in which a small amount of radioactive gas escaped from the plant (see HCN 2-10-78). The plant will operate at very low levels initially to test the procedures. The plant was operating at 68% of capacity when it was discovered that helium gas coolant containing radiation was leaking. It has never operated at full capacity.



Photo by Mike Jacobs

NORTH DAKOTA FARMHOUSE. Coal conversion plants will be allowed on prime agricultural land in North Dakota under certain conditions.

Nearly empty buses mystify Millers



DOROTHY AND NESTER MILLER say they see 80 to 90 cars per trip between the mines and Saratoga, half of them with only one passenger. But their buses go nearly empty.

Nester and Dorothy Miller have a solution. They're offering bus service for 210 mine employees who have to commute an average of 94 miles a day from Encampment and Saratoga, Wyo., to coal mines in southcentral Wyoming.

However, the mine employees don't seem to think they have a problem. During the first month of operation, only about eight men have been riding the buses.

"We were really shocked by the response," the Millers say. They spent several months getting the necessary insurance, public service permits, and investing in the buses — large, yellow school buses that look a little ludicrous lumbering down the highway with one or two passengers per trip.

Some of the passengers can't understand their coworkers either. "I said right from the beginning that if a bus got started I'd be on it," one of the riders says. "It's a saving to me, but I guess other people don't look at it that way." He says he hasn't figured out the exact amount of money he saves, but it's obvious to him that when he pays four and a half cents per mile to ride the bus, he couldn't begin to travel as cheaply even in the car pool he was in before. "I put 7,000 miles on my new pickup just since September. When you take into consideration

everything — gas, oil, tires, and buying a new pickup every three years, I don't think I can afford to drive. . . Besides, that's why we're in the mining business — it's because of the energy situation."

The Millers say they're trying everything to promote the service. They've put up posters illustrating, dollar for dollar, the savings of riding the bus. They're now installing tape decks. They've lowered their rates and advertised the service through the wives, who, they say, tend to be more interested.

While the mine superintendents have been very helpful in publicizing the service, the Millers say they're not interested in subsidizing it to encourage employees to use it. Nester Miller says he has hesitated to approach the men through their union because he doesn't want to get between the companies and the unions.

The Millers, and other people running similar businesses across the country, are trying to figure out why more people aren't interested in using buses. The Millers say, "We're simply fighting the human attitude. It's a matter of breaking a routine." In addition, they speculate that most people in the Saratoga area don't believe that there is a shortage of energy — or that there ever will be. Making high wages at the mines, many workers don't seem to be very concerned with saving money.

When the Millers asked federal transportation officials in Denver for advice, they were told an even "harder luck story" about the Denver bus system that few people ride despite a very serious smog problem in the city.

The Millers are now working with the Wyoming Energy Conservation Office and with mine supervisors to try to find a solution. They hope they can keep the buses running until after the national energy bill passes. If the bill makes gasoline prices jump and a gas guzzler tax is included, then it might help the buses' popularity, they hope. Until then they plan to keep the buses on the road to remind workers that an alternative is available.

Churches fund new N.D. organization

Several religious organizations will be funding a new conservation group in North Dakota to be known as the Dakota Resource Council. Evelyn Newton, chairwoman of the new group, says the members are interested in protecting the food producing capabilities of farm land and in the wise stewardship of natural resources. Newton is a Gladstone, N.D., farmer.

Large-scale strip mining and coal conservation facilities are the most serious threat to agricultural values, she says. "Church groups are very concerned," she says, partly because of their interest in keeping families together, which she says is more possible in a rural society.

An organizer-researcher, John Norton, has been hired by the group. The council will be the only North Dakota conservation organization with a paid staff member, Newton says. Norton is now finishing an apprenticeship with the Northern Plains Resource Council in Billings, Mont. He will open an office in Dickinson, N.D. The new group is closely tied with the United Plainsmen, a landowner-conservationist group. Members are being sought throughout the state.

For more information about the group, call Newton at (701) 225-9447.

Kerr-McGee determined to dodge siting regs

Kerr-McGee Nuclear Corp. is planning a \$593.4 million uranium mining and milling complex near Douglas, Wyo., but the company contends that it should not be covered by the Wyoming Industrial Siting Regulations. Wyoming law states that any industrial facility that will cost more than \$58 million must obtain a siting permit.

Kerr-McGee says, however, that the mines and mill are not a new facility, but an extension of the Bill Smith uranium mine that has been under construction since 1967. The company says that mining rights to the area were first acquired in 1966 and 1967 and that construction of the mine commenced in 1967. Therefore, it says, the mine does not need to comply with the industrial siting law, which was passed in 1975 by the state legislature.

Plans for the area call for four surface and nine underground uranium mines. In addition, there will be a mill with the capacity to process 2,500 tons of ore per day. The operation will employ 870 persons.

Kerr-McGee's plans took the town of Douglas by surprise. One resident told the Associated Press that the townspeople were "shocked and some of them just scared to death" as a result of the proposal.

The county superintendent of schools, Sheldon Henderson, wrote to the Industrial Siting Council objecting to Kerr-McGee's application to be exempt from the siting rules. Henderson said that an impact study was necessary and that Kerr-McGee hadn't contacted any of the local officials before announcing its plans. Henderson said that he expects a large influx of children into the schools if the plans go ahead.

The prime objective of the state's 1975 Industrial Siting Act was to anticipate and

plan for facilities that would have a major socio-economic impact on a community. The Powder River Basin Resource Council, a citizen-rancher group based in Sheridan, Wyo., has filed a formal protest to the company's request for an exemption to the siting rules. PRBRC contends that Kerr-McGee should be covered by the rules.

One of the arguments that is certain to be raised against Kerr-McGee is that, although it argues that it was constructing the Bill Smith mine in 1967, it did not produce any ore until 1977, a full 10 years later. One state source says that this does not constitute "due diligence" in the construction of the mine. In addition, it is argued that the expansion is so vast, that it does not necessarily constitute a mere "extension" of existing operations. The seven-man Industrial Siting Council will make a final determination whether the mines are covered by the law.

As the Kerr-McGee controversy is developing, the Wyoming state legislature is reviewing the Industrial Siting Administration rules with an eye toward removing all mines from the agency's jurisdiction. The legislature is considering a resolution that states that the inclusion of mining costs in the determination of total costs of a project is contrary to the legislative intent when the Industrial Siting Act was passed.

The Wyoming law is written so that a major industrial facility is defined by its costs of construction. At present, if that facility would cost more than \$58 million, it is covered by the law. If this current amendment becomes law, it is unclear whether it would exempt all mines from the law, or whether it would only exempt those that are a part of another facility. Sources indicate, however, that Gov. Ed Herschler intends to veto any legislation that would exempt mines.



The **HCN**
Hot Line

energy news from across the country

NATIONAL COAL POLICY PROJECT. An alliance of environmentalists and industrialists has issued a report on national coal policy that indicates on which issues the two interest groups can agree. "Where We Agree," presented by the National Coal Policy Project, urges that coal mining concentrate on Eastern underground mining instead of Western surface mining and that new coal-fired power plants be sited closer to cities that will use the power instead of in the remote coal-producing areas. The project also recommended that coal development in the West be concentrated around Gillette-Decker-Sheridan areas of Wyoming and Montana because, "This concentration will tend to prevent the spread of social dislocations." The report brought a heated response from the Environmental Policy Center, one of the leading environmental lobbying groups. EPC says that the project ignored several groups with vital interests in coal planning, including farmers, Indians, ranchers, miners, and citizens living in the areas recommended for development. In addition, EPC says that if the project's recommendations were followed regarding strip mining, the result would be a weakening of the already-enacted strip mine regulation law. EPC pointed out four areas in which the project's recommendations called for looser reclamation standards than currently exist.

ALASKA PIPELINE SABOTAGE. An explosive device blew a two-inch hole in the Alaska pipeline, pouring thousands of barrels of oil over the tundra for several hours. The pipeline was repaired and restarted within 24 hours. A spokesman for the pipeline company told the Associated Press that the sophisticated leak detection system had not picked up the spill, but that it had been found by a private pilot flying over the area. This is the second sabotage attempt on the line since it became operational in July. The first one did no damage.

ALASKA OFFERS OFFSHORE LEASES. The state of Alaska is planning to offer for bids 650,000 acres of offshore oil leases in the Beaufort Sea, adjacent to Prudhoe Bay. The lease sale has been held up for several years because of an ownership dispute over the area between the state and federal governments. An agreement has been reached that will allow this sale to go ahead, according to the **Alaska Advocate**. The chief environmental problem will be the reaction of polar bears living on the ice in the area, according to a state government study. The study questions whether the bears would survive the intrusion.

SOLAR TAX BREAKS. Thirty-two states now offer some form of tax break to homeowners who install solar energy equipment, the Associated Press reports. The most common form of tax, allowed by 27 states, is a break on property taxes. Fifteen states allow the homeowner to deduct part of the price of solar equipment from state income taxes. The highest tax credit is 35% in Arizona.

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H.C.N. Bulletin Board



GRAZING BILL HEARING

A Western hearing will be held on the \$350 million range improvement bill introduced recently by 14 Western Congressmen (see HCN, 2-10-78, p. 6). The bill has won praise from agricultural organizations and criticism from environmentalists. It sets up a new grazing fee formula, allows for certain range improvements without impact statements, and allows for disposal of excess wild horses and burros. The hearing will be held in Salt Lake City on March 30, starting at 9:30 a.m. Anyone who wants to testify should call Rep. Gunn McKay's (D-Utah) office in Ogden, Utah, at (801) 399-8816.



© Carol Snow

PESTICIDE WORKSHOPS

The Colorado Department of Health is sponsoring three workshops on pesticides, including state and federal regulations and symptoms of pesticide exposure. There is a \$3 registration fee. The workshops will be held March 6 in Greeley at the Weld County Health Dept., March 9 in Pueblo at the Ramada Inn, and March 13 in Grand Junction at the Civic Auditorium. For more information, call the department at (303) 388-6111, ext. 334.

COLO. AIR HEARING

The Colorado Air Pollution Control Commission will conduct a public hearing on April 13 to consider regulations regarding transportation plans for the state. The commission will also consider adopting state ambient air quality standards for certain pollutants. The hearing will be at 1 p.m. at the Colorado Dept. of Health Bldg., 4210 E. 11th Ave., Denver. For more information, call (303) 388-6111, ext. 286.

DEMYSTIFYING BATS

Most people have "aversions, superstitions, and fears" about bats, according to a booklet to be published next spring by the Utah State Division of Wildlife Resources. Nevertheless, bats are beneficial to man. They are also second to man as the mammal most widely dispersed across the earth. With these and other facts, the booklet is designed to provide insight into bats. To order a copy write Utah State Division of Wildlife Resources, 1596 W. North Temple, Salt Lake City, Utah 84116.

ENVIRONMENTAL EDUCATION

The Colorado Mountain Club has published a children's educational guide to hiking near Boulder, Colo., Boulder Study Trails. While the book lists specific areas near Boulder, the program described can be adapted to any community that "has a pocket of untamed open space and an active interest in their children's environmental education," according to the booklet's author, Alexis Parks. Copies are available from the author at P.O. Box 1917, Boulder, Colo. 80306.

UTILITY SCOREBOARD

Three utilities well known in the Northern Plains appear prominently in Utility Scoreboard, a report by the Environmental Action Foundation. The report compares the nation's 100 largest power companies on 15 separate issues. Montana Power Co. (MPC) is listed as the worst offender of all 100 in terms of its ratio of residential to industrial rates. Idaho Power Co. is listed as second worst. MPC has more excess generating capacity than all but one other utility. Pacific Power and Light (PP&L) ranks second highest in the cost of its excess capacity. PP&L and MPC both rank high in their over-projections of demand for three years in the future. For a copy, send \$3.50 to Environmental Action Foundation, 724 Dupont Circle Bldg., Washington, D.C. 20036.

SOLAR GREENHOUSE MEETING

The third annual Conference on Solar Energy for the Heating of Greenhouses and Greenhouse-Residence Combinations will be held on April 2-5 at the Ramada Inn in Fort Collins, Colo. Registration fee is \$55.50. For information, write Office of Conferences, Rockwell Hall, Colorado State University, Fort Collins, Colo. 80523 or call (303) 491-6222.

NATIONAL WILDLIFE WEEK

The National Wildlife Federation's 41st annual National Wildlife Week will be March 19-25, 1978. A free wildlife week education kit and a free copy of a poster showing a peregrine falcon are available by writing NWF, Dept. CNE 78, 1412 16th St., NW, Washington, D.C. 20036.

News of North Dakota in

The Onlooker

Subscription price—\$12 American per year
Box 10, Mandan, N.D., 58554

SUN DAY SEEKS DOLLARS

Sponsors are being sought for Sun Day, a day which planners say will mark the beginning of the Solar Age. Planned by many of the same people who organized Earth Day 1970, Sun Day (May 3, 1978) is designed to get people talking about and tapping solar energy potential. Coordinators are being named all over the country, and more are needed. Sun Day Chairman Denis Hayes is also asking for sponsors who will donate the equivalent of the price of a tank of gas. Contributions are tax deductible. Send them to Sun Day, 1028 Connecticut Ave., NW, Washington, D.C. 20036 or write for more information.

WYOMING INFORMATION

Wyoming residents can check on the progress of legislation at a free information number (1-800-442-2744) from 8 a.m. until 5 p.m. Monday through Friday. The service is offered by Wyoming Information and Referral Service, Inc., a private, non-profit agency.

WIND ENERGY SURVEY

The University of Illinois is conducting a survey of wind energy conversion systems to determine how many individuals in the continental U.S. own windmills used for generating electricity, their location, and their experiences with the windmills. Questionnaires are being sent out and interviews will be conducted with as many as 300 owners of wind power equipment. Contact Diane O'Rourke, 414 David Kinley Hall, University of Illinois, Urbana, Ill. 61801.

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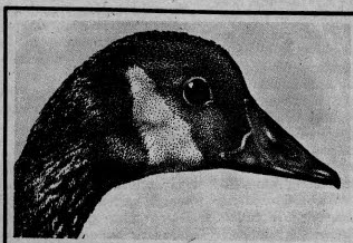
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the people's silkscreen book

By LAURA SELDMAN

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Western Roundup

Conservationists sought for wilderness 'adoption'

Conservationists in Montana, Colorado, Idaho, and North Dakota are being asked to "adopt a wilderness area" to prepare for the next phase of the U.S. Forest Service's second Roadless Area Review and Evaluation (RARE II).

Northwest Citizens for Wilderness in Helena, Mont., says that as a part of its "adoption" program it is training volunteers to do field studies on the roadless area of their choice. The volunteer is expected to study the area and to write a brief report on its wilderness attributes and potential conflicts with wilderness designation.

Northwest Citizens for Wilderness (P.O. Box 635, Helena, Mont. 59601, 406-442-0597) is coordinating conservationists' efforts on RARE II in the Forest Service's Region I, which includes North Dakota, Montana, and Northern Idaho.

In Colorado, the Colorado Open Space Council's Wilderness Workshop also has

an "Adopt a Wilderness Area" program. The workshop has already held meetings in Pueblo, Boulder, and Alamosa. Another will be held April 8 in Denver.

In the second, or evaluation, phase of the RARE II process, roadless areas identified by the Forest Service in phase one will be judged for "attributes needed to round out a quality wilderness system," including distribution, representation of ecosystems, land forms, and other criteria. The socio-economic impact of wilderness designation and other alternatives will also be considered. The information will be included in draft environmental impact statements.

Public comment about specific areas that should be recommended for wilderness designation will be requested by the Forest Service at the end of the summer. A final environmental impact statement and draft legislation for Congress is expected to be completed by the end of the year. Congress

will make the final decision on each area.

Because of the opportunity presented by RARE II, many environmentalists are placing a high priority on wilderness work this year.

"RARE II represents probably the last real opportunity for preservation that most of our remaining wild lands will have," according to an item in the Montana Wilderness Association newsletter.

In Utah and Wyoming, representatives of the Wilderness Society are among those leading the effort to collect information on roadless areas. While no formal "Adopt a Wilderness" program has been set up, Bart Koehler in Cheyenne, Wyo., and Dick Carter in Salt Lake City, Utah, are both trying to help citizens interested in protecting their states' vast roadless acreages.

Koehler's address is Box 1184, Cheyenne, Wyo. 82001. Carter's address is 523 Judge Building, Salt Lake City, Utah 84111.

Channelizing may create flood danger

The combination of heavy snowfall and extensive channelization work may result in severe flooding on the Camas Prairie of Idaho, according to a district conservationist with the U.S. Soil Conservation Service.

For years ranchers and farmers in the area have been channeling and straightening sections of streams and creeks to help

irrigate their crops, according to the Idaho Statesman. The straightened channels with few natural obstructions will greatly increase the velocity of spring runoff.

The state doesn't have control over anyone who wants to do work in a streambed unless the stream is constantly flowing. Many of the waterways on the Camas Prairie dry up during part of the summer.

Idaho phosphate ES found inadequate

The U.S. Environmental Protection Agency (EPA) has found a final environmental statement (ES) on phosphate development in southeast Idaho inadequate, further stalling additional phosphate development. The ES was prepared by an interagency federal team.

The agency found the statement unsatisfactory in three areas, according to the Idaho Conservation League.

1) It gave no commitment to enforceable

mitigating measures, although air and water quality standards will be violated.

2) Only one or two of the 16 specific mining plans discussed in the statement are complete. 3) The impact of radiation exposure was not given adequate consideration.

According to John Hough, director of the Interior Department's Western Field Office, the criticism from EPA will likely mean a supplemental environmental statement will be needed.

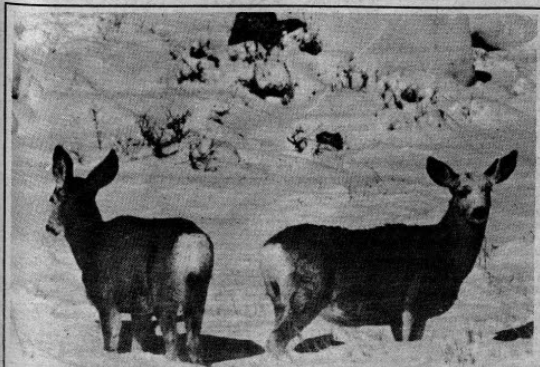


Photo by Ted Carlson
WINTER is taking a heavy toll on wildlife in the region this year.



'78 winter's wildlife toll will be high

Wildlife all over the West are suffering as a result of the harsh winter.

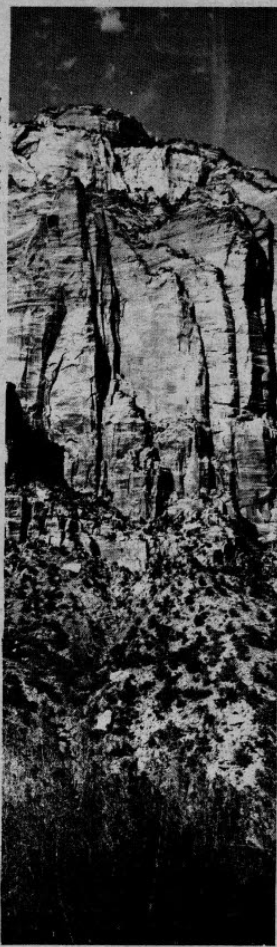
Deep snowfall in Wyoming is causing many elk deaths in the northwestern corner of the state, despite the efforts of Wyoming Game and Fish personnel to set up feed stations. There are more than 300 elk in the area. Recreationists have helped by using their snowmachines to haul hay in, according to the Jackson Hole News. The department estimates the feeding program will cost several thousands of dollars.

In Montana, hundreds of mallards have already died on the Bighorn River, also because of heavy snows. The ducks were starving when temperatures dipped below zero, adding to the stress. The U.S. Fish and Wildlife Service is feeding corn to the birds, trying to lure them away from farmers' silage.

The most serious conditions in the Northern Plains seem to exist in North Dakota and in portions of surrounding states and provinces. Snows are the heaviest in more than 20 years, cutting off power and stranding many rural people in their homes for weeks at a time.

Deer and antelope are turning to farmers' haystacks in desperation, but Mike Jacobs, publisher of the *Onlooker*, says there is cooperation amongst sportsmen and farmers. While some farmers are asking for a special deer season to cut down the size of herds, many are cooperating with the North Dakota Wildlife Federation in a "save the deer" feeding campaign.

There are no estimates on the wildlife losses in the region at this time. The effects of the winter may last for years since weakened antelope and deer does may abort many of their offspring.



National Park Service photo by Fred Mang, Jr.
UTAH doesn't know if it wants wilderness in Zion National Park.

Utah looks at park wilderness plans

Utah officials hope they can affect a National Park Service proposal for wilderness designations within six national parks in Utah soon to come before Congress. Wilderness proposals are for Zion, Arches, Capitol Reef, and Bryce Canyon National Parks and for Dinosaur and Cedar Breaks National Monuments.

A legislative assistant to Sen. Jake Garn (R-Utah) told state officials that if both Garn and Sen. Orrin Hatch (R-Utah) were against the wilderness bill, it would be difficult to pass, according to the *Deseret News*.

The state is now preparing its position. June Viavant says that judging from the state's record, it's bound to take an anti-wilderness position. Viavant is a member of the Escalante Wilderness Committee.

14-High Country News — Feb. 24, 1978

HOME, SWEET HOME? Two University of California scientists say that the air inside the average home is often more polluted than the air outside on a smoggy day, *Conservation News* reports. The study showed that indoor levels of carbon monoxide, nitrogen oxide, vinyl chloride, and fluorocarbons were often two to three times higher than state and federal air quality standards. The pollutants result from aerosol sprays, cigarette smoke, organic compounds used in cooking and cleaning, and, more frequently, from poorly constructed or improperly serviced gas appliances.



Eavesdropper

environmental news from around the world



LOONEY LIMERICKS

by Zane E. Cology

Quoth an old rural statesman of note,
While photographed kissing a goat:
"I'd get on my knees
And hug bugs and trees,
If I thought it would get me a vote."

SMEW VIEWED ANEW. A rare white and black Siberian smew — a duck — has been spotted in the continental U.S. for only the second time in history. The Rhode Island Audubon Society reports that the bird was seen in Westerly, R. I., and it is believed to be the same one seen in Newport, R. I., for the first time in January 1973.

INSULATING THE NEWS. Old newsprint, one of the chief ingredients in cellulose insulation, is undergoing boom times. With the greatly increased demand for insulation, the price of old newsprint has soared, and the recycled newsprint business has been hurt. Mills that specialize in recycling old newsprint for newspapers and other users say that they are right on the brink of a shortage. Mill operators fear that another surge in demand for insulation, brought on by a cold winter, would force some mills to close. The rising prices have been a bonanza for groups who raise money by collecting old newspapers, however.

STATE OF WYOMING PUBLIC NOTICE

PURPOSE OF PUBLIC NOTICE
THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500, AND THE WYOMING ENVIRONMENTAL QUALITY ACT (35-502 et. seq., WYOMING STATUTES 1957, CUMULATIVE SUPPLEMENT 1973).
IT IS THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS TO (2) TWO INDUSTRIAL DISCHARGERS, (3) THREE COMMERCIAL DISCHARGERS AND (1) ONE OIL TREATMENT DISCHARGE, AND TO AMEND (1) ONE COMMERCIAL DISCHARGE PERMIT AND (2) TWO INDUSTRIAL DISCHARGE PERMITS WITHIN THE STATE OF WYOMING.

APPLICANT INFORMATION

(1) APPLICANT NAME: THE FMC CORPORATION
P.O. BOX 750
MAILING ADDRESS: KEMMERER, WYOMING 83101
FACILITY LOCATION: SKULL POINT COAL MINE
NEAR KEMMERER, WYOMING
APPLICATION NUMBER: Wy-0027626

The FMC Corporation has been operating its Skull Point Mine, located near Kemmerer, Wyoming, for approximately two years. To date the volume of water encountered while mining has been fairly small and has been used primarily for dust control. It now appears that additional water will be encountered and that it may become necessary to discharge the excess to unnamed tributaries of Cumberland Creek (Class III stream) which is a tributary of Little Muddy Creek.

FMC has asked for authorization to discharge from these various locations: Discharge 001 would be from the existing settling pond to the east and would enter an existing HLM stock pond. Discharge 002 would be from the same pond but would flow to the north to a natural depression, thus creating a pond, and Discharge 003 is planned for the future and would consist of the water pumped from dewatering wells on the outskirts of the mine.

The proposed permit requires compliance with treatment considered to be best practicable effective immediately. Because the discharge is in the Colorado River Drainage, additional limitations on total dissolved solids (salinity) are required. The permit allows an unlimited quantity of discharge provided the total dissolved solids concentration is less than or equal to 879 mg per l. If the wastewater discharge has a total dissolved solids concentration of more than 879 mg per l, not more than one ton of salt will be allowed to be released in any single day.

The permit requires periodic self-monitoring with reporting of results on a quarterly basis. The permit is scheduled to expire on January 31, 1983.

(2) APPLICANT NAME: KERR-MCGEE NUCLEAR CORPORATION
MAILING ADDRESS: P.O. BOX 188
GLENROCK, WYOMING 82637
FACILITY LOCATION: SECTION 3 MINE
CONVERSE COUNTY, WYOMING
APPLICATION NUMBER: Wy-0026221

Facility is a proposed open pit uranium mine located approximately thirty miles north of Douglas, Wyoming, in the Cheyenne River drainage. The mine will have four possible points of mine water discharge: two to the Dry Fork of the Cheyenne River (Class III stream) and two to the Brush Creek drainage (Class III stream).

The proposed permit requires compliance with effluent standards considered to be "best practicable" effective immediately. Periodic self-monitoring of the effluent quality is required with reporting of results quarterly.

A public notice of intent to issue a discharge permit for this mine was issued August 9, 1976, however, final issuance of the permit was held up at the request of the applicant. Since many limitations and requirements have changed since August of 1976, the Department has elected to re-draft the permit and reissue the public notice to give all interested individuals an opportunity to comment on the proposed permit.

(3) APPLICANT NAME: P & P ENTERPRISES
MAILING ADDRESS: "HOME RANCH 3RD ADDITION"
P.O. BOX 6498
SHERIDAN, WYOMING 82801
APPLICATION NUMBER: Wy-0027651

Home Ranch 3rd Addition is a proposed permanent housing subdivision with 500 family units located south of the City of Sheridan, Wyoming. The proposed wastewater treatment facility consists of a three cell lagoon system which will discharge into an unnamed tributary of Little Goose Creek (Class I stream).

The proposed permit requires compliance with National Secondary Treatment Standards and Wyoming's Water Quality Standards effective immediately. Because the wastewater will flow a considerable distance (approximately 1 1/2 miles) in an intermittent drainage before reaching Little Goose Creek, strict limitations on total residual chlorine and ammonia were not judged to be necessary.

Periodic self-monitoring of the effluent is required with reporting of results quarterly. The permit is scheduled to expire March 31, 1983.

(4) APPLICANT NAME: PAUL J. MCGEE
MAILING ADDRESS: "NORTHLAND MOBILE HOME PARK"
605 MILLER AVENUE
GILLETTE, WYOMING 82716
APPLICATION NUMBER: Wy-0027634

Northland Mobile Home Park is a proposed facility of 229 spaces to be located north of Gillette, Wyoming. Wastewater treatment will consist of an extended aeration package plant with a capacity of 60,375 gallons per day. The discharge will be to the Little Rawhide Creek (Class III stream) drainage.

The proposed permit requires the effluent quality to be in compliance with National Secondary Treatment Standards and Wyoming Water Quality Standards effective immediately. Periodic self-monitoring of effluent quality is required with reporting of results quarterly. The permit will expire February 28, 1983.

(5) APPLICANT NAME: SUCHOR, INC.
MAILING ADDRESS: C O LARRY'S PLUMBING AND HEATING
1601 4J ROAD
GILLETTE, WYOMING 82716
APPLICATION NUMBER: Wy-0027618

Suchor, Inc. plans to construct a permanent housing development near Gillette, Wyoming, which will consist of 570 family units. A biotank sewage treatment plant with a design capacity of 2 millions of gallons per day (MGD)

is proposed to treat the development's sewage. The discharge will be to Donkey Creek (Class III stream) via an unnamed drainage.

The proposed discharge permit requires compliance with National Secondary Treatment Standards effective immediately. Self-monitoring of the effluent is required on a regular basis and monitoring results must be reported quarterly. The permit will expire January 31, 1983.

(6) APPLICANT NAME: DREILING, LTD.
MAILING ADDRESS: 638 PETROLEUM CLUB BUILDING
DENVER, COLORADO 80202
FACILITY LOCATION: RAUDSEP No. 1-33, NW4, NW4,
SECTION 33, T52N, R68W,
CROOK COUNTY, WYOMING
APPLICATION NUMBER: Wy-0027642

Facility is a standard oil production unit located in Crook County, Wyoming. Produced water is separated from the petroleum product through the use of heater treaters and skin ponds. Discharge is to Miller Creek (Class III stream).

Wyoming's Produced Water Criteria must be met immediately upon discharge. Semi-annual self-monitoring is required for all parameters with the exception of oil and grease which must be monitored quarterly. The proposed expiration date for the permit is September 30, 1980.

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

(7) PERMIT NAME: WADE'S MOBILE HOME MANOR
MAILING ADDRESS: P.O. BOX 277
LARAMIE, WYOMING 82070
PERMIT NUMBER: Wy-0024651

Facility is a mobile home park located on the southwest side of Laramie, Wyoming. Sewage treatment consists of a package treatment plant with chlorination. Secondary treatment standards must be met effective immediately. The discharge is to the Laramie River (Class I stream) via an unnamed drainage.

A wastewater discharge permit was issued for this facility October 20, 1975. Since that time on-site inspections by personnel of this Department indicate that the total residual chlorine limit of the discharge should be increased to 1.0 mg per l, since the discharge flows directly through the trailer court for approximately 1/4 to 1/2 mile in an open drainage.

The proposed permit incorporates the modification and insures that no water quality standards will be violated. Quarterly self-monitoring of the discharge is required. The permit will expire September 30, 1980.

(8) PERMIT NAME: AMAX COAL COMPANY
MAILING ADDRESS: 205 SOUTH ROSS AVENUE
GILLETTE, WYOMING 82716
FACILITY LOCATION: EAGLE BUTTE (NORTH GILLETTE) MINE
T51N, R72W, CAMPBELL COUNTY,
WYOMING
PERMIT NUMBER: Wy-0028018

Amax Coal Company was issued a permit to discharge from its Eagle Butte (North Gillette) Mine on November 1, 1976. The Company is now requesting that the permit be modified to include an additional point of discharge.

The present points of discharge are as follows: 001, settling pond located in the center of Section 16, T51N, R72W, which receives mine water and overburden runoff; 002, settling pond located in the center of Section 21, T51N, R72W, which receives water used for dust control in the coal crusher; 003, settling pond located in the NW4, Section 16, T51N, R72W, which receives mine water; and 004, settling pond in the NW4, Section 16, T51N, R72W, which receives runoff from the temporary spoil storage area and mine water. The additional discharge point (005) will be a settling pond located in the SW4, SE4, Section 9, T51N, R72W, which will receive mine dewatering water.

The proposed modified permit provides the additional discharge point and requires that all five discharges meet effluent requirements judged to be "best practicable." Periodic self-monitoring of the discharges is required with quarterly reporting to the regulatory agencies. The proposed expiration date is January 31, 1983.

(9) PERMIT NAME: EXXON MINERALS COMPANY, U.S.A.
MAILING ADDRESS: P.O. BOX 3020
CASPER, WYOMING 82602
FACILITY LOCATION: HIGHLAND URANIUM MINE,
CONVERSE COUNTY, WYOMING
PERMIT NUMBER: Wy-0026796

Exxon Minerals has requested that the discharge permit issued to them on June 5, 1974, for their Highland Uranium Mine be modified to include three additional points of discharge and moving of discharge point 003. The proposed permit includes all the changes requested and requires compliance with effluent limitations considered to be best practicable for uranium mining operations. All discharges will be to the North Fork of Box Creek (Class III stream) via unnamed drainages.

Discharge point 001 is the outfall from a sediment control reservoir. Discharge points 002, 004 and 005 are discharges from the dewatering wells which Exxon uses to keep water out of the mine pits. Discharge point 003 is the discharge of any water which collects in the bottom of mine pit No. 2. Discharge point 006 is the overflow from the potable water system.

The proposed permit requires periodic self-monitoring of the quality and quantity of the discharge with reporting of results quarterly. The permit will expire March 31, 1983.

STATE-EPA TENTATIVE DETERMINATIONS

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

PUBLIC COMMENTS

Public comments are invited any time prior to April 10, 1978. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits Section, Hathaway Building, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80202. All comments received prior to April 10, 1978, will be considered in the formulation of final determinations to be imposed on the permits.

ADDITIONAL INFORMATION

Additional information may be obtained upon request by calling the State of Wyoming, (307) 777-7781, or EPA, (303) 327-3874, or by writing to the aforementioned addresses.

The complete applications, draft permits and related documents are available for review and reproduction at the aforementioned addresses.

Classified Ads

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

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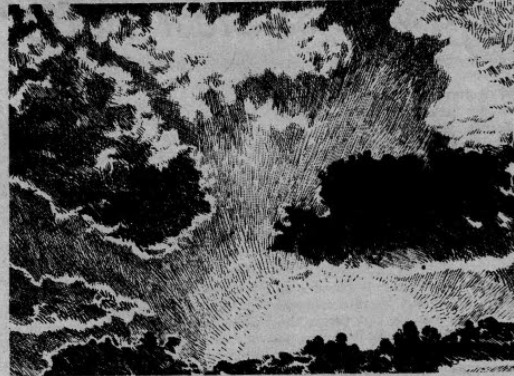
IT'S MY WEATHER, TOO

by Myra Connell

In the last issue I began a discussion of the fantastic stunts called weather modification. To those who are planning such operations, the sky is the limit.

A five-year plan covering 97 counties in Kansas, Missouri, Iowa, and Nebraska is designed to tide farmers through "the droughty 70s" by bringing rain at a cost of five to eight cents per acre. However, God "sendeth rain on the just and on the unjust," even induced rain, so what happens to the farmer who hasn't paid? Further, a farmer would need rain for his crops while the county fair committee would wish for fair weather. The bean farmer might need rain while the barley farmer is ready for harvest, needing sunshine.

Ridiculous? Yes, but not so utterly extravagant as some other schemes. Meteorologists have tried unsuccessfully to divert the path of a hurricane; but "the wind bloweth where it listeth and thou... canst not tell... whither it goeth." I suppose bossing tornadoes around will be next! There has actually been talk of trying to change the patterns of the winds, including, I suppose, the jet streams.



Most shocking of all are two other proposals: to control ocean evaporation by spreading chemicals on the surface and to thaw the ice in polar regions by spreading soot over it. What about the fish and polar bears? Weather modification has even been suggested as a weapon against enemy nations.

Those who would tamper with the powerful forces that control weather have not

had smooth sailing. Loud objections have been blown from many directions. Opponents point out that seeding is not successful unless clouds are almost ready to rain. Results are difficult to measure with accuracy. Worse still, seeding under some conditions may actually cause a decrease in precipitation estimated at 54%.

Results of seeding may be unpredictable. In 1971 a 4,800 square-mile area in central Florida was seeded with no success. The target area was moved to Southern Florida where 100,000 acre-feet of water fell and ruined the tomato crop.

Legal complications in the wake of weather meddling blow one's mind. South Dakota people brought suit against the U.S. Bureau of Reclamation after an enormous thunderstorm dumped 12 to 14 inches of rain on Rapid City and the surrounding region, killing 230 people and causing \$155 million worth of damage. Five to six weeks of cloud seeding over 22 counties had preceded the flood. The initial ruling on the case is being appealed.

Ownership of the clouds is another mind-boggling issue. How does one stake a claim on a cumulus? And what if someone's rain cloud damages your crops? U.S. Rep. B. F. Sisk (D-Calif.) asks, "If we squeeze all the water out of the clouds for the Rockies, will there be any left for Iowa corn...?"

Idaho's attorney general threatened suit against the state of Washington in 1977 for fear that its seeding would rob thirsty Idaho.

So far there are no federal regulations on weather modification, except a requirement that operations must be reported to the Department of Commerce. About half the states have laws about seeding, and some have prohibitions. State law is based on an old concept that a landowner's domain extends to the center of the earth and the height of the heavens. But after all, clouds, wind, and rain have no respect for state lines.

Service Directory

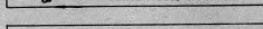
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16-High Country News - Feb. 24, 1978

Pawnee National Grasslands dilemma:

How to protect buttes' wealth while sharing it

by Karen Reichardt

The shortgrass prairie in northeastern Colorado is flat and dry. To the newcomer, it is hopelessly monotonous. Yet there are those who know and love the country, with its flesh-colored washes and cliffs of clay, temperamental thunderstorms, and expansive horizons. Though most tourists head for Colorado's mountains rather than her plains, the place on the prairie is heavily visited. This place is Pawnee Buttes.

The Pawnee Buttes are two towers unexpectedly rising from the prairie sod, erosional remnants of the high plains that once were eastern Colorado. The buttes are a landmark for travelers, naturalists, scout troops, science classes, and photographers. Carloads of visitors descend upon the buttes, especially in spring and fall. At times, 20 or 30 cars a day have been counted on spring weekends, and the number is increasing.

Local people claim that James Michener's book, *Centennial* has drawn many people to the buttes. In his book, he staged a great drama at Pawnee Buttes, though he renamed them Rattlesnake Buttes to fit his tale. One can only guess at some of his new names in the book for old places, but there is no mistaking Pawnee Buttes. People are curious about the place, and once they visit, they want to return.

MANAGEMENT PROBLEM

Pawnee Buttes pose a unique management problem. The two 225-foot landforms are one-half mile apart. Most of the two mesas are part of the Pawnee National Grasslands managed by the U.S. Forest Service. Access roads from the north and south, however, are on a narrow strip of private land owned by Keith Nelson's care, the buttes have been fairly well protected from overnight camping, cross country driving, fires, litter, and dirt bikes,

since he controls the access.

Because of the popularity of the buttes, government agencies have made a series of attempts to acquire the private land, but they haven't been successful. In 1964, the National Park Service considered making the buttes a national monument, but decided the area was too small and there was too much evidence of man's occupancy, according to Stewart Adams, ranger for the Pawnee District of the Forest Service.

In 1967 plans were made by the U.S. Forest Service for providing recreational facilities and managing visitation at the buttes. The agency planned to transform the now badly-eroded access roads into all-weather dirt roads and to build an interpretive overlook on the cliffs to the west of the buttes. However, this plan was predicated on acquisition of the Nelson's land, and he has tenaciously resisted all talk of

selling it. So the plan was abandoned.

Adams is now working with the Audubon Society, the Nature Conservancy, and the University of Northern Colorado on another management plan. He is proposing a nature study area with access only by foot trails from the southwest. He hopes that restricting vehicles in the area will help Nelson, too, who has been worried about misuse of vehicles in the area.

The Forest Service thinks some kind of plan must be implemented soon because of the fragility of the area and the increased use by scientists as well as recreationists. The vegetation at the buttes is suffering the consequences of too many vehicles traveling off the roads. Erosion is an increasing problem, as vehicles make new paths to skirt the two-foot deep ruts.

The shortgrass prairie is dominated by grazing and drought-adapted grasses, such

as buffalo grass and blue grama grass. The prairie sod evolved under grazing, but once the soil is broken up by off-road vehicles, the climax grasses are slow to return, if they return at all.

FOSSILS

Numerous fossil-collection expeditions have been made to Pawnee Buttes in the last 100 years. R. M. Pearl, a geologist at

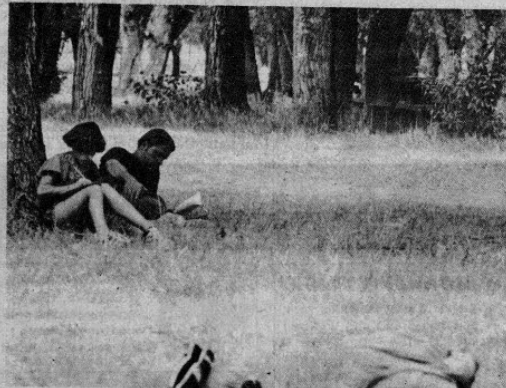


Colorado College, says Pawnee Buttes is the "most rewarding locality in Colorado" for collecting of vertebrate fossils. In the geological formations of alluvial derivation, fossilized remains of land vertebrate animals such as ancient sloths, camels, horses, swine, and non-passerine birds have been unearthed.

Expeditions from the Peabody Museum at Yale, the University of Colorado, the University of California, the Denver Museum of Natural History, and the University of Kansas have been made to the buttes and to cliffs of similar geologic origin to the north and east. In these formations, they have unearthed some significant finds contributing to the evolutionary history of horses. Important bird deposits of ancient origin are also at the buttes area.

Local biologists and naturalists watch the cliffs in the area to find raptor nests. The region of northeastern Colorado is noted for a high density of raptors, including Swainson's hawks, golden eagles, prairie falcons, and ferruginous hawks. Many experts agree that because of the ideal nesting habitat the buttes and surrounding cliffs afford, the land should be protected.

Every part of the country has its own local mecca which is visited and revisited. On this one, the Forest Service is struggling with the dilemma of maintaining the natural values of the area, both for ranching and for wildlife, while at the same time responding to the public's plea for accessibility.



U.S. Forest Service photo

PAWNEE NATIONAL GRASSLANDS are a mecca for prairie tourists. A private school class is pictured visiting Crow Valley Park in the grasslands for a camping and education trip.

Dear Friends

With this issue, we're starting a series of articles on the environmental records of U.S. senators and representatives from the Northern Plains and Rockies.

We're just beginning to realize the scope of the project we've tackled, especially in the more populous states where there are several politicians.

To start, we studied the ratings published jointly by the League of Conservation Voters and the Environmental Policy Center. They do a careful, thorough job and deserve our thanks. But as these groups point out, their ratings do not reflect the legislators' total record.

In our own attempts to judge politicians, we've discovered a number of potential pitfalls. For one thing, final votes on a bill may be dramatically different than committee votes. A legislator who appears to be concerned about the environment because he voted for a bill in its final form may also have been trying to weaken it at every step of the legislative process. If you don't know that, you may misjudge him.

Also, the particular issues we chose to look at may bias our analysis. For practical reasons, we decided to concentrate on 1977 votes. That means that

North Dakota's representatives will fare very poorly from an environmentalist's point of view, because 1977 was a year of water votes—and North Dakota politicians believe the Garrison Diversion is very popular in their state. Another year, energy votes might dominate the ratings and change the picture a little.

While environmentalists in the politicians' home states have been very helpful to us, we have tried not to rely exclusively on their perceptions. Sometimes they'll be too soft on a person because he or she is good on a particular issue, likeable, or the best delegate that state has had in a long time. Sometimes they'll be too hard on their representative because they compare his or her performance with the politician's extravagant promises. And sometimes, they just don't know what happened to Congressperson X after he or she arrived in Washington.

We've tackled this series because we think you're interested in keeping track of our elected representatives. While it would be comforting to send someone to Washington whom you can

trust to do what's right on environmental issues, environmentalists are finding out that's not always safe. For instance, trusted representatives in Wyoming and Arizona have become convinced that there's an "environmental backlash" and that they don't dare vote to protect the land all the time.

Nor should we give up on representatives who didn't promise to vote with us. As environmentalists in North Dakota were reminded last year, there are some who might not always agree but who do respond to their constituents' pleas on some issues.

In short, we hope this series will help you in the difficult task of assessing the performance of your representatives in Washington. We're contacting environmental lobbyists in Washington, the staffs of the politicians, local environmentalists, and are checking the ratings, but we know there will still be holes. Feel free to write in with your own comments.

We're also interested in reader feedback on our story on page 11 about the fledgling efforts of a new bus service. We know similar things are being tried in other parts of the country, and some of them must be succeeding. Anybody have any suggestions?

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