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North Dakota's Riskiest Harvest

Reprinted with permission from the Oct. 28, 1973 **Detroit Free Press.** Allan Sloan is a **Free Press** business writer.

by Allan Sloan

For 60 years, Walter Mittelsteadt's farmland has been providing the cattle and wheat that have put meat and bread on America's tables. And now, one of these days, the land may be providing something else vital to American consumers: energy.

For Walter Mittelsteadt's 970 acres, located in the rolling western North Dakota countryside in America's breadbasket, are also part of the biggest coal deposit on the face of the earth. The deposit, the Fort Union Formation covering parts of four western states, is a former swamp that 60 million years of geological processes have turned into an estimated 1.3 trillion tons of the low-grade coal called lignite.

For years, the lignite on Walter Mittelsteadt's farm and thousands like it just lay there, occasionally getting in the way of farmers' plows. It wasn't much good as fuel in electric generating plants and no one had another use for it. Now, the use has arrived. By a quirk of chemistry, North Dakota's lignite is an excellent fuel to turn into synthetic natural gas — and the rush is on, thanks to the current natural gas shortage.

The action, with coal, oil and natural gas companies fighting each other for coal rights, is so heavy that some North Dakotans are beginning to think of their state not only as a breadbasket, but as an energy basket, too.

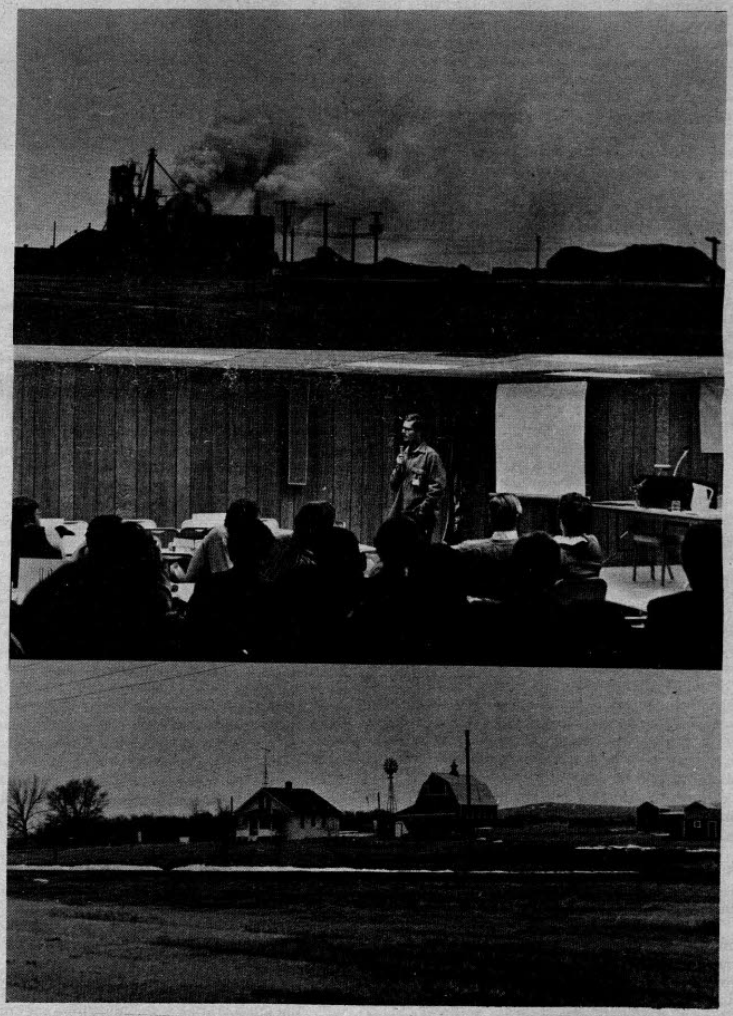
One of the companies with the biggest share of the basket's goodies is the Michigan-Wisconsin Pipeline Co., a sister company of Michigan Consolidated Gas. Michigan-Wisconsin controls 3.5 billion tons of coal in the Beulah area (northwest of Bismarck), and wants to start turning it into gas.

What happens to Michigan-Wisconsin is vital to Detroit, because more than 80 per cent of Michigan Consolidated's gas comes from Michigan-Wisconsin. Michigan-Wsiconsin also sells gas to two smaller gas companies in Michigan, to the biggest gas company in Wisconsin, and in five additional Midwestern states.

The company's management, which had been counting on large supplies of gas from the Canadian Arctic being available during the 1980s, is now afraid that the gas will be delayed, and might not make it at all. As a result, the company now feels that coal gas will be a significant part of the fuel burned in the Midwest in the 1980s and 1990s.

Though Michigan-Wisconsin is the first company to formally announce plans to gasify coal

(Continued on page 4)



North Dakota landowners and policy makers are making major decisions regarding coal development in their state. At issue is the "one time harvest" of strippable lignite versus the productivity of the land if it is left in agriculture. At top, a lignite processing plant run by the Knife River Coal Co. near Gascoyne, N.D. In the middle Ed Dobson, Friends of the Earth Northern Plains Representative, speaks to the North Dakota Wildlife Federation on the problems of strip mining in their state. At bottom, a productive farmstead in southwestern North Dakota underlain with strippable lignite.

HIGH COUNTRY

By Tom Bell

Fatalism is one of those depressing kinds of terms indicating that the die is cast and there is no way out. It is beginning to pervade my thinking in regard to Wyoming and coal development. I suppose my mind has become almost paralyzed by viewing in the mind's-eye all those developments which have been announced.

No day now goes by without some new or additional development related to energy being announced. It is like Watergate to Nixon — all pervading. And yet the people of Wyoming sit virtually helpless, unable to control their destiny. The pity of it is that they have no way of determining the meaning to them.

The problem is so huge and so complex that even those of us who are close to the problem are completely bemused. There is no human institution in existence which can adequately deal with the problem. Given a lead time of ten or twenty years, we could probably cope.

We don't have that lead time. The energy crisis is upon us. **Coal News** (Feb. 22, 1974) says, "The expanded use of coal (is) fast becoming a necessity because of a projected 32 per cent second quarter shortage of residual oil." (The Good Lord was smiling upon this nation. We are just emerging from one of the mildest winters in years — a blessing or we would really be suffering from blackouts and additional shortages.)

And so the inexorable rush to western coal has been set in motion. Montana and North Dakota seem to have some degree of strength in dealing with the problem. Strong leadership by North Dakota's governor and Montana's lieutenant governor provide a bulwark. Montana has tough laws but many residents still think those laws are inadequate. Nevertheless, the states find themselves in the uncomfortable position of being subject to national imperatives.

Last week, I sat in on the meeting of the Program Management Team of the Northern Great Plains Resource Program. This was the program which finally got off the ground in early 1973 with a mandate to file a report by June 30, 1974. (For more on NGPRP, see HCN, Dec. 21, 1973.) That report is aimed at delineating the problems, the unknowns, and the possible directions of coal development. It is to be based on certain assumptions of size and growth of development.

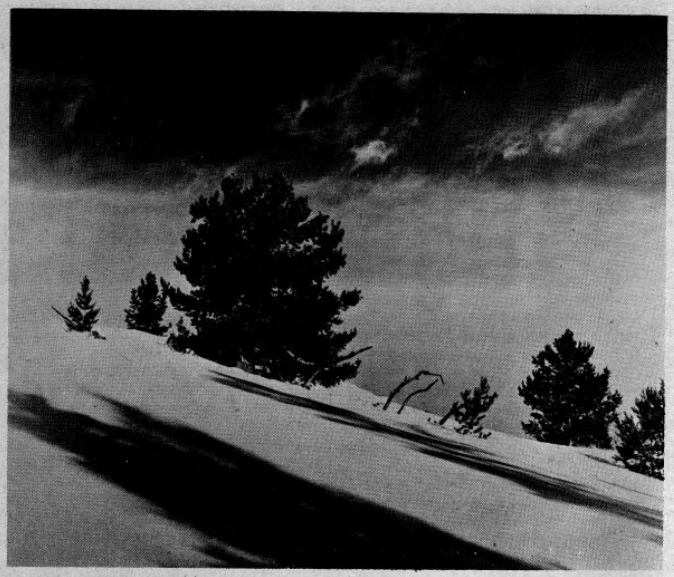
But in spite of the sincere dedication of Program Manager John Van Derwalker and his staff, and the states involved, I fear that their report will be mere window dressing. In the first place, the development of coal in the Northern Great Plains will be like the Alaska pipeline. There won't be time to fully address all the social and environmental implications, or look at the alternatives. There has already been so much money committed by so many big companies that there is no turning back.

And in the second place, there will not be time to institutionalize the needs and recommendations brought out in the report. You have to convince people of the need for planning and for laws which will implement planning. You have to pass those laws and give them time to become useful tools. Lacking leadership on a state level makes the task all the more difficult.

Even that may not be relevant. Already there have been threats that if Montana insists on passing and using tough laws, the federal government may step in and preempt them.

While the federal government is doing an NGPRP report on the one hand, the same government has a coal development impact team in Wyoming's capitol writing another report on the other hand. The latter is a hurry-up job to justify a new railroad and untold coal mines ir just Wyoming's part of the Powder River Basin. It appears to be an end-run.

The politics of big industry and big government may be overwhelming in the long run. Like the Garrison Diversion engineered by the Bureau of Reclamation in North Dakota, the huge aqueducts to carry water to the coalfields may already have moved beyond the drawing boards. The little people won't matter.



Letters

Dear Mr. Bell,

When people out your way are told you must step aside and see your land strip mined for coal, because people here in the East need the low sulfur coal, I hope they will remember that we don't need your coal. West Virginia, Virginia and Eastern Kentucky have estimated minable reserves of over 20 **billion** tons of low sulfur coal and almost as much medium sulfur coal.

Now this may be a small percentage of the total low sulfur reserves, but it is enough to fuel all our country's current coal needs for some 35 years, with no high sulfur or Western coal! Detroit Edison and American Electric Power look as if they want to shift most of their coal purchases to the West and blame the environmental movement for the economic depression this will cause in Appalachia and the Mid-West coal fields. As a former coal miner I don't want this to be and know it does not have to be.

Citizens for Environmental Protection has challenged several West Virginia utilities to let us look for low sulfur Appalachian coal without limits of price or terms of contract. I support efforts of the citizens of the West to restrict strip mining. Believe me, we don't need your stripped coal and we sure don't want it.

W. H. Farley, President
Citizens for Environmental Protection
Charleston, W. Va.

* * *

Dear Tom,

This is a reply to Mr. Bibler's letter and your note in the Jan. 18 issue of **HCN.** Farmers are not allowed to spread manure from any animal on the fields because too many people complain the odor pollutes the air. This is what happens when city people insist on moving into the country.

I tried for a long time to sell or give the horse manure away to anyone who would haul it away. No one was interested as it was too much work to load it on a pick up truck. Some friends finally found a man with a truck and scoop shovel who would haul it for them providing he could have a share of it. This is the only way they have of getting it so I can not charge the stranger for what he keeps. I must cover the pile with grass and leaves before it is picked up so no one can yell about the odor. Manure is hard to dispose of around here as no one wants any ordors around their property. You can not even give compost away as they think it smells.

Manure is liquified and also dried. The dried cow and sheep manure can be bought in any garden supply store. The price is high for 5-10 or more lb. bags. Air pollution controllers are trying to make the farmers liquify manure or sell the raw manure to companies who turn it into liquid and sell it back to the farmers. Big deal!

Sincerely,
Doris Cook
Wooster, Ohio

Dear Sir,

In the Nov./Dec. number of the magazine "Montana Outdoors," published by the Montana Fish and Game Department, I read something about your magazine "High Country News."

I am a nineteen years old boy and very interested in the United States. I have read many books and articles about America and the more I read about it, the more I become interested. I am particularly interested in America's nature

Editorial

Citizens Need the Whole Picture

Rapid development on a massive scale is finally becoming of some concern to more than a few environmentalists in the West. Spurred by the energy crisis, the use of vast coal deposits but scarce water has raised some uneasy questions. Yet, the average citizen has no way of really gauging the matters with which he should be concerned.

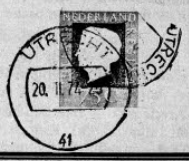
Take the matter of water. The State of Montana is proposing a series of projects to evaluate the potential physical, biological, and water use impacts of water withdrawals and water developments. As Montana points out, "No person or agency can predict the **cumulative** water use impacts of a **number** of power plants. . ." (Gasification and liquefaction plants could be added.) And they go on to point out that, "Agency people from all five Old West Regional Commission states are concerned that the long-term impacts of large-scale industrial water use may be quite serious to irrigation dependent agriculture and other water uses. . . If no long-term policies are formed, our water use future will be shaped for us by a series of corporate decisions." The Old West Regional Commission is composed of Montana, Wyoming, North and South Dakota and Nebraska.

The same series of events which led us into the energy crisis could eventually lead the West into a water crisis. Each big company is going for all it can get to serve its own selfish interest. No one is keeping track of the total, cumulative amount of water that is being committed to each new development. But further than that, no one knows what the cumulative effect will be on streams, underground aquifers, fisheries, agriculture, municipal uses, and others.

The water is only one aspect. What about the cumulative effect of thousands of new people on the existing rurally oriented society, on the quality of life of the uncrowded open spaces?

How is the average citizen going to know how much his taxes are going to go up to take care of all the new services required? How much more crime will there be? How many more fishermen sharing his favorite fishing spot? Or trespassers on his land?

Somehow, the information gap is going to have to be bridged. The citizen has to be better informed so better decisions can be made. —T.B.



which I think is really great.

I write this letter because I wondered whether it would be possible for me to take out a subscription on your magazine "High Country News." Having a subscription on your magazine would give me the opportunity of learning something more about America which is especially interesting for me because I will visit your country this summer.

Allard van Dijk
Albrecht Thaerdaan 44
Utrecht, Netherlands

* * *

Dear Editor,

Have read your various articles on Alaskan resources. Some are reasonable but I feel you are at times missing some of the broader, harder areas that Alaskans have been facing for years without the "Pipeline."

(1) Alaskan fishing has been plagued by Russian, Japanese, & Korean fishing vessels for years — so much so that our fisherman are not allowed to fish in certain Alaskan waters.

(2) Our timber, a major export, is not being sold to the U.S. market, but to the Japanese. They pay more.

This brings me to my final point about Alaskans and their "great land," which is what Alaska means. The Alaskan resources have been plundered and wasted for a long time before the pipeline question came up — and not just by "foreigners." Our own Army and Air Force people based up here have done their dirty deeds, too. One only need go through the military dump to see the carcasses of moose and caribou to realize how wasteful it all is. After one year's residence they are allowed three caribou. But they are too busy looking for horns to use the meat (when many Alaskans can).

Terry Davis
Anchorage, Alask

Guest Editorial

Reprinted from the SIERRA CLUB BULLETIN, Feb., 1974.
by Laney Hicks, Northern Great Plains Regional Representative

Dakotans Rally to Control Coal, Water

Citizen interest and reaction to energy development assumes a different intensity in each of the states in the Northern Plains. North Dakota is moving to the front in its concern over the plans of outside corporations to "develop" the state's coal and water resources.

So far, the North Dakota state government has withheld approval of large water sales pending a further understanding of the impacts rising out of the sales. The Public Service Commissioner is critical of the state's reclamation law, claiming that proof is lacking that the land can be reclaimed to its original use. He states, "We are already developed. Western North Dakota has some of the world's best agriculture. The return from agriculture over 100 years is potentially much more than a one-time harvest for coal, which could destroy our land."

On the citizen level, the Farmers Union has led its members in a critical review of the proposed development. The Union urges its members to look ahead and plan. They should investigate those areas already stripmined and see what happens to the tax systems, the water, and the land. The Farmers Union sees the 1975 legislature as critical to the future of its members and calls for them to decide on a position and get to each legislator prior to the election to find out what his position will be. In its own newspaper, the Farmers Union said that, "Consumers and farmers have joined together to seek equity in the marketplace by concentrating their efforts on the giants of the food industry, rather than on each other. A confrontation is in the making between the corporations that control the world's energy resources, and a coalition of consumers, farmers, and environmentalists."

The most recent addition to citizen involvement is an organization called the United Plainsmen. A coalition of farmers, ranchers, conservationists, businessmen, and professional people, the group hopes to create a grass-roots movement that can make a well-reasoned contribution to the decisions on coal and water development.

The farm and ranch organizations of Montana and Wyoming would do well to follow the lead of North Dakota.

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ND Harvest...

(Continued from page 1)

in North Dakota, it's far from the last. Peoples Gas, which serves Chicago, has announced plans, as have Tenneco and El Paso. Other gas pipeline companies are seeking coal in reserves in the state, and they'll probably want to start gasifying coal soon, too.

But developing the coal means strip mining hundreds of acres a year, and turning the coal into gas means building huge plants employing hundreds of people each. And North Dakota, which is fiercely proud of its rural, isolated character, is not sure it's ready for large-scale mining and industrialization.

Michigan-Wisconsin, which needs state permission to divert water to gasify coal, would like to start working immediately on a $500 million gasification plant. It wants to have the plant ready by 1979 or 1980, and has applied for enough water rights to supply three more. Each plant would use 10 million tons of coal a year, and produce 250 million cubic feet of gas a day — enough gas each day to heat 1,250 Michigan homes for a year.

According to Michigan-Wisconsin's figures, each plant would provide 1,051 direct jobs, and about half as many indirect ones. Were one plant operating now, it would be the state's biggest single non-governmental employer and represent an investment 70% greater than the state's annual budget.

In most states, a thousand-job plant would be nice, but not overwhelming. But North Dakota's population is 617,000 and has been dropping for more than 20 years. In the last federal census, North Dakota had so few people that it now has only one member in the House of Representatives — a severe blow to the state's ego. The state for years has been losing many of its brightest young people, who get their college educations in the state and then leave, because there's nothing for them to do.

So North Dakota, aided by a special bipartisan committee appointed by Gov. Arthur A. Link (who had the congressional seat that the census took away) is now weighing the situation: Does it risk the land's future productivity to allow strip mining to produce immediate economic benefits? And should North Dakota allow industrialization to provide jobs for its young people, and risk disrupting the state's rural character?

One of the reasons that the question of gasifying North Dakota coal has not become a national issue is that the state is isolated, and likes things that way. In the wide open spaces, life is a lot different than it is in the big cities, where the influential media voices dwell. You can see for miles, the air is breathtakingly clean, and 15 minutes is a long time to take driving to work.

In North Dakota, people don't measure their land in acres — they talk about sections (640 acres, equal to a square mile). None of the state's newspapers carry full New York Stock Exchange listings, and prudent people carry survival kits in their cars in case of a breakdown during one of the frequent savage winter storms.

Even the references people go by are different. When C. Emerson Murray, the influential director of the state's legislative council, wanted to talk about gasification he said, "I think it could be the most important thing in North Dakota since the first trail drive of longhorn steers from Texas in 1882."

SELLING YOUR SOUL TO THE COALMEN

In many ways, Walter Mittelsteadt and his family typify North Dakota and the coal debate going on there. Middlesteadt, at 58, two years below the average age of North Dakota's working farmers, would very much like the royalties on what are probably millions of tons of lignite under his land. But he's worried about whether the land can be fully restored after the mining's done.

During an interview in his cozy farmhouse, Mittelsteadt and his wife, Hertha, talked about coal and the future. With them was their 30-year old nephew, Wesley Mittelsteadt. Wesley, a staff sergeant in the Air Force, left North Dakota 13 years ago "because there was nothing to do." He'd like to serve out his 20 years in the Air Force, get his pension and come back to work in a gasification plant — but he's afraid that the plant will have caused so many changes that he won't be coming home to the North Dakota he left.

Throughout the discussion, the smell of a homemade pie being baked wafted through the Mittelsteadt living room, a constant reminder of the good, wholesome life many city people imagine that farm people lead.

Like most farmers in North Dakota, Mittelsteadt has benefited from his year's record-high beef and wheat prices. This record prosperity has made the state less eager for industry than it might have been a few years ago, when life was a lot harder down on the farm.

Mittelsteadt also did very well with the rights to his coal on the land. Most farmers signing away their coal rights got a dollar an acre cash bonus, plus a dollar an acre per year in advance royalities. Those royalties come off the 10 cent a ton payment most farmers will get if the coal on their land is finally mined.

Two and half years ago, when Michigan-Wisconsin got into the coal business, it made a deal with the North American Coal Co., which runs a small mine near Beulah. North American, which controlled only about 400 million tons of coal, used front men to convince farmers to lease the company more coal rights. The company then bought the leases from the front men (paying them overrides and bonuses), and has now assembled 3.5 billion tons for Michigan-Wisconsin. The company's goal is five billion.

"People have to have heat and stay warm. But what I'm really afraid of most is those people coming in."

But Mittelsteadt held out when the leasing agents came around, and got a very large bonus — 30 times the standard dollar an acre fee — when he finally signed his rights away this year. He's likely to become a millionaire if his land is mined. North American estimates it can get 12,000-25,000 tons of coal from the average acre — $1,200 to $2,500 an acre to a man with a 10 cent royalty. The land itself would probably sell for about $150 an acre, and cost the coal company 10 times that to reclaim.

One state legislator, no friend of industrial development, said the farmers who now fear strip mining signed away their coal rights because they liked the money, and didn't think their land would ever be mined. He likened the situation to Goethe's Faust, who sold his soul to the devil, but never expected the devil to collect.

Mittelsteadt says he's worried about what will happen to the neighborhood if Michigan-Wisconsin builds its plant nearby. He thinks he might even have to start locking his doors.

"People have to have heat and stay warm," he said, so he's willing to have his coal changed into gas for them. "But what I'm really afraid of most is those people coming in. They'll all be hoodlums, especially when they're building the plant."

GASIFICATION — ANCHOR TO WINDWARD

Despite North Dakota lignite's disadvantages as boiler fuel — it has a low heat content, a lot of water and ash — it has a high carbon content, which makes it just dandy for conversion into gas. And North Dakota's coal is found under gentle, rolling land, easy to mine and relatively easy to reclaim. The contours of the land are not like the steep mountains of Appalachia that strip mining has ruined forever.

Most important of all, North Dakota has vast amounts of water available — water is essential for the gasification process — and most of the coal is in private, rather than governmental hands.

Originally, Michigan-Wisconsin didn't want to turn coal into gas until at least the 1980s. Gasification technology is still relatively primitive — the only available process for making pipeline-quality coal gas was developed by the Lurgi Co. of Germany 40 years ago and used to manufacture gas for the Nazi war effort — Michigan-Wisconsin wanted a better process.

The U.S. is pushing coal gasification hard, but no new processes are ready now. While the technology developed, Michigan-Wisconsin hoped to get delivery on the vast quantity of Canadian Arctic gas — five trillion feet — it bought from Imperial Oil (Exxon's Canadian affiliate). That was enough to supply 630 million feet a day for 25 years.

Plans called for that gas to be carried to U.S. markets by 1979 through a $5 billion pipeline connecting Alaska's North Slope and the Canadian Arctic with U.S. markets. By no small coincidence, the U.S. route of the pipeline runs near Dickinson, N.D., not far from the coal fields of Beulah. M-W would have been able to stick its coal gas in the line and pay a transit fee, without worrying about laying its own line from North Dakota to Detroit.

But now, the company isn't optimistic about getting its Canadian gas by the end of the decade and is dusting off its backup facility: coal gasification using the proven Lurgi process.

"We had some misgivings about Canada," says Wilbur H. (Deke) Mack, chairman of Michigan-Wisconsin's parent company, American Natural Gas, and the driving force behind American Natural's successful gas supply program.

"Gasification," said Mack, "is our anchor to windward, so to speak."

But the North Dakotans are having misgivings about Michigan-Wisconsin, at least in part because the company has changed its mind on how much water it wants. When the company's engineers submitted their request to the state water board in January, they asked for enough water to run 22 gasification plants — the most that 5 billion tons of coal would support. Later, when the size of the application frightened people in the state, the company's management and public relations people cut the request back to four plants, saying that the 22-plant figure was an unfortunate miscalculation.

But the company's coal reserves make it clear that there are plans for more than four gasification plants — or perhaps for turning the coal into a product other than gas. The 22 plants Michigan-Wisconsin originally talked about would have been an investment of $11 billion (80% more than the state's entire tax roll), would have created 23,000 direct jobs and probably brought 200,000 people (a third of the

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state's present population) into a small four-county area.

The company now says it never intended to build 22 plants, and that it put in its enormous water request because an engineer on the state water board wanted it.

Water from the Missouri River, which flows through North Dakota, isn't used very much in the state. But some people feel that the more water North Dakota claims now, the more it will get when the federal government and the states along the Missouri's route finally divvy up the water. The federal government and the states are squabbling over who controls how much water.

But Governor Link, who is generally considered to be the key man in deciding whether Michigan-Wisconsin gets it water and under what conditions, now feels that if Michigan-Wisconsin changed its plans once, it can change them again whenever it's convenient.

Link, who appoints the state water board's members, is the son of European emigrants who struggled as far as North Dakota and homesteaded the land which his family now farms.

He seems inclined to give Michigan-Wisconsin permission to build at least one plant — providing the company agrees to stringent controls and makes advance tax payments to let state and local government build the facilities the new mine, gas plant and their employes would need.

But Link is resentful over what he considers to be a rush job from Michigan-Wisconsin. "I'm a lover of the land," said Link, who sometimes wears cowboy boots to work. "I'd like to see the land remain clean and pure, with no invasion. But I have to be realistic. . . .

"The companies seem to think that it's got to be right now, that all of us who have responsibilities have to respond overnight.

"The companies have been laying these plans for a long time . . . I think it's a bit unfair to ask us to make up our minds in six months or a year."

Michigan-Wisconsin feels differently. It says it needs a decision now in order to start engineering and environmental studies. Arthur Seder Jr., American Natural's handsome, articulate president who's been acting as the company's chief representative in the state, says that North Dakota will have plenty of time to control what his company does.

The first Michigan-Wisconsin plant won't open until at least 1979, Seder says, and by then the state will have had plenty of time to shut Michigan-Wisconsin down if it doesn't like what it's doing.

Also, Seder says, the studies for Michigan-Wisconsin's second plant would include the impact of plants that other companies will have in operation or in planning, so that the state will not lack for data on what gasification is doing.

Michigan-Wisconsin is not making what could be its most potent argument of all — that if the state of North Dakota stalls or attaches conditions that the company can't meet, the federal government will probably step in.

Allen Olson, North Dakota's attorney general, feels sure that the federal government — which is pushing coal gasification and, in Olson's words, "doesn't care a rat's ass about North Dakota" — will cause the state a lot of trouble if North Dakotans take too hard a line on coal gasification.

IF YOU LIKE BIG CITIES, MOVE TO THEM

Michigan-Wisconsin is accentuating the positive: jobs with an average salary of $11,000 a year, large tax payments, an honest attempt at land reclamation. The company has also agreed to let the state review its federal environmental impact statement for the gasification project, and says it will pay advance taxes to finance needed facilities, sell part of its coal gas to North Dakota utilities at cost, and comply with whatever standards the state sets up.

Michigan-Wisconsin is showing a great deal of enlightened self-interest. It feels that it will have to meet strict standards in the long run, so it prefers to be generous and concede without a fight.

Complicating an already complex situation — in which energy for the present is pitted against future food production, and environmental quality is pitted against potential jobs — is North Dakota's unusual history.

The sparsely-settled state, now known for its conservatism, has a long history of socialism and Populism. The state has had socialist government, and has always felt exploited by "big Eastern interests," ranging from New York bankers to grain buyers in Minnesota.

Attorney General Olson, one of the few top North Dakota politicians to have spent part of his working life outside the state, says, not entirely joking, that, "Here, trust stops east of the Mississippi."

When North Dakotans felt that banks were cheating them, they started a state-owned bank that's now North Dakota's biggest. When farmers felt exploited by Minneapolis grain merchants, North Dakota started a state-owned grain elevator.

Almost surprisingly in this age of environmental concern, there has been almost no organized effort by ecologists to block gasification in North Dakota.

The Sierra Club has filed a suit to stop coal development in the Dakotas, Montana and Wyoming until environmental impact statements are filed, but hasn't specifically attacked Michigan-Wisconsin's project.

Friends of the Earth, another highly-active environmental group, has contented itself with sending its North Dakota field worker, Ed Dobson, touring the state showing anti-strip mining slide shows.

Dobson, who tours the state driving a Volkswagen Beetle, also distributes bumper stickers mocking strip mining. Dobson's stickers, his answer to the Mining-Is-Everyone's-Future sticker of pro-coal forces, show the word "coal" and a gaping maw. Five letters, which Dobson says are transliterations of the Crow language, refer to coal as an obscenity.

Dobson's main argument is that low rainfall and high sodium content of the soil in many parts of North Dakota make it impossible to reclaim land effectively.

North American Coal hasn't been reclaiming North Dakota land for too long, but says it's found nothing so far to indicate that total reclamation is impossible.

The closest thing the state has to an indigenous environmental movement is the North Dakota Wildlife Federation whose newsletter, **Flickertails**, opposes gasification. "If we like industry," says Bernice Palmer, the newsletter's editor, "there are 49 other states we could go to. North Dakota is special, and kind of rare. If you like big cities, move to them."

Perhaps the reason there's no outcry from out-of-state environmentalists is that there's not much need for them. Even people who are highly sympathetic toward M-W's plans seem worried about the impact of strip mining and large numbers of people.

D. H. Dettman, executive vice-president of the Bank of Beulah, would benefit mightily if new industry were to move into the city, which had 1,344 people in the 1970 census. But even Dettman, considered by North American Coal to be one of their supporters, is worried.

There's good and there's bad in it," said Dettman. "We have no crime problem, we have no drug problem. . .

"We live so far from lots of these problems city people have that you can't begin to understand it. At the present, you could say we lead a sheltered life, compared to what it's like in cities . . . We probably don't understand the ramifications, what the good and the bad would be."

Later this week, North Dakota's energy committee will hold its last scheduled public meeting, and go to work on writing its recommendation to the water board. Though no one can say for sure, the prevailing opinion is that Michigan-Wisconsin will get its water permit for one plant, with strict conditions. Whether it will get permission for the three more plants it wants is uncertain.

(Editor's note: Since this article was written, the single water permit for 17,000 acre-feet of water has been granted to Michigan-Wisconsin. Gov. Link has said he would like to see a moratorium on future permits until the state assesses the impact of the one gasification plant.)

"If we like industry, there are 49 other states we could go to. North Dakota is special, and kind of rare."

But even that one plant will change North Dakota.

E. Bruce Hagen, the North Dakota Public Service Commissioner who supervises mining operations, says the state is now mining only about 6.8 million tons of coal a year — and that one gasification plant will more than double that overnight.

Hagen, whose pencils carry the cheery message "North Dakota Public Service Commission — A Regulatory Body With Feelings," says the state has only one reclamation inspector, and will have to hire more if it's to keep up with what's happening.

Being exposed to North Dakota has changed Michigan-Wisconsin, too. During a brief intermission at one of the hearings at which he represented the gas company, Art Seder found himself empathizing with the state's people.

"I feel for these people, I really do," said Seder, who's as sophisticated a city boy as you're likely to find.

"This is a basic decision. If I were a rancher out in western North Dakota, I don't know how I'd feel about this." Then, he added slowly, "No. I'm afraid I would know how I'd feel."

"Although commendable progress has been made in leveling and reshaping the land, evidence is lacking that such land can be returned to its former productive conditions. My observations from both ground and aerial inspection convinced me that reclamation practices presently employed are simply not adequate. Less than total reclamation constitutes trading our infinitely productive agriculture land for a one time harvest of lignite resources. If energy is a national problem and responsibility, then reclamation must also be a national responsibility."

North Dakota Governor Arthur Link

Strip it, Ship it, Burn it, Gasify it . . .

Nation's Eyes Turn to North Dakota's Coal

by Bruce Hamilton

North Dakota's vast lignite coal reserves have been used ever since the first white settlers came to the territory. Lewis and Clark used lignite in forges and for heating at Fort Mandan in the winter of 1804-1805. When the railroads cut across the plains, lignite from North Dakota was a major fuel source.

But lignite mining has always been a relatively minor aspect of North Dakota life. Agriculture is the dominant land use. In most of the region underlain with lignite, over 90% of the land area is included in farms. Dryland crops (primarily spring wheat), and range livestock are the major enterprises.

North Dakota's coal reserves total 350,698,000,000 tons. About 2,075,000,000 tons of those reserves are strip minable. Of the strippable reserves, 1,678,000,000 tons are low in sulfur content (one per cent or less) which makes them attractive from an air pollution standpoint. These tempting statistics have brought the energy producers,who are no longer assured of cheap foreign oil, to North Dakota.

Coal development in North Dakota is mostly for export. With a steadily declining population now numbering about 617,000, and massive hydroelectric projects along the Missouri River, there is not much need for expanding coal development for in-state use. However, the rest of the country is hungry for low sulfur coal.

Coal exports from North Dakota have increased from 0.5 million tons in 1969 to 2.3 million tons in 1971. Exports are expected to top 7.4 million tons by 1975. Further substantial increases in coal export can be expected over the next decade. Unit trains presently transport coal from the state, and slurry pipelines have been suggested as a possible alternative in the future.

But now the talk is focusing less around exporting coal. Each month new plans are disclosed for building facilities in North Dakota to produce electric power or gas from the state's lignite, and exporting those commodities. Gas and electricity are relatively cheap to transport. And the economics of shipping low heat content (6,700 Btu per pound), high moisture content (40% water by weight) lignite are questionable. It costs about one-half cent per ton per mile to ship coal by unit train. That's a high price to pay for shipping water to Chicago.

The Knife River Coal Co. lignite strip mine near Gascoyne, N.D. This lignite supplies a power plant at Big Stone Lake, S.D. Knife River Coal is a subsidiary of Montana Dakota Utilities.

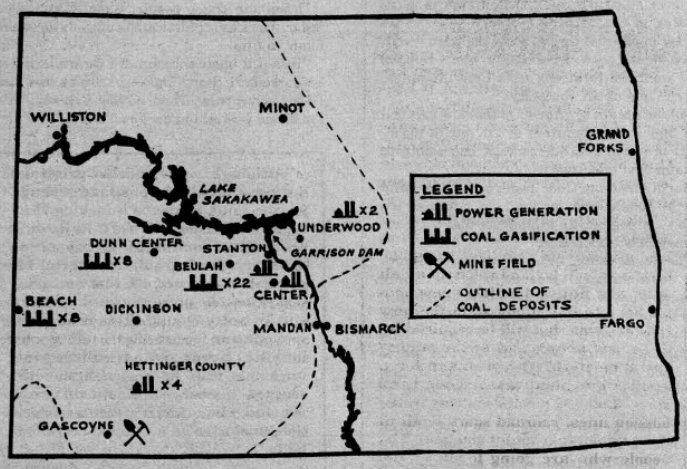
DEVELOPMENT PLANS UNFOLD

The North Central Power Study (Oct. 1971), a joint investigation by western utilities and the Bureau of Reclamation, identified the potential for four major power complexes in North Dakota. The list included a 5,000 megawatt (mw) complex near Bowman, a 5,000 mw complex near Beulah, 3,000 mw at Dickinson and 1,000 mw at Center.

While the size and number of facilities is uncertain, the resource requirements can be predicted. One estimate puts a single 1,000 mw lignite-fired power plant's requirements at: 6.1 million tons of lignite per year, 8,500-11,250 acre-feet of water per year, 100 full-time workers at the plant and 110 full-time workers at the mine. Obviously, a number of these units would have a major impact on the rural agricultural economy of the area.

The North Central Power Study concentrated on the existing technology of coal-fired electric power generation. Today, many energy companies are looking at North Dakota's lignite reserves for gasification. While several processes have been tested to convert coal to gas, only one, the Lurgi process, has been operated on a commercial scale.

Gasification is not seen as an energy supplier until the 1980s, but already companies are firming up commitments on two essential commodities — coal and water. Though few formal plans have been announced for coal-fired electric generation or gasification, a look at coal leasing and water requests can give the observer a look at what the future may hold for North Dakota.



The sites above either have been proposed as locations for new energy facilities or are proposed additions to existing power plants and mine fields.
Source: United Plainsmen News.

COAL RUSH; WATER RUSH

Any discussion of coal development in the West brings you inevitably to a discussion of water, or rather the lack of it. Although North Dakota is blessed with more available water than Montana or Wyoming, coal developers still run into a distribution problem. Cutting diagonally across the state is the mighty Missouri River carrying hundreds of thousands of unappropriated acre-feet of water. Much of this available water is stored in the mammoth reservoir behind Garrison Dam known as Lake Sakakawea.

Most of the western half of North Dakota is underlain with lignite coal reserves. In the nine-county West River planning area, which encompasses eight million acres in the state's southwest corner, nearly one million acres have already been leased for coal. A total of about two million acres is under lease in the state according to reports filed at county register offices. This leased land does not have enough local water to support full development.

The water requirements for a moderate amount of mining and preparing coal for shipment are nominal and might be provided from existing supplies. In these processes, water is used mainly to control dust on haul and access roads. However, if coal is to be used for power generation or conversion to other forms of fuel,

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"Coal development in the Northern Great Plains has the potential to transform the character of the region irrevocably. This potential poses both challenges and opportunities to area residents and public decision makers."

Dr. F. L. Leistritz
Assoc. Prof. of Agricultural Economics
North Dakota State University

then water must be imported. Such development would require a maze of pipelines, canals and storage reservoirs.

Wayne Kube and his associates at the Engineering Experiment Station of the University of North Dakota, Grand Forks, have made some estimates of water requirements. They predict that a plant utilizing the Lurgi gasification process to produce 250 million cubic feet of pipeline quality gas and 30 million cubic feet of hydrogen daily would use over 12 million tons of lignite annually. This production would consume 43,750 acre-feet of water. Plant cooling would require an additional 693,000 acre-feet of water annually, although most of this water could be recirculated.

These figures are much higher than one utility's recent request for 17,000 acre-feet of water to run a similar-sized gasification plant in the region.

Kube and his associates also estimate that the use of 11.7 million tons of coal for coal-fired electric power generation would consume about 15,770 acre-feet of water annually, Again, substantially greater quantities would be required for cooling.

Already 17 major energy companies have registered an interest in North Dakota's water. In a recent survey conducted by the State Water Commission to "find out what to plan for as an outside estimate" the companies expressed an interest in obtaining nearly 700,000 acre-feet of water.

The Water Commission survey also gave tentative locations for 28 dams. These are ones the industry has proposed for nearly every major river and creek west of the Missouri River.

The Michigan-Wisconsin Pipeline Co., a subsidiary of American Natural Gas Co. of Detroit is the most notorious applicant in the state. In early 1973 M-W shocked the state by a request for 375,000 acre-feet of water to supply 22 proposed gasification plants in the Beulah-Hazen area. Water was requested from three intake sites on Lake Sakakawea and one site on the Missouri River.

Later the M-W request was reduced to 17,000 acre-feet — enough for one gasification plant. M-W now says it wants to construct four plants and is interested in obtaining 68,000 acre-feet of water. The company has acquired an option on 3.5 billion tons of North Dakota lignite from North American Coal Co.

Barring the original request of M-W, El Paso Natural Gas Co. of Texas has expressed an interest in the most water from North Dakota. El Paso wants 150,000 acre-feet from Bowman, Dunn and Stark counties for electric generation and coal gasification. El Paso has listed four dam sites along the Little Missouri, Knife and Green Rivers as potential sources of the water.

MinnKota listed the second highest amount, according to the survey. The electric cooperative is interested in 100,000 acre-feet of water for power generation in a Hettinger County complex. MinnKota holds leases on 115,000 acres in Hettinger and Adams counties. MinnKota would be part of a 6,400 mw complex proposed in the vicinity of Regent, N.D.

Tenneco Co. of Houston, Tex., has told the survey it is interested in obtaining 90,000 acre-feet of water for coal gasification. A Tenneco subsidiary has coal leases on 8,000 acres of land in the Beach area of Golden Valley County. The Intake Water Company, another subsidiary of Tenneco, proposes to divert 80,650 acre-feet of water from the Yellowstone River at Intake, Mont. This would go by pipeline to their North Dakota coal holdings.

The list goes on. Natural Gas Pipeline Co. of America (Chicago), which owns the People's Gas Co., wants 80,000 acre-feet. Consolidation Coal Co. and Industrial Coal Co. each wants 70,000 acre-feet. Kerr-McGee Corp. of Oklahoma City has registered an interest in 25,000 acre-feet. Montana-Dakota Utility Co. may be asking for 30,500 acre-feet. All these possible requests illustrate the tremendous interest in the region and the overwhelming pressure for rapid development of the area.

A DIVERSION SCHEME TO MATCH THEIR DREAMS

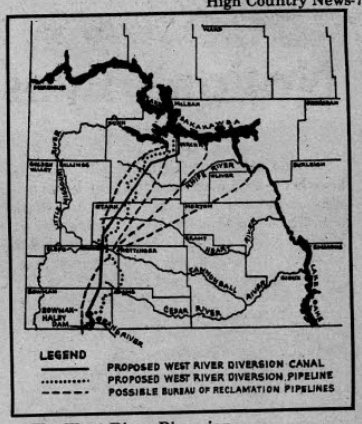
This heavy demand for water has pushed the State Water Commission and Gov. Arthur Link into the limelight. This month the first water permit for gasification — 17,000 acre-feet to Michigan-Wisconsin — was granted after many debates and a demonstration at the state capitol.

Gov. Link has said publicly, "If a one-plant permit is granted, then I believe we must have a moratorium on all other water permits for coal gasification until the first plant is studied to determine environmental, social, and economic impacts. This one plant could serve as a pilot project, under state guidelines, to determine just what the procedure should and should not be in the future."

In the meantime, the state is busy preparing a feasibility study of a massive water development scheme known as the West River Diversion. The latter is a potential project in which water would be pumped out of Lake Sakakawea on the Missouri River. It would be piped to the southwestern part of North Dakota where the coal fields are.

Karen May, planning director for the Roosevelt-Custer RC and D (Resource Conservation and Development) office. She plans for eight counties in southwestern North Dakota. Much of her time is spent speaking to local groups about coal development in the region.

"It's pretty obvious that the strip mining activity itself is a competing land use. But we also have to realize that there will be land eaten up by all of the new houses that those new people have to live in, by all of the new road systems that will be required by those new people and by the mining operation itself. The plant site for a gasification plant takes about 1,000 acres, dam sites, canal systems, transmission lines, railroad spurs — all of those things take additional land. The people who are going to suffer the most in that situation are going to be your farmers and your ranchers."



The West River Diversion. Map reprinted from the Mott Pioneer Press.

Vernon Fahy, Chief Engineer for the State Water Commission says, "Some North Dakotans want to see our lignite reserve developed. Others don't. If there's a 'no go' decision about lignite development, our water requirements (in the West River counties) will be somewhat diminished. On the other hand, if the opposite decision prevails, we better know pretty well what our options are as far as meeting substantially increased demands for water. The West River study is going to produce some of the answers we need."

Fahy favors the diversion for two reasons. First, such development "can help stem outmigration from the state and help stabilize the economy." Second, the diversion will "establish rights to the waters stored here in North Dakota to satisfy all forseeable needs. These rights can be obtained only through actual use." North Dakota, like most Western states, operates by the appropriation ("use it or lose it") water rights doctrine.

The West River Diversion calls for lifting Lake Sakakawea water 1,280 feet in elevation over a distance of from 210 to 260 miles. Through a conveyance system, water would then be provided through turnouts located at interceptions with Spring Creek, the Knife River, the Green River, the Heart River, the Cannonball River, the Cedar River, the Little Missouri River and the Grand River.

From the turnouts, water would flow down the natural drainages by gravity feed, back toward the Missouri River. En route, water would be available for a variety of beneficial uses including irrigation, mining, gasification and power production.

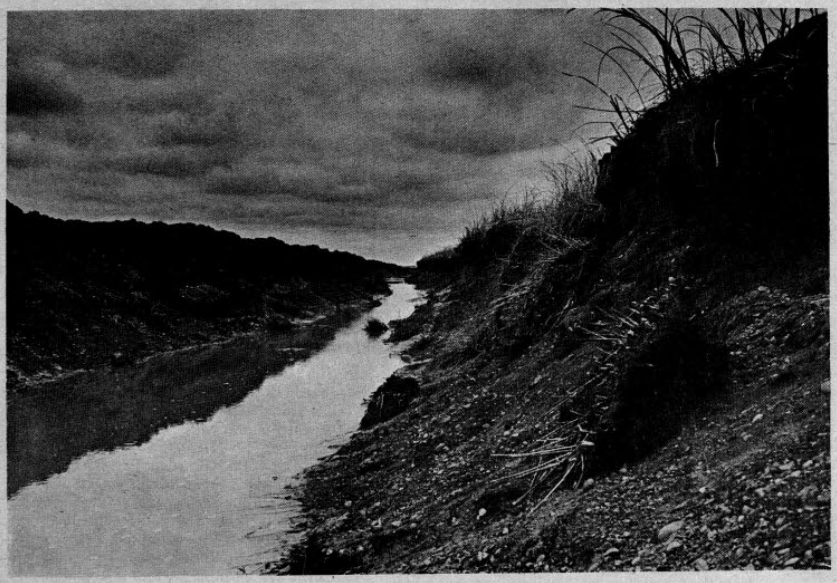
Fahy emphasizes that the West River Diversion study is more than a narrow analysis of how water can be lifted and transported from Lake Sakakawea to the West River area. It is a comprehensive study in that it is concerned with an array of alternative means of using, conserving and enhancing the resource base. It analyzes current and projected demands for water to be used by municipalities, industry, irrigation, recreation, fish and wildlife, pollution abatement, flood control and environmental enhancement.

Fahy feels when the study is completed, decision makers will have a wealth of information to assist them in setting state policy and in selecting a course of action.

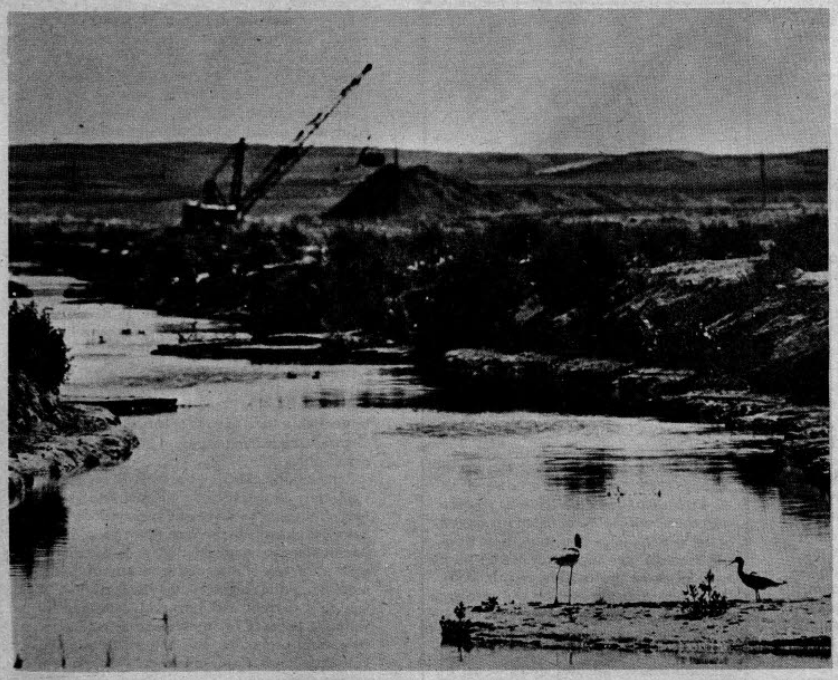
Line Reference Target LRT-BE

...g... Country News
...day, Mar. 1, 1974

NEW WOUNDS FOR



First construction on McClusky Canal as it began to drain John's Lake, once considered one of the finest canvasback marshes in North America. April 1972.



A pair of avocets view the dragline constructing the drainage ditch that destroyed John's Lake. The ditch was later expanded to form a portion of the McClusky Canal. Photo taken August, 1972.

"An irresistible force creeps across the beautiful, winds
Dakota. It leaves in its wake a massive open wound up
exceeds 350 feet in width and 100 feet in depth. The force
dragline with 200 foot boom and 13 cubic yard bucket.
Canal, a part of the colossal Garrison Diversion Unit."

N

Ode to Diversion

My generation saw the "DAM" VISION.
We were Awed by the earthen wall
And cheered when the ribbon was cut,
The Mighty Missouri harnessed.
Irrigation and recreation at last,
HURRAH AND ALLELUIA!

Today I view the final rape of Mother N
Did we ENVISION THIS?
Could we but see this ragged gorge,
Winding its way through the meadows a
Nothing will stop its relentless path,
Aquifer or Hill, Family home, Wildlife, o
The relentless march goes on.
My generation is shocked!
This is my Native Land, so crudely hand

Where is that Vision for the future?
My Children's Children's Children,
I fear for them.
Will no one plan for them?

Don
McLean Cou

Photos by Richard Madson of the Committe

See related story page 10.

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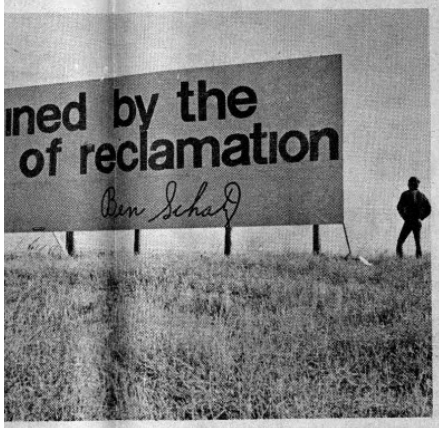
FOR OLD PRAIRIES

s across the beautiful, windswept prairie of central North
a massive open wound upon the earth which, at times,
100 feet in depth. The force is a 1,200,000 pound walking
and 13 cubic yard bucket. The wound is the McClusky
Garrison Diversion Unit."

Dr. Glen Sherwood
New Wounds for Old Prairies



Leo Reiser and his wife standing on the spoil bank for the McClusky Canal, overlooking what is left of their farmstead, September '73.

Ode to Diversion

n saw the "DAM" VISION.
d by the earthen wall
when the ribbon was cut,
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D ALLELUIA!

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Vision for the future?
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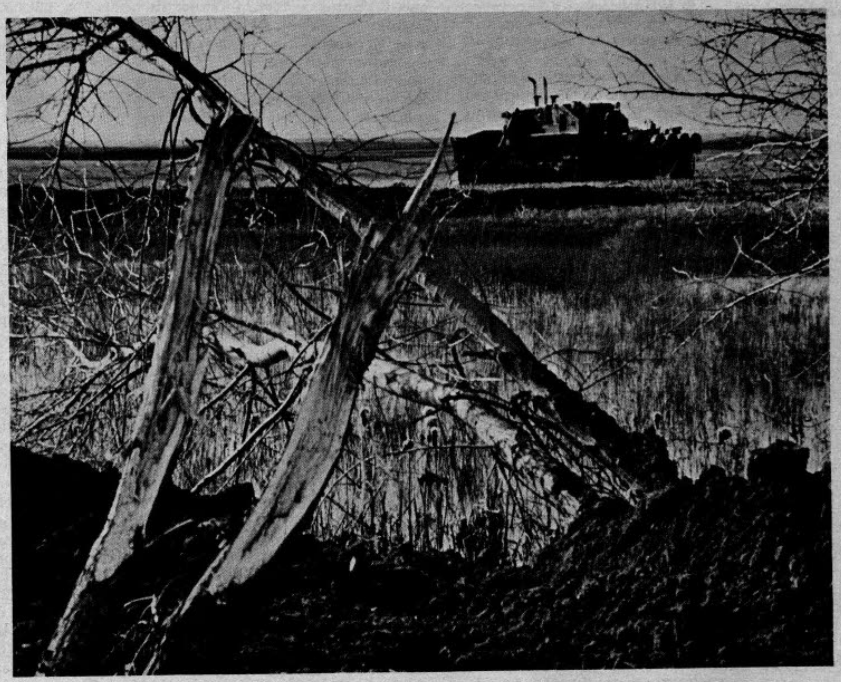
Don Sondrol, President
McLean Country Farmers Union



Audubon National Wildlife Refuge, photo taken April 1972 as construction for the McClusky Canal moved through the refuge. Audubon Refuge was orginally set up to mitigate for wildlife habitat lost when Garrison Dam was built on the Missouri. Now, when the Garrison Diversion is being built, the refuge is one of the first areas being destroyed.

d Madson of the Committee to Save North Dakota
page 10.

Reckoning from Washington

by Lee Catterall

Opponents of large-scale strip mining have lately confronted obstacles that, if not new, are more formidable than they might have expected.

A few months ago, muckraking national television commentators were showing scenes of great dozers and shovels turning land upside down. The commentators said that was awful. Now, they're showing charts indicating the amounts of untapped western coal, and saying it's downright terrible it hasn't been tapped.

Last year, opponents of a stiff strip mining bill, using tactics that angered Rep. Teno Roncalio and others, got the House Interior Committee to stall further consideration and action on the bill until late January.

They thought, with not particularly remarkable acumen, that a hard winter with fuel shortages would work in their favor when it came time for politicians to cast votes. That strategy has worked so well that the issue had to be postponed another month because of the energy crisis. The committee was scheduled to finally return to the strip mining bill this week.

Last week, a U.S. District Court in Washington handed down a decision saying the federal government has been pursuing a reasonable policy in its handling of coal development, despite environmentalist objections. It was an important decision environmentalists didn't expect, from a judge who is

known as a liberal sympathetic to nature and its friends.

The Sierra Club and the National Wildlife Federation complained in court that the federal government had gone "helter-skelter" in its policy of granting leases, permits, contracts and other such things to allow coal mining in the Powder River Basin.

Not so, ruled Judge Barrington Parker. The Northern Great Plains Resource Program, the Interior Department's coal plan for the basin, "is a study project and not a program for development," Parker's court opinion says.

Quite to the contrary, it says, the Interior Department "has taken action to control development of coal on a national basis," including the Northern Great Plains.

Parker points to three such efforts: first, the Montana-Wyoming Aqueducts Study of potential water resources; second, a new coal leasing policy that has included a halt to new prospecting permits; and, third, a willingness to avoid environmental catastrophes on Indian lands.

"Those actions," the court says, "are not part of a plan or program to develop or encourage development but are attempts to control development by individual companies in a manner consistent with the policies and procedures of the National Environmental Policy Act of 1969."

So the environmentalists, still trying to digest last week's bitter pill, must now turn their attention again to Congress. The Senate last year passed a tough version of a strip mining bill.

But the bill is a long way from final enactment. The House committee must act, then the entire House. And later, both the House and Senate must take a final vote on a bill that can be put together from the two versions.

As Washington lobbyists say, there is room for "slippage." There's also plenty of room for politicians to change their minds — be fickle, cynics would say — and be re-elected.

Board of Directors, Committee to Save North Dakota. **Photo by Richard Madson**

Garrison Diversion Threatens the Prairies

by Bruce Hamilton

Ben Schatz's farm was cut into three pieces in 1970 to make way for the Garrison Diversion. He was offered $10,500 for 80 acres of land taken. Canal construction forced Schatz to reduce his cattle operation by a third. His income has already been cut by more than the total price he was offered. Schatz is awaiting condemnation proceedings.

Leo Reiser will lose his entire farmstead to the Garrison Diversion. A portion of his land was taken in April of last year. Reiser was given final notice of pending construction on his property at 5:30 p.m. on April 2, 1973. The bulldozers began moving through his farm at 8:00 a.m. the next morning. Reiser estimates relocation of his farm unit will cost him $10,000 more than the price offered him by the Bureau of Reclamation. He is awaiting condemnation proceedings.

The Ben Schatz and Leo Reiser farms represent only two of the nearly 300 parcels of land that have been dismembered to date by a mammoth pork-barrel project sponsored by the Bureau of Reclamation and known as the Garrison Diversion. Before the diversion project is finished, over 5,000 parcels of land will be taken.

The Garrison Diversion is an engineering scheme to lift 871,000 acre-feet of Missouri River water out of Lake Sakakawea (the reservoir behind Garrison Dam) primarily for irrigation purposes. Project construction is scheduled to continue into the 1980's and involves digging 1,800 miles of major canals and laterals.

The principal proposed benefit of the project is the irrigation of 250,000 acres of land. To accomplish this, a total of 218,500 acres will be bulldozed, inundated or otherwise adversely impacted according to the Committee to Save North Dakota (CSND). The CSND is a group of ranchers, farmers and conservationists in the state who are fighting for a moratorium on the project and a thorough re-evaluation of its social, economic and environmental effects.

A SALTY KISS OF DEATH

The CSND points out that there is an important difference between the Garrison Diversion and other Bureau of Reclamation projects. This project will not "reclaim" arid land, since the land to be irrigated is already productive. The CSND feels it would be a tragic twist of fate if the project brought "the salty kiss of death to 250,000 acres of fertile North Dakota prairies that are already producing fine crops." The Bureau of Reclamation has not released the results of studies on the crucial question of whether irrigation will lead to salinization of the soil, according to the CSND. In fact, in some areas to be irrigated, basic soil studies are not completed and their irrigation is claimed as a benefit on faith.

At one time most citizens of North Dakota, and many prominent conservation organizations, stood behind Garrison. Dr. Glen Sherwood in his booklet **New Wounds for Old Prairies** recalls the temperament of the times: "The late '40s and early '50s were good years of abundant water and ducks. Drier years followed and both ducks and wetlands dwindled. But a panacea was promised. It was called the Garrison Diversion. It would provide water for ducks and farmlands. Looking at the parched marshes in those years, as a young man with hopes and dreams, I was eager for the promise of Garrison Diversion. So was the rest of North Dakota. Innocent prairie people that we were — we had all swallowed the bait."

Sherwood's innocent approval slowly turned into outrage as he studied the total ramifications of the project as a research biologist with the Northern Prairie Wildlife Research Center. He finally resigned his government research position so he could speak out freely against the project. During his years of study Sherwood says, "I found the environmental, economic and social impacts of Garrison Diversion to be far worse than my wildest suspicions. The people of North Dakota, by trusting government and business leaders, have had an unprecedented disaster unleashed upon themselves."

What soured many people in the state was the discovery that some of the proposed benefits of the project were part of an "outright hoax." Take for instance the supposed fish and wildlife

(Continued on page 12)

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Emphasis ENERGY

in the Northern Rockies and Great Plains

A potentially commercial **geothermal well** in Sandoval County, **New Mexico,** has been announced by Union Oil Co. of California. The company says the well is comparable to some of the better wells in the Geysers Field of Northern California. Union operates one of the world's largest geothermal steam projects in that field.

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Utah Power and Light Co. and Geothermal Kinetics, Inc., have entered into a joint venture to drill for geothermal steam near Brigham City, Utah. UP and L president, E. A. Hunter, cautioned, even if the first well produced steam, it might take as much as a year of testing to determine its quality and long term potential and whether it would be practical to build a generating station. "We will continue to develop the area's abundant coal resources as the fuel for our base load," Hunter said.

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Residents along the Yellowstone River from Miles City to Fairview have banded together to protect themselves from large industrial water appropriations. The **Yellowstone Basin Water Use Association** (YBWUA) is composed of irrigating farmers plus interested townspeople and recreationalists. YBWUA's purpose is to "provide the means whereby the Yellowstone drainage basin can unite to protect and maintain present and future water needs of agriculture, municipalities, industry, recreation and wildlife by seeking to maintain a minimum stream flow and an adequate water supply in the Yellowstone River and its tributaries."

YBWUA is supporting three important pieces of water legislation being considered in the state legislature. One bill requires the state to reserve a minimum stream flow in the Yellowstone "to maintain existing irrigation operations, provide for municipal and recreational needs and to protect fish and wildlife." The second bill would establish irrigation as a higher priority use than industrial use. This measure would help preserve eastern Montana's agricultural base. The third piece of legislation would require a detailed ground water study in the eastern Montana coal fields.

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The Bureau of Land Management (BLM) and the Ashland Division of the U.S. Forest Service have released a revised report on the **Decker-Birney** area of **Montana** that recommends federal coal leasing on almost all of the planning unit. Leasing would be in order of economic recoverability, with prohibitions on leasing only in the Tongue River flood plain (where the federal government has very few mineral rights) and in areas of insufficient data.

The original Decker-Birney study recommended restricting leasing to the Moorhead, Decker, and Hanging Woman coal fields; a 12 mile by 50 mile strip along the Montana-Wyoming border.

The Decker-Birney planning unit consists of some 900,000 acres of river bottom and breaks, rolling tree-covered hills and open grasslands. BLM and the Forest Service manage 26% of the surface in the area and 88% of the coal. Coal companies have already leased 18,456 acres of federal land in the unit. Seven companies and speculators including Norsworthy and Reger, Getty Oil Co., Pacific Power and Light Co., and Pat McDonaugh have applied for an additional 117,523 acres of federal coal in the unit.

Burlington Northern says its major contracts for hauling low-sulfur coal may result in a shift of its regional headquarters from Omaha to Denver. The coal is mainly from Wyoming and Montana. Burlington says its projected revenues for coal hauling are to go from $140 million in 1974 to $200 million in 1976.

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The **Western Interstate Nuclear Board** has released a report predicting large increases of coal-fired electric generating capacity in the Rocky Mountain West over the next eight years. Utah will see a 10-fold increase in coal-fired power production according to the report. Utah now produces 414 megawatts (mw) of coal power. By 1982 this figure will jump to 4,800 mw. Colorado: now 1,922 mw, projected 5,002 mw. New Mexico: now 2,500 mw, projected 6,100 mw. Wyoming: now 1,500 mw, projected 3,380 mw. According to the report there are no plans for more nuclear power plants in the four states before 1982.

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Colorado Gov. John Vanderhoof said he will test his veto powers if the **Atomic Energy Commission** (AEC) insists on conducting underground nuclear detonations to free natural gas in northwest Colorado. The AEC has plans to spend $107.6 million on some 30 gas stimulation blasts in Colorado, Utah and Wyoming over the next five years. Vanderhoof points out that "there is enough activity in western Colorado" with the expected development of oil shale. He said, "there are an awful lot of other places in the United States" where the tests might be conducted.

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Montana's House of Representatives voted down a measure which would have required a Public Service Commission study of electricity rate structures. The study would have been aimed at energy conservation. The bill, sponsored by **Rep. Dorothy Bradley,** was heavily lobbied against by Montana Power Co.

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Oil shale development in Colorado, Utah and Wyoming will require the development of a multi-million dollar power generating system to extract the oil. **Public Service Company of Colorado** estimates between 1.25 and 1.75 kilowatts of electric power will be needed to mine and process a barrel of shale oil.

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The second of six **oil shale lease tracts** has received a bid of $117.7 million. The bid was offered by a consortium of companies including Atlantic Richfield Co., The Oil Shale Corp. (TOSCO), Ashland Oil Inc., and Shell Oil Co. The 5,094 acre tract is located on federal land in Colorado's Piceance Basin, 20 miles southwest of Meeker, Colo.

If the bid is accepted, the consortium will have the right to develop some 723 million barrels of shale oil contained on the tract in shale beds averaging 30 gallons per ton. The lease is for 20 years.

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Feasibility of a $1.5 billion coal-fired electric generating plant in south-central Utah may hinge on a huge, underground aquifer. **Intermountain Consumer Power Association** has announced the discovery of what is possibly a major water find near Caineville, a few miles east of Capitol Reef National Park. The Association is part of the Intermountain Power Project, composed of Utah and California electric utilities. Only 15% of a projected 3,000-megawatt generating plant output would be used in Utah. The rest would go to six southern California municipalities.

The Hot Line

across the country

Nuclear radiation from the burning of **coal and natural gas** poses a greater threat to human health than fall-out did during the time of greatest testing of atom bombs. That is the conclusion from a three-year research project at the University of Utah. The radiation comes from naturally occurring uranium, radium and radon gas in coal. Director of the University Laboratory of Environmental Radiation, Dr. Robert C. Pendleton, says the radiation level in Utah is "sufficient to cause concern." The conclusions were drawn from 18 air-sampling stations around the state.

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Another major step has been made toward the commercial production of gas from coal. For nearly a week, a **Hygas process** pilot plant produced 900-1,000 Btu gas from Montana lignite coal. Bernard S. Lee of the **Institute of Gas Technology** feels a demonstration plant can be built in 1978 using the Hygas process. Second generation commercial plants are projected for 1981.

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The **Interfaith Center on Corporate Responsibility,** a coalition of national churches concerned about the social policies and practices of corporations, and the **Commission on Religion in Appalachia** are going to hold a hearing on the impact of the energy crisis and strip mining in Appalachia. The purpose of the hearing is to determine the role and responsibility of national churches on the issues of strip mining, and to produce a report of findings and recommendations. It will be held March 14-16 at Clinch Valley College, Virginia.

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"We view coal as the foundation for Project Independence," **William E. Simon** told the National Coal Association Board of Directors in a special long-distance telephone conversation. The Federal Energy Administrator is also reported to have told the coal operators to "cheer up!"

- - -

The **Premier of British Columbia** has warned the Northwest states to change their lifestyle or face their own destruction. Premier Dave Barrett told the Seattle Rotary Club, "We are the most wasteful people in the country and we've made no demands for an alternative lifestyle. If we can't control our greed, we are on the way to destruction of the society. Our ego hang-ups — for large cars and all — is absolutely abnormal." He said the Northwest would continue to get natural gas from British Columbia but that the price would skyrocket.

Barrett and the governors of Washington, Oregon and Idaho agreed at the Seattle meeting to work together to develop alternate energy sources and ways of combatting pollution.

- - -

While scientists search for a more efficient way to get methane gas from organic waste, an inventor in Greece, N.Y. is producing **electricity from leaves.** Walter K. Lentz believes he can use his compost piles to heat and light his six-room home and office. "There's electricity everywhere — in rocks, door knobs, trees, flowers, earth, water, everywhere but in distilled or dead water," said Lentz. The electricity comes from harnessing heat generated by bacteria fermenting in leaf mulch.

Garrison...

(Continued from page 10)

benefits. The Garrison Diversion was twice rejected by the Bureau of the Budget (the old Office of Management and the Budget) and it was only when the Bureau of Reclamation cranked in enormous fish and wildlife benefits that the scales were tipped and the project was authorized.

In order to gain approval, project proponents had claimed as a major environmental benefit the "creation" of 16,000 acres of additional wetlands. Using the BuRec's own figures, critics of the project showed that it would ultimately result in a 17,450 acre net wetland loss.

In order to accomplish these mathematical shenanigans the promoters included 34,000 acres of existing wetland in their areas to be developed. To further complicate the calculations, acreage was apparently shifted from one category (water and marsh area) to another (upland habitat area) to show a net gain rather than a loss.

"How 5,438 acres were moved from water and marsh area to upland habitat area without water and marsh area decreasing and upland habitat area increasing is unexplained. . . Now you see them; now you don't. The temporary wetlands are quicker than the eye," commented one critic from the Izaak Walton League.

Richard Madson, chairman of the CSND, says that the diversion will involve, "The greatest net adverse impact on prairie wetlands of any single federal project in the nation's history. A minimum of 82,483 acres of wetlands will be adversely affected through drainage, irrigation runoff degradation, introduction of carp and other rough fish and undesirable water manipulation."

In addition, Madson says that the wetland manipulation will require "the destruction of, or adverse impact on, seven national wildlife refuges, requiring acquisition of productive agricultural land for mitigation purposes."

CANADIANS WANT MORATORIUM

Also of concern is the adverse impact on water quality caused by irrigation return flows, pesticide run-off, and channelization. The waters of the Missouri, Souris, Sheyenne, James, Wild Rice and Red rivers will be degraded as a direct result of the diversion according to the CSND.

Of international concern, is the water quality in the Souris and Red Rivers which flow from impacted areas across the border into Canada. Estimated concentrations of pollutants in the Souris will be in violation of international law. Acting Sec. of State Kenneth Rush informed the Interior Department on Nov. 5, 1973, that "the obligation of the U.S. under the 1909 Boundary Waters Treaty should be carefully weighed before further funds are expended on this project." Yet, the Bureau of Reclamation continues construction.

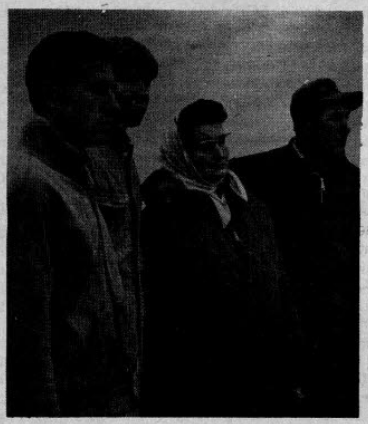
On Oct. 23, 1973, the Canadian government called for a moratorium on further construction of Garrison Diversion. So far the U.S. government has ignored Canada's request. The American attitude has been to continue work since current development does not affect Canadian waters. The U.S. is reportedly prepared to consult with Canada about future construction that will have an impact on water quality in Canada.

Canadians have argued that although current work does not directly affect Canada, the work makes little practical sense unless the entire diversion is carried through to completion. The CSND estimates that, "If Canadian objections to polluted return flows force abandonment of this area (the middle Souris), 41.5% of the entire Garrison Diversion project will have to be redesigned."

Rep. Henry S. Reuss (D-Wis.) announced on Nov. 20, 1973, that he had requested a ruling from the General Accounting Office (GAO) on the legality of further expenditures on Garrison. Reuss, who is chairman of the Conservation and Natural Resources Subcommittee of the House Committee on Government Operations, noted in his request that it appears the project would pollute Canadian waters in violation of an international treaty. "Interior admits that after two years of study, it has no solution to the problem," wrote Reuss. "Interior merely offers to make more studies while continuing to construct and spend more of the taxpayers' money. Only a GAO ruling that such expenditures are unlawful will stop the Interior Department's draglines and shovels."

FORGOTTEN FARMERS

North Dakota farmers, the citizens who are supposed to be the prime beneficiaries of the Garrison Diversion are having second thoughts about the project. Part of their misgivings are based on cases of shoddy treatment of landowners and inadequate compensation as in the cases of Ben Schatz and Leo Reiser. Another hard pill to swallow is that 63,000 acres of productive farmland will be lost directly to the project, and a substantially greater amount will be disrupted by canal routes.



The Albert Wall family of Mercer, N. D. watch as construction equipment for the Garrison Diversion moves through their farm. Sept. 2, 1972.

Photo by Richard Madson

The project's promoters claim that the diversion will benefit the small farmer, but the average cost of the sprinkler equipment to be used with the project is about $30,000 per 160 acres — far above the capital available to the small farmers. The CSND feels that "the project may drive from the land the very individuals it was originally intended to benefit."

The farmers' feelings have recently been reflected in the position statements of the state's two largest farm organizations. The North Dakota Farmers Union has requested a congressional investigation of the project. The North Dakota National Farmers Organization has called for an outright moratorium.

This local sentiment has been amplified by the federal government's environmental agencies. In June, 1973, Russell Train, then Chairman of the President's Council on Environmental Quality wrote Interior Sec. Rogers C.B. Morton saying, "In view of the substantial and severe impacts of this project, including the loss of wetlands, the lowered water table, the severed farms, and the public controversy and international implications, I strongly recommend that construction of the Garrison Diversion Unit be suspended until these issues have been resolved."

In August 1973, the Interior Department rejected Train's recommendation. That same month the Environmental Protection Agency commented on the BuRec's draft environmental impact statement. They labeled the statement "inadequate."

Despite this storm of protest, the bulldozers continue to tear open the North Dakota prairies to make way for the Garrison Diversion. On Jan. 17, 1974, North Dakota's Senator Milton Young, a 28 year veteran in the Senate and the ranking Republican on the Senate Appropriations Committee, announced that Garrison was "in deep trouble." He told a news conference that the present opposition to the project was the strongest and most determined the project had ever encountered.

Young singled out Richard Madson of the CSND as the initiator of the opposition and labeled him "an environmental ecology extremist."

Young said that the opposition of the Canadian government, EPA, and CEQ was threatening the project. He claimed there was mounting pressure on President Nixon and Roy Ash of the Office of Management and the Budget to delete all funds for the project from the budget proposal.

On Feb. 2, 1974, Young announced that the President's budget included an item of $10,555,000 for the Garrison Diversion for the fiscal year 1975, a disappointment to the Senator because of its size.

BLEEDING THE LANDOWNERS DRY

The CSND and its allies in the fight to stop the Garrison Diversion are closer than ever to success, but it now appears they need more help than ever before. Sen. Young and the Bureau of Reclamation have refused to debate Garrison with Richard Madson of the CSND. The CSND has filed a lawsuit to stop Garrison and a hearing has been set for March 17 in Federal District Court in Bismarck.

Paula Ward, Regional Governor for the Izaak Walton League says, "I'm very disappointed in the situation. I think those landowners who are pouring their money into the lawsuit to fight the Bureau are going to be bled dry of funds while construction continues. It is simply unjust for citizens to have to go to such lengths while the federal government uses taxpayers' money to fight them in court."

How can you help? Ward suggests the following courses of action:

1) Anyone who wants to help the CSND should send donations to Richard Madson, Box 1591, Jamestown, N.D. 58401.

2) Write your Senators and Congressmen and ask them not to support the $10 million slated for Garrison Diversion in the President's budget.

3) Write Roy Ash, Director of the Office of Management and the Budget, objecting to further funding for this project. Address: Executive Office Building, Washington, D.C. 20503.

4) Write Rep. Henry Reuss in support of his request for a GAO investigation.Address: 2186 Rayburn House Office Building, Washington, D.C. 20515.

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Western Roundup

Montana Calls Time Out

Montana's Gov. Thomas L. Judge has introduced two bills in the state legislature aimed at preserving the quality of life in his state. In the two bills Judge has asked legislators to declare a moratorium on rural subdivision and industrial water use permits. The water bill has been passed by both houses. Under its provisions large water demands made after Jan. 1, 1974 will have to wait three years. During the moratorium, state agencies will sort out existing rights, study the impacts of the proposed large scale diversion and develop plans for the state's water.

Judge's other bill has not been acted upon yet. In it, the governor is asking for a two year moratorium on rural subdivision until a land and water survey identifying environmentally critical areas has been completed by the state. The suspension would apply only to prime agricultual lands and to subdivisions of over five parcels which total more than 240 acres.

Land Power - State v. Local

In the Colorado Legislature, land use battlers are devoting much of their energies to one part of a package of proposed land use legislation. The focus is on HB 1041, a bill creating a state land appeals board. Republicans have amended the bill to give localities more power. In its original form, the bill would have established some state guidelines over major land use areas and created a State Land Appeals Board with authority to designate areas and activities of major state concern. In its amended version, the state land board's authority is reduced and handed over to local governments. Local officials must say what is of state concern.

The Colorado Open Space Council has withdrawn its support from the bill. "If, as we strongly feel, there are such things as matters of state concern," COSC says, "then it seems absurd to put the entire process at the local level, elevating the issue up to the state only when the local governments falter."

Utah Citizens Favor Land Use

Two Utah State University professors say that an overwhelming majority of people in Utah favor land use planning, but that the people disagree on what land use planning means. About 73% of the people contacted by the professors favored land use planning for the state as well as for their county. Only six per cent were opposed. However, one-fourth of the people replied that they did not know when asked, "What does land use planning mean to you?"

The professors polled 1,643 Utahns. Their study indicates that most people "prefer local regulations on matters of concern to communities." A "significant proportion" feel that the state should assume major responsibilities "for certain situations." "Very few," the professors said, favor much federal involvement.

The results of this survey have been published in a booklet entitled, **Public Views on Land Use Planning** in Utah. It is available from the Department of Sociology, Utah State University, Logan, Utah 84321.

Desert Lots Sell Like Hotcakes

Desert land in northwestern Utah has sold like hotcakes recently, according to the **Salt Lake Tribune.** The newspaper says that more than 100,000 acres of arid land in the Great Salt Lake Desert has been purchased by developers and resold at substantial profits during the past four years. The land was purchased for about $15 an acre, but is priced to sell for up to $250 an acre. "There's nothing there," says a county commissioner in the region. "Just a few cattle, people and sheep ranchers. The browse is so sparse, where it does grow, it takes a lot of acres to support one animal." According to the **Tribune** story, the lots are being sold to "out-of-staters from coast to coast."

Who Pays for Coyote Control?

Coyote hunters and trappers in Kansas report that they are receiving $12 a pelt for coyote fur. The pelts are exported from markets in New York, Chicago and Denver for use on ski clothes in Europe.

Meanwhile, a more costly form of coyote control has roused officials in Wyoming. If the Environmental Protection Agency (EPA) allows experimental use of "coyote-getters" in Wyoming, it may cost the state between $100,000 and $300,000 per year, officials say. "I feel the federal government is in a better position for that type of funding and programs than we are," says Larry Bourret, Wyoming's assistant commissioner of agriculture. EPA representatives visited the state in January to discuss the experimental use of spring-loaded sodium cyanide devices in Wyoming. Texas has already begun a 16-month experiment using sodium cyanide to control predators on private livestock lands.

Proposed wilderness for Dinosaur National Monument in Utah and Colorado comes up for public hearing on March 14 in Craig, Colorado, and March 16 in Vernal, Utah. The National Park Service proposes a wilderness area of some 45,100 acres, roughly enclosing 37 river miles along the Green River and 23 miles along the Yampa. The main features of the proposal are the spectacular river canyons. Photo above is at Split Mountain Canyon. Those wishing to include statements in the official record have until April 15. Write Superintendent, Dinosaur National Monument, Box 210, Dinosaur, CO 81610. If you wish more information on the wilderness study and the master plan policy, write to the address above or to Regional Director, National Park Service, 1709 Jackson St., Omaha, Nebr. 68102.

Briefly noted . . .

Although environmentalists lost their fight to halt the construction of Teton Dam in Idaho, their efforts did accomplish one thing, according to the Bureau of Reclamation. Ronald Vissia, a regional director for BuRec called their achievement "a better mitigation plan than was originally part of the project. They got the (Interior Department) secretary's attention." The Bureau will spend $2.5 million in an attempt to lessen the environmental impacts of the dam project.

* * *

Rapidly expanding use of the wild river segment of the Rogue River in Oregon has led to a limitation on commercial float boating. Private boaters and hikers will not be affected this year. Commercial outfitters and guides who used the river for float trips two or more times in 1973 will be limited to the same level of use as last year. They will be the only ones receiving a permit.

* * *

The National Park Service plans to start a mass transit system on the south rim of the Grand Canyon this summer. The system is a "reaction to the traffic congestion, air and noise pollution, parking problems, and fuel shortage — any of which could impair a pleasant park visit," a Park Service spokesman said.

* * *

National conservation groups have asked **National Park Service Director Ron Walker** to take another look at plans for massive development on the South Rim of the Grand Canyon. A contract which called for ". . . an improvement and building program of not less than $5 million" was to be completed by Dec. 31, 1973. The contract was delayed. The National Parks and Conservation Association and Friends of the Earth, among others, have written the Park Service in opposition to further developments before a Master Plan is completed.

* * *

Utah Gov. Calvin L. Rampton vetoed a bill which would have required the plaintiffs in an environmental lawsuit to post bond against losses. The recently passed bill was aimed at lawsuits which would delay projects on environmental grounds. The Governor said it was unconstitutional, but also said Utah Rules of Civil Procedure allowed judges to require bonds in such suits.

* * *

Some relief came this month for Aspen, Colo. citizens who have been struggling to control boom town growth. The U.S. Forest Service purchased the Hunter Creek Valley from Top of Aspen, a subsidiary of McCulloch Properties, Inc. The agency paid slightly over two million dollars for the 1,750 acre tract. The land is within walking distance of the town of Aspen and extends upstream through meadows, aspen groves and spruce-fir forest for about three miles. McCulloch bought the land in the early 1960's for residential development.

Thoughts from the Distaff Corner

by Marge Higley

We were sorting through the photographs, and planning the centerspread for this issue of HCN.

"Can they really do that?" I asked Bruce. "Can the Bureau of Reclamation really go ahead with this canal even if the people don't want it, and it's ruining their farms, and a wildlife refuge, and putting salt in their rivers?"

"They're doing it," he answered . . . and handed me a report on the Garrison Diversion project.

As I read it, it triggered some elusive thought in the back of my mind. A reminder of something I had seen or read . . . but what? A parallel, maybe? Suddenly it came to me.

Ants, of course! A TV program on insects had prompted me to delve for more information. Ants are fascinating creatures. They're called "social" insects because they live in a highly organized society, in many ways similar to that of man. There are many different species, but all ants live in colonies consisting of various "classes" which might be compared to segments of our own society.

Most of the ants are "worker" ants, who have many jobs. Some build and repair the nest. Others continually provide food for the colony. Some of the workers might be likened to dairymen.Ordinary garden-variety ants collect aphid eggs, nourish the young aphids, pasture them, and regularly milk them for their sweet honeydew secretion. Other ants keep herds of plant-lice for the same reason. One species has domesticated a small type of beetle, who has dwelt so long in the underground world of the ant that it has lost its sight and must be carried by the worker ants into the treetops to forage on the leaves.

There are "farmer" ants, too. The leaf-cutter, or atta ant, carries leaves down into the dark chambers of the nest, where they are cleaned, chewed, shredded, and spread out into a spongy bed for growing mushrooms. These are carefully tended by groups of workers who prune and weed them. Not all the farmers grow their crops underground. Naturalist Royal Dixon tells of watching ants near Austin, Texas, who actually cultivated a small patch of rice. They kept it "plowed" and weeded, and eventually harvested their crop!

Some of the workers could be classified as janitors or clean-up crew — their job is to tidy up the place. They carry off the trash, which consists mostly of the inedible portions of the great supply of food carried into the nest by the foragers. Then there are the maids and baby-sitters, who look after the needs of the queen ant, and feed and care for the larvae until they are hatched.

So, in this "society" of ants there are foragers, dairymen, cowboys (or should I say beetle-boys?), farmers, builders, carpenters, janitors, maids, baby-sitters, and yes, even a few pets!

You are probably wondering what all this has to do with the McClusky canal and the Bureau of Reclamation. Well, I'm coming to that.

In addition to the queen and the various workers, each ant colony includes some "warrior" or "soldier" ants. These warriors are there to protect the colony in case of disaster or attack. They're "programmed" for one purpose only. To fight unto death — no matter what.

One scene of the TV show that prompted all this reading stands out vividly in my mind. A portion of an ant hill had been broken away, and hundreds of wasps were swarming in to devour the ant larvae. All the worker ants dropped their normal chores to help the carpenters seal up the break, while the warriors valiantly attacked the invaders. The hole was soon sealed up and the colony of ants was safe.

But those automated warrior ants kept right on fighting. With dogged determination and singleness of purpose, they fought . . . and died . . . long after the need for such sacrifice was ended.

If you're still wondering what this has to do with the Bureau of Reclamation, you have not yet read the story on page 10.

When Santa Fe, New Mexico, got more than a foot of snow earlier this winter, Urban Rogers of the National Park Service found a way to beat the energy crisis. He skiied to work! Rogers logged the three miles from his home to the NPS office in about an hour, passing lines of cars that were bogged down in the snow.

College Buys Sun Power

Designers in Colorado are preparing for the construction next August of the largest building yet to use solar power for heating. Community College of Denver is planning a 320,000-square-foot building — housing a swimming pool, gymnasium, and numerous classrooms and offices — for construction on their north campus. The building is expected to cost nearly $10.5 million.

Architects estimate the cost will probably only run 10% more than that of a similar structure that did not make use of the sun's energy for heating. Some 60,000 square feet of solar energy collectors will be installed on the building. The solar collectors heat water and then pump it to an underground storage area. When the building cools, the hot water is then pumped into the building's heating system.

The two-story, circular building will accommodate up to 2,000 students at any given time and is entirely free of direct fossil fuel use. Electricity will be wired into the building for lighting and other uses. : : EARTH NEWS

Old Sneakers For Sale

The American folksinger Pete Seeger reports that in China nothing is wasted. Every community has what is known as a "waste products purchasing center."

"An old pair of sneakers, an old bicycle inner tube bring so much a pound of rubber," Seeger says. "The handle of an old toothbrush brings approximately a penny because new bristles can be put in it. And an empty toothpaste tube brings about a penny and a half for the lead in it."

In one village he visited, a group of eight-year-old school children sang a song for Seeger. His interpreter translated the lyrics:

"I found a little metal ball in the roadway,
Chairman Mao says we must not waste anything,
So I took it to the Waste Products Purchasing Center.
Tra-la-la-la."

Wind Ships Return

Plans for a modern wind-driven freight ship have been completed in West Germany. A Hamburg engineer, Wilhelm Proelss, has spent more than ten years on the project in co-operation with the Institute for Naval Architecture at Hamburg University.

He says his plans are now ready for a shipyard, just in time for the energy shortage.

The German engineer estimates that wind-driven ships will cost less than fuel burners, and travel at the same speed — 12 to 17 knots — in fair weather. He says that total fuel consumption — including the galley and heating — is less than 5% of diesel-powered ships.

Proelss says that modern aerodynamics, electronics, and meteorology — all necessary for efficiency in sailing ships — weren't available when the ships were in common use.

Although there has been great interest in the project, so far no one has been willing to make the $8 million investment to finance a life-size prototype of the model bulk carrier. : : EARTH NEWS

Computer Power

Warmed-up computers may soon be able to do their bit for the energy crisis.

An insurance company in Hartford, Conn. will heat a nine-story addition to their building with their computers' excess energy. One of the company's computers, an IBM 370-168 gives off about 100,000 BTU's. That heat, which is usually blown outdoors, will be sucked up to a water tank on top of the roof. The water will heat air blown through ducts into individual rooms.

The plant will save the company about 81,000 gallons of fuel oil during the first year of operation, company vice-president Bernard F. Wilbur says.

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Book Reviews

The Forest and the Sea

by Marston Bates, Vintage Books, N. Y., 1960.

Only One Earth

by Barbara Ward and Rene Dubos, Ballantine Books, N. Y., 1972.

"All life," eccentric professor Marston Bates says, "consists of packages of water." In the **Forest and the Sea** he links the intricacies of life in this and in other ways. He uses the tropical rain forest and the sea to show the relationships of living things to all that surrounds them.

Bates, a zoologist at the University of Michigan, devotes his book to a branch of science he calls "skin-out" biology. The most significant and general unit is not the cell, but the individual, he believes. From the individual, two separate pursuits emerge: the study of what makes the individual work — "skin-in" biology, and the study of the individual and what is outside — "skin-out" biology. Though this approach is lacking in impressive-sounding Greek names, generalization is necessary "if we are to fit our jigsaw pieces of information together into meaningful patterns," Bates says.

Bates transfers the vocabulary of the sea to the tropical rain forest. "In the treetops we were in what marine students call the pelagic zone — the zone of active photosynthesis, where sunlight provides the energy to keep the whole complicated biological community going. Below, we had been in the benthos, the bottom zone, where organisms live entirely on second-hand materials that drift down from above — on fallen leaves, on fallen fruits, on roots and logs. Only a few special kinds of green plants were able to grow in the rather dim light that reached the forest floor."

These parallels are the result of Bates' travels in Micronesia and Columbia. He uses his knowledge of the exotic to give a deeper understanding of the familiar. He succeeds in making the reader feel less awkward on foreign soil.

In **Only One Earth** Barbara Ward and Rene Dubos proceed from basic biology to a hard stare at the cultural obstacles we face in tending a unified planet. They prepared the book for the United Nations Conference on the Human Environment in Stockholm in 1972. Their aim, they say, was to "creep up on the sensitive issues of divisive economic and political sovereignty."

The two authors proceed by explaining how and where we are interdependent. They point to the world's environmental problems. We can learn from foreigners, the authors contend. We're all in the same web.

For instance, Rumania, a rapidly urbanizing and industrializing country has managed to avoid rotting cities and isolated suburbs, the authors say. Back when 40% of its people were still working in agriculture, the country began to practice land use planning. They set out **not** to create an oversized, dominating city. They have succeeded in fostering economic growth in a number of small, comfortable cities.

The authors call Holland's National Physical Planning Act "the most comprehensive approach to the problem of controlling urban sprawl." In that country, "elected local and regional authorities are responsible for detailed plans which citizens may inspect, accept, or contest. A number of New Towns are being built to take the strain off the biggest urban concentrations."

The thought of extending your cares from your personal stomping ground to the entire globe — as advocated in both of these books — may be intimidating.

"It is sometimes said of those who try to persuade man of his environmental predicament that they paint a picture so gloomy and irreversible that the average citizen's response is to go out and buy a beer," Dubos and Ward admit. "If nothing can be done to escape the onward rush of some irresistable eco-doom, then why take the trouble even to return the can? But indeed over a vast range of environmental problems, action is possible. . . . Indeed, some nations and other jurisdictions already are launched on effective planning and pollution-control programs."

By showing parallels in the familiar and the foreign, both of these books can strengthen environmental reform. Neither is new. But both are timely.

—JN

Moon and Back

Earth, love it or leave it. What did we go
So far to find
Orbiting our deadly rind?
Nighttime it's a ball of sooty snow,

Daytime mainly not there. Here we've air,
Plenty of books,
Some flowers and cement, but it looks
Like us. Outer space is relatively nowhere

And notorious for nothing. Why did we do it?
We won't eat,
But stab our neighbors in the street.
We could have trimmed the beyond like so much suet,

Or one more sports event. Then we blinked back
On our blast across
One corner of so much emptiness,
And caught that lonely rainbow of the moon rock

That grew us. In Sunday editions we gape at it —
A flattened tide pool,
A child's balloon at a funeral —
But know it. Us. Home country. Self. Our planet.

—Bruce Berger

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Eavesdropper

LOONEY LIMERICKS

by Zane E. Cology

Dakota farmers grow wheat . .
And corn . . . and milk . . . and meat.
Now it is found
That there's coal underground.
If they strip it, then what do we eat?

\- - -

The demand for food and a year of low precipitation may bring on dust bowl conditions, according to the U.S. Soil Conservation Service. SCS says that on Jan. 1 more than 6.6 million acres in a 10-state area from Montana to Texas were already in a condition to blow.

\- - -

Drought and other causes of decreased food production helped produce world food shortages last year. The author of "Politics of World Hunger," Arthur Simon, said other chief causes were the devaluation of the American dollar and the American wheat deal with Russia. Simon said it was the worst shortage in 20 years.

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Scientists and oceanographers are expressing increasing concern with ocean dumping of man-made wastes. Sewage and waste dumping off New York City into the Atlantic and off Southern California into the Pacific have created "dead sea" areas covering many square miles. In the Atlantic, the deadly mass of unwanted material is slowly creeping back toward land. Some observers think the sludge will start invading the beaches of Long Island in three years.

\- - -

Sewage and solid wastes have begun to pollute Antarctica. Scientists say pollution is already threatening penguins and sea animals. Dr. Bruce Parker of Virginia Polytechnic Institute says action should be taken to stop pollution or the Antarctic may be "heading for a pollution crisis that could kill its value as an unparalleled site for research." Penguins have also been found with contamination from oil slicks and from DDT and other pesticides.

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Indian petroglyphs and rock carvings, some estimated to be 8,000 years old, are being carted out of the Southern California desert. Collectors blast or drill them off the cliffs and sell them for decorations in homes of the wealthy. Most of the ancient art work is being taken from public lands managed by the Bureau of Land Management. Such removal is a federal offense if collectors can be caught.

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The Los Angeles Sports, Vacation and Travel Show held in late 1973 was a bust, according to an Associated Press story. A bicycle display drew the biggest crowd at the Los Angeles Convention Center where $20 million worth of recreational vehicles were on display. The gasoline shortage was blamed for the lack of interest.

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The "ungreeting" card has caught on not only in Oregon but such other states as Washington and California. Hawaii, Colorado, and Texas are soon to join the ranks. One Colorado card will read "Colorado has everything. . ." and on the inside . . "heat waves, snow storms, smog alerts, ticks, taxes, Texans, and a shortage of gas, oil and water."

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The Coast Guard recorded 830 oil spills in the ocean off the Mid-Atlantic states during the first six months of 1973. Some 300 of the spills were in the New York harbor area.

Line Reference Target LRT-BE4-V2

A CONSERVATION PORTRAIT:

Chuck Perry: Watchdog Over Coal Harvest

Chuck Perry grew up in North Dakota, the breadbasket of the nation. Today he is leading the fight against strip mining that breadbasket. "We don't want any degradation of the quality of life, air, water, and especially no degradation of the productivity of the soil," says Perry. "The people on the farms and even the people in the cities of North Dakota are dependent directly on agricultural production. What we are being faced with here is a total readjustment in our way of life and our society."

Perry is a college dropout. After trying three schools, he worked on community organizing in the southeastern part of the country. He also trained Head Start parents in Missouri and Montana. These jobs were interrupted with campaign organizing for presidental hopefuls John Lindsay and George McGovern. His last job was as the assistant to the North Dakota Tax Commissioner where he became active in the controversy over coal development.

Today, all his organizing experience is directed towards the North Dakota ranchers and farmers. As the first executive director of the newly-formed United Plainsmen Association, it is his job to form a coalition to serve as citizen watchdogs over energy development in the state.

United Plainsmen was organized in the first part of Nov., 1973, in the rural community of Mott, N.D. Here a group of concerned ranchers and farmers had gathered to discuss impending coal development on or around their lands. Most of the participants agreed with their governor, Arthur Link, that coal development in the state was a "one time harvest."

"They'd been hearing about it for nearly a year from various energy interests who had come to the Mott area to tell them that the goose that laid the golden egg was ready to lay the egg," says Perry. "And as a matter of fact for over a year, many were led to believe that it was going to be something akin to the oil rush in the '50s in North Dakota."

The stories and rumors brought up more questions than hard, fast answers. The group decided to organize so they could learn more about the issue.

"During that time the energy interests, and especially Michigan-Wisconsin Pipeline Company (which was proposing 22 gasification plants for the state requiring some five billion tons of coal and 375,000 acre-feet of water), were sending out press releases to the local papers which were taken as semi-official information," recalls Perry. This made the educational process difficult.

"It wasn't seen as a lobby," says Perry. "After we discovered conflicting information it took us awhile to get it to the press and point out to them that there was another side to the story . . . that it was essential from the standpoint of their duty to the people to tell the whole story."

Today, the United Plainsmen prints a newsletter that is sent out as a supplement to five local papers in North Dakota's coal country.

"It's changed considerably," he says. "A little less than a year ago, the State Water Commission was on the verge of granting four water permits for gasification before anyone in the state really knew what was going on. Since we got involved, we've had the decision held off and pared down to one request. I think this action alone is a monument to what's happened already. It's a monument to the fact that just a handful of people can do a lot. A lot of people can do what has been thought of as being unimaginable."

Though United Plainsmen is still in its infancy, Perry has plans for an army of workers so his group can accomplish some of those "unimaginable" goals.

One of his goals is a tough political coalition to force the issues out in the open. "The one thing we feel quite strongly about is that if we're going to win in North Dakota, we're going to have to fight the battle within the political-geographic boundaries of the state.

"The approach that we take will be geared to the political realities of North Dakota. Especially this coming fall because key legislators are coming up for re-election.

"We're also considering initiating a referendum and we'll hopefully be taking one or more of the energy-related issues we're concerned about to the people for a vote on the general election ballot this fall,"says Perry.

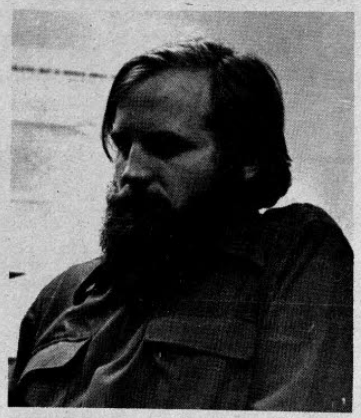
What does Chuck Perry consider as "winning in North Dakota?" A ban on strip mining? Tighter reclamation controls? Raising the state severance tax?

"All those things will be involved in our discussions and our education program through the fall election and in our lobbying effort next year. We want to raise the questions and ask the people to decide," says Perry.

"We believe that in North Dakota, where there is a historical suspicion of big business and outside interests — a strong, strong Populist strain — that after three or four months of intensive education the people will be able to make the decisions. The issues that are environmental issues in other states are basic bread-and-butter issues in this state.

"A man who has his hands in the soil and whose family has been working it since the homesteading days is the man who is concerned about what strip mining will do.

"I would hope that the people in this region and especially in North Dakota will look at the coal resources which are under their farms and ranches and say, 'The highest use of this land is for the production of food and protein.' At a time when the Department of Agriculture is telling us we need to be increasing our food production by 33% by 1985, we can't afford to destroy this land."



Perry characterizes the basic choice as being "a rural agricultural society versus an industrial urban society, which is a boom-and-bust society."

"I personally don't think that energy generation from coal is in the best interest of the people — any place. That's not to say we're going to be able to stop using coal as a fuel tomorrow or next year, but there has got to be a commitment on the part of the nation to phase out the use of coal as soon as possible for energy production," he says. "We're going to try to point out that there are alternatives and that it is a lie what the people of this state have been told about it being their patriotic duty to give up the coal and the land to solve the energy crisis."

Perry points out that if "all the coal in southwestern North Dakota — and there's coal underlying every bit of the state south and west of the Missouri River — were to be stripped and put to maximum utilization, it would only take care of about three per cent of America's energy demand based on today's consumption.

"It's a drop in the bucket and the rationale for coming here to take it at all is a shady one." Perry favors the use of renewable energy sources which have less impact on the land. He points to North Dakota's wind resource as one relatively untapped source of power.

But windpower is just a thought in Chuck Perry's mind that goes along with the house he dreams of building down by the river someday. Unplanned coal development is the real, immediate threat he must deal with daily. This brings him inevitably back to talk of organizing and politics once again.

"We're hoping to build United Plainsmen into a statewide organization because we're going to be carrying on a statewide electoral politics program. We want any citizen that is at all concerned about the issues to contact us, join, and become active," says Perry.

United Plainsmen memberships are $10 a year. Their address is P.O. Box 1933, Bismarck, N.D. 58501.

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"North Dakota must develop the guidelines and legislation with teeth that will protect our people and our environment. We are agriculturalists in a state in which the number one economic consideration is agriculture."

North Dakota Governor Arthur Link

In the NEWS
NORTH DAKOTA