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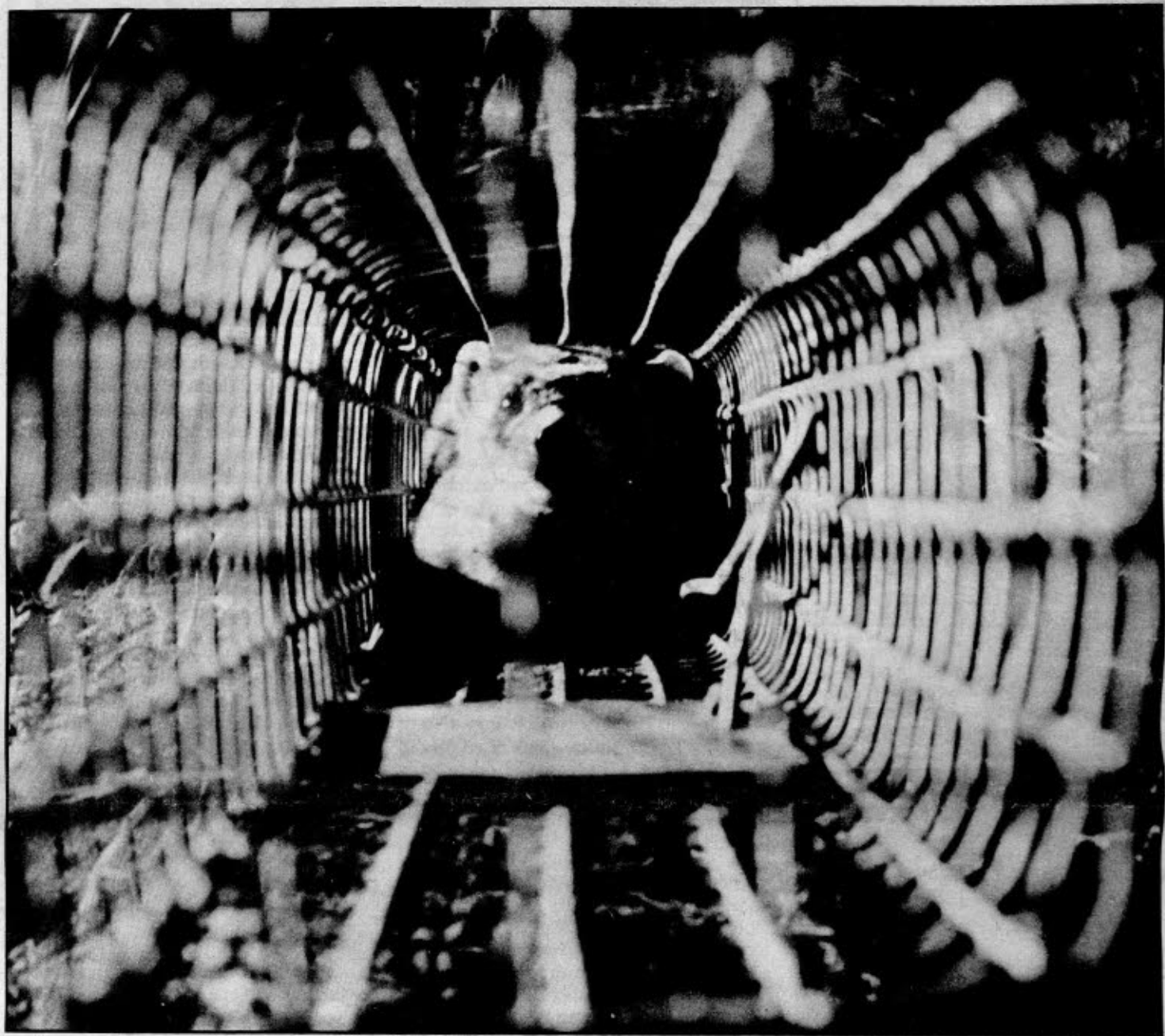
High Country

news

Friday, July 23, 1982

Vol. 14 No. 15

\$1.00



Ferrets

The prognosis is good

by Joan Nice

The walls of many a Wyoming cafe are rife with pictures of wildlife, but the collection at Lucille's in Meeteetse is unique.

Just above photos of a deer, an antelope and a fish is a framed portrait of a dead black-footed ferret. Over by the cash register a sign advertises Lucille's ferret T-shirts and hats, which are both worn by the cafe's female softball team, the Fairettes.

A year ago, the cafe's proprietor, Lucille Hogg, had never heard of a black-footed ferret. It's no wonder. The last documented specimen in Wyoming had been found in 1965. A population had been discovered in South Dakota in the '60s, but disappeared 11 years later. The only black-footed ferrets in captivity died at the Patuxent Research Center in Maryland in 1978. Although a number of people looking for ferrets were optimistic about the species' continued

existence, they could not come up with a single warm body as proof — not even a road kill.

In fact, many people in the U.S. Fish and Wildlife Service were about ready to give up on the ferret, until Lucille showed up at a local taxidermy shop with a nearly perfect specimen in a paper sack. Lucille's dog had killed the animal in her yard the night before. After her husband tossed it over the fence, Lucille retrieved it. She thought the slender little beast with the black mask and feet was handsome enough for stuffing.

To her chagrin, Lucille never got to stuff her ferret; the U.S. Fish and Wildlife Service took it away for tests. But she and a local ranch hand named Doug Brown, who later led researchers to a live ferret, have had the satisfaction of stimulating an important scientific discovery. A fairly large band of ferrets is alive and well on a picturesque bench at the base of the Absaroka Mountains near Meeteetse. It is the only known population of the species *Mustela nigripes* in the world.

Thanks to Lucille and her dog, the debate has shifted from whether ferrets exist to how to ensure their survival.

On a tip from Brown, Denzie Hammer and Steve Martin of the Fish and Wildlife Service made the first verified sighting of a ferret in the Meeteetse area on October 29, 1981. After seeing it disappear down a hole early that morning, they waited all day before it emerged again and triggered their live trap. Then they took it to town, had it anesthetized and fitted it with a radio collar.

The collar's transmitter lasted only 15 days, but it helped researchers find eight other ferrets. After about three weeks on the site, the team moved out for the winter.

Just as they were leaving, a group of privately-funded researchers was assembling, apparently oblivious to the worsening weather on the 7,200 foot plateau. Now, camped in relative ease on some private land near the ferret's

home, they have accumulated nine months of data. In the short term, they hope to get the facts needed to protect the Meeteetse ferrets. Then, if possible, they'd like to find or help establish ferrets in other locations — whatever it takes to get the beleaguered animal off the endangered species list.

The team's leader, Tim Clark, a biologist and adjunct professor at Idaho State University, began last winter with \$4,000 from a group called Wildlife Preservation Trust, Inc. That group has continued its support, and money has come in from a variety of other sources, including the New York Zoological Society, National Geographic, the U.S. National Academy of Science, Fremont County (Wyo.) Audubon, Defenders of Wildlife, the Humane Society of America, the Nature Conservancy, the National Wildlife Federation, Sigma Xi and the Mellon Foundation.

Clark has responded to the opportunities at Meeteetse with a speed and economy that must be the envy of government biologists, who are still

(continued on page 10)

WESTERN ROUNDUP



High Country News

Published biweekly by the High Country Foundation, 331 Main, Lander, Wyoming 82520. Telephone (307) 332-6970. Printed by the Jackson Hole News, Jackson, Wyoming. Second class postage paid at Jackson (USPS No. 087480). All rights to publication of articles herein are reserved.

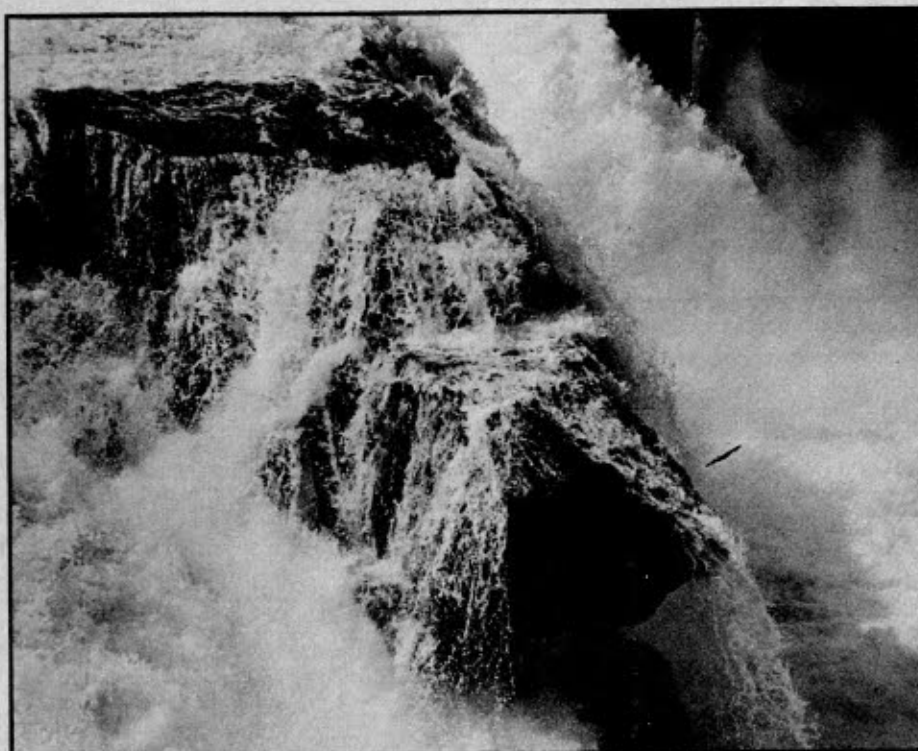
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Subscriptions cost \$15 per year. Single copies \$1.00.



Water plans slowed by WWDC

The Wyoming Water Development Commission voted 5-1 on July 7 to break off negotiations with the Sheridan-Little Horn Water Group for development of a water project on the Little Big Horn River near Sheridan, Wyoming. The commission also approved seven water project studies and tabled one controversial one, the Blue Holes Reservoir on the Wind River.

On the Little Horn project, the commission agreed to negotiate a contract with the U.S. Geological Survey for stream gauging and measurement. In addition, it appointed its own attorney, Houston Williams of Casper, Wyoming, to negotiate with the Crow Indian tribe and the state of Montana for apportionment of the river's water. Both of these functions had originally been included

in the contract with the water group. The Little Big Horn flows north into Montana and enters the Crow Indian reservation immediately upon crossing into Montana.

The commission also cut all future negotiations with the Little Horn Group, an action which may be in violation of Governor Ed Herschler's (D) water program passed by the 1982 legislature. That law required that the commission reach a contract with the water group.

The WWDC also tabled the contract for the Blue Holes Reservoir project near Dubois, Wyoming. That project would impound 174,000 acre-feet of water on the Wind River. The reservoir would encroach on the Wind River Indian Reservation and use water currently claimed by the Shoshone and Arapaho tribes. Commissioner Willard Rhoads of Cody made the motion to table the discussion on the basis that negotiations with the tribes had so far been unsuccessful.

In dealing with another sensitive issue, two commission members declared conflicts of interest and did not vote on projects affecting their own

interests. Walter Pilch, an engineer from Sheridan, did not vote on two projects, the Rawlins municipal project study and the Powder River Basin study. He abstained from the former because his son occasionally works for the engineering firm considered for the study and from the latter because he himself had done work for one of the water claimants in the basin, Cadiz Corporation.

WWDC chairman Nelson "Ed" Wren also declared a conflict on the Upper Savery Reservoir, because he is an affected irrigator. Three members, William Kirven, Lee Coffman and Lewis Freudenthal, were not at the meeting.

Drilling to proceed on reservation

Tribal dissidents' efforts apparently won't deter drilling of the first exploratory oil well on the Northern Cheyenne Reservation in Montana in August.

This will be the first step toward major energy development on the Northern Cheyenne reservation. Despite the 50 percent unemployment rate on the reservation, the Atlantic Richfield company's oil contract has been controversial since it was signed in May, 1980.

Tribal dissidents have tried to block development through a referendum (HCN, 3/5/82) and legal actions in tribal court.

The federal district court in Billings said this spring that Gilbert Redneck, a tribal member, had not exhausted his remedies through the tribal courts in his attempt to prevent exploration on land where he owns the surface rights and the tribe owns the minerals. On June 14, Charles Whitedirt, another tribal member, was denied his attempt for a temporary restraining order, which was based on the tribe interfering with rights guaranteed under the Indian Religious Freedom Act. Tribal court judges, who are appointed by the tribal council, have generally been unsympathetic to the dissidents' arguments (HCN, 3/5/82).

Geoff O'Gara. Dave is a Buffalo, Wyoming attorney and has been active in conservation causes in Wyoming for many years. He's been an HCN subscriber and supporter since he moved to the state in 1969.

Geoff, of course, is a former editor of HCN and, as such, needs little introduction to long-time readers. He is currently midwifing the birth of his book-publishing venture, Trotevale, Inc.

This will be the last issue of the paper you will receive until the one dated August 20. The staff is taking its annual and, we think, well-deserved vacation (of course, we're prejudiced). After two weeks in the woods, we'll return to the trenches.

— the staff

Dear friends,

When our offices were down on 7th Street a few years ago, we enjoyed weekly visits from Lafe Bell, a small, sprightly man in his eighties. He had always shared a heap of reading material with his son, Tom Bell, the paper's founder and first editor. When Tom left for Oregon, Lafe continued to recycle his newspapers through us.

We liked reading the *Denver Post*, but what we really relished were his stories about what Colorado and Wyoming used to be and about the hard work of making a living here as an underground coal miner and rancher.

We will miss those stories and Lafe's sensible, positive approach to life. He died last week while he was out irrigating his ranch near Lander. He was 88.

Attentive readers will note that former editor Joan Nice has contributed two pieces to this issue, one on the elusive black-footed ferret and another on the "privatization" of federal lands. We are all glad to have her lucid prose back on HCN's pages. She has been doing quite well for herself as a freelance writer, contributing to *Audubon*, the *Denver Post* and *Defenders*, as well as some regional publications. Two-and-a-half-year-old daughter Kate (alias Huck) is also keeping Joan busy.

The freelance life seems to have brought out in Joan a heretofore unsuspected neatness in manuscript preparation. When she was HCN's editor, one pencil planted firmly behind her right

ear and another in her hand, it was her firm credo that "Neatness does not count." Her manuscripts then, while legible, were covered with pencil marks, scratch-outs and scrawl-ins. The two submitted for this issue were neatly and flawlessly typed. Perhaps she's been reading *Writer's Market* too closely. In any case, they are brightly written and informative as well, both Nice trademarks.

The board of directors of the High Country Foundation met on Sunday, July 18. Along with the other items of business was the election of two new board members, Dave Palmerlee and

The HCN Publishers Fund drive is coming along quite well. We would like to take this opportunity to thank the following people for their generous contributions to the fund:

Tom Bell
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Arco's contract gives it the right to explore the entire reservation for oil. No coal development could proceed until after the company relinquishes nonproductive areas, but the tribal leaders have been steadfast in their objections to coal development on the reservation. A tribal election next fall could reopen this possibility.

— Marjane Ambler



California bighorns

Pipeline threatens bighorns

A proposed livestock watering pipeline between two wilderness study areas in southwestern Idaho is drawing fire from conservationists who fear the cattle that will be brought into the area will drive away the resident population of rare California bighorn sheep.

The Bureau of Land Management proposal would run 19 miles of pipe — with watering tanks every mile — along an existing road corridor in between Little Jacks and Big Jacks Creek wilderness study areas. About 100 California bighorns, desert cousins of the Rocky Mountain bighorn sheep, roam the rugged basalt and rhyolite canyon through which Little Jacks Creek flows. Big Jacks Creek canyon, which runs parallel to Little Jacks, has no bighorns but has been identified as potential bighorn habitat.

The bighorns were extirpated from the canyonlands by the 1900s — victims of over-grazing and over-hunting. Twelve California bighorns from a remnant herd in British Columbia were transplanted in Little Jacks Creek in 1967. The population has grown to between 100 and 125. The entire United States population of the bighorns is estimated at 1,600.

The bighorns seek refuge in the steep canyons, but graze up to about one mile from the canyon rim. The sagebrush-steppe plateau between Little Jacks and Big Jacks Creeks is some of the best remaining high desert grassland left in Idaho. Lack of water discourages cattle from grazing there and competing for forage with the sheep.

However, there are two grazing allotments in the area. BLM area manager Butch Peugh said the pipeline is necessary to ease pressure in the overgrazed areas where water has been available. Although an economic analysis of the pipeline has not been completed, the BLM estimates the project will cost \$163,000, not counting pumping or maintenance costs.

The construction costs would be borne by the BLM.

The Committee for Idaho's High Desert (CIHD) labelled the pipeline a "porkbarrel project," and has said the BLM is reversing an earlier decision to scuttle the project "due to political pressure." The original project proposed in the early 1970s included 42 miles of pipeline which extended up to

the canyon rim. The BLM drilled a well for the pipeline in 1974 but was stopped from building it by a lawsuit brought against the agency by the Natural Resources Defense Council. CIHD chairman Bruce Boccard and other pipeline critics fear the BLM will succumb to pressure from ranchers to build a more extensive pipeline deep into bighorn habitat. The ranchers, at a Boise July 1 hearing on the proposal, did demand that the BLM construct the entire 42-mile project.

Boccard said he is alarmed because the BLM predicts five to 10 California bighorns will be displaced by the pipeline. Cattle compete for forage with the bighorns, and the bighorns avoid livestock, according to BLM biologist Alan Sands. Continued presence of cattle will cause bighorns to leave an area, Sands said. The loss of any of the rare bighorns could weaken the population while it is at such low levels in the area.

For these reasons, the BLM had earlier established a policy to "maintain a separation of use between cattle and bighorn by not developing livestock water sources within bighorn habitat unless the potential adverse impacts to bighorn can be avoided or mitigated."

A final decision on the pipeline will follow the release of the final EIS in late September. If the pipeline is approved BLM must complete a cost-benefit analysis for the project, although Peugh said a negative cost-benefit ratio would "not necessarily" kill the project.

— Glenn Oakley

Tribe gives severance tax credit

In the first major indication of tribal flexibility on severance taxes, the Crow Tribe agreed this month to give Westmoreland Resources credit for any severance taxes paid to the state, in effect protecting the company from double taxation.

At the same July 10 meeting, the tribal council approved a five percent severance tax on coal mined on tribal mineral rights off the reservation. The tribe had ceded some of their land to the state but retained the mineral rights. The combined actions won the tribe bargaining power with other prospective coal developers and potential industry support for the tribe's challenge to the 30 percent Montana severance tax on tribally owned coal. If the tribe wins its lawsuit, which is now pending in the federal district court in Billings, a company mining coal in the off-reservation area would have to pay a five percent tax to the tribe instead of the 30 percent tax to the state. A company mining coal on the reservation would have to pay the tribe's 25 percent coal tax.

The tribe is currently negotiating with North American Coal of Cleveland for developing a coal mine on the reservation and with three major corporations for new coal contracts, in exchange for contracts now held by the companies, which the tribe believes are illegal and inequitable. The contracts with the three companies — AMAX, Gulf and Peabody — have been in legal limbo since the tribe filed a lawsuit challenging them in 1975.

The Crow have settled with Westmoreland and with Shell for new contracts. However, Shell cannot proceed with development until the Interior Department approves its contracts. That approval is contingent upon congressional action on a bill, sponsored by Sen. John Melcher (D-Mont.), to authorize alternative contracts.

— Marjane Ambler



Helen Bogart

Oil leases granted near Yellowstone

Oil and gas leases will be granted on about 25,000 acres near and adjacent to the western edge of Yellowstone National Park. Some of the leases extend into an area where the Forest Service has refused to allow geothermal exploration in order to protect the geothermal features within the park.

U.S. Forest Service officials in Missoula, Montana, said oil and gas drilling would not damage geothermal resources in the vicinity. National Park Service officials who are still studying geothermal systems in Yellowstone to determine how they work, said they expected to work with the Forest Service to protect the park's natural wonders.

Dr. Richard Tenney, president of the Madison-Gallatin Alliance, a wilderness advocacy group based in Bozeman, Montana, said it "didn't make much sense" to drill for oil and gas when geothermal drilling in the same area had already been ruled out by federal agencies for lack of information about the subsurface structure. The alliance plans

to appeal the Forest Service decision, he said.

Eight miles of Yellowstone boundary will be included in the leases; about half the leases on the border would be restricted by "no surface occupancy" stipulations, which would require slant drilling from off the lease site.

Forest Service geologist Buster LaMoure told the *Missoulian* that drilling "is not going to disturb the (geothermal) water in any shape or form. It is still going to be recharged."

Despite studies conducted over the last two years, scientists in Yellowstone do not yet have a complete analysis of how the underground plumbing in the Yellowstone area works. A group from the University of Utah is currently working on a study that may clarify whether surface phenomena like Old Faithful get their underground steam from the east or west. The study should be completed this year.

Mark Weber, a geologist with the Forest Service in Missoula, said that if companies decided to drill on the leases, the Forest Service would require a casing program to prevent any leakage of geothermal zones. Casing would also have to be able to withstand corrosion from underground steam and water, he said. He added, "We are not dealing with necessarily abnormal subsurface conditions. We have yet to establish that geothermal zones would be encountered in that area."

The Park Service responded to the environmental assessment by expressing concern for protection of wildlife, watersheds, and visual quality. Weber said any drilling applications would be restricted on a case-by-case basis to protect those resources. Yellowstone National Park Assistant Superintendent Ben Cleary said his office had "a very good working relationship" with the Forest Service and would be consulted on drilling plans.

Two years ago, an exploration permit to drill in acreage near the western border of Yellowstone for possible geothermal energy development was denied because of its unknown consequences for the park's geothermal features.

— Geoffrey O'Gara

BARBED WIRE

But you don't want to sit in the smoking section. After several thousand gallons of gasoline spilled from a pipeline into LaValle Creek near Missoula, Montana, an area rancher told the *Missoulian*, "The rock worms, hellgrammites and frogs are all dead, but that's the only damage I can see."

Put the boardwalk over here, the casino there... A caller to the Montana State Department of Lands asked geologist Terry Grotbo why the state didn't put up lake-front homes and diving boards on Butte, Montana's abandoned Berkeley Pit. The pit, once the largest copper mine in the world, is filling with water since being abandoned by Arco. Grotbo said he didn't know if the caller, who claimed to be from an organization that develops resorts worldwide, was serious or not.

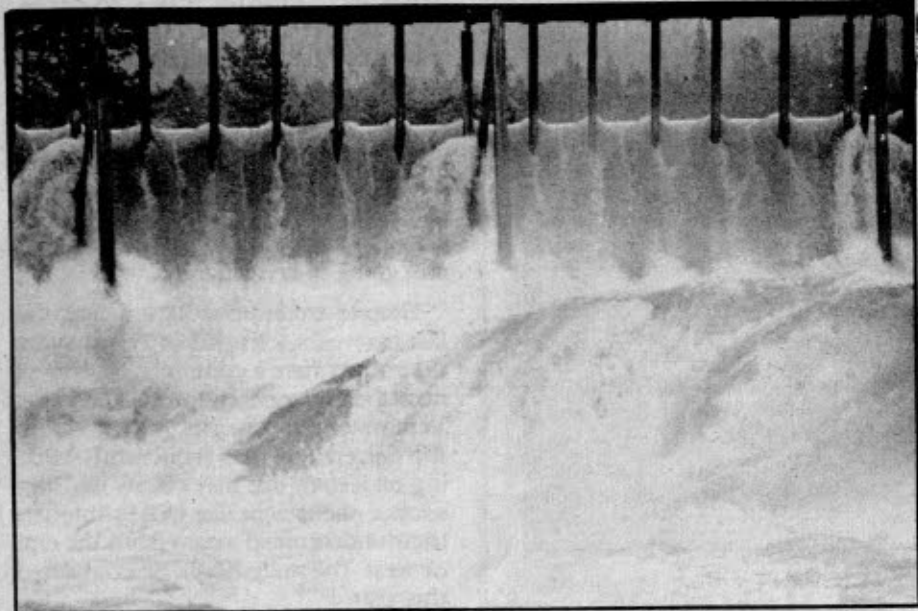
Love is the pits. In an attempt to lure sharp-tail grouse from a potential coal mine site onto reclaimed land, Western Energy Company is serenading them with tape recordings of other, romantically inclined grouse. The Bureau of Land Management has refused the company permission to mine a 181-acre area containing 10 million tons of coal near Colstrip, Montana, because it contains a grouse strutting ground. Western Energy hopes to use the taped mating calls to lure the amorous grouse to an area already mined and reclaimed, so it can proceed with its mining plans.

Mobammed had his mountain, now Kentucky has... The state of Kentucky's Department of Energy is negotiating to buy Paraho Development's Anvil Points oil shale facility in Colorado, which it proposes to dismantle, ship east and reconstruct somewhere in Kentucky.

Beat the high cost of living. The federal government has declared the Love Canal area of Niagara Falls, New York, site of the dumping of at least 21,000 tons of chemical wastes in the 1940s and 1950s, now safe for human habitation.

A liberal might argue that's not all he's misinformed about, but we're not that kind. Heraldry buff Joel Hedgpeth of Santa Rosa told *California* magazine that Interior Secretary James Watt's much-publicized reversal of the buffalo on his personal Interior Department seal to face to the right instead of left, was wrong-headed. According to Hedgpeth, heraldic convention defines direction from the bearer's perspective, not the viewer's. Therefore, the buffalo was facing to the right all along and the secretary switched it to the left. Said Hedgpeth, "Since Secretary Watt has stated that there are only two kinds of people, liberals and Americans, the reorientation of our venerable bison to the left, liberal, direction indicates either a change of heart on his part or, more likely, that in matters of heraldry he does not know what he is doing."

WESTERN ROUNDUP



David Spear

Dam safety questioned in region

In the wake of the recent failure of the Lawn Lake Dam near Estes Park, Colorado, the *Denver Post* reported that 100 of the state's 2,249 dams are unsafe. Examination of the records by *High Country News* indicates that 96 dams in Montana did not meet 50 percent of the Corps of Engineers "probable maximum flood" safety standards, making them "unsafe" in Corps parlance. In Wyoming, 15 dams do not meet 50 percent of the PMF standard.

The U.S. Army Corps of Engineers has set engineering safety standards for dams, which require that they meet 100 percent of the "probable maximum flood" in the drainage in which they are located. The "probable maximum flood" means pretty much what it says — the largest flood that can be reasonably expected based on past records. If a dam meets between 50 and 100 percent of the standard, it is not considered a big problem. At less than 50 percent, however, it is considered "unsafe." A number of older dams throughout the country are "unsafe" by this measure.

The Corps also categorizes dams as high hazard, intermediate hazard and low hazard. A high hazard dam is one that will pose significant danger to life and property if it fails. Intermediate hazard dams pose no danger to life and have less of an impact on property. Low hazard dams pose virtually no threat to life or property.

Of the 96 dams in Montana that do not meet 50 percent of the PMF standard, 36 are high hazard structures. In Wyoming, 12 of the 15 unsafe dams are high hazard. About 140 dams were inspected in Montana and 45 dams in Wyoming. The inspections were begun in 1978, after the failure of the Teton Dam in Idaho, which caused extensive damage and loss of life.

Colorado's Lawn Lake Dam collapsed above Estes Park July 15, unleashing about 250 million gallons of water through canyons and into the resort town, leaving four persons dead and causing about \$70 million worth of damage. According to the *Post*, the dam had been inspected only four times since it was built and was not considered particularly dangerous at its most recent inspection in 1978.

Wyoming has instituted some repairs for dams that fail to meet the PMF standard, at least for those owned by the state and local governments. Some of the projects approved recently in the governor's water program were for increasing structural and hydrologic stability of dams. However, there are several private dams for which nothing has been done or is planned. There is even one dam that no one will claim ownership of. State records indicate

that the Badwater Creek Dam near Arminto is owned by the Chicago and Northwestern Railroad, but the company said that it isn't.

In Montana, 13 high hazard dams classified as unsafe are owned by the state. There are plans presently to rehabilitate all of them. The other 23 unsafe dams are all privately owned and the state has no present authority to force the owners to repair them up to safety standards. Legislation to do so was introduced during the last legislative session, but was tabled by the state House of Representatives.

Utah coal plant costs climb

Higher costs, weakening power demand, the world oil surplus and knotty legal problems have not slowed construction of the mammoth Intermountain Power Project 10 miles north of Delta, Utah, and 100 miles southwest of Salt Lake City.

Dubbed by project officials as "one of the largest coal-fired electric generators in the world" and "the largest construction project in the West in the 80s," the proposed IPP is a \$11.5 billion 3,000-megawatt complex featuring four 750-megawatt generating units.

IPP is being built by a consortium of California and Utah interests primarily to replace older generation systems and to meet anticipated new power demands. Six California municipalities own 58 percent of IPP. The rest is shared by Utah's major private utility Utah Power and Light, 23 Utah municipalities and six rural electric cooperatives.

Since breaking ground in September, 1981, project development has been on schedule. Site preparation is almost complete and construction of the first generating station is set for August. Commercial operation of the first unit is targeted for July, 1986, followed by one unit each in the following three years.

In May, the Intermountain Power Agency (IPA) which governs IPP development announced the original cost estimate for the project had soared from \$8.9 billion to over \$11 billion. Questions arose over whether the project should be continued. But in June, the IPA board of directors reconfirmed its position to proceed with IPP as originally planned.

However, there are strong indications that the decision may not hold. IPP power will cost \$3,000 per megawatt making it the "most expensive coal-produced electricity in the country," according to one Utah state regulatory staff member.

The cost, when coupled with the softening demand for new electricity in the western United States, makes IPP plans appear less feasible.

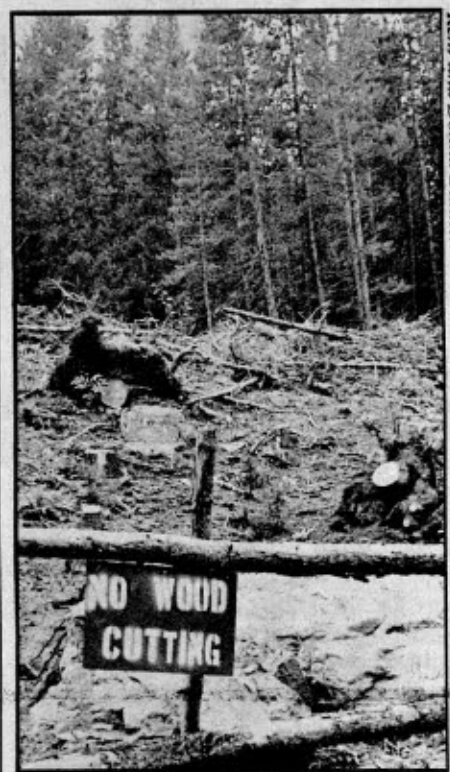
Utah Power and Light with its 25 percent share in IPP has been reportedly either trying to get out of the IPP deal, sell its contract rights to another interest or delay or cancel the second two units. UP&L has over-projected its future power demand and is trying to delay construction on Hunter 4, a 450-megawatt unit in Emery County, Utah. Hunter 4 power will cost an estimated \$1,000 per unit compared to the IPP \$3,000 per unit cost.

California IPP participants, like Los Angeles Water and Power, want IPP power to replace their expensive oil- and gas-fueled power generating units. With the current world oil surplus making that source less costly, the push for IPP power has been dampened temporarily.

Adding to the problems is the possible challenge of IPA's status as an unregulated and tax-exempt political subdivision of the state of Utah. Both the Utah Public Service Commission and the State Attorney General's Office are looking into the tax and jurisdictional questions. An extensive attorney general's opinion is expected in August. If the opinion casts doubt on the legal standing of IPP it could delay or even stop an upcoming \$600 million IPP bond issue.

IPA board member Barry Hutchings, who works for one of the Utah municipalities participating in the project, calls IPP "an asinine mess," yet he supports completion of the first two units. "With one and one-half billion dollars spent or in the works, it would be more expensive to pull out," he said. "But two units is as far as I go. I don't think the other two will ever be built. Not before the 1990s anyway."

— Jess Funk



Kent and Donna Dammen

Timber talks table tree sale

An innovative approach to consultation between Forest Service officials and local interests has led to a delay in a controversial timber sale on the western slope of Wyoming's Wind River and Gros Ventre Mountains.

Earlier this year, Bridger Teton National Forest Supervisor Reid Jackson approved plans for the Jack Creek timber sale, which would allow clear-cutting of about seven million board feet of timber in a roadless area in the Upper Green River drainage north of Pinedale, Wyoming.

The sale sparked protests from outfitters, environmentalists and local officials. They argued variously that the sale would damage the watershed, diminish wildlife such as elk, increase human use

of the habitat by creating roads and hurt the local economy, which is dependent on outdoor recreation. The plan was appealed to Deputy Regional Forester Kent Mayes.

Jackson and other Bridger-Teton officials began meeting with local officials and others who objected to the sale a few months ago — the group was informally dubbed the White Pines Consensus Group. They received advice and guidance from Robert Chadwick, a special assistant to the regional forester in Portland, Oregon, who specializes in mediating such encounters.

A Teton County resident who attended one of the meetings said Jackson appeared to be moved by the discussions. Elaine Mercill, of the Bridger-Teton planning office, said it was the first time such an approach had been taken in this region.

The group includes timber industry representatives, media, environmentalists, state and local government representatives and Forest Service representatives. It will meet next month for an on-the-ground look at the site of the postponed sale.

No cutting is expected this season. Jackson plans to issue a modified decision, probably this fall, and his options include selective cutting, reforestation of roads, no cutting at all, the original plan, or an even larger clearcut.

A second controversial timber sale in the Pinedale area, the Klondike Hill Timber Sale, has not been postponed. Appeals of that sale are pending before Mayes, and a decision is expected this fall. Bridger-Teton spokesman Fred Kingwill said Jackson is also considering a postponement of the Klondike sale.

— Geoffrey O'Gara

Reclamation Act reformed

The U.S. Senate recently updated the Reclamation Act of 1902 to increase the acreage on which farmers can receive subsidized water from federal reclamation projects. The old limit was 160 acres. The new limit proposed by the Senate is 1,280 acres, while a House proposal passed earlier called for 960.

The 1902 law, which had been the basis for all reclamation water law for 80 years, was outmoded and rarely enforced, according to farmers, politicians and environmental groups. With 25 percent of the nation's total irrigated farmland coming under reclamation programs, the law was clearly in need of reform.

Under the old law, farmers could receive subsidized water for land in excess of the 160-acre limit, but they had to sign a "recordable contract" agreeing to dispose of the "excess" land within 10 years.

Under the new law, farmers will be eligible for subsidized water on a much larger acreage and also will be eligible to irrigate additional land with reclamation water on a "full-cost" basis, with an interest rate of 12 percent.

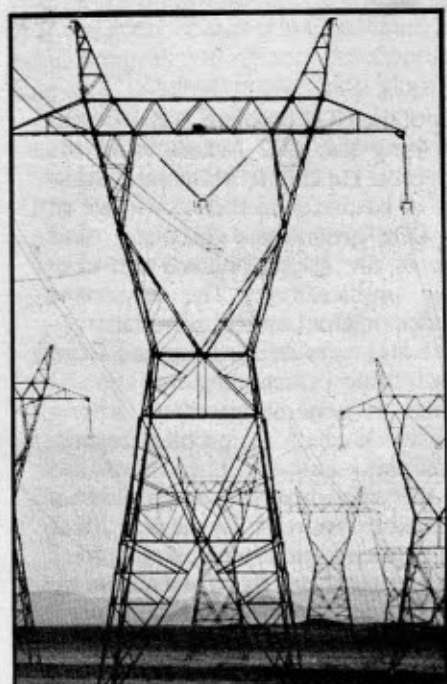
Originally, the Senate bill called for subsidized water for up to 2,080 acres, but the acreage was reduced out of fear that the increased size would benefit large agribusiness operations at the expense of small farmers.

The House version of the act was passed in early May. The major difference between the two bills is that the House bill sets a 960-acre limit and calls for two interest rates for water projects, depending on whether they are new or existing projects. Irrigators taking excess water from new projects could be charged around 14 percent and from existing projects, five percent.

The two bills will be formed into one law which will finalize the acreage limitation and interest rates. According to Marlowe Teuscher, director of the Office of Congressional and Legislative Affairs, the final bill probably set the

limitation closer to the 960 proposed by the House and the 12 percent interest rate from the Senate.

—Jennifer Walford



Jack McElman

Headaches increasing for BPA

The Missoula County attorney has filed suit challenging the adequacy of the Bonneville Power Administration's proposed impact aid payments to counties affected by construction of two 500-kilovolt powerlines.

The controversial lines, which will carry electricity from coal-fired power plants at Colstrip, Montana, to consumers in the Pacific Northwest, were originally to have been built by the private utilities operating the Colstrip plants. When those utilities ran into right-of-way problems, BPA agreed to build the lines. While the private companies would have paid property taxes on the ground beneath the lines, the BPA is not required to. And, while other federal agencies are frequently required to make payments in lieu of taxes in such cases, BPA officials have main-

tained that the law prohibits their agency from doing so.

Concerned about the financial strain of lost property tax revenues, Montana's Attorney General Mike Greely has asked BPA to make more generous "impact aid" payments to Montana communities. "Impact aid" is BPA's term for reimbursement to local governments for specific costs incurred because of the project. Greely feels BPA has the discretion to expand its impact aid policy and Missoula County Attorney Robert Deschamps is asking it to do so in the suit filed July 16 against the agency.

Meanwhile a decision is expected any day in separate dispute between the BPA and the Montana Board of Natural Resources over the siting of the line's Missouri River crossing.

Montana's Board of Natural Resources has asked that the Missouri River crossing near Townsend be located about a half a mile south of the site originally proposed by BPA in order to avoid adverse impacts on irrigated land, recreation and wildlife habitat. Changing the crossing site was one of several conditions outlined by the board when it approved the 91-mile Townsend-to-Garrison segment of the Colstrip powerline on June 18.

While BPA said it had "no problem" with the other conditions it objected to the relocation of the river crossing, citing cost and engineering factors, lengthy easement negotiations with landowners, additional permits, and construction delays as some of the reasons for its objection. It said the route change would also affect the tie-in of BPA's powerlines with those of the Montana Power company, which is constructing the line from Colstrip to Townsend, where BPA takes over.

The BPA challenged the state's request at a June 23 hearing before U.S. District Judge James Battin in Billings. The original purpose of the hearing was to resolve what BPA considered unnecessary delays in the state's permitting process — by then a moot point since the board had given its conditional approval of the powerline just five days before. However, with Montana Power supporting its case, BPA used the occasion to object to the state's relocation request and asked the court to settle the conflict.

Both BPA and state officials agree the river crossing issue will ultimately test

the "teeth" of the state's industrial facility siting law. Although at one time BPA claimed it was exempt from Montana's Major Facility Siting Act, Judge Battin ruled in March that the agency must comply with the law's "substantive" siting requirements, which say the powerline should have minimal impacts on humans and the environment. In its review of the powerline proposal, the state found BPA did not comply with those standards at the Missouri River crossing and suggested an alternative site.

"Obviously we don't have a definition of 'substantive standard' we agree on," said George Eskridge, BPA project information officer. "We consider it to be something objective and measurable, such as tower height, noise levels or water quality standards. BPA does not consider location (of powerlines) a substantive standard" and not within state jurisdiction.

"What happens in Montana," he adds, "will set a precedent all over the country for how a state is involved in siting a federal transmission line." Eskridge believes that because of "procedural problems," location of public powerlines should lie within federal authority, but feels the state and BPA should have an "active, working partnership." Judge Battin will decide the nature of that partnership when he issues his ruling on the powerline siting conflict.

—Ellen Ditzler

State pest regulations in jeopardy

The possibility of states' rights being undermined by an amendment in a two-year reauthorization of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) is creating quite a stir among the states, the pesticide industry and public interest groups.

The amendment would limit the authority of states to restrict pesticide use below allowable federal guidelines. Under the current 20-year-old FIFRA act, states are allowed to enforce more

stringent pesticide restriction than those set for the nation.

Francesca Lyman, editor of *Environmental Action* magazine, said many states' standards are more restrictive than the national standard because needs are usually locally specific.

The states authority amendment "becomes a states rights issue" because it is seen as mitigating their authority, according to Sue Sherman, chairwoman of policy and special projects, office of pesticide programs in the Environmental Protection Agency. With this amendment, special rules to protect state needs would not be allowed.

The U.S. House of Representatives has presented a different version of the state authority issue, she said, which would allow the pesticide industry to challenge the requirement of a state's need for data beyond that released by the EPA.

Another provision which may limit citizen groups', the public's and pesticide competitors' access to chemical and toxicity information on pesticides is being considered by Congress. Sherman explained that to protect research done by chemical companies, steps are being taken to extend the time that research data can be withheld from the public.

Sherman added that pesticide developers have said more exclusive protection would provide them with the incentive to develop new uses of old chemicals and to develop new chemicals.

Chuck Benbrook, the staff director for the subcommittee with jurisdiction over pesticide legislation in the House, said a stalemate has been reached between public interest groups and the industry over the public access amendment. Lyman said the information requested by the public interest groups concerns the health effects of pesticides. The argument that competitors may find out the chemical used from health effects descriptions is unfounded since this could include several different chemicals, she said.

It has always been hard to get pesticide information, she added. If this revision is passed, information will be even more difficult to obtain.

One amendment that would allow people injured by pesticides to sue in federal and state courts has been reinstated, Benbrook said.

—Jennifer Walford

HOTLINE

SFC REFUSES AID

The U.S. Synthetic Fuels Corporation has refused financial aid to Energy Transition Corporation of Santa Fe, New Mexico, for its proposed Chokecherry coal-to-hydrogen plant located southwest of Craig, Colorado. The company was going to sell the hydrogen to Union Oil Company for use in its shale oil plant currently under construction near Parachute in western Colorado. The SFC denied the aid because Energy Transition failed to meet certain criteria about the plant's design and economic viability. Union Oil said the decision will not affect its plant.

IS ARIZONA CRACKING UP?

The increased demand on groundwater in Arizona is creating the occurrence of great, jagged fissures over the surface of the desert. Often these gaping cracks are several miles long and deep enough to swallow up a dropping rock without a sound. The first report of a fissure was in 1927 and the last count found more than 100 ground cracks in the state. Large-scale pumping of underground aquifers to irrigate arid farmland or for urban use in Phoenix and Tucson has lowered the water table, causing surface slumps. In some places the land cracks open. Rapid growth in the state could lead to more fissures and pose additional hazards to homes and property.

NO MORE DUMPING

Colorado Sen. Gary Hart (D) has introduced legislation that would ban the disposal of untreated toxic wastes in landfills. Hart's bill would require the Environmental Protection Agency to list the most dangerous hazardous wastes being disposed of and would prohibit their dumping in landfills until they can be neutralized. He told the *Denver Post* he fears contamination of drinking water will increase if such dumping is not eliminated. Hart called hazardous waste dumps, "ticking time bombs with 1,000-year fuses."

NO NEW WELLS

A spokesman for Shell Canada has denied that the firm has plans to drill new wildcat oil wells in the Flathead Valley northeast of Glacier National Park. According to Montana's *Missoulian*, Lorne Kingwell, foothills manager for Shell Canada Resources in Calgary, Alberta, refuted rumors that the company was planning more drilling just across the Montana-British Columbia border. The company drilled two wildcat wells two years ago, one on the site of the proposed Cabin Creek coal mining complex northwest of Glacier National Park and the other near Middle Kootenai Pass along the Continental Divide. Kingwell said the Middle Pass well produced "some shows of gas" but "nothing of commercial value."



COAL SWAP QUESTIONED

There are serious questions in the eyes of Rep. Pat Williams (R-Mont.) about the proposed coal land swap between the Bureau of Land Management and Burlington Northern's coal mining subsidiary, Meridian Land & Mineral Company. The BLM is considering a swap of company and government coal lands in an area near Circle, Montana, in the eastern part of the state. Both the BLM and Meridian would receive separate tracts of coal land. Williams is questioning the priority of the exchange and BLM's handling of it. In an Associated Press story, Williams said if the swap were approved, he would introduce legislation requiring the

resulting BN profits to go to the holding company's railroad subsidiary. He said that since Meridian wants to exchange railroad land grant coal for BLM coal to open a mining operation, the profits from the mine belong to the railroad.

RETIRED REACTOR

The engineering test reactor at the Idaho National Engineering Laboratory, used in safety testing of nuclear fuels and coolants, is to be retired after 25 years of service. The reactor will be deactivated, but the unused fuel will be kept to permit the reactor to be restarted if necessary. Further maintenance or surveillance of the dormant reactor will be small, said officials. The de-activation project started in January, with crews dismantling and decontaminating areas and removing hazardous material.

HELICOPTER ACCESS APPEALED

NUPEC Resources, Inc. of Riverton, Wyoming, has appealed the U.S. Forest Service's decision to give the firm helicopter-only access to drill in an area in the Collegiate Peaks Wilderness near Buena Vista, Colorado. The Forest Service's decision was made April 9 to protect the wilderness values of the area (HCN, 4/16/82). The company said the cost of aerial access is extreme compared with constructing a road to enter the area. Company officials also said previous exploratory efforts in the area justified this proposal. However, the Forest Service is sticking to its guns in requiring helicopter access only.

A hot story

CO₂ in the atmosphere

by Betsy Bernfeld

Last year was the warmest year in recorded history for the northern hemisphere, according to a report recently released by the Climate Research Unit of the University of East Anglia in Norwich, England.

William Barbat, a self-employed geological consultant who resides near Teton Village, Wyoming, called the information "a breakthrough in the noise level." What Barbat is referring to may be Planet Earth's most urgent problem.

The accelerated burning of fossil fuels since the Industrial Revolution has pumped billions of tons of carbon dioxide (CO₂) into the atmosphere. The element carbon is present in all living things. Fossil fuels are the remains of once living things, and carbon is present in these fuels to a greater or lesser degree, depending upon the fuel type. Chemically, the act of burning is the combustion of oxygen and the fuel burned. The waste from fossil fuel burning is carbon dioxide and water vapor.

The earth has means of absorbing CO₂, though the exact equilibrium of this absorption — where CO₂ emitted and consumed are equal — is unknown. Oceans absorb CO₂, plants convert it through photosynthesis and some scientists contend that plant and animal

The complete melting of the polar ice caps would correspond to sea level at the clock face of London's Big Ben.

life could benefit from an increase in atmospheric CO₂ levels (see accompanying story on this page).

A 1978 report from the U.S. Department of Energy indicates that these natural controls are using up only about 50 percent of the CO₂ emitted from fossil fuel burning. The same report explains that "CO₂ transmits solar radiation but absorbs some of the outgoing long-wave radiation from the earth, the so-called 'greenhouse' effect." In other words, the sun's rays can still get in through the accumulated CO₂ in the atmosphere, but not all of the heat can get back out. Thus, the earth, like a large greenhouse, may be warming.

According to Barbat, global temperature (plotted from Greenland ice core samples) goes through cycles, apparently related to the sun's activity. This

natural variation is sometimes referred to as "noise." The 1970s and 1980s fall in a natural downswing of the cycle which may partially camouflage the greenhouse effect. However, Barbat said he thinks the 1981 average temperature is high enough to be evidence of a CO₂ warming effect, above and beyond the natural noise in the earth's temperatures.

Accurate and comprehensive measurement of CO₂ in the atmosphere began in 1958. According to Norman Rosenberg, director of the Center for Agricultural Climatology and Meteorology at the University of Nebraska in Lincoln, "There is indisputable evidence that CO₂ is increasing in the atmosphere at the average rate of about one part per million per year since 1958." There are about 338 ppm of CO₂ in the atmosphere now, compared with an estimated 300 ppm in 1890. In 1958, as measured at Mauna Loa, Hawaii, the concentration was about 315 ppm.

Barbat, though he does not claim to be a technical expert on the CO₂ problem, has over the years become a clearinghouse for information on the subject.

Barbat moved to Jackson Hole, Wyoming in 1967, firmly committed to the idea of "not letting another area get spoiled." He was bothered by the fact that he was geologist for Amoco at a time when many environmental problems were beginning to be blamed on the energy industry. It prompted him to take six months off work to soul-search and conduct an intensive study of the "true ecological niche of energy."

Barbat said his conclusion was that two world problems stood out above all others as "totally unmanageable." There were over-population and the CO₂/greenhouse effect.

In the fall of 1979, after 12 years of

study of the CO₂ problem, Barbat began publishing the *CO₂ Newsletter* in his spare time. He calls it "a bimonthly summary of advances in the knowledge of the CO₂/greenhouse problem, and some of the social, political and economic implications." The newsletter includes original articles as well as published and unpublished reports from the scientific community.

There is general agreement among those working on the problem regarding the time scale of CO₂ accumulation and the accompanying magnitude of temperature increase. By the year 2000, CO₂ concentrations in the atmosphere will have increased by 20 percent above 1958 figures, causing a global temperature rise of about .8 degrees Celsius (one degree Celsius equals about 1.8 degrees on the Fahrenheit scale). When CO₂ has doubled, possibly between 2030 and 2080 depending on the rate of fossil fuel use, the average global temperature increase will be two to three degrees C.

Barbat said the recent eruption of the volcano Chicon in southern Mexico may have a slight counteractive cooling effect over the next five years. The ash the eruption injected into the stratosphere will screen out part of the entering sunlight. However, he said the Mount St. Helens eruption would have no effect on the temperature because it was very small by world standards.

Volcanic eruption is one factor that increases the "noise" surrounding climate and temperature change. Other factors that affect climate on a global scale are sunspots and other possible "greenhouse" culprit gases besides CO₂ — nitrous oxide, methane and fluorocarbons. According to Stephen Schneider, a climatologist at the National Center for Atmospheric Research in Boulder, Colorado, "In any stretch of climatic history, there are fluctuations. The current developments are consistent with CO₂ theory, but it's not conclusive."

Schneider said that between 1895 and 1945, the whole northern hemisphere warmed an average of .6 degrees C. Then, in 1945, it began to cool, dropping .3 degrees C by 1970, with the area above 45 degrees latitude cooling considerably more. Then, in 1970, warming began again, until the 1981 "record warmth." However, Schneider warns that though this current warming trend could be related to CO₂ buildup — and he personally believes it is — there are

California under water!

While the melting of the polar ice caps as a result of the CO₂/greenhouse effect would undoubtedly cause some inconvenience, there could be a number of benefits from the phenomenon.

First of all, said climatologist Stephen Schneider of the National Center for Atmospheric Research, "We are not talking about the end of the world here. This type of warming is not unprecedented on a geologic scale. 1981 was the warmest year on record, but the record is very short — since we've had thermometers. As some people like to do, if the history of the earth were a time line the length of a football field, the period we've measured is less than the width of the goal line stripe. There is no doubt that the earth has been warmer and cooler throughout periods of geologic history."

Nevertheless, the scale of temperature change is significant. During the last great Ice Age, the average temperature of the earth was three to five degrees C cooler than it is currently, roughly the same increment of warming predicted from CO₂ buildup. Still, during the last Ice Age, about 70 percent of the earth was free of ice.

According to Sylvan Wittwer, a plant scientist and director of the Michigan State University Agricultural Experiment Station, "The climate changes being predicted may not necessarily be all bad. Moisture is more of a limiting factor than heat in growing crops. And the effect on moisture patterns is more of an unknown."

"If there is a doubling of CO₂, there will be a decided positive effect. The limiting factor in photosynthesis is CO₂. If you double or triple CO₂, you can double plant growth. We may now be witnessing a crop production increase globally as a result of CO₂ increases."

"CO₂ additions decrease water requirements for plants — it takes less water to produce a ton of grain. In addition, there is less damage from air pollu-

tion because pollutants don't get inside the leaf as easily."

Wittwer also said agriculture has adapted to a number of changes in the past, for instance, developing harder crops. In short, he said, "Agriculture will very likely be able to cope with all these dire predictions."

There are, of course, other possible outcomes, including that mentioned by William Barbat, editor of the *CO₂ Newsletter* — increasing temperatures would force crop production north onto more acidic soils. These soils, in turn, could not adapt fast enough as host to the new climatically adjusted crops, and a famine period would follow.

Climate modellers are of little help in predicting these types of changes because moisture pattern changes escape ready analysis. According to Wittwer, some beneficiaries of the projected climate changes would be grain production of the Soviet Union, Canada and Alaska. The Corn Belt — currently extending north to southern Wisconsin and south to Kentucky, Missouri and Kansas — would probably migrate north. The corn belt moves northeast at the rough rate of 150 kilometers (about 90 miles) for every one degree C increase in temperature.

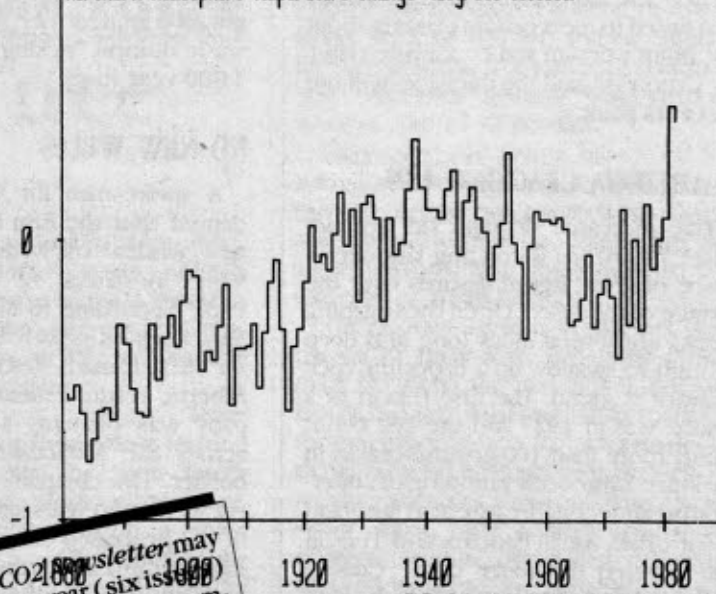
If all that is predicted occurs, some Rocky Mountain states could become substantial wheat producers. The Cotton Belt may move north. Water scarcity for crop production — a chronic problem in the West — may be lessened, as CO₂ increases crop water use efficiency.

On the other hand, the "eternal snow" on the peaks of the Rockies may melt and California may be under water. Your Arizona desert may be waterfront beach, but the beach may extend to central Texas.

However, given the uncertainties and divergence of scientific opinion, it is probably not a good investment to buy land and wait for the climate to change.

— Dan Whipple

Northern Hemisphere temperature change (degrees Celsius)



William Barbat's *CO₂ Newsletter* may be obtained for \$20 per year (six issues) from P.O. Box 24, Teton Village, Wyoming 83025.

P.D. Jones in CLIMATE MONITOR, 1982.

also other potential causes. For instance, between 1970 and 1981, volcanic activity was unusually low worldwide.

A variety of climate models agree that an increase of two to three degrees C. in temperature would reduce the stability of the great ice sheets in Greenland and the Antarctic. On a time scale of perhaps several hundred years, many glaciologists feel the West Antarctic ice sheet would disintegrate, raising the average sea level by five to six meters (16 to 19 feet). If the CO₂ build up is not halted, all the ice sheets would eventually disappear, raising sea level about 100 meters.

In the United States, a three meter rise in the sea would submerge the fertile delta farmlands in California as well as virtually the entire land surface at Galveston, Port Arthur, New Orleans, the Florida Keys, Miami, Charleston, Norfolk, Portsmouth and Atlantic City. All the seaports in the world would be affected, said Barbat.

A six meter rise in the oceans would submerge all of Sacramento, Gulfport and Mobile and would inundate Washington, D.C. from the Lincoln Memorial to the base of Capitol Hill. The total absence of ice caps would correspond to sea level at the clock face of London's Big Ben and up to the roadway of San Francisco's Golden Gate Bridge.

As reported in Barbat's early 1982 newsletters, the average sea level has risen 165 mm between 1890 and 1980, and is now "at or near its highest level since the earlier interglacial, the Eemian, 100,000 years ago."

But it is not the magnitude of the temperature change which has meteorologists worried, said Barbat. The problem is that the change will not be uniform. Equatorial lands may experience very slight change, but the poles may experience a six to 12 degree C rise in temperatures when the world mean goes up to two to three degrees C.

The difference in temperatures between the Arctic and the equator is the fuel that drives the "weather machine." This temperature gradient determines weather in the mid-latitudes. Barbat said it controls how far south moisture-bearing storms penetrate.

A 1977 National Academy of Sciences report said that the predicted temperature changes would result in a general poleward movement of agro-climatic zones. While it may sound good to have a longer growing season at higher latitudes, the report explained the acid and badly leached soils existing in large areas at higher latitudes would require extensive, expensive soil amendments before they could be cultivated. Also, summer temperatures might become too high for optimum production in the present corn belt, concluded the report.

This is just what happened in the 1930s, explained Barbat, when world climate was experiencing a cyclical high and the average temperature was the warmest it had been for many centuries. The U.S. plains states were a dust bowl.

Approximately 4,000 to 8,000 years ago, in a period called the Altithermal, data show that some parts of the northern hemisphere experienced approximately three to four degrees C higher average temperatures than present. Meteorologists often use this period to predict what world climate will be like around the year 2030, if the CO₂ problem continues to accelerate.

At that time a sandy desert extended from California and Oregon to Central Texas and Iowa. The other side of the globe fared a little better, however. The Sahara Desert was lightly vegetated, and there was considerably greater rainfall in East Africa. Siberia had a two to four week longer growing season.

However, climatologist Schneider warned against drawing too many con-



Bill Barbat

Barbat believes the CO₂ problem is "far more serious than little nagging things like disposing of nuclear wastes."

clusions from even this seemingly parallel situation. He said, "These kinds of projections are drawn from climate models which are equilibrium models — that is, they look at the effects after the average temperature has warmed the three or five degrees C all over the earth. However, that will take a hundred years after the first warming 'inputs' — CO₂, sunspots, or whatever.

"After about 25 years, though, you would probably get about 60 percent of the equilibrium value. And, the land warms up faster than the oceans, so the effects are not evenly distributed." In addition, said Schneider, the Altithermal period was probably caused by a slight shift in the earth's planetary orbit around the sun, not any type of "greenhouse" heating.

Although Barbat and many scientists believe the CO₂ problem to be one of the most urgent issues facing the world today, it has not yet reached the political forum. The CO₂ problem has no outspoken champions and no legislative lobby, said Barbat. Much debate still surrounds the exact consequences of the CO₂ build-up and solutions to the problem.

Barbat's solution has pushed him outside the environmental mainstream. He advocates a greatly accelerated use of nuclear-electric energy, modestly supplemented with solar to supplant oil, natural gas and coal.

Barbat said nuclear power has the greatest concentration of energy per unit of volume, whereas solar and wind energy are "going toward the wrong end of the scale" because they are very

diffuse and must be gathered relatively inefficiently from a large area.

Barbat said people have "some highly irrational fears" about nuclear energy because it was first used in war. He said a U.S. report showed zero accidental deaths attributed so far to about 500 reactor-years of operation. Typical U.S. coal-electric plants reportedly pose a greater cancer hazard than present nuclear-electric plants, said Barbat. He feels the CO₂ problem is "far more serious than little nagging things like disposing of nuclear wastes."

Barbat said the biggest problem of the

whole CO₂ issue is what to do with the automobile. About one-third of CO₂ emissions to the atmosphere are from gasoline-powered vehicles. But electric cars have not been able to compete with gasoline engines, said Barbat, because they cannot attain high speeds or go long distances. He said the energy per unit of mass is far greater in a gasoline engine than in a storage battery.

"At the moment, there is really no 'technological fix' for the CO₂ problem," said a CO₂ Newsletter quoting Marvin Miller, principal research assistant at the Massachusetts Institute of Technology's energy laboratory. In other words, scientists know of no way to reduce CO₂ in the atmosphere other than by natural means like absorption by the oceans and green plants. And, according to Barbat, scientists speak in terms of 1,000 years or more for the oceans to absorb even the excess CO₂ now present in the air.

A 1977 report from the U.S. Energy Research and Development Administration (now part of the Department of Energy) said, "Reducing fossil fuel use enough to affect CO₂ levels is extraordinarily difficult." The report went on to say that if the United States reduced its fossil fuel use by half in the year 2000 and use remained at that level until 2040, the doubling of CO₂ levels in the atmosphere would be delayed by roughly five years.

On the other hand, if one assumes a growth rate in fossil fuel use based on the last 20 years, and extrapolates it out over time, CO₂ in the atmosphere would double by 2030.

Only one-third of the man-made CO₂ in the atmosphere comes from the United States, according to DOE. An international scenario devised by ERDA which, in the year 2000, freezes fossil fuel use in Japan and Western Europe, reduces it 50 percent per capita in the United States and limits it to one percent per capita growth in the Third World, would only delay the doubling of CO₂ levels by about 20 years.

Lester Lave, in a 1981 *Technology Review* article, recognized several lags which make prospects of lessening CO₂ emissions unlikely. Lave pointed out there is no conclusive proof that CO₂ increases will cause large-scale adverse effects. He said the year 2000 will bring confirmation of whether simulation models are correct. Even when the CO₂ build-up is recognized as an international problem, arriving at an international solution would be very difficult. Switching to suitable alternative energy sources may require decades, Lave said. It would also probably require reduction of Third World fossil fuel use at tremendous cost to their economic development.

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Betsy Bernfeld is a freelance writer in Jackson, Wyoming. This article was paid for by the HCN Research Fund.

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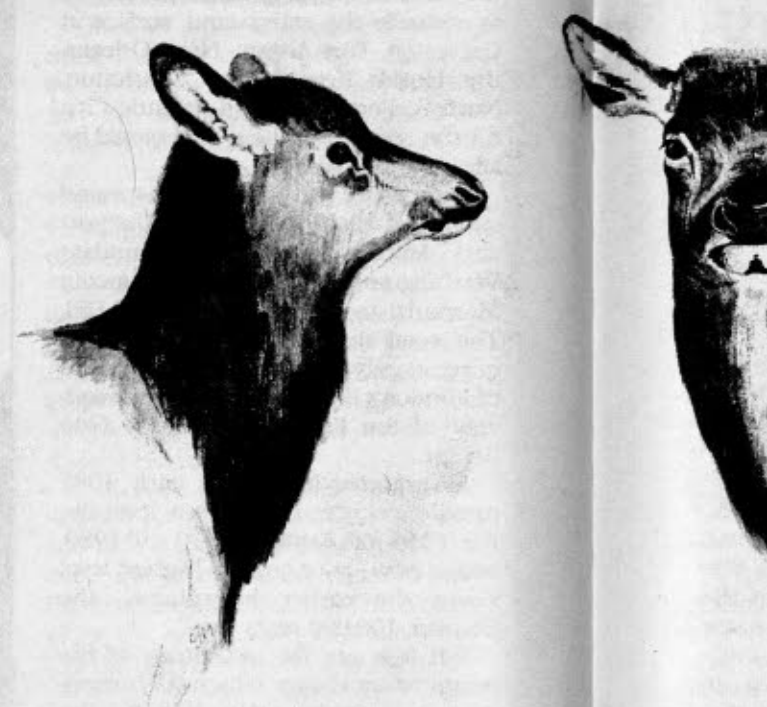
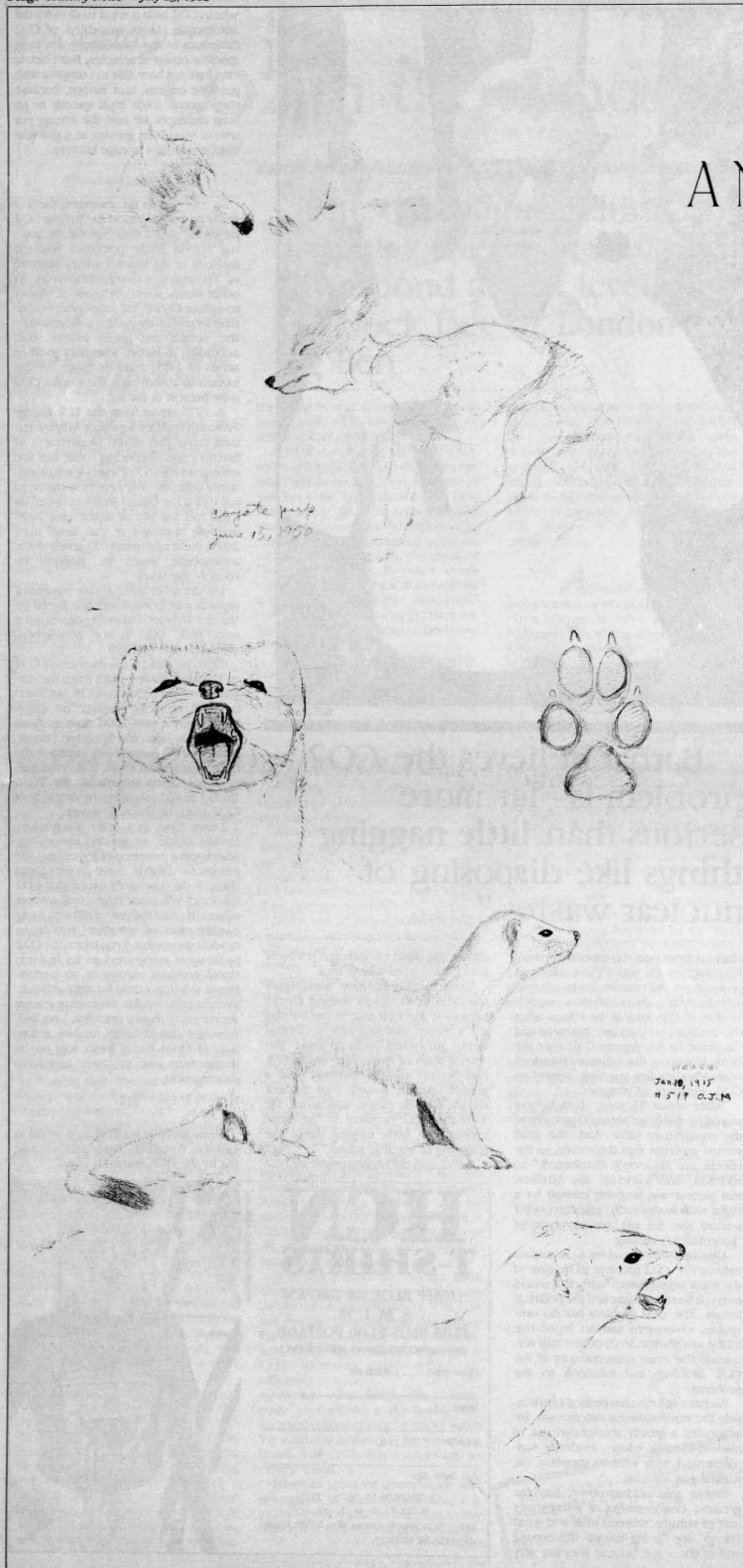
Jennifer Watford photo



8-High Country News — July 23, 1982

OLAUS J. MURIE

A Naturalist's Portfolio Of



Olaus Murie was one of the great naturalists of his time. Prior to the 1940s, there were vast gaps in the history, distribution and abundance of many mammals. Olaus, a reared Minnesota boy, was assigned to fill some of these gaps. One expedition was to make a detailed study of the caribou over hundreds of miles by dogsled in winter and by boat in summer. He was up with this wide-ranging species. Later he spent several years on a survey of the bird life of the Alaskan coast. In the last years of his life, he studied the North American elk in Grand Teton National Park, Wyoming. His assignment was to find out all that he could about its history. Over the years he amassed a wealth of information.

Olaus' field notebooks became crammed with words alone would not fully convey all that he wished to say. On his Alaskan expeditions he started to sketch. He was a naturalist, nothing but the encouragement of a teacher back in high school. Yet Olaus possessed perhaps the greatest qualification for a naturalist: observation with attention to detail, an inquiring mind.

There is a lesson in these sketches. There is no magic about being a naturalist. Certainly not a college degree in biology. It is to spend patient hours in the field, constantly asking questions, discovering some little new facet about an animal. It is more than a trip to some exotic land. Olaus in his quiet way inspired countless young people to become keener observers. These sketches will help the reader as well.

Dr. Allen W. Stokes, president

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"Sketches of a Naturalist" has been published by the Teton Science Center History Association as a benefit for the Teton Science Center environmental education programs at the Grand Teton Science Center in Grand Teton National Park.

The portfolio includes eight pages of watercolor sketches reproduced on 9" x 12" sheets of a textured ivory paper, which many of the originals were made. The cover is made of stock, includes a photo of the artist and features an illustration of the initials OJM as Murie signed many of his sketches.

Copies of the portfolio are available for \$12, plus \$2.00 shipping. High Country News. To order, send your check for \$14.00 to High Country News, Box K, Lander, Wyoming 82520.

OLAUS J. MURIE

Portfolio Of Field Sketches



One of the great naturalists of the 1900s and a man well-suited to the 1940s, there were vast gaps in our knowledge of the life and abundance of many mammals and birds. Olaus, a farmer, was assigned to fill some of these gaps. His first Alaskan assignment was a detailed study of the caribou. This entailed traveling by dogsled in winter and by boat or on foot in summer to keep track of migrating species. Later he spent several summers in an extensive study of the Alaskan coast. In the late 1930s he began his classic study of the American elk in Grand Teton National Park and Jackson Hole, Idaho. His intent was to find out all that was possible about its life and how he amassed a wealth of information.

His books became crammed with details. But he realized that they did not fully convey all that he wished to record. So on his earliest assignment he started to sketch. He was a self-taught artist, having had the encouragement of a teacher back in Minnesota to start him off. Perhaps the greatest qualifications for an artist — keen attention to detail, an inquiring mind and perseverance.

These sketches. There is no magic formula for becoming a naturalist without a college degree in biology. Instead one must be willing to work in the field, constantly asking questions. For many naturalists, a little new facet about an animal or plant can bring more joy than a lifetime of study. Olaus in his quiet modest manner helped others to become keener observers. Perhaps careful study of his work will help the reader as well.

Dr. Allen W. Stokes, professor of animal behavior
Utah State University

"The Naturalist" has been published by the Grand Teton Natural History Association as a benefit for the Teton Science School, which offers environmental education programs at the Grand Teton Environmental Education Center in National Park.

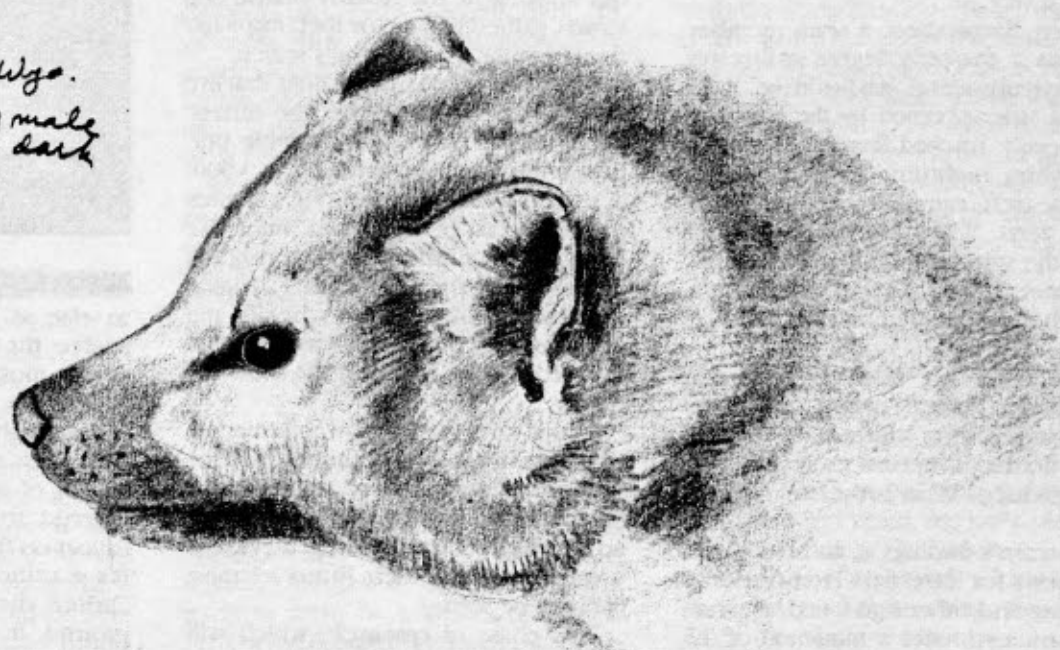
The portfolio consists of eight pages of watercolor sketches and pencil drawings, on 12" sheets of a textured ivory paper similar to the paper on which the originals were made. The cover, printed on a heavier ivory paper, features an embossed watercolor rendering of a caribou head as Murie signed many of his pieces.

Portfolios are available for \$12, plus \$2 postage and handling, from High Country News. To order, send your check for \$14 to Murie Portfolio, High Country News, Lander, Wyoming 82520.

It's playful otter feeding fish, but is a valuable fur animal.

Marten ♀ (large one)
Flat Creek
Jan. 30, 1933.

mosquito Creek, Wyo.
Dec. 1934 sig male
dark
marten



An interview with

Paul Ehrlich is a professor of biological sciences and Bing Professor of Population Studies at Stanford University in California. He is an expert in ecology and evolution. He is author of several books, including *The Population Bomb*. He and his wife Anne Ehrlich co-authored *Extinction: The Causes and Consequences of the Disappearance of Species*.

Ehrlich is spending this summer, as he has many summers, doing research at the Rocky Mountain Biological Laboratory near Crested Butte, Colorado. He was interviewed by associate editor Carol Jones.

Q. Why do you suppose the Endangered Species Act sailed through Congress with so few changes?

A. Although I didn't follow it closely in Washington, I have rarely seen an issue on which the concerned technical community was so unanimous. All biologists who know anything about the problem feel the Endangered Species Act, while inadequate to solve all the problems, is an absolutely necessary thing. It is symbolic of the direction we need to go.

Why is the Act inadequate?

The Endangered Species Act calls attention to the problem but it doesn't deal with many important aspects. In fact, it doesn't really have the exact focus it should because it does not address genetic diversity. Having five or six members of a species alive in a zoo is not extinction, but it doesn't do us any good in that capacity.

The Endangered Species Act tends to focus on prominent species; it doesn't give enough attention to the continual grinding destruction of other organisms on the planet that goes on day in and day out.

There are many things that must be done to prevent the present epidemic of extinction from continuing. For example, acid rain certainly causes many extinctions in aquatic ecosystems and will probably cause them in terrestrial ones. And, of course, the Endangered Species Act doesn't speak to acid rain at

all, or to our use of pesticides or to the things done outside the boundaries of the United States.

Two of the most publicized endangered species existing in our region are the bald eagle and the grizzly bear. What would their extinction mean other than a symbolic or aesthetic loss?

At the moment the loss would be aesthetic and symbolic, as it would be for the California condor. But one thing that is often unrecognized, is that in the act of protecting organisms that are large and symbolic like the grizzly, the bald eagle and the condor, we are at the same time protecting habitat that contains many, many other organisms that are very important to us. In particular, in the case of the California condor, they are the sole protection of a large chunk of southern California mountains. If the condor disappears, the reason for saving that area in the eyes of most non-scientists disappears also. You won't keep developers out for the sake of obscure plants, insects and small mammals that now have refuge in those mountains.

The national parks are having trouble maintaining some of their large mammal populations also. If the national parks, which are in general too small, were to lose some of their spectacular animals, there will seem in people's minds less and less reason to go there and to protect them. With the present level of public knowledge, large symbolic organisms are the anchor on which we build our case for protecting very substantial levels of habitat. We have to get people to understand the basic thing we have to preserve is entire ecological systems intact, with all the species in them.

In this area, the mountain pine beetle and the spruce budworm are two pests that have defoliated and destroyed hundreds of acres of trees. The controversy continues over whether to spray or not to spray. Which position do you take and why?

Species by species, I don't know the

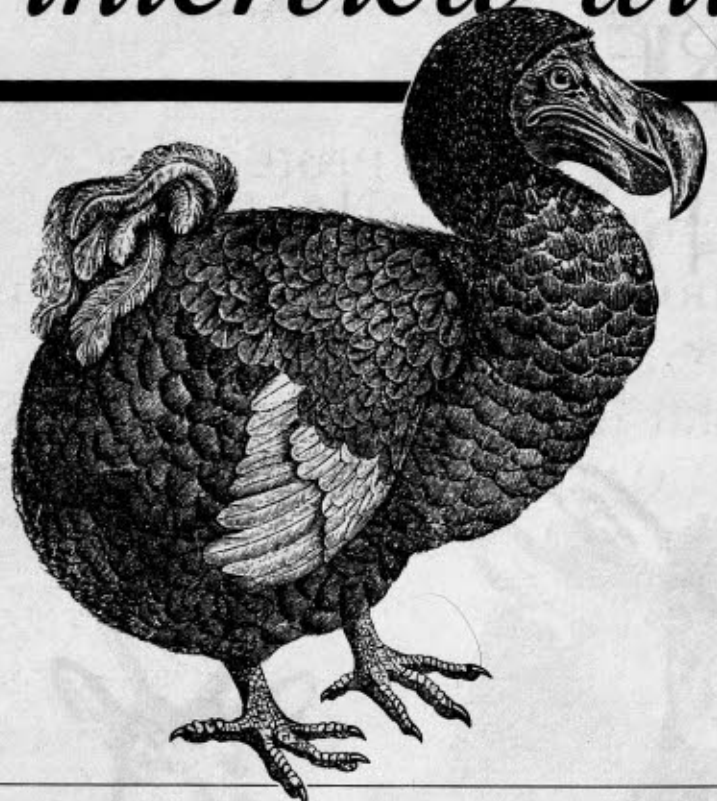
details, but in general, by the time they get around to spraying for forest insects the epidemic is going to come to a crashing halt on its own anyway. There is a lot of good evidence indicating that for the long-term health of forests, forest insects are actually providing a benefit by pruning out the weak trees. In the long-term, most spray programs are ineffective in controlling the organisms they are after. The bugs develop resistance and they would have eventually gone away anyway. And you kill off the natural predators, making it more difficult to control them (the pests).

There can be specific exceptions, but usually, even if you didn't worry about the side effects on other organisms, spraying is still a dumb thing to do economically. To a certain extent, it's much too expensive to control certain organisms — it's much better to give them their head and watch the destruction of a few trees and let nature take its course. You must add in the fact that it (spraying) has a grotesque impact on birds, on beneficial insects and on fish.

Do we draw a line between develop-

ment and species extinction? If so, where is it drawn and how do you convince people that development should be stopped to save a species or protect some habitat?

This is a standard problem where the benefits tend to be concentrated and the costs diffused. The problem is that ecologists don't know today what the precise impact of exterminating some obscure organism will be. When single populations are measured against an economic benefit, usually the benefits look much larger than the costs. The trouble is that when we push the system too far and then, all of a sudden, the costs are staring everyone in the face and we all end up with our society collapsing. For example, we are doing a lot of work right now in the intermountain region and it's crystal clear that the Great Basin (in Utah) as a whole is overgrazed, the quality of range is running down, the ecological systems that control erosion are breaking down. As far as we can determine, the economic benefits are marginal at best. But with the way the system runs, it continues to run



Ferrets . . .

(continued from page 1)

hoping to get back in the field this summer, after a 10-month intermission. To begin the work last fall, Clark recruited a rotating field team of seven, all of whom had either a bachelor's or a master's degree in science and were willing to work for \$15 a day. When more money came in to support the project this spring he raised the wages to \$25 a day.

Louise Richardson, a team member who has a master's degree in forestry and environmental studies from Yale, seemed unconcerned by the low pay. She happily tracked ferrets last winter even when nighttime temperatures at the research camp dropped to 38° F below zero. When asked if she would spend the whole summer in Meeteetse, she grinned. "Yes. The whole summer, the whole winter...however long it takes."

Clark said his team is after the answers to several urgent questions: How many ferrets winter here? Exactly where do they live? How many young do they produce? What is the fate of those young?

The team's findings so far hold much good news for ferret fans. From tracks in the snow and other sign found last winter, Clark estimates a minimum of 22 ferrets. This summer, as of July 21, the team had already seen 11 different litters, for a total of 34 young. In 11 years of research in South Dakota only 11 litters were found. "So you see by compar-

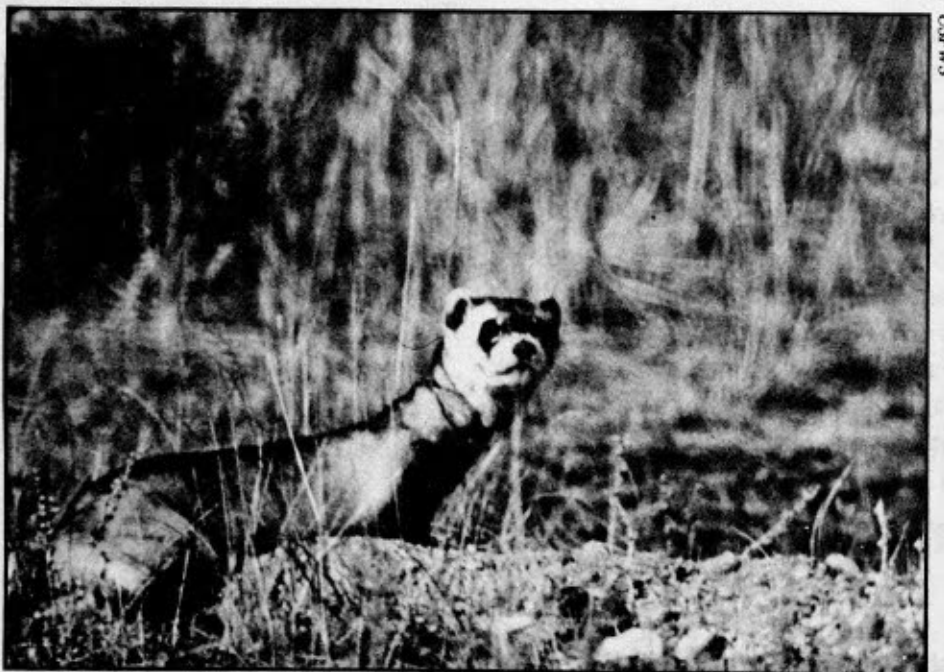
ison what we're sitting on in Meeteetse," Clark said.

From all indications, they are sitting on a biologist's gold mine. If the team members are subdued during the day, it is only because for this phase of the research they have adopted the nocturnal ways of their subject. Morning finds them a few miles from the research site slumbering in tents at a rocky break sparsely shaded by pines and juniper. Most afternoons they are out walking in the nearby prairie dog towns, gathering data for their maps and preparing for the evening's search.

The white-tailed prairie dogs that live here are believed to be the ferrets' prime food source. For mapping purposes, the team has broken the 3,500-acre core of the prairie dog complex into 85 areas. In each area, they have counted the number of prairie dog and badger holes. They have listed all animals, dead and alive, seen on the site, and all ferret sign. And they have mapped the ferret tracks found in the snow last winter.

Armed with this kind of information, members of Clark's team can read the nearly featureless plateau as if it were a book of ferret history. When they drive up for a night of spotlighting, they know where ferrets and their litters are most likely to be seen.

This phase of research, which will take about a month and a half, is aimed mainly at finding out how many young the population is producing. Each night there are two shifts: from dusk to 2 a.m. and from 2 a.m. to dawn. As hard as it is



Radio-collared black-footed ferret

to rise at two, many team members prefer the later shift, because that is when most of the ferret litters have been seen.

Although the young ferrets are still with their mothers now, at about seven weeks of age, they are old enough to emerge from their holes at night to cavort on the bench's short grass carpet. It's a critical time for the researchers. Earlier, the young were hidden underground. In a month or so they may be indistinguishable from their mothers and fathers.

Moving from hole to hole with their mother, the little green-eyed ferrets look "like a train with green headlights,"

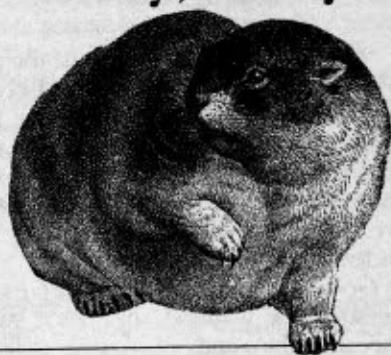
said one researcher. "They fall all over themselves like a litter of puppies or kittens," said another. "Imagine all that energy concentrated down a hole. It makes me feel sorry for the mother. They are just non-stop."

As the spotlights sweep the prairie each night, the researchers stare into a sea of darkness lit by a few bright eyes. The eyes of jackrabbits are amber. The eyes of antelope, badgers and weasels are green.

But to an experienced observer, there's something special about the ferret's emerald stare. "It's like a green traffic light coming on," said researcher Tom Campbell. It's not as big or

Paul Ehrlich

"In the act of protecting organisms that are large and symbolic, like the grizzly...we are at the same time protecting habitat that contains many, many other organisms."



downhill just to collect that very little benefit even though all kinds of people are paying costs — like the people who come to the area for recreation or those who might like to graze in the future — it is sort of a 'we fly now and you pay later' kind of system.

I spent seven hours today (July 14) going through the mountains to the east of Provo. It's horrifying. In that whole area where there should be a very rich flora, we were appalled at what we found. If you had asked me to guess how many species of plants I would have expected to see on a sunny day at the height of the season going through an altitude range of 4,500 feet to 10,000 feet, I would have guessed 60 at a minimum. I don't think we saw more than a dozen. The whole area is overgrazed. Sooner or later they will lose the plants the cattle like.

I think the only way to convince people of this problem is to get them to understand how the planet as a whole works. Those obscure organisms are working parts of the ecological system that supports our lives. We destroy one

of them and it's like the analogy in the book (*Extinction*) — it's like popping a rivet out of the wing of your airplane — you can still fly without a lot of rivets, but sooner or later, if you destroy enough of them, the whole thing will collapse.

You strongly suggest the preservation of insects and plants. Many people find it hard to believe that exterminating a few here and there would make any difference. What difference does it make? Would any extinctions be good?

Plants are the basis of the whole system — if you don't have any plants, you don't have any human beings, because all of our food comes directly or indirectly from plants.

Getting rid of insects hurts both plants and birds — it operates in two directions. Every time you see a showy flower, that is an indication that the plant is trying to get an animal to help it reproduce. Most pollinators are insects and many of our crops depend upon wild insects to pollinate them.

Insects, as a group, are not friends or enemies — they are part of the system. Some are extraordinarily beneficial to humans, and a few are extraordinarily dangerous. But mostly, you must think of them as part of a vast mechanism that gives us the world as we know it. If you could push a button and make all the insects disappear, everything else we know would soon disappear also.

We don't have the technology to get rid of the insects that people find loathsome or that carry disease like cockroaches or mosquitoes. If I could push a button and get rid of every mosquito that carried malaria, I would be tempted to do it, even though we're not certain how bad knocking those rivets out would be. Our very best technology is utterly inadequate in dealing with those pests. We don't have the capability — short of nuclear weapons — to get rid of them.

The beneficial insects, like the ones that prey on insects that destroy our crops, are the ones that we get rid of much easier. They have smaller population sizes and are therefore more readily forced to extinction.

I would have no qualms about forcing the German cockroach population in New York City to extinction. We're part of the ecological system, too, and that gives us a right to try and suppress populations that attack us directly — within reason.

The types of cockroaches that have invaded our homes don't provide beneficial services. But there are many species of cockroaches that are very important in the ecological system. They are decomposers, and without decomposers the whole system grinds to a halt.

We are in the process of not just controlling a few organisms that happen to impinge upon us directly, but — often for extraordinarily trivial reasons — we are destroying this enormous storehouse of benefits. We are just casually exterminating everything. If the only problems were the species we recognized individually and deliberately

wanted to do something about, we'd be in great shape. But it is this massive habitat destruction that exterminates other populations and species before we even know they exist.

In your book, Extinction, you stress the consequences of destroying the world's tropical rain forests. Why should we here in the Rockies be concerned about those rain forests or Galapagos tortoises or the African elephant or the humpback whale?

For people in the Rockies, me included, it's nice to live in a world where you know African elephants and humpback whales exist. However, tropical rain forests directly affect us.

For example, the Amazon rain forest is a major feature of the planetary climate mechanism. It controls how much sunlight is received by that whole huge area, how much moisture is in the air, etc. If we make a desert out of the Amazon rain forest, it is conceivable that in the next 50 years or so, it might well change the climate of the planet so much that you could no longer have wheat or corn grown where it is now in North America. We might destroy North American agriculture — the last place you can get dependable food — in a world already vastly overpopulated.

In summary, people must understand that they do receive services from ecological systems. That is not brought home to them until the flood sweeps down from the deforested highlands, or until the plague comes along that would have been controlled by natural systems.

I do think most people are beginning to understand that we get all kinds of products from other organisms. For instance, many of our medicines come directly from plants — plants that are now endangered.

If we just continue to destroy them (other organisms) casually — bulldozing them, paving them under, paving them over, plowing them under, grazing them away — we are going to pay a higher and higher price as time goes on. □

This spring, rancher Jack Turnell turned down a firm that wanted to run a seismograph line through the ferrets' home to gain geologic information for oil companies. The gesture cost his ranch \$10,000.

"blinky" as an antelope's, the eyes are closer together than a badger's — very similar to a weasel's. The final test is a look through binoculars or a spotting scope at the particular eyes in question.

Even with experienced observers in the ferret capital of Meeteetse, however, finding ferrets is a needle-in-a-haystack proposition. Clark said he spends about an hour and a half staring into the night for every ferret that he finds. Not that he's complaining. After waiting 10 years to see a ferret, an hour and a half doesn't seem so bad.

In 1973, Clark had spread "WANTED" posters all around the state that offered \$250 to the person "provid-

ing information leading to the discovery and verification of the black-footed ferret in Wyoming." He spent most of every summer searching prairie dog towns and talking with ranchers, conservationists and biologists about leads.

Eight years after he began, he had heard many "credible" stories — and some incredible ones. One time, he was led to a "ferret" that turned out to be a prairie dog that had blackened its feet digging in a coal vein. He also found suspicious-looking diggings and a ferret skull, but no live ferrets.

Now, looking back on those years, 39-year-old Clark can see what he and other researchers were doing wrong.

Biologists are fair-weather types just like everyone else," he said. "We know now that we were looking at the wrong time of year. Winter is the time to be there."

The ease of tracking in the snow is one important reason to be looking for ferrets in the winter. But on white-tailed prairie dog towns such as the one near Meeteetse, there is another, even more important reason to be out in the snow — ferret diggings. These long strings of dirt, extending up to 12 feet out from a hole, sometimes with a three to five inch trench down the middle, are the clinchers in ferret identification. In summer, they can be destroyed by prairie dogs in a matter of hours. But in winter, white-tailed prairie dogs hibernate, leaving the ferrets' tell-tale diggings intact.

With improved techniques and renewed interest in ferrets, Clark is optimistic about finding them elsewhere. "I wouldn't be surprised. In fact, I'm willing to make a \$10 bet that we're going to find 10 more ferrets in Wyoming in the next three years," he said.

It took scientists a long time to realize ferrets even existed. Naturalists John Bachman and John James Audubon first described them as a separate species in 1851 from a skin given to them by a Wyoming trapper. Ferrets are thought to have lived everywhere black-tailed and white-tailed prairie dogs did — in 12 Western states and two Canadian provinces, from Arizona, New Mexico and Texas north to Alberta and Saskatchewan.

Prairie dog poisoning efforts, which began around the turn of the century and continue to this day, are blamed for the ferret's demise. The site where the ferrets have managed to survive near Meeteetse is cattle ranching country, which "has been managed well since pristine times," according to Clark.

The key prairie dog complex here is a jumble of public and private lands. Many of the ferrets found so far are on the Pitchfork Ranch, a big, prosperous spread managed by a man in his mid-thirties named Jack Turnell.

So far, Turnell has been cooperative with the research effort. He is a member of the group set up by the state Game and Fish Department to help protect the ferret, the Black-Footed Ferret Advisory Team. This spring, he turned down a firm that wanted to run a seismograph line through the ferrets' home to gain geologic information for oil companies. He agreed with other members of the advisory team that the ground vibrations might disturb pregnant female ferrets or, later, their young litters. The gesture cost the ranch \$10,000, Turnell said.

Both private and public landowners are in a quandary. Similar seismic lines have been run across the area before. Four oil wells were drilled there last year. Dale Strickland, the state biologist who is leading the advisory team's effort, said, "Everybody's afraid. We don't want to do anything that would jeopardize the ferret. But we also realize that we can't very well stop activities that have been going on."

A biological assessment just completed by the U.S. Bureau of Land Man-

(continued on next page)

Ferrets . . .

(continued from previous page)

agement, another major landholder in the ferret's domain, recommended against almost all new energy development in the area, on the grounds that it might destroy ferret habitat, bring in extra people or actually harm the ferrets themselves.

How long ranchers such as Turnell will continue to turn down energy proposals for the area is not clear. The Pitchfork Ranch brought a decimated antelope herd back to healthy numbers earlier in this century. Preservation of the ferret is well within the ranch's traditions. "As long as this family has the Pitchfork, I have an idea that the ferret is pretty safe," Turnell said.

But the Pitchfork's priorities are not those of the public. Oil and gas revenues are a big part of ranchers' incomes in the area. Some form of prairie dog control may be judged necessary on the plateau, where Turnell says prairie dogs have increased by 30 to 40 percent in the last 12 years. The area has already been poisoned at least once, sometime between 1935 and 1958.

The way Turnell sees it, the ferrets have survived the Pitchfork's multiple use management in the past, so there's no reason to halt everything now. "I think multiple use can continue, but with certain precautions," he said.

Eventually, Turnell would like to see the ferrets transferred to public lands.

Both Turnell's and BLM's management ideas are still in the talking stages. BLM's assessment still has to undergo the scrutiny of the U.S. Fish and Wildlife Service. Turnell is in the process of discussing his ideas with the other members of the advisory team, which includes representatives of the U.S. Forest Service, the state, the Bureau of Land Management, the Fish and Wildlife Service and the University of Wyoming.

Clark's approach to these kinds of problems is non-confrontational. He tries to get to know local people well before he talks to them about ferrets. When asked, he'll say that a "dotted line" should encircle the ferret's home — not a fence. "Decrees given without any discussion or background will backfire," he said.

The risks of confrontation go beyond the Meeteetse scene. If the ranchers shut their gates to ferret researchers, that would be a loss. But if landowners all over the region get the idea that ferrets make life difficult for ranchers, the implications are even worse. The chances of a rancher voluntarily reporting ferret sightings again would be reduced. Efforts to recover the species could be quietly sabotaged. The job of trying to get a second population started somewhere in the West, one of Clark's hopes for the future, would be made much tougher.

On the sidelines at advisory team meetings is Bob Kiesling, a representative of the Nature Conservancy based in Helena, Montana. Kiesling said that his role is simply that of an observer, "waiting for the right opportunity to approach landowners to get a little more formal protection agreement worked out."

"The reason those ferrets are in that particular part of Wyoming is that the landowners haven't done anything to discourage their being there. We'd like to figure out some way to maintain the status quo in a legally formal way," Kiesling said.

Although in this case the state has taken on the job of protecting the ferrets, ultimate legal responsibility for their welfare lies with the Fish and Wildlife Service. Ron Crete, a FWS biologist who is also on the state advisory team, sees it more as a job of building a con-



sensus than of brandishing a club. "If the BLM suggests management that affects Jack Turnell or other ranchers in the area, I think we ought to work on it together," he said. "It's not fair to lose the ferrets, but it's not fair to make one guy pay to keep them either."

Meanwhile, the ferret research continues. Clark expects to find another litter or two this summer. Then his team will need a year to check both his summer and winter counts. At the same time they will be looking for ferrets and ferret habitat elsewhere. If they find that the Meeteetse population is holding its own, Clark will consider suggesting that some of the young be used to start a new population in some other hospitable prairie dog town.

"It looks as if it may be biologically possible to recover the species," Clark said. However complicated and sensitive the politics, the biological prognosis is good.

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Joan Nice, a former editor of *High Country News*, is a Lander-based freelance writer and a regular contributor to *Audubon*. This article was paid for by the HCN Research fund.

BOOKS

On the edge of extinction

These Are The Endangered

Charles Cadieux, 1981; \$15.00, cloth; 223 pages; Brattleboro, Vermont; The Stephen Greene Press.

Review by Peter Wild

We all know the story about the man who, the better acquainted he became with his neighbors, the more he preferred the company of his dog. In a similar twist, we're finding out that the more we learn about nature, the more we realize the fallacies in our early attitudes toward it.

Good old Smokey the Bear extinguished the wildfires that once swept through thousands of square miles of forest land each summer. That proved a boon for timber companies and rural villages. It has been a disaster, however, for the very choosy and now endangered Kirkland's warbler, who makes its nest in thick groves of young jack pines. The tall stands created by fire suppression are wiping out its habitat.

All of which is to say that, like cats and dogs, pickles and ice cream, man and nature, regardless of the former's good intentions, generally do not mix. This is the lesson of *These Are The Endangered*, that pollution and habitat destruction are responsible for the growing number of species our nation is crowding and poisoning into oblivion. The official government list of them is long, with over a hundred and fifty entries. Some of these — the grizzly bear, the whooping crane and the timber wolf — have found sympathetic places in the country's imagination. Others — the Sonoran pronghorn antelope and the Houston toad — have not been blessed by the public razzle-dazzle that would help insure their survival.

Charles Cadieux presents thirty birds, fishes, mammals, and reptiles on the endangered list. Thus, while his book is

these are the



by Charles Cadieux

Introduction by Dan Poole, Wildlife Management Institute

ENDANGERED

representative rather than all-inclusive, it is detailed. Aided by a good selection of photographs and sketches, the former North Dakota game warden and past president of the Outdoor Writers Association devotes a half dozen pages to each of his subjects, outlining its particular habits and pondering the failures and successes in its preservation.

For while the outlook for many endangered species is gloomy and frequently surrounded by controversy — witness the recent brouhaha over swiping California condor eggs — other creatures, such as the brown pelican and the Delmarva fox squirrel, have bounced back remarkably well, once given the chance.

But not without the efforts, as Cadieux reminds us, of fish and wildlife people, citizen conservationists, and, yes, politicians, who are willing to work for causes larger than themselves. □

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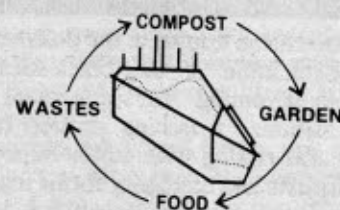
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EIS ISSUES TO BE STUDIED

Issues pertinent to the environmental impact statement for rangeland management planning will be determined at a public meeting. The 1.9 million Bureau of Land Management acres of land being reviewed involves the Salt Wells Resource and Pilot Butte portion of the Big Sandy Resource area in Wyoming. The Rock Springs BLM meeting will be 7 p.m., July 29 at Western Wyoming College. Written comments will be accepted until Aug. 31 and should be sent to P.O. Box 1869, Rock Springs, Wyo. 82901 or (307) 382-5350.

ART EXHIBITS ADDED

The contemporary Indian is depicted in the Plains Indian Museum by modern Indian art, dancers and other items. This is one of two new exhibits added to the museum in the Buffalo Bill Historical Center in Cody, Wyo. The other exhibit focuses on camp life around the 1880s. The center is located at 720 Sheridan Ave., Box 1000, Cody, Wyo. 82414 or (307) 587-4771.

POLITICS OF CONSERVATION

The 37th annual meeting of the Soil Conservation Society of America examines the political forces that shape conservation policy and practices. Speakers, a panel discussion and seven concurrent technical sessions on land and water management issues, highlight the meeting. The meeting will be Aug. 8-11 in New Orleans, La. Registration information is available from SCSA, 7515 N.E. Ankeny Road, Ankeny, Iowa 50021 or (515) 289-2331.

RURAL CONSERVATION COURSE

A course on protecting the cultural, natural, scenic and agricultural resources of rural communities will be offered in the townships of Cazenovia and Pompey, N.Y., Sept. 19-25. Participants will study and tour the host towns and be involved in group projects. Tuition is \$95 for National Trust members and \$110 for non-members. Contact the Rural Project at 1600 H Street, N.W., Washington D.C. 20006.

RESERVOIR PROJECT

The Corps of Engineers has released a final environmental impact statement on the proposed Taylor Draw Reservoir in Colorado. The reservoir would be located near Rangle and have a storage capacity of 13,800 acre-feet. Written comments on the final EIS are due by Aug. 15. Contact the Regulatory Section, U.S. Army Corps of Engineers, Sacramento District, 650 Capitol Mall, Sacramento, Calif. 95814 or (916) 440-2541 to obtain a copy or to comment.

WILDERNESS WALKS

The Montana Wilderness Association is sponsoring a wilderness study walk program. The walks are designed to inform people about Montana wilderness and to attract new members. Hikes in northwest Montana are in the Chicago Peak-Cabinet Mountains Wilderness on Aug. 7-8 and Bethel Creek-Swan Range on Aug. 14. Southwest Montana trips will be the Koch Peak Climb-Madison Range on Aug. 7-8 and West Pioneer Mountains on Aug. 28-29. Each participant is responsible for transportation, food and equipment. Contact the MWA, P.O. Box 635, Helena, Mont. 59624 or (406) 442-0597.

WATER QUALITY MEETING

Comments and recommendations regarding proposed modifications to Wyoming water quality will be presented at a public meeting by the Wyoming Environmental Quality Council and the Local Government Coordinating Committee. The salinity standard for the Colorado River Basin and the Wyoming water quality management plan will be studied at the 7 p.m., Aug. 5 meeting at Sweetwater County Library in Green River, Wyo. Written comments should be submitted to the council, 1111 East Lincolnway, Cheyenne, Wyo. 82002, (307) 777-7781 or Paul Schwieger, State Engineers Office, Barrett Building, Cheyenne, Wyo. 82002, (307) 777-7354. Copies of the proposed revisions and the report may be obtained from the above address.



WILDLIFE ART SHOW

Wyoming wildlife will be featured in the third annual Audubon Wildlife Art Show. Art works depicting residential and migratory flora and fauna will be displayed. The show will be held Sept. 15-19 at the Central Wyoming College in Lander. Artists are encouraged to submit up to three original works with cash prizes awarded for first place in each category. Entry forms are available from Audubon Art Show, Box 701, Lander, Wyo. or (307) 332-6500. The deadline for entry is Sept. 1.

OPTIONS SET FOR WASATCH

Eight alternatives on the development of land and resource management for the Wasatch-Cache National Forest in Utah is outlined in a booklet. The booklet, "Array of Alternatives," can be obtained from the Forest Service office in Salt Lake, Ogden, Logan, Bear River and Kamas in Utah and Mountain View, Wyo. Comments on the alternatives should be submitted by Aug. 13 to the Forest Supervisor's Office, Rm. 8226, Federal Bldg., 125 S. State St., Salt Lake City, Utah 84138 or (801) 524-5030. Call to find out times and dates of public meetings concerning the forest management.

GREEN MT. REVIEW RELEASED

A draft environmental impact statement on the Green Mountain grazing area is available for public review. The grazing management area affects Carbon, Fremont, Natrona and Sweetwater counties in Wyoming. A proposed action and four alternatives are analyzed in the EIS. A hearing on the draft EIS will be at 7 p.m., Aug. 12, at the Fremont County Library in Lander. Copies are available from the Bureau of Land Management Rawlins District Office, P.O. Box 670, Rawlins, Wyo. 82301, (307) 324-7171 or BLM Lander Resource Area Office, P.O. Box 589, Lander, Wyo. 82520, (307) 332-4220. Comments on the EIS must be received by Sept. 2.

A RUN FOR PEACE

Three Montana residents are running a 3200-mile route from New York City to Seattle to encourage peace and call attention to the need for nuclear disarmament. The run began on June 21 at the conclusion of the U.N. Conference on Disarmament and will end on Sept. 18 in Seattle. Stops will be made in Colorado, Wyoming, Montana, Idaho and Washington. Proceeds will help send representatives to Warsaw Pact countries to work for peace. For details, write to "Run for Peace", P.O. Box 202, East Glacier, Mont. 59431 or (406) 226-5594.

WATER WORKSHOP

The Rural Communities Institute and Western State College of Gunnison, Colo., are sponsoring the Seventh Annual Water Workshop on Aug. 2-4. The conference includes presentations on various water issues facing Colorado. The workshops will be at the college. Dormitory housing is available. Cost is \$60 for the conference including meals. Single day rates are available along with a one-credit course offered concurrent with the workshop. For more information contact Theo Colborn, Rural Communities Institute, WSC, Gunnison, Colo. 81230 or (303) 641-2029.

STATE OF WYOMING PUBLIC NOTICE

PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT (35-11-101 et. seq., WYOMING STATUTES 1957, CUMULATIVE SUPPLEMENT 1973.)

IT IS THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS TO AND (3) COMMERCIAL FACILITIES, TO MODIFY AND (1) OIL TREATER PERMIT, AND TO RENEW (1) INDUSTRIAL PERMIT, (1) COMMERCIAL PERMIT, (7) OIL TREATER PERMITS, (1) MUNICIPAL PERMIT, AND (1) FEEDLOT PERMIT.

(1) APPLICANT NAME: Fearn and Lincoln Partnership
MAILING ADDRESS: Airport Business and Industrial Center - North and South
P.O. Box 1085
Rock Springs, Wyoming 82901
FACILITY LOCATION: Uinta County, Wyoming
PERMIT NUMBER: Wy-0031364

The Fearn and Lincoln partnership plans to develop an industrial and commercial subdivision located five miles north of the City of Evanston, Wyoming which will be known as the Airport Business and Industrial Center - North and South. Wastewater treatment for the facility will be provided by a package plant followed by a polishing pond. The discharge will be to the Bear River (Class II Stream).

The proposed permit requires immediate compliance with effluent limitations based upon National Secondary Treatment Standards and Wyoming's in-stream Water Quality Standards. Periodic self-monitoring of effluent quality and quantity is required with reporting of results quarterly. The proposed permit is scheduled to expire July 30, 1987.

(2) APPLICANT NAME: Kelly Mader
MAILING ADDRESS: Bunker Hill and Liberty Valley Subdivisions
P.O. Box 699
Gillette, Wyoming 82716
FACILITY LOCATION: Campbell County
PERMIT NUMBER: Wy-0031372

The Bunker Hill and Liberty Valley Subdivisions are proposed trailer parks with a total of 105 units. Wastewater treatment will be provided by a three-cell aerated lagoon system. The discharge will be to Donkey Creek (Class II Warmwater Stream). Even though Donkey Creek is designated as a Class II Water, its seven consecutive day - ten year low flow is zero based on recent USGS stream flow data. During periods of no flow, the fish in Donkey Creek survive in pools in the Creek.

The proposed permit requires immediate compliance with effluent limitations based upon National Secondary Treatment Standards and Wyoming's in-stream Water Quality Standards. Periodic self-monitoring of effluent quality and quantity is required with reporting of results quarterly. The proposed permit is scheduled to expire July 31, 1987.

(3) APPLICANT NAME: Saunders and Thorsen Enterprises
MAILING ADDRESS: Sunlight Mobile Home Park
3103 Knollwood
Gillette, WY 82716
FACILITY LOCATION: Campbell County, WY
PERMIT NUMBER: Wy-0031356

Saunders and Thorsen Enterprises intends to develop a 113 unit mobile home park to be located approximately seven miles south of the City of Gillette, Wyoming. Wastewater treatment will be provided by a three-cell aerated lagoon system which will discharge to Bone File Creek (Class IV Water) via an unnamed drainage.

The proposed permit requires immediate compliance with effluent limitations based upon National Secondary Treatment Standards and Wyoming's in-stream Water Quality Standards. Periodic self-monitoring of effluent quality and quantity is required with reporting of results quarterly. The proposed permit is scheduled to expire June 30, 1987.

(4) APPLICANT NAME: Husky Oil
MAILING ADDRESS: P.O. Box 380
Cody, Wyoming 82414
FACILITY LOCATION: Federal 15-34 Tank Battery, SE ¼, Section 34, T45N, R96W, Hot Springs County, Wyoming
PERMIT NUMBER: Wy-0031038

Facility is a typical oil treater located in Hot Springs, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. The discharge is to Sand Draw (Class IV) via an unnamed drainage. This permit is being modified to reflect a name change of the tank battery.

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1986.

(5) APPLICANT NAME: Husky Oil Company
MAILING ADDRESS: P.O. Box 380
Cody, Wyoming 82414
FACILITY LOCATION: Park County
PERMIT NUMBER: Wy-0000451

Wastewater treatment at the Husky Oil Refinery at Cody, Wyoming consists of complete containment of all process wastewater streams with discharge of non-contact cooling water to the Shoshone River (Class II Water). The proposed permit requires compliance with effluent limitations for non-contact cooling water which are considered by the State of Wyoming to represent best available treatment. In addition, the permit includes a limitation on heat which is designed to insure that the State's in-stream water quality standard for temperature (no more than a 1.1°C increase above ambient) is violated at the seven consecutive day, ten year low flow for the Shoshone River (146.32 cfs). In addition, the permit includes provisions which require the company to monitor and control phenol seepage to Cottonwood Creek which has been a problem in the past.

The proposed permit required periodic monitoring of effluent quality and quantity with reporting of results quarterly. The permit is scheduled to expire September 30, 1987.

(6) APPLICANT NAME: S and R Land Company
MAILING ADDRESS: Green Valley Estates
7006 Willshire Blvd.
Cheyenne, Wyoming 82001
FACILITY LOCATION: Campbell County
PERMIT NUMBER: Wy-0027260

Green Valley Estates is a proposed housing development of 130 units located northwest of the City of Gillette, Wyoming. To date, few of the lots have been sold and the houses that have been built are served by septic tank and leach field systems. However, the development does have a completely constructed physical - chemical wastewater treatment system which will be used once the minimal number of homes can be connected to it. The plant will discharge to an unnamed stock pond (Class IV water) located in the Wildcat Creek drainage.

The proposed permit requires immediate compliance with effluent limitations based upon National Secondary Treatment Standards and Wyoming's in-stream Water Quality Standards. Periodic self-monitoring of effluent quality and quantity is required with reporting results quarterly. The proposed permit is scheduled to expire August 31, 1987.

(7) APPLICANT NAME: Altex Oil
MAILING ADDRESS: 1660 17th, Suite 300
Denver, CO 80202
FACILITY LOCATION: Elk Mtn. Lease, NE¼, NW¼, Section 23, T20N, R80W, Carbon County, Wyoming
PERMIT NUMBER: Wy-0000230

Facility is a typical oil treater located in Carbon County, Wyoming. The produced water is separated from the petroleum product through the use of heater treater and skim ponds. The discharge is to Bear Creek (Class III).

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1987.

(8) APPLICANT NAME: Bessemer Oil
MAILING ADDRESS: Box 6200, Raderville Route
Casper, WY 82604
FACILITY LOCATION: Poison Spider Field, NE¼, Section 13, T33N, R83W, Natrona County, Wyoming
PERMIT NUMBER: Wy-0001694

Facility is a typical oil treater located in Carbon County, Wyoming. The produced water is separated from the petroleum product through the use of heater treater and skim ponds. The discharge is to Poison Spider Creek (Class IV).

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1987.

(9) APPLICANT NAME: Energy Reserves Group
MAILING ADDRESS: P.O. Box 3280
Casper, WY 82601
FACILITY LOCATION: Lightning State Lease #0-5756A, 3-36 Battery, NE¼, NW¼, Section 36, T35N, R66W, Niobrara County, Wyoming
PERMIT NUMBER: Wy-0025712
FACILITY LOCATION: Lightning State Lease #0-5756, 12 & 13-36 Battery, SW¼, SW¼, Section 36, T35N, R66W, Niobrara County, Wyoming
PERMIT NUMBER: Wy-0025721

Facilities are typical oil treaters located in Niobrara County, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. The discharge is to Lightning Creek (Class IV Water) via an unnamed drainage.

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permits is December 31, 1987.

(10) APPLICANT NAME: J.W. Gibson
MAILING ADDRESS: P.O. Box 237
Henderson, CO 80640
FACILITY LOCATION: Coughlin Lease Tank Battery, NW¼, Section 26, T16N, R77W, Albany County, Wyoming
PERMIT NUMBER: Wy-0027383

Facility is a typical oil treater located in Albany County, Wyoming. The produced water is separated from the petroleum product through the use of heater treater and skim ponds. The discharge is to Bellamy Irrigation Ditch (Class IV Water).

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1987.

OPINION

Let us now praise Wyoming's water commission

After presenting a fairly blistering story about the Wyoming Water Development Commission and the governor's water project bill recently (*HCN*, 6/25/82), it is a pleasure to now pass out some kudos to the commission. At a July 7 meeting, members took some positive steps toward avoiding potential conflicts of interest and gave more judicious consideration to some water projects.

The board terminated negotiations with the Sheridan-Little Horn Water Group, whose proposal to develop the Little Big Horn River near Sheridan, Wyoming, had come in for substantial criticism. The board appointed its own attorney to negotiate for water rights on the river with Montana and the Crow Indian tribe, instead of having the group do it. In addition, the WWDC will enter into a contract with the U.S. Geological Survey, instead of the water group, to conduct stream gauging and measurements. Both of these are positive steps, which should protect the state.

A more questionable development in the affair was the commission's decision to halt negotiations with the group altogether. This would seem to be of questionable legality since the law that was passed *requires* the commission to enter into a contract with the group. Laws, even bad ones like the governor's water program, are usually better observed than not, if only to prevent confusion among those who deem consistency a virtue.

In a second move, the commission tabled the Blue Holes Reservoir proposal, a large water project on the Wind River near Dubois. The project would inundate land on the Wind River Indian Reservation, using water claimed by the Shoshone and Arapaho tribes which live there.

Blue Holes was tabled on the motion of Willard Rhoads of Cody, who questioned — correctly, we think — whether the project was a wise use of taxpayer money when the tribes have so far refused to negotiate at all on the matter. It does not seem unreasonable to us to require water project developers to have at least some claim on the water

they intend to impound before asking for public money. Stated more directly, it seems that water is a pretty basic requirement for a water project.

Perhaps most important, however, several commissioners — albeit grudgingly — bowed out of the voting on projects in which they may have conflicts of interest. Walter Pilch of Sheridan did not vote on hiring an engineering firm to work on a project benefitting the city of Rawlins because his son occasionally works for the firm in question. Pilch also withdrew from voting on the Powder River Basin study because he has worked for one of the water claimants, Cadiz Corporation.

WWDC chairman Nelson Wren of Savery announced he would not vote on the proposed Upper Savery Reservoir because he is an affected irrigator. William Kirven, another board member with potential conflicts on some proposals, was not present, so his actions on these are still unknown.

It was clear from Pilch's statements that he was reluctantly declaring a conflict. "To me, it's ridiculous," he said. However, the commission members should realize — and are finally showing signs that they do — that the state is has reached the big leagues in terms of financial outlays and the "good old boy" system of dispensing government funds is no longer satisfactory.

The governor's water program calls for spending \$600 million in water development money over the next six years. The commission will doubtless make decisions over which reasonable people may have reasonable disagreements, but the taxpayers have a right to feel that their money is being spent with at least some semblance of objectivity, not merely on the basis of a handshake and a slap on the back. The commissioners' actions in declaring their conflicts — however reluctantly — is a step in that direction and we commend them for it.

—DSW



High Country News

Published biweekly by the High Country Foundation, 331 Main, Lander, Wyoming 82520. Telephone (307) 332-6970. Printed by the Jackson Hole News, Jackson, Wyoming. Second class postage paid at Jackson (USPS No. 087480). All rights to publication of articles herein are reserved.

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We've been missing something.

For the past six months, there has been an unpublicized opening at *High Country News*. Since October, when the paper officially became a non-profit entity, we have been without a publisher, a niche that founder Tom Bell had filled from the paper's beginning in 1970.

We have not, of course, been without friends and supporters who have often filled the publisher's role, caring about the quality of our product, believing in its importance, investing money in its future.

This summer, we would like to formally recognize this ad hoc publishing family through the High Country News Publishers Fund. This fund, designed as a complement to the Research Fund we use for editorial projects, will provide financial support for such non-editorial purposes as circulation building, advertising promotion, foundation fundraising and other survival tactics.

Join the Publishers Fund. And welcome to the family.

..... Count me in. Enclosed is my tax-deductible donation for \$

..... I'd like more information. Please send me a copy of your Publishers Fund "prospectus."

Name

Address

City, State, Zip

* Unless donors ask to remain anonymous, we plan to acknowledge all contributions to the Publishers Fund in the paper. In addition, names of the Publishers Circle (\$5,000), Publishers Friends (\$1,000) and Publishers Associates (\$500) will be printed on the masthead of *High Country News* during the coming year.

..... Please check here if you *do not* want your gift acknowledged in this manner.



Sparrows, potholes and casual destruction

The other day I walked down Fourth Street in Lander on my way to work. The city has been re-tarring cracks in the street — a process I'd been observing for the last few days, wondering why it was necessary to take up the old tar and replace it with new. Just another way to spend my tax dollars, I supposed.

On this particular day, though, there was more than fresh, hot, sticky tar in the street. On one tar patch were about eight birds — sparrows, I have concluded since consulting my field guide — all slowly dying, stuck in the tar. Why these birds landed in the hot tar, all together like they did, is a mystery to me. It looked as if they had first gotten their feet stuck and then, in the process of trying to fly away, got their feathers caught also.

It was a distressing sight. I felt angry and helpless, not just because I'm an emotional animal lover — which I will admit I am — but because it was so ironic to view destruction of these eight birds just after I had read Paul Ehrlich's *Extinction* and interviewed the author.

Ehrlich said in the interview that we are casually exterminating species in an alarming manner. The death of eight sparrows will not drive that species to extinction, but the manner in which they died raised the issue again. Their death was a by-product of our society, an unintentional result of the routine repair of potholes.

In our rush to refill the cracks in our own decaying system — to put up another condominium, find another barrel of oil or dam another river — we tramp unthinking on the ecosystem, destroying habitat for species we may not even know exist. How long can we afford to unconsciously develop, sprawl and backfill before we get caught in our own tar?

Paul Ehrlich and other biologists say we have to start considering the consequences of casual and not-so-casual elimination of species now. All over the world we continue to develop more and more areas — areas that provide habitat and diversity in the biosphere with which humans seldom concern themselves. How do we know we're not eliminating new medicines, food sources, regulators of other species we consider pests, pollinators, waste recyclers, etc.? We don't. Worse, we rarely think about it.

I am not suggesting, nor is Paul Ehrlich, that we stop all development right here and now. I am suggesting that we go about development from a different perspective — one that would represent a major change in society's values. It would require educating virtually everyone, but especially developers, engineers, architects, and urban and rural planners, in the basics of biology and ecology. It would require a new consciousness — one that recognizes and considers the values of obscure as well as prominent species.

I was able to free one of the birds that hadn't yet gotten his wings glued to the pavement. I felt guilty leaving the others to die from their casual bout with the 20th century. All were dead when I passed by later.

There are plenty of sparrows in Lander. Doubtless, these few won't be missed. But their fate struck me as an example of the indifference with which we view our relationship with the rest of life.

— CJ

LETTERS

MOST TIMELY

Dear HCN,

HCN is the most timely and informative medium for western land use issues, far more so than the slick publications of national organizations. Your absence would be sorely missed. Persevere! I'm sure help is forthcoming.

Mark Pearson
Boulder, Colorado

COMMENDATIONS

Dear HCN,

I recently read the article on western reclamation (HCN, 4/30/82). With the

exception of only a couple of points, I would like to commend Carol Jones for the objective way in which she presented a difficult and controversial subject.

Chris Cull
Western Energy Company
Billings, Montana

DESTRUCTIVE SWIFTNESS

Dear HCN,

The Barry Flamm article (HCN, 6/25/82) articulated the frustration so many of us feel. The destructive swiftness of this administration leaves us heartsick.

The paper looks and reads better than ever. Beautiful cover on the July 9 issue.

LaDonna and Jack Kutz
Albuquerque, New Mexico

(continued from page 13)

(11) APPLICANT NAME:

MAILING ADDRESS:

FACILITY LOCATION:

PERMIT NUMBER:

Facility is a typical oil treater located in Albany County, Wyoming. The produced water is separated from the petroleum product through the use of heater treater and skim ponds. The discharge is to Bellamy Irrigation Ditch (Class IV).

The discharge must meet Wyoming's Produced Water Criteria effective immediately. No chemical limitations have been imposed on this facility except for oil and grease (10 mg/l) and pH (6.5 - 8.5). This is due to the extreme aridness of the area which allows for beneficial use of the water for agricultural purposes. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1987.

(12) APPLICANT NAME:

MAILING ADDRESS:

FACILITY LOCATION:

PERMIT NUMBER:

Facility is a typical oil treater located in Niobrara County, Wyoming. The produced water is separated from the petroleum product through the use of heater treater and skim ponds. The discharge is to Lance Creek (Class II) via an unnamed draw.

The discharge must meet Wyoming's Produced Water Criteria effective immediately. Chapter VII of the Wyoming Water Quality Rules and Regulations infers that as long as the Produced Water Criteria is met, the water is suitable for beneficial use. There is no evidence to indicate that limitations more stringent than the Produced Water Criteria are needed to meet Wyoming's Water Quality Standards. The Department will continue to evaluate the discharge and, if necessary, will modify the permit if evidence indicates that more stringent limitations are needed.

Semi-annual self-monitoring is required for all parameters with the exception of oil and grease, which must be monitored quarterly. The proposed expiration date for the permit is December 31, 1987.

(13) APPLICANT NAME:

MAILING ADDRESS:

FACILITY LOCATION:

PERMIT NUMBER:

The main sewage treatment plant serving the City of Rock Springs is a newly constructed activated sludge package plant including a bio-tower and anaerobic digester. The plant discharges to Bitter Creek (Class IV water).

The proposed permit requires immediate compliance with National Secondary Treatment Standards and Wyoming's in-stream Water Quality Standards. Self-monitoring of effluent quality and quantity is required on a regular basis with reporting of results monthly. In addition to the usual parameters associated with sewage treatment plants, the permit requires monitoring of the total phosphorus content of the effluent (to aid in the assessment of eutrophication problems in Flaming Gorge Reservoir) and total dissolved solids in the potable water supply and the effluent (to aid in the assessment of salinity sources to the Colorado River System).

The permit is scheduled to expire September 30, 1987.

(14) APPLICANT NAME:

MAILING ADDRESS:

FACILITY LOCATION:

PERMIT NUMBER:

The C.A. Lewis Trust operates a facility known as the Whistle Creek Lambing Pens located on the banks of Whistle Creek, southwest of Byron, Wyoming on State Highway 32. The facility covers an area of approximately ten surface acres and holds up to 4,000 sheep, however the facility has not been used in the last several years.

The proposed permit requires no-discharge except in the case of a 25 year - 24 hour storm event (1.8 inches). If a discharge did occur, it would flow into Whistle Creek (Class II Water).

In addition, the proposed permit requires elimination of all water gaps, elimination of pens built out into the Creek, and operation of a dead animal removal program. The permit is scheduled to expire August 31, 1987.

STATE/EPA TENTATIVE DETERMINATIONS

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

PUBLIC COMMENTS

Public comments are invited any time prior to August 23, 1982. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits section, 1111 East Lincolnway, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80295. All comments received prior to August 23, 1982 will be considered in the formulation of final determinations to be imposed on the permits.

ADDITIONAL INFORMATION

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

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

Public Notice No: Wy-82-007

BEFORE THE WYOMING INDUSTRIAL SITING COUNCIL

IN THE MATTER OF:

CHICAGO AND NORTH WESTERN
TRANSPORTATION COMPANY AND
WESTERN RAILROAD PROPERTIES,
INC.

the
APPLICANT

PERMIT APPLICATION TO CONSTRUCT
CERTAIN RAILROAD FACILITIES IN
CONVERSE, NIOBRARA AND GOSHEN
COUNTIES, WYOMING

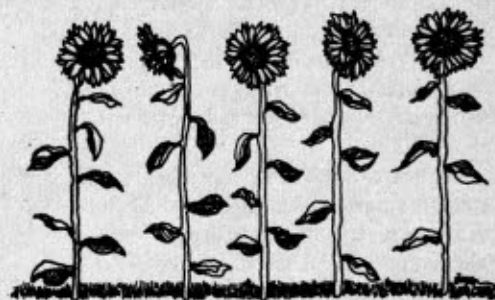
NOTICE OF CANCELLATION OF HEARING

Notice is hereby given that the public hearing before the Wyoming Industrial Siting Council originally scheduled for July 29, 1982 in Lusk, Wyoming is hereby cancelled. The hearing has been cancelled due to the ruling by the District Court that the Industrial Siting Council has been preempted by the Interstate Commerce Act. There are no plans to reschedule the hearing at this time.

Industrial Siting Administration
Suite 500
Boyd Building
18th and Carey Avenue
Cheyenne, Wyoming 82002
(307) 777-7368

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"Privatizing" the commonweal

by Joan Nice

After weeks of secrecy, the U.S. Bureau of Land Management revealed a list of more than 4.3 million acres of public land that may be sold to reduce the national debt. The acreage, mostly in the West, is said to be worth about \$2.5 billion.

It's a much shorter list than was hoped for by Reagan administration budget-cutters, who had projected selling \$17 billion worth of federal property owned by various agencies over the next five years. It will be shorter still when the administration and the public begin a line-by-line examination of the proposals, several agency spokesmen predict.

Reagan gave federal agencies 60 days to come up with a list of salable lands. By the time the task reached agency field offices, some employees had less than a day to do the work, according to BLM's Wyoming information specialist Pat Korp. "These lists were compiled in some pretty strange ways," she said.

"We just didn't have time to do a good job," said Mel Schlagel, BLM's real estate specialist in Wyoming.

In Cody, Wyoming, for instance, all lands that are flat enough to sustain irrigated crops were included on the list — whether or not the water and soils available justified selling them for farms.

In Montana, BLM state officials cut the salable acreage by one-half before they sent the figures on to Washington, because they felt local estimates were too high.

The Butte, Montana, BLM office reported more land available for sale in Park County, Montana, than the BLM had under its jurisdiction there. Butte BLM officials blamed old maps for the error.

According to rules drafted by the agency's Washington, D.C., office, lands on the BLM sales list are supposed to fall into one of four categories: lands with residential, commercial or industrial values; lands with potential for cultivated agriculture; small, scattered tracts that are impractical to manage; and, lands that are no longer needed for federal purposes, or that would serve the public better if they were sold.

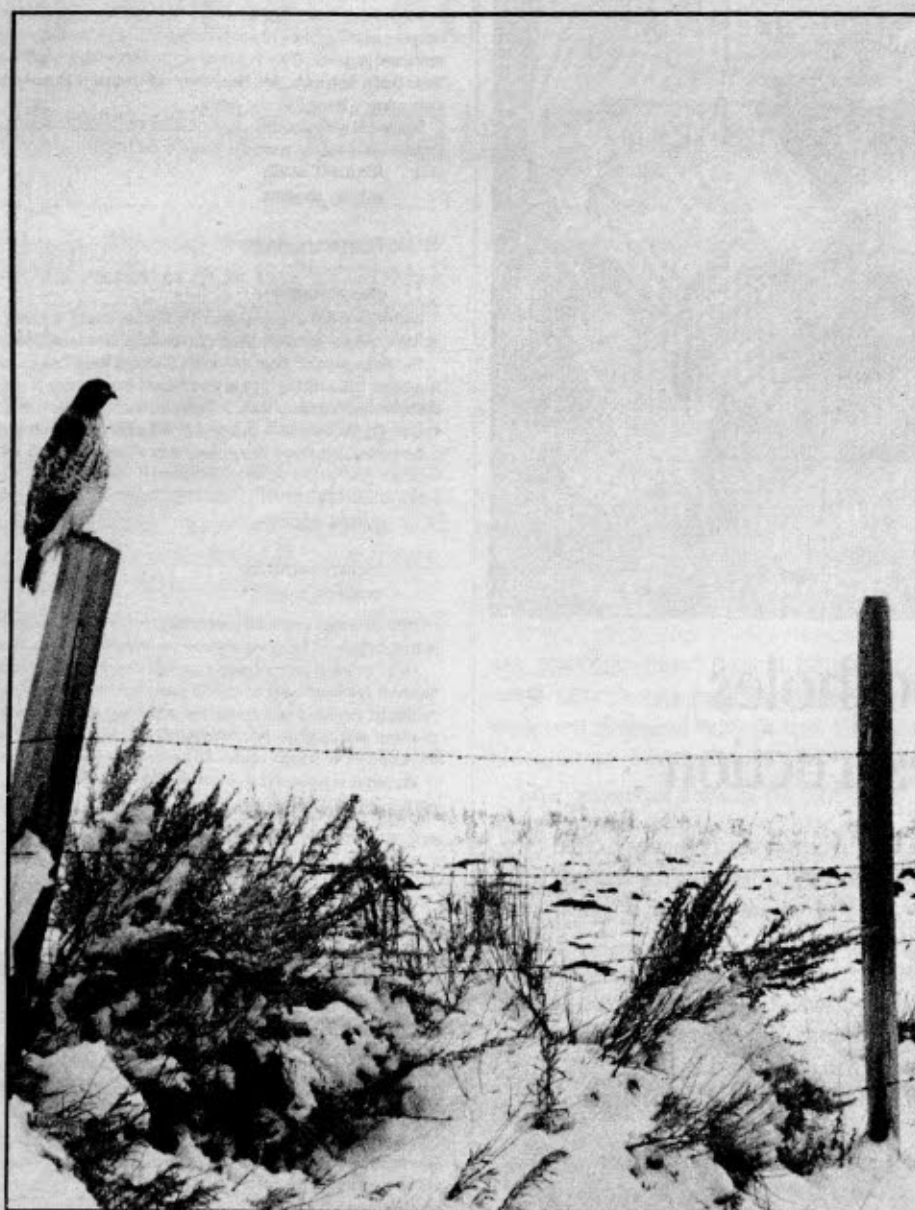
Tracts exempt from the land sales program include: Indian lands, national parks, wildlife refuges, wildernesses, wild and scenic rivers and national and historic trails. The Interior Department, which oversees the BLM, has also said none of the nation's mineral estate will be sold under the program. The Department has been less clear about the status of the hundreds of millions of acres of public lands used primarily for livestock grazing and wildlife habitat, however.

"For the first 18 months, maybe two years, it's very unlikely that grazing lands will be recommended by the department for sales," said Andy Newman of the Interior Department's public affairs office.

Conservationists are ambivalent about the program. According to Debbie Sease of the Sierra Club, some 200,000 acres of BLM land were sold last year under the procedure outlined in the Federal Land Policy and Management Act of 1976 "with virtually no opposition from conservation groups."

The BLM sales list just published goes beyond disposals that would be allowed under existing laws, however. Of the 4.3 million acres listed for sale, only 2.7 million acres could be sold under existing land use plans. The remaining lands would require either amendments to those plans or changes in laws.

A BLM memo signed by Associate Director James M. Parker asked all state directors to help the agency establish "meaningful disposal criteria which



David Spear

low-cost transfers of public lands. Local governments fear they will be priced out of the land market by private developers.

"Whatever happened to the administration's Good Neighbor Policy in dealing with the states?" asked California resources chief Huey D. Johnson.

Interior Secretary James Watt has been a strong advocate of cheap transfers for public purposes. In fact, through his Good Neighbor Program he has already begun to process 361 applications for some 951,000 acres of land. In the "good neighbor" spirit, many of the transfers have already been made at far less than the fair market value that the Property Review Board now demands. The Arizona Game and Fish Department, for example, leased nine acres of land worth \$89,000 for \$10 a year. The state of California got 63 acres worth \$95,000 for a historical park for free. Now, by order of the Property Review Board, only those Good Neighbor applications received before March 1, 1982, will be processed.

Conservationists have also criticized the board's decision to halt such transfers.

Economic return cannot be used as the sole yardstick for measuring public benefit from federally owned property," said the Sierra Club's Sease in testimony before the Senate Committee on Energy and Natural Resources. "The public interest may at times be best served by using a particular parcel for a park, a hospital, or other use that may or may not be as economically attractive as private development."

Senate hearings held this spring mobilized the opposition to Reagan's land sale program. The debate centered on a non-binding resolution introduced by Sen. Charles Percy (R-Ill.), which was designed to give a Congressional nod of approval to the President's program. Conservationists and Westerners so vigorously opposed the proposal that Percy gave up trying to push it.

That was an important victory for the program's opponents, but by no means the end of their battle. As the sales lists released by the BLM this summer indicate, the administration is proceeding quickly, if somewhat haphazardly, even without Congress' nod.

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Joan Nice, a former editor of *High Country News*, is now a Wyoming-based freelance writer and a regular contributor to *Audubon*. This article was paid for by the HCN Research Fund.



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Gone fishin'

The next issue of *High Country News* will be published August 20. No issue will appear August 6; the staff, seeking solitude and six foot trout, will be on it and six-foot trout will be on its annual vacation.

For Sale?

The U.S. Bureau of Land Management has identified more than 4.3 million acres of public lands as candidates for sale. Here's the Interior Department's breakdown by state, and the approximate value of each acreage:

State	Acreage	Value (in millions of dollars)
Arizona	612,177	158.6
California	320,100	102.4
Colorado	389,715	91.0
Eastern states	55,876	21.8
Idaho	294,983	90.2
Montana	404,390	62.8
Nevada	749,991	1,587.8
New Mexico	448,500	80.4
Oregon	254,228	89.0
Utah	133,330	110.4
Wyoming	654,266	141.7
TOTAL BLM	4,317,556	2,536.0

would be applied outside existing authorities."

"That's where the process gets scary," Sease said.

The U.S. Forest Service has also been trying to come up with a list of its salable lands, but no figures are available yet. When figures do come, they are not expected to be nearly as big as the BLM's. The agency has no legal authority to sell most of the lands it manages, according to Dick Pederson of the agency's national office. Even if it did have authority to sell, "We just don't have that kind of valuable land lying around here," said Richard D. Hull, the service's director of lands in a *Washington Post* story.

Conservationists are not alone in watchdogging the sales process. In some cases, they are temporarily

aligned with the same people they fought during the "Sagebrush Rebellion" in the late 1970s.

Many ranchers fear that if grazing lands are ever sold, they will lose their federal grazing privileges. "We don't know if we can trust the Congress and the President to hold the line for ranchers," said Dean Rhoads, the Nevada legislator who instigated the Sagebrush Rebellion, a movement advocating turning federal lands over to state or private ownership. "Many ranchers would be hard pressed to buy those lands at any price now."

Many state and local government officials are frightened by the sales program too — but for different reasons. To maximize revenues from the sales, Reagan's newly-formed Property Review Board has decided to discontinue all free and