

High Country

news

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Pipe dreams

A Midwestern water OPEC

by Bruce Webendorfer

At first glance, the Great Plains and the Great Lakes don't seem to have much in common. The sage and bunch grass hills of the Powder River Basin are a long way from the cool forests of birch and tamarack that edge down to the shores of the northern lakes.

But there is something both regions have — vast quantities of a valuable natural resource, coal in the West and water in the upper Midwest.

During the last decade, the energy-poor Midwest has been one of the regions demanding that Western energy resources be exploited, and has become increasingly dependent on High Plains coal. But only in the last year did the Midwest begin to realize that the West might someday reverse these roles and make demands on the Midwest's abundant water supplies.

In August 1981, Powder River Pipeline, Inc. of Great Falls, Montana proposed to float coal in a 1,923-mile pipeline from Gillette, Wyoming to the Great Lakes port of Superior, Wisconsin.

What distinguishes that proposal from at least eight other coal slurry lines under consideration nationwide, is the idea of a twin pipeline carrying 12,500 acre-feet of clear Lake Superior water back to Wyoming and Montana every year. The water would be used in the slurry pipeline, reducing the demand on scarce Western water.

This mixture of Western coal and Midwestern water has brewed both lively political rhetoric and difficult questions in the Midwest. The response to both could be as significant for Montana and Wyoming as for Minnesota and Wisconsin.

The Powder River Pipeline proposal, coming just before the Midwestern governors met last September to discuss the economic revitalization of their region, inspired some boisterous comments from several participants.

Wisconsin's Governor Lee Dreyfus (R) said that the Great Lakes states could become "an OPEC of water" and that his own state should "lead the charge in marketing Great Lakes water."

Michigan's William Milliken (R) took a more defensive stance and warned

Western states to "keep their hands off Midwest water." Iowa's Robert Ray (R), thinking of Montana's 30 percent coal severance tax, suggested a Midwest "soil-depletion tax" on food crops, a tax to be passed on to Western consumers.

That initial reaction has led several states to take a new look at a resource they have long taken for granted. The governors established a special task force to study the role of the Great Lakes water resource in the future economic growth of the region. Minnesota has undertaken a study of the value of water to the state, and the Wisconsin Coastal Management Council sponsored a conference in May on the possible inter-basin transfer of Great Lakes water.

The questions these groups are asking sound much like the questions asked in the energy-rich Western states a decade or so ago.

Does the Powder River Pipeline proposal signal the start of a future Western demand for Great Lakes water? What is the extent of the resource? What is its value, and what does the Midwest stand to gain and lose by exploiting it?

This round of discussion will help

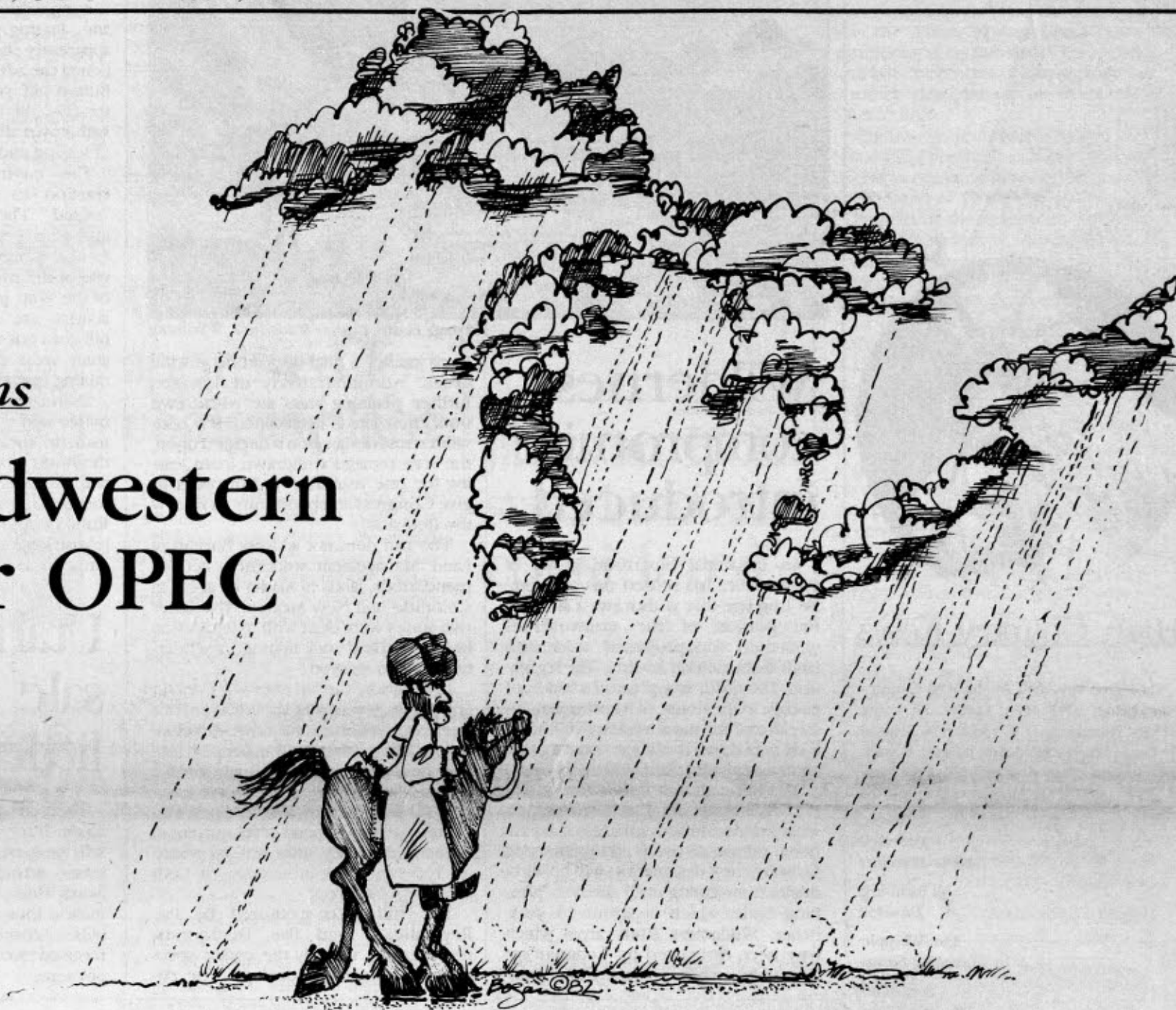
determine whether the Great Lakes could be a realistic source of water for the water-poor regions of the country, or whether the idea is just one more in a long line of fanciful structural solutions for pushing back the limits imposed by a dry climate.

More important, perhaps, is that the discussion is creating a new awareness in the Midwest of the Great Lakes as a depletable resource. That awareness could have indirect but far-reaching implications for the taxation, sale and control of other resources of national importance.

The Great Lakes contain 20 percent of the world's fresh surface water, and fully 90 percent of North America's. That works out to enough water to cover the contiguous 48 states to a depth of eight feet, or to fill the Grand Canyon 178 times. The annual discharge from the lakes is enough to supply every person on earth with 14,000 gallons of water.

At the Wisconsin Coastal Management Council conference, discussion

(continued on page 10)



WESTERN ROUNDUP



High Country News

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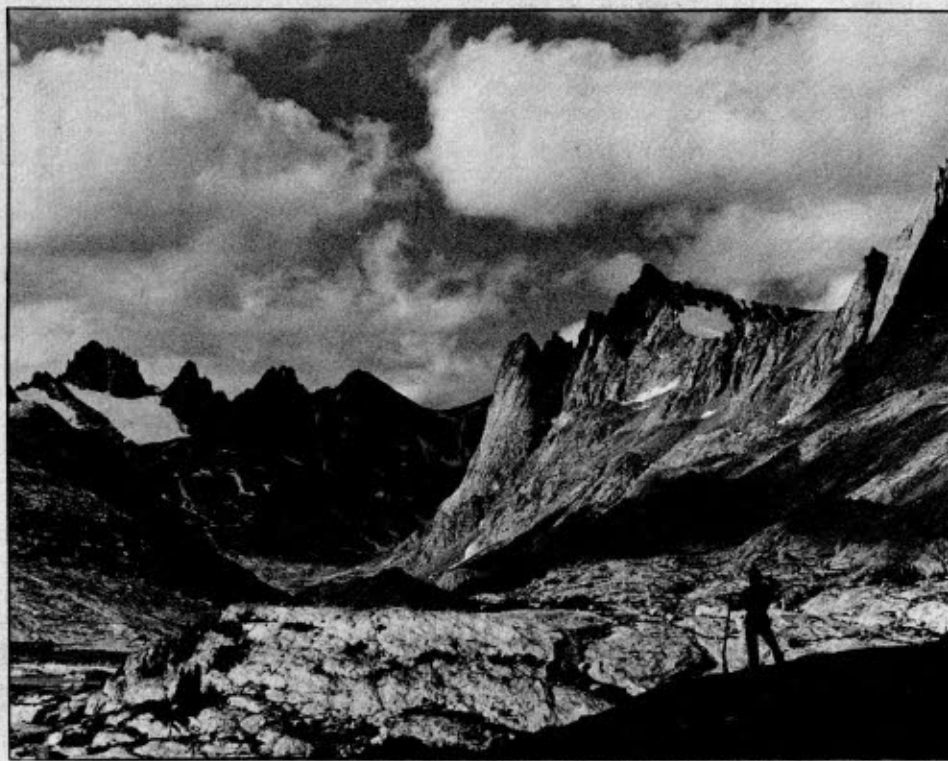
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Titcomb Basin, Bridger Wilderness, Wyoming

Wilderness compromise introduced

An influential bipartisan group of congressmen has settled on compromise language that withdraws a substantial portion of the controversial wilderness and proposed wilderness lands from mineral leasing. The legislation, HR 6542, has a good chance of passage in the House of Representatives in place of the more restrictive Burton bill and the less stringent administration-backed Watt proposal.

The bill withdraws all existing wilderness areas from mineral leasing permanently. In addition, all areas that have been administratively recommended for wilderness designation will be withdrawn from leasing until the next planning cycle, which is about 15 years hence. Wilderness study areas which have been designated by Congress are also withdrawn from leasing until Con-

gress makes a final disposition on the areas. Administratively designated further planning areas are withdrawn until their fate is determined. If a non-wilderness designation is decided upon, the area remains withdrawn from leasing for one year afterward in order to give Congress an opportunity to review the decision.

The bill does not address Bureau of Land Management wilderness recommendations, lands in Alaska or areas in Colorado and New Mexico. The latter two states were dealt with in legislation last year. Hard rock mining in wilderness is also ignored.

In addition, the bill does not contain any language releasing lands that are not declared wilderness for other development. The timber and mineral industries have been pushing strongly for that release language. The bill does, however, allow the president to open restricted areas to mineral development in future emergency situations, provided he receives the concurrence of both houses of Congress.

The bill is co-sponsored by five Republicans and five Democrats, representing virtually the entire spectrum of wilderness ideology. The co-

sponsors are: Manuel Lujan (R-N.M.), Robert Lagomarsino (R-Calif.), Charles Pashayan (R-Calif.), Douglas Bereuter (R-Neb.), Don Clausen (R-Calif.), John Seiberling (D-Ohio), Morris Udall (D-Ariz.), Beverly Byron (D-Md.), Pat Williams (D-Mont.) and Ray Kogovsek (D-Colo.).

Lujan had introduced the Watt legislation, which would have withdrawn all designated wilderness from mineral leasing until the year 2000, with reconsideration at that time. The Watt bill would also have allowed the president to open wilderness areas to exploration and leasing. Lujan's co-sponsorship apparently indicates that he has abandoned the administration proposal. The Burton bill, proposed by Rep. Phil Burton (D-Calif.), would have permanently withdrawn all wilderness from all forms of leasing and development.

The environmental community's reaction to the proposal has been "mixed." The absence of release language is a very positive point, according to one source, because that had been one of the most controversial portions of the Watt proposal. But a number of activists are disappointed because the bill does not withdraw BLM wilderness study areas or address the hard rock mining question.

Sources at the House Interior Committee said the legislation should go to mark-up soon. Chances for passage in the House are considered good, but its fate in the Senate is uncertain. One source said that Sen. James McClure (R-Idaho) is almost certain to try to attach release language to the bill, reducing its attractiveness to wilderness advocates.

Utah coal sale attracts little interest

The soft coal market continued to hinder Interior Department attempts to sell western coal leases as two Utah leases attracted little interest. The North Horn Mountain tract, with 112 million tons of reserves, went without bids. Another tract, Rilda Canyon, received two bids for a little over \$8,100 per acre.

Dear friends,

Here at *High Country News*, we can always tell when it is an election year. Candidates and officeholders who normally view our humble newspaper with bemused tolerance suddenly exhibit earnest concern for our well-being. While we aren't exactly feted, a la the *Washington Post* or the *Wall Street Journal*, this revived interest is usually good for a cup of coffee at Wyman's Restaurant at campaign coffer expense.

The fading spring has brought out a bumper crop of politicians seeking to enlighten our editors about the vital issues of the day. Wyoming Sen. Malcolm Wallop (R) and his Democratic challenger Rodger McDaniel have both braved interviews with *HCN* minions. Wallop discussed wilderness issues with Director Jill Bamburg. Managing Editor Dan Whipple talked to McDaniel, mostly about the decidedly un-environmental question of national defense posture, one of Whipple's eclectic hobbies.

The visiting season has not brought only politicians, however. A class of graduate students from the University of Wisconsin, genus *Magister Scientium*, had reason to believe that *HCN* employees could enlighten them about the environmental and water-related issues in the West. Whipple and Design Director Kathy Bogan took about an hour and a half last week to disabuse them of this notion.

HCN's long-threatened new version of T-shirts is now available. The shirts are 100 percent cotton, brown or light blue, adorned with Kathy's drawing of a petroglyph from Grand Gulch, located on Bureau of Land Management land near Canyonlands National Park in Utah. The shirts were produced by Lee Gardner of Jackson, Wyoming's Backroads Gallery. The price is \$7.00, plus \$1.00 postage and handling for each shirt ordered. Wyoming residents must add 21 cents state sales tax. Sizes are for adults: small, medium, large and extra-large. Don and Donna Ford, who run the National Outdoor Leadership School's Baja branch, had the honor of purchasing the first shirts. They also had the good sense to buy a subscription at the same time.

Speaking of T-shirts and good sense, *HCN* Contest No. 1, (*HCN*, 5/28/82 in the classifieds) was won by Scott Larsen of Powell, Wyoming. Scott correctly said, "Everybody knows that that's what you hafta put in your beef jerky if you wanna do it right. And if you think that's bad, don't look on any of that stuff with Charlie Brown on the package. It's on the shelf where you buy your gas."

There were several other correct entries, but Scott's was the first one received. The contest judges, who must remain anonymous to protect them from undue influence, have recognized an inherent injustice in this, however.

Because mail within Wyoming moves much faster than mail outside the state, people within the state have a better chance of winning, simply because they get their paper first and their entries are returned quickest. This, it seems, is unjust.

So, to eliminate the problem, the judges have hit upon an ingenious solution. They are going to make the contest a lot more subjective. Beginning this issue, entries will be judged on creativity. Neatness does not count. This will eliminate the Postal Service variable and replace it with a number of others that may or may not be superior. For the details of contest No. II, see this issue's classified ads.

For those who got the answer to Contest No. I correct and think that justice would be better served by issuing duplicate prizes — forget it. The judges are nothing if not arbitrary. However, we would like to thank Merry Bateman, Ron Harden and the other entrants.

In response to our recent advertisement beginning, "We just fired our \$9 a week janitor," we received the following from Eric Morgenthaler of the *Wall Street Journal's* Colorado bureau: "I can't do anything about the janitor or the accountant; but if you really did drop your subscription to the *Journal*, I'd be happy to get you another one."

Well, we really did, and we'd be happy to accept. We all love to read the *Journal*. Thanks, Eric.

— the staff

The Bureau of Land Management in Utah had expected a great deal of competition for the North Horn Mountain tract. A BLM spokesman said that a number of companies had expressed interest in the tract. That interest did not, however, extend to an outlay of cash.

Sohio Corporation, which had done exploration on the tract, said the minimum bid for the coal — 35 cents per ton in place — was too high. None of the other dozen or so companies that had initially contacted BLM offered any bids.

The Rilda Canyon tract hadn't been expected to generate much interest, but two companies, West Appa Coal of Denver and Utah Power and Light, bid \$8,150 an acre, or 69 cents a ton and \$8,125 an acre, respectively. Minimum bids had been set at \$2,337 per acre.

BLM is still analyzing the bids to see if any will be accepted.



David Spitzer

Montana farmers use endrin again

The pesticide endrin is being used in Montana again this year but the Department of Agriculture won't know how much has been used until applicators file reports in mid-June. But the Department of Agriculture environmental management chief Gary Gingery guessed that less than 5,000 acres have been sprayed with the pesticide.

Department of Agriculture Director Gordon McOmber said if applications exceed the yearly average of 37,000 acres he will declare emergency restrictions on the use of endrin.

Last year 225,000 acres of wheat in eastern Montana were sprayed with endrin (HCN, 4/16/82). Some wildlife was contaminated and migratory waterfowl hunting season was nearly cancelled. The Fish & Game Commission issued a series of recommendations aimed at restricting the intake of endrin-contaminated waterfowl.

Endrin, like DDT, is a chlorinated hydrocarbon, but is much more toxic and can cause birth defects and tumors. It is so toxic that a quarter ounce, if ingested, could kill a 170 pound man.

Gingery said the cutworm problem so far this year is nowhere near as serious as last year. But he said as the weather warms up the infestation could spread.

Most of the endrin spraying has been in the fertile wheat country in northern Montana, including the counties of Liberty, Hill, Choteau, Cascade, Teton, Golden Valley and Wheatland.

Earlier this year the Environmental Protection Agency approved two alternatives to endrin — lorsban and paramethrin — for use on cutworms. But economics dictate the continuing use of endrin. Lorsban costs about \$9.98 per acre to apply, excluding application costs. Paramethrin runs from \$5.56 to \$5.90 per acre and endrin costs only \$2.35 per acre. Application costs are \$2.60 to \$3.60 per acre.

Gingery said that farmers don't have much choice. "They're in a hell of cost-

price squeeze," he said. "I just hope they exercise good judgement."

Gingery also said his department is monitoring those areas that were sprayed with endrin last year. He said they have taken 200 samples of vegetation, soil, sediment and fish, and are awaiting results from the laboratory in Bozeman.

The Department of Fish, Wildlife & Parks, with the help of a \$20,000 EPA grant, is also monitoring areas that were sprayed last year. Joe Wegan, a biologist, said they have collected waterfowl and upland game bird samples and will collect big game samples in July. The results should be available in four weeks.

Wegan also said they are conducting studies on fields that have been treated this year with paramethrin, lorsban and endrin and comparing the biological effects.

— Jim Robbins

Water wells approved for coalgas plant

Hampshire Energy's proposed coal-to-gasoline synthetic fuels plant, proposed for a site near Gillette, Wyoming, got a boost this week when a spokesman for the state engineer's office announced that the Wyoming agency will give preliminary approval to Hampshire's proposal to drill 15 wells to supply water for the plant.

Word of the engineer's office approval drew an outcry from ranchers in the Gillette area, who fear Hampshire will deplete underground water supplies they use.

Michael Penz of the state engineer's office said the water supply-water yield analysis that will be released this week will recommend approval of the project's well permits — a determination that the state's Industrial Siting Council was awaiting before making its decision on the issuance of construction permit for the \$2 billion plant.

The project is slated to begin construction in 1983 and be completed in 1987. It will process 5 million tons of coal from the Powder River Basin annually to produce 300 million gallons of unleaded gasoline and various by-products. At the peak of construction, in late 1985, the project will employ 3,750 workers.

If the 15 wells get final approval, Hampshire will be able to draw 4,608 acre-feet of water a year from the Lance-Fox Hills Formation, for the duration of the plant's 20 to 40 year life.

The Citizens for Responsible Development and the Powder River Basin Resource Council have asked the Wyoming Industrial Council to block plant construction, pointing to uncertainty over groundwater impacts and other possible problems. Area ranchers in the groups have also appealed to the federal Synthetic Fuels Corporation, which is considering a request from Hampshire for \$1.5 billion in loan guarantees to build the project.

According to Penz, the engineer's report will set conditions on the permits designed to protect local ranchers. Three to five monitoring wells will have to be drilled, and various mitigating efforts will have to be made if Hampshire's water use interferes with the supplies of existing users. Penz said he hoped Hampshire would drill the wells this summer so they could begin gathering baseline data.

Following its release, the state engineer's analysis must be published for three consecutive weeks. A 20-day comment period then ensues, after which the engineer will issue a final opinion.

— Geoffrey O'Gara



John George

Red-tailed hawk

Jackson Hole state land sale considered

The Wyoming Board of Land Commissioners is considering the sale of some 659 acres of state-owned land to private development interests in Jackson Hole.

The lands include two developable 80-acre units on West Gros Ventre Butte, a steep 460-acre parcel on East Gros Ventre Butte at the west entrance to the Town of Jackson, and a highly developable 23-acre piece along the Snake River just east of Teton Village. The two buttes provide critical winter habitat for mule deer and the riparian lands along the Snake have been identi-

fied by the Game and Fish as a valuable area for raptor nesting.

According to Deputy Land Commissioner Bob Bullock, the sale proposals were initiated in April when former U.S. Senator Clifford Hansen and representatives of the Somerset Company, a California development firm, appeared before the State Land Commission. Under Wyoming law, an existing surface lessee has a right to file an application for purchase and Hansen's daughter, Mary Mead, is one of the lessees of the butte property. The Somerset Company purchased land from the Hansen family for the luxury Spring Creek Ranch development on East Gros Ventre Butte and is in the process of putting together another development on West Gros Ventre Butte.

The river parcel has not been leased since 1974 despite "a number of inquiries" about possible lease or purchase. G. Scott Eaton of Teton Village has asked permission to file an application for purchase of the property, and the Board of Land Commissioners decided to consider this parcel along with the rest of the Teton County properties.

In deciding the fate of these state lands, the Board of Land Commissioners will have to evaluate two conflicting views of what the state's "best interest" may be.

On the one hand, the state constitution and act of admission (to the union) require that the lands be managed to produce the highest financial return for the public schools. With grazing fees generating only about \$1 per acre per year and land prices going as high as \$8,000 per acre, the state's interests in school finance would best be served by selling the land and investing the money at market interest rates.

On the other hand, the lands possess significant scenic, agricultural and wildlife values that the state may wish to preserve for non-financial reasons. Recognizing the existence of such values, the board has previously adopted a policy that the state's land inventory be maintained. In 1981, the state, which administers 3.6 million acres, sold only one 13.6-acre parcel.

A public hearing was held in Jackson Hole June 10 on the proposed sales to

(continued on page 4)

BARBED WIRE

Stalking the wild metaphor (continued). Wyoming Senator Malcolm Wallop (R) recently made his official announcement that he was running again for his Senate seat, saying he sought a mandate to "expand our beachhead" in the struggle to eliminate "dry rot nurtured by a runaway torrent of liberal concepts..." Those concepts had been "constantly face-lifted and trotted out before us..."

Fowl play. A Houston judge has dismissed an animal cruelty case against a man accused of baiting a fighting bulldog with a live chicken. The case alleged that the chicken was suffering mental torture. The judge said he couldn't determine the chicken's state of mind at being set upon by an enraged bulldog. "It's difficult enough to decide cases with human beings, much less a chicken," the judge said, according to United Press International.

Give 'em money, but don't let 'em find out anything. Environmental Protection Agency Region VIII chief Steven J. Durham sent a memorandum to his division directors reading, "No grant awards to state, or any other entity should contain any funds for public relations or public participation unless such activities are mandated by federal statute or regulation. In any case where such activities are mandated, the amounts awarded should be kept to an absolute minimum and should be reviewed on a regular basis by the regional office."

We didn't know they could dance. The Agricultural Research Service of the U.S. Department of Agriculture has published a research brief called "How to get a wasp to hustle." The feat is accomplished by spreading artificial kairomone, a substance reproduced by the bollworm, a natural prey of the trichogramma wasp.

Your tax dollars at work. The Sheridan (Wyo.) County Commission is considering a program to water the weeds at the county airport in order to put the county's water rights on airport land to beneficial use and so prevent the rights from lapsing.

And then El Salvador will embargo it. The Agricultural Research Service of the U.S. Department of Agriculture reports that okra can be used as a "caffeine-free coffee substitute, an oilseed for margarine, a high-protein meal for baking, fiber to make paper and a biomass burned for fuel."

Machiavelli was right. John McKetta, a chemical engineering professor at the University of Texas at Austin and an energy advisor to President Ronald Reagan told a Billings, Montana audience recently that the "greenhouse effect — the heating of the earth's atmosphere that threatens to melt the polar icecaps — wouldn't be a complete disaster. McKetta pointed out that the roiling waters would inundate Maine and Massachusetts, ridding the nation of Sen. Edward Kennedy (D-Mass.) and former Sen. Edmund Muskie (D-Maine).

WESTERN ROUNDUP

(continued from page 3)

assess local sentiment. If the commissioners decide to proceed with the sale, they would be public sales with competitive bidding — but the existing lessees, or original purchase applicants, would have the right to meet the high bid.



Interior cancels tribal leases

The Interior Department's recent decision to recommend cancellation of two oil leases on the Wind River Reservation in Wyoming is significant because it appears to be the first time the department has cancelled a lease for any reason other than non-production.

The Shoshone and Arapahoe Tribes filed a petition last November asking the Bureau of Indian Affairs to cancel Amoco's and Sohio's leases because Amoco, the operator, had filed erroneous production reports, failed to pay royalties and used improper measuring equipment in the field.

News reports and the tribes' investigation of possible thefts from their Wind River Reservation led to Senate hearings and the eventual overhaul of the federal government's royalty accounting system for both federal and Indian leases.

Amoco is expected to appeal Interior's decision since it has refuted most of the tribes' allegations. Amoco said that when leases were unitized, it paid royalties to individual Indian mineral owners instead of the tribes because of "accounting errors."

If the leases are cancelled, the tribes will get back 900,000 barrels of proven oil reserves.

— Marjane Ambler

Power fight pays off for Colo. group

A Western Colorado consumers' group will receive about \$40,000 for legal fees from Colorado-Ute Electric Association following a dispute over the utility's proposed Rifle, Colorado to San Juan, New Mexico 345-kilovolt powerline.

Harry Galligan, executive secretary to the Colorado Public Utilities Commission, said the PUC decided to award the attorney and expert witness fees to the Gunnison River Coalition, which intervened in the powerline permit process.

Last January, the PUC agreed with the coalition's arguments against the power line, and denied Colorado-Ute a permit for the project.

Colorado-Ute had proposed building the \$244 million power line to connect the growing southwestern Colorado

market with its Craig III power plant, and to strengthen the ties with the Arizona and Southern California power grid.

But the coalition argued the line was not needed and that Colorado-Ute could not afford to build it. The utility provides wholesale electricity to 14 rural electric co-ops on the Western Slope and in parts of the Front Range and southeastern Colorado.

Although the cost of the reimbursement will fall on Colorado-Ute's customers, coalition leader Hank Hotze called it a bargain compared to the projected cost of the project.

— Heather McGregor

Jurisdiction struggle over Wyo. drilling

Getty Oil Company's plan to drill an exploratory oil and gas well on Forest Service land south of Jackson, Wyoming, may lead to a struggle between the state and the federal government over which entity has jurisdiction. Wyoming Gov. Ed Herschler (D) testifying Tuesday before the state Oil and Gas Conservation Commission (OGCC), of which he is chairman, said the state will make its own review of Getty's plan and set its own stipulations before allowing Getty to drill.

Attorneys for Getty told the OGCC that the commission's "Rule 236," which gives the agency responsibility to protect lands and water within Wyoming's boundaries from degradation or pollution, "doesn't apply" to Getty's well, which is located entirely on federal land. Getty has held its lease on the site for 12 years.

The U.S. Forest Service recently approved Getty's plan to drill the well high on a saddle in the Bridger-Teton National Forest 15 miles from Jackson. The site is within the boundaries of a proposed addition to the federal wilderness system made by the Carter administration under RARE II (Second Roadless Area Review and Evaluation), and has sparked opposition from environmentalists and some Jackson-area businessmen. The Getty site was not included in the Wyoming Wilderness bill introduced this year by the three-man Wyoming congressional delegation.

Of particular concern to the state is Getty's access road up a steep canyon to the drill site. The Wyoming Game and Fish Department told the OGCC that the access road could cause pollution of Little Granite Creek, which runs into the Hoback River, which in turn enters the scenic Snake River drainage. Game and Fish asked the OGCC to order Getty to serve the rig by helicopter rather than road.

Paul Cleary of the State Planning Office said the state would await Getty's final road construction plans before setting any conditions for the well.

Forest Service minerals specialist Al Reuter said his agency was still considering various alternatives for road construction and road reclamation. Opponents of the well point to the Forest Service's own studies, which indicate the last mile of Getty's road might be impossible to reclaim.

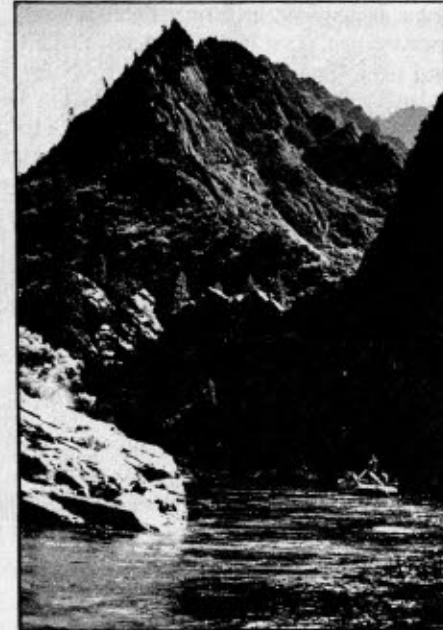
Getty Oil District Manager Richard Hamilton said the company would try to abide by any stipulations set by the state, but he said there were serious difficulties with helicopter access. It would require a larger drill site and a staging area at a lower elevation. If helicopters were grounded by bad weather, he said, they could not service problems at the well.

The Wyoming Wilderness Association, the Jackson Hole Alliance, and the Sierra Club are all appealing the Forest Service decision. The Sierra Club appeal is to the Interior Department's Board of

Land Appeals, while other appeals have been addressed to the Forest Service and the U.S. Mineral Management Service.

Hamilton said Getty plans to begin preliminary road surveying next week.

— Geoffrey O'Gara



Salmon River, Idaho

Idaho is short on pollution control fund

Idaho's Water Pollution Control Fund is in trouble.

Its 1982 federal appropriation is still being debated in Congress. Although conservationists still hope funding will be approved for this fiscal year, confidence is waning.

Meanwhile the state is unable to replenish the \$5.5 million it borrowed from the fund last year. State legislators approved the loan to help rebuild the state penitentiary after a damaging riot. They had planned to pay the money back with state surplus funds this year. However, recession quashed those plans and the state faces a deficit this year rather than a surplus.

Federal support of water pollution control projects is being reduced at a time when state and local governments are unable to make up the difference.

Under the Reagan administration, the federal government has announced its intention to cut back federal participation in new sewage system construction from 75 percent to 55 percent. The Idaho legislature, for its part, has significantly reduced state inheritance taxes which had been the major source of state funds in the past.

Unless lawmakers find new funding, the account will be out of business in three or four years, said Idaho Department of Health and Welfare, Division of Environment Administrator Lee Stokes.

The Water Pollution Control Fund was created a decade ago to protect Idaho waters from domestic pollution, Stokes explained. It emphasized the construction of sewage treatment plants. The state provided 15 percent of the cost of new sewage treatment systems, the feds 75 percent, and local governments 10 percent.

Several years ago, the state also began using its funds to help in situations where federal funds were not available: to improve a septic system in a rural area, for example, or to install a sewage collection system.

A year ago, the Idaho legislature further authorized the Pollution Control Fund to concern itself with agricultural pollution (i.e., from irrigation return water).

Now virtually all such projects across the state face cancellations or delays.

Boise's \$15 million sewer expansion is one of those projects. The first phase of Boise's sewer treatment plant was put into operation in 1976, with plans to

build a second phase in 1979. But funding was delayed in 1979, so that Boise is only just now designing the expansion.

If new construction is delayed any longer, said Boise Public Works Director Bill Ancell, the Boise plant faces severe overloads. Designed to handle five million gallons a day of sewage, the West Boise plant is now treating eight million gallons.

The Boise City Council has decided to raise sewage system connection fees by about 25 percent, Ancell said. But that will not begin to pay for the entire needed expansion.

Other large projects are facing similar delays in Coeur d'Alene, Post Falls, Sandpoint and Lewiston.

Those communities may have to make one or two choices, Ancell said. They may have to petition for modified water quality standards or find a way to pay for projects with local funds.

In downtown Boise, Ancell said, the Boise River is now clean enough not only for fishing and swimming, but also for trout spawning, even in a drought year. Those standards were set by the federal government a decade ago when the federal government also promised funds to help keep them, Ancell said. Now that the federal money is being reduced, local communities may be forced to reevaluate.

Division of Environment Administrator Stokes isn't sure how state and local governments might come up with the required revenues to meet existing standards.

"We're still trying to do some thinking (about another source of revenue)," Stokes said. "But we haven't come up with anything really innovative yet." It will be difficult to introduce new taxes or pass bonds during these hard economic times, he said.

— Jeanette Germain

Synfuel plant won't lower air quality

The Northern Cheyenne Reservation's special air quality status will not preclude construction of a synthetic fuels plant on the adjoining Crow Reservation in Montana, according to an environmental study conducted by the Council of Energy Resource Tribes staff. However, the plant faces economic and internal political hurdles that could prevent its proceeding beyond the feasibility study stage.

The Crow Tribe empowered its chairman in January, 1981, to proceed with a \$2.7 million Department of Energy study on the feasibility of building a coal gasification plant on the reservation. That study is to be completed in July, 1982.

Eight possible sites were eliminated during the environmental portion of the feasibility study because they would have caused air degradation on the Northern Cheyenne Reservation, which is designated Class I under the Clean Air Act's prevention of significant deterioration section.

However, the plant could meet the Class I standards if it were built on any of three other sites, according to the study. Bob Siek of the CERT staff said he expected to recommend that the tribe adopt its own standards for some air pollutants and hazardous wastes not covered by the federal regulations.

Federal, but not state, environmental regulations apply to facilities on Indian reservations, although some states have tried to assert jurisdiction.

In Montana, state air jurisdiction is not expected to be a problem since the facility will have to meet the strict Class I criteria for pollutants covered under significant deterioration regulations. Jurisdiction questions may arise, however, over the state's industrial siting act.

CERT and the proposed plant operator, Pacific Coal Gasification Company are trying to avert a jurisdiction battle by involving the state from the beginning in planning. Don MacIntyre, an attorney with the state department of natural resources, said jurisdiction would be determined on a case by case basis, depending upon who builds a plant and whether it is on tribal or private land within the reservation.

The feasibility study has been stymied by charges that the tribal director of a portion of the study had mismanaged as much as \$100,000 of the DOE grant. The DOE is now reviewing explanations submitted by the tribe before deciding whether to release several hundred thousand dollars it is holding from subcontractors on the study, including Pacific Coal, Fluor Engineers and Constructors, Inc., Lehmann Brothers and CERT.

Ted Smith, the director of CERT's Denver office, who conducted an audit, said that only a few individuals caused the problems, which consisted mainly of borrowing money from the synfuels account to use in other tribal accounts, a practice that he says many businesses are guilty of. However, such borrowing could be more serious in the Crows' case since the tribe might not be able to repay the account. An audit of tribal finances by the U.S. Office of the Inspector General found the tribe was effectively bankrupt.

Tribal sources said the material submitted to DOE documents work paid

out of the synfuels account and justifies other expenditures that were criticized as disallowable under DOE contract terms.

If the feasibility study grant problem is resolved, the fate of the gasification plant will depend upon a decision by the Crow tribal members and upon funding from the U.S. Synthetic Fuels Corporation. Federal assistance would be necessary, according to Joe Byrne of Pacific coal, because the cost of producing the gas is above the current market clearing price.

— Marjane Ambler

Tribes asked to provide dump sites

Browning-Ferris Industries of Houston, Texas, has contacted several Indian tribes in the West about locating toxic waste sites on their land to help their local economies, according to a copyrighted story in *Native Self Sufficiency*.

Because of budget cuts under the Reagan administration, many tribes are heavily in debt, and unemployment rates range as high as 75 percent. The newspaper, which is published by a nonprofit foundation under the auspices of The Youth Project in Forestville,

California, said the firm contacted tribes through the Bureau of Indian Affairs, offering millions of dollars to those who would accept such sites.

So far no tribe has accepted BFI's offer. The company contacted the Chemehuevi and Hualapai in Arizona, the Duckwater Shoshone and Mojave in Nevada, an unnamed tribe in Utah, and the Cherokee in North Carolina, according to the article.

The *Native Self Sufficiency* reporter, Daniel Bomberry, speculated that the firm is interested in Indian reservations because federal toxic waste laws might not be carefully enforced there. Unlike state or county governments, most tribes do not have tribal departments to monitor public health or water and air quality. Therefore, they must depend upon understaffed federal agencies, such as the Indian Health Service, the Bureau of Indian Affairs and the Environmental Protection Agency.

Pete Block of BFI said Indian reservations were not sought more than other sites on private or public land, and there was "absolutely no thought" of avoiding regulations. "We feel that hazardous waste disposal is a pressing national problem that needs to be resolved. We need sites that can be engineered to protect the environment and the public health, and that cannot be compromised," he said.

Controversy on the Fort Mojave Reservation in Nevada, California and Arizona led to the recall of the tribal chairman before the tribal council

stopped negotiations with BFI in May, according to Bomberry.

The Fort Mojave tribal council said the facility would have provided 50-100 full-time jobs and 20-30 construction jobs on the reservation, where unemployment is now 75 percent.

The tribal councils of the three reservations downstream from Fort Mojave on the Colorado River had all objected to a site there. The Nevada governor, Robert List, called the BFI plan to locate the hazardous waste dump on Indian lands "a flagrant attempt to circumvent state regulations and to avoid public comment on the issue," according to the *CERT Report*, a publication of the Council of Energy Resource Tribes.

While non-Indians could not directly influence such a decision, the Utah tribe decided against siting a facility there because of potential political backlash from their non-Indian neighbors. Other tribes have either refused the BFI offer or have taken no action.

A spokesman for BFI, the nation's largest publicly held waste management firm, said the proposed Fort Mojave site would not be used for storing radioactive wastes, polychlorinated biphenyls (PCBs), class A explosives or wastes that are "highly reactive" to air or water. He said the site would be used for chemical wastes resulting from the manufacture of automobiles, petroleum products, pharmaceuticals, paper, glass, insulation and air conditioners.

— Marjane Ambler

HETTINE



EVOLVING PINE BEETLES

A pine beetle, genetically different from the ones that caused severe damage in Colorado's Front Range Jefferson County three years ago, is emerging near Dillon and Eagle, Colorado. These high-country beetles prefer lodgepole pines rather than ponderosas. The Colorado State Forest Service is beginning a \$2.7 million treatment project to eradicate the pests using federal, state and private funds. State Forest Service officials told the *Denver Post* an estimated 125,000 lodgepole pines will be cut.

BLM REASSESSSES UTAH AREA

The Bureau of Land Management has identified 7,620 acres within the Negro Bill Canyon as a wilderness study area. The BLM reassessed the area after the Utah chapter of the Sierra Club appealed the BLM's earlier decision to exclude the area from wilderness potential (*HCN*, 4/30/82). The public is asked to comment on the proposal before June 20 to the Moab BLM District Manager, P.O. Box 970, Moab, Utah 84532.

DOE REDUCES INVESTIGATIONS

A reorganization of the special investigations branch of the Department of Energy has raised fears that the agency will allow many criminal oil fraud cases to slip by. The unit was in charge of policing oil price control laws that were in effect last year when President Ronald Reagan decontrolled oil prices, according to the *Wall Street Journal*. Investigations by the unit have showed many consumers may have been overcharged by billions of dollars during the price control period. Six senior investigators and the director of the unit will

be relocated within the Energy Department, and power to pursue criminal investigations will be restricted.

EPA ADMITS ENFORCEMENT LAG

Environmental Protection Agency administrator Anne Gorsuch has admitted her agency was lax in enforcement during 1981. She told the Associated Press that 1981 was a "period of hiatus" for the enforcement unit, but with new management organization and pep talks to regional offices, the enforcement units should be back to normal. Gorsuch has reorganized the enforcement sections, bringing them all under one director, instead of having separate units such as air or water pollution sections. Gorsuch has asked her agency to press lawsuits vigorously.

BIA CUTTING BACK

The Bureau of Indian Affairs will cut the number of its regional offices from 12 to five and eliminate 372 jobs in an effort to save about \$16 million annually. The regional BIA office in Billings, Montana, would be downgraded to a small field office. Tribes in New Mexico, Colorado and western Utah will be served by the Albuquerque, New Mexico office; tribes in eastern Montana, Wyoming, North and South Dakota will be served by the Aberdeen, South Dakota office; and tribes in Idaho and western Montana will be served by the Portland, Oregon office.

MINING PROPOSED IN PARKS

Four mining companies have successfully convinced the National Park Service to propose a regulation change that would reduce current restrictions on mining in parks. Park Service officials said concerns by environmentalists that the parks will be open to expanded mining operations are premature, because no decision has been made on the proposal. The four companies pushing for the changes claim the current regulations are obsolete. The Park Service's moratorium on expanded mining in parks expired in September, 1980, but to date no new permits for mining have been issued. The Park Service has given the public 30 days to comment before deciding what to do.

WPPSS PULLS OUT NO. 1

The Washington Public Power Supply System has approved a new plan to proceed with construction of the recently mothballed plant 1 at Hanford, Washington. The plant was mothballed at the end of April because power forecasts for the Northwest indicated there would be no need for its power (*HCN*, 5/14/82). Despite the forecasts, WPPSS officials have devised a plan to resume construction of the plant in July, 1983. However, WPPSS officials will not decide until October, 1984 on a completion date for the Hanford plant.

TIMBER: NO AID, ONLY SYMPATHY

Even though Agriculture Secretary John Block said he sympathizes with congressional efforts to grant relief to timber companies which have been stuck with high-priced contracts to buy trees from federal lands, he said he will not support such relief. He specifically rejected federal aid for financially ailing International Harvester Company, according to the *Wall Street Journal*. Block said there is a good possibility the government will rewrite the contracts, which set a higher price on U.S. trees than the current market. Sens. Mark Hatfield (R-Ore.) and James McClure (R-Idaho) have introduced a bill that would allow companies to terminate as much as 40 percent of the contracts. The *Journal* reported the plan could possibly cost the Agriculture Department \$1 billion in revenues.

BOISE CASCADE PINCHED

Boise Cascade Corporation permanently terminated 92 employees at their corporation headquarters in Boise, Idaho, at the end of May. Company officials told the *Idaho Statesman* that the permanent staff cuts were issued rather than temporary layoffs because the company does not expect to see an improvement in the timber industry in the near future. The cuts represent almost 11 percent of the Boise staff.

SCHWINDEN: MORE WILDERNESS

Montana Gov. Ted Schwinden (D) will recommend expanding the boundaries of the Lee Metcalf Wilderness, according to the *Missoulian*. Schwinden's recommendations will call for approximately 50,000 more acres than is asked for in Sen. John Melcher's (D-Mont.) bill. Wilderness advocates were disappointed in Melcher's bill which called for a 202,000-acre Metcalf Wilderness and a 72,000-acre special management area near Monument Mountain. There are about 400,000 roadless acres in the area.

DRILLING NO HARM TO GRIZZLIES

The U.S. Fish and Wildlife Service said U.S. Borax Company's plans to drill between four and nine mineral core sample holes in the Cabinet Mountains Wilderness Area in Montana would not harm grizzlies. The FWS opinion was based on a plan to keep Borax out of the Chicago Peak area, which has suffered a decline in grizzly habitat after Asarco, Inc. proceeded with projects in the area last year. The plan will also mandate several road closures in the vicinity of the wilderness and delay some planned forest projects for the area.



The dam-nation of Kootenai Falls

by Don Snow

Fishermen know the river well. It's one of Montana's 10 best, a blue-ribbon trout stream that rears large, healthy fish and fills delighted anglers' creels. The river is the Kootenai in northwestern Montana. It rises in British Columbia, flows south, then makes a broad U-turn across a corner of Montana and the Idaho panhandle. Then, like any good tourist, it heads back home.

Many Montanans have heard of the Kootenai, but few have fished it. Even fewer realize what a giant of a river it is. Only one other river in the state, the Clark Fork, carries more water across a Montana border. No other Montana river sustains populations of white sturgeon, a saw-backed anadromous fish that sometimes reaches 1,000 pounds.

Nearly half of the Kootenai's 100-mile-long trek in Montana is consumed by Lake Koocanusa, not a lake at all but a string-bean of a reservoir created by the Libby Dam in 1972. The Libby Dam is a federal power project built by the Army Corps of Engineers and operated by the Bonneville Power Administration. Now a consortium of rural electric cooperatives, the Western Montana Generation and Transmission Association, wants to dam the Kootenai again. The site they have chosen is bound to cause them trouble.

Kootenai Falls, according to geologists, is the last major water fall in the Northern Rockies. It is a spectacular series of cascades a few miles east of Libby along U.S. 2, where the big river drops 75 feet in a little less than a mile. Anglers say that the falls are the heart of the river, producing large trout and high catch rates. But officials of the Western Montana G & T say that the 10,000 cubic feet per second of rushing water there is just too much wasted energy. They want to harness its hydroelectric potential.

The dam they propose is a 30-foot-high concrete curtain spanning the river at the head of the falls. It would create another skinny reservoir 3.5 miles long, inundating a popular fishing spot, the China Rapids, and other recreation sites.

More than 90 percent of the river's flow would drop into a half-mile-long tunnel behind the dam, then rush through a series of underground penstocks where it would turn a turbine capable of generating 144 megawatts of power. The average annual output,

Lincoln County, where the dam will be built, continues to writhe with unemployment — 38 percent to be exact.

however, would be a reliable 58 megawatts, roughly the amount required by 35,000 customers.

Below the dam, eight-tenths of a mile of riverbed would be dewatered during low flows. Altogether, more than four miles of the river — including the spectacular falls — would become Koocanusa the Second.

Company officials point out that they have done everything possible to preserve the falls and keep impacts on the river to a minimum. "It's the most environmentally acceptable project that's ever been designed," said James Sewell, consulting engineer for the project. Sewell helped design the dam and power station for Northern Lights, Inc., the Sandpoint, Idaho utility that will actually own and operate the project. Northern Lights will use about one-fourth of the dam's output.

"We're putting the power station underground," said Sewell. "And we're letting about 750 cubic feet per second over the dam to mitigate the impacts on fish. That's quite a bit of power, frankly. That flow is 100 cfs lower than the river's historic low flow."

Sewell also notes that the builders will place concrete pads below the dam to spread the overflow evenly across the falls, making them look as natural as possible.

"Plus, we've spent about \$900,000 on the state's environmental impact statement," said Sewell, who proudly notes that the company complied willingly with the Montana Major Facility Siting Act.

But others in Montana, Idaho and British Columbia take issue with the utility's assessment. Conservationists do not believe the utilities have done enough to mitigate impacts on the fishery, nor do they believe that the dam's 58 megawatts are needed. Kootenai Indians are upset with the proposal because they regard the falls as a sacred place, central to their religious practices. Altogether, 10 parties, including

three Kootenai tribes and several conservation groups, have filed an administrative appeal with the federal government against Northern Lights and the Federal Energy Regulatory Commission, the agency charged with licensing the project. Though not widely publicized, the issues raised by the plaintiffs against the dam carry regional and national significance.

Kootenai Falls is now under consideration by the National Park Service as a Natural Landmark, an area that possesses unique natural significance and therefore deserves preservation. Missoula geologist David Alt, who co-authored a study of potential landmarks in the Northwest for the National Park Service, gave Kootenai Falls the highest priority rating as a National Landmark.

"It is certainly the largest and most outstanding waterfall in the northern Rocky Mountains," Alt said. "I know of no other comparable waterfall in the region."

That fact alone has stirred up conservationists' rage against the dam proposal. Libby Rod and Gun Club member McGregor Rhodes of Libby said of the falls, "It's a scenic wonder. It ought to be preserved as is." Said Steve Loken, a member of Save the Kootenai Association, "Kootenai Falls can do quite well without Northern Lights' proposed improvement. The Kootenai River has already paid a heavy price for energy production with Libby Dam. Co-op members are paying a heavy price, too." Both Save the Kootenai and the Libby Rod and Gun Club are intervenors in the FERC licensing proceedings.

As Loken pointed out, several of the partners in the Kootenai Falls projects, including the Missoula and Ravalli County electric co-ops, took a financial beating last January when two nuclear units in the Washington Public Power Supply System were terminated due to declining demand for power. But now, in spite of electrical demand that has

dropped even lower, Northern Lights and its Western Montana G & T partners appear ready to spend an estimated \$226 million at Kootenai Falls. Loken said that power co-op members should question such an expenditure, especially when a vigorous conservation program might more than fulfill expected demand.

Economist Thomas Power agrees. As an expert witness for the intervenors, the University of Montana economist has examined the issue of need for Kootenai Falls power. He said that the utilities' method of arriving at need projections was seriously flawed. "They are not based upon professional energy analysis, but on each of the utility's projections of past consumption patterns," said Power. But those consumption patterns have changed drastically and they will continue to change in the future, he maintains.

"There is no consistency among the utilities in how they adjusted past usage patterns to reflect future conditions," he said. "History is not some monolithic force which merely duplicates past performance. None of the individual demand projections meets today's professional standards."

Power said that even the Bonneville Power Administration, a power planner that has historically predicted soaring electricity demands, is now forecasting record low growth in demand through the end of the century. But the Western Montana G & T, according to Power, predicts growth that is 50 to 100 percent higher than any other forecasters in the Northwest.

James Sewell, consultant to Northern Lights, says there is a good reason for his company's higher predictions. "Eastern Washington, northern Idaho and western Montana are growing faster than the rest of the region," he said. "We've had a nine percent increase in customers over the past two years. Based on what we know right now, Kootenai Falls will not meet the needs for electricity after 1995."

Sewell acknowledged that there are more sophisticated modelling techniques than those used by the Western G & T. "We didn't use one of those fancy models," he said. "But you know, it's a matter of debate whether they're all that much better than the old seat-of-the-pants method anyway."

Another matter of debate raised by the intervenors is whether the utilities are spending enough on conservation and whether cheaper power is available to them from other sources.

Erval Rainey, Kootenai Falls project manager for Northern Lights, said his company has already maximized the potential for conservation. "Years ago we started a campaign to sell electric space heating, but we never promoted it without urging people to insulate," he said. "Conservation has pretty well been done already."

But Thomas Power disagrees. "They have not estimated the maximum potential for load reduction through conservation," he said. "They are spending less than three percent of their budgets on conservation."

Power believes that electricity from Colstrip Units 3 and 4, if made available to the cooperatives, would be cheaper than Kootenai Falls power — and that margin, he said, does not even include

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Lance Schelton

Kootenai Falls, Montana

“We’ve already consumed a certain amount of natural resources at Colstrip...why destroy the state’s last great falls, too?”

— Wilbur Rehmman,
former executive director, Montana Wildlife Federation

the \$12 million annual loss of the Kootenai Falls recreational resource which economists say is a moderate replacement price. Under a condition in the original license to build Colstrip 3 and 4, the Montana Power Company must make a small portion of the power available to rural co-ops. So far, MPC has not extended the offer to the Western Montana G & T.

Wilbur Rehmman, former executive director of the Montana Wildlife Federation, said that the Colstrip permit was awarded with the understanding that Montanans should receive some of the energy since the state accepted Colstrip’s impacts.

“The Board of Natural Resources and Conservation, when they awarded the permit, said that some of the power ought to go to Montanans,” said Rehmman. “Since the power is generated in Montana, where the sacrifices are made, the state should get some of the benefits directly.”

Rehmman doubts whether the Western Montana G & T really needs the 58 megawatts produced by the falls, but if it does, he said, the company should buy it from Colstrip. “We’ve already consumed a certain amount of natural resources at Colstrip, and Montanans have accepted the impacts. Why destroy the state’s last great falls, too?”

Rehmman believes that the outstanding natural character of Kootenai Falls ought to be preserved, and although his organization has intervened chiefly to save the fish and wildlife attributes of the area, Rehmman himself feels that

there are better reasons to preserve the falls.

He points out that, to the Kootenai Indians, the falls are not just scenic but sacred, and he says he can see why. “There’s a kind of otherness to those falls,” he said. “When you stand there you can feel their power. You can see how religious beliefs could be fastened there.”

“The tribal claim is the sleeper issue in the case,” he continued. “Sure, the falls are an important recreation area, but if that’s lost that won’t be the tragedy. The tragedy will be that the Kootenai will lose their major vision quest site. What could you give them as compensation for the loss? Two-hundred Bibles?”

Along with the National and Montana Wildlife Federations, three tribes of Kootenai Indians in Montana, Idaho and British Columbia have appealed to stop the project. The Kootenai base their case on religious freedom, guaranteed by the First Amendment of the Constitution. They say that elements of their deities live in the falls, and the Kootenais themselves use the area to seek personal visions that are inspired by these gods.

The Kootenai will not speak publicly about the exact significance of the falls, and in fact most of their testimony in the case remains confidential, to be viewed only by the judge and a few attorneys.

But Lawrence Kenmille, a Kootenai from Elmo, Montana, spoke generally of the falls’ significance.

“For many years we have kept the importance of the falls to ourselves, but with the dam proposal we have to stand up to protect it,” he said. “Kootenai Falls has been an aboriginal area and it has religious significance to us. (We) went there for a thousand years to pray. So you might liken it to a church site. We do not build our own monument. Nature builds a monument for us.”

Kenmille believes that the preservation of traditional Kootenai culture depends on the continuing integrity of the falls and other sacred places where tribal members journey on vision quests. “As long as we remain Kootenai, we have to retain our spiritual areas,” he said. “The preservation of our culture depends on them.”

Kootenai attorneys are seeking relief on the basis of the First Amendment and the American Indian Religious Freedom Act of 1978, which guarantees access to Indian places of worship as well as the right to practice traditional ceremonies. The attorneys say there is no way to preserve the integrity of the falls if it is dammed — damming it will essentially destroy it for the Kootenai.

How does Northern Lights view the religious rights issue? “They probably have a legitimate point, in a sense,” said Erval Rainey. “But how can you tell? It’s confidential. They’ve submitted testimony, and I haven’t seen it.”

Rainey said he isn’t sure the Kootenai even use the falls anymore, but if they do Northern Lights will provide access for them.

“We know a lot of people who say

they haven’t seen Indians around there for 75 years,” he said. “The Act says you can’t prohibit visitation to their shrine area, and we won’t change that.”

But the Indians say that visitation isn’t the point. They do not wish to worship a dam.

While the lawyers on both sides continue to clash their paper swords, and the state and federal regulatory agencies study the project’s merits, Lincoln County, where the dam will be built, continues to writhe with unemployment — 38 percent to be exact. Erval Rainey is quick to point out that the dam will create 500 jobs for at least four years, after which it will employ a permanent workforce of 25. “Sixty percent of Lincoln County wants it,” he said.

But among the other 40 percent are voices that decry the long-term benefits of the project. “We got promised a lot of jobs with the Libby Dam, too,” said McGregor Rhodes, “but there’s no guarantee those jobs will go to local people.” Rhodes believes that some of the county’s unemployment today was caused by workers who stayed on after Libby Dam was built.

“The Kootenai Project is just classic boom-and-bust,” he said. “And don’t forget, they’re not building it to create jobs. There’s lots of better ways to do that, anyway,” he said.

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Don Snow is a freelance writer in Stevensville, Montana and a frequent contributor to *High Country News*.

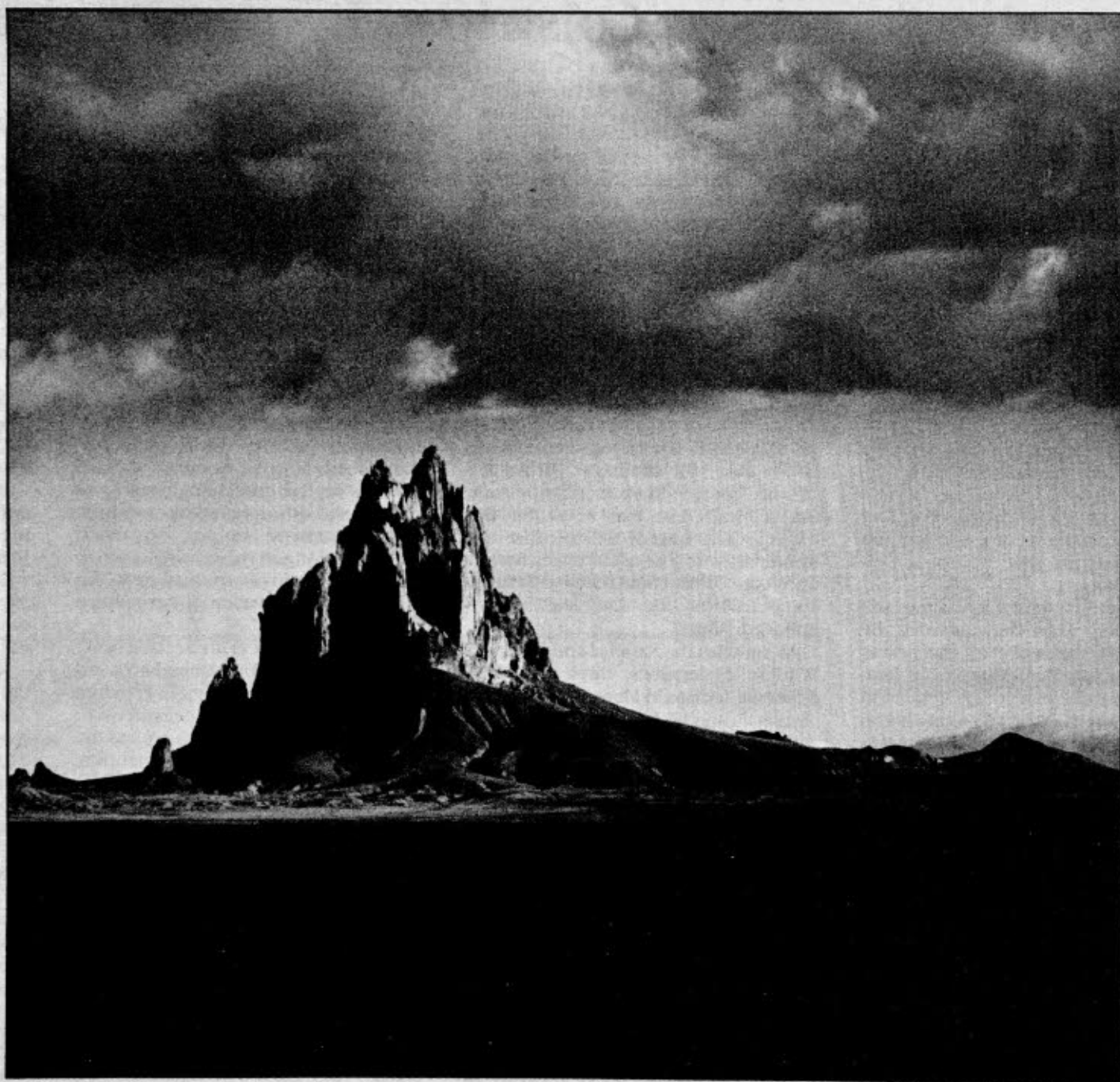
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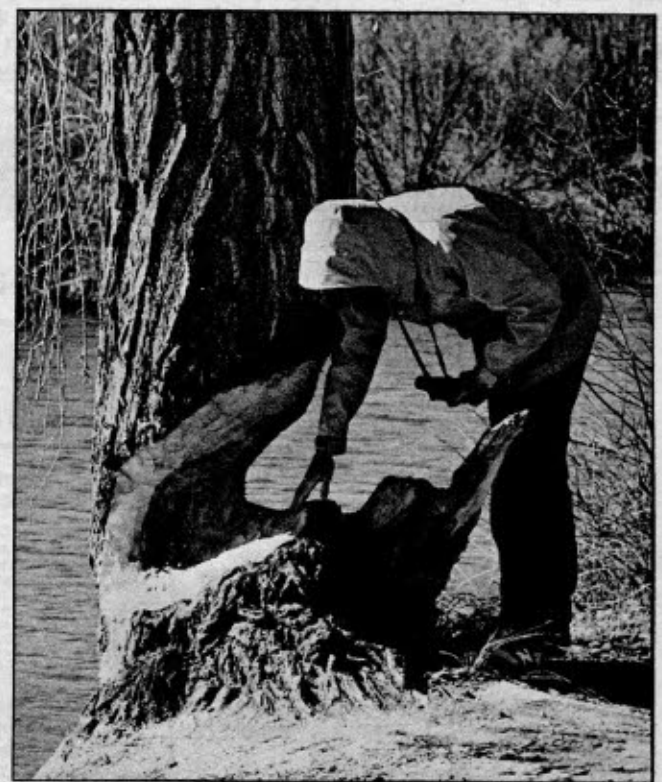
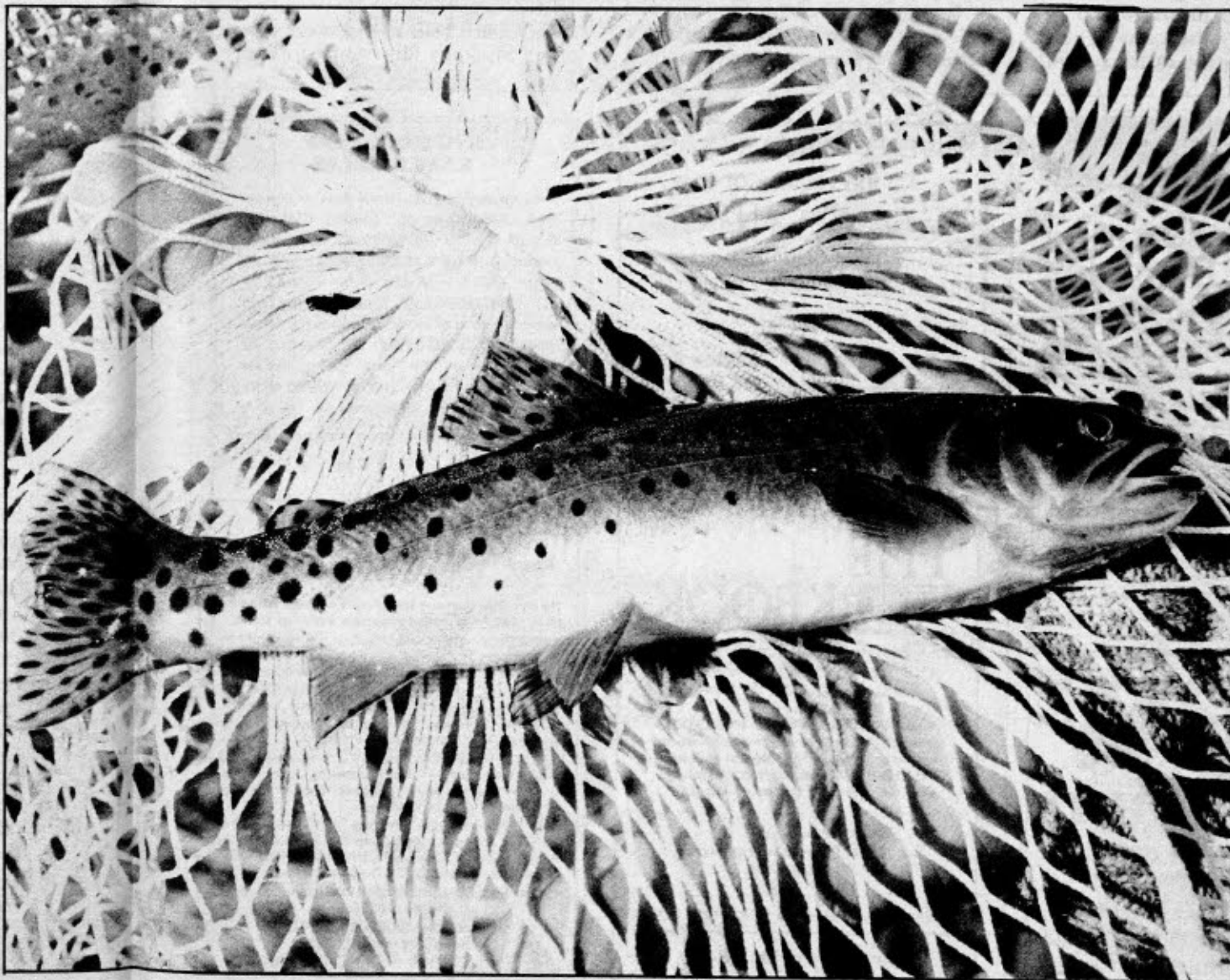
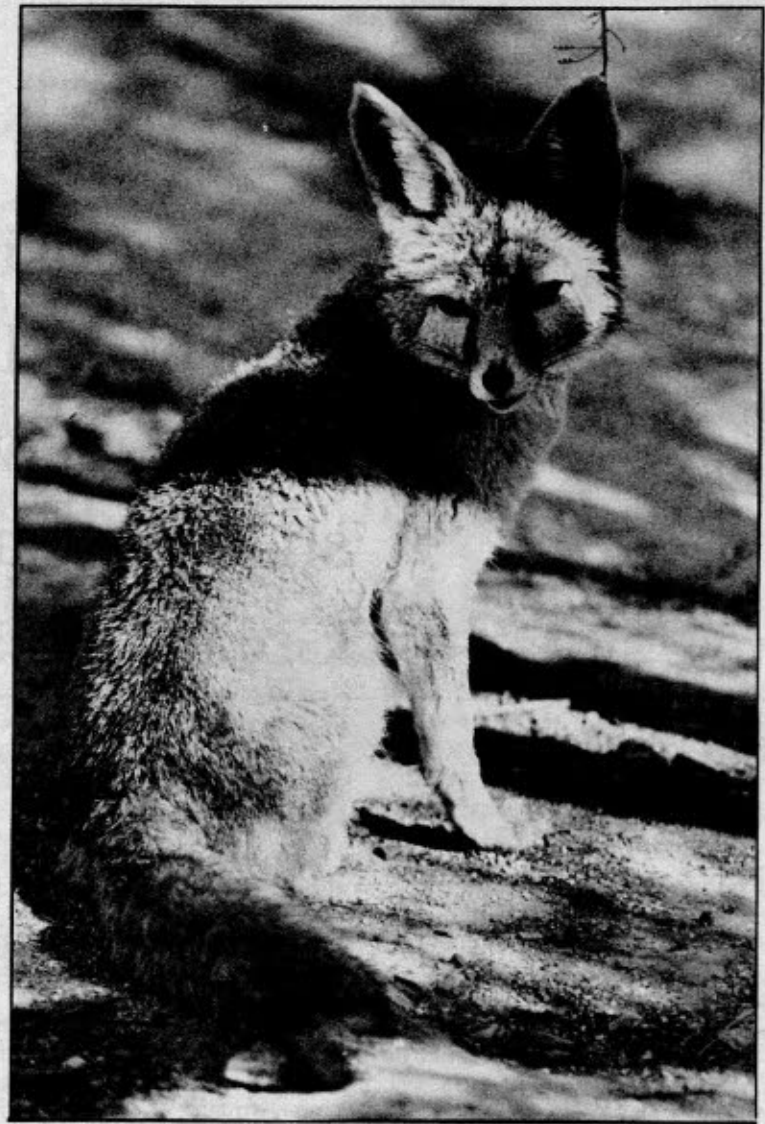
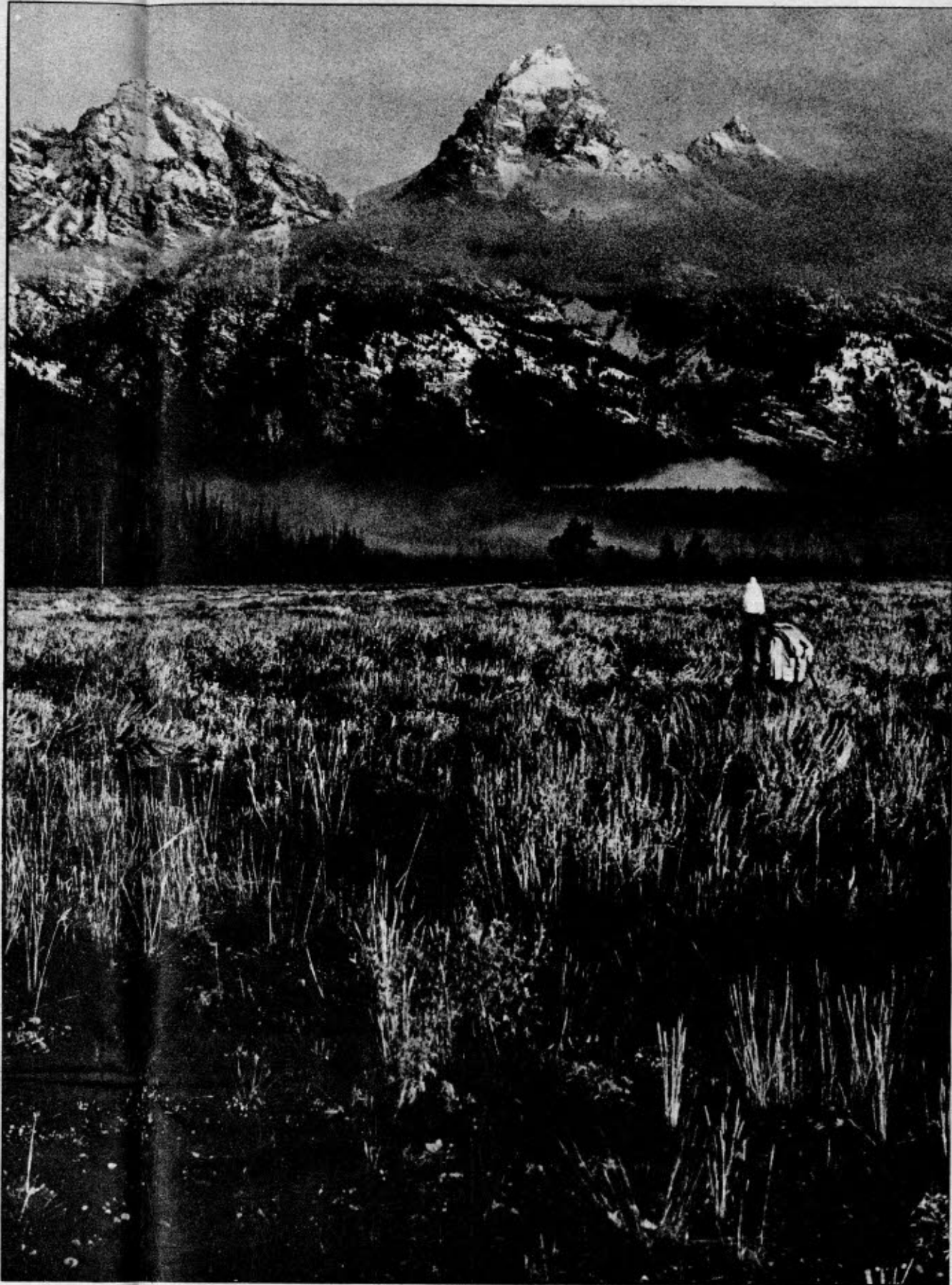
Kent and Donna Dannen are nature photographers whose work has gained international recognition for its unique viewpoint, aesthetic realism and high technical quality. Their photo subjects range from sweeping landscapes to intimate details, from wildlife to human interaction with nature. The Dannens combine extensive knowledge of natural systems and deep empathy with the inhabitants of those systems to create photographic images that lead eye and mind beyond the image to communion with the subject itself.

Often asked which of them "really" took a particular photo, the Dannens usually find this question impossible to answer. They maintain that they could teach their dog to press a shutter button. The conception of a photograph is what distinguishes a work of art from a snapshot. The Dannens combine their individual backgrounds, talents and personalities to conceive photos that are truly joint efforts.

Donna Dannen is a ranger/naturalist in Rocky Mountain National Park. Her skill in the visual arts extends also to watercolor, pencil and pen-and-ink. In each medium, her work has been used to illustrate various books and magazines.

Kent Dannen is an ordained minister of the Christian Church (Disciples of Christ) and writes a regular column about spiritual aspects of nature. He also teaches nature photography for the National Wildlife Federation. His photographic training includes undergraduate work in photojournalism at Kansas University and graduate study in art at Ohio University.





Clockwise from upper left: Lower Falls, Grand Canyon of the Yellowstone; Grand Teton at Sunrise; a kit fox; prickly poppy; beaver cut in cottonwood, Bosque del Apache National Wildlife Refuge near Socorro, New Mexico; greenback cutthroat trout, a threatened species, netted alive for transplant to Rocky Mountain National Park; Shiprock, near Four Corners; salisy and timothy.



Wisconsin Governor Lee Dreyfus said the Great Lakes states could become an "OPEC of water" and that his own state should "lead the charge in marketing Great Lakes water."

Great Lakes...

(continued from page 1)

focused on the two consumptive uses considered most likely to tap into all that water: agriculture and energy development in the High Plains.

The agricultural boom in the central and southern plains, currently supported by the "mining" of the Ogallala Aquifer, is by now a familiar story. So is the drying up of that agriculture as the Ogallala is depleted.

The President's Council on Environmental Quality reported in 1981 that severe drawdowns in the aquifer and increased energy costs for pumping water are jeopardizing the multi-billion dollar agricultural industry. Water that cost \$1.50 per acre-foot to pump in 1970 cost about \$60 per acre-foot in 1980.

The idea of moving water from the Great Lakes to the south and west to rescue High Plains agriculture is not as technically difficult as it sounds. Water could easily be sent into the Mississippi River, either by digging short canals into Mississippi tributaries or by expanding existing diversions, such as the Chicago Canal, which uses Lake Michigan water to flush that city's waste water down to the Mississippi.

The increased water in the lower Mississippi could then be pumped west or could offset lower flows caused by increased consumption of High Plains surface waters like the Arkansas River.

High lake levels frequently cause

extensive shoreline damage, and the federal government has considered increased diversions during high lake level periods.

But the economics of such diversions are more complicated than the engineering. "The roof is not going to come down on High Plains agriculture," said Harvey Banks, who directed the recently completed High Plains-Ogallala Aquifer Study. "Farmers are beginning to use water more efficiently, and can make the adjustment to dryland farming. There is no need for immediate action to rescue the High Plains."

Banks estimated that even the diversion of surface waters from adjacent areas — water from the Missouri or Arkansas Rivers — would be prohibitively expensive: \$400 to \$800 per acre-foot in 1977 dollars. "That is far beyond the farmer's ability to pay," he said, "and would require a massive infusion of federal funds. So even these nearby interbasin transfers are far down the road."

University of Michigan economist Paul Nickel and economic consultant Bruce DeNuyl looked specifically at the economics of using Great Lakes water for High Plains agriculture, and agreed with Banks. "It seems highly unlikely that an interbasin transfer of water from the Great Lakes for the purpose of supplying irrigation water to the West could be justified by any economic criteria," they concluded.

Nickel and DeNuyl argue that benefits to Western agriculture would be more than offset by the costs of construction and operation of the system,

problems caused by lower lake levels, and the displacement of agriculture from other regions.

If experts question the economics of diverting Great Lakes water for Western agriculture, they also feel diversions for coal slurry lines are minor enough not to worry about.

Although even small changes in lake levels can cause major impacts — studies show that even a three-inch lowering of Lakes Michigan and Huron can cause \$46 million annual losses in navigation and hydropower generation — the Powder River Pipeline proposal would amount to an extremely small lowering of the level of Lake Superior.

But the complex issue of the nation's dependence on fossil fuels and the need for water to convert those fuels into usable forms of energy poses a more difficult problem, and one with greater significance for the Northern Plains.

In a study done for the National Academy of Sciences in 1978, two California researchers found that, under any reasonable assumptions about coal use, synfuel production and electricity generation, water consumption in the Missouri and upper Colorado River basins would greatly exceed water flows during dry years. Under intensive coal and synfuels development, the problem would be severe.

Looking at the same problem, the National Research Council cautioned in 1977 that "since energy projects are such capital intensive developments, it seems foolhardy to continue with these

projects without a guaranteed water supply in the face of a severe drought."

Enter the Great Lakes. While attention is now focused on water for coal transportation, it is possible that those enormous stores of water could be looked on as *insurance* for guaranteeing the full exploitation of energy resources in the Northern Plains. Given that political decision, not a drop of Great Lakes water would ever need to be pumped West to have a tremendous impact on the region.

Precisely, the political stakes are the clearest in all the talk about the diversion of Great Lakes water — who controls the use of resources located in one region but demanded in others? And just the increasing awareness and discussion of the issue could have an effect on the politics of resource control in other regions.

When Montana passed its controversial severance tax on coal — most of which lies under federal land — it provoked both a legal and political response. Coal companies and Midwest utilities fought the tax to the U.S. Supreme Court, and while the tax was upheld, the court established guidelines for such taxes in the future. The tax also led to discussions in the Senate about federal limitations on state resource severance taxes.

South Dakota's recent exercise of state control over another resource — interstate waters — promises to raise the political ante.

The South Dakota legislature agreed to sell Missouri River water to Energy

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HCN CONTEST NO. II. You did so well on HCN Contest No. I, that we are offering a brand new series HCN T-shirt for the winner of this new competition. For HCN Contest No. II, invent your own cause celebre, e.g. "Free the Dave Clark Five," or the "Society for the Perpetuation of Endangered Diseases. Don't let them eradicate smallpox without an environmental impact statement." Include a two paragraph publicity packet describing your new organization. Winning entries will be selected for their originality, humor and irreverence. First place gets a T-shirt, second and third places will be reprinted in HCN and get glory and fame, but no prizes. Tie goes to the runner, decision of the judges is final. Send entries before July 9 to Judges, HCN, Box K, Lander, Wyoming 82520. Please state T-shirt size with entries.

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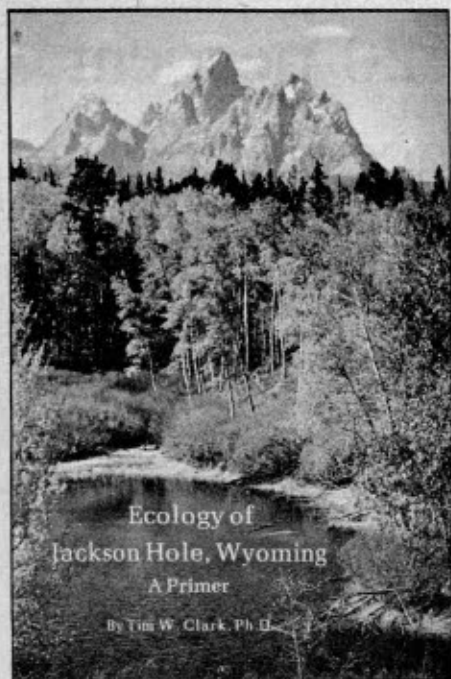
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Contact Joyce at Travel Services Unlimited, 238 Main St., Lander, Wyoming 82520; (307) 332-6500 to learn more about A WIND RIVER EXPERIENCE IN TIME AND SPACE and about WOMEN IN THE WILDERNESS. These backpacking experiences will occur in July in the Wind River and Absaroka Mountains of northwestern Wyoming with outdoor educators and leaders who wish to share their love of the wilderness.

Keystone Science School
The Keystone Science School announces the schedule for its 1982 Preservation of Species workshop series:
EXTINCTION: A GLOBAL ISSUE, July 9-11, taught by Dr. Elliott Norse, Director of Science and Police for the Center for Environmental Education, Washington, D.C.
URSUS ARCTOS HORRIBILIS: THE MARGINS OF SURVIVAL, August 6-8, taught by Dr. Charles Jonkel, Professor, University of Montana, and head of the Montana-based Border Grizzly Project.
SPECIES RECOVERY: QUEST TO RETURN THE BANISHED, October 1-3, directed by John Torres, Chief, Nongame and Endangered Species Section, Colorado Division of Wildlife.
THE ENDANGERED SPECIES ACT: THE SNAIL DARTER AND BEYOND, November 5-7, directed by Robert J. Golten, Counsel, National Wildlife Federation Natural Resources Clinic in Boulder, Colorado.
Tuition: \$100 per workshop (\$140 with room and board). College credit available.
KEYSTONE SCIENCE SCHOOL
Box 70, Montezuma Route
Dillon, Colorado 80435 (303) 468-5822

BOOKS



Ecology of Jackson Hole, Wyoming: A Primer
Tim W. Clark, Ph.D.; 1981, \$4.95, paperback, 99 pages. Illustrated by Wendy Morgan; published by T.W. Clark. Available from Box 2705, Jackson, Wyoming 83001.

Review by Betsy Bernfeld

One of the best places I've found to gain an overall view of Jackson Hole is from a big boulder (I recommend Falling Ant or Cut Finger Boulder) with Tim Clark's new book in hand. *Ecology of Jackson Hole, Wyoming* is both a technical and philosophical primer.

To limit an enormous subject like ecology to the microcosm of Jackson Hole brings it out of the clouds and translates it into personal action in the present world. Clark begins at a level you can perceive from your rock — soil, wind, water, weather, geology. Average

annual snowfall is about 120 inches; the Tetons are still rising about one foot every 500 years; low concentrations of phosphorous and nitrogen limit the growth of algae in Jackson Lake; summer sunlight may measure 8500 foot-candles of brightness.

He proceeds to populations of organisms. Several decades ago about 80 percent of the elk population migrated east of Grand Teton National Park; today nearly 80 percent migrate through the Park.

In ever-broadening circles, Clark takes you through the 12 "biotic communities" of Jackson Hole — aquatic, meadow, lodgepole pine, etc. — where certain plants associate with certain animals. Finally he focuses on the entire "ecosystem," where plants, animals and the physical environment all interact.

Somehow Clark packs in 93 definitions of ecological terms and principles and even kilocalories/m²/yr without destroying his readability. Part of this success at delighting readers with technical information can be attributed to the generous number of photographs and incredible number of maps, charts and diagrams — 29 in 99 pages — drawn by Wendy Morgan, an artist-anthropologist-resident of Jackson Hole.

Clark, who holds a Ph. D. in zoology and has resided in Jackson for eight years, said he has aimed his textbook toward "beginning as well as advanced students of natural history and ecology who are new to this area." It seems even more appropriate for people who plan and live in Jackson Hole.

Since human settlement of the valley in 1884, many species of wildlife have been obliterated and others seriously reduced in numbers. Natural vegetation has been altered, several streams polluted and human overcrowding introduced. Clark hopes that knowledge of ecology will be considered in the planning of Jackson Hole's future. He says the present Teton County Comprehensive Land Use Plan is a "compromise which falls far short of providing real protection for many valuable natural and scenic resources in Jackson Hole."

In the past few years ecological reports have influenced the Forest Service and National Park to shift from strict fire suppression to a more flexible fire management program. Fire has been a major force in the shaping of the biotic communities seen today in Jackson Hole. Because of fire suppression, aspen communities have been deteriorating, while sagebrush and coniferous forest communities are increasing. In general, a more homogenous ecosystem, which supports fewer wildlife species, is being created.

The last chapter of Clark's book is "Personal Views." It is not merely his personal views; Clark incorporates ideas from 43 references. Treading precariously on an ecological tightrope (so as not to fall into environmentalism), he writes, "The more we know about the 'laws of nature' governing our existence, the better we can anticipate their effects on us and the more likely we are to produce an adaptive strategy for our long-term survival with a high quality of life for all." He calls for an evolution in the relationship of mankind to the environment.

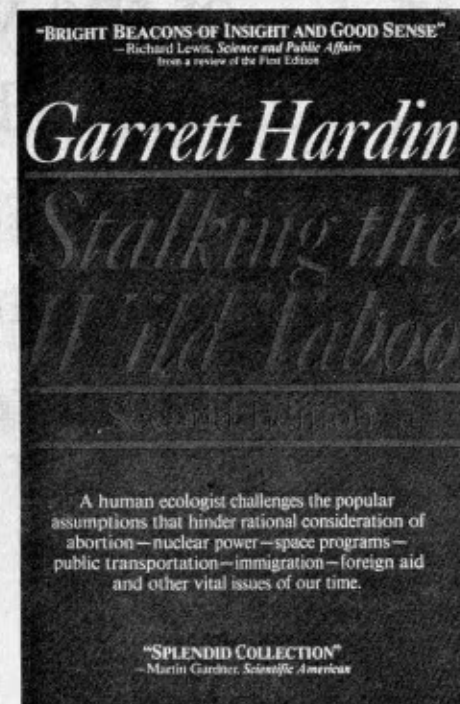
While perched on your boulder, probably nibbling, sniffing or scratching like the squirrel nearby and trying to figure out your relationship with the view, you may flip back to the three quotes with which Clark begins his book. They exemplify the proposed evolution of human thought.

The first one is Helen Mettler's "God bless Wyoming and keep it wild." That's a fairly easy one.

Then comes a quote from Aldo Leopold's *A Sand County Almanac* — the one about all creatures being fellow-voyagers and knowing that although we people are captains of the ship, we are not the sole object of the quest. I can understand that one, too, but while I'm still trying to realize it, Clark hits with the third — a quote from *The Dolphin Papers*, by John Rodman.

Rodman suggests that nature is

merely a paradigm invented by humans to experience the world without falling into vertigo. One may come up with a proper place in the paradigm, but the "full impact of the theory of evolution" is still to come. Don't try to understand that one. You may fall into vertigo and off the boulder.



Stalking the Wild Taboo

Garrett Hardin, 1978; 2nd. ed.; \$11.95, cloth; \$7.95, paper; 284 pages. William Kaufman, Inc., Los Altos, California.

Review by Peter Wild

Environmentalist Garrett Hardin advocates creating outdoor slums in our recreation areas. To him, feeding the hungry is a crime. Scientists profess reason but often act by faith. Earthquakes should not be predicted.

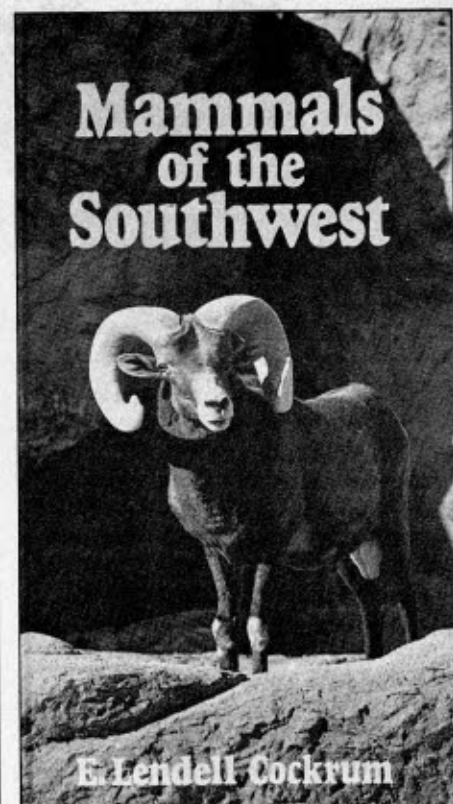
To shed some light on Hardin's controversial positions, first a little biography. He "converted" to the environmental movement fairly late in life — in his late forties — but did it with a vengeance. In 1963, he delivered a speech on the pros and cons of abortion, a tabooed topic, he reminds us in these collected essays, that most newspapers of the day quailed to mention. The administration at the University of California at Santa Barbara, where he taught biology, also quailed. Twin-armed with reason and tenure, Hardin persevered.

Since his career-threatening beginning, Professor Hardin not only has survived but prospered, penning two of the environmental movement's landmark documents, "The Tragedy of the Commons" and "Lifeboat Ethics." In the process of questioning the nation's assumptions, he has crossed swords now and then with fellow scientists, notably Barry Commoner. Yet he continues to spar, jabbing, parrying, dancing with deft footwork around our present-day taboos.

That word conjures up the superstitions and blind spots of other cultures — the haunted forest, the sacred cows. Yet our "rational" civilization, as Hardin reveals, is full of sacred cows. Until very recently, the nation has worshipped them: the nuclear reactors that must be built if the Republic is to survive; the automobile industry that must crank out ever more gas-guzzlers if we are to shorten the unemployment lines. Though the inherent fallacies leap out for most environmentalists, the wrongheadedness continues to direct the affairs of the country — witness the present situation in Washington. In *Stalking the Wild Taboo*, Hardin touches on such aberrations, but for the most part he pursues more elusive game. Guided by reason honed with wit, Hardin stalks the phantoms which often turn out to be based on our desire to believe what is flattering to our egos: our love of technology, the sanctity of the family, our compassion for the poor.

Such unexamined attitudes have massive impact on how we get along with the earth. In questioning them, Garrett Hardin offends Protestants, Catholics, Millerites, silviculturists, and Hindustanis. So if you belong to any of these

groups, or if the statements at the beginning of this review puzzle you, you might turn to *Stalking the Wild Taboo* for further intellectual confrontation. We nodded, as it is reported Homer occasionally did, when this revised edition of Hardin's essays first appeared. Because it shows once again, and eloquently, that ecology is the subversive science, we recommend it highly, if belatedly.



Mammals of the Southwest

E. Lendell Cockrum, \$11.95, cloth; \$5.95, paper. 176 pages. The University of Arizona Press, 1982. Drawings.

Review by Peter Wild

That furry thing that just streaked through the sagebrush looked like a rabbit, but what kind? If it had a rusty patch at the nape of the neck, it was an eastern cottontail. On the other hand, if it displayed greatly elongated hind legs and black on the dorsal surface of the tail, you can bet it was a black-tailed jack rabbit, not a rabbit at all but a hare. In the fine tradition of Olaus Murie's *A Field Guide to Animal Tracks*, E. Lendell Cockrum offers a handy tool for field identification, in this case for the mammals of southern Utah and Colorado, for all of Arizona and New Mexico, and for adjacent areas of Texas, Mexico, California, and Nevada.

For ready reference, Cockrum divides his text into sections on hooved animals, carnivores, rodents, hares and rabbits, and bats. Each species gets just two pages of minimal but essential information. Exquisite drawings by Sandy Truett, accompanied by small map inserts, illustrate the major characteristics and ranges of individuals. Facing pages run through the basics of identifying features, particulars of measurements, habitat, and life habits. Even with this simplified information, there are surprises along the way. Cockrum, an authority on Chiroptera, mentions over 20 species of bats, giving us an insight into the wealth of life in the West's nighttime skies. More dramatically, we learn that the jaguar, that large spotted cat associated in the popular imagination with jungles and man-eating depredations, once ranged almost into southern Colorado.

In a few places the author might have been kinder to wildlife neophytes. Our inquiries as to the location of the nearest bands of pig-like collared peccary or of the periscope-tailed coati likely will bring puzzled looks from local folks. Cockrum might have inserted the common names of javelina and chulo to save us the embarrassment. However, for the most part he keeps the tenderfoot in mind. Though the expert at field identification will find little of use here, for those of us not entirely sure of the differences between a rock squirrel and Gunnison's prairie dog this is just the prompter to have along in the side pocket of a pack.

BOOK NOTES

Practical Photovoltaics: Electricity from Solar Cells
Richard J. Komp, 1981. \$14.95, paperback, 181 pages with photographs and illustrations. Aatec Publications, P.O. Box 7119, Ann Arbor, Mich. 48107. An understandable technical guide to the theory, design, manufacture and future of solar cell technology including step-by-step instructions for the assembly of solar cell arrays. Appendices include a glossary of technical terms.

Roughnecking It
Chilton Williamson, Jr., 1982. Simon & Schuster, New York, \$15.50. 288 pages. A very well-written book about life in the Wyoming oil patch, weakened somewhat by the self-conscious presence of the author, a transplanted easterner who tries very hard to become a part of it all. The section on the trial of Ed Cantrell is excellent reporting.

Vegetarian Medicines
Clarence Meyer, 1981. \$6.95, paperback. 92 pages with bibliography. Sterling Publishing Co., Inc., Two Park Ave., New York, NY 10016. The author discusses 18 common food plants which have specific healing properties, then lists a number of ailments and describes the remedies for them, often with a bit of history.

Healing Herbs: For Arthritis and Rheumatism
Alexandra Donson, 1982. \$6.95, paperback, 143 pages with glossary, bibliography and illustrations. Sterling Publishing Co., Inc., Two Park Ave., New York, NY 10016. A description and illustration of 36 herbs used by the Chinese to cure many forms of arthritis, rheumatism and other joint diseases. Recipes included.

BULLETIN BOARD

NEW LAND USE BOOKLET AVAILABLE

The School of Living Land Committee has prepared a booklet which details a "gentle" approach to human use of the earth's resources. It tells how a community land trust and land users might interact "in the best interest of the land itself while achieving modest material desires becoming to our species." Copies are available for \$2.50 plus 50 cents postage from Heathcote Center, 21300 Heathcote Rd., Freeland, Md. 21053.

COMMUNITY TECHNOLOGY WORKSHOP

The Farallones Institute of Occidental, Ca., will host its third Community Technology Workshop July 25-Aug. 28. The workshop consists of four two-week intensive courses on low-cost weatherization/conservation (July 5-17), solar water heating (July 19-31), solar space heating (July 19-31), solar space heating (Aug. 2-14) and community food systems (Aug. 16-28). Costs of the residential programs is \$350 per course, with scholarships available to low-income applicants. For information, contact Betsy Timm, 15290 Coleman Valley Rd., Occidental, Ca. 95465 or (707) 874-2441.

WHITE RIVER DAM EIS

The BLM has released its final EIS on the White River Dam, an earthen dam proposed for a site approximately 40 miles southeast of Vernal, Utah. The EIS includes findings that the proposed project would not jeopardize the continued existence of three endangered fish species: Colo. squawfish, humpback chub and bonytail chub. Copies of the EIS may be obtained from the Vernal and Richland BLM district offices or from the Utah state office, 136 East South Temple, Salt Lake City, Ut. 84111.

"THE PATH NOT TAKEN"

Nebraska's Center for Rural Affairs has just released a report on agricultural research decision-making in the Animal Science Department at the University of Nebraska. That may not sound terribly exciting, but the report looks at the way in which private funds from agribusiness firms, trade associations and commodity groups influence the direction of research projects. It also includes a discussion of the public policy issues involved in research accountability. For a copy of "The Path Not Taken," write the Center, Box 405, Walthill, Neb. 68067.

MONTANA STUDIES SMALL-SCALE HYDRO

Montana's Department of Natural Resources and Conservation and the USGS are studying stream flows on 40 streams in northwestern Montana to determine the potential for small-scale hydroelectric development. The data will also be used to predict the hydroelectric potential of other streams in the area. For further information, contact Paul Cartwright, MDNRC, 32 S. Ewing, Helena, Mont. 59601 or (406) 449-3780.

FINAL TAR SAND RULES

The Interior Department has issued its final rules for converting oil and gas leases and valid claims based on mineral locations to combined hydrocarbon leases. The new rules will give certain tar sand leaseholders rights to oil and gas deposits on their claims, and certain oil and gas leaseholders rights to asphalt, bitumen or bituminous rock, including tar sand. The rules were published in the May 24 *Federal Register* and apply to 11 Special Tar Sands Areas in eastern Utah.

MONTANA WILDERNESS STUDY WALKS

The Montana Wilderness Association is offering a series of Wilderness Study Walks this summer to acquaint Montana residents with specific threatened roadless areas and to have a good time in the woods. July trips include: North Fork of the Flathead, Tuchuck Rendezvous, July 3-5; Le Beau Area, Talley Lake, July 10; Columbia Mountain to Strawberry Lake-North Swan Range, July 17-18; Granite Creek, Middle Fork of the Flathead, July 24; Gallatin Range Crest, Hyalite, Porcupine, Buffalo Horn Wilderness Study Area, July 10-12; West Big Hole Mountains, July 31-Aug. 1. For more information write: Montana Wilderness Association, Box 635, Helena, Mt. 59624.

MORE OSM RULE CHANGES

Interior's Office of Surface Mining has proposed changes in the rules governing coal exploration. The new rules would require that notices of intent to conduct exploration be filed only when exploration activities might "significantly disturb" the natural land surface rather than in all cases. If requested, a public hearing on the proposed changes will be held June 16 in the second floor conference room of Brooks Towers, 1020 15th Street, Denver, Colo. To request a hearing or obtain additional information contact Jerry R. Ennis, OSM, 1951 Constitution Ave., N.W., Wash. D.C. 20240 or (202) 343-7881.

WYOMING CHAUTAUQUA '82

Wyoming Chautauqua '82, a five-day series of cultural programs and workshops reminiscent of the traveling tent Chautauqs that visited the West between 1904 and 1925, will visit four Wyoming communities this July. The summer tour will begin in Dubois, July 7-11, and move on to Powell, July 14-18; Gillette, July 21-25; and Saratoga, July 28-Aug. 1. Donations will be accepted from patrons at the programs, and children and senior citizens will be admitted free.

INTERNATIONAL ENERGY TOURS

Michigan's Jordan College is offering four international energy tours in the next year or so. The first is a solar tour of France, Oct. 13-24, followed by an energy tour of Hawaii, Dec. 4-12; energy tour of Israel, Feb. 17-Mar. 1, 1983; energy tour of Australia/Far East, Aug. 11-27, 1983; and a solar tour of Spain, Nov. 1-8, 1983. For more information, contact L. Bouwkamp, Jordan College, 360 W. Pine St., Cedar Springs, Mi. 49319.

VOLUNTEER KITS AVAILABLE

The 1982 Volunteer Recognition Kit, published by the National Center for Citizen Involvement, Box 4179, Boulder, Colo. 80306, contains articles on how to prepare press kits and press releases, as well as tips and ideas for starting volunteer programs. Cost is \$9.95.

DESERTIFICATION REPORT

The Interior Department has issued a new report titled "Desertification in the U.S.: Status and Issues." Prepared over a two-year period by an interagency task force, it assesses the general condition and changes in quality of western arid and semi-arid lands. The report is available for \$7.50 from the Superintendent of Documents, U.S. Government Printing Office, Wash., D.C. 20240.

NEW ENVIRONMENTAL GROUP FORMED

The High Plains Alliance, a new Wyoming environmental group calling itself "more a spiritual force than a formal organization," is now being formed. As one of its first projects, the group is offering a \$2 "Letter to the Editor" kit listing state and regional newspapers and including a fact sheet to help recipients put together a strong letter. To obtain a copy of the kit or more information on the group, write High Plains Alliance, Box 197 D, Buffalo Star Route, Sheridan, Wyo. 82801.

"WELCOME TO MY WEST"

"Welcome to My West" is the title of an exhibit on display throughout the summer at the Buffalo Bill Historical Museum in Cody, Wyo. The show includes artifacts, letters, photos and artwork significant in the life of Irving H. "Larry" Larom, a colorful western character famed as a conservationist, collector and dude rancher.

WILDLIFE IMPACT SYMPOSIUM

The Thorne Ecological Institute has just announced a fall symposium on "Issues and Technology in the Management of Impacted Western Wildlife" to be held Nov. 15-17 in Steamboat Springs, Colo. Sessions will focus on cumulative and secondary impacts from energy and related development, mitigation and sampling techniques, and sensitive wildlife habitat management. For more information, contact Robert Comer, Thorne Ecological Institute, 4860 Riverbend Rd., Boulder, Colo. 80301.

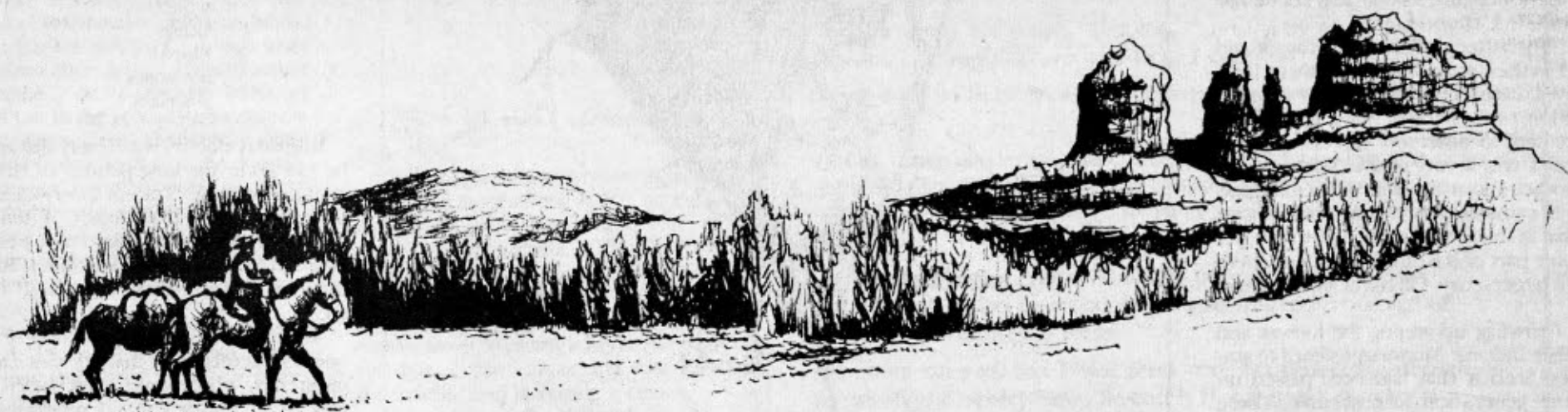
FLYING HIGH IN BOISE

The Idaho Raptor Rehabilitation Center, which does breeding projects and heals sick or injured birds of prey from around the West, is having a multi-media fundraiser in Boise June 25-26. Called "Another Chance to Soar," the show blends music, dance and illusion. It will be shown in the Capitol High School auditorium at 8:15 p.m. June 25 and at 2 and 8:15 p.m. June 26. Tickets are \$5 in advance, \$6 at the door and \$4 for students and senior citizens.

NEW BOOKS ON AGRICULTURE

Three new books available from the Conference on Alternative State and Local Policies detail what cities, towns, counties and states can do to alleviate the current crisis in food and agriculture policy. *New Directions in Farm, Land and Food Policies: A Time for State and Local Action* (\$9.95) is a 300-page reference guide to approaches that have been tried around the country. *New Initiatives in Farm, Land and Food Legislation* (\$4.95) is a companion resource for activities at the state level. *Assisting Beginning Farmers: New Programs and Responses* (\$5.95) is an in-depth look at several innovative programs for assisting new farmers. Order from Conference Publications, Room 406, 2000 Florida Ave., N.W., Wash. D.C. 20009.

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OPINION

Dead people, terrorism and the Clean Air Act

The current debate over the renewal of the Clean Air Act has been distinguished primarily by the shrillness of the participants. The National Audubon Society has recently completed a technical study with the emotion-laden conclusion that if Congress repeals the so-called "percentage reduction" requirements of the legislation, there will be 2,200 premature deaths annually after the year 2000.

Wyoming's Sen. Alan Simpson (R), not to be outdone in the rhetoric department, called the society's conclusions "hysterical drivel," "a political gimmick," "emotionalism and hoorah" and "terrorism." Strong stuff.

If you had asked us a year ago, we would never have predicted that the Clean Air Act would be so colorful. A bill whose minute technical detail is so drab as to be almost miraculous is suddenly overflowing with 2,200 innocent dead people and political terrorism — all over the issue of percentage reduction.

"Percentage reduction" refers to a provision passed in the 1977 amendments to the act that requires all new coal-fired power plants to install stack-gas scrubbers to reduce sulfur dioxide (SO₂) emissions 70 to 90 percent. The scrubbers are required regardless of whether the coal burned in the power plant has a low sulfur content — like most western coal — or a high sulfur content — like most eastern coal.

The scrubber requirement was added in the House-Senate conference committee in 1977, attached to the bill at the insistence of a number of eastern coal state representatives. As Sen. Simpson correctly points out, it was not attached to protect the environment, but rather to insure that utilities did not favor western coal's lower sulfur content. The amendment is designed primarily to keep eastern miners mining and eastern coal marketed.

However, as a nifty little side effect of the percentage reduction requirement, environmental benefits were indeed forthcoming. Prior to 1978, when the percentage reduction rule was enforced, 39 of 46 permits issued required only that new power

plants meet the maximum new source performance standard (NSPS) of 1.2 pounds of SO₂ emitted into the atmosphere for every million Btu of coal burned.

Since 1978, only four of 46 permits issued have allowed SO₂ limits as high as 1.2 pounds. The national average has reached 0.6 pounds per million Btu for new plants — about half of the maximum.

So, the air is a little cleaner as a result of the requirement.

Simpson says that he favors clean air. He doesn't want to "gut" the act, simply make it a better law. He does, however, oppose the regionalism inherent in the percentage reduction requirement. The National Audubon Society says that it doesn't want 2,200 dead people lying around after the turn of the century.

The issue is — or ought to be — clean air. And, the air can be kept as clean as it has gotten — cleaner, even — if the allowable emissions for new sources are lowered below current levels. Simpson's aides say the senator plans to introduce legislation to do this. That is, allowable SO₂ emissions for new plants will be lowered from the current maximum of 1.2 pounds per million Btu to a reduced figure yet to be determined. This new figure will probably be between 1.0 and 0.6 pounds per million Btu.

This compromise would seem satisfactory to address the problems that the two sides want to solve. The result should be reasonably clean air and no eastern favoritism.

A case can be made, it seems to us, for a lower maximum standard than the one Simpson mentioned. The national average for new permits is already 0.6 pounds of SO₂, and the average in the West is 0.16. However, these are matters that can be thrashed out in the halls of Congress, once everyone is convinced of everyone else's good faith in the national commitment to clean air. Perhaps then we can dispense with the dead people and the terrorism.

— DSW

N. Scott Momaday: pursuing the human spirit

by Maureen Dempsey

A pregnant woman in a bathrobe is hitchhiking on an Oklahoma highway. Tired of waiting in an unfamiliar hospital for the birth of her child, she has decided she wants to be with her husband, at home.

Once home, she finds her husband gone and the old people asleep. An unsteady shotgun greets her belly. Her anger is immediate — and loud. It unnerves her opponent; he had expected fear.

N. Scott Momaday is the son of that bathrobed woman, Natahcee Scott. Her Kentucky pioneer and Cherokee relatives, along with his father's Kiowa ancestors figure in Momaday's book *The Names: A Memoir*.

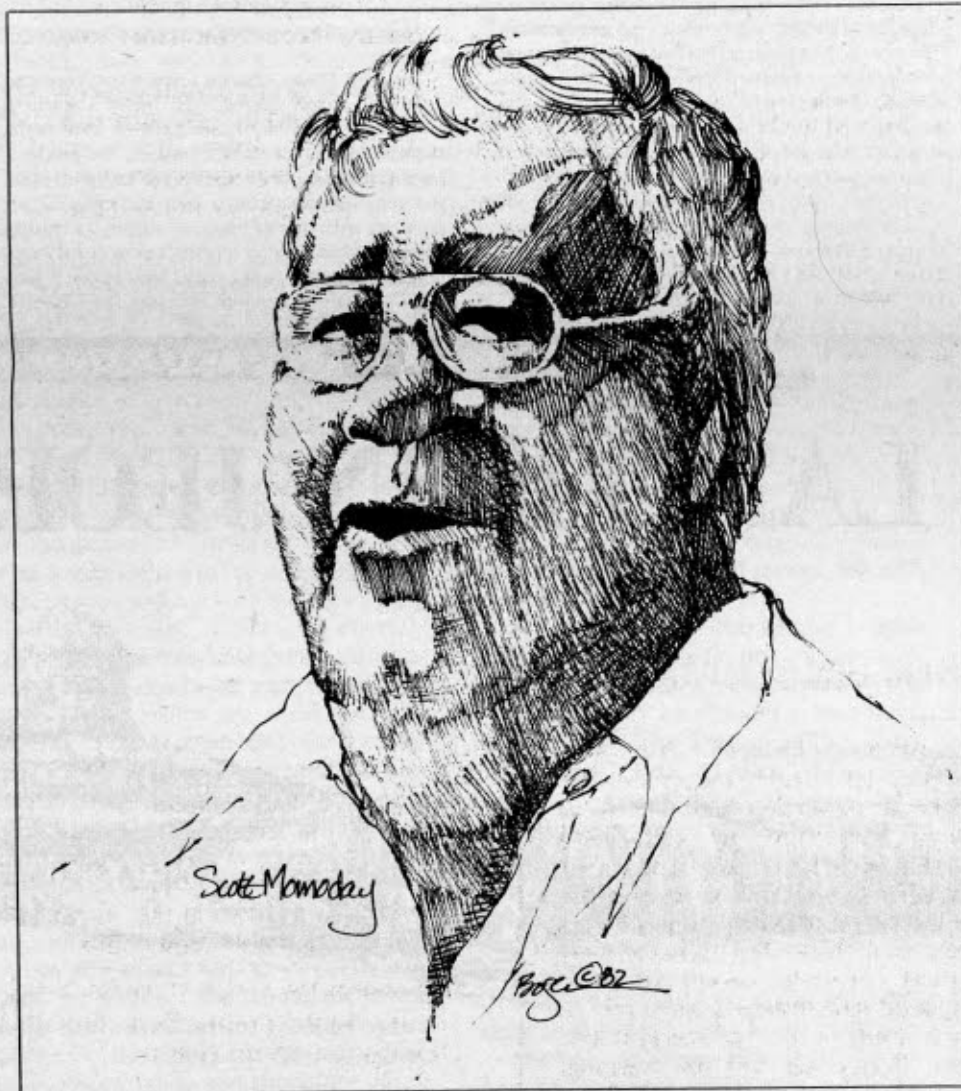
"My father's people are arrogant and set in their ways. I like this in them, for it gives them a character, a color and definition of their own. But it means they are hard to suffer too. This distemper of theirs was a very serious matter to my mother about the time of her marriage. She came warily among the Kiowas. That is the whole story, hers to tell; yet some part of it is mine as well. And there is a larger story, I think, of where I am in it."

Growing up among the Kiowas and other Indians, Momaday listened to stories. Stories that had been passed on from generation to generation. These stories and the characters who told them show up in different forms in his other books, *The Way to Rainy Mountain* and *House Made of Dawn*. The latter book, his only novel, won the Pulitzer Prize in 1969.

Momaday is usually introduced to audiences as the "most prominent Indian writer today." This kind of distinction divides the man — somewhat uncomfortably — into two categories: "American Indian" and "writer." Alan Velie, editor of *American Indian Literature*, said, "To say that he is our most prominent Indian writer is like calling Sandy Koufax a great Jewish pitcher: both statements are true, of course, but far too restrictive."

Velie goes on to say that Momaday is one of the best writers in America today — Indian or non-Indian. "He is also a poet of considerable talents — and the great strength of both *The Way to Rainy Mountain* and *House Made of Dawn* is the power of his language and his poetic way of looking at things."

Momaday grew up hearing Kiowa and Navajo, but his first language is English. His mother, a schoolteacher and writer, insisted on that. It was through her that



he learned to love literature, which he studied at the University of New Mexico and Stanford University. He was a professor of English at Stanford and now teaches at the University of Arizona.

Of his own works, Momaday's favorite is *The Way to Rainy Mountain*, an odyssey of Kiowa culture and history, and a personal one as well.

"I came to a point where I wanted to understand what being an Indian was. Other people thought of me as an Indian, my father was an Indian, but I wanted to know what that meant," Momaday said. His father was an artist and teacher, and both of his parents worked for the Indian services on Navaho reservations in New Mexico and Arizona. But the family also lived with his Kiowa grandparents in Oklahoma on and off, until both of his parents found teaching jobs at the Jemez Pueblo in northern New Mexico.

It is this landscape of mountains, canyons and prairies that Momaday remembers and describes in all of his books. In *The Way to Rainy Mountain*, Momaday journeys from Yellowstone's

mountains to Oklahoma's plains, following the same route the Kiowas took in the seventeenth century when they became a Plains Indian.

Momaday bristles at being asked to define the American Indian. "To put the American Indian in quotations is to indicate probably more than anything else, that guy over there that is bedecked in feathers, astride a horse, chasing John Wayne across the silver screen," he said.

"But the real Indian is someone who thinks of himself as an Indian," he continued. "What is it, after all, that entitles one to think of himself as an Indian? Well, you're really talking about a way of looking at the world. That way of seeing the world is predicated upon different sorts of experiences, experiences that run back in time, over many generations."

"It is primarily an idea, not a matter of blood, not a matter of appearances," he said. Momaday's return to Rainy Mountain and the grave of his grandmother, Aho, was a journey to find that idea. Momaday writes in the prologue to *The Way to Rainy Mountain*, "And the jour-

ney is an evocation of three things in particular: a landscape that is incomparable, a time that is gone forever, and the human spirit, which endures."

First man
behold:
the earth
glitters
with leaves;
the sky
glistens
with rain.
Pollen
is borne
on winds
that low
and lean
upon
mountains.
Cedars
blanket
the slopes —
and pines.

Momaday doesn't write every day and he has gone for long periods of time without writing. "I'm not a very disciplined person, I think finally. When I have been at my best writing I have been on a couple of very good schedules. But they don't happen for me very easily," he said.

"I think what you're writing frequently determines that. If you are inspired by what you are doing, then it is easy to fit yourself into a productive routine. But if you don't have that inspiration, it is very hard to get up at 5 a.m. and go through the motions," he said. "I don't like having to write what I don't want to write."

"There is in Indian tradition, a kind of reserve — no pun intended — a reluctance to place yourself on view. People who have made names for themselves — placed themselves on view — are thought to be presumptuous," he said. He is uneasy with that idea and feels "it can be used to good and bad effects."

He himself hasn't felt ostracized. "But I'm not very perceptive in those terms. Yet I'm quite clear there are a lot of Indian people who feel I have no business writing books," Momaday said.

Scott Momaday doesn't divide himself into the categories of American Indian and writer. He writes about what he knows, utilizing Indian art, poetry and conflict in his work. He believes that "man tells stories in order to understand his experience, whatever it may be."

¶¶¶

Maureen Dempsey is the circulation manager for *High Country News*.

LETTERS

DUCK, CHIP

Dear HCN,

Chip Rawlins' "Predator and Prometheus" article (HCN, 5/14/82) is excellent — timely, informative, and most welcomed by those of us who have spent the last ten years working on this myth-filled issue. Get ready to duck, Chip. You are in for some heat!

California HCN readers should know that the state Department of Food and Agriculture filed an *amicus* brief to EPA in support of Compound 1080. That action merely compliments the ridiculous California state budget support for 1080 through the federal Animal Damage Control (ADC) program. Evidently political boundaries are immune to stupidity.

There's always room for optimism, however. California Assemblymen Byron Sher and Leo McCarthy supported unsuccessful budget control language against 1080. Californians might send them a note of thanks.

Thanks again HCN and Chip.

Jean Curry
Friends of the Earth
Santa Cruz, California

SPECULATION, EMOTIONALISM, DISTORTION

Dear HCN,

As is the usual trend with environmental writers, Chip Rawlins infused as much speculation, emotionalism and distortion as he possibly could in the article, "Predator and Prometheus," (HCN, 5/14/82). I think HCN wasted their research money on this one, at least to the extent that Rawlins "analyzed" the policies and attitudes of the National Wool Growers Association. Your writer didn't contact our office, or any of my staff, or any of our officers to determine our programs or attitudes. Neither did he request the USDA loss data upon which our economic estimates are based. No, he just labeled the losses "inflated." It is the old "don't confuse me with facts" syndrome.

Rawlins states that there were "several fully documented deaths due to coyote getters and 1080." I have data that shows there were no deaths either to "getters," or to 1080 by virtue of agency use in the predator control programs. Only one accidental death occurred from a "getter," by an unqualified handler, and it was due to inadequate medical treatment. There hasn't been one 1080 death due to its use in predator control, but a few from its use in rodent control — a use that continues today.

"Cattlemen have been largely silent in the 1080 issue"? The National Cattlemen Association jointly filed the emergency use request with the National Wool Growers Association a year ago last January. They also jointly requested the preliminary hearings that have led to the current adjudicatory hearings. The NCA and the NWGA jointly share the expenses connected with the current hearings.

Where were you when the lights went out? The woolgrower lobby that Rawlins condemns is the same lobby that has fought for research funds for universities and federal agencies to evaluate fences, dogs, aversives, repellents, scare devices, attractants, ultra-sound, and a host of management alternatives. We've had no help in funding non-lethal research from any of the environmental groups!

If the 1080 issue appears as a crusade, it's only because the media has chosen to give it a disproportionate amount of attention. It isn't a crusade with us, but it seems to be a crusade with people who write about the sheep industry.

Rawlins asks if the taxpayer should be made to subsidize the poisoning of the public domain. This is a gross misrepresentation of the facts. Control applications under the old program actually took place on a small percentage of the

public land areas of the West (less than nine percent) and my bet is that they would be even more restricted under a new program. Since the taxpayer is willing to subsidize other pest control activities such as blackbirds, starlings, rats, grasshoppers and dozens of insects, why is the coyote any different when it damages private property? After all, I pay taxes too, and so do our 23,000 members. The question is whether the public wants to maintain their interest in this particular phase of wildlife management, or simply condemn it and hope it goes away. It won't, of course, and maligning us and our industry won't make us any less intent on achieving a balanced predator management program. It will sell articles though, won't it?

Marv Cronberg
President, National Wool Growers Association, Inc.
Salt Lake City

COOL, CALM, COLLECTED

Dear HCN,

Chip Rawlins' "Coyote: Predator and Prometheus" (HCN, 5/14/82) was about as cool, calm, and collected a study of perhaps the smartest four-legged wild critter on this continent as I have seen anywhere, in any publication. My compliments to Rawlins, and to HCN for having snagged the article for publication. With a canny agent, Rawlins likely could have banked several times what HCN can afford, from one of our high-powered slick magazines. This says something for both Rawlins and HCN.

Rawlins' weighing and balancing of these factors and those was superb, and his closing comment said much in few words: With all the killing, by whatever means and manner, coyote not only is about as abundant as the prey it needs from decade to decade, but it has also spread its range — perhaps in part because of the pressure generated by the sheepmen and their lobby — to virtually every one of the first 48. We have 'em down here in the south Georgia boonies, though I confess I haven't personally seen or heard one in the 13 years of my alleged retirement. The old hooters will keep on yowling, come hell or high water, and the wool growers association might as well get reconciled.

Bill Voigt
Blackshear, Georgia

CUTTING QUALITY CONTROL

Dear HCN,

The present administration's policies are having far-reaching effects on environmental protection and quality of resource management by federal land managing agencies. Although the Forest Service has been known to make some poor decisions regarding proper forest management, basically it has been by far the most conscientious and ethical of the federal land managing agencies.

As a result of the National Environmental Policy Act and the National Forest Management Act, professional scientists were hired by the agency for the sole purpose of quality control in resource management. These professionals have the job of reviewing proposals for projects, assessing possible problems and recommending alternatives and mitigating measures for protection of their particular resource specialty. This new approach, along with public involvement, was a positive breakthrough for environmental protection desperately needed on our public lands.

Today, however, economics are dictating that the number one priority for the Forest Service be outputs (i.e., "hard targets" such as timber cut, mineral leases and development, and recreation visitor days). Resource management is being replaced by resource use. Based on this new priority, when budget cuts have filtered down to the individual forest level, guess who gets cut? The specialists, of course. And when these professionals are spread too thin to cover the work load, many projects will go through without adequate review.

Thus, quality control, which meets no "hard targets," is sacrificed.

These changes are just beginning to take place. A determined and vocal public reaction is essential at this point. A visit to your local forest supervisor's office and/or a letter to your forest supervisor and the regional foresters (in Denver, Ogden, and Missoula) could make a significant difference in the quality of resource management on your national forests in the next few years.

Name withheld by request

AMERICA, THE DUST BOWL

Dear HCN,

Every time I hear the sound of buzz saws, I think it's James Watt hewing and hacking away at our wilderness, rooting up a continent in relentless (private profit) drilling for gas and oil, leveling the mountains I see from my window, using up millions of tons of direly needed water, for shale oil.

Every time James Watt announces a new plan for "rational conservation," I look for the poniard in my back.

Now he's ready for large-scale offshore oil leasing. He's also going in for lumbering national forests on a grand scale. His announcement about preserving wilderness areas — until the end of the century — takes the prize for barefaced cynicism. He doesn't care what we think. He's got the power.

If Watt and his friends have their way, this country, blessed by nature above all others, will be a giant dustbowl, an abandoned mining town on an enormous scale. Not "America, the Beautiful."

Teapot Dome and Elk Hills pale to insignificance beside this planned "development" of James Watt.

I was thinking of the poet's line, "There is a pleasure in the pathless

wood," when I read of Watt's latest. Unless such "plans" are stopped our children and grandchildren will, fifty years from now, or less, be wondering *what* a "pathless wood" is, or was.

Martha M. Garlin
Boulder, Colorado

PROTECT WILDERNESS

Dear HCN,

I have appreciated your careful reporting of the current Wyoming Wilderness Act of 1982 issue. As one who first became acquainted with the wilderness resource of Wyoming as a youngster prior to the Second World War, I remain of the view that these resources must be saved as wilderness. They are the foundation of our nation's natural heritage lands.

Roadless areas not included in this legislation need to be fully protected as "roadless-natural" units until a national decision can be made as to the future of each such area; including wilderness status.

Then, consider so-called "release" status for such roadless units; or portions of same, when it becomes evident that the unit does not now nor in the future contain wilderness potential — and only when such evidence is clear.

Additional areas could be included as wilderness on a regular basis, without any restrictions.

All wilderness units should be withdrawn, as well as all unreserved roadless areas, from all forms of mineral leasing — exploratory drilling, development, seismic and related activities.

We should add to our National Wilderness Preservation System the some five million acres of unprotected National Forest lands in Wyoming.

John R. Swanson
Berkeley, California

Our \$4.50 an hour typesetter just volunteered to take a cut in pay.

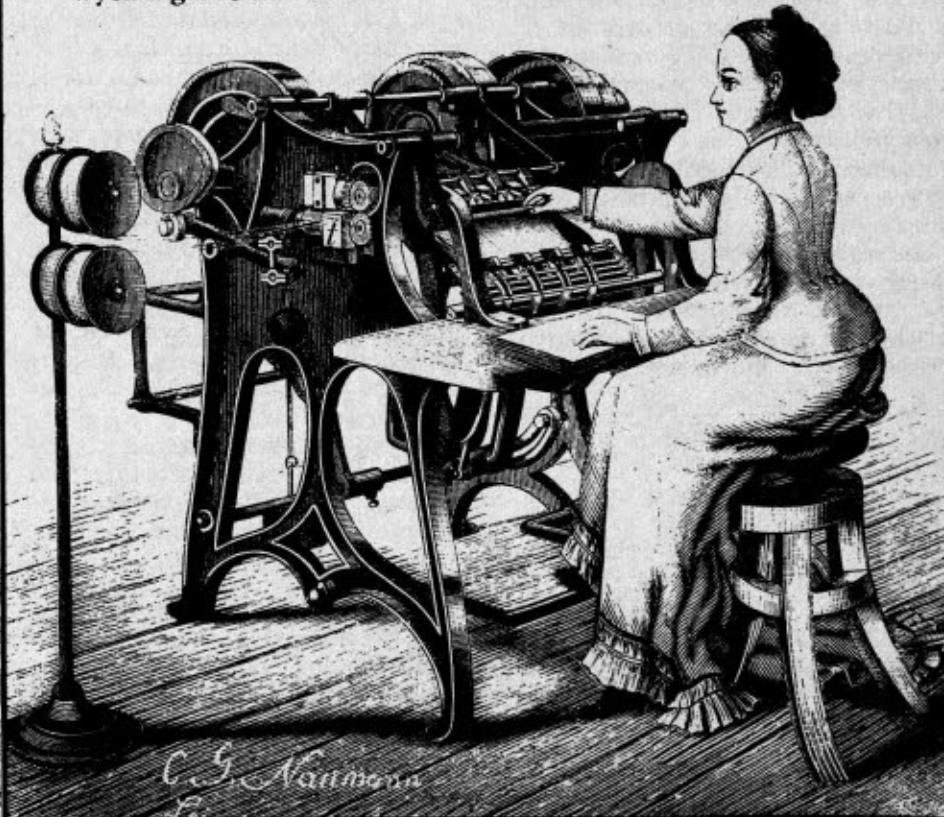
"I know times are tough," she said, "and I want to do my part. Besides, if Douglas Fraser can do it, I can, too."

Never ones to buck an anti-inflationary trend, we had to accept her offer.

Fact is, times *are* tough and cutting the fat in a budget like ours is about as easy as finding a job in Detroit. Once you've cut the mileage reimbursement back to 10 cents a mile, where can you go?

To your friends, of course — to the people who read *High Country News* and count on its unique, in-depth coverage of western environmental issues.

We count on you, too. Please send your tax-deductible donations to the High Country News Research Fund, Box K, Lander, Wyoming 82520. Thanks.



Rest-Rotation: restoring the range

by Jim Robbins

The way Gus Hormay sees it the present methods of range management are all wrong. Range management got off on the wrong foot in the West in the 1860s when the range was overstocked and overgrazed.

It has been downhill ever since, said Hormay, a range ecologist, and will continue into the future unless a new management technique is adopted. The technique he advocates, and one which he pioneered during a 50-year career as a range conservationist with the U.S. Forest Service and the Bureau of Land Management, is rest-rotation grazing.

"Rest-rotation is the only way," Hormay said. "No other method works. Rest-rotation is the only method that lets Mother Nature take her course."

The deliberate, soft-spoken, 75-year-old said his method is appropriate for all land managers, whether they're managing for wildlife, cattle, watershed or aesthetic values, because rest-rotation establishes maximum vegetative cover, upon which all other values depend.

Hormay buttresses his claims about rest-rotation with a color slide show that illustrates before and after conditions of range land where he has applied his method. The slides show areas that had been devastated by overgrazing and were returned to full forage production in as little as seven to 10 years of rest-rotation.

The rest-rotation method focuses on the range grasses and their regenerative properties. Plants, like animals, require food for growth and sustenance. Plants manufacture this food — carbohydrates, proteins and fats — in their green parts, principally their leaves.

The plants store the food in the roots and stem bases to be used in the spring to initiate growth and to get the plant through periods when it is not making food, such as winter.

Perennials store enough food to last for several years so that even if the plant is defoliated by grazing for a year or two it does not die. But, Hormay said, the plants do not begin producing starch for storage until they are half grown. If the cattle chew off the top of the grasses each year before they begin producing starch, the plants will starve to death after several years.

"(The way we graze now) we're preventing the plant from making food for itself — this is murder," Hormay said.

This has a two-fold effect on the range land. First, the desirable plant species die out and the range is invaded by less desirable species, or is not replaced at all. In the latter case, soil erosion can become a problem and topsoil may wash or be blown away.

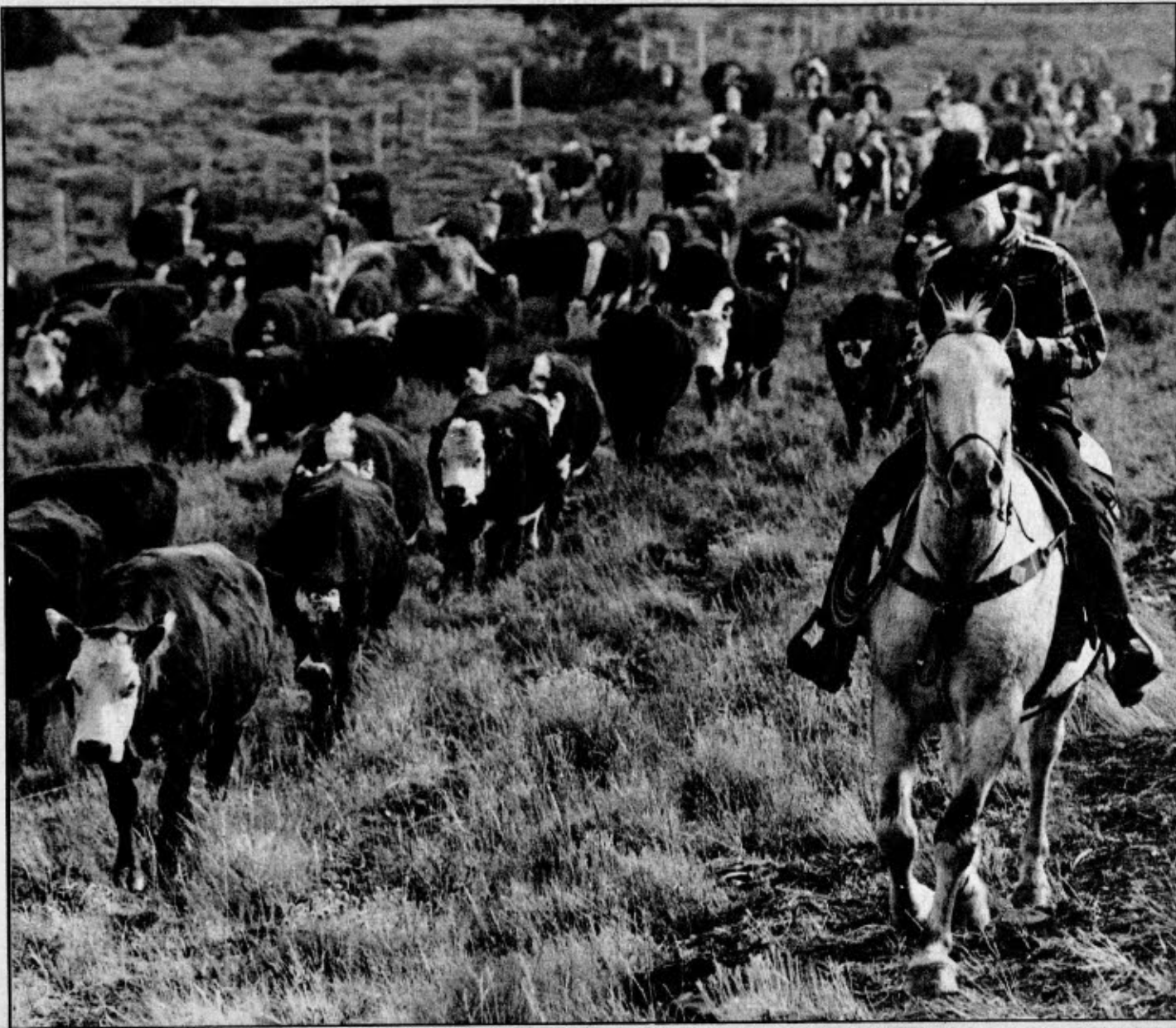
Secondly, because the species being grazed year after year are deprived of the opportunity of going to seed, the range is not naturally revegetated.

So, the plants need a rest in order to grow to maturity. Once every several years they need to store food to survive the years of grazing and to produce seed to naturally revegetate range land.

The rest-rotation method is based on a three-year cycle that allows the plants to produce enough starch to get through the years they are grazed and to allow them to naturally revegetate.

To begin using the process, pasture areas are fenced off into three sections — call them A, B and C.

The first year all of the stock are turned out onto pasture A to graze normally all year. During the second year the livestock are turned onto pasture B and pasture A is left idle, until the fall when it has gone to seed. Once the grass has gone to seed the cattle are turned back onto A to trample the seed into the ground. Hormay calls this "planting." He says if the cattle are not used to plant the seed in this manner, the seed lies on the ground and in the spring when it



Mike McClure

Bill Meiners, director of the Idaho Wildlife Federation, has reservations about the system's effect on wildlife.

sprouts, it dries out and dies in the sun.

The third year, pasture A is not grazed at all, giving the seed a chance to establish itself and the existing plants another year to grow and store starch unmolested. The third year C is grazed in a normal manner and B is not grazed until fall. The pattern is continued over and over in the same cyclical manner.

"If it's done right it always works," Hormay said. "It can be done anywhere on any type of range land." He said he developed the procedure on arid western range land in eastern California, where it works just as well as in areas with heavier rainfall.

Hormay said that people who have tried his method and claim it doesn't work have not followed the letter of the procedures, which he insists is a must.

The traditional method of restoring range land is to reduce the number of cattle on the range until the area makes a comeback. But Hormay claims that method doesn't work and never will. Even if you reduce the number of cattle from 100 head to 10 head, he says, those 10 cattle will still concentrate in riparian areas, near trees and so forth, destroying vegetation in those favorite hangouts. "Unfortunately," Hormay said, "the best plants and grazing sites are destroyed first."

Hormay said that because each portion of the range has a chance to rest and rejuvenate, his method "restores every square foot of vegetation" and maintains it in a healthy condition.

The Matador Cattle Company near Lima, Montana has used the rest-rotation grazing method for seven years. Ray Marxer, the foreman of the ranch said the effect on the forage has been tremendous.

Marxer said the 78,000 acres where rest-rotation is being practiced "was in

pretty poor shape," but has made a "tremendous comeback." He said weaning weights of the calves are 10 pounds more than what they were before the process began and 10 to 15 pounds more than other ranches in the Centennial Valley.

According to Marxer, the only upfront investment was 29 miles of fence, which he said wasn't that much of a problem. He did say that moving the cattle from pasture to pasture can be difficult, but claims it is worth the effort.

Wildlife has made a comeback on the Matador Ranch and Marxer also attributes that to rest-rotation.

"We had 50 head of elk that used to winter in a stand of timber on the range," he said. "Last winter we had 450."

But while Marxer claims wildlife and cattle have both benefitted from the system, Bill Meiners, the director of the Idaho Wildlife Federation, has reservations about the effect on wildlife. In fact he wrote a paper called: "Rest-Rotation: A Bummer."

Meiners maintained the benefit to wildlife is not automatic and that wildlife needs have to be addressed separately from those of livestock.

"Forage allocation for wildlife needs to be made under rest-rotation," Meiners said. "People assume it is a panacea, but it is not. You still have to manage for wildlife." Meiners said he believes rest-rotation is a useful tool, but is not a total system because wildlife needs are not addressed.

But Gus Hormay believes the increase in forage from implementation of his system is enough to satisfy the needs of both domestic and wild animals. Hormay also said if the wildlife is well managed through hunting their number will never be enough to be a factor in the rest-rotation process.

Hugh Harper works for the Idaho Bureau of Land Management as the chief of biological resources, which oversees rangeland, wild horses, forestry, wildlife, and watershed resources. Harper said he has never seen any system of grazing that works as well as rest-rotation. "Rest-rotation is the only way we'll successfully graze arid western rangeland," Harper said. "The important thing out here is protecting watershed values and rest-rotation does that. It's definitely better than continual use."

Harper said there is an added cost to the rancher because of increased fencing and an increase in the number of times livestock need to be moved.

But he said rest-rotation is still more cost-effective. "If we use rest-rotation, we can produce twice as much (forage) as we're producing now."

Hormay formed his rest-rotation theories in 1948, after his first 18 years with the government. The first successful application was on the Harvey Valley cattle allotment on California's Lassen National Forest in 1952.

Acceptance of the system has been slow among tradition-bound ranchers, but his work has been commended by both the Department of Interior and the Department of Agriculture. He retired from the government in 1977, and now serves as a part-time consultant to landowners interested in implementing the system. He said, "I like to see stockmen make the best possible income without destroying the land."

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Jim Robbins is a freelance writer in Helena, Montana and a frequent contributor to *High Country News*.