High Country News

75¢

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Photo by Sara Hunter-Wiles

MOVE OVER, hikers; move out, coyotes: Llamas are backpacking in the Rockies, and sending predators packing, too. For a shaggy llama story, see page eight.

In the News

DINOSAUR DYNAMOS? 2

The power plants proposed in the Allen-Warner Valley Energy System are dinosaurs, according to environmentalists. A Bureau of Land Management report puts it more politely: Conservation and renewable sources of energy could produce twice as much.

WILDERNESS WAR. 4

As more and more people head for the wilds, the experts argue over how to keep the wilderness wild. And a new branch of bureaucracy flowers: the wilderness managers.

TWO DEATHS, MANY REASONS. 3

Two campers were victims of a grizzly attack in Glacier National Park. Was the bear to blame? Or the campers? Or park officials? Whatever the case, bear managers take steps to make sure it doesn't happen again.

PATRIOTIC (NATIVE) AMERICANS. 6

Not long ago Indian leaders talked about forming a Native American OPEC to milk the most dollars out of the reservations' energy riches. Now CERT is proclaiming its patriotism with big production boosts.

Alternatives could outshine Allen-Warner plants

by Jasper Lee

BRYCE CANYON NATIONAL PARK, Utah — Equipped with cameras, sun hats and day packs, visitors cluster along the railing at Yovimpa Point. Cameras click. "It took me half a roll of film to get all that," one visitor exclaims. A young park ranger tilts his hat down against the wind and motions to a group of tourists who follow him through a garden of sculpted sandstone spires.

Behind this pleasant summer scene lies one of the hottest disputes over energy development in the West. For below Yovimpa Point lie the low, rolling Alton hills, and beneath these hills lies coal — coal proposed to be strip-mined, shipped as slurry to two distant power plants, and burned to produce electricity. This complex is known as the Allen-Warner Valley Energy System.

Designated top priority on President Carter's "critical energy facilities" list, the system is designed to supply electricity to California, Nevada and the small city of St. George, Utah. Coal mined at Alton, Utah, would be burned at the proposed 500 megawatt Warner Valley power plant 22 miles upwind from Zion National Park in Utah, and at the 2,000 megawatt Harry Allen power plant near Las Vegas, Nev.

"Visitors to Yovimpa Point will be introduced to the sights, sounds and smells of a coal strip mine," says Gordon Anderson of Friends of the Earth. "Daily blasting at the mine could damage the fragile eroded sandstone spires the park is meant to protect." The mine could also violate the park's pristine air quality, he says.

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Local ranchers claim that the strip mine and export of groundwater that would be used to slurry the coal will destroy the water quantity and quality on which their livelihood depends.

"The Allen-Warner Valley Energy System is one of the most ill-conceived energy schemes ever proposed for the West," says Southwest Resource Council spokeswoman Jane Whalen. "Not only will it irreparably damage our national parks and ranchlands, but the energy from the project is not even needed." The Allen-Warner Valley Draft Environmental Impact Statement recently released by the Bureau of Land Management in Cedar City, Utah, adds credence to her words.

A FIRST

Without taking a position, the draft outlines alternatives to building large electric generating stations. In "Alternative 5," the report suggests that a strong conservation program coupled with development of cogeneration (which uses industrial steam to produce electricity), biomass, wind, geothermal resources and the sun could produce over twice as much energy as the proposed power plants. According to the agency, "only mixes of these sources that are considered realistic considering the time frame and existing socio-economic and political conditions are included in this alternative."

"This is the first time an environmental impact statement has studied conservation and alternative energy sources as a realistic alternative to a proposed energy system," said BLM's Paul Dulin. "Usually they look at variations of the project as proposed. But technology has advanced the development of alternative energy sources to the point that they must be considered as a viable alternative."

Should the Allen-Warner Valley project be built, California would receive 90 percent of the energy produced by 1990. The implementation of conservation measures and alternative energy technologies would not only eliminate the need for California to participate, but would result in a surplus of 4,167 megawatts, according to the BLM.

In its biennial report the California Energy Commission, which sets energy policy in the state, states that "geothermal, cogeneration and renewable energy sources including solar are available now. They should be expanded because of their favorable characteristics, efficiency, more stable costs, and the fact that they are indigenous to California."

But California utilites insist that they have no alternatives to the Allen-Warner Valley project. In response to the draft statement, Glen J. Bjorklund, Southern California Edison's vice-president for system development said, "We find no basis in fact whatsoever for these exaggerated estimates. I can say categorically that it would be technologically impossible for solar to be developed in that quantity in that time frame. There's no question about that."

Both Southern California Edison and Pacific Gas and Electric have tabled plans to build large California-based coal burning power plants because of shrinking energy demand forecasts.

David Roe, a lawyer with the Environmental Defense Fund, says, "the energy problem is a lot more malleable than the utilities have been telling us — there is remarkable evidence of how much flexibility there is once somebody looks at the numbers. The utilities may still think that they need to build more dinosaurs like AWVES, but the point is that they don't need to if they look elsewhere."

IS IT NEEDED?

In another precedent-setting action, the BLM prepared its own energy demand forecasts for the project. "The question 'Is the project really needed?' was asked so many times," said BLM's Dave Everett, "that we decided it was necessary to make an independent verification of the project's energy projections."

The results are significant. The verification slimmed the energy "need" for the 2,500 megawatt by 547 megawatts in California and 125 megawatts in Utah. These reductions indicate that the 500 megawatt Warner Valley power plant need not be built.

If plans to construct Warner Valley, the Utah power plant, were abandoned, slurry lines proposed to ship coal from Alton could be jeopardized. Utah law allows for the export of state water in slurry lines only if there is a clear and reciprocal benefit to Utah. Without a slurry, the economics of mining coal at Alton would be much less attractive.

THE CALIFORNIA CONNECTION

The California connection to canyon country coal power has evolved for several reasons — cheap sources of coal and water, lower pollution standards, and cooperative politicians. The first power lines were strung from the Southwest to California when the Four Corners, N.M., coal generating plant fired up in 1963. Since then, the power towers which stalk across the sparse landscape of Utah, Arizona and Nevada to California have multiplied — with the San Juan project in 1973, the Mohave station in 1971, and the Navajo station in 1974.

In 1976 when Southern California Edison's withdrawal from the proposed

Kaiparowits power plant caused the project to be abandoned, environmentalists celebrated quietly. "They'll be back, sooner or later," was the cautious response to congratulations. Predictably, California utilites were back sooner.

The Intermountain Power Project, which, at 3,000 megawatts, will be one of the largest coal burning power plants in the world, was approved last winter by Secretary of the Interior Cecil Andrus. Up to 75 percent of the plant's power will be wired to California from central Utah.

"The Colorado Plateau parklands can not continue to accommodate such massive industrial development without a wholesale sacrifice of natural values already set aside here," says Gordon Anderson. "But Utah politicians still view courting industrial development for their southern counties as a patriotic cause, confident that industry can be accommodated here without sacrificing the universal appeal of the canyonlands."

WATER DEFENDERS

Politicians may have been wooing these earlier projects, but the Alton coal mine has cooled their ardor — at least in Kane County. County residents who publicly burned effigies of Kaiparowits' foes when the project collapsed in 1976, are now calling themselves environmentalists. Water — a resource more scarce and critical to the people of Kane County than energy or jobs — has caused the change of heart.

The Alton coal fields lie along the base of the Pink Cliffs, a spectacular formation of salmon colored sandstone that extends into Bryce Canyon National Park. The easternmost reach of the Alton coal fields proposed for development lies directly beneath the Yovimpa Point overlook at the end of Bryce Canyon's scenic drive.

Over a 35-year period, Utah International and Nevada Electric Investment Company, plan to produce approximately 10 million tons of coal a year from the 8,328 acre surface mine. About two-thirds of the coal would be strip-mined. At the base of Bald Knoll, a coal processing plant would crush the coal, mix it with water, and ship it as slurry to the Harry Allen and Warner Valley plants. Over 10,000 acre-feet of water a year would be drawn from 13 wells drilled deep into the local water-bearing formation.

Kane County ranchers fear that the coal mining above their ranches will destroy the watershed and that pumping groundwater to slurry the coal will deplete wells, springs and streams upon which their livelihood depends.

"Land isn't worth much to people in Kane County," said Ron Wrencher, a local rancher. "In fact, it isn't worth anything at all without water. Water is the lifeblood."

"Drawing that water out of the aquifer," said rancher Caroline Lippencott, "is as if you've been living on interest and all of a sudden somebody takes all your money out of the bank."

In an attempt to protect their water, seven Kane County ranchers joined with Friends of the Earth, the Sierra Club and the Environmental Defense Fund in a petition to the Interior Department to declare certain lands in the Alton coal field "unsuitable for mining" under the Surface Mining Control and Reclamation Act of 1977.

The petition alleges that the mining operations will adversely affect not only water quality and quantity but also the productivity of agricultural lands in the area. It questions the ability of the mined areas to be reclaimed and mentions adverse impacts to the clean air, visibility, geologic features and visitor experience at Bryce Canyon National Park.

After a series of investigations by the Office of Surface Mining, the Secretary of the Interior will rule on the future of the Alton coal fields. This decision will be made by Nov. 28, a year after the petition was filed.

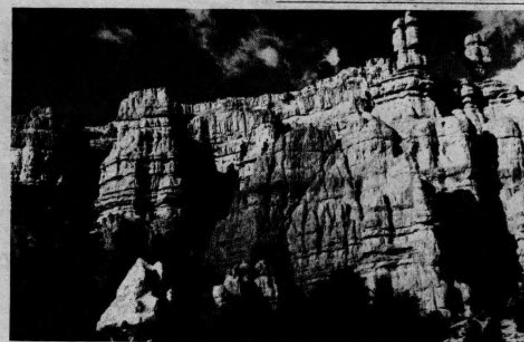

Photo by Kent and Donna Dannen

SANDSTONE SPIRES in the Dixie National Forest near Bryce Canyon National Park may be damaged by blasting at the coal strip mine that will provide fuel for the Allen-Warner project.

Many Kane County residents are disturbed by the inconclusive data produced by the hydrology studies conducted so far. According to BLM hydrologist Bill Wiley, long term pumping tests are essential to assess the effects of drawing groundwater for the slurry. But such tests are expensive, and plans to do them have not been announced.

While alternatives to the slurry, such as truck and rail transport have been proposed, these, too, have their drawbacks. "Trucks would stir up dust along the roadside and it would settle on the livestock feed and the cattle wouldn't graze it," says Jet Mackelprang, a 61-year-old resident of Johnson Canyon. Coal companies indicate that high fuel costs make trucking unrealistic.

According to Union Pacific Railroad Company, a rail line into Kane County would cost about 3 million dollars and would only be feasible with an annual coal production of at least 30 billion tons. No such market currently exists, according to the railroad.

There may be only one scenic view from Yovimpa Point, but there is a whole handful of diverging views on the Alton strip mine and the proposed Allen-Warner Valley Energy System.

At the root of this is a dichotomy of values and interests and lifestyles. It is a divergence of politics — between those who support a centralized power source, not only for producing electricity for for making decisions, and those who would like to see that source decentralized so that power and decisions are produced at a more regional or local level.

The fate of the Allen-Warner Valley Energy System will have a significance as sweeping as the view from Yovimpa, not only for the view itself, but for the future of energy policy in the West.

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Jasper Lee works with the Southwest Resource Council in Hurricane, Utah.

Glacier grizzly kills two; human error blamed

by Jim Robbins

GLACIER NATIONAL PARK, Mont. — A recent grizzly mauling that resulted in the death of two young National Park Service employees here was the result of human error and will not have an effect on bear management policy in the park, according to Management Assistant Joseph Shellenberger.

On July 24 a grizzly bear attacked and killed Kim Eberly of West Lawrence, Ohio, and Jane Ammerman of Stillwater, Minn., both 19 and both employees of McDonald Lake Lodge, as they slept in their tent just inside the park boundary along Divide Creek. The two had pitched their tent in a restricted area where camping is prohibited. Shellenberger says the campers were located on the route used by the bear to go from its sleeping den to a dump located just outside the eastern boundary of the park on the Blackfeet Indian Reservation.

A 258-pound, 3½-year-old grizzly bear was shot the following morning on the Blackfeet Reservation. Human hair found in the intestine and bear droppings matched that of the victims, proving it to be the killer bear.

According to Shellenberger the bear first killed the woman and then, as the man was trying to get away, killed him. The bear then dragged the woman's body 60 yards down the creek and devoured parts of her body.

"The bear was no longer wild and had lost its fear of man," Shellenberger said.

NO WARNINGS ISSUED

A camper who found the woman's body claimed park authorities failed to inform the public that a rampaging bear was in the area. Robert Shanahan of Mount Laurel, N.J., was fishing in the park when he came across the woman's body. He contacted the **Great Falls Tribune** and said that had the National Park Service and Blackfeet tribal authorities issued warnings of earlier bear rampages, the deaths of the two young people could have been avoided.

Shanahan said that Blackfeet tribal authorities told him several pigs on a farm about a mile north of the lodge had been killed by a bear one or two nights before the killing. He was also told that several campsites outside the park had been ravaged and that attempts had been made to trap the bear.

"Obviously it was a maverick, wild bear," Shanahan told the **Tribune**. "Those folks (park and tribal authorities) knew for days about the bear before these people were killed. They knew a bear was tearing up campsites."

Shellenberger, however, denied that his agency had failed in its duties. "No one knew the (troublemaking) bear was a grizzly," he said. Shellenberger said that the Indians had asked for assistance in trapping the bear, but since it was on reservation property there was nothing the Park Service could do. "We loaned them a trap and that was it. Our usual procedure (when unusual bear activity is going on) is to close campgrounds and trails. There are no campgrounds or trails to close there." Shellenberger said that the campers made a serious mistake by camping on a bear trail in the creek bottom.

Shellenberger said that one result of the slaying has been increased cooperation among the authorities involved. "We now have cooperation with outside agencies — county, tribal and everyone involved — to help us prevent these incidents in the future."

INQUIRY RESULTS

A five-member federal-state board of inquiry recently completed a study on the mauling and a report is expected soon.

SAVING GRIZZLIES is a priority, even if it means some risk for people, according to a Glacier National Park ranger.

The board has already released part of their findings. They revealed that the autopsy of the victims' bodies showed

(continued on page 4)

Photo by Jim Robbins

CAMPERS SLAIN by a grizzly in Glacier National Park last July had pitched their tent very near paved roads and cabins, but they were also in a prohibited area traveled by grizzlies on their way to a dump outside of the park.

GRIZZLY...

(continued from page 3)

that neither had the pair had sexual intercourse, nor was the woman having a menstrual period. Some experts think that both serve to attract bears, and park literature warns visitors of this.

The board also revealed that the bear was shot eight times by tribal authorities who killed the grizzly. There was speculation the bear was wounded before the attack, but no evidence was found to confirm it.

Ironically, Eberly's brother Bill, also a park employee, was attacked by a female grizzly last Sept. 12, but was not seriously hurt. While conducting a biological survey, Eberly climbed a tree to avoid a sow grizzly who was with her cubs. The bear pulled him from the tree and he played dead. When the bear started to leave, he climbed the tree again and was again pulled down. This time he played dead until the bear left.

The two deaths bring the total number of campers killed by bears in the park's history to five.

The first two bear-caused deaths in Glacier National Park took place on Aug. 12, 1967, when two women were killed in separate incidents by different grizzlies. As a result, the park's bear management policies underwent sweeping changes, including the closure of trails and campsites frequented by bear. Park officials warned campers not to leave food around campsites, and closed food dumps behind Sperry and Granite Park Chalets, two hostels for hikers. Granite Park Chalet, near the Granite park campground where a woman was killed in 1967, was at the time dumping food scraps behind the chalet so tourists could watch grizzlies feed in the evening.

The third death took place in 1976 at Many Glacier Campground in east Glacier. One of a group of five women was killed. This attack puzzled bear management experts because there was no apparent reason for the attack — none of the women were menstruating, no food was in the area, and no cosmetics — also thought to attract bears — were being used.

In 1977 the National Park Service instituted a computerized bear management program to minimize bear-human contacts. The system closes campgrounds and trails where grizzly contacts are numerous and requires a permit for back country areas in the park.

The most recent killings have caused a flash of emotion in western Montana, both for and against the grizzly. Letters to the editors of local newspapers range from defense of the grizzly's need for habitat to demands that the species be wiped out of the park so people can enjoy it.

Bob Litchfield, a ranger who works on the bear patrol at the park, says that people have to realize that there are certain risks inherent in visiting the park. "I'm basically a referee between the bears and the people," he said after a day of fielding questions from anxious tourists. "The bottom line is that we don't make the park safe for people at the expense of the bears. People have to realize that when they come here they could have contact with a bear."

Jim Robbins is a freelance writer based in Helena, Mont.

Budding bureaucracy

by Louisa Willcox

Joe and Debbie Lhadick were taking off, leaving the pressures, the paperwork, and the plastic behind. They were heading into the wilderness in Rocky Mountain National Park — back to simple rhythms: sleeping, campfire cooking, all-day hiking.

At the trailhead, however, they were taken aback by the portal ranger's greeting: "May I see your permit?"

"What?"

"You weren't aware that you needed a permit to get into the wilderness? Well, it is a new system here...and it looks like this weekend all the spots are taken."

"A ticket to get into the wide open spaces!" Joe muttered to himself as they drove away.

While scenes like this would have seemed preposterous 15 years ago, they are not uncommon today. Schemes for rationing the number of visitors have been implemented in 27 designated and proposed wilderness areas, which make up 8 percent of the U.S. Forest Service Wilderness and 42 percent of the National Park Service Wilderness.

At the same time, resentment has been brewing against such heavyhanded methods of control. A recently filed lawsuit and numerous threats of legal action against the agencies that manage wilderness indicate the heat of public concern. Managing agencies, particularly the Forest Service, are beginning to explore other techniques, such as education and wilderness zoning, which in some cases could reduce the need for rationing.

At the root of the problem is a steadily growing group of wilderness-hungry recreationists. Despite the increased cost of gas, use continues to rise at an average rate of eight to 10 percent a year, so that now, more than ever, backpackers are threatening to "love wilderness to death." At the same time, the number of new areas suitable for inclusion in the 19 million-acre National Wilderness Preservation System is dropping every year. And increasing pressure from timber and mining interests could make large increases in the system politically impossible in years to come.

Originally, the word "wilderness" connoted mystery, danger, the presence of wild beasts and the absence of human control. However, one finds in today's wilderness a plethora of signs, trails, campsites, and people. Many feel that the kind of wilderness experienced by Lewis and Clark and John Wesley Powell is rapidly becoming a thing of the past, preserved only in books and memories of old timers.

A NEW PROFESSION

Keeping some wildness in wilderness has become the goal of a new profession: wilderness management. In recent years even wilderness, a symbol of freedom from the constraints of government institutions, has become host to a bureaucracy.

Due to the newness of the profession, many of its practitioners are old school foresters, trained in the biologic sciences and timber cruising, not social engineering. Others in the National Park Service are steeped in the "parks for the people" philosophy, accustomed to designing campsites and trails and posting signs.

When the Wilderness Act was passed in 1964, anyone who suggested that wilderness needed managing would have been laughed at. All you had to do was draw a line around it and leave it alone. Wilderness would take care of itself. But as use has escalated, so have problems of trail erosion, water pollution, tree stripping, and wildlife disturbances.

Faced with signs of degradation of the resources and conflicts among users, managers are increasingly compelled to act. Many managers in this situation have decided to make recreationists bite the bullet by limiting their numbers. Other options include educating campers to leave fewer traces and engineering projects — such as huts, privies, and improved tent sites — that increase the amount of use a wilderness can sustain.

The administrators of all wilderness areas are currently developing wilderness management plans. The National Park Service's in-house handbook **Management Policies** directs the planning process with some general rules of thumb, such as flexibility, fair-

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copes with crowds, confusion and conflicts

Keeping some wildness in wilderness has become the goal of a new profession: wilderness management.

ness, respect for visitor freedom, and the application of the "minimum tools necessary for management purposes."

The Forest Service is subject to a more detailed set of requirements, some established by the National Forest Management Act of 1976. These include public participation in the planning process, as well as setting wilderness capacity limits. What the agency is calling a "potential model wilderness plan" under these requirements is due for Colorado's Maroon Bells-Snowmass Wilderness in several weeks.

PHILOSOPHICAL DISAGREEMENTS

Despite statutory planning requirements, however, the direction of wilderness management is bogged down in fundamental disagreements over philosophy, based on varying interpretations of the following provision of the Wilderness Act: "Wilderness areas shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired...and so as to provide for the protection of these areas, and the preservation of their wilderness character..." One side in the argument favors human "use and enjoyment" as the highest goal of wilderness use. For them, engineering and education are generally appropriate solutions to overuse problems. On the other side are wilderness purists, who lean towards preserving natural processes and an aura of solitude in an area, even if it means less convenience for people. This group tends to support strict control of visitors through rationing in crowded areas.

Congress, anticipating that commodity interests, not recreationists, represented the major threats to wilderness preservation, has given little guidance for developing a wilderness management philosophy.

A survey of wilderness managers conducted last year by the Northeastern Forest Experiment Station in Durham, N.H., found that most of the administrators who responded are confused about the basic meaning of wilderness. One manager wrote, "Public administrators, experts, and professionals do not agree about what wilderness is or how it should be operated...If we could decide what wilderness is, then we might be able to eliminate non-wilderness happenings in it."

Managers often use the notion of "carrying capacity," a concept borrowed from the field of range management, to help specify standards for wilderness and to bolster managers' decisions with evidence of impacts. Theoretically, when concentrations of people reach a certain level, the health of the ecosystem and the quality of the experience goes downhill. The problem is to figure out where that level is.

In a wilderness context, "carrying capacity" has become a Gordian Knot. How can one estimate the point at which change becomes damage when wilderness itself is not just a piece of ground, but the ambience of a place? One man's wilderness can be another's roadside picnic ground.

Although study techniques have increased in sophistication, with computers that simulate hiking patterns and calculate the number of encounters on the trail, the question of where to set capacity limits remains largely speculative. Many researchers have concluded that the idea of a cut-off point for ecological or social wilderness quality may, in fact, not exist. Ecologist William Moen says "the complexity of the dynamic relationship between an animal and its environment is so great that the human mind cannot fully comprehend it. Carrying capacity is not a straight-forward, definable biological relationship."

Currently, proponents of the wilderness "use and enjoyment" philosophy are using studies that debunk the carrying capacity theory to support their preference for engineering solutions and visitor education over rationing. In the hands of a bureaucracy, rationing has enormous potential for abuse, some say. Others, including the managers of a number of eastern wildernesses, feel that rationing is unfair and impractical in areas that traditionally host many visitors.

DEFENDING RATIONING

On the other hand, members of the wilderness purism school, such as George Stankey and Robert Lucas, researchers at the Rocky Mountain Forest and Range Experiment Station in Missoula, Mont., are using their calculations of carrying capacity to defend rationing systems. These include rationing by reservation, first come-first served, lottery, fees and outdoor proficiency certification. Among the suggested methods, the last two have not yet been tried. However, momentum is building to experiment with certification. Under such a system, admission to wilderness would depend on proving skills and knowledge that protect the user and the wilderness.

While certification would be an expensive rationing technique for both visitors and the managing agencies, so are the reservation and first-come first-served methods used today. According to recent calculations of permit costs conducted outside the agency, wilderness managers (and in turn U.S. taxpayers) spend $5-$20 to issue one "free" user permit.

Responses to a recent survey of the 27 managers who currently ration use indicate that many user limitations are being set "arbitrarily" and "without previous study." "It was a seat of the pants guess," said one manager. "We might as well have flipped a coin," said another. Many blamed insufficient funds and staff to measure use and study impacts.

Some researchers and agency critics feel that the decision-making process would not greatly improve even if the money were available. John Stanley, co-author of the Sierra Club's **1979 Wilderness Impact Study**, said: "Both the Sierra Club and wilderness managers end up reacting to peer pressure from other wilderness users when making policy decisions regarding the kinds and amounts of wilderness use."

Some users, frustrated with permits and seemingly capricious limits, are threatening legal action in Mt. Rainier National Park Wilderness, Wash., Great Gulf Wilderness, N.H., and Great Smokies National Park Wilderness, Tenn.

Rationing systems in the nation's popular whitewater rivers, such as Idaho's Middle Fork of the Salmon and the Grand Canyon in Arizona, have also been subject to similar threats by river runners — and in the case of the Grand Canyon, to a legal suit. Among charges against the National Park Service, which recently instituted a phase-out of motorized boat travel through the canyon, the plaintiffs, a group of commercial boatmen accuse the agency of adopting an elitist rationing policy. By increasing the time, money and stamina required to run the river, the boatmen charge that the Park Service is discriminating against the old, the weak, and those with tight schedules.

DIFFERENT APPROACHES

Some administrators, mostly from the Forest Service, are experimenting with ways of doing things differently.

Managers of the Selway-Bitterroot's Moose Creek District in Idaho are finding that teaching minimum-impact camping techniques in the area's public schools is reducing some types of impacts along several drainages. While the Forest Service used to take out several packtrains of trash a season in these areas, the district ranger says that since the education program began, the amount of garbage has dwindled — to less than one backpack-full last year. For this area, at least, education has so far eliminated the need to ration. The program — cheaper, easier to administrate and less controversial than rationing — has spread quietly to several other Forest Service wilderness areas.

In the White River National Forest in Colorado, administrators of the Maroon Bells-Snowmass Wilderness are developing a plan that aims to avoid a blanket approach to user restrictions, by tailoring management practices in different areas to the interests of various groups of users.

Instead of assigning one overall carrying capacity for the wilderness, the plan would establish several. This approach sets up different zones of experience within the wilderness. These zones include an outer "transitional" corridor, which would bear higher concentrations of use, and a series of more natural areas as one penetrates into the inner core of the wilderness. The pristine inner-sanctum would have no trails or signs.

Photo by Marjane Ambler

FORESTER in Wyoming's Bridger-Teton picks up after backpackers.

The plan, due to be published in several weeks, seeks to provide opportunities for four distinct categories of users that have been found to frequent that wilderness area: the elbow-rubbers, the hard core hikers, those who try to avoid risky situations, and a group that possesses several of these attributes. Under this system, those who go backpacking to socialize may find all the campers they could ever want to meet in the transition area. Joe and Debbie, on the other hand, would probably rush through this camping congregation and head for the more primitive interior.

If the public is satisfied with the way the plan works, it will be incorporated in the forest-wide plan for White River National Forest, slated for completion in 1985. Managers currently involved with the wilderness planning process nationwide look upon the Maroon Bells-Snowmass plan as a potential prototype for their own plans.

While the plan does not solve the rationing issue, it avoids it by giving purists and non-purists separate niches.

Ultimately, Congress or the courts may be forced to give wilderness management a clearer direction. In the meantime, experiments such as those in the Selway-Bitterroot and Maroon Bells-Snowmass may keep complaints fron various factions down to low decibel levels.

Louisa Willcox researched wilderness management for her thesis at Williams College, Massachusetts.

marmot inspects pack at 13,800'.

Energy

CERT stresses production, not rebellion

by Marjane Ambler

WASHINGTON, D.C. — Abandoning the OPEC-style rhetoric that has caused the organization public relations problems for the last five years, the Council of Energy Resource Tribes now is emphasizing the contribution made by its members in reducing the country's dependence on foreign oil.

According to figures released by CERT at its annual meeting here earlier this month, energy production on the reservations of member tribes totals the equivalent of almost 1 million barrels of oil per day, an increase of 52 percent in one year and of 100 percent since CERT was formed in 1975.

CERT claims that its members produced 29 percent more coal in 1979 than they produced in 1978, while total U.S. production increased only nine percent. Members produced 2.3 percent more oil and 6.8 percent more gas, while the U.S. totals decreased 1.4 percent in oil and increased only .3 percent in gas. Figures for uranium production were not available.

From the inception of the organization, CERT leaders have said that dramatic increases in tribal production would be possible only when the tribes gained more control over development. This view translated to a demand for more money, jobs and environmental regulatory authority for the tribal members.

CERT used the two-day meeting to draw attention to several advances in tribal control, both on the reservations and in Washington. At the same time, the Indian speakers named several specific areas where more Indian involvement is necessary before production can be increased further.

Some examples of advances cited at the meeting:

— Legislation has been prepared by coal-owning tribes, CERT and the federal Office of Surface Mining that provides tribes the option of full regulatory control over strip mining of Indian coal, such as many states now exercise. Requested by Congress in 1977, the bill will be considered early in 1981.

— Tribal governments are exempt from the oil windfall-profits tax. CERT said this legislative victory will mean more than $500 million in additional royalties for tribal coffers over the next decade.

— The Jicarilla Apache Tribe has taken over Palmer Oil and Gas Company's interests on its reservation in New Mexico. After buying out Palmer, one of three companies operating under joint venture agreements on the reservation, the tribe formed the Jicarilla Gas Co. to take over its six producing wells. The tribe also has imposed its own severance tax, an action which has been challenged by oil companies. The case probably will be considered this year by the U.S. Supreme Court.

— The U.S. Department of Energy has given grants to the Crow Tribe in Montana to study the feasibility of a tribally owned and operated synfuels plant and a coal-fired power plant.

— Tribal regulatory control has been imposed on oil exploration on the Fort Berthold Reservation in North Dakota. Indian guides, paid by the companies, accompany each exploration crew to enforce tribal regulations.

FRAGILE TRIUMPHS

CERT Chairman Peter MacDonald pointed out that many of the victories won by the tribes are fragile, and either a Carter or a Reagan administration could easily obliterate them.

Sen. Pete Domenici (R-N.M.), speaking on Reagan's behalf, promised that increased tribal revenues and jobs would result from a Republican administration's emphasis on increased energy production. However, MacDonald, saying he was unhappy with the direction his own (Republican) party was taking, criticized the GOP's emphasis on states' rights and reduced federal spending.

CERT officials consider these two areas critical to the development of Indian resources. Tribal mineral inventories and energy management capabilities depend heavily upon federal funding. States' rights are interpreted to mean a state's right to take the Indians' water, to tax their minerals and to exert jurisdiction.

While CERT leaders lauded efforts by the Department of Energy and the Administration of Native Americans, they said the Bureau of Indian Affairs has broken funding promises and tried to undermine tribal self-determination.

Both CERT and Interior sources admit that many recent disagreements are rooted in personality conflicts between CERT — represented by director Ed Gabriel and chairman MacDonald — and the appointee for Assistant Secretary for Indian Affairs, Tom Fredericks, and his staff. In fact, many Interior Department officials are convinced that CERT, or at least MacDonald, is responsible for holding up confirmation of Fredericks, which has been pending since July 1. CERT staff members deny the charge.

INTERIOR VS. INTERIOR

Indian leaders are outraged and Interior officials embarrassed by a debate now raging within the Interior Department about the legality of certain types of mineral contracts. MacDonald sounded the alarm at the beginning of the conference, saying that a draft Interior policy paper implies that only leasing is legal — not joint ventures, production-sharing agreements or service contracts. Calling Interior's view the "final betrayal," MacDonald said it would render the push by tribal governments to develop their own energy resources illegal.

Interior officials told **HCN** that they agree that tribes should be able to enter into such contracts. They believe, however, that the current statutes governing leases on reservation land restrict such arrangments. Legislation will probably be necessary to rectify the situation, they say.

Indian leaders are particularly irate because Interior had been working on new Indian mineral leasing regulations for five years prior to publishing them this summer. The regulations, which cover oil, gas and uranium, provide for alternative mineral contracts.

An Interior source, obviously embarrassed by the fact that his agency has published regulations it now considers illegal, said the problem should have been recognized years ago. "But," he said, "we weren't getting any pressure from tribes to enter into such contracts at that time."

Peter MacDonald

CERT members flirted with endorsing John Anderson, independent candidate for President. They gave him a standing ovation after his obviously well-researched speech appealing directly to the concerns expressed by tribal leaders about the other two parties.

However, CERT leaders refused to endorse any candidate yet. First they want the three candidates to address several specific Indian issues in policy papers. Flexing the Indians' political muscle, MacDonald cited figures showing a sizable number of voting-age Indians in several Western states and implied they would support a candidate whom CERT endorsed. However, since Indian voter turnout is traditionally low, their energy resources are much more likely to be considered when political decisions are made.

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Marjane Ambler, a former managing editor of **HCN**, is now a freelance writer based in Lander, Wyo., studying Indian energy development under a grant from the Alicia Patterson Foundation.

ENERGY PRODUCTION BY CERT TRIBES

	1978	1979	Percentage Increase
Oil (in barrels)	19.8 million	20.3 million	2.3
Natural gas (in million cubic ft.)	87.0 million	92.9 million	6.8
Coal (in tons)	19.0 million	24.8 million	29
Uranium (in tons)	1.5 million	3.0 million	99
Barrels of oil equivalent	224.3 million	342.0 million	52

Pipe will pass Pine Mountain

The latest route chosen for MAPCO, Inc.'s 1,172 mile pipeline in New Mexico, Colorado, Utah and Wyoming represents a small victory for tree lovers.

The pipeline will transport up to 65,000 barrels a day of liquid hydrocarbons, including butane, ethane, isobutane, natural gas and propane.

In preparing the environmental impact statement for the pipeline, the Bureau of Land Management analyzed several different route alternatives. In Wyoming's Sweetwater County, BLM selected a route over Pine Mountain, even though the company wanted to parallel Highway 430.

Because the Pine Mountain route went through one of the few forested areas of Sweetwater County, a number of local citizens launched a campaign to convince BLM to re-route the pipeline along the highway. The campaign generated nearly 100 letters opposing the Pine Mountain alternative. One correspondent wrote, "After reviewing your proposals for possible routes for the MAPCO pipeline over...Pine Mountain, I must ask you one thing; Are you crazy?"

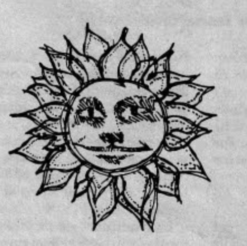
A BLM source says that the route over Pine Mountain was chosen because of soil instabilities along Highway 430. However, once the strength of the public sentiment became clear, "We chose the highway 430 route — the route that made everybody happy." MAPCO will use special construction techniques to overcome the loose soils problem.

The only battle facing the pipeline now comes from residents of Utah, where the pipeline will be put through Jesse Ewing Canyon. According to BLM, there is no serious environmental danger, because the pipeline will be set in existing roadbed. However, residents are upset that the road will be temporarily closed during construction.

Meanwhile, four gas transmission companies have filed with the Federal Energy Regulatory Commission for permission to build a 583-mile natural gas pipeline from the Wyoming portion of the Overthrust Belt to California. The line would deliver 800 million cubic feet of gas daily. It would be undertaken by a partnership called the Rocky Mountain Pipeline Co., which consists of Pacific Gas Transmission Co. of San Francisco, Pacific Interstate Transmission Co. of Los Angeles, El Paso Natural Gas Co. and Northwest Pipeline Corp. of Salt Lake City. The companies hope to begin delivering gas to California in 1982.

Energy

Coal tax fuels the search for alternative energy in Montana



by Ken Western

BOZEMAN, Mont. — One of the largest solar-heated commercial structures in the Northwest is the $2.75 million Life of Montana building here.

The building has been labeled a "heat sieve" by the Alternative Energy Resources Organization, a Billings-based group of solar advocates. But the building's maintenance engineer points with pride to a heat bill of $752 last December — which is $2,248 less than the estimated cost of heating the building with natural gas.

Ordinarily a private company's choice in architecture wouldn't become a matter of public debate. But the bill for this solar system was picked up by taxpayers. The project received $208,000 from the Department of Energy and $59,500 from Montana's Renewable Energy Resources Program.

The Montana program has served to encourage development and promotion of solar energy and other renewable resources. Established in 1975, it has funded about 145 projects in the areas of solar, wind, hydro, biomass and geothermal power. Its money comes from 2.5 percent of the state's coal severance taxes, which amounted to about $1.5 million this year. California, Oregon, Kansas and Tennessee all have undertaken programs similar to Montana's. But while these states may rely on the sales of bonds or other means to fund their programs, only Montana relies entirely on coal. Using revenues from that finite source, the state hopes to obtain 15 percent of its energy needs from renewable sources by the year 2000.

Montana's grants, administered by the Energy Division of the Department of Natural Resources and Conservation, are awarded for a period of one year. Recipients are required to share their information with the public.

Officials at the Energy Division report that the number of unsolicited proposals for solar projects has been double the number submitted for all the other renewable energy categories combined. Projects have included solar hot water systems, passive greenhouses, home space heaters and various educational and research projects.

While stirring up a few controversies such as that surrounding the Life of Montana, the Alternative Renewable Energy Sources Program has enabled many Montanans to try out ideas which otherwise might not be financially practical.

In a state where the task of keeping warm is challenging, it has helped keep the search for the perfect heating system very much alive.

"Since it has been shown that solar energy works as a residential heating source, no additional demonstration projects of this type will be funded," according to the agency. "However, new high performance, low-cost innovations and limited commercial scale development of solar energy will continue to be explored."

Wood and solar energy are viewed as offering "the best potential for widespread use in the next two to five years." And while wood stoves vastly outnumber solar collectors in Montana, the use of solar heating has grown significantly during the past several years.

Up to 400 residences and commercial buildings utilize solar energy in Montana, which also offers tax credits and incentives for alternative energy projects.

About one-third of the solar installations are located in western Montana, with about 65 to 70 percent of the activity centered around the five-county area around the university community of Missoula.

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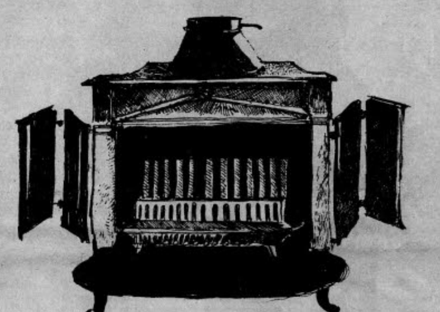
Ken Western is a free-lance writer based in Bozeman, Mont. Research for this article was paid for by the HCN Research Fund.



Hot Line

TUMBLING TINDERWEEDS. In the mad rush to turn practically everything into some sort of fuel, University of Arizona scientists say that notorious and unbeloved Russian thistle — often known as tumbleweed — can be transformed into synthetic firplace logs. Researchers at Arizona say they have succeeded in turning the tumbleweeds into tumblelogs and they are now building a prototype factory to manufacture the synthetic logs. Kenneth Foster, director of the university's Office of Arid Lands Studies, told United Press International: "Tumbleweeds are an excellent fuel. They have a heat content equivalent to white pine. And logs made from the weeds burn very clean and leave little ash." Foster says the Russian thistle, which has been the subject of intensive extermination efforts by farmers, could become a cash crop in the future.

SMALL HYDROPOWER PLANTS. The installation of small hydroelectric power plants on existing water projects could provide 190 megawatts of power in 12 Western states, according to the Interior Department's Water and Power Resources Service. Interior says there are 46 places where small plants could be installed economically at existing facilities. In addition to economic considerations, the service considered environmental and social impacts of the sites. Of the 46 sites considered, 37 would be acceptable to the public and free of substantial environmental impact. Twelve of the potential sites are in Colorado; five in Montana; three in Idaho; and two each in Nevada, Arizona, Utah, New Mexico and Wyoming.

NO NEW DAMS. The Army Corps of Engineers, responding to a request from Idaho Gov. John Evans (D), is terminating its study of possible damsites on the North Fork of the Coeur d'Alene River. Evans said he would look into ways to harness streamflow without building large dams, which, he noted, Idahoans clearly opposed. "It appears unlikely," said Evans, "we will have any more major hydroelectric dams in our state."

PRIVY POWER. It's not quite the event that, say, the unveiling of the first nuclear fusion reactor might be, but the National Park Service is now operating a solar-powered privy at Rocky Mountain National Park. They hope the gadget — which distills urine and dries excrement to be burned on the spot — may be the harbinger of solar seaters across the nation. And Rocky Mountain National Park is particularly needy: During the tourist season, helicopters have to fly out wastes every week.

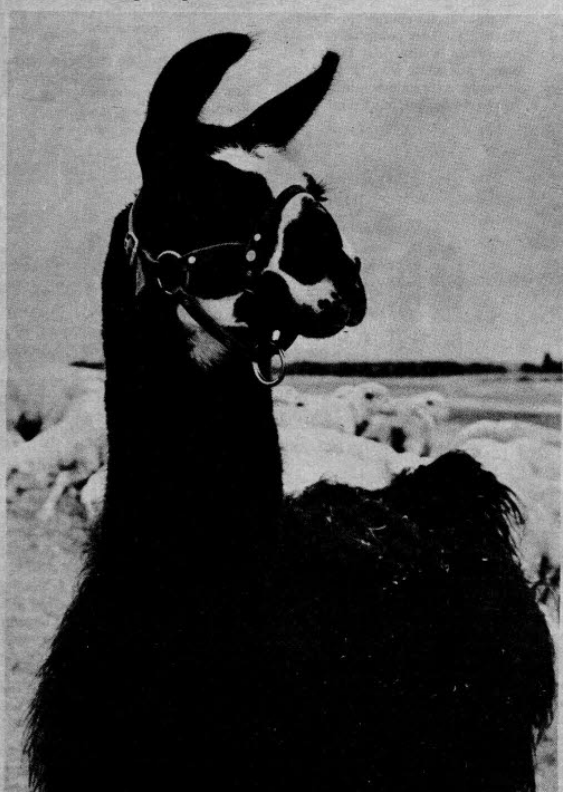
AUSSIE OIL DELAY. The Great Goanna in Western Australia will sleep in peace for at least a few more months. An Australian labor leader has stepped into a dispute between oil men and Australian aborigines and halted oil and gas drilling on tribal land sacred to the lizard god Goanna. The Aborigines are opposed to the drilling because they believe that if the lizard-god is disturbed, he will tell the real-life, six-foot long lizards not to mate, depriving the tribes of their tribal delicacy, roasted goanna meat. Australian union chief Bob Hawke has convinced the 15 workers on the rig not to drill until a settlement can be reached with the state government in Perth. According to reports from the region, The Great Goanna himself has not been consulted.

TAR SAND ON HAND? Congress is moving slowly to resolve some statutory roadblocks to federal leasing of tar sands in Utah — so slowly, in fact, that Interior Department officials decided to go ahead and lease whether or not legislation is passed. That will mean an end to a 15-year moratorium on leasing tar sands, which hold reserves estimated at 30 billion barrels of oil. But don't expect tar sands production tomorrow. Though Interior Undersecretary James Joseph said oil and gas lessees in the southwest corner of Utah could begin producing oil from tar sands without paying any additional fees, the development might face environmental hurdles. In addition, tar sands are found in an area already slated for other developments: among them coal mining, oil shale, the MX missile system, and the Intermountain and Allen-Warner Valley power projects.

LAYING OFF URANIUM. New Mexico, the nation's chief producer of uranium yellowcake for nuclear power plants, is suffering from 20 percent unemployment among its uranium workers, as a halt in nuclear power growth closes more and more mines. "The industry is in a complete state of collapse," Bill Darmitzel, head of the New Mexico Mining Association, told the **Wall Street Journal**. And while the industry has endured boom-and-bust cycles before, officials told the **Journal** that they are encountering more and more public opposition to their mining and milling activities. New Mexico is not alone in suffering from the uranium industry sag: a total of 500 workers have now been laid off at uranium mines in the Jeffrey City, Wyo., area.

Photo courtesy of Mama's Llamas

BACKPACKING LLAMAS are a more common sight in the California mountains than they are presently in the Rockies, but interest here is growing.



GREGORY, a six-year-old llama belonging to Betty Holstein, is learning two new skills: backpacking and sheepwatching.

John Lye isn't sure the llamas have saved any lambs, but "we've sure gotten a kick out of watching them."

BETTY HOLSTEIN has loaned her llamas to John Lye, a Morton, Wyo., sheeprancher, to see if they'll keep the coyotes away. They report mixed success, but Lye adds: "We sure get a kick out of watching them."

LLA

Expert pack-toters

by Duane Howe

"Come on, Gregory, get up," Betty Holstein admonished her six-year-old llama.

Gregory was on his first pack trip in the Wind River Mountains, and he couldn't keep up with the horses. For the first eight miles he had carried his pack regally and had even passed some backpackers. Now he must have felt a rest was in order.

Holstein's horse, which had Gregory's lead rope around its saddle horn, yanked desperately. The llama remained unmoved, even as the saddle was ripped off the lunging horse's back. Eventually, in his own good time, Gregory moved along. But he took his respites when he pleased and arrived at camp two hours behind the horses.

A slower pace on the return trip was more to Gregory's liking. He seldom needed a rest, and his pace quickened noticeably when we encountered a black bear sow and her cubs along the trail. The bears weren't threatening, but they captured Gregory's attention and made him very light-footed for the next hour.

Gregory was as much of a surprise to wide-eyed hikers as the bears had been to Gregory. Llamas are not a common sight in Wyoming's mountains.

"California and Oregon are llama country," Holstein says. "There, it isn't unusual to see hikers accompanied by several of the pack-toting beasts."

The largest herd in North America, 500 head, is owned by Patterson Llamas of Sisters, Ore. Two California firms, Shasta Llamas of Mount Shasta and Mama's Llamas of El Dorado advertise wilderness hikes of three to five days with llamas carrying the baggage.

The heavier the load, the slower the animals travel. Professionals suggest keeping packs under one-third of the animal's body weight to maintain a comfortable hiking pace. Depending on the load, llamas can travel up to 25 miles a day. While it takes two to four llamas to shoulder the load of an average horse, llamas are lighter on the land than horses.

The shaggy beasts can also lighten your pocketbook. The price of an adult female has risen to nearly $3,000 and a breeding pair goes for $4,000 to $5,000. Their popularity in zoos and as pets, pack animals and investments, combined with a limited supply, has pushed the price upward. The United States embargoed their importation in 1938, making the estimated 3,000 llamas born in the United States all that are available here.

Llamas can be a profitable investment if you have at least three females and a male. Purchases qualify for investment credit and can be depreciated over a five to 10 year period along with all buildings, fences and equipment needed to raise them. Their feed is also deductible. Llamas breed in their second year, give birth to a single offspring after a gestation period of 11 months and live about 20 years.

Patterson Llamas has buyers for most of their animals before they are born. They will not sell a female without a male, but will sell any number of the less expensive males to build a pack string.

When a stranger to Holstein's llamas was feeding them recently he turned to find a two-year-old female looking him square in the eye from a few inches away. "She was just checking him out," Holstein says. Llamas have a special padded toe that allows them to approach quietly subjects they feel should be investigated.

Adult llamas stand between three and four feet high at the shoulder and weigh 250 to 450 pounds. They come in combinations of white, brown, black, beige, gray and appaloosa. Their fleece is coarser than that of the alpaca, a slightly smaller domesticated species of the genus **Lama**, and shorter than that of the prized vicuna, a more distant wild relative that survives somewhat tenuously high in the South American Andes.

Each year a llama will yield three to eight pounds of wool that brings $1 to $2 an ounce, which more than pays for its feed. But pack llamas are not usually sheared because their wool cushions heavy loads.

In South America males are used exclusively as pack animals, and females

AMAS

try predator patrol

Photographs by Sara Hunter-Wiles

raise young and provide wool. Soft llama-hair ropes secure the packs on the males, and spun llama wool is woven into cloth. The meat is sometimes jerked into "charqui," sandals are made from the skins, candles from the tallow, and even the dried droppings are burned to heat homes.

The llama is one of 16 camel-like creatures found in North American fossils. It has taken some 53 million years for it to grow from the jackrabbit sized creature that originated in western and central North America, to migrate to South America and to return home.

"What intrigues me most are their unique personalities," says Holstein, who owns six llamas. Ordinarily friendly, Gregory will ignore her and become very recalcitrant when the llama thinks he has been abused. When contented, he makes a low humming sound that could be likened to the purring of a cat. He saves his piercing scream for the rare times when he's really upset. Most of the time, he is completely silent.

Llamas are easy to raise and train, rarely get sick and can tolerate the Southwest's summer heat as well as the worst of a Wyoming winter.

True to camel tradition, they can go without food or water for several days. Their three-compartment stomach processes only about a bale of hay a week. They deposit their waste in a community dung heap, and have no odor detectable by man. A four-foot wire or pole fence will hold them, and they can be transported in a camper on a pickup.

Already attractive to hikers, animal lovers and investors, llamas soon may be sought after by sheep ranchers as well, Holstein says. She has seen her llamas chase dogs out of a pasture and has heard that they will kill dogs by striking with their front feet. She's often wondered if llamas could be equally inhospitable to coyotes. John Lye, a Morton, Wyo., sheep rancher and member of the Fremont County Predator Control Board, is giving her an opportunity to find out.

Shortly after Lye lost the first two lambs from his flock of 300 sheep this spring, he decided to give llamas a try. His first day on the job, Gregory ran Lye's own dog out of the fenced pasture. Soon after, the county trapper's dog was encircled by llamas and needed help to escape. Lye figured he was onto something.

But during those first few weeks, the llamas kept apart from the main flock and four lambs were lost. Later, in May, Lye returned from a two-day absence to find two lambs missing, one dead, and four mutilated, but alive. Since he had never had lambs attacked but not killed before, Lye guesses that the llamas caught the coyotes in the act and ran them off before they could finish the job. This time the sheep were in an irregularly-shaped rolling pasture where in some corners coyotes could work undetected. Lye thinks that one or two coyotes probably decoyed the llamas away from the sheep while other coyotes made the kills.

From June 4 to Aug. 19, no kills were made. During late August, three late-born lambs were lost.

"We've sure had a kick out of watching them this summer," Lye says, though he isn't sure the llamas saved any lambs. Lye and Holstein speculate that llamas raised with sheep probably would reduce losses by staying closer to the flock. Only one observation was made of the llamas actually chasing a coyote: A neighbor saw Gregory run one away from the flock. She said he didn't try to catch up with it, but returned to stand beside another llama after the coyote was on his way.

The experiment has generated a lot of interest, Holstein says. She is planning to meet with a University of Wyoming official in September to discuss a more formal research project. Like John Lye, sheepmen plagued by coyotes are ready to try anything — even long-necked beasts that make their neighbors stop and stare.

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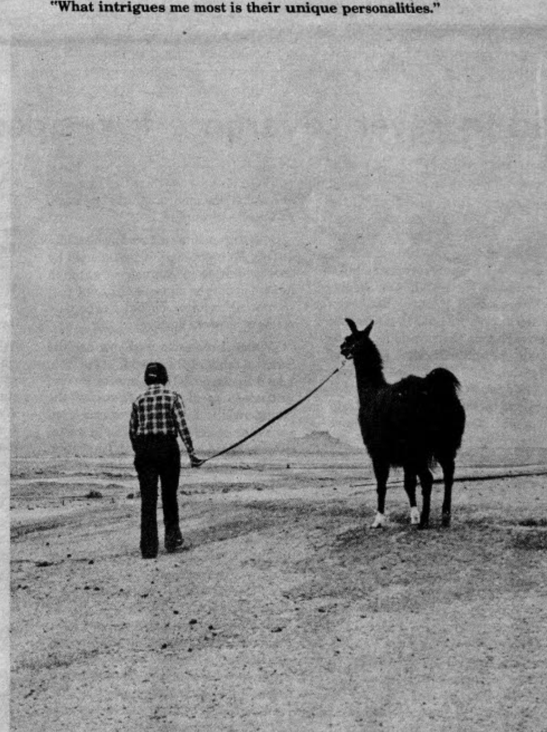
Duane Howe is a veterinarian and horse packer who lives in Dubois, Wyo. This story was paid for by the HCN Research Fund.

THE ODD COUPLE are expected to produce more llamas for Betty Holstein's ranch in Dubois, Wyo.

Ordinarily friendly, Gregory becomes very recalcitrant when he thinks he has been abused.

INTO THE SUNSET go Gregory and Betty Holstein. Holstein says: "What intrigues me most is their unique personalities."



Trackings

followups on previous stories

New exploration roils mountainous Stillwater Complex

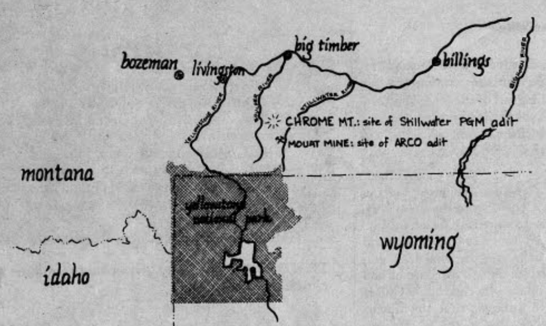
(see **HCN** 10-5-79 for previous story)

Major corporations are moving forward with plans to develop mineral deposits in the Stillwater Complex, a mineral-rich band stretching about 28 miles across the northern end of the Beartooth Range in south central Montana.

In August, the Montana Department of Health and Environmental Sciences issued a water discharge permit for a 2,000-foot exploratory adit or tunnel below the summit of 10,000-foot Chrome Mountain on a plateau above the Main Boulder River south of Big Timber.

Though the complex has experienced mining boom periods whenever the country needed chromite, nickel-sulfide, or platinum and related minerals, for several decades it has been the reserve of ranchers and outdoor enthusiasts attracted to its fish, game, and scenery.

Stillwater PGM has begun construction of a series of settling ponds that will hold the water discharged during the exploratory operation, and has already dug the adit 120 feet into the mountain, according to J. David Kelland, project manager in Denver for Chevron Resources Co.



Chevron joined with Johns-Manville Sales Corp. last year to form the Stillwater PGM partnership. Colorado-based Johns-Manville, which has been active for several years in the Beartooths, last summer extended a road to the Chrome Mountain site and has drilled a series of holes for core samples.

Meanwhile, the Anaconda Co. and its parent, the Atlantic Richfield Co. (ARCO), are nearing a decision on whether to develop platinum and palladium deposits at the east end of the Stillwater Complex. The company drilled a 4,000-foot exploratory adit this year at the site of the old Mouat Mill, a leftover from previous mining operations.

Anaconda last week told members of the Stillwater Protective Association, a group of ranchers and landowners which has been watchdogging mineral development in the area, that by the end of the year it would make a decision on whether to go ahead with development. The exploration reportedly turned up mineralization suitable for mining, but doubts about the economy have slowed an Anaconda decision.

A group called the Boulder Valley Association has formed to represent local landowners on the northern side of the complex where Stillwater PGM plans its exploratory adit. Company officials are optimistic about the Chrome Mountain adit.

"The diamond drilling has shown that a mineral zone exists, but we need to go underground to check on the ore distribution and the structural composition of the rock," Kelland said Tuesday of Stillwater PGM's site.

PGM stands for "Platinum Group Metals," which are used predominantly to manufacture catalytic converters for the auto industry and scrubbers for the petroleum refining industry. The metals are also used in the electronics and jewelry industries.

Kelland said platinum and palladium are both present at the site but the firm needs to take out a bulk sample before making a decision on going into production. Trucks will be used to take out about 200 tons of ore this summer and next.

A new operating plan, as well as a new state water quality permit, would be needed for full scale production.

A tentative plan for future operations was submitted to the Forest Service at the end of July so that Stillwater PGM could begin studies for a formal environmental impact statement, Kelland said. The plan calls for a large-scale mining operation by as early as 1982, with a new road up the headwaters of the East Boulder River to take the place of the long route from the Stillwater River side of the range.

An underground mine would supply ore to a mill and crusher located in what is now a remote canyon. Ultimately, the operation could employ up to 500 persons. And Big Timber, a small town which now serves the agricultural and vacation properties around it, could be home to a smelter.

Johns-Manville has been exploring the Stillwater Complex for almost 15 years — and once in the past, its tunnelling for samples has caused problems. In 1976, the Montana Department of Health and Environmental Sciences halted drilling in the Picket Pin Ranch area near the West Fork of the Stillwater River after ammonia and nitrate showed up in the water.

Pressured by the Northern Plains Resource Council, which is affiliated with the Stillwater Protective Association and the Boulder Valley Association, the state environmental agency made the August permit "stringent," according to both company and rancher representatives.

The permit requires that any water discharged from the mine not lower the water quality of the creek below the adit, according to Fred Shewman in the Water Quality Bureau of the state health department.

Shewman said the revised permit requires the corporation to monitor groundwater monthly, instead of quarterly. The revision was one of several minor changes incorporated as the result of public comments at a hearing in July in Big Timber.

Kelland said the number of miners will increase to 16 men in another month for two shifts on the adit. He said work will probably continue until October, when weather conditions will drive the miners away from the 9,000-foot site.

— Dan Hollow, Geoffrey O'Gara

Bid to sever severance taxes dead for 1980

WASHINGTON, D.C. — A bid in Congress to curb state taxes on federal coal has stalled until next year, killed by the crowded fall congressional calendar and strong opposition from Wyoming and Montana officials.

"It is simply too controversial a bill," said George Dowd, a staffer for the Senate Energy and Natural Resources Committee. "We just didn't get started soon enough this year," said an aide to Sen. Dale Bumpers (D-Ark.), sponsor of the legislation. "There was not adequate time for everyone to be heard."

Bumpers' bill would have put a limitation of 12.5 percent on the severance tax states may impose on federal and Indian-owned coal within their borders.

On the House side, a bill proposed by Rep. Phillip Sharp (D-Ind.) would have set the same limit on all coal, whether federal, Indian, state, or private. That legislation was approved this week by the full House Commerce Committee, but even if the House should approve it, Senate inaction stands in its way.

Bumpers and other supporters of a tax ceiling argue that consumers in their states are paying higher utility bills — as much as $4.30 more a year — because of high severance taxes. One senator likened the rise in severance taxes to the jumps in OPEC oil prices.

But officials from Montana and Wyoming — which have severance taxes of 30 and 17 percent, respectively — say hefty severance taxes are needed to provide the money for dealing with the social and environmental consequences of coal mining.

Both arguments surfaced repeatedly during an eight-hour hearing held by the committee in August — an often heated debate on an issue that one participating senator called "economic warfare between states."

"When it comes to coal, we are the Saudi Arabia of the world," said Sen. Lloyd Bentsen (R-Tex.), one of several witnesses speaking in favor of the Bumpers bill. "But Wyoming and Montana are in effect becoming a cartel themselves. A severance tax limitation would save us tens of millions of dollars."

"I don't think this is a consumer bill at all," said Sen. John Melcher (D-Mont.). "It's a coal company bill. And if it's passed along with efforts to gut the stripmining act, it would be a banner year for coal companies."

One bone of contention was Wyoming and Montana's access to other financial resources. "It's very difficult to charge the federal government with being indifferent to the needs of states that are impacted by coal development," said Bumpers, citing the state royalty fees and the federal strip mine bill's reclamation fund as alternative funding sources.

Supporters of the Bumpers bill also charged that high severance taxes violate the law by interfering with interstate commerce. But Melcher blamed the escalating freight rates for any of the alleged impacts on commerce.

"I have studies," added Sen. Malcolm Wallop (R-Wyo.), "that show that the present level of taxation has no effect on the marketplace."

"How do we go about getting the money we need?" asked Wallop. "We're not trying to take money from other states. But how is a rural state like Wyoming going to shift to producing synthetic fuels and other energy resources, when we have had to cut back already on some 20 services, including roads, schools and water supplies?"

The extent to which severance taxes are actually being directed towards long-term coal impact mitigation efforts was not discussed at the hearing.

Wyoming Gov. Ed Herschler, however, later told **High Country News**, "Most of our focus is on trying to meet the social and economic impacts that are facing our state today."

Herschler said that he would not support the direct rebate approach the state of Alaska has recently employed to distribute some of its oil and gas royalties. "But," he said, "if we get to that point, we should reduce taxes."

Western Roundup

Wyoming Basin National Park?

The National Park Service is launching a study to assess the park potential of the 22-million-acre Wyoming Basin in southwestern Wyoming and northwestern Colorado. In a recent press release, Representative Dick Cheney (R-Wyo.), calls the study "a misuse of time and taxpayers' money."

The $4000 study is due to be completed in November. If the Park Service concludes that the basin has park quality resources, another study will be undertaken to make size recommendations.

The basin, which includes the Red Desert and some unique rock formations, is largely managed by the Bureau of Land Management.

Cheney said, "I find it incredible that at a time when the Park Service can't take decent care of the extensive lands and resources it already owns, the agency is busy looking at more lands. And I think it's absurd that this part of Wyoming is being studied for park potential." The Wyoming Basin contains "significant energy resources" which shouldn't be locked up, he said, as well as large amounts of private land.

However, a Park Service spokesman said energy development and park use could coexist under a plan that would need congressional approval.

Sioux lose suit for lands

The federal district court has dismissed a suit filed by the Oglala Sioux for the return of South Dakota Black Hills land instead of money. The Oglala had filed a complaint on Aug. 1 that sought to block the payment of $117 million by the federal government to nine Sioux tribes.

The move was in response to a June 20 Supreme Court decision that ordered the government, through Interior Secretary Cecil Andrus, to pay $17.1 million for the 7.3 million acres, and interest totalling over $100 million. According to attorney Mario Gonzalez of Pine Ridge, S.D., the Oglala want the land, not money.

However, the plaintiffs also sought $1 billion in trespass damages from the government, and $10 billion to pay for mineral resources removed from the Black Hills since 1877.

U.S. Judge Albert Schatz of Omaha dismissed the case, saying, "The court concludes that the present suit is a suit against the sovereign, that the Congress created a special and exclusive remedy under the Indian Plains Commission Act for the claims raised here, and that accordingly this action cannot be maintained against the United States in this court."

Wilderness briefs

Photo by Richard Murphy

WYOMING'S DUNOIR CREEK area where Chevron plans to conduct seismic testing for oil and gas.

RATTLESNAKE

U.S. Sen. John Melcher (D-Mont.) recently introduced a bill to create a Rattlesnake National Recreation Area and Wilderness on 60,000 acres north of Missoula. Melcher's bill includes 30,000 acres of wilderness, 1,665 less than the reserve proposed last November in the House of Representatives by Rep. Pat Williams (D-Mont.). The difference, says Melcher, is a provision to provide more opportunities for bicycles, horse-drawn carts, and motorcycles.

Cass Chinske, head of the local Friends of the Rattlesnake, says his group will fight the "Melcherization of the Wilderness." He claims that the extension of the recreation area boundaries would harm several endangered species, including the grizzly bear.

Melcher says that Chinske has "raised his hackles," but he would "check into what he was saying." The senator introduced the bill after agreements for land trades were finalized. While land must be under federal control to be included in a wilderness proposal, about 40 percent of the Rattlesnake is in private ownership. Montana Power Co., owner of 21,093 acres of the Rattlesnake, has agreed to trade its land for $20 million worth of bidding credits on government-managed land in southeastern Montana.

PALISADES

On July 24, the U.S. Forest Service issued a stay on the approval of new oil and gas leases in the 250,000-acre Palisades wilderness review area along the Idaho-Wyoming border. The action came in response to an administrative appeal of an agency decision that reopened for leasing the area slated for further planning. Regional Forester Jeff Sirmon maintains that since the RARE II Environmental Impact Study did not give enough information to identify the choicest leasing areas or environmentally sensitive spots, the Forest Service was bound to open the entire area for leasing. Currently environmental assessments are not required for leases, but only on a site by site basis for planned exploration operations. Dr. Thomas Nelson, deputy chief for the National Forest Systems Program will preside over the oral presentation of the appeal on Oct. 1.

RIVER OF NO RETURN

Noranda Mines, Ltd. has recently filed mining claims for cobalt in the newly designated River of No Return Wilderness in Idaho. Due to lobbying efforts by the company, the bill, signed by President Carter in July, set aside the 39,000-acre West Panther Creek drainage as a special management area that could host cobalt and copper mining if the minerals are found in sufficient quantities. Noranda, owner of the Blackbird cobalt and copper mine six miles outside the wilderness boundary, has filed claims that cut a swath southeast to northwest in the wilderness along West Panther Creek.

Noranda mine manager Jim Johnston said the biggest problem for new mining efforts will be the tailings dam, according to an **Idaho Statesman** report. Copper and cobalt waste currently leaches into the Panther Creek drainage from the existing mine's tailing dam, and has reduced the fish population there by as much as 90 percent, he said.

DUNOIR

Plans by Chevron U.S.A., Inc., to set off explosives in the DuNoir area northwest of Dubois, Wyo., were temporarily shelved and then reinstituted this week by Shoshone National Forest officials.

The Forest Service issued an environmental assessment last July recommending Chevron be allowed to do seismic testing for oil and natural gas in the 53-square mile area in northwest Wyoming — much of which has been recommended by the agency for inclusion in the neighboring Washakie Wilderness.

Under the plan, Chevron will explore along 13.6 miles of seismic lines, of which about one-third lie in the Forest Service-recommended wilderness area. (Wilderness groups are pressing for a larger wilderness, that would encompass most of the seismic testing area.) The blasting will be done only during the winter months. The Forest Service decision will not be final until after the public comment period ends on October 15.

Bruce Hamilton, the Sierra Club Northern Great Plains representative, said the new plan was an improvement over the July proposal, because seismic work in winter would protect vegetation, wildlife and summer users. But he added: "The highest and best use for this area is wilderness preservation. We see no reason for seismic testing to take place when all indications are that chances of a discovery are negligible." The U.S. Geological Survey, in a 1979 report, declared commercial-size oil and gas deposits unlikely in the DuNoir area.

STATE OF WYOMING

Financial Statements of Insurance Companies which are Authorized to do business in Wyoming.

Published in High Country News Aug. 22; Sept. 5, 19; Oct. 3, 17, 31, 1980

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Aviation Underwriters, Inc., Attorney-in-Fact for
National Insurance Underwriters
10534 Natural Bridge Road, St. Louis, Missouri 63134
Lambert Field, P.O. Box 10155, St. Louis, Missouri 63145
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

GROSS PREMIUMS RECEIVED	$288,656
Losses Paid Deducting Salvage	623,116
Losses Incurred	1,110,334
Total Admitted Assets	11,388,675
Liabilities	9,366,240
Capital Stock Paid Up	
Surplus	2,022,435
Income during year ending December 31, 1979	3,170,092
Expenditures for year ending December 31, 1979	3,402,796

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Datea Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

THE NATIONAL INVESTORS LIFE INSURANCE COMPANY
Home Office: Second and Broadway Streets, Little Rock, Arkansas 72201
Mailing Address: Post Office Box 3668, Little Rock, Arkansas 72203
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$-0-
Gross Premiums Received	51,903
Direct Benefits and Losses Paid	14,887
Direct Benefits and Losses Incurred	2,488
Total Admitted Assets	167,684,963
Liabilities	156,630,838
Capital Stock Paid Up	2,000,000
Surplus	9,054,124
Income during year ending December 31, 1979	57,133,721
Expenditures for year ending December 31, 1979	53,761,707

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

NATIONAL OLD LINE INSURANCE COMPANY
(Mail) P.O. Box 2900; Little Rock, Arkansas
(Home) Capitol 9 Woodlane, Little Rock, Arkansas 72201
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$7,111,000
Gross Premiums Received	236,542.65
Direct Benefits and Losses Paid	109,130.56
Direct Benefits and Losses Incurred	114,926.90
Total Admitted Assets	232,945,629
Liabilities	205,075,151
Capital Stock Paid Up	5,691,449
Surplus	22,179,028
Income during year ending December 31, 1979	61,187,888
Expenditures for year ending December 31, 1979	52,480,149

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Fidelity Life Insurance Company
1002 Walnut Street, Kansas City, Missouri 64102
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$44,648,633
Gross Premiums Received	1,641,979
Direct Benefits and Losses Paid	296,350
Direct Benefits and Losses Incurred	304,614
Total Admitted Assets	227,332,226
Liabilities	206,619,101
Capital Stock Paid Up	3,125,000
Surplus	17,588,125
Income during year ending December 31, 1979	82,209,959
Expenditures for year ending December 31, 1979	76,961,560

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Guardian Life Insurance Company
2 East Gilman Street Madison, WI 53703
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$111,164
Gross Premiums Received	9,327
Direct Benefits and Losses Paid	2,862
Direct Benefits and Losses Incurred	0
Total Admitted Assets	204,243,117
Liabilities	190,840,383
Capital Stock Paid Up	NONE
Surplus	13,402,734
Income during year ending December 31, 1979	42,150,146
Expenditures for year ending December 31, 1979	40,554,145

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the state of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National General Insurance Company
P.O. Box 10155 Lambert Field; St. Louis, Missouri 63145
10534 Natural Bridge Road; St. Louis, Missouri 63134
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

GROSS PREMIUMS RECEIVED	$145,319
Losses Paid Deducting Salvage	158,343
Losses Incurred	160,962
Total Admitted Assets	21,375,313
Liabilities	15,513,070
Capital Stock Paid Up	1,512,000
Surplus	4,350,243
Income during year ending December 31, 1979	18,364,325
Expenditures for year ending December 31, 1979	17,016,501

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of the State relating to insurance, and it is duly authroized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Fire Insurance Company of Hartford
Mail — CNA Plaza — Chicago Illinois 60685
Home — 270 Farmington Avenue, Farmington, Connecticut 06032
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

GROSS PREMIUMS RECEIVED	$90,829
Losses Paid Deducting Salvage	4,305
Losses Incurred	24,323
Total Admitted Assets	614,756,945
Liabilities	493,569,556
Capital Stock Paid Up	5,000,000
Surplus	116,187,389
Income during year ending December 31, 1979	231,928,242
Expenditures for year ending December 31, 1979	219,294,424

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of the State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Liberty Life Ins. Co.
MAIL: Valley Forge, PA 19493
HOME: Liberty Park, Frazer, PA 19355
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$-0-
Gross Premiums Received	29,198
Direct Benefits and Losses Paid	15,076
Direct Benefits and Losses Incurred	14,528
Total Admitted Assets	71,952,290
Liabilities	53,791,636
Capital Stock Paid Up	1,500,000
Surplus	16,660,653
Income during year ending December 31, 1979	56,206,886
Expenditures for year ending December 31, 1979	46,757,902

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

NATIONAL INDEMNITY COMPANY
3024 Harney Street, Omaha, Nebraska 68131
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Gross Premiums Received	$241,977.00
Losses Paid Deducting Salvage	140,922.00
Losses Incurred	108,298.00
Total Admitted Assets	409,798,815
Liabilities	192,035,504
Capital Stock Paid Up	5,500,000
Surplus	212,263,311
Income during year ending December 31, 1979	125,636,554
Expenditures for year ending December 31, 1979	105,564,354

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Independence Life Insurance Co.
Room 810 Illinois Building Springfield, ILL 62701
Liberty Park, Frazer, PA
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$230
Gross Premiums Received	1,062
Direct Benefits and Losses Paid	-0-
Direct Benefits and Losses Incurred	-0-
Total Admitted Assets	13,160,374
Liabilities	9,203,636
Capital Stock Paid Up	1,504,000
Surplus	2,452,737
Income during year ending December 31, 1979	8,994,046
Expenditures for year ending December 31, 1979	10,345,298

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

The National Life Assurance Company of Canada
522 University Avenue, Toronto, Ontario, Canada M5G 1Y7
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$-
Gross Premiums Received	27,015
Direct Benefits and Losses Paid	16,715
Direct Benefits and Losses Incurred	14,156
Total Admitted Assets	44,826,839
Liabilities	41,070,839
Statutory Deposit	600,000
Surplus	3,156,000
Income during year ending December 31, 1979	19,826,913
Expenditures for year ending December 31, 1979	20,780,133

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Home Life Assurance Company
Valley Forge, Pennsylvania 19493
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$992,149
Gross Premiums Received	411,862
Direct Benefits and Losses Paid	164,822
Direct Benefits and Losses Incurred	166,417
Total Admitted Assets	205,575,514
Liabilities	174,163,216
Capital Stock Paid Up	1;111,000
Surplus	30,301,297
Income during year ending December 31, 1979	238,994,505
Expenditures for year ending December 31, 1979	234,946,473

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

NATIONAL PRODUCERS LIFE INSURANCE COMPANY
Mail: P.O. Box 16294 Phoenix, Arizona 85011
Home: 244 W. Osborn Phoenix, Arizona 85013
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$-0-
Gross Premiums Received	12,573
Direct Benefits and Losses Paid	2,184
Direct Benefits and Losses Incurred	1,758
Total Admitted Assets	30,814,007
Liabilities	27,173,817
Capital Stock Paid Up	1,391,273
Surplus	2,248,916
Income during year ending December 31, 1979	3,687,479
Expenditures for year ending December 31, 1979	3,471,737

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the Satate of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

National Liberty Life Ins. Co. of America
Liberty Park, Frazer, Pennsylvania 19355
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979
No Direct Business in 1979

Insurance Written	None
Gross Premiums Received	None
Direct Benefits and Losses Paid	None
Direct Benefits and Losses Incurred	None
Total Admitted Assets	$3,000,583
Liabilities	136,412
Capital Stock Paid Up	1,500,000
Surplus	1,364,170
Income during year ending December 31, 1979	335,754
Expenditures for year ending December 31, 1979	141,754

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

DEPARTMENT OF INSURANCE STATE OF WYOMING

NATIONAL LIFE INSURANCE COMPANY
National Life Drive, Montpelier, Vermont 05602
BUSINESS IN WYOMING FOR THE YEAR ENDING DECEMBER 31, 1979

Insurance Written	$838,722
Gross Premiums Received	102,084
Direct Benefits and Losses Paid	7,234
Direct Benefits and Losses Incurred	2,787
Total Admitted Assets	2,330,369,946
Liabilities	2,179,975,873
Capital Stock Paid Up	None
Surplus	150,394,073
Income during year ending December 31, 1979	411,950,871
Expenditures for year ending December 31, 1979	388,487,108

Pursuant to Section 26-3-129 (b), Wyoming Insurance Code, I certify that to the best of my knowledge and belief, the insurer above named is in all respects in compliance with the laws of this State relating to insurance, and it is duly authorized to transact the business of insurance in the State of Wyoming.
Dated Aug. 21, 1980
s. John T. Langdon
Insurance Commissioner

Bulletin Board

WOOD YOU LIKE TO KNOW

The Solar Energy Research Institute has published the "Decisionmaker's Guide to Wood Fuel for Small Industrial Energy Users." The handbook covers a wide variety of topics for small businessmen interested in wood burning, including storage and handling of material, economics, combustion equipment and pollution abatement. Copies are $8.00 ($3.00 microfiche) and may be obtained from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.

TENTH VAIL SYMPOSIUM

The Tenth Vail Symposium, entitled "Dreams of the 70's — Realities for the 80's" will examine the role of the mountain recreation community and the use of resources in the Rocky Mountain West. The three-day conference, beginning in Vail, Colo., on Sept. 26, will evaluate the goals and objectives of the past and "a realistic examination of the future — the decade of the 80's." A number of speakers have been invited from past symposiums, including John V. Lindsay, former mayor of New York City, and former Interior Secretary Stewart Udall. Registration for the conference is $25.00. For further information contact the Vail Symposium, P.O. Box 100, Vail, Colo., 81657 or call (303) 476-7000.

MISSOURI RIVER PLANNERS MEET

The Missouri River Basin Commission, a state-federal group responsible for water resources planning in a 10-state region, will hold its 34th quarterly meeting Oct. 29-30 at the Ramada Inn Central in Omaha, Neb. For more information, write: MRBC, Suite 403, 10050 Regency Circle, Omaha, Neb. 68114.

NORTH DAKOTA GASIFICATION PLANT WATER

The U.S. Water Resources Council has published a report assessing the water resources implications of the Great Plains Gasification Associates Project in Mercer County, N.D. The coal gasification plant will require 12,800 acre-feet of water annually; the associated electric power plant, 11,200 acre-feet annually; and coal mining and additional local water needs, 680 acre-feet yearly. Copies of the report are available from the council, 2120 L St., N.W., Washington, D.C. 20037. Comments are due by Nov. 3, 1980 to Gerald Seinwell, Deputy Director, U.S. Water Resources Council at the same address.

FRONT RANGE CONFERENCE

The first phase of the Colorado Front Range Project launched last year by Gov. Richard D. Lamm will culminate later this month in a two-day conference on the problems of anticipated population growth in the 200-mile-long strip along the eastern edge of the Colorado Rockies. In June and July, 1500 citizens participated in forums in each of the affected counties to discuss the implications of the 50 percent increase in population expected in the next two decades. The conference, to be held at the Regency Inn in Denver on Sept. 26-27, will develop a statement on what the Front Range should be like in the year 2000 and lists of items for action or further exploration. Participation is open to any resident of the area. Registration is $10 for each day. For more information, contact conference coordinator Judy J. Rielley, State Capitol, Room 124, Denver, Colo. 80203 or call (303) 839-2471.

SHORT SOLAR COURSE

The Solar Energy Research Institute is offering a week-long course in solar heating and cooling in federal buildings Sept. 22-26 at the Sheraton Santa Fe Inn in Santa Fe, N.M. The course will cover the design, engineering and economics of passive and active solar systems. A registration fee of $60 will cover luncheons, tours and a workbook. Contact the Conferences Group, SERI, 1617 Cole Blvd., Golden, Colo. 80401.

SEVERANCE TAX CONFERENCE

A number of Wyoming public interest groups, including the Wyoming Outdoor Council, Wyoming Education Association and the League of Women Voters, are sponsoring a conference on the mineral severance taxes and their relationship to the state's current needs and financial priorities. Speakers will include representatives from the fields of education, social services, industry, municipalities and government. For further information contact "Tax Conference," Box 1184, Cheyenne, Wyo. 82001.

INDIAN MINING REGS

Proposed regulations governing mining and mineral development (excluding coal) on Indian lands were published in the **Federal Register** in August. For more information contact Tom Riggs at the Office of Trust Responsibilities, Bureau of Indian Affairs, Washington, D.C. 20245. Public comments on the regulations will be accepted through September.

IAAATDC SYMPOSIUM

The Second Annual Symposium of the International Association for the Advancement of Appropriate Technology for Developing Countries will be held Oct. 10-11 on the campus of the University of Denver. The event, cosponsored by the Department of Energy's Solar Energy Research Institute, is entitled "Agriculture, Rural Energy and Development." More than 60 technical papers will be presented to approximately 350 participants from 20 countries. For more information on registration and fees, contact Richard Flood at the Solar Energy Research Institute, 1617 Cole Blvd., Golden, CO 80401, or call (303) 231-7358.

GRADING THE CANDIDATES

If you are having trouble deciding for whom you will cast your presidential vote, the League of Conservation Voters will help you out — and for only $2.00. LCV has profiled the environmental voting records for three 1980 presidential candidates — John Anderson, Ronald Reagan and Jimmy Carter. Reagan fares the worst of the three in the ratings, getting "F" in seven of the nineteen subjects reviewed. Carter comes out ahead and Anderson's record is mixed. Copies of the full report can be obtained from LCV, 317 Pennsylvania Ave. S.E., Washington, D.C. 20003.

RANGE RAP

Public range lands and their management will be the key issue at the National Public Lands Advisory Council meeting Sept. 22-23 in Boise, Idaho. The council, which advises the Bureau of Land Management, consists of 17 members, both private citizens and state and local officials. All sessions are open to the public, which is invited to make statements beginning at 2:30 p.m. on the 22nd. Address inquiries about the meeting to Karen Slater at the Bureau's Washington, D.C., headquarters (202)343-8947.

LAND RESCUE WORKSHOP

People interested in setting up open space and agricultural foundations dedicated to land preservation are invited to a one-day workshop in Denver Sept. 29 sponsored by The Nature Conservancy, The Trust for Public Lands and Open Lands Real Estate. Kingsbury Browne, billed by the groups as "the country's leading authority on the operation of open space land trusts," will participate. Registration is $20 for the meeting, which will begin at 8:30 a.m. at the Denver Athletic Club.

APPROPRIATE TECHNOLOGY CONSIDERED

The National Center for Appropriate Technology is sponsoring a conference in Butte, Mont. on Oct. 2-4, 1980 on "What Makes Appropriate Technology 'Appropriate'?" The conference will examine whether the claims of social and economic benefit made for appropriate technology can be supported. For further information contact Thomas Pelletier, NCAT, P.O. Box 3838, Butte, Mont. 59701 or call (406) 494-4572.

OR WHAT, INDEED?

The Wyoming Church Coalition is sponsoring a series of 10 conferences around the state on the subject "Wyoming: Frontier or Colony — Or What?" The area conferences will examine community goals and values in the light of religious and ethical doctrine and explore policies and programs to enhance the quality of life in the state. The conferences will be held on Nov. 10 in Laramie; Nov. 11 in Rawlins; Nov. 12 in Rock Springs; Nov. 13 in Riverton; and Nov. 14-15 in Worland. Five additional meetings will take place in different locations between Jan. 5-9. For further information contact the Wyoming Futures Project, Rev. Shirley E. Greene, 1820 Hillside Dr., Laramie, Wyo. 82070 or call (307) 742-2583.

Classifieds

NEWS EDITOR. **High Country News** is looking for a full time news editor with copy editing skills and a good grasp of natural resource issues. Low salary, health insurance. Job includes writing, making assignments and editorial policy setting. Application deadline Oct. 1. Send resume, writing and-or editing samples, and references to Geoffrey O'Gara, HCN, Box K, Lander, Wyo. 82520.

Opinion

A tale of wild Bennie Peer and its 'flexible' administrators

We are extremely wary of well-intentioned bureaucrats who ask us to forget the crusade for formal wilderness status on certain lands. "Keep Congress out of it," they say, "We can handle things better if you give us a little flexibility."

Stories such as that of the Bennie Peer roadless area along the Montana-North Dakota border heighten our skepticism about granting land managers that kind of leeway. The Bennie Peer's 18,000 acres of wild, rolling grassland were declared "essentially roadless" by the Forest Service in 1975. The designation and the management plan that accompanied it placed severe restrictions on development. The goal was to keep the area just as it was.

But five years later, the Bennie Peer has undergone dramatic changes. It now supports 60 oil wells, 60 miles of pipelines, 30 miles of underground power lines, and yes, 50 miles of roads.

What happened to the agency's vow to protect the Bennie Peer's roadless character?

It fell to the fury of energy development. Oil and gas developers with old leases in the Bennie Peer suddenly took an interest in the area. And, since leasing contracts are legally binding, the Forest Service said there was nothing it could do to stop them.

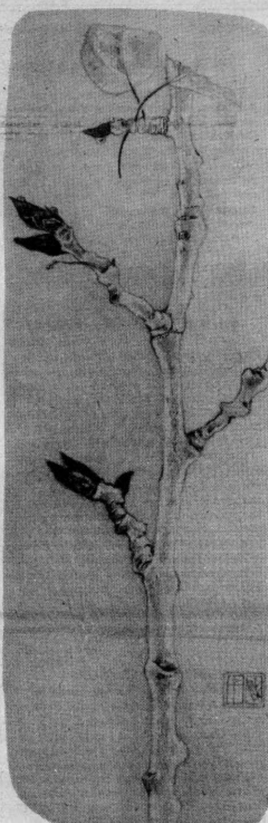
But what about the paradox of roads in a roadless area? Here's where the Forest Service really floundered. Rather than resolving to keep further development to a minimum, the agency decided to change the area's label and, with it, the management goals. "When we made the roadless designation, we had no idea there was going to be any oil in the area," says Tex Williams of the Forest Service.

Fortunately, the state of North Dakota was ready to fight. It argued that the presence of oil should not open the door to all kinds of development in the area, which is considered prime big game and cattle country. The Forest Service's May decision to remove the roadless designation was reversed in August, in response to a *strong negative reaction from* the North Dakota Game and Fish Department and the state Natural Resources Council.

The story ends happily, in that the Bennie Peer has retained its protected status, despite the unstoppable oil wells. But the Forest Service's inclination to give up on preservation as soon as oil becomes an issue underlines the insecure positions of other administratively protected lands around the region.

Flexibility in the hands of a public land manager is too often like power in the hands of a politician: It can be quickly wrested by a fast-moving, aggressive and well-heeled lobbyist. Amid the current push for energy, it appears that most administratively-protected lands haven't got a chance.

— JN



Tree pollution: Reagan's bark

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"Preposterous" seemed about right for the statement that Sen. Kennedy attributed to Ronald Reagan in his convention speech: "80 percent of air pollution comes from plants and trees." But immediately from Reagan headquarters in California came word that the senator had misquoted the former governor. What Mr. Reagan had in fact said, his deputy staff chief informed the press, was that "80 percent of **nitrogen oxide pollutants** in the air come from plants and trees, not 80 percent of all air pollution." Oh.

If something tells you that still sounds fishy, you're right. Like so many other campaign clarifications, this one only makes matters worse. So here, for the record, is more than you will ever again want to know about nitrogen oxides. If it begins to sound too much like high school chemistry class for comfort, bear with us: there will be no quiz at the end.

There are three types of nitrogen oxides in the atmosphere. Their names sound alike but they aren't — two of them are pollutants and one of them isn't. The one that isn't, nitrous oxide, N_2O, amounts to more than 90 percent of the total. If he was talking about anything, this is the one Mr. Reagan was probably talking about. It is given off by a relatively small class of bacteria known as denitrifying bacteria. Plants and trees do not emit any gaseous nitrogen oxides — in fact, they spend most of their time and energy taking in nitrogen from the soil. Nitrous oxide (which you might also recognize as laughing gas, although this is a serious matter) is a biologically natural and benign gas. Its chief role is to control the ebbs and flows of the ozone layer in the stratosphere.

The other two nitrogen oxides, nitric oxide, NO, and nitrogen dioxide, NO_2, are the pollutants. Both are principally the products of combustion — the burning of coal in a power plant or gasoline in an automobile engine. Nitric oxide is a colorless gas that in itself is not particularly toxic. However, it reacts with hydrocarbons and sunlight to produce smog that can harm or kill plants and animals. It is also oxidized in the air to form the orangish-brown nitrogen dioxide, which is quite toxic. It interferes with the blood's ability to carry oxygen and can produce various types of lung damage. Nitrogen dioxide also reacts with water vapor to form nitric acid, which gives us acid rain.

We like to be helpful, so here is what Mr. Reagan can say if — though it seems unlikely — he should ever again wish to comment on the nitrogen cycle: "90 percent of all nitrogen oxides come from denitrifying bacteria." It hardly seems a slogan to campaign on, but it has the advantage of being right. For those of you who were wondering if you should pave over your back yards in the interest of cleaner air, forget it — plants and trees are innocent of polluting the air. Man-made air pollution, Mr. Reagan notwithstanding, is still the problem.

Opinion

Dear Friends,

Kathy Bogan

Kathy Bogan is suffering her trial by fire tonight (Thursday) — the headline machine is producing meaningless hieroglyphs, a large empty space has developed on the opinion pages, and the typesetter and editors have begun paying more attention to some Guinness stout and Oriole baseball than to the pages. Welcome aboard, Kathy. We have our good nights, and our bad nights. But Kathy, like those who preceded her, is the one who has to get up in the early morning and take the galleys over to the **Wyoming State Jounal.**

The **Journal** has printed **HCN** for a long time, tolerating our small budget, last-minute changes, and eccentric staff. We, in turn, have tolerated our share of **Journal** idiosyncracies — including a great deal of talk about softball, which is not always that easy to digest on a red-eyed Friday morning. In fact, so provoked was an editor a few press days back that we challenged the **Journal** to a softball game.

Thus was born the **HCN** softball team. We won't bore you with our exploits in that first game, except to say that Joan is a speedy lead-off, Dan and Geoff can hit, and Will...well, Will showed up. Nor will we tell you the score...we could not, after all, afford to beat the **Journal**, or you might get 12 pages instead of the usual 16.

But we're willing to let the word out that we're now taking on challengers in, or on, this different field. We'll play a seismic crew team from the proposed DuNoir wilderness area, the snowmobilers association from Jackson, or the executive team from the Exxon Corp. We haven't got a name yet — somebody suggested a monicker to go with the masthead, but "Goats" didn't sound right. Any suggestions?

— the staff

Easterners, big corporations dominate new synfuels board

The recently-appointed Synthetic Fuels Corporation board of directors is not intended to embrace a broad spectrum of viewpoints — its job is to dole out about $88 billion over seven years to speed development of synthetic fuels from oil shale, coal liquefaction, tar sands and the like.

Nevertheless, the composition of the seven-person-board, announced last weekend by President Carter, ought to make us wince in the West. To represent this region, as well as the environment and federal regulators, we have only Interior Secretary Cecil Andrus. The rest of the board is made up of businessmen, one labor representative, and one businesswoman. None of them are from the Rockies or Great Plains.

That gives Andrus a lot of responsibility; and he has only one vote.

The chairman of the board, John Sawhill, comes from the Department of Energy. He has been running the agency's synthetic fuels program, which has so far emphasized big, expensive projects. Then we have the chairman of IBM, the president of the AFL-CIO, the retired chairman of American Telephone and Telegraph, an insurance executive and an economics professor from Wisconsin who serves on several corporate boards.

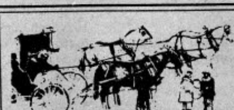
These folks will not lack for advice, should they seek it. Catherine Cleary, the Wisconsinite, can go to her AT&T board meetings and run into Donald MacNaughton, another AT&T director, who can tell her tales of oil shale from the board meetings he attends over at Exxon. John DeButts, the Synfuels Corp.'s former AT&T chairman, also sits on the board at Citicorp, where he can chat with Clifton Garvin, Exxon's chief executive. And Frank Cary, the IBM chairman, has on his board S.D. Bechtel, Jr., head of the Bechtel Corp., a company which can be expected to do much of the engineering and construction for future synfuel plants.

Add to these a labor chief who obviously would want to see jobs in the construction trade, and a gung-ho synfuels booster from the Energy Department, and you can conclude, I think fairly, that the synfuels corporation will push for big projects by big companies.

Perhaps that was to be expected, though the whole approach seems wrongheaded to some of us. What we didn't expect was that, with most of the massive, untested synfuels projects likely to be located out here, the board would contain only **one** representative from our region. And there are people in Wyoming who would question whether Andrus really can represent the energy-boom areas south of his native Idaho. Furthermore, as we said earlier, he has only one vote.

This board — with enough money to make its corporate connections blush — should indeed be able to get the synthetic fuels industry on its feet. Our only fear is that its directors will feel little compunction about planting those cumbersome feet primarily on the delicate soils of the West.

— GOG



Letters

SUNDOWNER

Dear HCN,

Frankly, I was rather disappointed in the "Solar" issue — I expected something larger, more interesting and much more uptone. Are you folks trying to boost solar or finish it off? Everyone working with solar knows about all the various governmental problems and is thoroughly sick of them — the best article (most hopeful, positive, uptone or whatever) was the Steve Baer piece — a reprint from elsewhere! Even the stories on super tight houses and envelope homes were written as though they were warnings.

Come on, even watch dogs don't snarl all the time. If you intend to deal with natural resources, how about considering the **positive** side occasionally: The Solar Greenhouse workshops run by the Wyoming Energy Extension Service; the Cheyenne Community Greenhouse; the Weatherization program and educational programs put on by the Teton Energy Council — all of the people out there who are doing things to live low-impact lives.

"Balance" in **HCN** lingo must mean a balance between "down" and "outrage."

Charlie Woodward
Victor, Idaho

LET UTAH GROW?

Dear HCN,

We would like to say this about your article on Utah (HCN 7-25-80).

Utah, a state with vast amounts of energy resources, spectacular national parks, clean air, and a variety of wildlife and ecosystems, has a population with little regard for any of these.

Why do Utahns have such little regard for their resources? These people, though proud of their lifestyle, seem less concerned about the quality than the quantity of life — a syndrome plaguing all Americans, not just Utahns.

Maybe we should make an example of Utah and let this state grow and grow and grow. Then other western states can watch Utah and its people be devoured by rampant growth in the name of the green-back dollar and ALL the "good" things it brings.

If this death wish is unacceptable then we ALL have to begin thinking about wiser use of what we have. We, whether environmentalists, industrialists, capitalists, rightists or leftists, are all in this consuming business together.

R.K. and M.L. Paulick
Fillmore, Utah

MORE CANYON BURROS

Dear HCN,

Re: Canyon Burros, letter from Meg Weesner, John Day, OR.

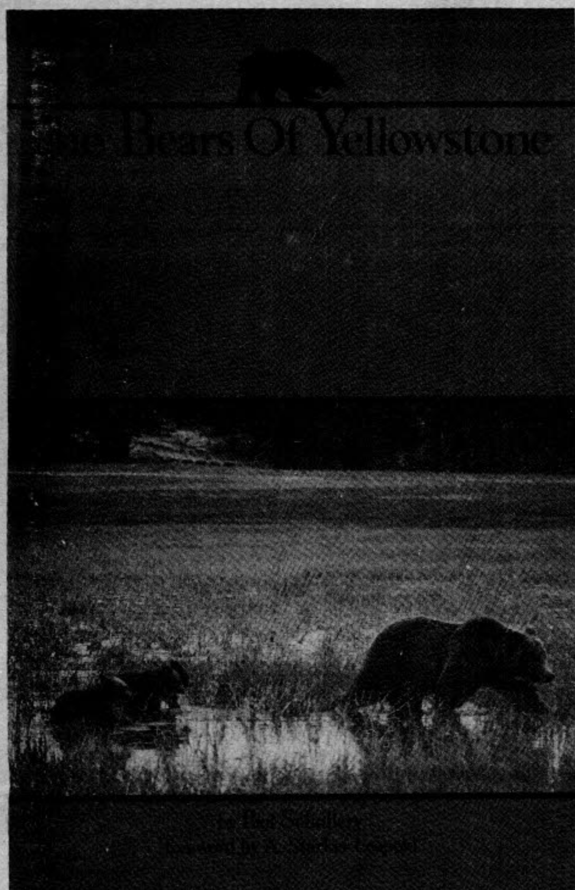
The trouble with many conservation groups is human arrogance — thus the excuses to kill all Burros in Grand Canyon National Park.

The Wild Horse & Burro Protection Act does not apply to National Parks and Monuments. It's the humanitarians who stopped the shooting that went on from 1924 through 1969. The government burro "expert" estimated the population at 1,500; the "Feral Burro Management Plan & Environmental Assessment" of 1976 quoted 2,000-3,000; actual nose-count amounted to 260 animals, the figures now guestimated is 350 burros!

How much more damage can 350 burros cause on 1.2 million acres compared to the concentration of thousands of hikers and riders of commercial mules on four trails? Who is more exotic and non-native: the burro who has adopted to harsh conditions or the human in his fancy lug-soled boots (including rangers), unable to survive without expensive campgear?

The yardstick should be "survival of the fittest" — and that favors the burros all the way!

Georgie Leighton
Aspen, Colo.



Books

by Geoffrey O'Gara

by Paul Schullery, Yellowstone Library and Museum Association, Yellowstone National Park, Wyo., 1980, 176 pages.

When you become interested in a particular animal, your appetite for information becomes enormous. You read a droning scientific paper, an emotional prose-poem, or a tall tale short on fact, and from each you dig out some tidbit of insight. In this backhanded way, I recommend that readers interested in bears take a look at Paul Schullery's book.

Schullery seems to have read most of the available literature on Yellowstone's bears, but in this slim, 176-page volume he had to leave most of that bibliomania back in the files.

Still, you may learn for the first time, as I did, that prehistoric bears or bear-like creatures once roamed our continent that were **not** related to our present black, grizzly or polar bears (whose ancestors crossed the Bering Strait from Asia about 300,000 years ago). And for anyone who visited Yellowstone in the 50 years before 1970, it will be a shock, or a laugh, to learn that feeding the bears has been illegal since 1902.

Such sparkling bits are not plentiful in this book, however, and bear aficionados are likely to find the material pretty thin. Compared with such popular-audience books as Frank Craighead's **Track of the Grizzly** and Bill Schneider's **Where the Grizzly Walks**, Schullery's book pales. In the end, it is only slightly more substantial than the dull little park pamphlets you pick up at the ranger station.

The book's middle and longest section is a discussion of the long-running controversy between grizzly researchers John and Frank Craighead and the Park Service over management of grizzlies in Yellowstone. Given his limited space, it's surprising that Schullery chose to tackle this Hydra, which has already devoured an undetermined number of bears, a lot of newsprint, and a few careers.

Schullery at first tries to present both sides of the many issues, among them: Should bear-feeding dumps in the park have been closed sooner, later, or gradually? Did rangers kill bears without recording the deaths? Should bear research be conducted independently of the Park Service's control?

But in his struggle to be an objective historian, Schullery eventually succumbs to his own employment history. (Schullery worked for three years as a Park Service historian-naturalist at Yellowstone.) The result is a public relations effort on behalf of the embattled Yellowstone Park Service.

The issue of bear management lives on today in the Yellowstone area, with surrounding states calling for a grizzly hunting season despite the fact that Park Service-controlled researchers can give no reliable population count on the threatened animal. If the bear fades from the Yellowstone ecoysystem the species will all but disappear from the lower 48 states.

But that is a big issue with very complicated answers that are largely ignored in this short, simple book. Had Schullery dropped the 25-plus pages devoted exclusively to the Craighead controversy and filled them instead with lore from the extensive reading list he's compiled, this might have been a more interesting volume. As it is, you must search for a few tidbits, enjoy some good illustrations, and turn to the excellent bibliography for directions to the real thing.

by Louisa Willcox

TOGWOTEE PASS, Wyo. — I left Jackson Hole in a deluge. After climbing to the pass through steel-grey September clouds, I dropped down the southern side to find the high meadows speckled with sunlight. Often clouds go to seed once they tumble over Togwotee, down into Wind River Basin. Chill winds have driven the autumn change of colors since I crossed the pass towards Jackson five days ago.

Red tinge on the willows, sheep sorrel and Oregon grape — yellow on flattened mules' ears, an odd clump of aspen and some composites I'm never quite able to identify. Above me, five hawks soar on the cloud-ripping wind — one above another, like airplanes stacked above a landing strip.

A hike through a lanky stand of lodgepoles leads me to the base of the Abasaroka Range's Pinnacle Buttes, a corrugated sculpture carved from the remains of 45-million year-old volcanic blasts.

There is no moving slowly across Absaroka scree. Loose layers of erupted ash, crumbly mudflows, cracked breccias, lie like ball bearings heaped on a slope. Anyone who has hiked these mountains quickly discovers the meaning of "dynamic balance." Deliberate footwork, searching for the stable boulder, works in the more solid granitic ranges, like the Wind Rivers to the west and south. But here, even the best-looking rock is not to be trusted. Staying upright depends on sheer momentum: while one foot is slipping out from under you, the other is pulling you forward and up. Earlier this summer, on a scramble up Petrified Ridge in the Absaroka interior, I watched a bighorn demonstrate the technique, crossing his quick legs like a Lipizzan performing "airs above the ground."

To the west, before the high timbered plateau of the northern Wind Rivers, lie the beveled figures of Pilot Butte and Lava Mountain, a 1,000-foot stack of volcanic debris.

All around is evidence of ancient St. Helenesque disasters — tales of hot smoke, strewn grit and ash, seething lavas are told in the gray rutted faces of the Wiggins, the Aycross and the Indian Meadows formations. The violence is somewhat muffled now by the tangle of trees and tenacious plants that grip this ashy soil. But surges of runoff next spring will cut new lines down the ancient faces, and will heap new piles of lodgepole trunks, roots, and rock.

Underfoot, a few slivers of obsidian catch the sun. They are the smokey-gray, almost transparent variety, found only in the Absarokas. Are they fragments of Indian blades or points? If so, this slide debris has chipped away all evidence. Perhaps, though, long ago, on a scramble after a bighorn, a Shoshone or Crow tired, slowed, lost his dynamic balance — and his tool.