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The Environmental Bi-Weekly

High Country News

Vol. 9 No. 3 Friday, February 11, 1977 Lander, Wyoming

Energy office head fired

Idaho legislature axes conservation programs

by Bruce Hamilton

Earl Adams, director of Idaho's Office of Energy, was a strong advocate of energy conservation. If he'd wanted to keep his job, Idahoans say he should have promoted building new fossil fuel and nuclear power plants. This week, under pressure from a hostile Republican-controlled legislature, the state's new Democratic Gov. John Evans asked Adams to resign.

Adams's forced resignation was the coup de grace in a long line of legislative attacks on attempts to set up a state energy conservation policy. In other actions the legislature rejected a Public Utilities Commission nominee because of his conservation stands, sent a memorial to President Carter urging accelerated nuclear and coal development, and advanced a bill to repeal the state building code. Appropriations for the Public Utilities Commission and the Office of Energy are expected to be seriously cut.

The Office of Energy was set up by former Gov. Cecil Andrus and was funded through his office. This year is the first time the energy office has had to come before the legislature for budget approval.

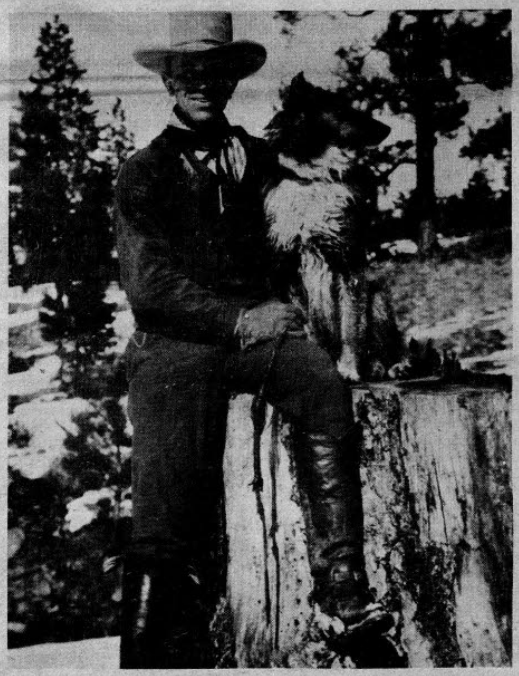
The Joint Finance-Appropriations Committee has delayed action on the energy office budget, but its members have openly criticized the lack of emphasis on building new power plants and the over-emphasis on conservation and renewable energy resource development.

At hearings last month, Sen. Richard Egbert (D-Tetonia), a member of the committee, told Adams: "I am concerned about your low-growth or no-growth position on energy. . . .I'd like to have your office look more at nuclear power. I'd feel like treating your office more generously if you were looking at something that will point this state in the direction of an abundance of energy."

At a meeting with Evans and his energy advisor, M. Karl Shurtliff, Adams was told that the energy office budget would probably not receive legislative approval as long as he remained as its director, informed sources told HCN. Evans had been a strong supporter of the energy office prior to asking for Adams's resignation.

Following his resignation, Adams said he was "a pawn" caught in the power struggle between the governor and the legislature.

(continued on page 12)



Aldo Leopold at Apache National Forest in 1910.
Photo by John D. Guthrie

Getting into the spirit of his surroundings, he went native, outfitting himself with all the accoutrements of the local cow-culture.

Aldo Leopold saw a 'fierce green fire' die

by Peter Wild

In one chapter of Jung's **Man And His Symbols**, M.-L. von Franz proposes that an individual is capable of growing through several stages. He begins with the wholly physical, but he can progress to the romantic, on through the leader, and become the seeker of spiritual truth. To illustrate the four, the psychologist mentions Tarzan, Ernest Hemingway, Britain's Lloyd George, and Gandhi. Few people reach the height of a saintly Gandhi, or even of a Lloyd George; instead, most get "stuck" emotionally at one of the earlier levels.

Aldo Leopold would have chuckled at such a simple scheme, for he realized that man and the nature in which he lives are far more complex than the neat categories that humans delight in imposing on the world. Nonetheless, the course of Leopold's life and thought — life and thought that helped expand the edge of the early conservation movement — roughly followed the progression.

In 1909, at the age of 22 and fresh from receiving a master of forestry degree from Yale, Aldo Leopold stepped off the train at Springerville, a cow town in what was then the rough-and-tumble Arizona Territory. Headed by zealous Gifford Pinchot, the recently created Forest Service glowed in its heroic age. As a new member of the campaigning agency Leopold looked forward to his first assignment.

Getting into the spirit of his surroundings, he went native. Susan Flader, the foremost writer on the conservationist, describes him during his first days on the frontier, ". . . outfitting himself with a horse, saddle, boots, spurs, chaps, ten-gallon hat and all the other accoutrements of the local cow-culture."

This was indeed the frontier that American boys dream of — or at least a remaining shadow of it spilling over into the 20th century. As the son of a prosperous furniture manufacturer of German descent in Burlington, Iowa, Leopold had hunted ducks along the banks of the Mississippi River; but to him the outdoor thrills of his childhood must have seemed a bourgeois

(continued on page 7)

Conservation pioneer series

HIGH COUNTRY

By Tom Bell

As we launch into the third century of our country's history, it would seem an appropriate time to assess where we now are, and to set goals for the years ahead. Admittedly, that's a big order. But two articles from widely-separated sources recently drew my attention. They deal with essentially the same subject — natural resources.

An article in the **Oregon Farmer-Stockman** (Nov. 18, 1976) points out that some of the best orchard lands in the state are being converted to subdivisions. The irony of the situation is that not only is a valuable natural resource being lost to its highest and best use, but also one of Oregon's cleanest industries is being destroyed. The value of fruit and nut crops, on the farm, in 1971 was $21.3 million. Yet, in our present system of values, food production runs a poor second. Economists tell us that the **sales value** of land represents its potential "highest use" value!

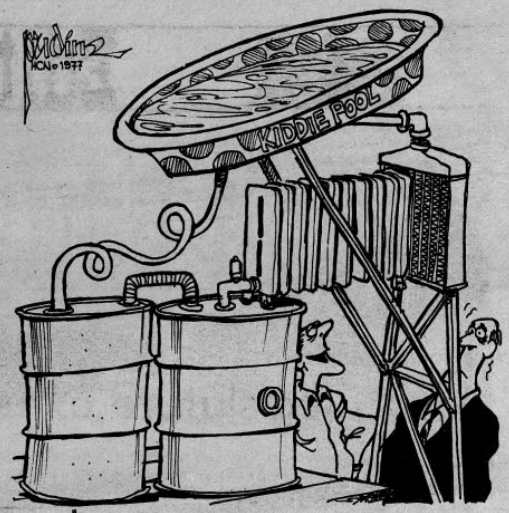
Like the Damocles sword of the energy crisis which now hangs over our heads, food will someday pose a threat not only to our way of life but to civilization. Those who stand to profit from sales of land would have us believe otherwise. Only recently, a spokesman for the real estate industry said farmland was being added to the base as rapidly as housing and industrial developments were taking it away. What that spokesman failed to add was that the marginal lands being brought into production at great cost were no match for the quality of lands being lost. Thousands of acres of land in Idaho and Oregon produce crops at a huge expense in energy. Water to make the land productive has to be pumped. In the short-term those lands can quickly become non-productive. This year's drought may quickly prove the point.

An editorial in **Forbes** magazine (Nov. 15, 1976) demonstrates another side of our folly. It begins, "Those objecting to our huge and growing sales of sophisticated weapons systems to Iran and Saudi Arabia are not thinking things through." The editorial goes on to contend that since we are dependent upon those two countries for oil, we should hook them on our military hardware. And then it says that our commitment to Israel is such that the balanced power would keep those neighbors from fighting.

Even if such thinking could be justified in terms of rationality alone, it could never be justified in terms of waste of natural resources. Wars and preparations for war are, and always have been, a criminal waste of natural resources. The costs can be justified for purely self defense when there is no other alternative. But an arms industry for profit or other specious reasoning should be repulsive to every thinking American.

Somehow we have come around to the twisted thinking in this country that our economy must be sustained with a thriving arms industry. President Dwight D. Eisenhower warned us of the consequences of a military-industrial complex. Today that complex is in place.

We can only hope and pray that President Jimmy Carter will re-define some of our national goals for the next century. There are good indications that he is committed to the philosophy of conservation. He could make no greater contribution to his great country than to inculcate the wisdom of wisely using our remaining natural resources.



"SCIENTIFIC, SCHMIENTIFIC, IT SAVES ME $50 A MONTH."

Price raise

Regretably, HCN is being forced to raise its subscription rate. HCN will cost $12 per year starting April 1, 1977. Operating expenses and salaries are two main reasons for the increase. It's been six years since the last price raise. HCN hopes it'll be another six years before it has to raise prices again. (For a full explanation see the stockholders' report in this issue.)

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HCN Letters

LIKE THE GRASSHOPPERS

Dear **HCN,**

Still enjoying **High Country News.** The next five years will see more exploitation of our resources and the loss of our wide open spaces, but there is nothing going to stop it.

It's like the grasshoppers were in 1933 and 1937, only this time will be permanent.

Gail O'Haver
Sundance, Wyo.

MISGUIDED MOVEMENT

Dear Editors,

The elevation of Edward Abbey to arch druid status by environmentalists over the past few years, capped by your adulative profile, tells us much about Mr. Abbey, but even more about the current state of the environmental movement.

As a self-proclaimed anarchist "living off the government," Abbey's political advice seems as contradictory as his lifestyle. I know few serious anarchists who live off the government, and even less who support candidates for public office, as Abbey would have us do. Most anarchists and socialists (the terms are not necessarily exclusive) have long ago realized the futility of voting for a particular candidate or party while the state remains a tool of corporate-business interests. If the words we use are to have any meaning, then Mr. Abbey may be a nature lover, an individualist, an opportunist, a misanthrope, or even a liberal, but he is certainly not an anarchist.

What new program does this "spiritual leadership" (Bruce Hamilton's phrase) offer environmentalists? Well, Mr. Abbey sagely advises us that we "have to cooperate with one another in some kind of political, social or legal action," and support candidates for office who put the public interest first. We are also "obliged to join or work for or at least contribute money to a citizen organization." At least this should appease a guilty conscience. And of course at a minimum, half of our lives should be spent enjoying the splendor of the great outdoors.

With this kind of guidance for the environmental movement, the owners, managers and stockholders of Exxon, Boise-Cascade, AMAX, PP&L, et al, have little to worry about. For at least 50 years these "corporate-business interests" have been able to absorb, co-opt, or delay any meaningful change proposed by well-intentioned individuals or groups acting in the "public interest." If history teaches us anything, it is difficult to see how Mr. Abbey's recommendations could lead to anything besides impotence and despair.

Indeed, it is hard to imagine any act more apt for a movement that has lost touch with reality than that of pulling up surveyor stakes, unless it be the puerile fantasy of a crafty band of eco-saboteurs blowing up Glen Canyon Dam. Wouldn't it be more important to understand why corporate capitalism **must** build huge dams, deforest our mountains, and excavate our prairies? Shouldn't we create or join an organization committed to **seriously** challenging the power of these corporations that degrade our environment and disrupt the social fabric of our communities?

Anyone who lives in one of our big cities, or works on an assembly line, or is unemployed or non-white or female knows that corporate irresponsibility is not limited to the environment. It seems to me that what we need is an organization that would unite environmentalists with other groups that realize the necessity for and publicly work toward replacing those now in control.

Edward Abbey may not have been seeking the mantle of guru of the environmentalists, but if we choose to follow in his footsteps, we may as well get our flutes together, and join him in the desert, solitary.

Michael Durgain
Laramie, Wyo.

STUD MILL SERPENT

Dear **HCN,**

Afton is lovely, Eden. But the serpent is a filthy stud mill that spews smoke, cinders. What to do?

Can't hang laundry out. Valley filled with smoky haze!!

M. Eads
Afton, Wyo.

LONG LIVE ROCKIES

Dear **HCN,**

Along with my check goes all of my heartfelt thanks for what you are doing to try and save my favorite country — the great country of canyons and deserts and endless mountain ranges. We have already lost so much but much remains.

I can't tell you how much I want it to remain as it is; perhaps with **HCN** in the forefront of the battle this will be possible.

Long live the Rockies and the Great Basin. How could I live without knowing they are still there.

Ruth Douglas
St. Helena, Calif.

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Editorial

HCN

Crashing through the snow

I'm told Wyoming used to be a place where on a moonlit winter evening you could be sure to hear a coyote howling somewhere in the distance. I say "used to be" not because we now have fewer coyotes, but because now it's harder to hear them. Today, instead of the song dog's call, the silence is often broken by the distant drone of snowmobiles.

In town, the machines roar along the alleys and around the school track. In the country, roadsides and fields are used as race tracks. Every road that leads into the mountains has its pullouts packed with parked pickups hauling snowmobile trailers. I must ski several miles from the road before I lose the smoke, roar, and clatter.

The local chamber of commerce boasts that Lander is the snowmobile capital of Wyoming. People walk the winter streets in black and purple snowmobile suits the same way people in Aspen or Vail dress like ski racers. It's a lifestyle, and I'm out of step with the craze.

What annoys me most is not that people like to ride in circles, burning up precious gas, driving themselves deaf, crashing through the snow oblivious to whatever lies in their path. What insults my sensibilities is that I have to live with this inane activity constantly and there are few close places where I can escape into the glorious silence of snow.

You'd think the national parks would be the ideal place for an intolerant, oversensitive fool like me. But, alas, the nearest parks are packed with the infernal machines, too.

Yellowstone promises fine ski touring (see story page 8), but the Old Faithful area is so thick with snowmobiles that smog hangs over the area, according to Mike Frome. Snowmobilers are encouraged to come to the park and trails are marked and groomed for them. The former park superintendent, Jack Anderson, was given a snowmobilers' award for promoting snowmobile use in the park.

The Park Service says parks are to be managed to assure the public the privilege "of experiencing the serenity of quiet forests and the renewed strength of nature unimpaired." How does promoting snowmobile use further this management goal?

At least in Yellowstone snowmobiles are restricted to unplowed roads. In Grand Teton, the Park Service is proposing leaving whole areas open to snowmobile use — including a potential wilderness area (see story page 6).

Grand Teton is the only park where snowmobiles are allowed to leave designated routes and tear around the forests and sagebrush flats. Such a policy sacrifices the quiet sanctuary of the park and turns it into a playground for mechanized Americans in quest of speed rather than scenery.

A few years back a ranger in Glacier National Park named Art Sedlack shot a trespassing snowmobile. When Sedlack fired his gun, that shot should have been heard throughout the National Park System.

Snowmobiles should be banned from all national parks. Let's start by requesting a ban in Grand Teton where the Park Service is now reviewing its snowmobile policy. Send a letter today to the Superintendent, Grand Teton National Park, Moose, Wyo. 83012.

Maybe if enough of us write, there will still be at least one place where the winter silence is pierced only by the call of a coyote. —BH

THANKS

All the folks at **HCN,**

I just want to make known my appreciation for the niche you fill here in the Rocky Mountain West. Your articles are generally very pertinent to the problems facing our region. I think what I enjoy most is that you look at the problems facing the common man and how changes occurring in our environment affect that man.

The Bulletin Board has provided many opportunities to acquire material of interest to me that otherwise I would probably overlook. I know I and other students here at the University of Idaho keep informed of laws, changes in forestry and range management, and EIS reviews through your work. Thank you.

Greg Nelson
Moscow, Idaho

EARLY THREATS TO THE JAMES

Dear **HCN:**

So this time it is the Bureau of Reclamation that is the greatest immediate threat to the James River! (See **HCN** 12-17-76, page 3.) In two earlier times it was, respectively, the World War II Air Force, and later the Corps of Engineers.

In the first instance, Sioux Falls, S.D., had built itself a nice little airport on 200 acres above town. WWII came along and the airport was absorbed in an air base, temporary. But the "Jim" occasionally overflowed. So the powers that be started dredging. They dredged and they dredged, until high waters raced past the air base without doing damage there.

However, as the late Dr. Ferd Brown wrote it up for **Outdoor America,** magazine of the Izaak Walton League, in 1944, the city "got a million-dollar airport and the owners of . . . land downstream for 50 miles got a million-dollar headache." The manipulation of the James ruined two city parks and a fine golf course because they were flooded "from early spring to the middle of July." I don't know the current situation; the Army Engineers probably "cured" the problem by straightening, dredging all the way to the confluence with the Missouri.

The next was a year or so later, centered at Aberdeen. The Corps wanted to give Aberdeen a supplemental water supply, and Aberdeen was willing. But there had to be other features. Storage space for flood waters would be provided. And Putney Slough would have to be drained, to create potato land to make the benefit-cost ratio come out right — and Putney Slough plus a nearby refuge was an important resting place for blue and snow geese on migration. And James River water, it was discovered, would run into Putney Slough instead of out of it if a ditch was dug. So the Corps planned to dredge and straighten the James for 45 airline miles, so's to get water to run out of the slough — and let it pile up on the meandered stream stretches below, as water had on the parks and golf course at Sioux City earlier.

The Aberdeen thing was licked. Sure do hope BuRec can be stymied this time!

William Voight, Jr.
Blackshear, Ga.

ANTI-ANARCHY

Dear **HCN,**

In the December 31, 1976, issue of **High Country News** you made much of Edward Abbey. As an author, he has become recognized for his rebellion against the establishment. I would hardly recommend the reading of **The Monkey Wrench Gang** for English high school students. I am a member of a school board and I shall see that his writings are not on the reading list because of the vulgar language in them.

Why should we praise a man who advocates sabotage "who is opposed to all forms of illegality — except at night"? We should hardly praise a man whose goals in life are: "money, fame, women, easy life, alcoholism, early death, and ecstasy." This does not give young people much to shoot at; few if any virtues toward keeping the United States a strong and virile country. You state that Abbey is an "**anarchist.**" That is the title we usually give to people who are for Communism or those who want to destroy our form of republican form of government. I do not solicit ideas from anarchists.

Johnston C. Craig
LaVerne, Calif.

WRONG SOURCE

Dear **HCN,**

As I was eagerly reading my January 14, 1977 copy of **High Country News,** I came upon what seems to be a misunderstanding. In Tom Bell's "High Country" column, he quotes ERDA as saying, in regards to alternate sources of energy, that "with a few exceptions . . . corporations are waiting for the government to take the lead in whether and how to pursue them." Actually, ERDA has not made this statement, but we at INFORM did, in the introduction to our study on alternative energy sources, **Energy Futures.** In fact, we are the ones who looked at what 140 companies are doing to develop 17 different technologies.

INFORM is a nonprofit research organization which studies the impacts of corporations on the environment, worker safety and health, land use, energy, and other socially relevant topics. Although it is true that ERDA did **partially** fund our alternative energy study, the research was completely independent, and we came to our own conclusions.

I and the other people here at INFORM have always found the **High Country News** to be an interesting, informative, and accurate source of news. For this reason I hope that you will be able to make note of and correct your error in a forthcoming issue.

Alfred J. Malefatto
Research Associate

P.S.: The report which you quoted from, **Energy Futures,** is a 750-page book which is available from us at special rates to non-profit public interest and environmental groups. Contact: INFORM, 25 Broad St., N.Y., N.Y. 10004.

SUN SIGN SUBSCRIBER MESSAGE

Pisces subscribers (by our definition, subscribers with a "3-77" on their address labels) would like to help us out at renewal time. By their nature, they are compassionate and receptive to our suggestion to send in their checks before we have to send renewal notices.

However, they also have a tendency to want to escape from reality, and chaos abounds in Piscean homes. Therefore, it's best for them to send their $10 checks now when they're feeling kind rather than waiting. That way they'll also save having to pay the new higher subscription rate.

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Conservation slide show

Wyoming's energy ingenuity on tour

A slide show in a newspaper?

It may sound absurd, but when we saw Charles Nations' Wyoming energy conservation slide show, we decided it was worth a try.

Charles and his wife, Frances, spent the fall exploring the state for signs of energy conservation activity. The ingenuity of the few avid energy conservationists they found seemed to temper their disappointment about the scarcity of projects.

Among their discoveries were:

—Butler Hilton, a retired state highway department engineer who uses carpet tubes, a vacuum sweeper, and discarded windows to gather solar heat in his home in Pinedale;

—Mr. and Mrs. John Countryman of Lander, who are using a hot water well near their ranch to heat a commercial greenhouse;

—and Raymond Short, production chief of the Carter Oil Co. coal mine in Gillette, who makes shrewd use of the sunlight that falls through windows in his house.

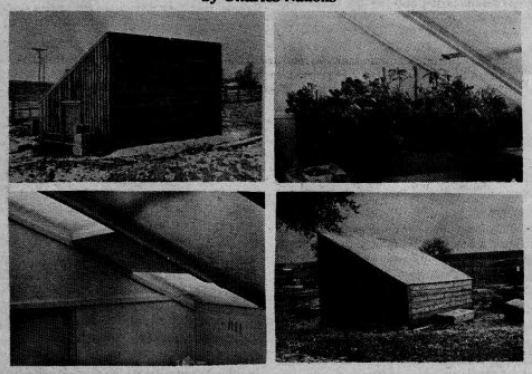
Nations described these and several other ingenious projects in a slide show he prepared for the League of Women Voters' state energy conservation conference in November. He has also shown the program to groups in Worland, Big Piney, Ethete, Riverton, Lander, Gillette, and Dubois. Future shows will be in Laramie, Jackson, Casper, and Cody.

We've only been able to include the highlights here. Due to space limitations, we had to omit some of Nation's shots of energy wasters — an ill-fitting motel door, a commercial greenhouse, a sea of yardlights in what, during the day, looks like the wide open spaces. We also had to omit slides on insulation, which Nations points out is "the easiest, quickest way to conserve energy" and should come before the more elaborate schemes in the rest of the show. He ends the show with a run-down on reading material available for budding energy conservationists. Nations (711 S. 3rd, Lander, Wyo. 82520, telephone (307) 332-5213) is eager to show his program free to any group that will pay his travel expenses.

To give you a sampling, here it is, newspaper-style.

The crowd has assembled. The lights are dim. The slide projector appears to be working. Now, just what are those energy-rich Westerners doing to make their bounty last longer?

excerpted from a slide presentation by Charles Nations

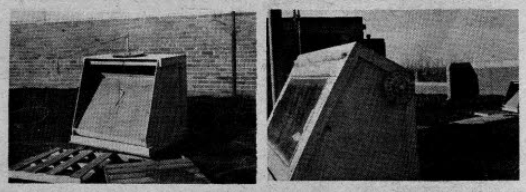


The first set of slides shows a simple greenhouse, designed by Malcolm Lillywhite of Evergreen, Colo., and a group of teenagers hired by the Community Action Program in Cheyenne, Wyo. You will be hearing more of Lillywhite, since he is into all kinds of energy conservation activity.

There was snow on the ground as you can see and it was a cold day. The thermometer reads 48 degrees in the house. The small boxes in front of the greenhouse are starter boxes for the children to use to start seeds and watch them grow.

Notice the small entry door and the poorly designed vent openings. The instructor at the school has to climb a ladder twice a day to adjust the vents in this greenhouse.

You can see the styrofoam blocks which are placed in grooves in the ceiling at night to conserve the heat inside. There are also some of the plants which are growing in the greenhouse.

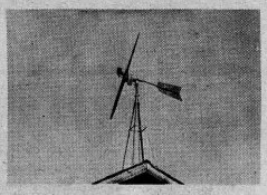


The Albany County Courthouse in Laramie has some solar collectors on the roof. This project was done by the university and reported as being very successful; however, the collectors were not being used at the time these shots were taken. The thermometer reads just a few degrees above outside air temperature.

The smaller box has been designed to tilt and follow the sun's travel with this system of cables.

The marks on the roof are there to indicate leaks. The building custodian is very peeved about the boxes being on the roof since they will interfere with the roof repair. No one had taken the time to explain to him what the devices are intended to do or how they operate.

That should be a lesson to all of us who may install some of these things in the future. Be sure that the guy who has to finally operate them is as fired up and interested in the thing as you are or the project is doomed to failure.



On a garage in Pinedale is a 32-volt wind generator, but it isn't operating. The owner won't sell it either. He bought it just for a momento of the old days when dozens of wind generators turned to produce voltage for ranchers and farmers, as well as some city dwellers, before the days of the Rural Electrification Administration and cheap electricity.

The builder of this greenhouse, Mike Dabich of Hudson, went to a solar energy workshop in Billings, Mont., and learned enough to satisfy himself that he could do it.

This geodesic design utilizes water barrels buried beneath a gravel floor for heat storage. The top of the greenhouse has a large vent and very good insulation. Mike uses styrofoam blocks inside to insulate and fiberglass panels on the south exposure to permit light to enter.

Mike first used furnace tape to seal the panels and found that the sun will bake the aluminum foil right off the adhesive. He now recommends clear, silicone sealer for this purpose.

Northeast of Cheyenne on Highway 85 to Torrington is this commercial solar collector. It is a well-made device with eight panels and a door which folds down to reflect more light into the panels. The collector was not in use at the time these pictures were taken, but it had been ducted into the basement of the house and incorporated into the heating system. This collector has no storage system inside the box to hold heat during the night or on cloudy days.

The visitor center at Lovell is the first completely solar heated and cooled government building in Wyoming. It is operated by the Department of Interior and is very complicated and expensive. It was under construction for over a year and opened last fall.

The collectors run the full length of the south side, and the landscaping incorporates a pond as part of the cooling and air conditioning system. The pond also reflects light onto the collector.

Since the building has been in operation, eight of the glass panels have broken. Special ladders needed to replace the glass had to be designed. No exact reason for the glass breakage has been determined, but heat expansion is suspected. Incidentally, those glass panels cost $100 each to replace.

This unusual geodesic dome house has been built by high school art teacher Frank Somer of Lovell. The dog house is also of geodesic design, and the dog seems to like it just fine.

The large black-painted area on the south exposure is covered with fiberglass resin to seal any leaks. Water trickles from the top of the dome down the grooves on the south side. It is then piped into a 2,000 gallon tank surrounded by rocks inside the house. A blower pushes air up through the rock bed to heat the house.

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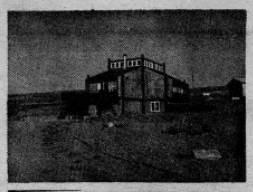
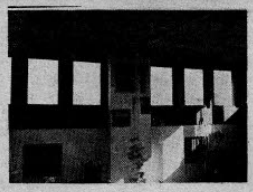


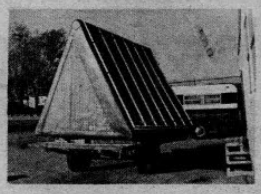


In Gillette, this home of Raymond Short, Jr., attracts a lot of attention. While it is not a solar home in the true sense of the term, it has been designed to take advantage of the sun.

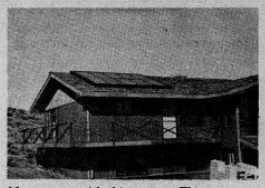
The house is built like a cross or plus sign with eight walls. The sliding glass doors and the windows are Anderson Thermopane, to prevent heat loss.

The upstairs serves as a heat plenum. Sun heating warms the upstairs through the windows and the blower system draws this warm air down into the lower floor when the temperature differential makes it efficient to do so. There is an electric heater in the basement.

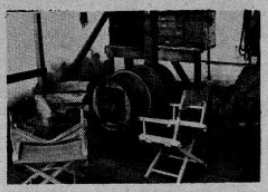
A commercially manufactured solar collector intended to be used as an attachment to an existing house or garage. This is a "Solar Furnace" and is available from Champion Home Builders of Dryden, Mich. This collector was photographed in Sheridan.



This well designed and built home belongs to Don Davis. It is in Squaw Creek Canyon near Lander. The panels were purchased from the Solaron Corp. When the system is complete, the panels should provide enough hot air to heat one level of the three-level home. A rock storage system (which surrounds a galvanized tank to heat domestic water) is in the basement. The system is fully automatic with a small electric radiation heater as backup.



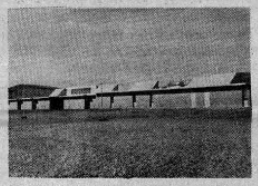
Notice the angle of the panels is not as steep as is usually recommended. Nevertheless, the owner expects reasonable success with this system. The square footage of the panels was increased to compensate for the low pitch of the roof.

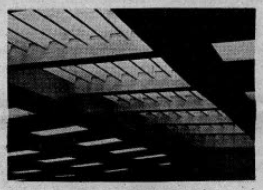


A report of a hydraulic ram in operation led us to the Skinner brothers' camp in the mountains near Boulder. First, we found this barrel heating stove in the cook tent. This is an old time use of 55 gallon drums and is very effective. In the kitchen was another barrel — this one used to heat water.

Outside was a three-barrels arrangement in which trash and wood were burned to heat water for dishwashing. The water was fed through a three-inch plastic line from Burnt Fork Lake to the hydraulic ram. The ram is a bad water waster, but in this case all the water that wasn't pumped into a storage tank was returned to the lake. The water pumped into the tank furnished the pressure head to the three barrel system you saw before.

There is no electricity at this camp, other than that provided by a gasoline driven generator, so this simple ram provides plenty of water for almost no cost and no use of energy.

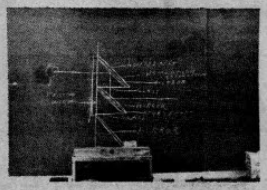




The high school at Kemmerer was built with these large south facing panels which, while they are not solar collectors, do serve a good purpose in bringing both heat and light into the building. Inside are louvers which are controlled to take advantage of the sun's rays. The school system recently had a 33% increase in utility rates and needs all the help it can get.

Nothing is more exciting to me than to meet a teacher who can inspire his students to do more than just enough. Gene Sloan of Big Piney is one of those special teachers.

Here is one of the things his kids have done in junior high school. This design uses mirrors and insulation to bring heat into the home and retain it.



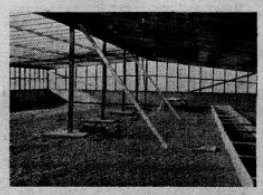
In 1896 a company drilling for oil in Lyons Valley near Lander struck a hot water vein. The well has been flowing continually since then and the temperature is right at 100 degrees. The present owners, Mr. and Mrs. John Countryman, did not use the water for any purpose other than some swimming and some irrigation.

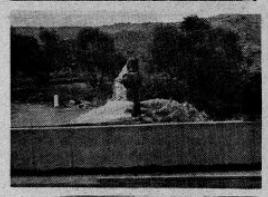
Recently they decided to build a greenhouse and use both the sun and the warm water to produce tomatoes and other vegetables for the market.

The greenhouse is 40 feet by 80 feet and is covered with fiberglass panels designed for this application. The fiberglass transmits lots of light and is also very strong.

The inside of the greenhouse is surrounded by a trough in which the hot water will flow for heating during cloudy days, at night, and during cold weather. The planter beds are filled with good composted soil and have deep gravel beds to retain as much heat as possible.

The first planting of tomatoes was a complete failure, however, due to too much heat and humidity, and possibly due to fumes from sulfur in the water and the chemical pentachlorophenol, which was used to treat the rafters. The Countrymans have since installed a forced air vent, tried to cover the rafters and the water, and have replanted their crop.



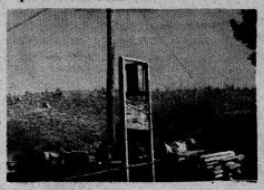


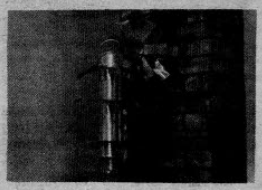
A retired engineer from the Wyoming Highway Department made these solar panels from material scrounged from the dump and from friends. The duct work is made from the cardboard tubes that carpets are rolled on for delivery and is insulated with foam rubber underlay material. Butler Hilton, the owner, uses a vacuum sweeper motor to blow the hot air into his house.

It was nine degrees below zero the morning these pictures were taken. Inside, using only these panels, it was a nice 72 degrees.

He has also made a model of a Savonius windmill from a fruit juice can, just to prove it will work.

His hot water heater is located in the bathroom. He installed this aluminum fin system to capture and distribute as much heat as possible which usually just goes up the stack.





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Environmentalists want more restrictions

Teton Park left open to snowmobiles

by Bruce Hamilton

The National Park Service has announced its intention to leave large portions of Grand Teton National Park in Wyoming open to winter snowmobile use. The proposal has many conservationists up in arms. They feel parks are the wrong place for noisy off-road vehicles.

"Snowmobilers must not be allowed to look on national parks as playgrounds for thrill-riding," writes Mike Frome in the December 1976 issue of **Defenders** magazine. "The point is sometimes made that snowmobiles have other places available to them for fun and games, but even if they had nowhere else to go they still should not be permitted to impose their inevitable adverse impact on the natural, esthetic, and scenic values of the parks."

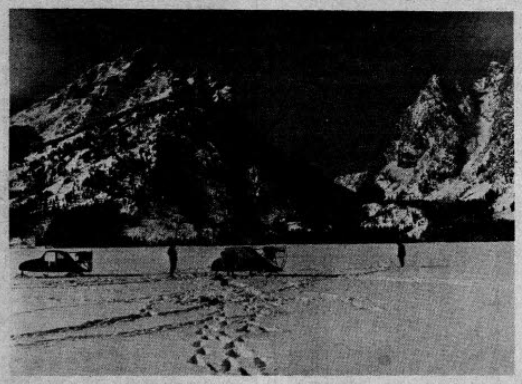
Snowmobile groups defend their right to use the parks. They believe that, if the machines are properly used, they have little impact on park resources.

Teton Park officials prepared an environmental assessment late last year on alternatives for management of winter recreational activities. The document considered four alternatives for snowmobile management: minimal restriction (allowing use almost anywhere a snowmobile could travel); a ban on snowmobiles; restricting use to unplowed roads and other routes; and restricting use to unplowed roads, routes, and designated areas.

In the Dec. 23, 1976 **Federal Register** the Park Service announced its choice of the latter alternative, leaving routes and areas open to snowmobiles. Public written comment was invited but no public hearings were scheduled. The proposal covered Grand Teton National Park and the John D. Rockefeller Memorial Parkway (the land between Grand Teton and Yellowstone).

BAN SOUGHT

Bart Koehler of the Wilderness Society advocates a total ban on snowmobiling in Grand Teton. He notes that Glacier National Park officials in Montana banned snowmobiles because of the noise and possible adverse effects on the park environment. Similar problems exist in Grand Teton, he says.



SNOWPLANES are now used on Jackson Lake in Grand Teton National Park. Many conservationists say the noisy home-built craft should be banned from the park. Photo courtesy of the National Park Service.

In fact, Grand Teton is the only national park that allows snowmobiles off designated routes. Yellowstone National Park in Wyoming and Rocky Mountain National Park in Colorado allow snowmobile use, but restrict it to selected unplowed roads to minimize impact. Koehler says that at the very least Grand Teton should adopt a similar policy.

"I think it's a hell of a concession just to let them stay on the unplowed roads," he told **HCN**. "The noise their machines make travels way beyond the roads."

Koehler is especially critical of the Park Service's plan to leave a potential wilderness, the Potholes-Signal Mountain area, open to snowmobiling. "As long as snowmobiles are allowed in there it won't be qualified for wilderness," he says.

Bob Kerr, superintendent of Grand Teton, says snowmobile use won't disqualify the Potholes-Signal Mountain area from future wilderness classification. If the potential wilderness ever becomes an officially designated wilderness study area, then snowmobile use will be discontinued, he says. In the meantime, "We don't have a mandate to manage potential wilderness as wilderness," Kerr says.

Garl Riggan, a member of the Jackson Hole Snow Devils snowmobile club and an advisor to the Wyoming State Snowmobile Association, says the Park Service snowmobile regulations for Grand Teton are generally acceptable to snowmobilers. He says what he objects to in the proposal is the suggestion that there is potential wilderness in the park. His organization is opposed to any wilderness in the national parks.

"If you set up a wilderness in the Potholes you would lock out snowmobiles and then only some young whipper-snappers on skis could get into the place in winter," he told **HCN**.

The new Grand Teton snowmobile regulations stem from a 1972 executive order requiring each federal agency to set up off-road vehicle regulations. The National Park Service decided to leave control of snowmobiles up to the individual park superintendents. Hence, the different policies in the different parks.

LOOKING FOR COMPROMISE

Home-built snowplanes were used on Jackson Lake before 1950 when the park was expanded to include the lake. Snowmobiles were first used in the park in 1964. This historic record of snow machine use, and a vocal organization of snow machine users in nearby Jackson, Wyo., apparently makes banning snow machines difficult for the Park Service.

Kerr says the routes and areas left open to snowmobiles under the proposed regulations are smaller than the area that has been historically open.

The proposal attempts to keep snowmobiles away from important wildlife wintering areas and areas used by cross country skiers, snowshoers, and motorists. In the past the Park Service has had complaints from other users about noise and tracks from snowmobiles marring the scenery. In addition, a number of instances of harassment or killing of coyotes by snowmobilers have been documented in the park.

Over 1,300 snowmobiles were registered for use in Grand Teton last year. When asked if present use figures showed a need for opening more than just the park's unplowed roads to snowmobile use, Kerr told **HCN** that present use could probably be accommodated on just the roads.

COMMENTS INVITED

Kerr stresses that the notice in the **Federal Register** is just a proposal and no final decision has been reached. Depending on the public's reaction, the area open to snowmobiles could be expanded or reduced.

Kerr said he does not plan to prepare an environmental impact statement on the proposal unless there is sufficient public controversy or the proposed action can be shown to significantly affect the park environment.

Copies of the environmental assessment are available from Grand Teton National Park, Moose, Wyo. 83012. Specify if you want the assessment for the park, the assessment for the J. D. Rockefeller Memorial Parkway, a copy of the **Federal Register** proposal, or all three. The comment period has been extended until March 6.

Endangered feces: a tie to the past

by Philip White

GRAND CANYON, ARIZ. — Scientists still don't know how much damage has been done to one of the world's paleontological treasures located in Grand Canyon National Park.

This particular treasure is not composed of plant and animal fossils. The medium involved here is not stone, but dung.

For 30 years, scientists have been studying the 200 cubic yards of almost perfectly fresh dung left by the now-extinct Shasta ground sloth in Rampart Cave near the western boundary of the park. Until July of last year when rangers discovered a smouldering fire in the cave, the four-foot thick dung layers had provided clues of plant and animal life in the late Pleistocene. Scientists have estimated that the bear-sized sloth, weighing 350 pounds, first began using the cave some 40,000 years ago and continued there intermittently during the next 30,000 years before disappearing from Rampart and similar caves in the Southwest.

Research came to a halt in July, however, when a fire was discovered in the cave. Dick McLaren, assistant chief ranger for the park, speculates that a cave explorer broke through the steel gate at the cave's entrance and accidentally touched off the fire with a torch. The National Park Service then spent more than $50,000 trying to put out the fire without damaging the dung deposits.

Finally, in October, the U.S. Mine Enforcement and Safety Administration sealed the cave and sent carbon dioxide inside to displace oxygen and smother the fire. In December, officials took measurements which indicated that the fire was out. But in January 1977, they re-entered the cave and found it filled with smoke and the dung still smoldering.

Dr. Paul S. Martin, an Arizona University geoscientist, says the fire is a tragedy to science. "It's worse than losing a whole museum," Martin says. Martin, who has visited all nine such caves in the world, said in an August 1975 **Natural History** article that Rampart Cave held the biggest and best-preserved ground sloth dung deposits.

The first such deposits, together with a large piece of hide, were found 50 years ago in a cave in southern Chile. That genus was apparently larger than an elephant and, like other sloths, was a herbivore. In the 1920s, a Shasta ground sloth skeleton in excellent condition was found at Aden Crater, N.M.

Richard M. Hansen, a Colorado State University scientist, took plant fragments from various levels of the Rampart Cave deposits and found that the sloths browsed on acacia, ephedra, mesquite, opuntia, yucca, and other plants which remain, today, as prominent plant-types in the Grand Canyon area. Thus, the scientists have decided that loss of food supply is not an explanation for the sloth's demise.

These studies have led Martin to theorize that the sloth's sudden extinction may have come at the hands of the first human hunters who entered southern Arizona in pursuit of mammoths about 11,200 years ago.

Much research remains to be done, however, and scientists are now hoping that the four-month fire has not completely destroyed what Robert Hullihan, in an article in the Des Moines **Register**, called the "endangered feces."

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Leopold. . .

(continued from page 1)

foretaste, a mere preparation for the real thing now before him. The wild White Mountains of the Arizona and New Mexico Territories, with their wolves, grizzlies, and sometimes half-wild men, would be his home for the next 15 years.

Leopold might have spent his life happily "stuck" in an emotionally immature and romantic stage, chewing tobacco with other Forest Service employes, camping in the ponderosa forests miles from civilization, and killing the hated wolf — in short, being a man among men. He did in fact act this out to a certain degree, reveling in the largeness and ruggedness of the country. But he possessed two traits that raised him above the average: capacity for perception and the ability to change. He knew how to evaluate the prejudices of his times and how to form his own opinions. Yet, instead of boasting of his growing skills as a scientist and woodsman, he went the other way. As, unlike the men around him, he began to grasp the complexities of the environment, he became increasingly humble and dubious of the Anglos' approach to nature.

Curiosity about his new surroundings often drew the young ranger away from duties assigned by the Forest Service. The first summer in the White Mountains, green as he was, he led a survey crew of experienced locals up and down ridges to map and cruise timber. The six hands grumbled about their boss. When something caught his eye, he would leave work to scout off by himself. The Indians, then as now on the bottom rung of the social ladder in the area, brought the eager Yale-man special delight as he watched them jerking venison in their camps. But despite the disgust of his crew and his dereliction of duty, Leopold was learning, beginning to see the effects of two cultures on the region.

For centuries small bands of Apaches had lived in the White Mountains without significantly damaging the environment. Pushed back from their wanderings over the surrounding plains, they held the tangled canyons and high plateaus of the area as a last stronghold, and by fierce guerrilla warfare they kept the whites out until the late 19th century. Then, when the Army captured their leader Geronimo in 1886, with a whoop the exploitation, the stripping of the mountains, the ditching, the overgrazing, began — and with it the erosion, the depletion of timber and wildlife.

Upon his arrival 25 years later, the young Leopold recognized the problem, while others busied themselves with making it worse. He knew that if the process continued it would leave a wasteland for the sons of the proud pioneers. Though the rapid misuse followed a similar pattern throughout the West, the damage was especially evident in the arid tail end of the Rockies. As Flader describes Leopold's realization:

> Reducing the wilderness to possession entailed an incalculable investment of labor, hardship, and sometimes even bloodshed. Hence the community ought to consider whether its methods of conquering the wilderness were efficient methods — whether they produced "a maximum of habitable land for a minimum of effort and suffering."

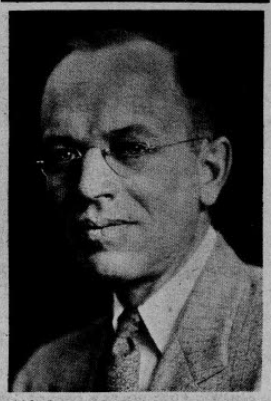
Years of nosing his horse into one washed-out valley after another in the national forests of the Southwest led him to question whether current practices yielded a net gain — whether more land was not lost to erosion than was gained by clearing, fencing, ground-breaking, and irrigating. While one individual was putting a new field under irrigation, another was losing an older field from floods, and a third was causing the floods through misuse of his range.

In his youthful exuberance, all this wasn't immediately clear to the new forest ranger, but he was wise enough and far enough ahead of his times to have inklings that the quality of an ecosystem reflects the quality — and the future — of the men inhabiting it. Hunting always fascinated Leopold, at first with a rifle and later with bow and arrow, and his gradual change of heart about the relationships of wildlife to the environment preceded a wider view of the delicate workings of the biota.

Treatment of the wolf started him thinking. Manly heroes require enemies, and in the early days of his career Leopold joined his fellows in the Forest Service in a holy war against the wolves and mountain lions that fed on the game species, the deer and elk. Yet through all the bloodshed he began to understand that what he, the Forest Service, and the local ranchers were doing was part of a larger mistake. Years later he recalled in **A Sand County Almanac** an epiphany during one of the slaughters:

> In those days we had never heard of passing up a chance to kill a wolf. In a second we were pumping lead into the pack, but with more excitement than accuracy: how to aim a steep downhill shot is always confusing. When our rifles were empty, the old wolf was down, and a pup was dragging a leg into impassable slide-rocks.
>
> We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something *new to me in those eyes — something* known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view.

He knew how to evaluate the prejudices of his times and how to form his own opinions.



Aldo Leopold. The photo was taken around 1928.

He progressed from thinking of game as a crop to his ultimate realization that man should stand in humility and wonder before the diversity of nature.

From then on Aldo Leopold slowly shifted from the accepted utilitarian approach to a holistic view of the environment, a change that took much of a lifetime, until it was refined and assumed a spiritual significance for another generation in the eloquent "Land Ethic" of his posthumous **Sand County Almanac.** Though the shift was so gradual that perhaps even Leopold didn't perceive it, two events symbolize the progression from his thinking of game as a crop to his ultimate realization that man should stand in humility and wonder before the diversity of nature — a diversity that should be restored and preserved rather than manipulated for short-term gains.

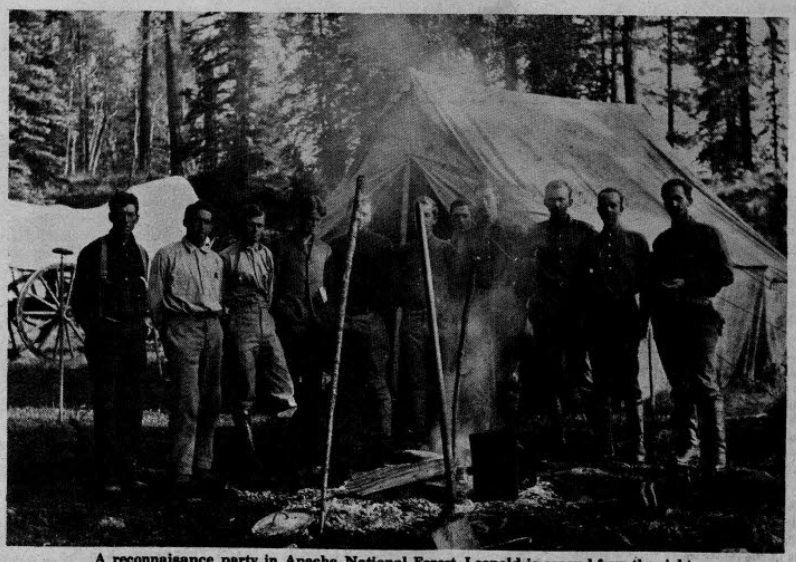
He began to realize that what he was doing was part of a larger mistake.

The first was a national scandal, one that drew into its maelstrom the **Saturday Evening Post,** the writer of romantic Western novels, Zane Grey, and the U.S. Supreme Court: the Kaibab disaster of the 1920s and 1930s.

The other was quieter: Leopold's joining in 1935 with Robert Marshall and other conservationists to found the Wilderness Society, an organization dedicated to preserving the variety of nature.

However, before he would reach that stage of intellectual and spiritual development, radical for his time, Leopold had a long way to grow.

Next Time: "Thinking Like A Mountain"



A reconnaisance party in Apache National Forest. Leopold is second from the right.

U.S. Forest Service photo by John D. Guthrie.

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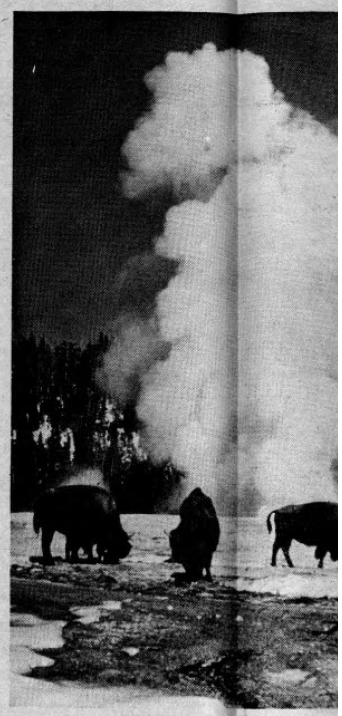
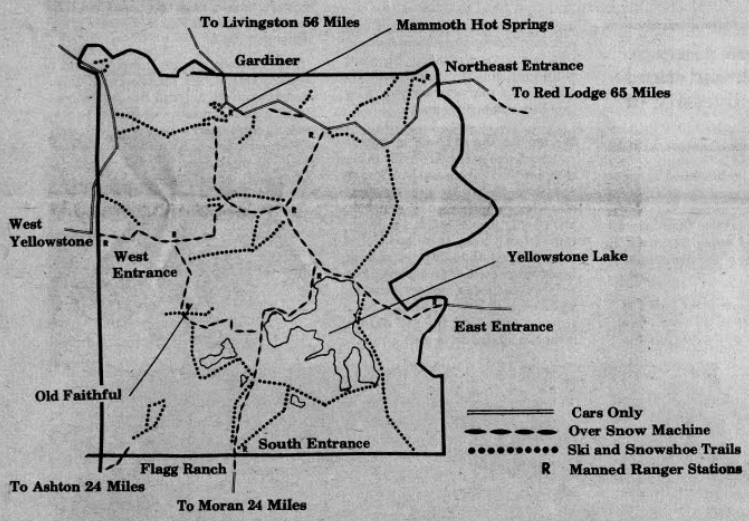
All photos courtesy of the National Parl

Bighorn Sheep are one of the many species of wildlife to be found in Yellowstone in winter.



Hot springs areas are good places to fin
the winter.



Cross country skiing, unlike snowmobiling, is not limited to trails or roads. This skier is in the Hayden Valley area.

Skiing in geyser
and m

Deep snow and temperatures down to 40 degrees below zero limit the number of people interested in sightseeing in Yellowstone National Park this time of year. Out of a yearly total of 2½ million visitors to the park, only 30,000 choose to come in winter.

Those who do come are offered the comforts of civilization by the Park Service and its concessionaire, the Yellowstone National Park Co. In winter, as in summer, the park is managed as much to please people as it is to preserve natural resources.

Nevertheless, most of the park is the secluded domain of wildlife and the self-propelled humans who venture into the back country. Snowmobiles are limited to the park's unplowed roads. Cars are limited to the plowed, but usually snow-packed, roads on the periphery of the park.

Human activity in the park is concentrated at the Old Faithful Visitor Center, which by unplowed road is 62 miles from the park's south entrance at Flagg Ranch and 49 miles from the west entrance at West Yellowstone. Most visitors ride to Old Faithful — either on their own snow-

mobiles or on the Yell
"snowcoach," which cos
from Jackson, Wyo., a
Yellowstone, Mont. Lo
ful costs a minimum o
two persons.

The Old Faithful ar
rental snowshoe and s
in the evening, park ser
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try ski trails near geyse
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For visitors who do
their money on a snow
Old Faithful, 13 mark
from plowed roads arou
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Bison and elk are of
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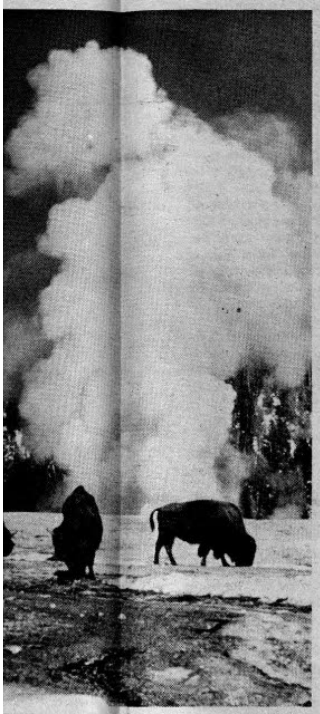

areas are good places to find wildlife in

The Norris Geyser Basin can be reached by ski trail.

n geyser and mudpot country

n to 40 nber of Yellow- ar. Out s to the winter. e com- ice and e Na- mmer, please ral re-

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mobiles or on the Yellowstone Park Co.'s "snowcoach," which costs $35.46 round trip from Jackson, Wyo., and $22 from West Yellowstone, Mont. Lodging at Old Faithful costs a minimum of $16.90 for one or two persons.

The Old Faithful area also offers food, rental snowshoe and ski equipment, and, in the evening, park service ski movies and naturalist talks. Forty miles of cross country ski trails near geysers, hot springs, and mudpots begin at the center. The Park Service brochure describes nine different routes, from two to twenty miles long.

For visitors who don't want to spend their money on a snowcoach or lodging at Old Faithful, 13 marked ski trails start from plowed roads around the perimeter of the park (see map).

Bison and elk are often seen by winter park visitors, according to park ranger Russ Lesko. But he warns people to "stay at a distance which won't disturb the animals," because every bit of food and energy can be critical to park wildlife in winter.

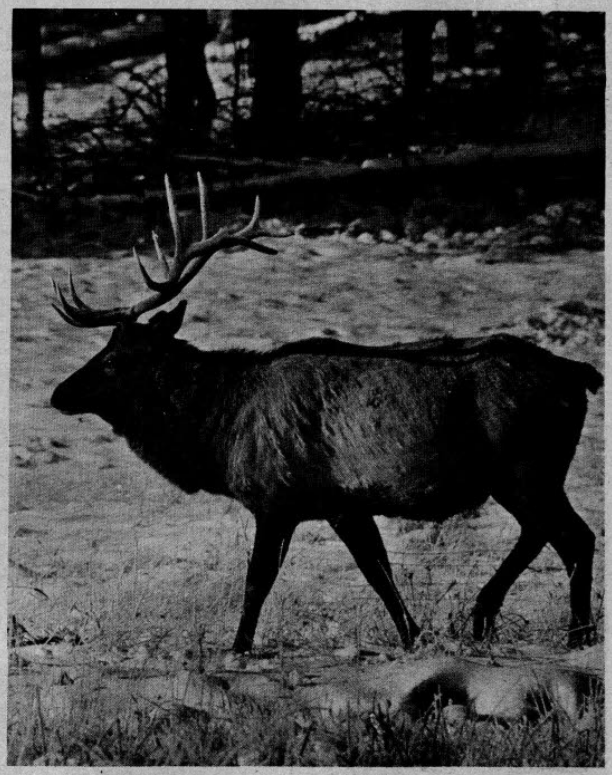
Because snowmobiles are limited to Yellowstone roads, skiers probably have more impact on wildlife than snowmobilers and motorists, according to Lesko. He says that animals adapt to the noise and regular traffic patterns of vehicles, but may be frightened by meandering skiers. He does not think present numbers of skiers are a threat to animals in the park, however.

The park service brochure on ski touring and snowshoeing at Old Faithful also warns against approaching wildlife — but for more man-centered reasons: "Remember animals can move much faster through the snow than you can! All the animals are wild and could charge you."

The brochure boasts of snow that is "almost always dry and powdery." Daytime temperatures range from 10-30 degrees. Nighttime temperatures can dip to 40 below zero.

Most Yellowstone skiing is on plateau country with little avalanche danger — ideal for the beginning and intermediate skier, according to Lesko.

Skiers and snowshoers on overnight trips are asked to check in at a ranger station to obtain a backcountry permit before they begin.



Elk and other wildlife are best viewed from a distance, for the welfare of both man and animal.

Line Reference Target LR1

Reckoning from Washington

NEW ENVIRONMENTAL ETHIC?

by Lee Catterall

Industrial leaders are stricken with fear over what they see as a new environmental ethic emerging in Washington, with White House approval.

Only time will tell if their fears are justified, but they are beginning to shake as they see young environmentalists fill some of the top posts in the federal government.

Politicos inside and outside of government have condescendingly referred to environmentalists as "irresponsible" and, if young enough, "immature" since the environmental movement first began in the '60s.

Example: A rift occurred recently between Carter transition team member Katheryn Fletcher, 26, formerly a staff scientist for the Environmental Defense Fund in Denver, Colo., and new Interior Sec. Cecil Andrus. A veteran Interior Department hand explained that Andrus had sent Fletcher back to the transition team because she had been "immature" in complaining about the department's "fiefdoms."

Two weeks later, Fletcher is part of a three-person team advising the President on environmental issues, and Andrus is complaining to Congress and the press about the "fiefdoms" in the department and telling of his plans to take a firm grip on them.

The Washington vets broke into a cold sweat recently when two top Carter aides — domestic affairs advisor Stuart Eizenstat and Katheryn Schirmer, head of the three-person environmental team — attended a major environmentalist gathering in Washington.

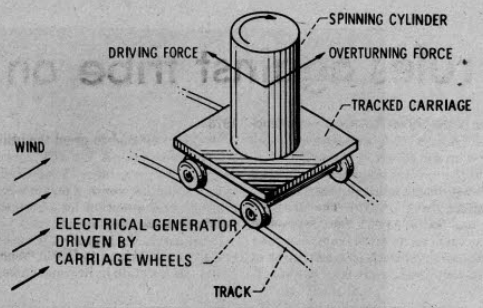
A few months ago, such a meeting would have been virtually ignored by most industrial and government leaders. This time, all attention was focused on the report the meeting was held to publicize.

Called "The Unfinished Agenda," the report was assembled by the nation's top environmental leaders as a "citizen's policy guide."

The 178-page report pays only passing notice to the current clamor for Western coal, treating the subject as if it were not to be taken seriously. There are "fundamental flaws" in the logic that has led the country to expect "an enormous expansion of coal mining, mainly by strip mining." It dismisses the idea of "new synthetic fuel industries, railways, slurry pipelines and clusters of giant coal-fired power stations," and deplores the "stripping of unrestorable lands often taken forcibly by eminent domain (e.g., in the Powder River Basin.)"

As the gathering took place, word got out about the top people Carter would be hiring to head environmental agencies. Congressional Budget Office staffer Douglas Costle will head the Environmental Protection Agency. California state legislator Charles Warren will chair the President's Council on Environmental Quality. Two other prominent Washington environmentalists were mentioned as possible choices to fill the other posts in the President's council.

It was enough to make most environmentalists cheer with delight, and most were doing just that. Within earshot, however, corporate and political types who had always thought a little environmental disruption should be allowed were hitting martinis and wondering what it all meant. They were beginning to worry if they might be branded as "irresponsible."



THE MADARAS CONCEPT FOR GENERATING ELECTRICITY

TOWER POWER. The Madaras concept for generating electricity from wind power is being re-investigated by the Energy Research and Development Administration. A test-scale Madaras rotor was built and operated in New Jersey during the 1930s, but the utility companies that funded the project were unable to continue funding during the depression era. The concept involves tall spinning cylinders, each standing on a railroad flatcar on a closed circular track. Air flowing over the cylinders would create a powerful sideways force which would drive the cars around the track in an endless merry-go-round. The turning wheels on the railroad cars would drive electric generators.

A Madaras power plant is expected to be capable of producing up to 100 megawatts of electrical power.

The HCN Hot Line

energy news from across the country

STRIP LAW AHEAD. With the Carter Administration solidly behind him, Rep. Teno Roncalio (D-Wyo.) predicts, "There's going to be a federal strip mining law, probably within a few months." Roncalio says he will be working to include a strong surface owner consent provision in the law, which would give a landowner the right to refuse to allow strip mining on his property even if he does not own the mineral rights. Roncalio also hopes to eliminate a loophole in the agreement the Interior Department made with Wyoming, North Dakota, Montana, Utah, and New Mexico. Interior granted these states control over strip mining on federal lands within their borders — unless the Interior Secretary decides it's not in the "overriding national interest."

RATE TURNAROUND. Northeast Utilities was shocked by Connecticut's response to its request for a rate increase in December. Instead of an increase, the Connecticut Public Utilities Control Authority ordered a rate decrease, lowering the company's existing rates by $21.6 million. The Connecticut Citizen Action Group, which led consumer opposition to the increase, called the decision "a stunning victory for the ratepayers of Connecticut."

METHANE LEGISLATION. Sen. Gaylord Nelson (D-Wisc.) has introduced a bill (S. 569) which would fund pilot projects to show whether methane digesters are practical for widespread use on American farms. The digesters would produce burnable gas and fertilizer from manure and crop residues. The bill calls for an evaluation of previous digesters and an analysis of the relative benefits of each. The bill also calls for installation of experimental digesters costing no more than $5,000 on at least 100 farms of no more than 640 acres each. Nelson introduced the same bill last year, but no action was taken on it.

RENEWED LEASING UNLIKELY IN '77. Regardless of what Interior Secretary Cecil Andrus would like to do, it looks like it will be impossible to resume federal coal leasing this year, according to **The Energy Daily.** Federal officials had thought leasing would start first in northwest Colorado, where a final regional environmental impact statement (EIS) on coal development has been completed. But the Colorado statement does not contain the analysis on specific sites that is required by the Mineral Leasing Act amendments, which were passed just as the EIS was being completed. It is not clear now whether or not the government must go through the time-consuming process of publishing and holding hearings on another EIS, according to **The Daily.**

INSULATE OR ELSE. The New York State Public Service Commission is exerting leverage on homeowners that should encourage almost every homeowner to conserve energy. As of April 1, no house may be connected to utility power lines unless it has minimum insulation of R-19 in the ceiling and R-11 in the walls and double-glazed windows.

TVA FIGHTING AIR REGS. The Tennessee Valley Authority (TVA) is continuing its lengthy fight against federal air regulations and has enlisted the backing of coal producers, who are lobbying for variances, according to **Coal Week.** U.S. Environmental Protection Agency (EPA) officials say they'll reject TVA's air quality compliance plan. They want to impose fines against TVA for illegal emissions at four plants. TVA previously won a lawsuit which said the states could not impose their regulations on the TVA since it is a federal agency.

MINE METHANE FOR ENERGY. An official of the Energy Research and Development Administration says a recoverable mine gas, methane, is about equal in quantity to known U.S. natural gas reserves and should be tapped. The methane is present in all coal deposits and must be vented from coal mines because it is potentially explosive. There are an estimated 794 trillion cubic feet of methane in U.S. coal deposits.

Gas pipeline route picked through Arctic Wildlife Range

Environmentalists do not favor the route for the Alaskan natural gas pipeline that was chosen by Federal Power Commission (FPC) Administrative Law Judge Nahum Litt. The final FPC recommendation will be given to President Jimmy Carter by May 1, and he'll have until September 1 to respond. Congress gets final authority.

The route of the Arctic Gas project system chosen would go through the Arctic National Wildlife Refuge. Litt ruled that the impact on the refuge would be small. Most of the 2,650 acres set aside for Arctic Gas (out of the refuge's 14,000 square miles) are for the right-of-way, Litt said, and would be revegetated. He added that only wildernesses — not refuges — have legal protection from such projects.

Litt said the Arctic Gas system was the best environmentally, economically, and would make gas available sooner. Environmentally, he says Arctic Gas's proposal to build the pipeline during the winter rather than the summer as the other companies proposed would do less damage to the permafrost. The capacity of the Arctic Gas pipeline could expand up to 4.5 billion cubic feet a day if reserves are greater than expected. This flexibility, which the other proposed systems did not provide, also rated high with the judge. The transportation cost for the gas would be about $1.60 per million Btu's, which is less than either of the other two proposed systems. He said that even with a 20% construction cost overrun, gas from the system still would be economically competitive with other fuels.

However, he warned that the Arctic Gas line would need laws passed which would provide federal guarantees of completion costs and would set the amount of the construction bill that consumers would pay.

The recommended route crosses into Canada, turns south up the MacKenzie River and continues on to the Calgary area. From there, it branches into two legs, one heading south into the states of Washington, Oregon, and California, and the other crossing into Montana, then going on through North and South Dakota, Minnesota, Iowa, and Illinois.

The state of Alaska would have preferred the "all-American" route, which would follow the Alcan Highway, thus using some of the same construction camp sites and disturbing less wild land.

The "all-American route" was proposed by El Paso Alaska Company. It would have involved liquefying the gas at Valdez and transporting it by tanker to California. Litt said that if Arctic Gas can't fulfill its plans, the El Paso proposal, with modifications, would be acceptable.

Litt rejected in its entirety the Alcan Pipeline proposal, according to **The Energy Daily.** Northwest Pipeline Corp., which submitted the Alcan Pipeline proposal, chose a route heading south through the Yukon and British Columbia, tying in with existing pipeline networks in southern Canada.

ce Target LRT-BE4-V2

Federal judge rules against tribe on Colstrip 3 & 4

Class I designation for air over the Northern Cheyenne Reservation in southwest Montana will not be enough to protect the air from the largest nearby pollution source if a U.S. District Court ruling made Jan. 27 holds. U.S. District Court Judge James Battin of Billings ruled that Colstrip units 3 & 4 (20 miles north of the reservation) are not subject to federal significant deterioration regulations, which provide for Class I designation. An appeal is planned.

The two coal-fired units must still comply with other state and federal emission requirements. Earlier the U.S. Environmental Protection Agency (EPA) had ruled that the two units would also have to meet the Class I standards, if the Northern Cheyenne request for redesignation is granted (see **HCN**, 1-28-77). EPA estimated the cost of meeting those standards at $11 million for the Colstrip plant, according to the Associated Press.

The difference of opinion between the utilities and EPA revolves around the definition of the phrase "commence construction." EPA says it refers to when the plant receives an air permit from the state and says this permit was not granted before the significant deterioration regulations went into effect June 1, 1975. The utilities argue, and Battin agreed, that "commence construction" refers to the time when they signed binding contracts for construction of the two units, which was prior to June 1, 1975.

The judge refused to grant the utilities an injunction against the EPA, which is barring them from major on-site construction. He said he wants a presentation of evidence on the motion for a permanent injunction before he'll decide.

In contrast to the argument the utilities made to the EPA and to Battin, Montana Power told the state in hearings on units 3 & 4 that the units would be subject to significant deterioration regulations and would meet those standards.

Colstrip units 1 & 2 were not affected by the ruling. Colstrip is being built by a consortium of utilities including Montana Power, Puget Sound Power & Light, Portland General Electric, and Pacific Power & Light.

MPC TESTIMONY PRESENTED

In written testimony to the U.S. Environmental Protection Agency (EPA), Montana Power and four other companies involved in the construction of Colstrip units 3 & 4 say that the Northern Cheyenne clean air redesignation proposal "is simply a ploy to defeat construction of Units 3 & 4." The companies state that the tribe's redesignation proposal "clearly concedes that strip mining on the reservation will be allowed and, in fact, become a reality. The hypocrisy of the 'intent to protect the air on the reservation' thus becomes so evident that it becomes arbitrary and capricious."

According to the testimony, the air pollution from strip mining would exceed Class I particulate levels by several times. The statement further says, "If it were truly the intent of the tribe to protect their air, then no activity such as strip mining, teepee burning, timbering, or asphalt mixing can take place on the reservation.

"A National Park or 'wilderness area' scenario should in fact become a reality. For some reason, the tribe does not propose this scenario. That reason is obvious. Their emotional concern to stop Colstrip Units 3 & 4 (which may be spurred by third party interests) smacks hard at a rational approach to protect the reservation." The five companies did not give any oral testimony at the hearing held in January.

ENERGY E 1977 HCN

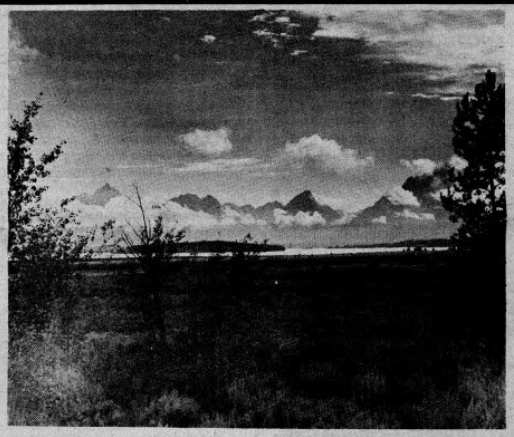
energy news of the Rockies and Great Plains

GAS TURBINE PLANTS PROPOSED. Two small gas turbine power plants have been proposed for Colorado. Tri-State Generation and Transmission plans to build two 46-megawatt units near Burlington. Public Service Co. of Colorado wants to build a 25-megawatt plant at Alamosa. The Alamosa plant would be used to generate power only during peak demand periods.

UTILITY ADS BANNED. The Idaho Public Utilities Commission has barred Washington Water Power Co. from sending political messages with its bills to customers. The mailings were protested before the PUC by the Kootenai Environmental Alliance, an Idaho citizens group. The PUC ruled that political messages should be paid for by the stockholders, not the customers, and should be mailed separately.

SYNFUEL WITHOUT SUBSIDY. While most companies are awaiting loan guarantees from the federal government before they proceed with oil shale development, Occidental Oil Shale Inc. says it's ready to go now. Occidental hopes to begin work on the federal government's C-b tract in Colorado, using a unique process which extracts the oil from the rock without mining it first. Occidental claims that its modified in situ process will produce more oil and less air pollution and use less water than any other process that has been considered by the federal government in its prototype leasing program. If the plan is approved, the federal tract will be developed by Occidental and Ashland Oil Co.

According to government estimates, the Occidental process can produce oil for $8-$11 per barrel, which is competitive with foreign oil. Conventional recovery would produce $16-$25 per barrel of oil.



JACKSON HOOKUPS HALTED

Deprived of its chosen transmission line route through Grand Teton National Park and the National Elk Refuge, Lower Valley Power and Light Co. is refusing to provide any new electrical hookups in Jackson Hole. The Wyoming Public Service Commission has ruled that the action is legal since existing facilities are loaded to capacity. However, the utility should be looking at alternative routes, the PSC said. Interior Sec. Thomas Kleppe refused to grant the right-of-way requested for the proposed 115 kilovolt line. Lower Valley Power and Light hasn't decided whether to appeal Kleppe's decision or choose an alternate route. In a newspaper advertisement, the utility urged Jackson Hole citizens "to join together in solid support for the facilities which are now required to serve your needs."

Photo of the Tetons.

BEULAH GASIFICATION. Although its project appears to have won county approval, the ANG Coal Gasification Co. will have to wait until March to be sure. In February the Mercer County (N.D.) Board of Commissioners and the company agreed to tack a long list of conditions onto the coal gasification project permit, but the county postponed final action. The site of the proposed plant is northwest of Beulah, N.D. The company will be expected to meet four of the 19 conditions, including writing a report on the project's effects on groundwater, before construction begins. The conditions also limit the plant to a production capacity of 125 million cubic feet per average annual day.

HOPE FOR PIPELINE. The Oklahoma Senate has passed an eminent domain bill, giving backers of a coal slurry pipeline project their first sign of hope in months. The proposed pipeline would carry Wyoming coal to an electrical generating plant in Arkansas. The Oklahoma measure would give the pipeline a right-of-way which could otherwise be blocked by landowners, especially the railroad companies who are in competition with pipelines for coal transportation. A similar bill was killed last year in the Oklahoma House. This year may be different, however. House speaker Bill Willis has pledged to see that the bill comes before the full House. The pipeline company, Energy Transportation Systems, Inc., still needs the power of eminent domain in other states along the route — South Dakota, Nebraska, Kansas, and Arkansas.

COAL DRAWS A CROWD. An overwhelming crowd arrived for the Bureau of Land Management's public meeting in Gillette, Wyo., to help plan development on federal lands in the coal-rich Powder River Basin. About 200 people attended the Feb. 1 meeting and 40 more had to be turned away for lack of standing room, according to the **Casper Star-Tribune.** "The impression we got from the bureau is that it will lease all of the coal that industry wants," said one Gillette resident, Irvin Johnson, who is a member of the Powder River Basin Resource Council. But BLM officials say they haven't made their leasing decisions yet and invite comments from the public on their proposed land use plan for Campbell and Converse counties up until March 1.

INTAKE PROTESTS EIS. Intake Water Co. has challenged a Montana draft environmental impact statement on the Yellowstone River as being "inadequate," giving the public too little time to comment, and failing to provide required environmental information. Intake, a subsidiary of Tenneco, Inc., accuses the Montana Department of Natural Resources and Conservation of ignoring any impacts from a dam the department is proposing at Moorhead on the Powder River. Intake is proposing a similar development at the same site, according to the Associated Press.

USGS CONFIRMS CONFLICT. The U.S. Geological Survey (USGS) has confirmed fears that strip mining in the principal coal deposit in Campbell County, Wyo., will disrupt the shallow ground water system. Ranchers in the semi-arid area who depend upon the ground water system have asked the U.S. Bureau of Land Management (BLM) to evaluate the effects of many simultaneous strip mines on groundwater flow, well yield, artesian wells, and springs before allowing more coal leasing on the Wyodak-Anderson coal seam. USGS says that nearly everywhere along the strippable zone of the deposit, the depth of mining would exceed the depth of ground water, thereby disrupting underground water flow.

Regional Legislative Roundup

Idaho . . .

(continued from page 1)

Jeff Fereday, executive director of the Idaho Conservation League, believes there was a third player in the game — the electric utilities. "Earl Adams may have been a pawn, but the utilities won't be happy until they get the bishops, knights, queen, and king, too," Fereday told **HCN.**

The Joint Finance-Appropriations Committee is also trying to gain control over a Federal Energy Administration-funded energy conservation program, which is now under Evans. The legislators want the power to review the program and possibly to refuse the FEA funds that were requested by the governor.

The committee has already voted to cut back the Public Utilities Commission (PUC) funds. Last year the PUC rejected the proposed Pioneer coal-fired power plant near Boise on environmental grounds. The vote upset many legislators. Fereday says an expanded PUC budget is essential to handle Idaho's growing energy problems.

MULLANEY REJECTED

The Senate State Affairs Committee rejected the nomination of Matt Mullaney to the Public Utilities Commission, 8-2. Mullaney was for rate reform and had been Andrus' energy advisor when the former governor opposed the Pioneer plant. Mullaney was branded as a radical environmentalist, and his nomination was strongly opposed by the utilities. Fereday says Mullaney was "fair, but hardly a radical."

Andrus prepared a package of energy bills to encourage conservation in the state before he left office to become Secretary of the Interior. Fereday says chances of passing any of these bills are slim unless citizens put more pressure on their legislators.

"The House is absolutely abysmal in its attitude toward resource issues and the Senate is just a little better," says Fereday. "Positive citizen action is absolutely essential at this point."

Montana subdivision law in danger, too

Tough reclamation regs under attack

Montana's strip mining reclamation act, which is said to be the toughest in the nation, is under attack in the Montana Legislature. The state subdivision laws are also being attacked by real estate interests. However, it is too early to tell whether these efforts or efforts to further strengthen environmental protection through some new innovative legislation will win out.

One Senate bill would allow a coal company to leave strip mined spoils in any shape they choose if the surface owner gives written consent.

Another bill would allow agricultural crops as an alternative to native vegetation for reclamation. Although superficially reasonable, the Environmental Information Center (EIC) says the present law is better.

The present law requires a company to plant permanent diverse native vegetation that is capable of self-sustaining productivity for at least five years. Critics of the bill argue that since thousands of acres will be strip mined in the state, it would not be possible to fertilize and water that much land for crop production. They add that native species, on the other hand, can withstand drought. After the land's productivity is proven by the native species, then it can be replanted in crops.

At a hearing held on the bill this week, some ranchers and the Montana Stockgrowers Association joined the coal industry to support the bill. They said landowners should have some say about reclamation plans.

C. C. McCall, administrator of the reclamation division of the Montana Department of State Lands, says his agency is neutral on the proposal. He suggested amendments giving the department authority to require the mining companies to replant native grasses if conversion to cropland or pasture fails, according to the **Missoulian.**

SUBDIVISIONS

A recent state study showed that over 90% of the land subdivided in Montana escaped any county review. The EIC is supporting a bill to close a loophole that allows any parcels 20 acres or larger through without any regulation. The bill would increase the size to 40 acres.

However, the Montana Senate has already passed a bill that would weaken subdivision regulations. Arguing that the regulation is increasing the cost of housing, a senator who is also a subdivider sponsored the bill. It would remove requirements that local governing bodies reject subdivisions that are not in the public interest, based on eight criteria — need, public opinion, effects on agriculture, local services, taxation, natural environment, wildlife and habitat and public health and safety.

Other weakening bills would allow subdivision sales before a final subdivision plat is filed, drop the requirement that local elected officials state in writing their reasons for approving or disapproving a proposed subdivision, and exempt subdivisions within a master planning area from various requirements. Some of these requirements include an environmental assessment, a preliminary plat, a public hearing, and a finding of public interest.

TAX WATER

Some of the bills introduced this session look more attractive to environmentalists. One would tax water used as a raw resource to manufacture synthetic natural gas from coal. The sponsor of the bill says that like coal, water used for gasification is a source of energy and should be taxed.

The state department of revenue would like to tax electricity sold out of state at the same rate ae Montana consumers now pay on electricity through the sales tax.

Tax credits would reward homeowners who insulate their homes, if another bill is passed. The bill, which is identical to an initiative petition now circulating, would also give awards to Montana citizens who develop efficient, inexpensive, alternative energy collectors.

ENVIRONMENTAL LOBBYISTS

Both EIC and the Northern Plains Resource Council are working for environmental legislation this year in Montana. To reach EIC, write Box 12, Helena, Mont. 59601 or call (406) 443-2520. To reach the Northern Plains Resource Council, write 419 Stapleton Bldg., Billings, Mont. 59101.

EIC staff members are also traveling throughout the state presenting programs about legislation.

Fish & Game urges saving Yellowstone

On March 10 a moratorium on new water use permits for the Yellowstone River in Montana will expire. A flurry of industrial applications to divert the remaining water for coal development in southeastern Montana is expected. The Montana Department of Fish and Game has initiated a major drive to reserve the remaining flows for fish and wildlife and prevent dams from blocking the free-flowing river. A special issue of the d epartment's magazine, **Montana Outdoors,** is devoted to the Yellowstone controversy (available at Montana newsstands or from MO, 1420 E. Sixth, Helena, Mont. 59601 for 60 cents). The department plans to release a movie entitled "The Yellowstone Concerto." The Montana Department of Natural Resources and Conservation has also released a publication on the controversy entitled "The Future of the Yellowstone River. . .?" (available from DNRC, 32 South Ewing, Natural Resources Building, Helena, Mont. 59601). A bill has been introduced in the Montana legislature to extend the Yellowstone River moratorium.

Oregon's land use law in trouble

Oregon is facing attacks on its land use planning act passed in 1973, according to **The Oregonian.** Oregon gives more power to its state land use commission than most other states. The governor-appointed commission can veto local land use decisions (although it has used this power only twice in three years) and is responsible for setting statewide policies. However, coastal counties are protesting state-imposed coastal management policies. The furor helped inspire the 1977 legislature to require such statewide planning policies to be adopted by the legislature instead of the commission and for any appeals of local land use matters to be made to the courts instead of the commission. Already the deadlines for local plans have been pushed forward three years and a powerful state land use commission chairman replaced by a man more "palatable" to local government. "No one is out to gut land use planning," according to Oregon State Senate President Jason Boe. "All we want is a system that works, not subject to capricious will of a non-elected body in Salem making decisions for people more than 300 miles away."

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Western Roundup HCN

GARRISON DEBATE CONTINUES

North Dakota legislators have reaffirmed their support of the controversial Garrison Diversion water project, while a Canadian official and conservationists continue to oppose it. The North Dakota legislature has passed a resolution urging accelerated work on Garrison and quick action by Congress to "implement the necessary changes to resolve the controversies that may delay the completion of this project." U.S. Sen. Milton Young (R-N.D.) says he'd like to retire from Congress before his term is up, but retirement before next year looks doubtful because the "Garrison Diversion is in such deep trouble" in Congress. Young sits on the key Senate subcommittee on public works appropriations which rules on funding for Garrison. Manitoba Liberal leader Charles Huband has asked Canadian Prime Minister Pierre Trudeau to call for a halt to Garrison construction. As presently designed, Canada would receive polluted return flows from the irrigation project. Conservationists oppose the project because it would destroy wetlands, displace farmers, and pollute U.S. and Canadian waters. The project would divert water from the Missouri River to farmland in eastern North Dakota. Photo of the McClusky Canal portion of the Garrison Diversion courtesy of the Committee to Save North Dakota.

Environmentalists sue over wolf hunt

Seven conservation organizations, and six citizens from Alaska, all represented by the Natural Resources Defense Council, have filed suit against the Bureau of Land Management (BLM) for allowing the Alaska Department of Fish and Game to attempt to kill 80% of the arctic tundra wolves on 144,000 square miles of mostly federal lands in northwest Alaska. The state wants to kill approximately 1,000 wolves allegedly to increase the supply of caribou in the north. The wolf hunts are already underway. Reports from Alaska indicate that at least 13 wolves have been shot by hunter-pilot teams operating out of northern Alaskan villages under special permits issued by the state. The BLM approved this plan during special meetings with the state last fall. Organizations supporting the lawsuit are: Defenders of Wildlife, the Natural Resources Defense Council, Friends of the Earth, the Fund for Animals, International Fund for Animal Welfare, the Humane Society of the United States, Animal Welfare Institute and the Wild Canid Survival and Research Center.

Wyoming seeks Indian water ruling

The state of Wyoming has filed suit in state court to determine who holds water rights in the Big Horn River system, which includes the water rights of the Wind River Indian Reservation. The suit was filed Jan. 31, 1977 — immediately after the Wyoming Legislature hurriedly passed and the governor signed a bill that gave the attorney general authority to initiate such action. The suit is against the federal government. It doesn't specifically name the Shoshone and Arapahoe tribes that share the Wind River Reservation, but the wording of the suit clearly indicates it is directed at them. The Wind River Reservation in central Wyoming contains the headwaters of many of the tributaries of the Big Horn River. Bob Harris, chairman of the Shoshone business council, says the tribes are awaiting word from their lawyers before deciding how to respond to the suit. Presumably, the tribes would have preferred to work through federal courts, as Montana tribes have done, since they don't consider reservations subject to state laws. The two Wind River tribes have not initiated any legal action to claim the water. However, for several years, the two tribes have asserted through tribal resolutions their rights to the waters "arising on, flowing through, or adjacent to" the reservation.

Drought spawns cloudseeding interest

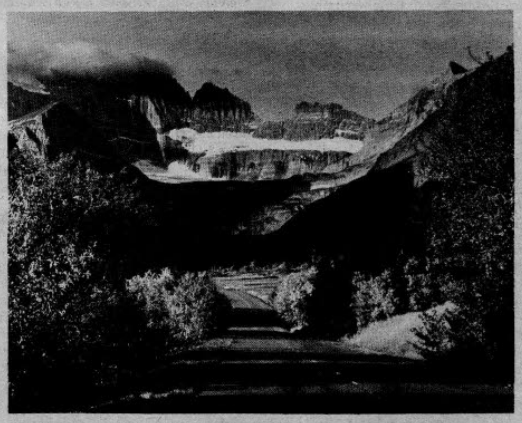
Drought conditions continue to plague the Rocky Mountain West, with snowpack in some states 60%-75% below normal. Interior Sec. Cecil Andrus says it may be necessary to limit use of water for industrial and power-generating purposes to conserve it for irrigation and home use. In testimony before the House Interior Committee Andrus ruled out massive multi-state federal cloud seeding to relieve the drought. He said he couldn't endorse seeding of that magnitude without knowing what the environmental impacts would be. Andrus didn't oppose state-sponsored seeding projects, however. Colorado has already approved a $250,000 cloud seeding program for three target areas — the San Juans, the Climax area, and the North Front Range. Colorado conservationists are critical of the project because environmental impacts are unknown and there is no guarantee it will work.

EPA criticizes Ski Yellowstone EIS

The U.S. Environmental Protection Agency (EPA) has criticized a U.S. Forest Service draft environmental impact statement (EIS) on the proposed Ski Yellowstone resort. EPA said the Forest Service study did not show whether the resort is needed, and it failed to explore certain environmental impacts, according to the Associated Press. The EIS recommends allowing the developer to use 1,800 acres of national forest near Yellowstone National Park in Montana for a year-round resort. Montana conservationists have been critical of the project because it is located in grizzly bear habitat. Joseph Sabol, Ski Yellowstone attorney, says EPA's criticism of the EIS is designed "to shoot down the entire project."

Bill requires EISs on critical habitat

Sens. Clifford Hansen (R-Wyo.) and James McClure (R-Idaho) have introduced legislation requiring the U.S. Fish and Wildlife Service (USFWS) to prepare an environmental impact statement (EIS) whenever it proposes designating critical habitat for any endangered or threatened species. The bill stems from a controversy over proposed grizzly bear critical habitat in Idaho, Montana, Wyoming, and Washington. Many residents of the region feel human activities could be severely restricted in designated grizzly critical habitat. USFWS has proposed setting aside 20 million acres for the grizzly but argues that most human activities will be unaffected by the designation. Hansen has specifically requested an EIS on the grizzly proposal. EISs are required by the National Environmental Policy Act for major federal actions significantly affecting the quality of the human environment.



CLEAN AIR DEMANDED FOR PARKS, WILDERNESSES

The Sierra Club has asked top federal officials to protect clean air in national parks and wilderness areas. In letters to Interior Sec. Cecil Andrus and Agriculture Sec. Robert Bergland, Sierra Club Executive Director Mike McCloskey called on the officials to seek Class I air quality redesignation from the Environmental Protection Agency (EPA) for the areas. Presently, parks and wilderness areas are under Class II EPA designation which allows pristine air to be polluted to levels which reduce visibility but still protect human health.

Glacier National Park in Montana (pictured above) is one park where protection of air quality is needed, according to the club. "It is believed that fluorides from existing smelters are already drifting into the park. Additionally a proposed coal field, the North Fork Coalfield near the park boundary in Canada, could further impact this park," the club said.

Photo courtesy of the Montana Department of Highways.

HCN Bulletin Board

BIOCONVERSION REPORT

"Capturing the Sun Through Bioconversion," is an 865-page summary of an international conference. The document reports on production and conversion systems fueled from urban and agricultural wastes. Copies can be ordered for $18 from the Conference Coordination Office, The Washington Center, 1717 Massachusetts, Ave., N.W., Washington, D.C. 20036.

NUCLEAR RESEARCH

The Energy Research and Development Administration has several documents on nuclear power available. Two of them: "Societal Risk Approach to Safeguards — Design and Evaluation" ($5.45) and "Survey of U.S. Uranium Marketing Activity" ($4.00). Both are available from the National Technical Information Service, U.S. Dept. of Commerce, 5285 Port Royal Road, Springfield, Va. 22161. Others available at that address include the status of central station reactors, peaceful nuclear explosions, tritium technology, status of safety technology for liquid fast breeder reactors.

WONDERFUL THINGS

Publishers of The Goodfellow Catalog of Wonderful Things want to hear about exceptional crafts work, which would be considered for their second edition, to be published this summer. In order to apply, send samples or good quality photos or slides of your work, along with information about your crafts business. For more information, write the catalog at P.O. Box 4520, Berkeley, Calif. 94704 or call (415) 548-2607. Final entry deadline is Feb. 15.

GRAND CANYON RESERVATIONS

The National Park Service is now accepting reservations for campsites in Grand Canyon National Park. Drive-up campsites may be reserved only for days during the period June 1-August 31. Campers without reservations will be directed to campgrounds that are filled on a first-come, first-served basis. Backcountry campsites inside the canyon are on a year-long reservation system. To reserve a site write Grand Canyon National Park, P.O. Box 129, Grand Canyon, Ariz. 86023.

ENERGY STUDIES AVAILABLE

Argonne National Laboratory has prepared several reports on regional energy development. Among the titles on the publications list are: "A Socioeconomic Assessment of Energy Development in a Small Rural County: Coal Gasification in Mercer County, North Dakota," and "Extraction of North Dakota Lignite: Environmental and Reclamation Issues." For more information contact Lynn Cassidy, Bldg. 12, Argonne National Laboratory, Argonne, Ill. 60439.

LAND USE STUDIES

The Urban Institute has published two new studies on the political and social forces influencing land use controls. **Land Use and the Legislatures** ($3.50, order URI 15400) is a comprehensive study of the pace and scope of state land use legislation. **The Law of the Land** ($3.00, order URI 15200) is a history of the debate over national land use legislation. Both are available from the Urban Institute, 2100 M St. NW, Washington, D.C. 20037.

WILD HORSE HEARINGS

The U.S. Bureau of Land Management will hold public meetings on new regulations that allow the use of helicopters and other motorized vehicles to manage and round up wild horses and burros. Helicopters will be allowed for animal capture but fixed-wing aircraft will not. For details on the regulations contact BLM. Hearings will be held in Phoenix, Ariz.; Sacramento, Calif.; Grand Junction, Colo.; Boise, Idaho; Billings, Mont.; Reno, Nev.; Albuquerque, N.M.; Burns, Ore.; Salt Lake City, Utah; and Rock Springs, Wyo., in early March. For times and places contact your nearest BLM office or write Director, BLM, Washington, D.C. 20240. Written comments should be sent to the above address before April 22.

ERDA ADVISORS SOUGHT

The Energy Research and Development Administration has set up an Environmental Advisory Committee "to increase public involvement in defining the goals and setting the policies of ERDA's environment, health, and safety programs." For more information — or to submit names for consideration — contact Dr. Joel B. Stronberg, Office of the Assistant Administrator for Environment and Safety, ERDA, Washington, D.C. 20545.

GLACIER PARK SKI TOURS

Park naturalists are conducting guided ski tours in Glacier National Park this winter. The tours are rated for novice and intermediate skiers and last from 2½-3 hours. Tours start from the end of the plowed road along Lake McDonald every Saturday and Sunday at 1 p.m. For details and weather conditions call the Apgar Information Center at (406) 888-5512.

TEACHERS' ENVIRONMENTAL CATALOG

A catalog of environmental education sources for teachers and students, "Learning About the Built Environment," includes sections on teacher sources and materials, mini-courses, activity guides, classroom aids, games, films, and projects. Copies are available for $3 from: The National Association of Elementary School Principals, 1801 N. Moore St., Arlington, Va. 22207.

SCHUMACHER TO SPEAK

E. F. Schumacher, author of **Small is Beautiful, Economics As If People Mattered,** will be the guest speaker at an environmental luncheon on Feb. 22 in Golden, Colo. The event is sponsored by the Rocky Mountain Center on Environment (ROMCOE) and the Colorado School of Mines. Cost of the luncheon is $5.50. It will be held in Friedhoff Hall in the Green Center, 16th and Cheyenne, at the Colorado School of Mines. For a reservation call ROMCOE before Feb. 17 at 861-1260.

Schumacher will be in Helena, Mont., at the civic center Feb. 17 and 18 for a public forum on the future of Montana's economy. Contact the Environmental Information Center, Box 12, Helena, Mont. 59601 for information on pre-forum activities.

Schumacher will also speak on Feb. 21 at 8 p.m. in the Regis College Field House, 50th and Lowell in Denver. Tickets are $2 advance and $3 at the door. To order a ticket send $2 and a stamped self-addressed envelope to the Colorado Open Space Council, 1325 Delaware, Denver, Colo. 80204.

DISTAFF CORNER

by Myra Connell

COUNTRY ROADS

During recent years motorists have rejoiced whenever a new slab of concrete facilitated travel from here to there. All in the name of the great god "Progress" highways have covered many square miles of our land — good corn-growing acres, pastures, even orchards.

Construction behemoths gouge out cuts and move mountains to fill in the hollows, leaving raw slopes and high banks to mark their destructive way.

As I travel the modern highway I deplore the steel guard rails that allow a mere glimpse of the scenery, then abruptly shut it off. I feel like a child whose all-day-sucker has been snatched. (I wonder why some wizard doesn't invent transparent guard rails.)

I feel that our gains in mobility have high costs in esthetic values, not least of which is loss of our country roads.

We older people are constantly admonished to refrain from living the past, to resist nostalgia, and look to the future. I accept this, but beg your forbearance while I indulge in a little sentimentality toward the old routes we used to travel.

One of these led from our house to the nearest market, several miles away. Progress decreed a new road, paved with blacktop. It was really a very nice road, much straighter than the old one, politely skirting the upper edges of the fields, slashing through a badland formation at a higher elevation than the old road. Its gracefully engineered curves were clearly designed for speed. The vista of farm, forest, and mountain was enticing.

At first I was thrilled with the new improvement. I could get to town so much faster, and the smooth ride was simply heavenly. The surface made me think of black velvet.

But soon I began missing things I had taken for granted and scarcely noticed about the old road. The great god "Progress" had feet of clay.

I discovered that I had loved that old road — the way it twisted and wound and fit itself to the curves of the river. Trees and brush lined most of its way and cut off the view. Still, the lovely panorama from the new road couldn't be fully enjoyed; one dared not let his eyes stray lest an oncoming auto might smack him.

The old road was careless and meandering, a narrow lane that I imagined had once been a buffalo track or Indian trail. It was a friendly old byway where ranchers on horseback or in Model-Ts stopped in the shade of the fabulous cottonwoods to visit and discuss Herefords or headgates. In spring it was fringed by the lacy greenness of the birch: in the fall the green changed to amber. The kids loitered along it to the little log school house, sometimes tethering their ponies while exploring the river's banks, all unconsciously learning the birds' calls, the flora and the fauna. Lovers strolled its length in the moonlight, enchanted by the heady fragrance of silverberry bloom.

On the new road there was no stopping for a neighborly chat: a wave of the hand or a toot of the car horn had to suffice.

The school kids no longer tied their horses to the fence posts in the school yard. The paved road brought consolidation of the small rural schools into big modern ones, so the kids now ride a shiny metal steed to a palace of plate glass. I doubt they learn to tell a robin's song from a crow's caw.

I felt myself an alien on the new road. Friendliness, leisure, romance and spontaneous learning have been sacrificed to the automotive revolution. In adjusting to the change we have lost much.

THE OLD ROAD had twisted and wound, with trees and brush lining much of it.

ce Target LRT-BE4-V2

HCN Books

The Genesis Strategy

by Stephen H. Schneider, Plenum Press, New York, 1976. $8.95, hard cover, 419 pages. Charts and illustrations.

Review by Peter Wild

About a year ago some friends found an ancient skeleton eroding out of a river bank. Removing it was illegal, but since the next cloud burst would carry the thing off, they dug it out and mailed the pieces to an acquaintance at a museum. Boney messengers from the past aren't all that unusual in the desert, but something struck me in hearing the story of this one. Analysis of the remains showed he had died of starvation.

Apparently, all of North America before the white men arrived wasn't the paradise that we tend to imagine. The poor fellow's

demise stemmed from two factors working in combination: climate and culture. The climate did him in through lack of rain; his technology, his ability to produce and store food, was inadequate for the circumstances.

Six hundred years later we like to feel that neither factor applies to us. The climate, despite occasional variations, seems stable, and 20th century technology enables the United States to produce super yields. Taking this view, the Department of Agriculture is reducing food reserves to near zero. Dr. Schneider, deputy head of the climate project at the National Center for Atmospheric Research in Boulder, Colo., points out that the assumption, though a comfortable one, is false.

In fact, the world's past weather shows wide swings in temperature and precipitation. It will continue to do so, despite the fact that by international agreement men have established a climatological norm based on the years 1930-1960. Schneider warns that the mid-century experienced a warm peak; "... what we now term normal is perhaps the most abnormal period in a thousand years."

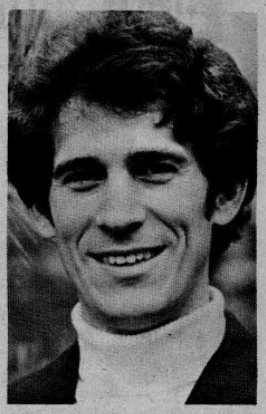
To back up his argument he presents scientific data along with charts and remarkable satellite photographs and delves into history. From 400-1200 A.D. the weather was warm and dry. Vikings sailed to Greenland and Celtic missionaries explored as far as Africa. A little later glaciers advanced over Europe and North America, bringing with them wet, cold, and famine. Extremes, however, are not necessary for disasters. A change of a few degrees one way or the other can torpedo a technology designed to operate only under "normal" conditions.

Our culture's blind faith in technology reflects a simplistic approach to the environment. We feel that technology can manipulate the earth for any end we choose. Agriculture in the U.S., with its dependence on energy and fertilizer, indeed has produced bumper crops. It also is resulting in massive thermal and chemical pollution, which in turn changes the weather for the worse. Practically anything we do to the environment effects the temperature and rainfall. Schneider discusses the adverse consequences of nuclear reactors, aerosols, solar power (that's right, solar power), the SST, and weather modification.

He is too much the realist to suggest that we go back to the wooden plow and wild berry gathering. The earth is a flexible structure, one that allows for a certain amount of give and take. Yet we don't know where the points of no return are.

In light of this, any rational person, as was Pharoah in the book of **Genesis** when Joseph advised him of a coming famine, would go slow and allow for considerable margins of error before committing himself to the latest scientific fads, whether they be the Green Revolution or nuclear power.

Schneider offers concrete suggestions, which include radical shifts in foreign policy and establishing a fourth branch of government. Books that deal with such far-flung subjects tend to be addleheaded, due either to authors' frenetic enthusiasms or their inability to bring the diverse matter together. **The Genesis Strategy** is one of the few that is consistently clear; anyone interested in the interrelationships of climate, food, and energy will find it rewarding.



STEPHEN H. SCHNEIDER — "What we now term normal is perhaps the most abnormal period in a thousand years."

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HELP WANTED. The Idaho Conservation League, a citizens' environmental group, is accepting applicants for a full-time executive director. Skills and knowledge required: political process, general resource-conservation issues, grass roots organizing, speaking, writing, lobbying, administration, fund raising. Job begins April 11. Send resume with references and samples of writing to ICL, Box 844, Boise, Idaho 83701. (208) 345-6933. Please communicate by February 14th.

NEW MEXICO NATIVE HERBS. Catalog, 25 cents. Lonely Mountain Herb Co., Box 23A, Radium Springs, N.M. 88054.

©Carol Snow

Eavesdropper

environmental news from around the world

LOONEY LIMERICKS
by Zane E. Cology

There once was a forester named Joe
Who planted six pines in a row.
He hoped they'd make wood
As fast as they could,
But, like High Country News, they grew slow.

ANDRUS'S PRIORITIES. Interior Secretary Cecil Andrus has sited the department's lead field office in Seattle, Wash., to give special emphasis to Alaskan issues, according to an Interior Department spokesman. Another of Andrus's priority projects is changing the 1872 mining law. His first priority, however, will be expediting passage of a federal strip mining bill, he says.

ALLIGATOR COMEBACK. Twenty years ago, it looked like alligators were headed toward extinction in the U.S. They were the victims of hide hunting and habitat destruction. This January their numbers had grown enough to have most of them removed from the endangered species list. "This shows we can do it," said former assistant Interior Secretary Nathaniel P. Reed. "We can reverse the trend toward extinction and save a species — if we want to." Seventy-five per cent of the alligator population, in the states of Florida, Georgia, Louisiana, South Carolina, and Texas, has been removed from the endangered list and placed on the less restrictive threatened list.

LIMITED LOBBYING OKAYED. The Tax Reform Bill of 1976, which was signed by President Gerald Ford, clarifies and liberalizes the regulations on legislative activities by tax-exempt groups. Under the bill, these groups — which include many environmental groups — can now do a reasonable amount of lobbying on issues that concern them. The law became effective January 1. Environmental groups favoring the law argued that businesses have an unlimited right to lobby and can write off the cost of the lobbying as tax-deductible business expenses. For more information, write to the national headquarters of any national environmental group.

WETLAND INVENTORY. The U.S. Fish and Wildlife Service (FWS) is now mapping wetlands in the United States to help protect this valuable wildlife habitat. Several preliminary publications have been completed, including existing state and local wetland surveys, an index of selected aerial photography of the U.S., and "ecoregion" and land-surface form maps. Requests for copies should be sent to the Information Specialist, Office of Biological Services, U.S. Fish and Wildlife Service, Department of Interior, Washington, D.C. 20240.

ORGANIC ACT FOR REFUGES. A National Wildlife Refuge System Organic Act will be introduced this session by Rep. John Dingell (D-Mich.), according to the Wilderness Society. The bill would create a Bureau of National Wildlife Refuges; direct the Secretary of Interior to study potential wildlife refuge sites in urban areas, estuaries, and the public domain; and expand upon the "d-2" lands in Alaska. The refuge system is the only federal land managing system without an organic act.

Line Reference Target LRT-BE4-V2

Rate raise ahead, nevertheless

HCN still survives on wild generosity

As part of our semiannual report to **HCN** stockholders (readers), we have an announcement to make. We're going to have to raise our subscription rate from $10 to $12 per year.

We're sorry to have to do it. For a while it looked like we could meet rising costs through a vigorous circulation and ad campaign. We've charged you $10 a year for six years now, and we wanted to keep it that way.

But a look at the first half of our current fiscal year (from July 1976 to December 1976) shows that costs are still rising and our income isn't. Overall, our expenses are up about eight per cent over the same period last year. In a few areas they have gone up much more than that. Our bills for supplies and postage, for instance, are each up 50%. Our printing bill went up over 25% last spring. And we have just heard about a major increase in rates for long distance phone calls.

The heart of our income, subscribers' yearly checks, is the encouraging side of this report. Our income from subscriptions, which is over 80% of our total income, increased by 10% from last year. We have 70 more subscribers than we did last January and 200 more than we had in August. We're up to all-time high of 3,528 subscribers.

We attribute this slow, steady growth to our sample mailing and volunteer advertising campaigns, both of which were made possible by donations from readers.

Volunteers mailed out about 5,000 sample copies of **HCN** in 1976. A healthy (by industry standards) two to three per cent of the people we contacted signed up for a subscription.

Our volunteer ad campaign, initiated in May, has generated considerable interest in the paper. **HCN** readers purchased ads for us in 35 periodicals in 15 states and one Canadian province — an effort that would have cost us an estimated $500. It is hard to measure this in terms of new subscribers, but some of the ads we could trace were bringing us over 10 replies each. One, placed in the **Idaho Statesman** TV section, brought a flood of more than 30 replies.

Two other types of revenue, each of which is only 5-10% of our total income, seem to be dropping slightly.

First, advertising is down seven per cent from last year. While that is disappointing, it is not devastating in terms of our overall income.

Second, donations to the paper appear to have dropped by eight per cent. That is a deceiving figure however, because it does not include the value of advertising purchased by readers, volunteer time spent on sample mailing campaigns, or photos and stories donated. It just doesn't reflect the wild generosity we've experienced over the past six months.

In short, you're sustaining us, just as you always have, through subscriptions, donations, and volunteer help. Nevertheless, the force of inflation has jeopardized our financial health. Over the past six months we took in $19,180 and spent $20,782. We have enough money in our savings account to cover this loss, but to insure the future of the paper, we feel we should raise our rates.

The raise should allow us to cover not only the gap between income and outgo. But we also hope to use it to raise staff salaries. We moved them from $300 to $325 per month last fall, but would like to push them all up to $375 per month, which would amount to minimum wage for the first 40 hours we work every week.

We'll wait until April 1 to raise both rates and wages. No matter what month your renewal comes due, we'll accept it at the old $10 rate between now and April 1 — a way of letting loyal existing subscribers delay the impact of our new rates if they wish.

Our thanks to everyone who has helped us during the past six months. To name a few who have donated their talents:

Writers Peter Wild, Sarah Doll, Myra Connell, Mike Jacobs, Bart Koehler, Ann Schimpf, Jeff Gailiun, Everett Peirce, Dorothy Harvey, Mary Trigg, Mark Peterson, and Rebecca Ambler.

Photographers Ann and Myron Sutton, Ron Mamot, Dick Randall, David Sumner, Mark and Marty Stouffer, Mike McClure, and David Doll.

Artists Ann Zwinger, David Wilson, Tom Connell, Bill Condron, Valerie Kaminski, and Carol Snow.

Thanks for miscellaneous good deeds to Charles Belding, Charles and Frances Nations, Nan Babb, Lafe Bell, Jackie Shaw, Hank Phibbs, Jim and Betty Maguire, Mike Weber, Leslie Petersen, Sally Forbes, Dorothy Nice, and the **Wyoming State Journal.**

We would also like to thank everyone who helped us spread the word about **HCN** by attending a "stuffing party," a gathering where sample copies are shoved into envelopes while great conversations take place. Those who attended in the past six months include: Mary and Gary Milano, Charles Smith, May Raynolds, Dan Whipple, Dennis Lamb, Rick Oliver, Jack Cornelisse, Myra Connell, Bill Scott, Gwen Arnesen, Charles and Frances Nations, Alice Johnson, and Anne Hamilton.

A High Country News stuffing party. Volunteers have mailed out 5,000 sample copies of the paper in the past year, helping push circulation up to an all time high of 3,528. At the party shown here entertainment was provided by Dan Whipple and Bill Scott.

People who have made monetary contributions to either the High Country News or the HCN Research Fund in the past six months are listed below.

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