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The Environmental Bi-Weekly



High Country News

Vol. 9 No. 4

Friday, February 25, 1977

Lander, Wyoming



Wood stove revival puts damper on energy costs

by Bruce Hamilton

I've been writing for two hours, and the fire in the old potbellied stove is out again.

It's an old New England saying that wood warms you twice — once when you cut it, and again when you burn it. However, if you burn pine in a leaky, old inefficient stove, as I do, you spend more time keeping warm with an axe and less time with your feet up sipping tea in the warmth of your living room.

My stove is an ancient Garland — "the world's best," its makers boast. Since several parts were missing when I brought the stove out of storage I've had to make do with ill-fitting ones scrounged from nearby dumps. The obvious leaks have been filled with furnace cement.

I've been reading about airtight stoves that only need to be stoked every eight hours and wood that has nearly twice the heat content of the lodgepole pine slabs I burn. However, these new stoves cost several hundred dollars more than the price I've paid to salvage my stove. And all the high heat content woods I've been reading about aren't found in Wyoming.

Wood burning is a science, but it requires a pragmatic approach. There is no one best stove for all locations, all budgets, all heating requirements.

AN OLD FRIEND

Wood was mankind's first source of heat and now, as fossil fuel resources are running low, we are rediscovering its joys.

John McPhee, in an essay in the *New Yorker* on firewood, wrote: "Science was once certain that firewood was full of something called phlogiston, a mysterious inhabitant that emerged after kindling and danced around in the form of light and heat and crackling sound — phlogiston, the substance of fire." Science erased that beautiful theory and replaced it with a chemical

explanation. The mystery was removed, but the magic of gazing into a fire has remained.

Today, with rising energy costs, wood burning is probably the fastest growing form of alternative renewable energy use. People who worry about the price and difficulty of installing solar collectors and erecting windmills find putting in a wood stove is relatively cheap and easy.

In 1850, wood provided 90% of America's fuel. Today, wood's contribution to the national energy picture is negligible.

There are some plans for commercial energy production from wood. Green Mountain Power Corporation has plans for a 50 megawatt electric power plant in Vermont fueled by trees that could not be used for lumber. The state of Maine was investigating the possibility of building a plant to convert wood waste to methanol, but has since dropped the idea.

The ultimate potential of wood-based energy systems is enormous. McPhee writes: "Roughly a tenth of the annual growth of all trees on earth could yield alcohol enough to run everything that now uses coal and petroleum — every airplane, every industry, every automobile."

These grand schemes show some promise, but the widest application has been and will probably continue to be wood burning in stoves and fireplaces in individual homes.

On a small scale, wood burning creates few environmental problems. Wood burns cleaner than coal, and supply is not a problem in most areas in this country. However, if wood burning catches on on a large scale, regulation may be needed to protect the environment.

Already many mountain ski communities are discovering that wood smoke coupled with car exhaust can create air quality problems during the winter

(continued on page 4)

**Birch and fir logs burn too fast,
Blaze up bright and do not last.
Elmwood burns like churchyard mould;
E'en the very flames are cold.
Oak and maple, if dry and old,
Keep away the winter cold.
But ash wood wet and ash wood dry
A king shall warm his slippers by.**

—Anon.



KITCHEN WOOD STOVES usually have small fireboxes which make them inappropriate for long-term room heating. The small fireboxes don't hold much wood and also require finely split wood, which burns up quickly. Some cook stoves have an attached water heating reservoir — another way to reduce your utility bill.

Photo by Mike McClure.

Sec. Andrus says no leasing without his OK

by Marjane Ambler

In a little publicized action Feb. 16, Secretary of Interior Cecil Andrus sent a memo to the director of the Bureau of Land Management (BLM), Curt Berklund, telling him no new leases for any minerals except oil and gas could be issued without his expressed approval.

Until Andrus begins acting on the stack of leases that will soon cover his desk, it is unclear how significant the memo might be. It may indicate that as part of the Carter Administration's new look at resource issues, Andrus will be appraising the need for leasing and scrutinizing the overall leasing program.

On the other hand, the memo could be

only what several state BLM directors expect — a routine request that would be expected from a new administrator. As Idaho BLM Director Bill Mathews puts it, "It's the general inclination of new folks in office to try to manage and control without a real idea of how much work they're getting into."

The memo affects coal, oil shale, phosphate, potash, sodium, and the uranium that is leasable in the West, as well as oil and gas on the Outer Continental Shelf. BLM offices across the country are now compiling lists of what leases are scheduled for the next 12 months to show how many will be affected by the action. BLM estimates compiled by HCN indicate

(Continued on page 10)



"REMEMBER THE OLD DAYS, ANNA? WOOD STOVES, CHESTNUTS ROASTING BY AN OPEN FIRE..."

HIGH COUNTRY

By Jon Bell

Warmth radiates from the neat wood stove at one end of the livingroom. There the kids plop themselves as they come in from playing, and there our guests often gather upon coming in from the cold. The remark has been made more than once, "There's nothing like a wood stove to cheer you up on a cold day."

Many people are now finding that there is more than warmth from the old-fashioned wood burner that brings cheer to the heart. An older, widowed neighbor lady told me yesterday that fuel oil to heat her small house had cost \$99 for January. Our wood has cost us only the price of fuel to run our small chain saw and to haul most of the wood from the nearby mountains in our pickup. I might hastily add that I have burned a few calories getting the wood loaded, chopped, and hauled into the house. It is a price I gladly pay, for though time consuming, it is not an unpleasant or onerous task.

Ironically, in this wondrous technological age, I have been brought full circle. Many were the armloads of wood I chopped and hauled in for my mother to stoke her cookstove and to heat our farmhouse. Central heating then was as it is now in my home — a wood stove located somewhere near the center of the house.

There were several reasons for wood stoves then, as there are now. We had no electricity — there was no Rural Electrification Administration, and, where we lived, not enough wind for a windcharger. There was no bottled gas industry as we know it today. There was no bottled gas or fuel oil distribution system that rural people could economically afford. In fact, much of the wood and coal burning of earlier days had to do with economics. It was just cheaper to get your own wood and, in my family's case, haul your own cheap coal.

The smell of wood smoke coming from our chimney even today evokes pleasant

memories of boyhood. Getting wood meant going to the mountains with team and wagon. It was slow and laborious for my dad but it was pure adventure for me. It was not only going up into those towering dark and mysterious mountains, but also getting to stay overnight in a bonafide, rustic log cabin. For someone whose family means prevented any but a few trips to town in a whole winter, it was like going to the ends of the earth.

The traumas of the winter of 1977 must evoke memories of yesteryear for many more of the older generations. In spite of all the distinct inconveniences of hauling in the wood, hauling out ashes, and doing without an easily adjusted thermostat, heat was available. You kept warm without worrying about all the snowdrifts between you and the fuel oil truck, or about huge gas pipelines completely devoid of any fuel for anyone.

Here in the Northwest, blizzards aren't the problem. It's the dearth of moisture. The region now stands at approximately 10% to 20% of normal moisture for this time of year. For an area that depends heavily upon hydroelectric power, the outlook for power for next winter isn't good. There may not be enough power to activate all the thermostats let alone heat all of the all-electric homes. The moisture shortage may even affect wood burners. Forest rangers are advising people to get their wood in early because tinder-dry forests may be closed later.

It is not a sense of smugness that wood-burners feel now. It is a sense of reality. People all over the world have burned wood for centuries. Trees grow and renew the resource every year while fossil fuels dwindle and eventually disappear. And the quality of people's lives seems not to have been diminished by the absence of a thermostat.



HCN Letters

AGAINST KANSAS PLANT

Friends at HCN:

This is a response to a letter from Lorin Bradshaw in your Jan. 28 issue, which argues that Kansas needs a nuclear generating plant. The letter cites shortages of gas, oil, and coal in trying to make the case for the nuke. There is no mention of conservation, solar energy, or wind energy. These three alternatives can be implemented in less time than a nuke can be brought on line, can deliver significant economic benefits to consumers, and will cause much less environmental degradation.

Lorin Bradshaw has probably been listening to too much utility company propaganda. It is most unfortunate that the utilities have invested heavily in nukes, but that is no justification for wasting more money and resources when there are alternatives. From my study of the electricity industry it appears to me that a utility would be hard pressed to justify any conventional generating plant until it has implemented load management, such as peak load pricing.

But rather than rely on my judgment as to the desirability of the alternatives which Lorin Bradshaw does not consider, permit me to quote some language from the U.S. Congress:

"The Congress finds that — (1) the fastest, most cost-effective, and most environmentally sound way to prevent future energy shortages in the United States, while reducing the nation's dependence on imported energy supplies, is to encourage and facilitate, through major programs, the implementation of energy conservation and renewable-resource energy measures with respect to dwelling units, non-residential buildings, and industrial plants; . . ." (Energy Conservation and Production Act, P.L. 94-385, 402(a), 90 Stat. 1150, 42 U.S.C. 6851.)

Dean B. Suagee
New Town, N.D.

NEEDS MORE THAN MONEY

Dear editor:

This is in regard to the letter in your January 28 issue from Jeff Gailiun, urging that the Bureau of Land Management be

given more tax dollars to manage the properties in its care.

I grow a little weary of reading and hearing that all BLM, or the Forest Service, or the Park Service needs is "more money and manpower." That is the only song BLM — and the Forest Service and the others as well, and for heaven's sake don't leave out the Bureau of Reclamation and the Corps of Engineers — knows how to sing. It has become a Johnny-One-Note business. I've heard it time and again in the 39 years I've been either a volunteer in the conservation ranks or an official of the Izaak Walton League of America, or just a citizen who reads countless pages of official documents and other publications.

Some months ago I wrote for publication elsewhere that hiring personnel in the Forest Service has proliferated so much in recent years that, at a meeting called by one forest supervisor he did not recognize his own rangers and had to be introduced. It is no better in the BLM. Parkinson's Law



prevails everywhere. The work load expands to the capacity of the staff available — and the capacity of the individual decreases with each expansion in personnel numbers. (Which may be a minute overstatement, but not by much.)

The crux of the problem is that: 1. bureaucracy revels in rendering its task ever more complex and dollar-demanding; and 2. that prevailing attitudes toward work too often are that it is to be shunned if at all possible, and the intricacies of the Civil Service System frequently turn out to be a guide as to how that may be done.

Certainly there are exceptions! I know dedicated and devoted officials of both BLM and USFS, present and past, who worked their tails to the bone with never a thought of a quitting whistle or bell — and some of them got the short end of their pawns.

If this reads as though I may be a bit bitter, perhaps I am. I saw some very good friends who were figuratively made to walk through cactus without boots, and memory lingers.

Instead of ever more money and men to figure out ever more complicated ways to do relatively simple management chores, let's concentrate somewhat on simplifying procedures and on increasing personnel efficiency.

William Voigt, Jr.
Blackshear, Ga.

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Price Raise

High Country News is raising its prices. Starting April 1, 1977, a subscription will cost \$12 per year. Operating expenses and salaries are two of the main reasons for the increase. (For a full report of our financial status see "Report to stockholders — our readers" in the last issue.)

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YOUNG WHIPPER-SNAPPER

Dear HCN:

I was interested in the comment of Garl Riggan in your Feb. 11 issue. He said, "If you set up a wilderness in the Potholes, you would jock out snowmobiles and then only some young whipper-snappers on skis could get into the place in winter."

I don't know at first hand about the Potholes area. But this "young whipper-snapper" has logged 192.5 miles on cross country skis this winter to date. I also recently clocked nearly three miles in 16 minutes 2 seconds in the Esterbrook X-C Citizen Race. My dad, who is a little older, did the same course in 20:23.

It's nice to be categorized as a "young whipper-snapper" at age 45. I hope to be able to qualify for the same kinds of insults when I am 65, or 68, like Dad.

Russ Fawcett
Casper, Wyo.

DEFENDING ABBEY

Dear Editors,

Ed Abbey got it from both left and right in the letters section of the Feb. 11 HCN, but I think both writers missed him a mile. In their indignation that Abbey isn't following their particular lines, they apparently aren't hearing him. Now I'm sure he can defend himself; but it's beginning to seem that at least some people aren't catching the irony in Abbey's books, nor the complexity of his vision.

Thoreau said he doubted if he could exaggerate enough to give a true account of what he saw around him. I think Abbey is in somewhat the same position. This is a weird world. I love wilderness more than anything, but at present I own two cars; I'm writing this on paper which was once trees. We're all placidly eating oranges and papayas that don't grow within hundreds of miles of where we live. And we take it all very calmly, as our due.

What I'm trying to say is, it's going to take more than a single-minded, dogmatic, humorless vision to see and make any sense out of this scene we're in. I like writers who have a bit of humor, detachment, irony, especially regarding the self; writers like this sound like human beings to me. I distrust "revolution" as much as book-proscribing; these activities aren't complex enough, diverse enough, strange enough, to be humanly true.

Taking some of Abbey's words seriously, while failing to take Abbey seriously as a person, apparently can lead one to all manner of outrage. I think we ought to take every legitimate opportunity to relax, and listen for each other's authentic voices, and maybe we can grow into something more solid and lasting than a program, or a dogma. Government-industry has a program, for sure; they've got a million of them, all carefully drawn up in their marvelously unconscious schemes to destroy the natural world. All we've got is a general sense that something is very wrong in the world and a few individuals with vision.

Tom Lyon
Logan, Utah

DOWN WITH BILLBOARDS

Dear editor,

It has become so ugly in Indiana that I am leaving, after a lifetime here. Moving to the high country. One of the things it will be a pleasure to leave is billboard proliferation. Few things ruin landscape so effectively. One billboard is equal to how many beer cans? Individuals may not litter, but business can, and does. They even light the litter so we can see it by night.

Harriett Rex Smith
Valparaiso, Ind.



Editorial

HCN

Carter re-examines pork barrel

When President Jimmy Carter pulled the plug on 19 highly questionable water development projects he made a lot of enemies on Capitol Hill. Members of Congress count on taking pork barrel projects back to their home districts and it's a matter of professional courtesy not to criticize your fellow politicians' pet projects.

The projects Carter recommended not be funded are among the biggest boondoggles ever dreamed up by the Army Corps of Engineers and the Bureau of Reclamation. Garrison, Oahe, Central Utah Project, Central Arizona Project, and many of the others never should have progressed past the paper work stage. Instead, hundreds of millions of dollars were pumped into the projects blindly. Artificially low interest rates were used to boost projected benefits while environmental costs such as loss of wildlife habitat were either misrepresented or ignored. In some cases, promotional zeal caused the developers to overlook potential geological hazards. The ill-fated Teton Dam in Idaho is a good example of one such project that went too far, too fast, without proper study.

Western politicians are arguing that Carter's move isn't prudent in light of the widespread drought in the West. But history may prove that stopping unnecessary water projects was the wisest course of action if the drought is a prolonged one. Would it be wise to open up new lands to cultivation when we can't guarantee them irrigation water and cheap hydroelectric power for pumping? Already Idaho Power Company has imposed a moratorium on new pump irrigation applications because of the water shortage.

Unfortunately, many of the nixed projects are already under construction — the foot is in the door. It took a President of unusual political courage and moral conscience to call a halt to these crimes against nature and reason. Fortunately, Carter is a gambler and he's willing to risk his political future to do what he believes is right.

Congress has rubber stamped these projects for years without looking at changing

local attitudes, growing environmental concern, and a drastically altered economic picture.

In the cases of Garrison and Oahe, many of the local farmers who were to be the supposed beneficiaries of the projects have banded together to block further construction. They have called for referenda to see if a majority of the local population is still interested in receiving this perverse federal aid. Their requests for a popular vote have been blocked by business interests and stubborn politicians. As a result, American taxpayers continue to throw good money after bad.

Carter's move should have wide support. He hasn't killed the projects — he's just recommended zero budgeting for the next



fiscal year and a re-evaluation of them. If the projects hold water and withstand the new administration's scrutiny, they will probably be completed in the future. However, if they flunk their exam, then it's better they were stopped now instead of later when millions more of the public's

dollars would have been wasted.

The sad thing is that more politicians aren't willing to join Carter's drive for reform. The same politicians who complain about the high cost of big government are the ones who are fighting hardest to have big government spending in their districts.

You can understand why old-line politicians like Sen. Milton Young of North Dakota would scream when his baby is yanked away from the U.S. Treasury's test. But there is no excuse for Western members of Congress with more objective and conservation-minded outlooks to oppose Carter. For example, Sens. Floyd Haskell and Gary Hart of Colorado should be leading the effort to have their state's questionable water projects re-evaluated to see if they really benefit Colorado and the public interest. Instead they are grabbing headlines by taking pot shots at Carter.

Carter needs all the support we can give him for his bold move. Here's what you can do:

—Conservation groups have just released a new edition of "Disasters in Water Development." The report describes 15 of the worst water projects in the nation including nine of the ones Carter nixed. Write for a copy, familiarize yourself with it, and then tell Congress to stop this dam foolishness. Single copies are \$1 from American Rivers Conservation Council, 317 Pennsylvania Ave., S.E., Washington, D.C. 20003.

—A dam fighters conference will be held in Washington, D.C., on April 2-3 and those who can attend are urged to participate in the annual appropriation hearings in the House and Senate to be held March 28-April 6. These hearings will be the place where Congress rules on Carter's water project cuts. For more information, contact the American Rivers Conservation Council at the above address or call (202) 547-6900.

—Your representatives in Congress will be voting on these water projects' budgets. Let them know how you feel. Sen. William Proxmire will be circulating a letter in Congress in support of Carter's water development cuts. Ask your representatives to sign it.

—Carter will be under tremendous pressure to back off. Let him know you appreciate his move and encourage him to stand firm.

—BH

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UTAH



Utah — Actual size, 10 1/2 in. x 13 1/2 in., 192 pages, 12,000 words of text, 178 illustrations in full color. \$25.00

Photography by David Muench
Text by Hartt Wixom.

The Mormon pioneers of 1847, who called Utah the Promised Land, would have found a fitting testament in this beautiful book. David Muench explores the vastness of this remote and rugged land, pictures the fragile beauty of alpine life, the vistas of mountains, canyonlands, and deserts. Muench's camera and Wixom's pen record the incredible human achievements exemplified in Mormon temples and the Tabernacle and the communities carved from the wilderness.

Charles Belding and his Graphic Arts Center Publishing Company of Portland, Ore. have generously allowed High Country News to have all the retail profits from the sales of the book described here.

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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.

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Warning: We'll be pulling all subscribers with "1-77" on their address label at the end of this month.

4-High Country News — Feb. 25, 1977

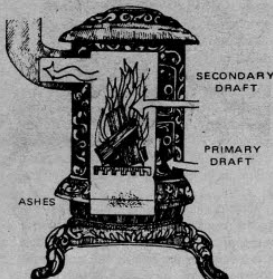
Wood stoves ...

(continued from page 1)

months when stoves are used every day and air inversions are common.

And a look at the hatchet scars on trees around any popular campground can give you an indication of what to expect if everyone was out gathering wood for winter. Wood is a renewable resource, but only if it is managed on a sustained yield basis. Lawrence Wright, in *Home Fires Burning: The History of Domestic Cooking and Heating*, notes an energy crisis that hit England in the 1600s. The country was almost totally dependent upon wood for fuel, and much of the forest land had been clearcut.

The same problem is still with us today. Erik P. Eckholm with the Worldwatch Institute notes that nine-tenths of the people



STANDARD WOOD BURNER. Most old stoves in second hand stores and cheap stores available through hardware stores work like this oak stove. The primary draft fans the fire. The secondary draft introduces more air but it drops the temperature so the volatile gases won't burn. Instead they pass up the stovepipe or are deposited as creosote. Such stoves are only about 30% efficient. Drawing courtesy of MAINE TIMES.

in developing nations depend upon firewood as their chief fuel. And all too often, the growth of human numbers is outpacing the growth of new trees.

In this country wood waste is a bigger problem than lack of wood. The U.S. Forest



WOOD BURNING doesn't provide even heat, but it does take the chill off a room quickly.

Photo by Mike McClure

Service estimates that as much as 30% of the debris discarded by a city is reusable wood material.

ALL WOOD IS NOT ALIKE

If you have a choice of kinds of wood to buy or cut on your own, choose the wood with the highest heat content. The best common firewoods are the ones that weigh upward of 40 pounds per cubic foot. But these woods — sugar maple, white ash, beech, scarlet oak, black locust, and others — are rare or nonexistent in the West and too valuable for firewood here.

Pine, spruce, fir, cottonwood, aspen and other Western softwoods weigh much less

than the Eastern hardwoods listed above and burn up like newspaper by comparison.

Aspen and cottonwood have lower heat contents and weigh less than most Western conifers. But weight isn't the only factor influencing heat content. Resin provides twice as much heat as wood per unit of weight, according to *Energy Primer*. Since most conifers have large amounts of resin, their heat content is boosted. The boost doesn't bring them close to a good heavy Eastern hardwood, though. A cord of aspen can produce 12.5 million Btu (British thermal units), a cord of Douglas fir generates 18 million Btu, and a cord of white ash provides 20 million Btu, according to *Energy Primer*.

But resinous wood is a mixed blessing. You pay for the added heat value by accepting a smokier fire. Excessive smoke leaves soot and creosote deposits in the flue. These deposits can ignite causing dangerous chimney fires. (For more on chimney fires and how to prevent them see "A note on creosote" in this issue.)

If you've ever camped on a rainy day, you know that another common cause of smoky fires is burning wet wood. But most wood that you gather for home heating — even wood that feels dry — is probably too wet to be burned efficiently. By cutting your wood early in the year and letting it dry for at least six months, you can decrease the smoke problem and increase the available heat of the wood by 20%-40%. Without adequate drying, more of the wood's heat must be used to evaporate the excess water during burning. For thorough seasoning, wood should be stacked so that air can circulate around each log. Wood is easier to split while it is still wet.

EFFICIENT BURNING

After the excess water in the wood is driven off in your stove, the wood breaks down into charcoal and volatile gases. Most

stoves burn the charcoal, but the volatile gases escape up the flue. These gases contain 60% of a log's potential heat.

"To burn these volatile gases requires abundant oxygen and temperatures of 1,100 degrees Fahrenheit," explains Ralph Comstock of the Idaho Office of Energy. "To provide each of these simultaneously is the design problem that has been challenging engineers since Benjamin Franklin's first Franklin stove."

"When the fire consumes the main air supply, the volatile gases pass up the chimney or condense on the flue walls — in either case, unburned. The obvious solution is to provide a secondary air source, but the introduction of such a large volume of air above the coals generally cools the gases below their ignition point."

Franklin stoves, fireplaces, potbellied stoves, box stoves, and most others that are common on today's market have no way to burn the volatile gases and operate at an efficiency no greater than 30%.

Certain thermostatically controlled airtight stoves, which provide a secondary air intake, operate more efficiently. "But when loaded with logs and thermostatically set for a long, slow burn, these stoves seldom achieve temperatures great enough to ignite the gases, despite the secondary air source," says Comstock.

"The most efficient stoves are those that circulate the gases near or through the fire to burn them," he says. "Base-burning airtight stoves accomplish this by locating the flue outlet at the base of the firebox, running the gases past the hottest part of the stove before venting them."

"Down-draft airtight stoves draw primary air through the coals, beneath which the gases receive a secondary supply of oxygen and ignite."

"Still another, the front-end combustion Scandinavian stove, uses a baffle system to create a draft pattern that mixes exhaust gases and volatile gases with the secondary air near the front of the fuel load and burns the logs from front to back, like a cigar."

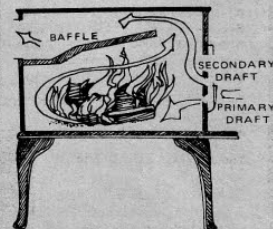
INEFFICIENT BURNING

Probably the most inefficient wood burner is the open fireplace. While you may feel warm as you sit in front of a roaring fire, your fireplace may actually be cooling your home.

Since fireplaces have yawning openings with no means of controlling the amount of air that enters them, they take in too much air, according to *Maine Times*. "The rapid movement of air up the chimney can empty a room of warm air in a short time. Air is resupplied to the room through leaky foundations and loose windows and doors."

The Franklin stove was an early attempt to rectify some of the fireplace's problems. By having closing cast iron doors, the loss of warm room air was reduced.

Other more recent improvements include fire-resistant glass doors, a fireplace



SCANDINAVIAN AIRTIGHT. The Jotul (diagrammed above) and other Scandinavian airtight wood stoves employ baffles to direct volatile gases back over the flame and improve efficiency. Manufacturers claim they can be about 75% efficient. Drawing courtesy of MAINE TIMES.

A note about creosote

Creosote is formed when wood gases condense and drip back down the flue. This crusty, brown, ill-smelling goo is caused by incomplete combustion and low temperatures in the flue. It is unpleasant, and can be dangerous.

When you get creosote built up in your flue, it can catch on fire. Chimney fires can be violent blasts that catch the roof on fire. So when you start to get a creosote buildup, you should clean your flue.

Chimney sweeps in Europe use specially made brushes. A bag of chains can knock off the creosote, but can also damage masonry. One homespun method is to use an old Christmas tree on a rope. But such trees are highly combustible and can catch on fire if there are any hot sparks left in the chimney. When you clean your flue, be sure to close your damper.

Lawrence Hamilton and Fred Winch of Cornell University say that creosote problems can be largely avoided if you follow these guidelines:

- 1) Burn most wood gases inside the stove.
- 2) Use seasoned wood.
- 3) Connect the stove to the chimney with a short length of pipe or use double pipe. Creosote precipitates when flue temperatures drop below 250 degrees F. Shorter pipes or insulated pipes keep flue temperatures higher.
- 4) Line the chimney with tile.
- 5) Use a chimney cap to provide better draft and to keep chimney temperatures higher.
- 6) In mild weather, instead of a long low fire, use a short hot one, or several short hot ones.

"Creosote also results when a stove is operated beyond its basic design capabilities," notes *Maine Times*. "In a Scandinavian stove designed to burn for eight hours on one stoking, for example, attempting to achieve a longer burn by limiting the air supply will lower the firebox temperature below the temperature needed for complete combustion."

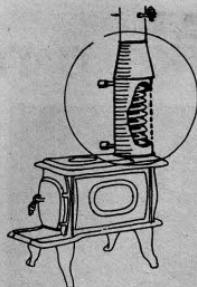
Buying wood

Most Westerners can get a firewood permit from the Forest Service and gather all the wood they need from the national forests. With a chainsaw and an axe, you can lay away a winter's supply in a few days. Lumber mills are another good source. Many mills give away or sell very cheaply their slab—the half-round uneven outer boards.

Firewood is sold by the cord, a stack 4x8x8 feet. A cord or rope eight feet long can be used to measure the pile, hence the name. A face cord is a stack 4x8 feet cut to any desired length. A rick is a stack 4x8 feet and 16 inches deep.

A cord of round logs has more air spaces than a cord of split logs. Most woodcutters measure a cord when the logs are whole. A split cord can be six inches shorter than an unsplit cord.

A cord of split wood won't fit in the back of a standard pickup truck. Some people sell "pickup cords" and shortchange unwary buyers.



WATER HEATER. A copper coil in your stovepipe can supply domestic hot water and use heat that would otherwise be lost. This unit is made by Blazing Showers and sells for about \$49. It can produce and store 20 gallons of hot water per hour.

little about efficiency and want to enjoy an open fire, you drop the front of the stove and you have a free-standing fireplace. The front is made of tight-fitting cast iron so when it is closed up the unit becomes an airtight wood burner.

STOVE SHOPPING

grate made of hollow pipes that suck in cool air and blow out warm air, a coil of copper pipe that fits in a stovepipe or chimney and heats domestic water, and a metal box that surrounds the fireplace and heats a reservoir of air that can be blown into the room. Several makes of modern fireplaces increase efficiency by taking in air from the outside (so warm room air is not robbed) and using fans to blow the warmed air into the room.

These tricks can greatly increase the efficiency of a fireplace, but the best way to get the most heat out of a piece of wood is probably with a well-constructed airtight stove. The efficiency of a basic fireplace is about 15% compared to about 75% for a well-constructed airtight stove, according to *Maine Times*.

Some manufacturers make a combination fireplace-wood stove. When you care

When shopping for a new or used wood stove, keep the following thoughts in mind: **IRON V. STEEL.** Most wood stoves are made of sheet steel or cast-iron or a combination of the two. Cast-iron stoves generally weigh more, are harder to repair, last longer, cost more, heat up slower, retain heat better, and resist warping. Sheet steel is lighter, cheaper, tends to warp and wear out, won't retain heat but heats up quickly. If you get a stove with a sheet metal bottom, line it with fire brick or sand. Cast-iron doors on sheet metal stoves make them more airtight. Don't burn coal in a sheet metal stove.

CRACKS. Look for cracks on old stoves. Minor ones can be repaired, but major ones may become major headaches. Only an airtight stove can hold a fire overnight. Check

to see if all doors fit tightly. Better stoves have gasket-lined doors. One piece doors have fewer potential air leaks.

FINISH. Rust on a wood stove can be removed with a wire brush and covered over with stove blacking—but make sure the stove isn't almost rusted through. Baked enamel paint is used on some stoves. In an article in *RAIN* magazine Bill Day says baked enamel deteriorates rapidly. Porcelain lasts many years, but is expensive. Cast aluminum is being used for some doors and handles. It transmits heat very rapidly and may cause serious burns. The old nickel plating on antique stoves is being mimicked on modern stoves with chrome. Day says the chrome is inferior because it quickly discolors. Some stoves come with a cabinet which is a safety feature because no exterior surface gets too hot to touch. The cabinet forms an outer box over the stove. Air is heated in the space between the stove and the cabinet and circulated throughout the room.

THERMOSTATS. Stoves like the Ashley have a bimetal thermostat that is tuned to the stove temperature and regulates the primary draft. The *Whole Earth Catalog* gave Ashley a rave review, and many owners praise their ability to hold a fire overnight. *Maine Times* notes that some people call Ashley's "creosote factories." The slow burn produces gases, and the stove has no device for secondary burning so the gases form creosote in the flue. *Maine Times* also notes that Ashley thermostats can "run away" causing fires to burn out of control. "The placement of the Ashley thermostat is so close to the draft air intake that the inrush of air to a fire demanding more air can cool the thermostat (thereby causing it to open wider), while the rest of the stove is getting hotter and hotter."

FIREBOX SIZE. When you choose a stove, be sure the size of the firebox suits your needs. The *Scandinavian models* generally have small fireboxes. Though these stoves are extremely efficient, they don't hold much wood. Therefore, when they are filled with low heat content wood they may not burn for as long as you'd like. Day says

Feb. 25, 1977 — High Country News-5



Photo by Mike McClure

these stoves are "the finest quality wood stoves" in the world, but questions their use in areas where high heat content wood is hard to find and you are trying to heat a large home.

However, "bigger stoves aren't necessarily better," notes *Maine Times*. "A big stove in a small room will have to be damped down to control heat, thereby producing creosote."

SOURCES ON WOOD

The Complete Book of Heating with Wood. Garden Way Publications, Charlotte, Vt. 05445. \$3, 128 pages.

Woodburner's Handbook. Media House, Box 1770, Portland, Maine 04101. \$2.50, 107 pages.

Woodburning Stoves. The Overlook Press, c/o Viking Press, 625 Madison Ave., N.Y., N.Y. 10022. \$10.

Firewood for Your Fireplace. Prepared by the U.S. Forest Service. Order from Superintendent of Documents, Washington, D.C. 20402. Stock number 0100-03195. 25 cents, 7 pages.

Wood "N" Energy. Six-page newsletter. Society for the Protection of New Hampshire Forests, 5 S. State St., Concord, N.H. 03301. \$5.

Wood Burning Quarterly Magazine. 8009-34th Ave. South, Minneapolis, Minn. 55420. \$4.95 per year.

"Consumers' guide" compares many available stoves. *RAIN*, 2270 NW Irving, Portland, Ore. 97210. Ask for Dec. 1975 issue. 75 cents.

"A Field Guide to the Stoves" compares many available stoves. *Maine Times*, 41 Main St., Topsham, Maine-04086. Ask for Oct. 22, 1976, issue. 30 cents.

Making and Using Wood Fuel. College of Agriculture, Cornell University, Ithaca, N.Y. 14850. Extension bulletin 940. 25 cents, 14 pages.

Energy Primer. Portola Institute, 558 Santa Cruz Ave., Menlo Park, Calif. 94025. \$4.50, 200 pages.

Spectrum, an Alternate Technology Equipment Directory. Alternative Sources of Energy, Route 2, Box 90A, Milaca, Minn. 56353. \$2, 64 pages.

SCANDINAVIAN AIRTIGHT STOVES



Jotul:
Kristia Associates
449 Forest Ave.
Portland, Maine

Lange:
Scandinavian Stoves, Inc.
Box 72
Airstead, N.H. 03602

Morsø:
Southport Stoves
Division of Howell Corp.
1180 Stratford Rd.
Stratford, Conn. 06497

Trolla:
Lyons Supply
Manchester, N.H. 03190

DOMESTIC AIRTIGHT STOVES

Sunshine:
Sunshine Stove Works
Norridgewock, Maine 04957

Ram:
Milton Hills
Belfast, Maine 04915

Fisher:
Fisher Stoves Inc.
504 South Main St.
Concord, N.H. 03301

Better 'N Ben's:
C & D Distributors, Inc.
P.O. Box 766
Old Saybrook, Conn. 06475

Tempwood:
Mohawk Industries, Inc.
173 Howland Ave.
Adams, Mass. 01220

THERMOSTATICALLY CONTROLLED AIRTIGHT



Ashley:
Martin Industries
1604 17th Ave. S.W.
Box 730
Sheffield, Ala. 35660

Shenandoah:
Shenandoah Mfg. Co., Inc.
P.O. Box 839
Harrisonburg, Va. 22801

Riteway:
Riteway Mfg. Co.
Marco Industries, Inc.
Harrisonburg, Va. 22801

MISCELLANEOUS STOVES AND EFFICIENT FIREPLACES

Warm Morning:
Locke Stove Co.
114 W. 11th St.
Kansas City, Mo. 64105

Wonderwood:
United States Stove Co.
South Pittsburg, Tenn. 37380

Monarch:
Monarch Range Co.
Beaverton, Wisc. 53916

Atlanta:
Atlanta Stove Works, Inc.
Atlanta, Ga. 30307

Birmingham Stove and Range Co.
Box 2593
Birmingham, Ala. 35202

Autocrat:
Autocrat Corporation
New Athens, Ill. 62264

Defiant:
Vermont Castings, Inc.
Prince St.
Randolph, Vt. 05060

Dover:
Dover Stove Co.
Main St.
Sangerville, Maine 04479



Arctic, Olympic:
Washington Stove Works
P.O. Box 687
Everett, Wash. 98201

Barrel stove kit:
Country Craftmen
P.O. Box 3333H
Santa Rosa, Calif. 95402

Atlantic, Monitor:
Portland Stove Foundry Inc.
57 Kennebec St.
Portland, Maine 04104

Fatsco:
251 N. Fair Ave.
Benton Harbor, Mich. 49022

Stove distributor directory

The following is a list of major stove distributors. For a list of local dealers contact the distributors. Drawings from *Maine Times*.

Leopold, 'thinking like a mountain'

Second in a two-part series
on Aldo Leopold

© 1977 by Peter Wild

As a boy in Iowa, Aldo Leopold loved to hunt along the bluffs of the Mississippi River, and his shifting attitude toward wildlife in adulthood is an important index of his changing environmental philosophy.

His arrival in 1909 as a young forester in the Southwest coincided with depletion of the game population there. The elk, deer, and turkey that once teemed in the mountains had withered under the habitat destruction and hunting pressure of the white settlers. Leopold's employer, the U.S. Forest Service, controlled great tracts across Arizona and New Mexico, and to a certain extent the agency condoned or at least winked at the laissez-faire attitudes of the pioneers and their sons. By overgrazing, overcutting, and overhunting they were destroying the land on which they depended.

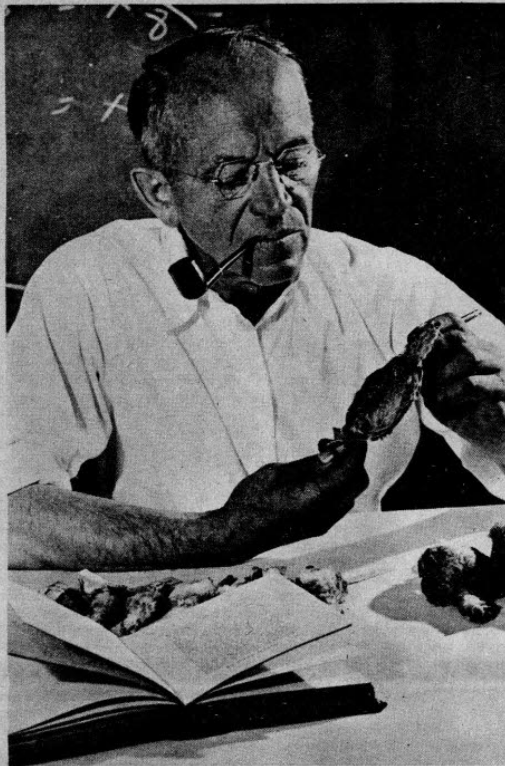
When the zealous conservationist Gifford Pinchot became the first head of the Forest Service in 1905, he envisioned the correction of just such abuses. A utilitarian, he viewed the nation's forests as treasure houses that could be made to produce indefinitely if carefully husbanded. Ironically, despite the "esprit de corps, pride, and idealism," as Jack Shepherd, author of *The Forest Killers*, typifies the outlook of the young service, other factors conspired to pervert its best intentions.

For one thing, its leaders didn't comprehend that a growing population could levy demands beyond the capacity of the shrinking forest lands. For another, the service didn't understand delicate relationships within ecosystems. From the beginning the agency emphasized timber production, not realizing that especially in the fragile Southwest intensive logging could upset an entire biota. And, regardless of their wisdom or lack of it, the new stewards of the country's forests often stood helpless before the political clamor of locals, who tended to scorn regulation of their exploitive habits.

As for wildlife, game management — of which Aldo Leopold would become the father — did not exist as a profession. The animals of the forests received little thought from officials whose main job was cutting trees. Cold statistics reflect the lack of concern: entrusted with enforcing the game laws of Arizona and New Mexico, the forest rangers had not made a single arrest by 1915.

Arriving in the midst of the wildlife crisis, Leopold grasped both the environmental and political aspects, and he launched a personal campaign to do something about them. His success at working with the two simultaneously shows his perception as a scientist and his skill as a diplomat. He was quick to recognize allies. Despite the general apathy, some devoted hunters — many of them from the cities — realized the need for changing old ways. Businessmen saw their clientele of tourists and hunters melting away with the wildlife.

Leopold managed to wrangle the job of overseeing game work in the Southwest



Aldo Leopold around 1946

He discovered that sound conservation consisted of more than catching poachers and enforcing bag limits, that the environment would kick back at the egotism of managers.

District, and it is to the credit of the Forest Service that it was flexible enough to give the ambitious ranger his head. Out of his office soon came a "Game and Fish Handbook," spurring rangers to their responsibilities in the woods. Taking to the field himself, he explained wildlife conservation to ranchers and to local citizen groups; he founded *The Pine Cone*, bulletin of the New Mexico Game Protective Association. All the while Leopold was publishing articles in professional journals and urging stricter federal regulations.

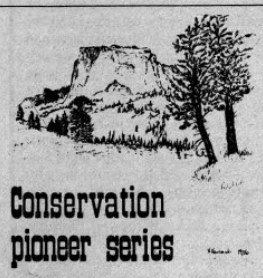
His views, however, still were utilitarian — he saw game as a crop — and, though progressive for the times, still shortsighted. Along with others, he would discover that sound conservation consisted of more than catching poachers and enforcing bag limits, that the environment would kick back at the egotism of managers.

The early conservation movement emphasized selective preservation. The simplistic thinking ran that if deer and elk were

good, then wolves and mountain lions were bad. Denied natural predators, the game population soared. In less than 20 years, for instance, the deer count on the Grand Canyon National Game Preserve of the Kaibab Forest exploded from 4,000 to 30,000. The game-loving public then beheld the spectacle of thousands of animals tottering across the overbrowsed landscape until they dropped of starvation.

Yet most people were unable or unwilling to see the cause — so embedded was the sanctity of deer and the prejudice against lions and wolves. At one point the Forest Service issued permits to kill some of the surplus game, but the governor of Arizona, making political hay from public sentiment, arrested the hunters. The novelist Zane Grey hired cowboys to round up the malnourished animals and drive them across the Colorado River to less populated areas, but despite the whoops of the horsemen the deer refused to act like cows.

Though the Kaibab lay outside Leopold's district, the problem was endemic to much of the Southwest. Still in the developing stages of his thinking about wildlife, Leopold did not solve the overpopulation disaster, but the faulty thinking that caused it moved him to reevaluate his own approaches. Apparently humans could not



orchestrate nature as easily as does a bandmaster waving his wand over obedient musicians.

Speaking of predators as part of the necessary health of things was professionally risky in the 1920s and 1930s — as it can be in some places today. But by doing so Leopold showed he was beginning the process of "thinking like a mountain," as he would later put it — striving to understand the diversity of the earth and its "indivisibility."

The shift involved more than a scientist's appreciation for nature's complexity. On an everyday basis it meant that man should become a servant of the earth, rather than its manipulator. The corollary on the philosophical level was that by living in harmony with the environment, man could restore harmony with himself. Certainly this was no new insight, when Rousseau, Emerson, and Muir are taken into account, but it was a novel stance for a practicing forester and influential bureaucrat.

Leopold's 15 years in the Southwest brought him personal satisfaction and a measure of professional success. He married Estella Bergere, a daughter of an old Spanish family, built a house, and began a family of his own. After official duties, he delighted in exploring, thinking, writing. Starting as a greenhorn ranger fresh from Yale, in 10 years he rose to chief of operations, the second highest position in the hierarchy that governed the 20 million acres of the Southwestern District. Yet he did more than initiate conservation reform and open the eyes of the public and the Forest Service to wildlife problems. In order to preserve the rapidly disappearing diversity that he saw as essential to environmental health, he persuaded the service to set aside one-half million acres of the Gila National Forest as the country's first wilderness area. This was a coup for Leopold and a major step for an organization so concerned with extracting resources that unmanaged lands were anathema to it. More importantly, the new concept broke ground for the Wilderness Act of 1964 and the nation's present growing wilderness system.

Yet in the midst of success, the chief of operations faced problems. Then, as now, the service predicated certain promotions on transfer. Leopold had moved around within the district, but after turning down jobs in other areas he realized that further advancement would come only after he left his home in the Southwest. In addition, along with earning a national reputation as an environmentalist, his activism had generated a certain amount of strain in his district.

In the same year as his wilderness victory on the Gila, he packed up his family and accepted a new position in Madison, Wisc., becoming associate director of the

Speaking of predators as part of the necessary health of things was professionally risky in the 1920s and 1930s.

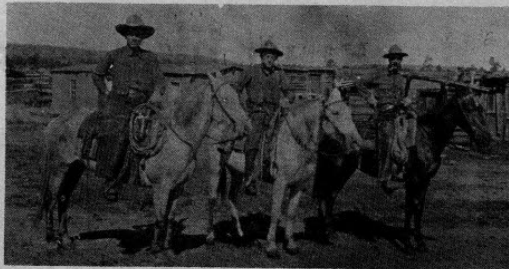
Forest Service research unit, the U.S. Forest Products Laboratory. Nearly 25 years of public service, study, and publication lay before him, but the course already was set; his mature thinking would be an expansion of ideas formed during his years in the abused Apache country at the southern tip of the Rocky Mountains.

He took the new job with the understanding that he would soon replace the current head. Contrary to expectations, however, the director stayed on, and Leopold chafed through four years of administrative paper-shuffling.

As a result the Forest Service lost perhaps its most original thinker when he quit in 1928. For the next few years he conducted game surveys in the Midwest for the Sporting Arms and Ammunition Manufacturers Institute and assisted universities in developing wildlife programs. He implemented his environmental philosophy by encouraging habitat restoration of lands that settlers had wrung of their resources, then abandoned. Much of the latter work brought pleasure, especially his mending of acres around the family's weekend shack — the inspiration for *A Sand County Almanac*.

Widespread professional acclaim followed in 1933 with publication of *Game Management*. In it Leopold still showed

Leopold showed he was beginning the process of "thinking like a mountain."



Leopold (on left) with two other foresters in 1911.

himself a technocrat, believing that the environment should be manipulated, albeit with greater sensitivity than in the past. But with the perspective of hindsight it seems that he was increasing his knowledge of the environment that eventually would bring him closer to the worshiper of nature, John Muir, than to its exploiter, Gifford Pinchot.

At any rate, the text established him as the "father" of a new science. He wrote it in the depths of the Depression, jobless and worrying about feeding a wife and five children. In the same year as its publication, however, the University of Wisconsin sweetened the book's success by creating a chair of game management especially for Aldo Leopold. He kept the job until his death, working with graduate students, establishing cooperative programs, always writing.

Though the shift to the last major development in Leopold's thinking is difficult to pin down, 1935 is significant. In that year he joined with other conservationists to found the Wilderness Society, a citizen group marked by emphasis on scientific and aesthetic appreciation of the natural heritage. Leopold thus threw himself into opposition to Pinchot's dream of utilitarianism. Today the Wilderness Society continues to urge agencies such as the Forest Service to follow through on Leopold's ideas by granting protection to the remnants of America's wilderness.

Ironically, the manuscript of *A Sand County Almanac*, the book that would top off his career and make his name famous, circulated for seven years in the early 1940s, suffering repeated rejection by publishers. Editors felt that the rambling philosophy of the essays was not what the

A SAND COUNTY ALMANAC suffered repeated rejection by publishers.

public wanted. With typical grit, Leopold kept revising and sending the manuscript out.

On April 14, 1948, an editor at Oxford University Press called to say that his firm would be happy to print the book. Seven days later the Leopold family spotted smoke across the swamp near its shack. A veteran of fire, Leopold armed the family with buckets and brooms and led it to a neighbor's burning field. Soon after, he fell on the fire line, dead of a heart attack at the age of 61.

Susan Flader has written two valuable books on Leopold. *The Sand Country of Aldo Leopold* contains an overview of his life and photographs of his Wisconsin retreat. *Thinking Like A Mountain* traces the metamorphosis of Leopold's thought. Presently Flader is working on his biography. For a study that places him in the context of other activists, Harvard's Donald Fleming offers the somewhat dyspeptic but useful chapter, "The New Conservation Movement," in *Perspectives In American History*, Volume VI, 1972.

Carter attacks dams; battle of the decade ahead?

by Bruce Hamilton

President Jimmy Carter has asked Congress to delete funds in the next fiscal year for 19 controversial water development projects. The move may spawn "one of the biggest environmental fights of the decade," according to Sheldon Kinsel of the National Wildlife Federation.

A memo from the White House said the projects should not be funded because preliminary review has indicated that they are "unjustified on economic, environmental, and/or safety grounds." The projects were dropped from Carter's revision of President Ford's budget on advice from the Interior Department, the Army Corps of Engineers, the Office of Management and the Budget, and the Council on Environmental Quality, according to the memo. Carter has asked the agencies to make a "full review" of the projects and report to him in 60 days.

LIVID WITH RAGE

"The reaction to Carter's elimination of major water projects from the budget has been staggering," says Brent Blackwelder, a water specialist with the Environmental Policy Center (EPC) in Washington, D.C. "Members of Congress are livid with rage that their pet projects have been cut and they've already begun mobilizing the dam building lobby to get the projects revived."

Kinsel says most national conservation groups are making backing Carter's move a top priority. EPC and the American Rivers Conservation Council sent out a fact sheet on the situation to their supporters and titled it: "WATER PROJECT ALERT OF A LIFETIME."

The 19 projects, all sponsored by the Corps of Engineers or the Bureau of Reclamation are: Garrison Diversion (N.D.), Oahe Diversion (S.D.), Central Arizona Project, Central Utah Project (Bonneville

Unit), Savary-Pot Hook Project (Wyo.-Colo.), Dolores (Colo.), Fruitland Mesa (Colo.), Auburn Dam (Calif.), Bayous Chene-Bouff-Black (La.), Lukfata Dam (Okla.), Cache River (Ark.), Dayton (Ky.), Freeport (Ill.), Dickey-Lincoln (Maine), Grove Dam (Kans.), Paintsville (Ky.), Yatesville (Ky.), Meramec Park (Mo.), and Russell Dam (Ga.-S.C.).

Carter has asked for a full review of 320 water projects nationwide, but only the 19 listed above have been recommended for zero budgeting. The Narrows Dam in Colorado was originally included on the list to receive zero budgeting. However, Narrows was dropped from the list. It will be reviewed, but no budget cuts have been recommended yet. The final report on all 320 projects is due April 15.

Sen. Milton Young (R-N.D.), the chief Congressional booster of the Garrison Diversion, called Carter's move "one of the most shocking things that has ever happened to North Dakota within my memory."

Other members of Congress and governors of the affected states expressed shock, anger, and outrage at the proposed cuts. Most vowed to fight to get the projects refunded. "I'm going right back to Washington to try to get that money back," said South Dakota Gov. Richard Kneip. Most critics cited the hundreds of millions of federal dollars that have already been spent on the projects.

Even the supposedly liberal and conservation-minded Western politicians were critical of Carter's action. Rep. Morris Udall (D-Ariz.), Sens. Gary Hart (D-Colo.) and Floyd Haskell (D-Colo.), and Govs. Dick Lamm (D-Colo.) and Jerry Brown (D-Calif.) all reportedly want their pet projects refunded.

Hart and Haskell have threatened to use the Freedom of Information Act to gain

access to the agency memos which encouraged Carter to blackball the projects. "The people of Colorado are entitled to know the case assembled to justify killing these important water projects and what we are up against in trying to save them," Haskell said.

Charles Parrish, an Interior Department aide, refused to surrender the internal memos to the senators citing "executive privilege."

Carter gave a partial explanation for the cuts in a Feb. 21 letter which read: "... Many of the 320 current projects approved in the past under different economic circumstances and at times of lower interest rates are of doubtful necessity now in light of new economic conditions and environmental policies."

Two projects where safety is a major Administration concern are Auburn Dam in California and Orme Dam in the Central Arizona Project.

Interior Sec. Cecil Andrus said part of the reason for the cuts is that Carter is following "campaign commitment to have a balanced budget."

PUNCH IN THE SOLAR PLEXUS

The Rocky Mountain News supported Carter's action in an editorial highly critical of pork barrel politics: "Carter's sudden attack ... means that the fight is really on now. He has hit Congress right in its political solar plexus. ... Anybody in politics with any common sense knows that it's terribly dangerous to attack Congress's sacred projects like dams ... for the home folks. And anybody in politics with any common sense also knows that a major part of the federal bloat that we all suffer from comes from those self-same projects. ..."

Andrus told the Western governors at a meeting in Denver, "This doesn't mean the projects are going to be axed. This is only a recommendation for the 1978 budget and

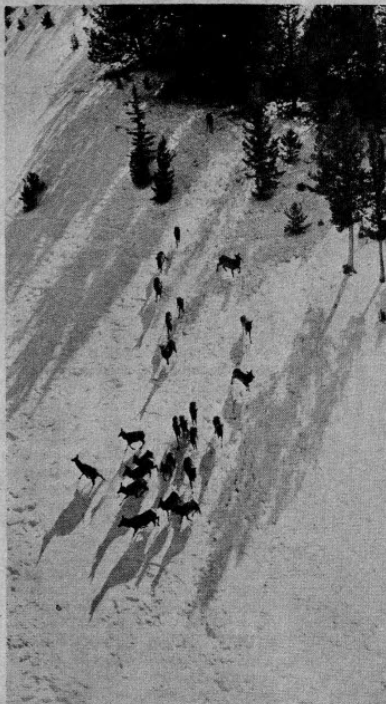
the money can be reinstated if that is the desire of Congress."

Young, speaking about Garrison, said, "This just about ends the project unless something new develops." The Senate would probably restore the money, but the House would be unlikely to concur, he said.

"We need to get huge quantities of mail in to both the Congress and the President," Blackwelder warned conservationists. "If we don't ... then this great victory will slip from our grasp as powerful Congressmen and Senators overwhelm the White House."



THE MCCLUSKY CANAL, a part of the Garrison Diversion in North Dakota, disrupted many family farms. President Carter has cut off funding for Garrison and 18 other controversial projects. Photo courtesy of the Committee to Save North Dakota.



TREES HAVE REPLACED BRUSH on this elk winter range, and there is little for the animals to eat. Idaho Dept. of Fish and Game photo.



REDSTEM CEANOTHUS, a species preferred by elk, thrives after a fire. Photo courtesy of Idaho Dept. of Commerce and Development.



Smoky the Bear has been

by Martha D. Noffsinger

One of America's largest elk herds is located in the rugged area between the Lochsa and Selway Rivers in Idaho. However, during the last two decades the elk population has been declining due to natural cycles of forest growth. The vital open browse areas required by elk have grown beyond the reach of the animals. Young conifers have matured into dense forests that dominate the slopes. But through the combined efforts of the U.S. Forest Service and the Idaho Department of Fish and Game, natural burns and controlled fires may improve the situation for the herd.

HISTORIC FLUCTUATIONS

Elk have been in North America since their migration from Asia during Pleistocene times. *Cervus canadensis nelsoni* is the subspecies which has inhabited the Rocky Mountains for several centuries. Lewis and Clark led their 1806 expedition through the Bitterroot Range at Lolo Pass into what is now Idaho. The dense forests impressed them, but made their movement slow. In their journals, they reported having to depend on plants and birds for food. Lack of deer, elk, and other game animals brought the group near to starvation more than once.

In the same areas through which Lewis and Clark traveled, major wild fires occurred in 1910, 1919, and 1934. High fuel concentrations had built up in the old timber stands. The downed timber that had frustrated Lewis and Clark in 1806 remained one century later and contributed to the extensive wild fires.

Open burned areas fostered the new growth of plants used for food by many forest animals. As larger numbers of elk and other animals could be supported by the new browse areas, their populations began to increase. Another change also began to have an effect: man, through a young U.S. Forest Service, had begun to control and extinguish forest fires.

By the middle 1940s elk in Idaho's Lochsa-Selway River area were so numerous that they gained the reputation of being one of America's largest herds. During the winters they ranged the slopes near the rivers. During the spring and summer, they moved from the rivers into higher ridges. The elk favored open southern exposures with grasses, forbes, and woody browse plants. Yet they had ready access to western slopes with dense evergreen cover in which to escape the summer heat.

FIRES IMPROVE FOOD

In Idaho, the four most important winter elk browse species are redstem ceanothus, mountain maple, serviceberry, and willow. The one preferred by elk is redstem ceanothus. Seeds of this low, dense shrub germinate more readily where the heat of fire has triggered the seed coats to split. Not only do burned sites increase the abundance of browse, they also support growth of plant material that has higher food value. Ash provides needed minerals for the new growth. Serviceberry twigs grown on burned sites have been found to have a higher protein content than the twigs of the same plant grown on non-burned sites.

Elk normally browse just the recent year's growth of brush. Young twigs have

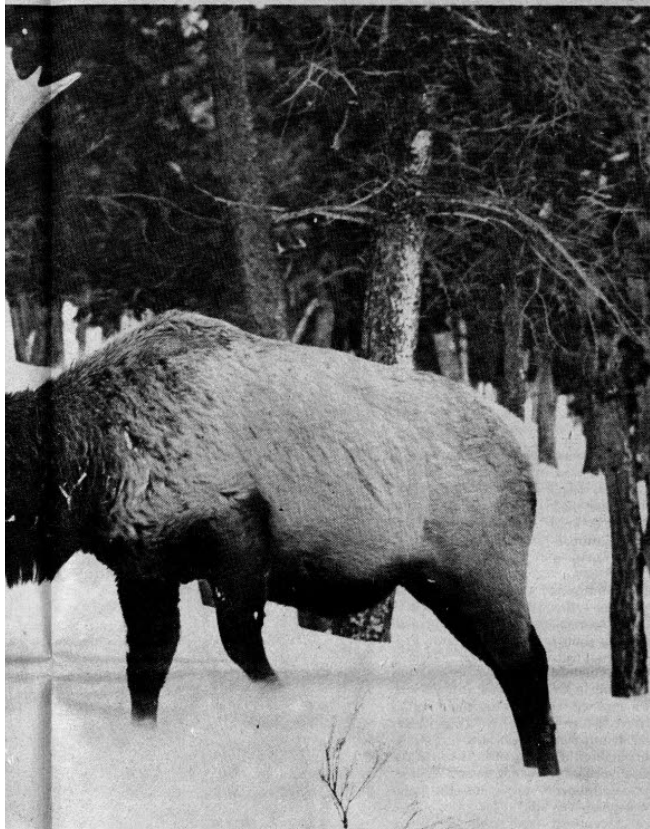


ELK NEED NUTRITIOUS PLANTS to carry



TOM LEEGE with the Idaho Dept. of Fish and Game starts a elk habitat. Idaho Dept. of Fish and Game photo.

n bad for the elk



to carry them through a rough winter. This forest provides almost no elk food.



starts a controlled burn to improve

more food value than older woody stems.

February to April is the most critical time of the year for all big game animals. Survival depends on getting food that will sustain life. If the food quality declines, the animal population declines. Spring elk calf survival is linked with the condition of adults during the winter stress period. Game managers report that many animals found dead of starvation have a full rumen that will not sustain them.

NEAR-FULL CYCLE

By the 1950s the population of the elk herds in the Lochsa-Selway River area had reached a peak and had begun to decline. Brush had grown too tall for browsing. For a long time natural succession of plants had meant a steady, if varied, source of browse material. However, conifers were growing up to shade out the elk-favored plants and had begun to dominate the early natural burn areas.

Just as natural burns began the changes that led to one of America's largest elk herds, natural growth toward mature forests led to fewer elk. Within the memory



BEFORE AND AFTER. Above: Fire has opened this ridge in the Selway-Bitterroot Wilderness and made excellent elk pasture. Below: The same ridge 20 years later. Trees are shading out food plants the elk need and the tender shoots of new growth on shrubs are above the elk's reach. Idaho Dept. of Fish and Game photo.



of three generations of elk hunters, elk populations have gone nearly full cycle. The area that provided no game animals to Lewis and Clark's men is once again becoming game-sparse as its forests prevail. But this time, a man-developed plan may intervene.

The U.S. Forest Service, in cooperation with the Idaho Fish and Game Department has initiated a policy of letting lightning-caused fires run their natural course in two extensive parts of the Lochsa-Selway River area in the Selway-Bitterroot Wilderness. The two areas, the Bear Creek and White Cap Creek drainages, were the first natural burn areas established in any national forest wilderness.

In both areas, man-caused fires are controlled and wilderness users are instructed in how to avoid starting forest fires. If a wildfire threatens private land or important service facilities adjacent to a natural burn area, fire fighters are called in.

The Forest Service released a final environmental statement on fire management in the Selway-Bitterroot Wilderness in December 1976. Fire management areas

have been set up in the wilderness and detailed fire management plans are being prepared for each area. The management plans will consider such things as fire history, weather patterns, fuel build-up, fire potential, wilderness visitor use, and human safety, according to Northern Regional Forester Robert H. Torheim.

The Forest Service in cooperation with Fish and Game is also considering setting fires to improve elk range in several areas in Northern Idaho within the Clearwater, Idaho Panhandle, and Nezperce National Forests. The plans are detailed in a draft environmental statement issued by the Forest Service last month.

Copies of the two environmental statements on burning are available from the Northern Region, USDA Forest Service, Federal Building, Missoula, Mont. 59801.

Martha D. Noffsinger is a native of Idaho. She has earned degrees in botany from the University of Idaho and the University of Michigan.

10-High Country News — Feb. 25, 1977

Andrus says ...

(continued from page 1)

that about 107 coal leases, 33 uranium leases, and two phosphate leases will be sent to Washington, D.C., for Andrus's approval from seven states (Wyoming, Montana, Utah, North and South Dakota, Colorado, and Idaho).

NO MORATORIUM

The BLM directors in each of the states contacted emphasized that they had been told Andrus's action was not another moratorium on leasing. "This will have no effect on leasing if he signs the leases," Colorado BLM spokesman Kip Hinton says.

However, whether or not he will sign them will depend upon his rationale for issuing the memo, which all of the BLM directors said they could only guess about. When HCN asked the Interior Department why Andrus issued the memo, a spokesman, Ed Essertier, said only that Andrus was following through on his promises to review all coal leasing.

Dan Baker, BLM director in Wyoming, admits there has been a lot of controversy

over leasing in the state. "Many people feel that present leasing is sufficient," he says — without further leases being issued. He is quick to add that Wyoming has never contemplated a massive leasing program.

One of the groups that has been pressuring Interior to reevaluate its leasing policies is the Western COALition, a group of environmental and agricultural groups from nine states. The head of the group, Carolyn Johnson, said representatives of seven states met with Andrus in Denver Feb. 20 — four days after Andrus's memo — to talk with him about leasing policies, among other topics. However, he mentioned nothing about his memo to them. When told of the memo, she and others in the office cheered enthusiastically.

"It's a very welcome move if it means the department is really going to reassess its policies," Johnson said. She hopes the department will scrutinize whether or not the minerals are needed and begin to determine criteria for where leasing should be allowed.

SOON BE SWAMPED

The director of the BLM in Idaho, however, does not think such enthusiasm is warranted. Mathews assumes the policy will be changed again — as soon as Andrus

realizes it won't be practical. He recalls the Eisenhower and the Kennedy Administrations trying similar policies. "They found very suddenly that the volume was so great, they couldn't handle it," he says.

Both he and the state BLM director in Utah, Paul Howard, say there has not been public pressure in their states that might have led to such a policy decision by Andrus. Howard says there will be public pressure if Andrus's action means more than slight delays. "There would be some upset people. . . . The leases we're talking about could lead to employment," he says. He added that there haven't seemed to be any environmental conflicts with the leases involved.

The state directors' estimates of leases which might be immediately affected are: Wyoming — 67 coal, unknown number of uranium leases; Montana — 17 coal, 1 uranium, and 1 phosphate; Utah — 10 coal, phosphate in the future; North Dakota — 8 coal, 21 uranium; Colorado — 5 coal; South Dakota — 11 uranium; and Idaho — 1 phosphate. The coal leases referred to are all under short-term criteria and preference right leases, which Interior regulations say don't have to go through the entire EMARS process (the Interior Department's new leasing regulations).

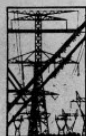
The last issue of HCN incorrectly described the route of the so-called "all-American" route proposed by El Paso Alaska Co. for the Alaskan natural gas pipeline. The route would parallel the present oil pipeline to the Alaskan coast where the gas would be liquefied for transport to California. Another route was chosen by Federal Power Commission Administrative Law Judge Nahum Litt. A final FPC decision is expected by May 1.

NADER PRAISES ANDRUS. Sec. of Interior Cecil Andrus has earned the praise of consumer advocate Ralph Nader and environmentalists by postponing oil and gas leasing in the Gulf of Alaska, coming out in favor of horizontal divestiture of energy companies, and probing into present natural gas stocks to see if available gas is being withheld. "We've got a good secretary of the Interior now who may just turn out to be the best appointment" of the Carter Administration, Nader says.

MANDATORY INSULATION? Federal Energy Administrator John D'Leary says his agency is looking at requiring utility companies to insulate residential homes and bill the home owners for the improvement. "We're going to have to find some way . . . to go back into all the buildings and all the houses that have been built, to bring them up to a minimum standard of energy efficiency," he said on the CBS Morning News. "I don't think we can do that through voluntarism."

OAHE AQUEDUCT PROPOSED. Frank Odasz of Energy Transportation Systems, Inc. (ETSI) says the firm has proposed to the South Dakota legislature that an aqueduct be built between Oahe Reservoir on the Missouri River in South Dakota and Wyoming. The 238-mile-long aqueduct would carry water to consumers between the Missouri River and the Wyoming border and, potentially, extra water for ETSI's use in a slurry pipeline to carry coal from Wyoming to Arkansas, according to the *Casper Star-Tribune*.

ZERO GROWTH PUSHED. Sen. Charles Percy (R-Ill.) is recruiting "nearly every big name in Washington" to participate in a private organization to promote energy conservation. Energy Conservation, Inc., is chaired by Percy and has Sen. Hubert Humphrey (D-Minn.) and Henry Kissinger as honorary board co-chairmen. Roger Sant, a former Federal Energy Administration official, is the executive director. The group will work toward zero energy growth for oil, gas, and electricity, according to *Energy Users Report*.



The HCN Hot Line

energy news from across the country

NEW CLEANER ENGINE. Sandia Laboratories has unveiled a prototype "variable displacement" car engine which it claims averages 40% better gas mileage than conventional models. The new engine eliminates the need for a throttle, a major cause of inefficiency, according to the *Wall Street Journal*. Instead of a conventional accelerator, the new engine has a pedal which changes the length of the piston stroke, thereby adjusting the horsepower to different driving conditions.

LOW SULFUR COAL — IN R.I. Test borings in Massachusetts and Rhode Island indicate millions of tons of low sulfur coal in seams up to 25 feet thick. The coal is of higher quality than expected, according to the drillings. Previously, Eastern utilities using Western coal have said that even though transportation costs are high, their choice was justified by the low sulfur content of much Western coal. Large quantities of low sulfur coal also exist in Appalachia.

SIERRA CLUB-INDUSTRY COALITION. The National Coal Policy Project, a newly formed group of environmental and industrial representatives, is planning a year-long series of meetings on coal policies. Former Sierra Club president Laurence I. Moss and Gerald L. Decker, corporate energy manager for Dow Chemical Co., are the co-chairmen. The two say that a preliminary meeting last July convinced them that environmentalists and industrialists could reach some sort of accord on such issues as air quality and energy pricing, according to *Air-Water Pollution Report*.

STRIP BILL AMENDMENTS. With strong backing from the Carter Administration passage of a strip mine control bill seems almost certain this year. However, Administration officials are opposing two key provisions supported by environmentalists and Western ranchers. In Senate testimony Interior Sec. Cecil Andrus said he opposed a proposed ban on mining of all federal coal underlying private land. Federal Energy Administrator John O'Leary testified that he opposed a section of the bill restricting mining on alluvial valley floors. He suggested revising the section to allow mining "which will not have a significant adverse impact on water sources. . . ." Rep. Morris Udall (D-Ariz.), the sponsor of the House version of the bill, says, "We'll be into the summer before we make the major decisions on this bill."

QUEBEC HESITATES ON NUCLEAR. After previously supporting nuclear development, the energy minister of the Parti Quebecois in Quebec, Canada, is calling for a public referendum before the provincial utility jumps into nuclear power generation. The Parti Quebecois says the province can depend upon electricity from the James Bay hydroelectric project until renewable sources are available. The provincial utility is considering as many as 35 nuclear plants in the province by 2000, according to *Energy Daily*.



TRAIN AGAINST NUKES. Russell E. Train, former head of the U.S. Environmental Protection Agency, says the U.S. should aim for "the phasing out and eventual elimination of all nuclear power." Train, whose antinuclear views were never expressed while he was in office, says he is "most bothered by the waste management and plutonium safeguard problems. . . ."



IPP STUDY SAYS POWER PLANT IS FEASIBLE

The Intermountain Power Project (IPP) has completed a private study which indicates that its 3,000 megawatt power plant proposed for Southeastern Utah is economically and environmentally feasible. IPP's plant would be the same size and in the same region as the proposed Kaiparowits power plant which was abandoned by its promoters because of economic problems.

The plant site would be 16 miles northwest of Hanksville, Utah, near Capitol Reef National Park (pictured above). Environmentalists are lining up to oppose IPP because of its impact on the air quality of adjacent national parks. IPP claims it will operate "within the requirement of all existing federal and state environmental laws and regulations."

IPP plans a dam on the Fremont River and development of a well field to supply the 50,000 acre-feet of water needed annually by the plant.

Plant construction would bring about 11,000 persons to Wayne County. Underground coal mine development in Emery County will bring in another 10,000 persons, according to IPP's report.

Photo of Capitol Reef National Park courtesy of the Utah Travel Council.

Feb. 25, 1977 — High Country News-11

Despite Congress's refusal

Interior opens federal coal leasing to railroads

by Lee Catterall

Disturbed by involvement in Western coal development by some railroad conglomerates, including Union Pacific, the Interstate Commerce Commission has asked Congress to give it power to stop other railroads from following the same tracks.

That involvement could reach gigantic proportions, because Interior Department lawyers have decided those conglomerates can lease federal coal, despite a law Congress has refused to repeal that is intended to forbid federal coal leasing by railroad companies. Department officials recognize they have removed the final obstacle that stood in the way of railroad conglomerates acquiring the capability of becoming corporate energy giants.

The railroad companies are gambling with the public interest and may be subverting the law by leaping into the energy field, the ICC warns Congress in a report filed this month.

Although it fails to ask Congress for authority to remedy "abuses" that already have taken place, ICC vice-chairman Charles L. Clapp, in a dissent, says the agency should have such power. "We should be in a position to correct the situation," he says.

Corporate reorganization of Union Pacific and other railroads has allowed them to become deeply involved in coal activities despite laws intended to restrict their involvement, the ICC explains.

Railroad holdings are so vast and their ability to develop them so unfettered, ICC lawyer James Taylor said in an interview, that Western coal development "is going to be a race between the oil companies and the railroads to get as much of the energy market as they can."

NATION'S LARGEST

Burlington Northern is the nation's largest coal reserve owner, with more than 11 billion tons that can be strip mined. Union Pacific is third biggest with 10 billion tons of stripable reserves. Atchison, Topeka, and Santa Fe owns more than 600 million tons.

Their reserves are in square-mile blocks lying in a checkerboard pattern with the federal blocks in 40-mile-wide strips along the railroad rights-of-way. The companies have been forced into joint ventures with energy companies in the past because they have been unable to assemble the blocks into a large enough area to mine economically.

Railroads have profited from those joint ventures, but their potential to lease federal coal themselves provides an opportunity for them to make those profits seem minuscule. Interior officials agree the new department policy allows railroad conglomerates to monopolize the "checkerboard" by refusing to enter into joint ventures and deciding to lease the federal coal themselves.

The restriction against railroad companies leasing federal coal apparently was intended to keep railroads out of the coal business, since their transportation capabilities would give them an unfair advantage.

Congress also stipulated that railroads could not haul their own coal except to burn in their engines' furnaces.

However, in actions Taylor said have "emasculated" the hauling restrictions, courts have ruled that a railroad can transport coal belonging to its subsidiary

company, as long as the subsidiary is not an "alter ego" of the railroad.

Subsidiaries that are financially dominated by their parent railroad companies have passed that "alter ego" test. Taylor, asked what would cause one to fail it, said, simply, "That's a good question."

In 1971, Union Pacific reorganized itself so it could have such a subsidiary.

Union Pacific Railroad created a parent company, Union Pacific Corporation, making the railroad a subsidiary along with whatever other subsidiaries it wanted to create. It now has three basic ones — Rocky Mountain Energy Co., Champlin Petroleum Co., and Upland Industries Corp. — and more than 20 others that are subsidiaries to those three.

The coal was transferred in the form of dividends to the parent company, which became the nation's third largest coal reserve owner.

The ICC warns that the transfer of coal ownership from child to parent could create problems. If the railroad should need those coal reserves "to support rail services essential to the public interest," the report says, "the intention of the Congress would be subverted, and today's citizens would lose the benefit of the contract made by their forebears with the land-grant railroads."

The ICC says it will continue to "monitor" Union Pacific's activity, but there is nothing it can do to divert its course from becoming a mammoth energy conglomerate.

INEFFECTIVE LAW

Rocky Mountain Energy Co. became the first railroad subsidiary ever to acquire a federal lease when, last year, the department granted a lease to Black Butte Coal Co. in Sweetwater County, Wyo. Black Butte Coal Co. is owned by Rocky Mountain Energy and Peter Kiewit & Sons, Inc.

Then-Ass. Interior Sec. Jack O. Horton objected to the granting of that lease initially, in part, because it violated the 1920 law forbidding railroad companies from leasing federal coal. However, the department decided that since Rocky Mountain Energy's parent company was Union Pacific Corporation and not Union Pacific Railroad, which also is a subsidiary under the company's 1971 corporate reorganization, the law would not be violated.

Later in the year, Hanna Mining Corp., a subsidiary company whose parent is a railroad — Escanaba and Lake Superior Railroad Co. in Michigan — applied for a lease. Interior Department lawyers, recalling Horton's objection to the Rocky Mountain Energy Co. lease, decided it was time to take a fresh look at the 1920 mining law.

They decided the court decisions Taylor said have "emasculated" the hauling restrictions also apply to the federal coal leasing restriction.

An Interior Department lawyer familiar with the issue said the application of the court decision to coal leasing qualifies Rocky Mountain Energy Co. for leasing. Also, subsidiaries of Burlington Northern probably would qualify, he said, even though the parent company is a common carrier railroad.

The Interior Department policy was made only a few months after the House Interior Committee refused, by a 20-to-21 vote, to adopt a proposal wiping out the 1920 law forbidding railroads from leasing federal coal. However, the department did not inform members of Congress of the newly-found ineffectiveness of the law and of the potential monopoly.



TRACK CLEARED. The Interior Department says railroad companies can now lease federal coal, clearing the track for the emergence of a new kind of corporate energy giant. Because of their private holdings along railroad rights of way in the West, railroads are already among the largest coal reserve owners in the nation.



10% CUTBACK SOUGHT. Northern Rockies and Pacific Northwest electric utilities are seeking a voluntary 10% cutback in electric consumption by their customers because of the severe drought. "Any and all electricity we don't use now will mean that much more water in the region's reservoirs for either power production next fall or non-power usage this spring and summer," says Pacific Power & Light Chairman Don Frisbee. Idaho Power Co. (IPC) has announced that it will no longer take applications for new irrigation pumping service because of the drought. All of the water in the Snake River in Idaho may be needed to meet existing needs for irrigation and power generation. IPC says mandatory curtailments are possible this summer.

ANDRUS BLOCKS COLSTRIP LEASE. The Interior Department says it postponed a coal lease sale near Colstrip, Mont., because of an error in the sale announcement. But Coal Week reports that the sale was delayed a month to give Interior Sec. Cecil Andrus time to see if he wants to put it off even longer. Coal Week quotes an Interior source as saying that Andrus "simply doesn't want anything leased until he has a chance to insure the environment isn't going to be disrupted." The proposed 200-acre lease is in the path of Western Energy Company's strip mine operation.

EXPLORATION DRAINS WELLS? A retired well driller and member of the Powder River Basin Resource Council conservation group has charged that some 20,000 uranium test holes in the Pumpkin

Buttes in northeastern Wyoming are damaging ranchers' water wells. The driller, Irvin Johnson, says, "Landowners in the area report that artesian wells have ceased flowing and that pumped wells go dry when they didn't before." The problem is probably test holes abandoned before they were sealed and capped as required by Wyoming law, Johnson says. A spokesman for the company responsible for the holes, Cleveland Cliffs Iron Co., claims that the company has plugged most of the holes it has drilled. According to a story in the Sheridan Press the firm is willing to return and fill any that were accidentally missed.

PANHANDLE JOINS PEABODY. Panhandle Eastern Pipeline Co. and Peabody Coal Co. have formed a joint venture — Antelope Coal Co. — to supply Wyoming coal to Middle South Utilities. "The joint venture owns a substantial portion of the coal reserves required for the new mine and expects to acquire the balance needed when federal coal leasing resumes," says the Wyoming Mining Association.

DEFINING SLURRY. A Colorado law prohibiting the exportation of the state's water may stop a proposed coal slurry pipeline from Colorado to Texas, according to the Rocky Mountain News. The developer — San Marco Pipeline Co. — says a coal-water slurry mixture is a manufactured product, like beer, and should be allowed to be exported. Assistant Atty. Gen. David Robbins says the state plans to file a statement of opposition to the project to clarify the matter.

MONTANA CONSERVATION PLANS. Building improvements could cut both residential and commercial energy use by more than half in Montana, according to a study by the Montana Energy and MHD Research and Development Institute (MERDI). By applying stringent building standards to commercial buildings, the report predicts a savings of 55% of the state's commercial energy use by the year 2005, according to Energy Daily. In the residential sector, insulation and conservation programs in new buildings could reduce overall energy requirements by 75-80%.

12-High Country News — Feb. 25, 1977

Wyomingites link planning to Mafia, communism

CHEYENNE, WYO. — The Wyoming Legislature nearly decided to repeal the State Land Use Planning Act, which it had voted into law during the last full legislative session two years ago. The Wyoming House voted 42-20 on Feb. 12 to repeal the 1975 act, but a senate committee reversed that decision.

In preparation for the decisions, members of the judiciary committee held a public hearing where they heard testimony that attempted to link land use planning with organized crime, the Communist Manifesto, and governmental oppression.

At the Judiciary Committee hearing Feb. 8, 13 people testified against repeal, eight testified for it, and one declared himself neither for nor against.

Judd Hansen, a rancher, said, "The only good thing about (land use planning) is that none of the plans have so far been implemented."

Dick Mater, an auctioneer, real estate dealer, and member of a land use planning

board in Gillette, invoked God, the Constitution, his own real estate dealings in three counties, and the Mafia, which, he said, "controls land use planning one hundred percent" in the East.

Shirley Driscoll, of Alva, said she had collected the signatures of 2,270 people

who wanted the 1975 act repealed. Bob Updike of Crook County said the idea for state land use planning may have originated in the Communist Manifesto.

The Wyoming Stockgrowers Association (WSA) submitted a letter, saying it favored repeal. Buck Holmes, chairman of the Laramie County Planning Commission, said he attended the meeting at which the WSA debated its position. "The WSA has 2,500 members," Holmes said. "There were about 60 of them at the meeting. By a difference of seven votes, they favored repeal."

Herschler testified against repeal. "We will not be the last generation to live in the state," he said. "We have an obligation to our successors to use our resources wisely. . . If those of us in Wyoming do not establish

our own land use plans, much of our land use will be dictated by the federal government."

The negative sentiment expressed at the hearing was apparently reflected in other land use votes by the legislature. Although they did not repeal the act, they voted down bills that would have granted counties more local control over planning, more time to complete their plans, and more money from the state. The house also killed a bill that would have allowed landowners to sell or donate easements for their land. The easement program would have been entirely voluntary and would have meant the landowners could receive tax benefits for promising not to develop their land.

The legislature adjourns Feb. 26.



Colo. political parties differ over size of severance tax

A minerals severance tax is one of the top environmental issues facing the Colorado legislature this session. The Republican majority favors a tax, but one smaller than Democratic legislators and Democratic Gov. Richard Lamm would like.

Presently Colorado has no severance tax — a tax on removing a mineral resource from the ground. The state has a production tax on oil and gas which is similar to a severance tax, however.

Both the Republican and the Democratic tax proposals are based on a compromise arrived at last session. Last year the Republican-controlled Senate accepted the compromise, but the Democratic-controlled House and Lamm rejected it. (This year the House is controlled by Republicans.)

REPUBLICAN BILL

The Republican bill (HB 1076), which is still in the House Finance Committee, calls for a 50 cent per ton tax on strip mined coal and a 25 cent tax on deep mined coal. The first 8,000 tons mined each quarter would be tax-exempt. Oil and gas would be taxed at five per cent of gross income. Oil shale is given a special tax schedule aimed at encouraging its development in the early years. Molybdenum would be taxed at 12 cents per ton of ore dug from the earth. Other mineral operations would not be taxed because all earn less than \$11 million minimum set by the bill.

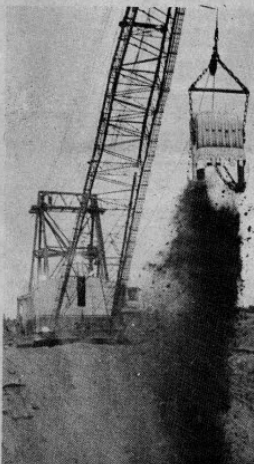
The Republican sponsor is Rep. Mick Spano (R-Arvida).

DEMOCRATIC BILLS

Two Denver Democrats, Reps. Bob Kirscht and Jack McCroskey, have introduced slightly tougher bills which have not been taken up by the House Finance Committee yet.

Kirscht's bill (HB 1174) calls for a 60 cent per ton tax on stripped coal and a 30 cent tax on deep mined coal. McCroskey's bill (HB 1181) would tax stripped coal at 75 cents and deep mined coal at 50 cents.

Both bills would tax oil and gas at four per cent and exempt mines that earn less than \$11 million. Molybdenum is not treated separately in the Democratic bills,



THE PRICE. How much should a coal company pay a state for the privilege of removing coal? Democrats are pushing for a higher severance tax than Republicans in Colorado. Nothing is settled yet, but the Republicans, who dominate both houses, are expected to get their way.

but since Climax Molybdenum Co. is the only non-energy mineral producer that earns more than \$11 million it would be taxed. Climax would be taxed at 2.75% of the gross income over \$11 million.

Climax favors the Republican's approach of a tax on each ton mined because the tax wouldn't vary with the price of molybdenum. The Democratic tax proposal links the tax to the sale price of molybdenum. Molybdenum prices have increased substantially in the past year.

The Colorado Open Space Council, a citizen conservation group, is looking for volunteers to research and follow the progress of the severance tax bills. If you'd like to help, call COSC at (303) 573-9241.

Montana house votes to protect Yellowstone River

by Dan Whipple

The Montana House of Representatives has voted overwhelmingly to extend the Yellowstone River moratorium until Jan. 1, 1978. The Senate taxation committee has also approved the bill and the full Senate is expected to concur.

The moratorium has been in effect since 1974, when the legislature halted the issuance of water permits. The moratorium was scheduled to expire on March 10 of this year.

The moratorium could be extended past Jan. 1 if legal challenges to it are unresolved, according to the bill.

Montana Fish & Game Department Chairman Joseph Klabunde says, "The Yellowstone River is probably the last major free-flowing river left in the continental United States south of Alaska. The fish and wildlife resource living in and along the Yellowstone is without question one of the major natural resources of Montana."

In order to keep the river "free flowing," the department is launching a major public relations campaign opposing any future large-scale water diversions from the river. Fish and Game has also filed to reserve 8.2-million-acre-feet a year of the river's estimated 8.8-million-acre-foot flow for in-stream uses. The lowest annual flow recorded by U.S. Geological Survey was 4.2-million acre-feet.

Game and Fish says that the reservation requested would protect the current users, but that little water would be available for new uses, such as energy development.

The department is asking the public to step in and make its voice heard to protect the river. It initiated the effort with the presentation of a movie entitled "Yellowstone Concerto" and a special issue of *Montana Outdoors*, the department's magazine.

James Posewitz, administrator of Fish and Game's Environmental and Information Division, says, "Time is no longer at our disposal. The state must now begin the allocation of the river's water; the process is begun, decisions must be made. One thing is obvious — the Yellowstone cannot remain free flowing and still meet all the projected demands while continuing to serve existing uses."

According to a Department of Natural Resources and Conservation (DNRC) report — "The Future of the Yellowstone River?" — the Yellowstone may not be able

to meet projected demands. The report says, "Industrial companies have applied for much more water than will be required, even assuming the highest level of coal development. In fact, they have applied in the Tongue and Powder River basins for more than is available, even through maximum storage."

To promote orderly development, DNRC recommends that the state rate water use priorities, rather than apply the traditional "first in time, first in right" principle. The report says, "The least water-consumptive method of developing



Montana's coal would be exporting the coal by rail for conversion to more usable forms of energy elsewhere. The most water-consumptive are combination conversion-transmission processes, such as thermal-electric generation and electrical transmission or coal gasification and SNG pipelines. In between are coal slurry pipelines."

DNRC says that coal slurry would use about one-fifth of the water that would be consumed by converting the coal to other forms of energy in Montana. So, the report recommends that the legislature study the costs and benefits of using slurry as an exporting vehicle.

The Board of Natural Resources and Conservation supports the House of Representatives action to extend the Yellowstone moratorium until the board "has had a reasonable length of time to act on requests for the reservation of Yellowstone Basin water."

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Western Roundup

HCM

Feds to determine if horses are wild

Federal officials, not state branding commissioners, must determine ownership of horses and burros grazing on public land, according to a recent U.S. Circuit Court of Appeals decision. The ruling reversed a district court decision which gave Idaho brand inspectors the right to determine whether horses and burros were wild and publicly-owned or stray and privately-owned. Circuit Judge S. W. Robinson said the 1971 Wild Horse Act was passed by Congress because states had been lax in protecting wild horses and burros. "A state vulnerable to pressure from cattlemen and other groups could defeat the Congressional purpose" of saving wild horses by pressuring state brand inspectors to find wild horses to be privately-owned, he said. The suit was originally filed by the American Horse Protection Association.

Lamm for Indian Peaks wilderness

The state of Colorado is asking for an Indian Peaks Wilderness Area more than five times larger than that recommended by the U.S. Forest Service. In a letter to the Forest Service, Gov. Dick Lamm encouraged the Forest Service to manage the area to provide for maximum visitor use consistent with primitive values. Lamm asked the Forest Service to disperse visitors by improving access to more points of entry, providing additional trail connections, and regulating and educating visitors. The state's recommendation was based upon extensive interdepartmental review. It was motivated by the "overwhelming public support" for the wilderness designation, "incomparable scenic quality" of the area, proximity to large population centers, and relative absence of competing resource demands, according to Lamm. The Forest Service proposes a 16,270 acre area. The state wants the entire 71,000 acre study area and an additional 12,000 acres of roadless areas. Since the area is adjacent to Rocky Mountain National Park, management by the Park Service instead of the Forest Service has been considered. The state remained neutral on that question, but Lamm recommended that an independent commission review the pros and cons of either agency managing the area.



CLOUDS. A Utah researcher says exactly the right clouds must be chosen for seeding or precipitation may be reduced.

Interstate suit may stop cloud seeding

In search of a panacea for the serious drought throughout the West, more Western states are beginning to seed clouds in an attempt to increase snowfall. However, the question marks that hang over the science have inspired threats of an interstate lawsuit and of congressional action to block the cloud seeding. Idaho Attorney General Wayne Kidwell says he fears that if the state of Washington proceeds with plans to seed clouds in the Cascade Mountains, it might mean less possibility of moisture in already thirsty Idaho. Two members of Montana's congressional delegation say they'll introduce legislation to protect other states if necessary to stop the projects in both Oregon and Washington. Wyoming and Colorado are both seeding clouds to increase snow depths (see HCM, 2-11-77). However, a Utah researcher says cloud seeding in that state in 1973-74 may have decreased precipitation. Dr. Geoffrey E. Hill says that for cloud seeding to work, the material must be seeded into exactly the right clouds—those that contain large amounts of supercooled water that has not frozen. Hitting the wrong clouds may decrease precipitation, he says. To work, seeders would have to get close to the clouds with airplanes and be able to identify the right clouds, he says. He maintains that ground generators (which are being used in the Southern Rockies of Colorado) aren't likely to work. "Clouds offering the best seeding opportunities are probably found in only a fraction of a storm area and for a limited time," he told the *Deseret News*.



WATER. In a good year, the spring runoff rushes over Shoshone Falls on the Snake River in Idaho. However, this year the Snake River drainage is running 52% of normal flow. Photo courtesy of Idaho Department of Commerce and Development.

Governors set up drought task force

A Western water crisis has prompted Western governors to begin to consider incentives for water conservation, just as the energy crisis is forcing them to give more serious consideration to energy conservation. Governors of 11 states and representatives of six others met in Denver Feb. 20 with Interior Secretary Cecil Andrus and decided to set up a regional task force to find ways to deal with what may be the worst drought in recorded history. California has already instituted water conservation programs and several other states are forming task forces to find ways to conserve water and ration it if necessary.

Agriculture, which uses about 85% of the region's water, will be hardest hit, meaning possible food shortages, according to Nebraska Gov. James Exon. Colorado, for example, predicts a \$100 million drought-loss to agriculture. The drought has already taken its toll on ski area employment in the state; five areas have closed in mid season.

Towns would also be affected. South Dakota predicts 30 towns may be out of water by summer, and Idaho predicts 51

towns will be out by mid-summer. Wyoming is praying for snow, too. Three inches of snow are reported in mountain pastures that normally have three feet this time of year. According to the U.S. Soil Conservation Service, winter and spring snow pack usually provide about 70% of the West's water supply each year.

Wildlife officials say wildlife and especially fish may be added to the drought's toll since most Western states don't have laws that protect minimum stream flows. A Colorado official says he would recommend that water be diverted from state fishing reservoirs if necessary to supply communities. "It might kill off a few fish, but I prefer killing off fish to killing off humans."

Colorado officials are drafting an emergency water proclamation that would suspend statutes and rules regulating distribution of water in the state. The proclamation would be used "only as a last resort" and would not affect Colorado's water commitments to nine other states and Mexico under interstate compacts.

Microwave experiments' toll reported

A U.S. Air Force microwave research project in central Montana has been linked to skin and bladder cancer, a series of debilitating disorders, and a fatal case of leukemia, according to the *New Yorker*, as quoted in *Borrowed Times*. The article says Boeing, which was under contract to the Air Force, had petitioned the Occupational Safety and Health Administration (OSHA) to raise the standard for exposure to electromagnetic pulse (EMP), saying the change would permit Boeing and other contractors "to continue to support programs vital to the national security." A year earlier Boeing was aware of two cases of leukemia and one case of skin cancer among the technicians who had been conducting the tests. Three years after the petition, OSHA denied their request. Meanwhile, two more cases of cancer occurred among people exposed to EMPs at Montana missile sites. An Air Force safety official in the EMP program developed leukemia and died of it, and a guard developed bladder cancer. In addition, a family of four who lived on a ranch close to a missile site where the tests were conducted developed a variety of symptoms, including hearing failure, memory loss, hair loss, weight loss, premature aging, low blood pressure, blood disorders, blurred vision, dizziness, fatigue, and headaches. The family has made claims against the Air Force for damages. Two of the cancer cases are scheduled for hearings in Workman's Compensation Court, according to *Borrowed Times*.

Browns Park road priority sought

A group promoting an improved road through Browns Park, Utah (see HCM, 11-19-76), has asked the Utah Transportation Commission to give the road first priority status for federal lands highway funds. The Tri-State Development Committee delegation, headed by Daggett County Commissioner Albert H. Neff, learned that another road had been chosen because of the traffic demands on the other road. However, the transportation commissioner assured the group that the Utah Transportation Commission would not forget its commitments to help the Browns Park road. Work on the draft environmental impact statement is underway and the commission expects to hold a public hearing on it this fall according to the *Vernal Express*.

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HCN

Bulletin Board



SIERRA STAFF POSITION

The Sierra Club is accepting applications for the paid position of Northern Plains Regional Representative. The staff member would coordinate club activities in Montana, Wyoming, Nebraska, and the Dakotas. Applicants should immediately contact: Paul Swatek, Sierra Club, 530 Bush St., San Francisco, Calif. 94108, phone (415) 981-8634; or Bob Brown, Hershey, Neb. 69143, phone (308) 368-5432.

WILD HORSE FORUM

The Cooperative Extension Service at the University of Nevada in Reno is sponsoring a National Wild Horse Forum April 5-7. Registration is \$25. For more information contact: John L. Artz, Renewable Resource Center, 920 Valley Rd., Reno, Nev. 89512 or call (702) 784-6763.

ENERGY SAVING TIPS

To get a free copy of "Tips for Energy Savers" send a request to the Consumer Information Center, Dept. 591 E., Pueblo, Colo. 81009.

UTILITY SEEKS HABITAT HEARING

Pacific Gas and Electric Co. has been denied its request to have a public hearing on a proposal for critical habitat for the peregrine falcon. The utility was apparently attempting to get public support for several hundred megawatts of geothermal generating capacity, which the utility fears would be jeopardized by the designation. The U.S. Fish and Wildlife Service denied the request, saying the habitat should be determined first. Then questions concerning the types of activities that might be prohibited could be considered — but not before.

MODEL LAND CODE

The American Law Institute has prepared a model land development code designed to standardize land use planning procedures and regulations. The 524-page code is available from ALI, 4025 Chestnut St., Philadelphia, Pa. 19104 for \$37.10.

NEW AERO OFFICE

The Alternative Energy Resource Organization of Billings, Mont., is setting up an office in Missoula to serve Western Montanans. The Missoula AERO group was organized by Scott Sproull. The new office, which will eventually include an alternative energy research library, will be run by Anne Garde and Angie Leprohon. The office will be open from 9 a.m. to 5 p.m. weekdays. It is at 323 W. Alder, Missoula, Mont. 59801.

GRAZING FEE REEVALUATION

The U.S. Forest Service and the U.S. Bureau of Land Management are reviewing fees charged for grazing livestock on federal lands. The 1976 Federal Land Policy and Management Act called on the agencies to reevaluate their grazing fee charges and prepare a report for Congress. Public hearings will be held on the subject at the following locations: Rapid City, S.D., on March 7; Missoula, Mont., on March 9; Boise, Idaho, on March 11; Reno, Nev., on

March 14; Denver, Colo., on March 16; Albuquerque, N.M., on March 18; and Washington, D.C., on March 23. Comments sent by mail should be addressed to: Grazing Fee Task Force, Range Management Staff, P.O. Box 2417, Washington, D.C. 20013.

TOXIC SUBSTANCES MEETING

The U.S. Environmental Protection Agency will hold a public meeting on March 22 in Denver to explain the 1976 Toxic Substances Control Act and to discuss options for implementation. Public statements at the meeting should be limited to 5-10 minutes apiece. The meeting will be held at the Post Office Building, 1823 Stout, Room 269, from 8:30 a.m. to 4:00 p.m. To reserve a time to speak, call Ms. Wanda Taunton at (303) 837-3926.

BEAVERHEAD PLAN RELEASED

The proposed land use plan and draft environmental impact statement for the Beaverhead National Forest in Montana has been released. Public meetings will be held from Feb. 22-March 3 in Ennis, Dillon, Wisdom, Butte, Missoula, Mont. and Sheridan, Wyo. For a copy write the Beaverhead National Forest, Box 1258, Dillon, Mont. 59725.

ASPEN ENERGY FORUM

The Roaring Fork Resource Center will hold its fourth annual Aspen Energy Forum in Aspen, Colo., May 27-29. Topics to be covered include passive solar architecture, solar economics, and active solar systems. For more information contact RFRC, P.O. Box 9950, Aspen, Colo. 81611.

WATER QUALITY HANDBOOK

"What are the Options?" is a handbook detailing possible solutions to water quality problems. It is designed to help citizens become involved in water quality program decisions. Free copies are available from Maria Gooch, "208" Water Quality Program, Southeastern Regional Planning and Economic Development District, 7 Barnabas Rd., Marion, MA 02738.

ENERGY — WHO'S DOING WHAT

The National Recreation and Park Association has prepared a revised edition of *Energy — Who's Doing What*, an annotated, nationwide listing of about 200 groups studying energy problems. For a free copy write: Park Project on Energy Interpretation, NRPA, 1601 N. Kent St., Arlington, Va. 22209 or call (703) 525-0606.

OUTDOOR EDUCATION

"Stalking Education in the Wild," an outdoor education workshop will be held April 29-May 1 at Sanborn Western Camps and Colorado Outdoor Education Center near Florissant, Colo. Over 250 events dealing with many aspects of the out-of-doors and education are planned for the 300 school teachers and administrators, camp leaders and naturalists who attend this annual event. For more information, write: Roger A. Sanborn, Colorado Outdoor Education Center, Florissant, Colo. 80816.

NEW SO2 STUDY

The U.S. Environmental Protection Agency is reevaluating its regulations on sulfur oxide emissions from power plants. Interested persons are invited to submit data, opinions and other information on the environmental effects of sulfur oxide to Don R. Goodwin, EPA, Office of Air Quality Standards and Engineering Division, Research Triangle Park, N.C. 27711.

Eavesdropper

environmental news from around the world



LOONEY LIMERICKS

by Zane E. Cology

Citizen Jones had withstood
All the energy bills that he could
His debts were all rising
Til he got enterprising,
And he lit up his home fires with wood.

CARROTS, NOT STICKS. U.S. Rep. Morris Udall (D-Ariz.), chairman of the House Interior Committee, is proposing another federal land use planning bill this session. This bill would provide grants to encourage state and local planning but would not include penalties for states that do not choose to participate, according to *Land Use Planning Reports*. The National Association of Property Owners, however, still opposes the bill. The group has enlisted the help of former Arizona Rep. Sam Steiger (one of the 12 congressmen named to the "Dirty Dozen" list by the Environmental Action for his poor environmental voting record). The property owners group is organizing banking, mining, farming, and ranching groups to oppose the bill.

NATIONAL FOREST GOALS

The U.S. Forest Service has initiated a new long range planning process and is seeking citizen involvement to determine land management goals in the Central Rockies and Great Plains. The new program, called "area guides" covers national forests and national grasslands in Colorado, Wyoming, South Dakota, Nebraska, Kansas, and parts of Montana. The U.S. Forest Service is seeking public opinion on wilderness, timber management, energy development and other resource issues. To participate contact U.S.D.A. Forest Service, 11177 W. 8th Ave., Lakewood, Colo. 80225 and ask for the first area guide newsletter.

TVA WANTS COAL FERTILIZER. The Tennessee Valley Authority (TVA) has asked Congress for \$7 million to design and build a demonstration plant to make ammonia for fertilizer using coal instead of natural gas as the hydrogen source. The manager of TVA's National Fertilizer Development Center in Alabama said continuing problems with natural gas supplies motivated the agency to research other resources for making ammonia.

REALTORS OPPOSE DETROIT'S

PULL. A variety of witnesses testifying on Clear Air Act amendments say they don't want to have to pay the costs of the Congress being lenient on the auto industry. Organized groups of realtors, shopping center proponents, retailers, steelworkers, and local government officials told the Senate Public Works Committee they didn't want to see strict controls on "indirect sources," such as land use and transportation controls, to make up for lax controls on auto emissions. The land use and transportation controls are intended to discourage developments that attract auto traffic. One witness said his group was "tired of compensating for Detroit's ability to get off the hook," according to *Air-Water Pollution Report*. Auto industry witnesses say they could meet the standards proposed for the Senate bill — but not this year. Sen. Edmund Muskie (D-Maine) says the committee will have the bill marked up by the end of February.



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Classifieds

HELP WANTED. Administrative secretary. Send resume to Rod Roberts, Domestic Technology Institute, P.O. Box 2043, Evergreen, Colo. 80439. Receptionist, with office skills to include typing. Interest in alternative energy desirable.

INFORMATION. Could your problem be solved by a county, state or federal agency, if you only knew which one? Call the Wyoming Information and Referral Service. We will help you contact the right persons in the right agency. Cheyenne residents may call 635-4105. All other cities, dial 1-800-442-2744. It's a free call. Either direct dial or through the operator.



Index 1974-76

Our special thanks go to Myra Connell, a retired librarian and one of the "Distaff Corner" columnists, who volunteered to compile the index. Extra copies of the index are available for 50 cents. We have only a limited number of back issues, but if you want one, send 50 cents and we'll try to find it.

1974

ALASKA — PIPELINE

"Alaska pipeline oil may go to Japan," Dec. 20, 1974, p. 12. As predicted by conservationists who fought pipeline, North Slope oil likely to be marketed to Japan.

"Soviets doubt pipeline success," Jan. 4, 1974, p. 10. Soviet scientists say pipeline in arctic presents dangerous and unprecedented difficulties.

"Town regrets pipeline praise," reprinted from Fairbanks All-American, Oct. 11, 1974, p. 3. Conditions in Fairbanks had since start of pipeline.

"Last untouched frontier: the fight for Alaska," July 19, 1974, p. 7. Review of article from "Audubon Magazine" on conflicts in Alaska between conservationists and developers.

"Morton opens up Alaska (logging, mining, damming)," by Roger Mellem, Jan. 4, 1974, p. 12. Criticism of Morton's plans to allot 20 million acres of Alaska to U.S. Forest. Also, plans for National parks in Alaska.

ALCOHOL (as energy source)
"Alcohol as fuel," from Earth News, Feb. 15, 1974, p. 10.

APACHE NAT'L FOREST (Arizona, New Mexico)

"Escudilla — revered and threatened, so rich a solitude," by Ernest L. Youens, Sept. 13, 1974, p. 1. Controversy re: Watts timber sale.

BEARS — GRIZZLY

"Are the grizzlies endangered?" Feb. 15, 1974, p. 10. Difference of opinions re: number of bears, management, hunting regulations.
"Grizzly, go home!" by R.C. Burkholder, Mar. 15, 1974, p. 4. Humorous story showing plight of grizzly bears in face of encroaching human species.

"Reckoning from Washington," by Lee Catterall, Aug. 30, 1974, p. 10. Results of study by National Academy of Sciences of grizzly bear in Yellowstone.

BEARS — GRIZZLY — PHOTOGRAPHS
Sept. 13, 1974, p. 13. Fund for Animals organization seeks to stop all killing of grizzly bears in Yellowstone.

BELL, THOMAS A.

"Wyomingites win awards," July 5, 1974, p. 14. Tom Bell and Margaret Murie win citations for conservation services.

BIGHORN CANYON TRANSPARK ROAD
Photo by Lynne Bama, Sept. 27, 1974, p. 13. Road given go-ahead; Montana conservationists seek to halt construction by court injunction.

BLM

"BLM tightens controls," Feb. 15, 1974, p. 12. BLM initiating program to prevent environmental damage by oil and gas leases.

"Nevada report may change the West, BLM exposes own grazing abuses," by Bruce Hamilton, Nov. 8, 1974, p. 1. Special report of task force indicts BLM of poor management of grazing lands.

"Reckoning from Washington," by Lee Catterall, Apr. 26, 1974, p. 10. Program of fencing and reservoir building on BLM land in order to counteract overgrazing criticized.

BOOK REVIEWS

American Habitat, by Rosenkrantz, B.G. & Koelsch, W.A., Eds., review by Peter Wild, Oct. 11, 1974, p. 15. Attempt to show effect on environment of social, economic and political events in America from colonial times to present.

Best About Backpacking, by Van Lear, Denise, Ed., review by Peter Wild, Dec. 20, 1974, p. 15. Sierra Club adds book to Totebooks. "Backpacking is a state of mind."

Cache Trails, by Mel Davis & Ann Schimpf, review by Anne Turner, Oct. 11, 1974, p. 15. Guide book to Cache Valley area, Utah.

Challenge Your Local Electric Utility, by R. Morgan & Sandra Jerabek, review by Peter Wild, Nov. 8, 1974, p. 15. Supplies information and documentation needed for fighting abuses of power companies.

Citizen Action Guide to Energy Conservation, U.S. Government Printing Office, review by Marge Higley, Jan. 4, 1974, p. 15. What an individual can do to conserve energy.

Clear Creek Bike Book, by Hal Aigner, et al., review by Peter Wild, Aug. 30, 1974, p. 15. Bicycle as conservationist measure, pleasurable experience, extension of self.

The Curve of Binding Energy, by John McPhee, Apr. 12, 1974, p. 15. Biography of Ted Taylor, and his obsession with sabotage possibility of nuclear material.

The Forest and the Sea, by Marston Bates, Mar. 1, 1974, p. 15. Author Bates uses rain forest and sea to show relationship of living things to environment.

Only One Earth, by Barbara Ward & Rene Dubos, Mar. 1, 1974, p. 15. Ward & Dubos take look at obstacles in tending planet.

From the Land and Back, by Curtis K. Stadfeld, review by Verne Huser, May 10, 1974, p. 15. Far-reaching effects of life on the land.

Hiking in the Teton Backcountry, by Paul Lawrence, review by Verne Huser, Feb. 1, 1974, p. 14. Emphasis on trail descriptions, maps, trail information.

Hut Hopping in the Austrian Alps, by William E. Reifsnider, review by Verne Huser, Jan. 18, 1974, p. 15. Sierra Club Totebook brings insight into hiking in Europe and introduces new concept of outdoor use: concentrated use in some areas to prevent damage in other more fragile areas.

Knowing the Outdoors in the Dark, by Vinson Brown, review by Peter Wild, Aug. 2, 1974, p. 15. How to develop senses for night exploration; techniques of attracting wildlife; sixth sense.

Opportunities in Environmental Careers, by Odum Fanning, review by Peter Wild, Nov. 22, 1974, p. 15. Basic premise: the greater the problems of environment, the more need for professional environmentalists.

Topsoil and Civilization, by V. Carter & T. Dale, review by Larry Edwards, Sept. 27, 1974, p. 14. Abuse of land leads to downfall of great civilizations.

The Voice of the Desert, by Joseph Wood Krutch, review by Peter Wild, Sept. 13, 1974. Realities of desert southwest explored by author.

BRADLEY, DOROTHY
"A conservation portrait: Dorothy Bradley, legislator for the land," Aug. 2, 1974, p. 16. Representative in Montana Legislature is interviewed.

BUFFALO

"Just beautiful buffalo," Aug. 2, 1974, p. 8-9. Some historical facts about buffalo; poems by Wilbur Wood and Joe Ribar.

May 10, 1974, p. 13. Buffalo not domestic animals, cannot graze on public land; controversy told in caption.

BUREAU OF RECLAMATION — PHOTOGRAPHS

"Hurrah for the wreck-the-nation bureau," photos by Verne Huser, Steve Miller, Fran Barnes, poem by Katie Lee, June 7, 1974, p. 8-9. Critical comments on activities of Bureau of Reclamation, especially dam building.

"New wounds for old prairies," photos by Richard Madison, Mar. 1, 1974, p. 8-9. Environmental damages caused by McCloskey Canal. Quote from Dr. Glen Sherwood. Poem by Don Sondrol, Pres. McClean Co. Farmers' Union in photo captions.

CLOUD SEEDING
"Rainmakers seed the Rockies' skies," Apr. 12, 1974, p. 13. BuRec to spend \$20 million to seed clouds in 11 states.

COAL

"The hidden costs of coal," by Arnold Miller, Feb. 15, 1974, p. 1. Leader of United Mine Workers discusses democratic institutions in relation to coal industry.

"Slurry pipelines future energy movers," Jan. 18, 1974, p. 10. Transporting coal via slurry lines compared with gasifying on site. Water a big factor.

COAL DEVELOPMENT

"Arkansas investigates other end of pipeline," by George Wells, reprinted from Pine Bluff Commercial, Sept. 27, 1974, p. 6. Staff writer of Pine Bluff Commercial surveys feeling of Wyoming people re: coal slurry pipeline.

"Coal conflict on Tongue River," by Bruce Hamilton, Aug. 30, 1974, p. 1. Ranchers Cotton, Gaskill, Daniels, McKinney, et al., vs. stripmining in Decker-Birney Resource Study Area, Montana.

"Coal leased and lost," May 24, 1974, p. 10. Study by Council on Economic Priorities re: federal leasing of coal lands.

"Comprehensive coal planning? Sierra Club versus government and industry," by Lee Catterall, Feb. 1, 1974, p. 12. Sierra Club suit to force environmental impact statements in Powder River Basin.

"The crisis in energy: coal shifts to the West," by Tom Bell, July 19, 1974, p. 1. Complex aspects of strip mining, underground mining use of low-sulphur coal.

"Judge calls showdown in Montana," Apr. 12, 1974. Gov. Judge of Montana takes tough stand on state's right to make decisions re: coal development.

"Mining down on the ranch," by Bruce Hamilton, June 7, 1974, p. 15. Surface mining versus ranching interests as seen by Carolyn and Irv. Alderson, Birney, Mont.

"North Dakota's riskiest harvest," by Allan Sloan, reprinted from *Detroit Free Press*, Mar. 1, 1974, p. 1. Far-reaching effects of coal gasification plants on Dakota farms, water supply, etc.

"Reckoning from Washington," by Lee Catterall, May 10, 1974, p. 19. Quotes from Eldean Kohrs re: "Gillette Syndrome."

"Reckoning from Washington," by Lee Catterall, June 7, 1974, p. 10. Report on environmental impact statement re: leasing of federal coal lands.

"Strip it, ship it, burn it, gasify it..." Nation's eyes turn to North Dakota's coal," by Bruce Hamilton, Mar. 1, 1974, p. 6. More on environmental effects of mining lignite in N.D. following article p. 1. Quotes from Karen May, planning director Roosevelt-Custer RC and D.

"Wyoming coalfields — scene of conflict," Apr. 12, 1974, p. 4. Need for comprehensive regional planning pointed out by environmental groups in court cases that were overruled by judge.

"Sary coal leases void?" July 19, 1974, p. 11. Indians and ranchers fight Westmoreland Resources strip mining operations in Sary Creek Basin, photo caption.

CONGRESS — U.S. (candidates for election)

"Wyoming candidates speak out," Oct. 11, 1974, p. 6. Interviews on the issues with Rep. Teno Roncalio and Tom Strook.

CONNOR, JIM

"Jim Connor, forest planner and communicator, Bridger-Teton's man in the middle," by Jim Miller, Dec. 6, 1974, p. 16. Work and biographical material re: subject.

COPPER MINING — Wyo.

"Meetetse contemplates its future," by Marjane Ambler, Nov. 22, 1974, p. 1. Many aspects of impact of proposed copper mine near Meetetse.

"Ruckelshaus enters Meetetse fight," Sept. 27, 1974, p. 12. W. Ruckelshaus hired by Meetetse Preservation Council to investigate proposed copper mining activity near town; statement of group.

COSC (Colorado Open Space Council)

"The Colorado Open Space Council," Jan. 18, 1974, p. 16. Work of COSC, Marilyn Miller and Jim Monaghan.

COYOTES — PHOTOGRAPHS

April 12, 1974, p. 13. Statistics by Don Balse, Bureau of Sport, Fisheries and Wildlife, on coyote as predator, in caption.

CRANES — SANDHILL — PHOTOS

April 26, 1974, p. 13. Audubon Society dedicated wildlife sanctuary on Platte River; Bureau of Sport Fisheries and Wildlife to establish wildlife refuge downstream.

DAMS

"State to loan industry water money," July 19, 1974, p. 7. Malcolm Wallop objects to proposed loan of low interest state money to industry for Hole-in-the-Wall Dam.

"To dam a river," by Carlos David Stern, Apr. 26, 1974, p. 1. Gap between preservationists and developers on advisability of damming wild rivers.

"To kill a river," by Hank Rate, April 26, 1974, p. 6. Environmental effects of dams and reservoir building.

DUNLAP, LOUISE

"Louise Dunlap and the coalition against stripmining," Apr. 26, 1974, p. 15. Biog. material and activities of subject as coordinator of coalition group against stripmining.

EAGLES — PHOTOGRAPHS Aug. 2, 1974, p. 13. Snake River Birds of Prey Natural Area in danger of being turned over to agricultural interests; explanation in caption.

ELECTRICAL GENERATING PLANTS

"In bondage to the moguls," by Phil Corathers, July 19, 1974, p. 6. Sharp criticism of utility companies in West Virginia, in editorial from *Daily Centinel*, Grafton, W.Va.

"Too much Idaho power," reprinted from Idaho Environmental Council Newsletter, Sept. 13, 1974, p. 3. Some statistics on air pollution from coal-fired electric plants.

ENDANGERED SPECIES

"On the verge of extinction," Mar. 15, 1974, p. 1. Plea by Bruce Hamilton for endangered wildlife. National Wildlife week announced.

"States aid the endangered," June 21, 1974, p. 14. Meetings held to discuss programs for fed.-state protection of threatened species.

"The whales need help," Jan. 18, 1974, p. 12. Japanese and Russians ignore international agreements to restrict whaling.

ENERGY CRISIS

"AEP: lacking in scruples," May 24, 1974, p. 3. Editorial criticizing AEP advertising against conservation of energy; excerpts from letter to AEP by Russell Peterson criticizing their policies.

"Annual household energy budget in mid-1973," Jan. 4, 1974, p. 15. Costs of various activities, e.g. water heating, in terms of percentage of energy and in dollars.

"Energy prophet M. King Hubbert," by John Heritage (Christian Science Monitor), Apr. 12, 1974, p. 5. Review of Hubbert predictions re: oil supplies; suggestion that we must learn from past experience.

"Revolution by shortage," by Ernest H. Linford, Jan. 18, 1974, p. 14. Traces various revolutionary changes that have occurred throughout history because of shortages, back to Paleolithic.

"Using the west; tri-state fossil fuels," Feb. 15, 1974, p. 15. Report on Tri-State Fossil Fuels Conference in Denver, in Jan. Quotes from speech by Brig. Gen. George A. Lincoln, Dr. Peter Metzger, Dr. Edward Teller.

ENERGY POLICIES

"Net Energy — a Concept," Mar. 29, 1974, p. 10. Sen. Hatfield expounds idea of net energy at Portland conference on energy crisis.

"Solar, wind deserve tax breaks too," by Stephen Tarver, May 24, 1974, p. 6. Advocating tax incentives for developments of solar and wind power sources.

ENVIRONMENTAL PUBLICATIONS

"Mountain eagle still screams," Sept. 27, 1974, p. 14. "Mountain Eagle" of Whitesburg, Ky., victim of sabotage but still carries on.

Review: Workbook, Dec. 6, 1974, p. 15. New magazine called *The Workbook* is a basic catalog of information for people who care about the environment, war, racism, sexism, poverty, crime.

ENVIRONMENTALISTS

"Environment a big winner at the polls," by Bruce Hamilton, Nov. 22, 1974, p. 10. 1974 election shows strong trend toward environmental protection.

"Land advocates on the ballot," Sept. 27, 1974, p. 16. Dick Lamm, Paula Ward, Ed Dobson, candidates for election in Colorado, N. Dakota, Montana.

FALCONS

"DDT linked to falcons' decline," Mar. 15, 1974, p. 12. Falcon's position at top of food chain believed reason that DDT is affecting productivity.

FAWCETT, ART

"A conservation portrait: rancher-environmentalist Art Fawcett," Oct. 11, 1974, p. 16. Biog. material and activities of Art Fawcett as chairman of Wyo. group of Sierra Club.

FLETCHER, KATHY

"EDF's Kathy Fletcher, Water suit vital to coal and agriculture," Dec. 20, 1974, p. 16. Environmental Defense Fund is in court because of organization's concern re: coal development.

FOREST FIRES

"Jackson fears forest fires," Sept. 27, 1974, p. 13. Natural fires being allowed to burn in Jackson Hole, criticized. Forester offers rationale.

"Playing with fire in the Grand Teton," Mar. 29, 1974, p. 3. Editorial by Bruce Hamilton re: man-initiated, controlled fires in forest management in National Parks, advisability of same.

"Smoky Bear era ends; rangers to restore fire in the Teton," by Lloyd L. Loope (Biologist, Teton Park), Mar. 29, 1974, p. 6. Park Service reasoning for "Fire-Vegetation Management Plan."

G.A.R. (Environmental coalition)

"Unlikely coalition forms in Aspen to oppose destruction of West," Sept. 27, 1974, p. 14. Business, ranching, and environmental groups unite in common cause.

GARRISON DIVERSION

"Garrison Diversion threatens the prairies," by Bruce Hamilton, Mar. 1, 1974, p. 10. Effect of the project on already producing farm land in North Dakota; salinization a possibility.

GEOTHERMAL ENERGY

"The geothermal alternative: earth energy," by Joan Nice, Sept. 27, 1974, p. 1. Exhaustive survey of geothermal possibilities as energy source.

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GLENWOOD CANYON HIGHWAY

"Three ways to pave a Colorado canyon," by Bruce Hamilton, Sept. 13, 1974, p. 12. Various alternatives for automobile highway through scenic canyon.

GRAND CANYON NATIONAL PARK

"Blow to the heart, congress considers canyon giveaway," Sept. 27, 1974, p. 12. Six conservation groups fight proposed giveaway of 185,000 acres of Grand Canyon Park to Havasupai tribe.

GRASSLANDS

"Prairie Revival" bringing native grasses back to pastures, backyards," by Gary Nabhan, Nov. 8, 1974, p. 6. Conservation-minded people are using native prairie grasses and plants for forage, erosion and noxious weed control, etc. in Central Grasslands.

"A working ranch without livestock," by Gary Nabhan, Nov. 22, 1974, p. 8-9. Description of Research Ranch in Arizona where experiments are going on to show results of respectful use of land.

GROUSE — SAGE — PHOTOGRAPHS

"It's strutting time," photos by Charles W. Smith, Apr. 12, 1974, p. 8-9. Description of breeding habits.

GUBERNATORIAL CANDIDATES (Wyo.)

"Wyoming gubernatorial candidates face issues," by Marjane Ambler, Oct. 25, 1974, p. 15. Dick Jones and Ed Herschler discuss main issues, especially those closely connected with environmental protection.

GULF STREAM (as energy source)

"Turning toward the infinite," Sept. 13, 1974, p. 14. Proposal to harness Atlantic Gulf Stream.

HELLS CANYON (Idaho)

"Will dams stop coal strippers?" Aug. 30, 1974, p. 8-9. Proposal to create parklands at Hells Canyon in opposition to use of Canyon in hydroelectric development. Attitude of Rep. Teno Roncalio discussed.

HIGH COUNTRY NEWS — POLICY

"Attention readers," by editors, Dec. 6, 1974, p. 2. Following letters to editors pro and con re: subscription list policy, editors state position and invite readers to apply for exemption, if they so desire.

Editors, Jan. 18, 1974, p. 6. Finances and present status of paper.

INDUSTRIAL SITING — PHOTOGRAPHS

Feb. 15, 1974, p. 11. No action in Wyoming senate on siting.

INDUSTRIAL DEVELOPMENT (Wyo.)

"Wyoming views development," Mar. 29, 1974, p. 12. John Jenkins reports on questionnaire sent to sampling of Wyoming people re: future development in Wyoming.

JIM BRIDGER POWER PLANT

"Unexpected esthetic and social impacts, Jim Bridger builders break promises," by Gowen Green, Dec. 20, 1974, p. 4. Owners of Bridger coal-fired power plant break numerous preconstruction promises, thus causing great public inconvenience.

KOEHLER, BART.

"Bart Koehler, environmental advocate," May 10, 1974, p. 16. Activities of subject as employee of both Wilderness Society and Wyoming Outdoor Council.

LAND — SALES AND DEVELOPMENT

"Has the second home peak passed? building new ghost towns," Aug. 2, 1974, p. 1. High interest rate slows down home building in Steamboat Springs.

"The last great carving up of America, squeezing out the deer, elk, antelope, and bighorn Rocky Mountain style," by David Sumner, Oct. 25, 1974, p. 3. Special issue, almost entirely taken up with effects on environment of home development in mountains, especially near Vail, Colo.

LAND USE AND PLANNING

"Montana advisors list local land use controls," Dec. 6, 1974, p. 7. EQC report emphasizes local land use controls.

"Council moves to protect land," reprinted from Montana Environmental Quality News, Jan. 18, 1974, p. 7. Montana Environmental Quality Council takes steps to protect land.

"U.S. House kills land use bill - revival needed," Mar. 15, 1974, p. 14. Causes for delays and defeats in badly needed land use bill. Readers urged to write congressmen to support HR 10294.

"The Message of Chief Seattle," by Chief Seattle, Sept. 13, 1974, p. 16. In 1854 Chief Seattle of Squamish tribe in Washington Territory expressed Indians attitudes re: land, use, ownership, etc.

"State controls on land use, Wyoming proposes land planning act," by Monty Grey, Dec. 6, 1974, p. 6. Need, proposed legislation, method of getting good land use planning.

"Udall bill makes feeble comeback; House revives U.S. land use bill," Apr. 12, 1974, p. 6. Efforts toward federal land use laws.

LILLYWHITE, MALCOLM

May 10, 1974, p. 10. Lillywhite's company, Solar Power Supply, serving as consultants to Monfort methane gas project in Colorado. Also researching solar heating and cooling, greenhouses, dryers, wind conversion, waste treatment.

LOBBYING

"Citizen lobbyists march to capitol," Jan. 4, 1974, p. 7. Regional lobbying efforts of conservation groups; how to be more effective via telephone tree.

LOF, GEORGE.

"A western portrait: George Lof, solar scientist," Mar. 29, 1974, p. 15. Work of Lof in developing solar power; predictions of future of solar power.

METHANE GAS

"It's chicken power tomorrow," by Tom Bell, June 21, 1974, p. 1. Possibilities of important energy source from organic wastes such as manure.

May 10, 1974, p. 10. Monfort of Colorado will produce 4 million cubic feet of gas per day from cattle manure.

MHD (Magnetohydrodynamics)

"MHD to offer more electricity," Dec. 20, 1974, p. 10. Recent experiments in new method of producing electricity encouraging.

MINING — PHOTOGRAPHS

"Mining the mountaintops," by Lynne Bama, Jan. 18, 1974, p. 8-9. Access roads to mining ventures in Cody area, showing environmental impact.

MITCHELL, FINIS

"Mitchell's Mountains," July 19, 1974, p. 8-9. Biography and photos of Finis Mitchell, advocate of wilderness, Boulder, Wyo. area.

MOUNTAIN SHEEP — BIGHORN

"Bighorn sheep: a precarious balance," by Joan Nice, Mar. 15, 1974, p. 8-9. Habits, behavior of species.

"The Kofa Game Range; bighorn sheep enter politics," by Neil B. Carmony, et al. Hearings re: Kofa Game Range Wilderness proposals.

May 24, 1974, p. 14. Documentary film "Bighorn," on life of species announced in captivity.

MURIE, ADOLPH

"Naturalist Adolph Murie dies," by Bruce Hamilton, Aug. 30, 1974, p. 16. Tribute to Murie; biographical material.

MURIE, MARGARET E.

"Wyomingites win awards," July 5, 1974, p. 14. Margaret Murie and Tom Bell win citations for conservation services.

NATURAL GAS — PHOTOGRAPHS

May 10, 1974, p. 11. "One of greatest ironies in West" described in caption; waste of gas in Hilight Field.

NAVAJO NATION'S ENVIRONMENTAL PROTECTION COMMISSION

"Navajos form first environmental agency," Nov. 8, 1974, p. 16. Harold Tao, director of EPC, explains organization, efforts to educate, work and objectives.

NPRC (Northern Plains Resource Council)

"Pat Sweeney and the Northern Plains Resource Council," Feb. 1, 1974, p. 15. Organization, objectives, activities of NPRC.

NUCLEAR POWER

"Everything you aren't supposed to know about nuclear power," by Jeffrey Knight, Feb. 1, 1974, p. 1. Extensive discussion of use of nuclear power, including waste disposal.

"Nuclear liability law under fire," June 7, 1974, p. 12. Discussion of Price-Anderson Act, which limits liability suits in case of nuclear power plant accidents.

NUCLEAR STIMULATION (Colo.)

"Colo. votes on nuclear stimulation," Oct. 25, 1974, p. 15. Colorado voters to vote on use of nuclear explosions in that state at Nov. 74 election.

"Nuclear v. hydraulic fracturing; water can do the job," Apr. 26, 1974, p. 10. Study by General Accounting Office (requested by Sen. McGee) compares two methods of gas recovery; list uncertainties of nuclear stimulation.

"Radioactive gas not salable," Dec. 20, 1974, p. 5. Gas from Project Rulison and Project Rio Blanco not marketable.

"Reckoning from Washington," by Lee Catterall, Feb. 1, 1974, p. 10. Comments by Roncalio on nuclear stimulation, Wagon Wheel; some other remarks.

"Roncalio opposes future blasts," Jan. 4, 1974, p. 10. Quotes from Roncalio's remarks re: proposal by Dr. Ray to use nuclear blasts to recover fossil fuels.

O'CONNOR, EGAN

"Egan O'Connor and nuclear pollution," July 5, 1974, p. 16. Citizens' battle to turn off nuclear fission.

OIL SANDS

"Oil sands mined," June 7, 1974, p. 10. Synthetic crude oil made from oil sand in Alberta Canada.

OIL SHALE

"Beginning of the End? Colony pullout of the oil shale race," by Bruce Hamilton, Oct. 11, 1974, p. 12. Colony Development, citing economic conditions as reason, announced suspension of plans to build first commercial oil shale plant.

"Confidential oil shale study reveals independence spells push for shale," Aug. 2, 1974, p. 6. Dangers of premature development of oil shale. "Oil shale fever rises in West," by Bruce Hamilton, Jan. 18, 1974, p. 1. Extensive discussion of oil shale development, impact; six tracts lands leased; highest bid over two million.

"Oil shale v. environment; the great balancing act," July 5, 1974, p. 1. Very extensive discussion of many phases of problems connected with development of oil shale.

"Post questions shale deal," Jan. 4, 1974, p. 10. Washington Post calls Utah shale deal "duplicitous."

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Dear Friends,

Laney Hicks is resigning from her post as the Sierra Club's Northern Plains representative. We'll miss her a great deal.

When we first met Laney, she was already a veteran of environmental duels. She'd developed a reputation as a tough scrapper and a sharp mind with the facts on all kinds of issues: timber cutting, energy development, clean air, and wilderness. At a time when eagle killings and other predator control issues had set ranchers and environmentalists at odds, Hicks ventured across the battle lines to try to develop a coalition on coal development issues. She viewed the ranchers as a force for preservation and was a staunch advocate of a strong agricultural economy — a position which made her controversial inside the Sierra Club as well as outside.

At the same time, she was among the club's strongest, most well-informed spokesmen on coal development. She invested much of her time researching and later defending the infamous "Sierra Club suit" on coal, which delayed coal development in the Powder River Basin for two years — to both the relief and horror of Wyoming citizens.

While working on the suit, Hicks, and other environmentalists were working behind the scenes to push for laws that would protect the state from the impending energy boom. They succeeded in helping to pass an environmental quality act.

Formerly a textbook illustrator, Hicks began her work in Wyoming in 1970 when the state sorely needed her, but didn't know it. Stan Hathaway was governor, High Country News



Laney Hicks
Photo courtesy of DENVER POST

was about to collapse from lack of funds, and the only daily newspaper with statewide circulation, the Casper Star-Tribune, had nothing better to do than write editorials and "news" stories complaining about Laney Hicks. Issues were sometimes mentioned in these diatribes, but their main focus was on personality. Attempting to pierce through the armor of Laney Hicks seemed to be one of their favorite pastimes. She was a highly visible scapegoat, there to receive the criticism inspired by any environmental activism in the state.

Hicks refused to temper her position in response to these attacks. At times she was forced to play the school mistress role; she warned people of the consequences of helter-skelter growth and appeared to be spoiling the fun. At times even colleagues in the environmental movement tried to keep their distance from Hicks, thinking it would help them preserve their popularity with the people, which made her job even lonelier.

In light of her reputation, we were surprised when we met her in 1973 and found a petite, quiet person. We immediately sensed the strength it must have taken for her to develop the crustiness that armored her in battle, that protected her from the hostilities of a state in adolescence, entranced

with the thrills of rapid change.

Her battling skills, while extremely effective, didn't come easily. When she began, she tells us, she could barely find the courage to get up before a group of people and give a talk.

"Her job created the image of a tough, cold person. But underneath that is a very gentle, sensitive person. No one could ask for a stronger or more understanding friend," says Pam Rich, who worked as Hicks's assistant.

Rich still expresses amazement and delight at her first assignment when she took on the Sierra Club's number two job in the region. Hicks was on a short trip, but she had left a note: "Could you please feed the chickadees?"

That is the other side of Hicks. Sensitive, sympathetic, a lover of small creatures, an artist. She hopes to return to a quieter life and her art work now. It must have been this sensitive side that made her care so much about Wyoming — that forced her to learn how to be ruthless with the facts.

It's not often we find someone with the sensitivity of an artist who can also be a strong crusader and withstand the rigors of the political arena. Hicks has somehow mustered the intelligence and courage to be both.

We owe her thanks. She has put up a gallant fight. —the editors

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OWLS — GREAT HORNEDED

"Tiger of the woods," Mar. 15, 1974, p. 16. Habits and behavior of species; important ecological role.

PELICANS

"Salt Lake shelters pelicans," by Dr. Florence Krall, May 24, 1974, p. 14. White pelicans of Gurnison Island in Great Salt Lake.

PERRY, CHUCK

"A conservation portrait: Chuck Perry, watchdog over coal harvest," Mar. 1, 1974, p. 16. Leader of fight in North Dakota against strip mining bread basket.

PESTICIDES

"DDT ban broken for moths," Mar. 15, 1974, p. 13. EPA to allow DDT in Idaho, Washington, Oregon against tussock moth, pea leaf weevil.

PETERSEN, LESLIE

"A conservation portrait: Leslie Petersen, WEI President," Apr. 12, 1974, p. 16. Biographical material and activities of subject.

POISONS

"M-44 poisoners back on land," June 21, 1974, p. 14. Secretary of Interior authorizes use of M-44 for emergency measure.

"Pressure mounts to bring back poisons," Feb. 15, 1974, p. 13. Various efforts to reestablish poisons as predator control in western states, including Wyoming.

POLLUTION — AIR

"Groups oppose undermining Clean Air Act," Apr. 12, 1974, p. 12. Six largest environmental organizations launch coordinated effort against those who would allow deterioration of clean air, including Nixon Administration.

"Clean air receives blow," Aug. 30, 1974, p. 10. Draft regulations of EPA would pass responsibility for regulations back to states.

"High sulfur fuel may cause deaths," Jan. 18, 1974, p. 15. Draft effects predicted if high sulfur fuels are used in L.A. area.

"Invisible poison — sulfur dioxide," by Joan Nice, Nov. 22, 1974, p. 6. Scope of problem of SO₂ as air pollutant; discussion of scrubbers; conclusion: large scale development of western coals to reduce pollution cannot be justified.

"Is Wyoming ready for Space Age?" June 21, 1974, p. 3. Problem with garbage in Cheyenne.

"Kennecott says tall stacks will clean Utah's air," Dec. 20, 1974, p. 7. Dispute between EPA and Kennecott over claim that taller stack will meet air standards.

"Lead kills Kellogg animals," Sept. 27, 1974, p. 13. Pollution problems caused by lead smelter in Kellogg, Idaho.

John R. Quarles, Jan. 18, 1974, p. 3. Emission control devices increase gasoline consumption of large cars more than of small cars; other factors in gasoline mileage.

"Wyoming holds hearings on sulfur dioxide regs, utilities and air advocates clash," by Joan Nice, Dec. 20, 1974, p. 6. Hearings held in Cheyenne on state's proposed sulfur dioxide regulations.

POLLUTION — SOLID WASTE

"Bottle bill is promoted," July 19, 1974, p. 10. Group called "Environmental Action" pushes for Federal Bottle Bill similar to Oregon bill.

"Living filter treats sewage," by Gregory Paul Capito, Apr. 12, 1974, p. 5. Amazing results of experiment at Penn. State Univ. of using vegetation to filter sewage.

POPULATION CONTROL

"Population — a perplexing problem," by H. Curtis Wood, M.D., Aug. 30, 1974, p. 12. Summary of population control problems.

POSEWITZ, JAMES A.

"Planning aids wildlife," May 24, 1974, p. 12. Award winner advocates planning to protect wildlife.

POWDER RIVER BASIN (Hearing)

"Moral: don't expect an answer," July 12, 1974, p. 12. Laney Hicks, Sierra Club rep. asked crucial questions at hearing on draft environmental statement re: coal development in basin; received indefinite answers.

"Reckoning from Washington," by Lee Catterall, Mar. 29, 1974, p. 10. Timetable that government has proposed for arriving at judgment on coal development.

PUBLIC LANDS

"Public land threat imminent," Sept. 27, 1974, p. 12. Details of H.R. 16676, "BLM Organic Act," and protest by Coalition to Protect Public Lands.

"Try writing on kenaf," Jan. 18, 1974, p. 15. Dr. Killinger working with plant called kenaf to use as substitute for paper.

RADIOACTIVE WASTE

"Egan O'Connor and nuclear pollution," July 5, 1974, p. 16. Citizens battle to turn off nuclear fission.

"Radiation in the Rockies," by Joan Nice, Feb. 1, 1974, p. 5. Extensive discussion problems of disposal of waste from nuclear usage.

RANCHING AND RANCH LIFE

"Wide open spaces in trouble, ranching industry on the rocks," by Bob Child, Dec. 6, 1974, p. 1. Ranchers' many problems trying to make ranching financially rewarding: high costs, low prices, land prices, water, predators, taxes, etc.

"RANCHING AND RANCH LIFE — PAINTINGS (Reproductions)"

Jim Bama, Dec. 6, 1974, p. 8-9. Photos of paintings by Jim Bama of Cody. Sketch about artist and wife.

RECLAMATION

"Rehabilitation of western coal lands, National Academy of Sciences Report," June 21, 1974, p. 12. Summary of report to Energy Policy Project of Ford Foundation.

RECYCLING

"Confessions of a recycler," by Phil Benson, Sept. 13, 1974, p. 7. Pointing out some major problems of recycling.

REERIO (Regional Environmental Education Research Improvement Organization)

"Reerio," July 5, 1974, p. 15. Work and activity of Reerio.

ROCKY MT. NAT'L PARK WILDERNESS PROPOSAL

Jan. 4, 1974, p. 13. Description of Master Plan and Wilderness proposal for Rocky Mt. Park, announcement of hearings on both.

SAGEBRUSH

"Spare that sagebrush," Jan. 4, 1974, p. 14. Idaho Fish and Game Dept. and studies in Washington state point out benefits of sage.

SAGEBRUSH — PHOTOS

"Sagebrush invades western grasslands," Larry Edwards, Nov. 8, 1974, p. 8-9. Erosion sets in following over-grazing and invasion by sagebrush. Explanation in accompanying short article.

SAND DUNES — PHOTOGRAPHS (Idaho)

"St. Anthony dune patterns," by Barbara B. Brown, Sept. 27, 1974, p. 8-9. Photos of dunes under BLM management in Idaho.

SHELL CANYON — PHOTOGRAPHS

"Shell Canyon," by Marge Higley, Feb. 1, 1974, p. 8-9. Small creek carved large canyon.

SILL, RICHARD

"A conservation portrait: Richard Sill and Pyramid Lake," by Thomas Michael Baugh, July 19, 1974, p. 15. Biog. material and activities of subject.

SOCIAL IMPACT

"Putting a price on Wyoming," by Gail O'Haver, reprinted from Union Farmer, July 19, 1974, p. 14. Values and lifestyles in Wyoming could be overcome by coal development.

"Another cover-up?" July 19, 1974, p. 3. Editorial, pointing out that predictions of "boom town" conditions is coming to pass.

"Energy boom — plans and payments," by Joan Nice, June 7, 1974, p. 1. Impact of population increase on schools, housing supply, hospital and sanitation facilities, transportation, social conditions in boom towns, Rock Springs, Gillette, Hanna, Colstrip and Lame Deer.

SOLAR ENERGY

"Heat and power from the sun, harnessing limitless energy," by Joan Nice, Mar. 29, 1974, p. 1. Progress in harnessing solar energy.

"Heating, cooling and conservation; solar energy emerges," by Joan Nice, May 10, 1974, p. 10. Report of meeting in Denver on solar heating and cooling, and energy conservation which brought 400 scientists and others together.

"Lost — a chance to be different," Apr. 26, 1974, p. 8-9. Artists' concepts of three designs for Wyoming Governor's mansion, including 1) the design by Corbett and Dehnert for solar heated type; 2) the design which committee accepted; and 3) far-out design by BQ. Anonymous.

"Not so exotic solar power for the seventies," by Egan O'Connor, Jan. 4, 1974, p. 1. Possibilities for solar power to replace other sources in near future. Public urged to insist upon development of solar power.

"The solar media," Jan. 4, 1974, p. 16. List of possibilities for using solar energy; where to send for information.

"Solar power reaches park service," Nov. 22, 1974, p. 11. New visitor center of Nat'l Park Service near Lovell to be heated and cooled by solar energy.

SOLAR ENERGY — PHOTOGRAPHS

"Solar power works! why wait?" Jan. 4, 1974, p. 8-9. Explanations of devices in use at Zamez, Albuquerque, N.M.

"Fort Collins home heated and cooled by power from sun," Aug. 2, 1974, p. 11. Solar house described in caption.

"Solar powered history," by Martin Marietta, U.S. Navy, Smithsonian, Mar. 29, 1974, p. 8-9. Solar power beginning 1878; explanations in photo captions.

STATE PARKS (Nevada) — Photographs

"Ichthyosaurs-dwellers of the desert sea," by Thomas M. Baugh, Sept. 13, 1974, p. 8-9. Photos and historical data re: Ichthyosaur Paleontologic State Monument.

STREAMS — POEMS

"Sing louder brook," by Hans Kleiber, May 10, 1974, p. 8-9. Poem is caption to several photos of streams and falls.

STRIP MINING (Northern Cheyenne Reservation)

"Cheyenne fight again for land," by Marjane Ambler, Oct. 11, 1974, p. 1. Northern Cheyenne tribe fights to prevent full scale coal development which would threaten their existence.

STRIP MINING

"Farmers question striping," Jan. 4, 1974, p. 7. Farmers' Union concerned re: advisability of strip mining farm land for coal.

"Federal strip mining bill action expected next week," by Benfield and Catterall, Nov. 8, 1974, p. 10. House-Senate Conference Committee debates strip mining legislation, especially on lands with split ownership.

"Landowners get consent provision in strip bill," Dec. 6, 1974, p. 10. Most recent developments in Federal strip mining legislation.

"Legislative tomfoolery: delays run from mining bill," by Lee Catterall, Apr. 12, 1974, p. 10. Lack of progress in getting strip mining bill.

"Reckoning from Washington," by Lee Catterall, Mar. 15, 1974, p. 10. Report on status of strip mining legislation.

"Reckoning from Washington," by Lee Catterall, Aug. 2, 1974, p. 10. Report on progress of strip mining legislation.

"Strip mine bill supported by new voices before veto announcement," Dec. 20, 1974, p. 10. Casper Star-Tribune and Deseret News support strip mining bill.

"Strip mining and the rules committee," by Lee Catterall, Aug. 2, 1974, p. 10. Hearing by rules committee of House of Representatives on Udall-Mink strip mining bill.

"Striping bill filled with loopholes," by Rep. Ken Hechler, May 24, 1974, p. 12. Progress of strip mining legislation in Congress.

"Victory for people and land," Aug. 2, 1974, p. 3. Editorial re: strip mining bill in Congress.

Apr. 26, 1974, p. 11. Effect of winds on strip mined land.

STRIP MINING — RECLAMATION

"Energy and great plains," Jan. 18, 1974, p. 11. Several short articles on strip mining and energy related topics including one on proposed federal strip mine in Montana where AEC plans to demonstrate reclamation.

TIMBERING

"STRETCH saves timber resources," Apr. 12, 1974, p. 5. Project STRETCH, (U.S. Forest Products Lab, Madison, Wis.) shows how great savings of wood can be made by greater utilization at logging site and sawmill.

"Timber sale ruled illegal; forest service reduces cut," Mar. 15, 1974, p. 6. Federal Court ordered Forest Service to reduce sales 1 billion b.f. Also, in suit brought by Sierra Club, Natural Resources Defense Council and Wilderness Society, Judge Waddy ruled Forest Service must prepare EIS.

TIMBERING — PHOTOGRAPHS

Aug. 30, 1974, p. 13. Review of controversial timber sale in Moccasin Basin near Jackson Hole, Wyo.

TWO FORKS DAM (Colorado)

"Governor advocates slow growth, Denver's Two Forks Dam," July 5, 1974, p. 12. Controversy re: dam near Denver.

UNCOMPAHGRE & WILSON MTS. WILDERNESS PROPOSAL

Jan. 18, 1974, p. 13. Numerous groups endorse citizens proposal re: Primitive Areas near Ouray and Grand Junction.

UPPER GREEN RIVER — PHOTOGRAPHS

Feb. 1, 1974, p. 13. Roncalio against inclusion of Upper Green in Wild River System.

WATER

"Energy demand threatens water," June 7, 1974, p. 12. Federal take-over of all water rights seen as possibility.

"North Dakota guards water," June 21, 1974, p. 6. Moratorium on water usage in effect, through conditional moratorium on coal development.

"Water dictates western future," by Tom Bell, May 10, 1974, p. 1. Crucial role of water in development of west and in agriculture and all other uses.

June 7, 1974, p. 11. Stock water tank near coal seam. Discussion of surface mining on aquifers in caption.

WATERFOWL — HABITAT — PHOTOS

Photo by Tom Baugh, Oct. 11, 1974, p. 13. Facts on loss of waterfowl habitat in photo caption.

WHITE CANE HIKERS

"Colorado's white cane hikers," by Ruth S. McKown, May 10, 1974, p. 14. Blind benefit from hiking if accompanied by person with sight.

WILD AND SCENIC RIVERS — PHOTOS

Nov. 22, 1974, p. 13. Omnibus Wild Rivers bill passes House. Some Wyoming rivers included. Roncalio originally in favor of inclusion of Green, but changed mind. Hansen against inclusion of Wyoming rivers.

WILD HORSES AND BURROS

"Invalid claims on wild horses," by Velma B. Johnston, Mar. 15, 1974, p. 10. Livestock interests using invalid claims to clear ranges of as many wild horses as possible.

Dec. 20, 1974, p. 13. Status of damage suit re: wild horse roundup in Idaho, in caption.

WILDERNESS

"America's wilderness: a chance to decide," by Tom Bell, Feb. 2, 1974, p. 1. Reviews of Multiple Use, Wilderness Acts, Environmentalists v. Forest Service in wilderness fight.

"Deletions anger conservationists, President Ford reveals wilderness proposal," Dec. 20, 1974, p. 12. President Ford's 10th report on wilderness proposes deletions that displease conservationists.

"Mitchell's Mountains," July 19, 1974, p. 8-9. Biography and photos of Finis Mitchell, advocating wilderness.

"(Emigrant, Agua Tibia, Mission Mt.) New tack taken on Colorado Wilderness," Aug. 2, 1974, p. 12. Maneuver in Congress to get wilderness bills passed.

WILDLIFE

"Nongame legislation: protecting the unhunted," by Bruce Hamilton, Mar. 15, 1974, p. 15. Endangered species harmed more by indifference than by purposeful intent.

"Wilderness in the wildlife refuges — a national treasure," June 21, 1974, p. 8-9. Wilderness proposals for Red Rock Lakes, Snake River Islands, Valentine, Desert, Unimak, Kenai National Refuges.

"A pen in the wild," by Carol Snow, Oct. 11, 1974, p. 8-9. Notes about artist and examples of wildlife drawings.

WIND POWER

"Eastern island chooses wind over oil power," Aug. 2, 1974, p. 12. Six big windmills being built to supply power for Block Island.

"Hans Meyer and windworks," by Bruce Hamilton, June 21, 1974, p. 15. Meyer and group research, develop, and design prototype windmills.

"Heronethus, windmill captain," by Bruce Hamilton, May 24, 1974, p. 15. Advantages of developing wind power explained by civil engineering professor.

"Return of the windmill," by Wilson Clark, reprinted from Smithsonian Magazine, May 24, 1974, p. 1. Developments in use of wind power.

"Wind power catalog," May 24, 1974, p. 8-9. Digest of recent developments in wind power, sources of more information.

WOLVES

"Howls used to find wolves," May 10, 1974, p. 13. Recorded howls of eastern wolves used to try to locate scarce wolves in Yellowstone Park and Shoshone Forest.

"Myth-made management; North American wolves," Mar. 15, 1974, p. 7. Mythical fears of wolves added to efforts to eradicate them. Man's approach to wolves called irrational. Adolph Murie's book "Wolves of Mt. McKinley" points out important ecological role of wolves.

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AIRPORTS (Jackson Hole)

"Battle over Teton airport still rages," Bruce Hamilton, Oct. 24, 1975, p.1. Developments now underway will undermine transportation study.

ALASKA

"Murie tours Alaska wilds for Park Service," Matt Soyester, Reprinted from Jackson Hole News, Aug. 29, 1975, p. 14. Murie reports on 28 proposed park, monument, forest, wild river, etc. areas in Alaska.

"Report from Alaska," Greg Capito, Aug. 29, 1975. EIS on Gulf of Alaska released; musk ox season set.

"Report from Alaska," Greg Capito, Sept. 12, 1975. Environmental offense along pipeline and on North Slope reported by workers

ALASKA — PIPELINE (Impact)

"Big dollars destined to leave mark on Alaska," Marjane Ambler, Oct. 10, 1975. Economic impact of pipeline project.

ALASKA — PIPELINE — PHOTOS

"Thirty-five Cent Coffee," March 28, 1975. Impact of pipeline on Alaska, in photo caption.

ALCOHOL (methanol) (as energy source)

"Wood Alcohol to Warm Maine" "Powerful spirits from diseased spruce," Phyllis Austin (reprinted from Maine Times), Mar. 28, 1975. Crash program for building plant to produce wood alcohol for fuel.

ASPEN — PHOTOS

"Quakers: harbingers of winter," Sarah Doll, Oct. 24, 1975. Characteristics of aspen in photo caption, quotes from E. Hemingway and Ann Zwinger.

BADLANDS WILDERNESS PROPOSAL

"Badlands wilderness proposed," Dec. 19, 1975. Probably South Dakota's only chance to have a wilderness.

BEARS — BLACK (Yellowstone)

"Where are the Bears?" Glen Cole, Oct. 10, 1975. In reply to inquiry re: bears in letters to editor, Cole gives stat. on Yellowstone black bears.

BEARS — GRIZZLY — PHOTOS

Aug. 29, 1975. Present status of grizzlies in caption.

BEAVER

"Nature's Corps of Engineers," Sarah Doll, Sept. 12, 1975. Beaver help build the earth, habits, behavior and present status of beaver.

BIG HORN CANYON — PHOTOS

"KTWO, Friends of Earth Clash over Canyon," Feb. 28, 1975. Pro and con re: proposed highway from Lovell, Wyo., to Fort Smith, Mont., thru Big Horn Canyon Recreation Area.

BIRDS OF PREY

"Birds of Prey fanciers parley," Bruce Hamilton, Dec. 19, 1975. Report of meeting of Raptor Research Foundation at Boise, Nov. 1975.

BIRDS OF PREY NAT. AREA (Idaho)

"Idaho desert entry threatens squirrels, birds of prey area," Oct. 24, 1975. Development of 20,000 A. of desert land near Nat. area would be detriment to raptors.

BIRDS — PRINTS

Paul Breeden Prints, Nov. 7, 1975. Description of black and white prints by artist Breeden, available at HCN, notes re: "The Singing Sparrow" gallery, environmentally oriented art gallery.

BLM

"BLM study on grazing scrutinized," Oct. 10, 1975. First of 212 impact statements closely watched.

"BLM tackles mammoth planning responsibilities," Oct. 24, 1975. Bruhaker, Lander area manager of BLM and other BLM personnel explain system of management planning for millions of acres of public lands.

"BLM Grazing Foes Reach Agreement," July 4, 1975. Local EIS to be prepared for 15 million acre public lands in 11 states.

BOOK REVIEWS

"American Indian Food and Lore, 100 authentic recipes, Carolyn Niethammer, by Gary Nabhan, Apr. 25, 1975. Focus on more arid lands of southwestern North America.

"A Better Place to Be, Carol Euston, by Peter Wild, Dec. 19, 1975. New approach to environmental studies for third thru eighth grade classroom.

"The Big Woods, Ellis Lucia, by Peter Wild. Changes in attitudes and technology in forests of Northwest. Social and political history contained in logging camps. Contrast between brutalized existence of logger and luxurious life of timber baron. Lack of understanding of environmentalists.

Ecotopia, Ernest Callenbach, by Michael Jakubcin, Mar. 14, 1975. Fictional account of visit to Ecotopia in 1999.

Environmental Pollution in Montana, Robert Bigart, Ed. by Peter Wild, May 23, 1975. Series of essays designed to help layman assess state's environmental condition.

Fieldbook of Nature Photography, Patricia Maye, by Lynne Bama, Jan. 17, 1975. Leading features of notebook of photography by Sierra Club.

Foxfire 3, Elliot Wigginton, Ed., by Peter Wild, Dec. 19, 1975. How-to compendium of rural, non-technological arts.

Gifford Pinchot, M. Nelson McGeary, by Peter Wild, July 14, 1975. Pinchot pointed out as pioneer in environmental movement and in establishment of Nat'l Forests.

God's Dog, Hope Ryden, by David Summer, Aug. 29, 1975. Attempts to meet the predator controversy head on.

Grass Land, Jim, Alice and Steve Wilson, by Marjane Ambler, Jan. 17, 1975. Values of grass, historically, economically, environmentally.

Great Sand Dunes, Steven A. Trimble, by Gary Nabhan, July 18, 1975. Park naturalist Trimble sees sand dunes as "island of hope."

Kuksu: Journal of Backcountry Writing, Dale Pendell, Ed., by Gary Nabhan, Aug. 29, 1975. Quality outlet for yon-land writers.

The Lands No One Knows, T. H. Watkins and Charles S. Watson, by Peter Wild, Oct. 24, 1975. History of the public lands; more than one nation has collapsed via abuse of land.

The Lives of a Cell, Lewis Thomas, by Peter Wild, Jan. 17, 1975. Man's relationship to complex life processes of the planet.

Making the Adobe Brick, Eugene H. Boudreau, Sud Walls, Roger L. Welch, by Peter Wild, March 28, 1975. Rediscovery of traditional building materials.

Modern Poetry of Western America, Clinton Larsen and William Stafford, Eds., by Gary Nabhan, Aug. 29, 1975. An attempt to round up some of best poets of western states.

The Monkey Wrench Gang, Edward Abbey, by Peter Wild, Oct. 10, 1975. Novel explores environmental sabotage in the Southwest.

Organic Gardening in Montana, Sandra Perrin, et al., Mar. 14, 1975. A \$1.00 guide to successful gardening in Montana.

The Outmost House, Henry Beston, by Peter Wild, Feb. 28, 1975. For a year, a lone man comes to gripe with the natural world on the outer beach of Cape Cod.

Power over People, Louise B. Young, by Peter Wild, July 18, 1975. Battle of residents of Ohio against high voltage transmission lines. Environmental dangers in same.

Practical Building of Methane Power Plants for Rural Energy Independence, John Fry, by Tom Bell, June 20, 1975. One of most definitive works on this developing technology.

The Regency Guide to Ski Touring, Sven Wik and David Summer, by August Daller, Feb. 14, 1975. Details of cross country skiing. Photos from book.

River Running, Verne Huser, by Peter Wild, Nov. 21, 1975. Complete and fully illustrated guide to running rivers by a professional guide.

Rocky Mountains, D. Muench and D. Summer, by C. H. Nations, Nov. 7, 1975. Rockies captured on film.

Run, River, Run, Ann Zwinger, by Joan Nice, June 20, 1975. Experiences of a naturalist as she explores the Green River.

Should trees have standing? Toward legal rights for natural objects, Christopher D. Stone, by Peter Wild, Dec. 5, 1975. Law professor Stone maintains that natural objects have legal rights; dissenting opinion in Supreme Court by Douglas agrees.

Small is Beautiful, E. F. Schumacher, by Peter Wild, Apr. 25, 1975. Refutes false but persistent idea that worth increases with quantity.

To Possess the Land, Frank Waters, by Peter Wild, July 4, 1975. Mystery story a plea for adequate laws to control land swindlers.

The Uneasy Chair, Wallace Stegner, by Peter Wild, Jan. 31, 1975. Biography of writer of western history and conservationist.

Voices from the mountains, Guy and Candy Carawan, Eds., by Lynne Bama, July 14, 1975. The course of industrialization in Appalachian states, and attempt of the people to keep old culture from giving way to the new.

Whitewater Rafting, William McGinnis, by Ann Zwinger, Nov. 21, 1975. Encyclopedic approach to subject with great detail.

Whole Earth Epilog, Penguin Books, review by Peter Wild, Apr. 11, 1975. Where to buy things helpful to living in harmony with the earth.

A Time to Choose, by the Energy Policy Project of the Ford Foundation, Apr. 11, 1975. An attempt to identify the nation's energy policy choices.

Wilderness Areas of North America, Ann and Myron Sutton, by C. H. Nations, Aug. 29, 1975. 500 options for wilderness lovers from Arctic to Central America, west to east coasts.

Wind River Trails, Finis Mitchell, June 6, 1975. Mitchell's personal advice about mountains he knows; less history and climbing info than Bonney's guide.

BUREAU OF RECLAMATION

"BuRec charged with multi-million dollar flim-flam," Dec. 5, 1975. Cost of three projects attacked by General Accounting Office.

BURK, DALE

"Preserving Montana as a State of Mind, Burk at Work," Jan. 3, 1975. Dale Burk's work as reporter for the Missoulian in Montana.

BURLINGTON DAM PROJECT (North Dakota)

"Ducks, farmers, dams conflict in N.D.," by Paula Ward (Friends of Earth), Sept. 12, 1975. Conflicting interests on Souris River.

BURLINGTON NORTHERN RAILROAD

"Who is Burlington Northern?," Nov. 7, 1975. Center for the Public Interest to study BN corporation.

CCCs (Civilian Conservation Corps)

"High Country," by Tom Bell, Nov. 21, 1975. Tom advocates return of pre-World War II CCCs.

COAL

"East, West leaders ignore Eastern coal," Dec. 5, 1975. Leaders, both east and west, do not know that billions of tons of low sulfur coal exist in Appalachia.

COAL DEVELOPMENT

"Arco wants west opened up. A producers view," Atlantic Richfield, Sept. 12, 1975. Favors development of western coal for reasons stated. "Concentrate coal development and problems," by Russell Boulding, Sept. 12, 1975. Discussion of sulfur content; suggests concentration of development.

"Does the nation need Western Coal?," "Myths characterize debate," Sept. 12, 1975. HCN presents three perspectives on opening coal reserves, in this issue.

"Eastern low sulfur coal supply plentiful Western sacrifice not necessary, expert says," Sept. 26, 1975. Not true that low sulfur coal not available in east.

"Governor Herschler enters Sierra-Interior coal battle; out-of-court compromise proposed," Joan Nice, Nov. 7, 1975. Review of Sierra Club EIS suit; Herschler's proposed compromise.

COAL DEVELOPMENT (Montana)

"Health board nods to units 3 & 4," Dec. 5, 1975. Decision on Colstrip 3 & 4 may set future policies.

"How to get water to Gillette," Nov. 7, 1975. Various sources of water for 16 coal processing plants proposed for basin. Comparison of the various proposed sources.

"Industry secrecy shrouds issue," by Robert R. Curry, Sierra Club research office, Sept. 12, 1975. Claims data inadequate or conflicting.

"Interior Regulations would change Leasing Policies," Apr. 25, 1975. Changes in leasing being considered.

"Northern Plains Coal Suit Most Important Battle Ground," by Lee Catterall, July 4, 1975. Legal battle re: regional EIS; suit brought by battle over regional EIS.

"Northern Great Plains Report: Preview of Disaster," by Marjane Ambler, Jan. 3, 1975. Review of impact of coal development.

"NPRC opposes leasing without regs," Nov. 21, 1975. NPRC calls for strip mining legislation to accompany coal leasing legislation.

"Powder River Council rides herd on coal," Nov. 21, 1975. History and activities of PRBRC; special notice of coordinator Lynn Dickey.

"Reckoning from Washington," by Lee Catterall, Sept. 12, 1975. Review of Sierra Club suit re: regional impact statement; present status of same.

"Western Governors' Regional Energy Policy Office Resolution," Nov. 7, 1975. Formal statement of Governors' stand on Sierra Club v. Morton suit.

"Westmoreland loses suit; implications far-reaching," July 18, 1975. Important decision by 9th Circuit Court of Appeals in suit of Friends of Earth vs. Westmoreland.

"Who Profits from our Coal?" "Bargain basement resource sales," by Russell Boulding, Apr. 25, 1975. Mismanagement of public coal by U.S. Dept. of Interior.

COAL DEVELOPMENT — PHOTOS

"Environmentalists Win Battle for Regional Statement," June 20, 1975. Captions outline battle over regional EIC.

COAL SLURRY PIPELINE

"Reckoning from Washington," by Lee Catterall, Oct. 24, 1975. Report on coal slurry legislation.

"Wyo. and Ark. Linked by Energy Problems," Reprinted from Arkansas Gazette, Dec. 26, 1974, Jan. 17, 1975. Discussion of the pipeline issue.

COYOTES

"Nat Reed: 'Stop Using Coyotes as Scapegoat'," June 6, 1975. Coyotes and energy crisis complex and paradoxical problems, says Nat Reed's Interior.

CRANES — SANDHILL — PHOTOS

"Peabody coal vs. sandhill cranes," May 23, 1975. Showdown over a proposed road across cranes' strutting ground.

CRANES — WHOOPING

"Fostering whoopers — risky business?" by Sarah Doll, Dec. 5, 1975. Efforts to increase whooper flock by using sandhill cranes as foster parents.

CROWTHER, DICK

"Dick Crowther's Homes Promote Energy Consciousness," July 4, 1975. Architect has innovative ideas on energy conservation.

DAMS

"Dams — no boon to locals," Dec. 19, 1975. Dr. Bernard D. Shanks found no significant benefits from dams; anticipates time when dams will have to be torn down.

DOBSON, ED

"Friend of the Earth and Strip mine showman," Apr. 11, 1975. Biog notes and activities of subject; developed slide show of stripmining and related topics.

DOLORES WILD & SCENIC RIVER PROPOSAL

"Action on Dolores protection," Oct. 24, 1975. Study team sends recommendations to Congress on 106 miles of Dolores in Jan.

"Dolores River awaits protection," by Sarah Doll, Sept. 26, 1975. Study group: Colorado Dept. of Natural Resources, U.S. Bureau Outdoor Recreation, BLM, U.S. Forest Service study river's eligibility.

DOUGLAS, WILLIAM O.

"Douglas championed environmental cause," Nov. 21, 1975. Short editorial praising Douglas as Justice of Supreme Court.

EAGLES — PHOTOS

"Eagles and Power Lines," Mar. 14, 1975. Solution for hazard of electric lines when eagles perch on them, in photo caption.

EAGLES — ILLEGAL KILLING — PHOTOS

"Colorado eagle slaughter," by Bayard D. Rea, May 9, 1975. Thallium kills eagles in Colorado.

EDIBLE PLANTS

"Guide to the Wild Edibles," by David Slade and Bob Mount, Apr. 11, 1975. Descriptions, how to gather, how to use. First of a series.

"Guide to the Wild Edibles," by David Slade and Bob Mount, Apr. 25, 1975. Descriptions, how to gather, how to use. No. 2 of series.

EHRMAN, MILLIE

"Millie Ehrman steers Council on Utah Resources," by Jack McLellan, Apr. 25, 1975. Successful efforts of Ms Ehrman in establishing environmental coordinating council in Utah.

"Save-the-range lawsuit riles ranchers, BLM," by Joan Nice, Oct. 24, 1975. Review of situation re: grazing, EIS on BLM lands.

EIS (on range land)

"NRDC supports lifting range freeze, Says only 'significant actions' should wait," Dec. 19, 1975. Proposal to lift current freeze on range improvements of little 'significance'. NRDC letter to HCN re: same issue.

"NEPA at stake? Environmental suit stirs questions," by Joan Nice, Dec. 19, 1975. BLM claims hardships caused by court agreement re: impact statements.

ELECTRIC POWER (lines)

"Judge rules against eminent domain," Sept. 12, 1975. Important decision re: eminent domain.

ELECTRICAL GENERATING PLANTS

"Kaiparowits comes before the people," by Jack McLellan, Aug. 1, 1975. Devastating effect of several large coal generating plants in S.W. Plateau area.

ELECTRICAL TRANSMISSION

"Louise B. Young describes dangers of high voltage power lines," Dec. 5, 1975. Title self-explanatory.

"People want power over transmission," by Marjane Ambler, Dec. 5, 1975. Objectionable impact of high voltage transmission lines; environmentalists taking action to minimize bad effects.

ELK

"Elk, the autumn buglers," by Sarah Doll, Oct. 10, 1975. Habits, behavior, management of elk.

ENDANGERED SPECIES

"Endangered trout succeed," Sept. 12, 1975. Paiute trout breed their way off endangered list.

ENERGY CRISIS

"Colo., Mont., offer home insulation," Sept. 26, 1975. Various aids for costs of home insulation.

"Dick Crowther's Homes Promote Energy Consciousness," July 4, 1975. Architect Dick Crowther a crusader for energy conservation; uses innovative ideas in home and office building construction.

"Government seeks insulation," Oct. 10, 1975. FHA, states, city councils, architects, advocate higher standards of insulation for homes, to save fuel.

"Industrial Waste Could be Saved Throwing away Profits," July 4, 1975. Ford Foundation Energy Policy Project points out ways of eliminating waste in electrical generating and industrial plants.

"Insulation: startoff at the top," Oct. 24, 1975. Ways of insulating attics.

"Major Savings Possible at Home, The 'Great Escape,'" July 4, 1975. Specific suggestions for saving energy in homes.

"Making Cars More Energy Efficient," July 4, 1975. Ford Foundation Energy Policy Project outlines means of greater fuel economy for autos.

"Save money, energy with home insulation," Sept. 12, 1975. Facts on insulating material.

"Sealing holes around your home," Nov. 7, 1975. Frame and plastic storm windows; weatherstripping, how to install.

"Slowing Energy Growth Gives Us Time to Choose," Ford Foundation Study has a Better Idea," by Joan Nice, July 4, 1975. Summary of book *A Time to Choose: America's Energy Future*, study by Ford Foundation.

"Stopping mobile home energy waste," Nov. 21, 1975. Suggestions for insulating mobile homes.

"Citizens help write Idaho energy policy, Pot shots at Pioneer?" Dec. 5, 1975. Workshops held throughout Idaho on energy antagonize Idaho Power Co.

ENERGY CRISIS (Legislation)

"House Bill Would Help Cut Waste, A marshmallow?" July 4, 1975. Summary of provisions of proposed bill.

ENERGY POLICIES

"Governors unite on energy rights, New confederacy," by Carol W. Cagle, reprinted from New Mexico Independent, Aug. 29, 1975. Extensive report on WGIREPO session.

"Impact Statements Disappointing, Denver Energy Conference," by Bruce Hamilton, Mar. 17, 1975. Report on frustrating Denver conference on impact statements and energy.

"Sawhill Choice Challenged by Environmental Groups (Governors to Name Energy Czar)" Jan. 3, 1975. Sawhill considered for Western Governors Regional Energy Policy Office post.

ENVIRONMENTAL PROTECTION

"Biologist searches for formula for dawn of century," by Ernest H. Linford, Dec. 19, 1975. Dr. George Wald predicts end of human race soon after year 2000.

"Brower urging giving up one sin: despair, FOE leader speaks at MWA conference," Dec. 19, 1975. Browerists help overcome despair of conference audience.

"Hearty support for the land in Idaho, Wyoming, polls show," Dec. 19, 1975. Polls in two states show majority of respondents concerned for quality environment.

"Plainsmen Critical of West River Diversion," by Mike Jacobs, Jan. 31, 1975. Coal taxation, water diversions, strip mining concern United Plainsmen Association.

ENVIRONMENTAL PROTECTION — FILMS

"Environmental films catalog," by Bruce Hamilton, June 20, 1975. Films on following topics: stripmining, Alaska, pollution, redwoods, endangered species, solid waste, mining law, reclamation of mined land, river restoration, land use, water planning, mountains, atomic reactors, birds, etc. etc.

ENVIRONMENTAL PROTECTION — FILMS (Review)

"Look What We've done to this Land," by Bruce Hamilton, May 9, 1975. Disruption of lives of Navajo and Hopi Indians by power plants.

ENVIRONMENTAL PUBLICATIONS

"Montana Outdoors: A Game and Fish Publication with a Purpose," Mar. 14, 1975. A magazine which has earned a reputation which suits its symbol of the grizzly independent, a fierce opponent when confronted.

EVANS, BROCK

"Mountain-loving lawyer lobbies for Sierra," Sept. 26, 1975. Bio. items and activities of subject.

FENCING

"BLM issues new fencing regs to protect wild life," July 18, 1975. Fences that allow antelope to crawl under to replace woven wire on Red Desert.

FERTILIZER (from coal)

"BN proposes fertilizer from coal. Boasts of benefits to Montana agriculture," by Marjane Ambler, Nov. 7, 1975. Burlington Northern offering Montana ranchers a tradeoff, taking land out of production for strip mining in exchange for synthetic fertilizer from coal.

FLAT TOPS AND EAGLES NEST WILDERNESS PROPOSALS

"Flat Tops and Eagles Nest Debated. How much Wilderness?" by Rick Thompson, Apr. 11, 1975. Hearings on areas held in Glenwood Springs, Colo. More hearings to be held in Washington.

FLOAT TRIPS

"River Running," by Ernest H. Linford, Feb. 28, 1975. Western River Guides Ass'n meets at Reno to discuss problems of environmental concern related to river running.

GEOTHERMAL ENERGY — PHOTOS

"Geysers Spa Makes Power," photos and chart by Pacific Power & Light. Geysers 90 miles north of San Francisco generates 400 megawatts.

GILA WILDERNESS — PHOTOS

"Gila Wilderness - Pocket of Isolation," by Richard P. Pharis, Mar. 28, 1975. Description of area in short article accompanying photos.

GRAND TETON NAT'L PARK — PLANNING

"Teton's neighbors speak at enlargement hearings," by Ernest H. Linford, Dec. 19, 1975. Hearings re: expansion of park held in Wyoming and Idaho.

GREEN RIVER

"BuRec Contract Ignores Fish Study, Green River Suffers," by Larry Edwards, June 20, 1975. Criticism of contract for sale of Green River water.

"Irrigation Water all Goes to Industry, Wyoming to sell Fontenelle Water," by Ann Zwinger, June 20, 1975. Sharp criticism of Bureau of Reclamation policies re water in Green River, esp. Fontenelle Reservoir, criticism also of Hathaway, others.

GROUSE — SAGE

"A matter between you and the strutting grouse," by Jim Posewitz (Montana Fish and Game), Oct. 24, 1975. A plea for saving the strutting ground of the sage grouse in coal mining areas.

GROUSE — PTARMIGAN

"Timid timberline mountaineer," by Sarah Doll, Nov. 21, 1975. Habits and behavior of little known species: quotes from Enos Mills' Bird Memories of the Rockies.

GUY, WILLIAM

"Guy defies governors in attempt to support Interior," Nov. 21, 1975. Devious methods of trying to get western governors to support Department of Interior in Sierra coal development suit.

"Guy named as Regional Energy Director, Conference participants' views vary," by Marjane Ambler, Apr. 11, 1975. Pro and cons re Guy's probable attitudes on environmental issues.

"HATHAWAY, STANLEY K. (Former gov. of Wyo.)

"Ford Taps Stan Hathaway for Interior, Ex-Wyo Governor championed growth," Apr. 11, 1975. Biographical notes, environmental record of Hathaway as governor.

"Illness forces Hathaway to resign from post," Aug. 1, 1975. Hathaway's resignation leaves Interior Department leaderless.

"Senate Confirms Hathaway for Interior, 60-36," June 20, 1975. Senate rejects motion by Muskie to send matter back to committee; Hathaway confirmed.

"Senate Weighs Hathaway Balance, Bias, Stan on stand," by Bruce Hamilton, May 9, 1975. Hathaway parries some questions, evades others in Senate, hearing on nomination to Interior secretary.

HAWKS

"Ferruginous Hawk Study now Complete," by Carol Snow, June 20, 1975. Breeding ecology study in northern Utah and southern Idaho completed by Richard Howard.

HELL'S CANYON RECREATION PROPOSAL

"Roncallo loses Hell's Canyon dams appeal," by Lee Catterall, Sept. 26, 1975. Roncallo's efforts to amend Hell's Canyon bill to allow dams fails in Senate.

HERONS

"Life in a heron rookery, Spearfishing, soaring, squawking," July 18, 1975, p. 8-9. Habits and behavior of great blue heron, plus large photos of herons near Lander, plus reproduction of Merrifield scratchboard.

HICKS, LANEY

"Laney Hicks Keeps Sierra Club on Front Page," by Marjane Ambler, May 9, 1975, p. 16. Hick's activities in Sierra Club put her in public spotlight.

HIGH COUNTRY NEWS — POLICY

"Readers keep HCN afloat for another year," Sept. 12, 1975, p. 16. Financial report to readers; recognition of people who have helped; plans; advertising; tax deductible contributions.

"Report to the HCN stockholder - the reader. With help, we're getting by," Feb. 28, 1975, p. 16. INDIANS (Navajo and Hopi)

"Southwestern cultures collide. Two religions," by Steve Auslander, May 9, 1975, p. 1. Impact of Anglo growth and development on tribal life.

INDUSTRIAL SITING

"A Comparison of Rockies' existing siting laws," by Ann Sayvitz, Jan. 17, 1975, p. 6.

"Utility Siting Legislation Promoted," by Bruce Hamilton, Jan. 17, 1975, p. 4. Exhaustive discussion of utility siting; main features of bills in a number of western states.

JIM BRIDGER POWER PLANT — PHOTOS

"Bridger Unit Four," Oct. 24, 1975, p. 10. Present status of unit four in caption.

KAIPAROWITZ POWER PROJECT

"Kaiparowits assault unleashed," Nov. 21, 1975, p. 10. Conservation groups fighting project by various legal means.

"Kaiparowits critics, boosters meet at Utah hearings," Sept. 26, 1975, p. 7. Review of various opinions expressed at hearings in Utah, on project.

"Kaiparowits EIS describes major canyon-lands impacts," Aug. 29, 1975, p. 10. EIS released; impacts reviewed.

KAIPAROWITZ POWER PROJECT — PHOTOS

"Kaiparowits Project Delayed Again," by Jack McLellan, Apr. 25, 1975, p. 11. Delays in starting of project reviewed in photo caption.

LAND — SALES AND DEVELOPMENT

"Subdivision Inventory Catalyst for Action," Mar. 28, 1975, p. 16. Environmental Information Center, EIC, presents facts on extent of subdivisions in Montana.

LAND USE AND PLANNING

"Dear Friends," Dec. 19, 1975, p. 16. Report on county hearing re: land use encourages editors of HCN; consensus concerned for preserving Wyoming.

"House Interior Committee kills land use bill," Aug. 1, 1975, p. 12. Federal land use bill killed in committee.

"Interns assist Wyoming planners," by Jim Huffard, Aug. 29, 1975, p. 12. Internship program designed to prepare specialists to work in planning.

"People move into land planning. Do it yourself," by Monty Grey, Feb. 28, 1975, p. 6. Describes in practical terms how citizens can influence future of communities thru planning process.

"A saga of Steamboat Springs, Land use planning tools," by Joan Nice and Bruce Hamilton, Feb. 14, 1975, p. 7. Recreational reservoir and second home community would take agricultural land out of production near Steamboat Springs, Colo.

"State roadblock at Beaver Creek, Where even the best land planning won't do," by Bruce Hamilton, Jan. 31, 1975, p. 1. State-Fed battle seems likely over ski development at Beaver Creek, in Colorado.

"State steps into muddle, Colorado ski area planning," Jan. 31, 1975, p. 12. Local problems spread across state from Marble Colo., following development of ski area and condominium building. Article from Aspen Times by Kirk R. Thomas, reprinted.

LOBBYING

"Citizens' lobby crusaders smiling, Wyoming passes siting, land use bills, Regional legislative review," by John Soisson, Mar. 14, 1975, p. 2. No. 3 of a series.

"Citizens rally to back legislation," Jan. 17, 1975, p. 16. Lobby efforts on behalf of environment in Utah, Mont., Idaho, New Mexico. No. 2 of a series.

"Citizens rally to back legislation, Critical year for environment," Jan. 3, 1975, p. 12. Lobby efforts in Colorado, Wyo., North Dakota.

"The Idaho Conservation League at the ping pong table and the podium," by Susan Whaley, Feb. 28, 1975, p. 7. Resume of activities of ICL, its ways of being effective in influencing legislation in Idaho and of spreading information.

"1975 Colorado Legislature an Environmental bust," by Marilyn Stokes, July 4, 1975, p. 12. Analysis of Colorado legislative session.

"People's lobby solves problems with signatures. Table manning manners," July 18, 1975, p. 14. People's lobby suggests methods for initiative, and referendum.

"Regional legislative review," Apr. 25, 1975, p. 12. Montana: Coal tax. Colo.: Environmental Policy Act; Open Mining Reclamation Act; Electric Utilities legislation; consumer protection.

No. 6 of a series.

"Regional legislative review," Feb. 14, 1975, p. 12. Mont.: considers 4-year moratorium on subdivisions. Wyo.: considers export policy.

No. 1 of a series.

"Regional legislative review, Montana laws please agriculture," by Sarah Ignatius (Northern Plains Resource Council), May 9, 1975, p. 12. Mont.: Export policy; siting; landowner consent; severance tax; water; citizen watchdogs.

No. 1 of a series.

"Regional legislative review, New severance tax may face veto," by Mike Jacobs, Apr. 11, 1975, p. 12. No. Dakota: Severance tax; diversion system; siting; strip mining; solar energy. Colo.: urban sprawl; severance tax.

No. 5 of a series.

"Regional legislative review, Utah Session ends, Strip mining, predator, front money bills pass," Mar. 31, 1975.

Utah: strip mine, tax system, predator control, air and water pollution, etc. Idaho: land use.

No. 4 of a series.

"Regional legislative review, Feb. 28, 1975. Wyo.: unannounced meetings of Senate Mines, Minerals and Ind. Dev. Committee Re: sulfur dioxide regs.

Utah: DOT, coal tax, predators

No. Dakota: solar energy

No. 2 of a series.

"Who's getting to your legislator? (And what are they saying?)," by Marjane Ambler, Feb. 14, 1975, p. 1. How to make lobbying effective; services performed for legislators by lobbyists; prominent lobbyists.

MERRITT, CLIF

"Clif Merritt: he leads from behind," by Marjane Ambler, Aug. 1, 1975, p. 16. Co-workers would "march into hell to do a... study if Clif Merritt asked"; subject is regional director for Wilderness Society.

MIONCZYNSKI, JOHN

"John Mionczynski knows the luxury of using less," July 4, 1975, p. 16. Atlantic City area resident demonstrates simple life style.

MISSOURI WILD RIVER PROPOSAL

"Senate passes protection bill," Dec. 19, 1975, p. 5. 175 miles of river would be protected under S. 1506. Description and history of river on same page.

"Missouri Breaks — dam site or park?," Aug. 29, 1975, p. 13. Pro and con on proposal.

MONAGHAN, JIM

"Land use advocate appointed to Lamm's staff, Jim Monaghan, environmental advisor," Jan. 31, 1975, p. 16. Work of subject and biog. notes.

MONTAGUE, PETER AND KATHERINE

"Gadfly and gathering facts, the Montagues," Feb. 14, 1975, p. 16. Two environmentalists who have set up "Southwest Research and Information Center," Albuquerque, N.M.

MOUNTAIN SHEEP — BIGHORN

"Bob Lewis and the Desert bighorn, High Country News benefit," by Bruce Hamilton, June 6, 1975, p. 8-9. History, habits and behavior of bighorn sheep; facts about artist Bob Lewis.

NUCLEAR POWER

"Breeder faces new challenge," June 20, 1975, p. 6. ERDA authorization includes funding for fast breeder, a controversial project.

"No delay on breeders," May 9, 1975, p. 11. ERDA rejects suggestion that breeder plant be delayed pending safety studies.

OAAE IRRIGATION PROJECT

"S. D. farmers fight Oaae diversion, Death knell for prairies?," by Bruce Hamilton and Sharon Jones, Oct. 10, 1975, p. 1. Family farmers protesting that costs of project exceed benefits.

"Stop the Oaae ditch rally," June 20, 1975, p. 10.

Nine environmental groups sponsor rally to oppose project.

OIL SHALE

"Colorado can orchestrate state's oil shale growth; Interview with Gov. Dick Lamm," by Carol Edmonds, Reprint from "Shale Country," July 18, 1975, p. 12.

ORGANIC FARMING

"High Country," by Tom Bell, Oct. 10, 1975, p. 2. Tom reports on comparative study between organic farming and conventional methods.

ORVs (Off Road Vehicles)

"Vehicle rules anger riders, walkers," by Ann L. Schimpf, Nov. 21, 1975, p. 1. Wasatch National Forest proposed regs on ORVs opposed by two special interest groups: hikers who want stricter regs and vehicle users who want less.

PETERSON, RUSSELL

"CEQ's Russell Peterson says emphasis on science essential for selling ecology," by Jack E. McLellan, Apr. 11, 1975, p. 7. Emotional and esthetic appeals for environmental awareness pose subtle threat.

PHOSPHATES (Idaho)

"Newest threat to Idaho's fish - phosphate mining," by Royce Williams (Idaho Fish and Game), Dec. 19, 1975, p. 12. Phosphate mines in Idaho threaten Blackfoot fish habitat.

"Phosphate-hungry world after Idaho, Turning the forest upside down," by Bruce Hamilton, Nov. 21, 1975, p. 1. Need for phosphate to have too much impact in Idaho.

PIPER, GEORGE

"Piper leads fellow farmers," Oct. 10, 1975, p. 5. Piper spends full time fighting Osha.

POLLUTION - AIR

"Abracadabra! Idaho Power cleans up stacks. No pollution in sight," by Jeffrey Fereday, Feb. 28, 1975, p. 1. Doubtful statements re: clear stack at Idaho Power's Pioneer plant.

"Clean air act could stop Kaiparowits," Oct. 10, 1975, p. 10. Amendment to clean air act would classify land to prevent deterioration of air quality.

"Colstrip could destroy farms," Dec. 19, 1975, p. 11. Dr. Clancy Gordon, Univ. of Montana warns of wide spread disaster to farms from coal fired generating plants.

"Debate on clean air nears end," June 20, 1975, p. 15. Review of amendments proposed at hearings by House Subcommittee on Public Health and Environment.

POLLUTION - WATER - PHOTOS

Aug. 1, 1975, p. 13. Problem of salinity control in Colorado River basin.

PRAIRIE CHICKENS

Reprinted from Water, Woods and Wildlife, by Les Rice, May 9, 1975, p. 8-9. Habits and behavior of species.

PREDATOR CONTROL

"Predators, Poisons pose problems," editorial, June 20, 1975, p. 3. High Country News states present stand on predators, especially coyotes.

"Court says EPA can ban coyote poison," by Bruce Hamilton, Nov. 7, 1975, p. 16. 10th Circuit court overturns ruling by Judge Kerr.

"Cyanide legalized for coyote kills," Aug. 1, 1975, p. 12. President Ford lifts ban on sodium cyanide as emergency measure, as concession to sheepmen.

"Predator suit appeal announced," Dec. 19, 1975, p. 13. Predator poison suit to go to Supreme Court.

"State stockpiles predator poisons," July 18, 1975, p. 13. Present status of predator poison suit in courts. Photo of a "coyote getter."

"CEQ Defends poison ban," Mar. 14, 1975, p. 13. Figures revealing effects of poison ban lead to conclusion that coyotes are not responsible for driving sheepmen out of business.

"Injunction issued on poison ban," June 20, 1975, p. 13. Judge Kerr injunction outlined in caption.

"Utah solons look at predators eradication or management," by Jack E. McLellan, Jan. 31, 1975, p. 6. Three predator bills to be considered by Utah legislators; two sponsored by wool growers. Each bill discussed.

PUBLIC LANDS

"Aspinall proposes public land giveaway," Oct. 24, 1975, p. 3. HCN editors refute Aspinall's opinions re: public lands.

RADIOACTIVE WASTE

"Uranium mill tailings hazardous, NRDC waste regulations," July 18, 1975, p. 10. National Resources Defense Council files petition with Nuclear Regulatory Comm. to require uranium companies to stabilize tailings.

"Western site sought for a-wastes in lieu of ultimate dump," by Joan Nice, Jan. 3, 1975, p. 1.

RICH, PAM

"Pam Rich to lead fight for Alaska, Leaving Sierra Club post," Nov. 7, 1975, p. 7. Rich to lobby in Washington, D.C. on Alaskan conservation issues for Friends of Earth.

ROCKY MOUNTAIN NATIONAL PARK

"Conservationists feud over expansion, Should Rocky Mountain Park grow?" by Tim Mahoney, Dec. 5, 1975, p. 6. Pro and con re: 130,000 acres to park.

RODACK, JUEL

"Grand Canyon changed his life, Juel Rodack, Arizona activist," by Peter Wild, Dec. 5, 1975, p. 16. Rodack and his wife Madeline fought to save Grand Canyon from dams.

SAGEBRUSH

"Sagebrush: shall we praise or eradicate it?" by Bruce Hamilton, Jan. 3, 1975, p. 6. Various opinions of value of sage to western rangelands.

SCOTT, CHARLIE

"Charlie Scott, from Wyoming to Washington, D.C. (and back again)," by Joan Nice, June 6, 1975, p. 15. Intimate portrait of subject; his activities as environmentalist.

SIERRA CLUB

"Is the Sierra Club in the National interest?" Burton-Hicks Debate," by Joan Nice, June 20, 1975, p. 12. Debate focused on "Are the energy related policies of the Sierra Club in the national interest?"

SKIING (Development - Montana)

"Ski Yellowstone Forces Choice. One more ski development or undeveloped skiing?" by Mike Cross, May 23, 1975, p. 1. Efforts of Montana Wilderness Ass'n to establish non-mechanized winter sports area as alternative to proposed ski resort.

"Rocky Mountain Ski Report," Nov. 7, 1975, p. 12. Moratorium imposed on intermountain area by M. Weber. County grants "Ski Yellowstone" building plan by B. Brewster. Marble ski area spared, New concern for impact of ski areas.

"Ski Yellowstone EIS challenged," Dec. 19, 1975, p. 12. Montana Wilderness Ass'n and others raise questions re: approval of resort.

"USFS tags Beaver Creek sports site," Aug. 1, 1975, p. 13. Existing ski areas and potential new areas in Beaver Creek sports site, Colorado.

SOLAR ENERGY

"Arizona says solar energy top priority," May 9, 1975, p. 15. State's energy office forging ahead with solar research.

"Cinderella Sunshine: A Tale of Two Principalities," by John P. Eberhard, Jan. 17, 1975, p. 1. Clever "take-off" from folk tale "Cinderella," lampooning present day industry and suggesting value of solar energy.

"Feds weigh sun power for heating, cooling," Dec. 19, 1975, p. 7. Solar power proposed for National parks. Solar equipment in use at Lowell, Wyo.

"Jerry Plunkett, inventor," by Joan Nice, Jan. 17, 1975, p. 8-9. Ideas of inventor on development of solar energy.

"Solar grows, buyers beware," Dec. 19, 1975, p. 10. Consumers should get engineering advice before buying solar equipment.

"Solar tour hits shopping malls, museums," Dec. 5, 1975, p. 12. University of Colorado preparing touring solar exhibit.

"Solaron Corp. will heat Gump Glass," Jan. 28, 1975, p. 14. Glass Co. in Denver to convert to solar heat.

"Washington Solons direct a few energy dollars toward the sun," by Ernest H. Linford, reprinted from Salt Lake Tribune, Apr. 25, 1975, p. 7. Industry invited to submit designs for pilot plant.

STREAMS - PROTECTION

"Flow reservations - water under the bridge," by Ken Bovee, Mar. 14, 1975, p. 4. Exhaustive discussion of minimum stream flow issue.

STREAMS - PROTECTION - PHOTOS

Photo by Dale Burk, July 4, 1975, p. 13. Streambed preservation now implemented in Montana.

STRIP MINING (Legislation)

"Partisan politics, Utilities pressure, Midealing states, blamed for veto," by Marjane Ambler, June 20, 1975, p. 10. Analysis of presidential veto of strip mining bill.

"Reckoning from Washington," by Lee Catterall, June 20, 1975, p. 10. Tracing progress on federal strip mining bill.

STRIP MINING

"Coalition now opposes all coal strip mining," Feb. 28, 1975, p. 14. Coalition Against Strip Mining, Washington D.C. lobbying organization, backs phase-out of all coal strip mining.

"Interior's coal regs 'an all-out retreat,'" Dec. 5, 1975, p. 11. NRDC and Sierra Club critical of Department of Interior coal mining regs.

"Malcher offers coal policy, Roncalio predicts moratorium won't be lifted," Oct. 24, 1975, p. 11. Two western representatives, Malcher and Roncalio, still fighting for strip mine laws.

"Reckoning from Washington," by Lee Catterall, Nov. 21, 1975, p. 10. Progress of strip mining legislation in Congress.

"Stripminers invade Death Valley, Monument to our generation?" Oct. 10, 1975, p. 14. Stripmining being allowed in National monument.

"Strip mining bill heads toward uncertain future at Ford's desk," May 9, 1975, p. 10. Discussion of bill; veto not certain.

"Teno attacks strip bill critics," June 6, 1975, p. 2. Roncalio sets record straight on vetoed strip mine bill.

"New federal action on stripmining," Feb. 14, 1975, p. 11. Interior Department sets own regulations on public land stripmining, following Ford's veto of 1974 bill; Ford's proposals to congress that would weaken strip mining regulations.

SYNTHETIC FUELS

"Bill would guarantee 75% loans for synthetic fuels," by Kevin Markey (Friends of Earth), Oct. 24, 1975, p. 12. Arguments against bill.

"Colorado sounds off on synthetic fuel bill," Nov. 21, 1975, p. 11. Details of congressional consideration of federal loan guarantees for synthetic fuel production.

"Reckoning from Washington," by Lee Catterall, Dec. 19, 1975, p. 10. Congress rejects President Ford's proposal to guarantee \$6 billion to aid development of synthetics.

TIMBERING (Escudilla Mt., Arizona)

"Escudilla battle eco-tactics explored, 'Log it or leave it,'" by Peter Wild, May 23, 1975, p. 6. Environmentalists fight FS sale of timber on Escudilla.

TIMBERING

"Forest yield not sustained," by G. M. Brandenburg, Aug. 29, 1975, p. 12. At present rate timber will soon be exhausted.

"Monongahela decision reveals need for review. Organic act, clearcutting future uncertain," by Mike Weber, Oct. 10, 1975, p. 12. Clearcutting opponents win temporary victory in West Virginia.

TROUT - PIUTE

"Piute trout beats all odds," by Tom Baugh, Mar. 14, 1975, p. 6. Management may save Piute trout.

TVA (Tennessee Valley Authority)

"TVA bill would expand board, regulate rates," Oct. 10, 1975, p. 11. Congress proposes TVA reform. Critics call bill meager attempt.

"TVA debt bill would push Western fuel shift," Nov. 7, 1975, p. 3. HCN editorial re: TVA trend to nuclear power plants.

"TVA moves west for fuel, Western uranium, coal dim Eastern hopes," by Marjane Ambler, Sept. 26, 1975, p. 1. TVA apparently not fulfilling original purpose of helping Tennessee Valley.

"What TVA move means for the West," Sept. 26, 1975, p. 5. Complicated questions re: compliance of TVA, a federal agency, with environmental and taxing regs.

URANIUM MINING

"Uranium producers unite," reprinted from Not Man Apart, March 1975, Friends of the Earth, May 23, 1975, p. 10. Outlook on uranium industry, supply, price; opinion of producers.

URANIUM MINING - PHOTOS

"Uranium development intensifies," Tom Bell May 23, 1975, p. 11. Significant events re: uranium, Westinghouse to explore eight states, 300 claims in Red Desert.

UTTER, PAULINE

"Urban activist, Pauline Utter, Sept. 12, 1975, p. 15. Biog. and activities of subject "... make urban setting more livable, ... take pressure of wilderness."

"Utah fights to save Southwestern canyons, Ma Escalante, May 23, 1975, p. 16. Activities of J.V. re: conservation of southwestern canyons and Glen Canyon Recreation area.

WARD, PAULA

"Ward taking stock in North Dakota," Dec. 19, 1975, p. 16. Activities of Ms Ward in behalf of environment, esp. in North Dakota.

WATER

"Speculators want Sunlight Basin, Use it and lose it?" by Lynne Bama, Aug. 29, 1975, p. 1. Proposed reservoir in Clark's Fork drainage would have damaging impact.

"Sunlight Basin dam rejected," Sept. 12, 1975, p. 1. Reservoirs on Clark's Fork drainage rejected by state engineer.

"Who owns the West's water? Federal water reservation," by Bruce Hamilton, June 6, 1975, p. 6. Conflicting federal-state water rights.

WATER (Colorado)

"Taking the lifeblood from the land," by Bruce Hamilton, Mar. 28, 1975, p. 1. Water supply problems in Thornton, Colo.

WATERFOWL - PROTECTION

"Trona ponds deadly to waterfowl," Sept. 26, 1975, p. 7. Trona executives, wildlife service and defenders meet to try to find solution for trona pond waterfowl losses.

WHEATLAND POWER PLANT

"Wheatland power plant ahead," by Bruce Hamilton, Aug. 1, 1975, p. 1. Pro and con discussed from viewpoint of various interests.

"Who needs Wheatland plant?" Dec. 5, 1975, p. 11. Need for power in Wyoming challenged.

WILD HORSES AND BURROS

"Wild horse grazing poses problems," Sept. 12, 1975, p. 13. Nevada claims wild horses belong to state. Annie fights amendment to protective act.

"Wild horse act ruled unconstitutional," Apr. 11, 1975, p. 13. New Mexico court rules Wild Horse Act of 1971 unconstitutional; discussion in photo caption.

WILDERNESS

"Approaching forests' limits," Oct. 10, 1975, p. 1. Scholl and Koehler assert that forest resources at slow end of scale are essentially non-renewable, at hearing in Denver.

"Clean air, grizzlies, BLM headline convention," Nov. 21, 1975, p. 14. Montana Wilderness Ass'n broadens scope of concerns at convention.

"Looking up the land," Dec. 19, 1975, p. 7. Wilderness Act clarified Handbook on wilderness act offered.

"New 'back country' status proposed," Nov. 21, 1975, p. 13. Proposal for new designation of wild lands opposed by wilderness proponents.

"New groups to fight for roadless areas, 85 million acres at stake," Nov. 7, 1975, p. 6. Wilderness Resources Institute formed to serve as watchdog over remaining potential wilderness areas.

"Tools to manage wilderness: rationing to signs," July 18, 1975, p. 6. Discussion of various means of preventing damage to wilderness resource.

"Wilderness endangered by overuse, It's us - not them - guilty this time," by Marjane Ambler, July 18, 1975, p. 1. Overuse increasingly evident in wilderness areas. Extensive quotes from Floyd Wilson, former ranger.

"Wilderness Society focuses on roadless west. Three full-time field men aboard," Dec. 5, 1975, p. 7. Bart Koehler, Dave Foreman, Dan Lechelsky hired to represent wilderness interests. Biographical facts, addresses of three men.

WILDERNESS (Wyoming & Idaho)

"Wyoming Wilderness: Idaho Wilderness," Sept. 12, 1975, p. 13. Roncalio's proposals for Glacier, Pope Agie and Cloud Peak areas. Council in Idaho opposed to cutting down acreage for River of No Return Area.

WILDERNESS TRAVEL

"Organizations, schools and Girl Scouts take groups into wilderness. Creating friends? Or just causing trouble?" by Marjane Ambler, Aug. 1, 1975, p. 6. Increased use equals greater impact.

"Wilderness conservation code," Aug. 1, 1975, p. 7. A code of wilderness practices from several sources: camp location, waste, solitude, off trail conduct, soap.

WILDFLOWERS - PHOTOS

"High superfluities," by Marge Higley, May 23, 1975, p. 8-9. Quote from Robinson Jeffers in caption.

WILDLIFE - HABITAT

"Habitat destruction threatens wildlife," Mar. 14, 1975, p. 1. Effects of human disturbance, esp. DDT, on peregrine falcon and other species.

"Improve backyard habitat," Mar. 14, 1975, p. 14. How to provide four necessary elements for survival of wild creatures in home areas. Plans for bird-house by BLM.

WILDLIFE MANAGEMENT

"Game Range transfer threat to wildlife? BLM new manager," by Marjane Ambler, June 6, 1975, p. 1. 25 environmental organizations protest transfer of management of Charles Sheldon, Kofa, and Russell Game Ranges to BLM.

"Non-hunters asked to help," Jan. 3, 1975, p. 8-9. Suggestions for solving problem of funding non-game wildlife management.

WILDLIFE - SCRATCH BOARD DRAWINGS (Reproductions)

"Holly Merrifield's wildlife art," by Holly Merrifield, Mar. 14, 1975, p. 8-9. Notes re: artist and work in photo caption.

WILLIAMS, CHUCK (Friends of Earth)

"Parks proponent, Chuck Williams, sells hope," Oct. 24, 1975, p. 14. Williams sees parks as "islands of hope," more important for protecting eco-systems than for recreation.

WIND POWER

"Plugging your wind generator right into the power system. New windwinds invention," July 4, 1975, p. 14. Converts dc to ac.

1976

ABBET, EDWARD

"Edward Abbey, druid of the arches," by Bruce Hamilton, Dec. 31, 1976. Interview with Edward Abbey; his philosophy, plus biog. notes.

ABSAROKA-BEARTOOTH WILDERNESS - PROPOSAL

"High Lakes left high and dry?" by Bart Koehler (Wilderness Soc. Rep.), Aug. 27, 1976. Draft land use plan excludes High Lakes.

ALASKA

"Report from Alaska," by Greg Capito, May 21, 1976. Oil and gas leases bid on by oil companies.

ALASKA — PIPELINE (OIL)

"Alaska pipeline fails test," July 30, 1976. Pressure test failed. Other aspects of pipeline controversy.

"How vital is Alaska Pipeline?" by Louis Hudson (Reprinted from Ft. Worth Star-Telegram), May 7, 1976. Pointing out mistake of not routing pipeline through Canada. Possible surplus of oil on West Coast.

"Report from Alaska," by Gregory Capito, Apr. 23, 1976. Oil spills on pipeline project.

ALASKA PIPELINE (Natural gas)

"Interior considers delaying pipeline," Apr. 9, 1976. Interior Dept. may postpone decision on gas pipeline from 1 to 5 years.

"Why bother with options?" Editorial, June 4, 1976. Three alternatives for gas pipeline route.

ALASKA — PLANNING (Photos)

"Wasting their breath," Aug. 27, 1976. Photos and captions of hearing on BLM planning for Alaskan corridors.

ALUNITE MINING

"More details on the alunite plan," Nov. 5, 1976.

"Alunite-to-alumina plant proposed for SW Utah: New industry for Rockies," by Bruce Hamilton, Nov. 5, 1976. Large deposit of bauxite substitute to be developed in Utah.

ANDRUS, CECIL D.

"Andrus looks balanced on environment," by Bruce Hamilton, Dec. 31, 1976. Evaluation, environmentally speaking, of Carter's nominee for Sec. of Interior.

BARNES, CRAIG

"How to change the world: Craig Barnes word for environmental activists," by Bruce Hamilton, Apr. 9, 1976. Barnes' environmental philosophy based on Gandhi.

BEARS — GRIZZLY

"Grizzly critical habitat — what will be excluded?" 13 million acres set aside to protect bears," by Bruce Hamilton, Nov. 19, 1976. Pro and con on controversial proposal.

"Interior to designate grizzly critical habitat," by Bruce Hamilton, July 30, 1976. Various aspects of pending designation of critical habitat for grizzlies.

"Keeping the country safe for cows and children: Grizzly dilemma," by Sarah Doll, Oct. 8, 1976. Problems with reintroducing grizzly population into formerly occupied areas.

"When bears awaken, biologists go on the prowl," by William Brewster, May 7, 1976. State and federal research project in Yellowstone.

BICYCLING

"The Trans-America bicycle trail," Mar. 26, 1976. Bickentennial tours described.

BIG HORN CANYON TRANSPARK ROAD

"Transpark road progresses," May 21, 1976. Contract awarded for 10 miles of road.

BIRDS OF PREY NATURAL AREA (Idaho)

"Studies tell how to protect raptors," by Bruce Hamilton, Feb. 13, 1976. Summary of situation in and around raptor area, esp. effect of agricultural development.

BLM (grazing)

"Herschler questions BLM range policy," Jan. 16, 1976. Herschler says halt of range improvements hardship on ranchers.

BOOK REVIEWS

All the Strange Hours: The Excavation of a Life, by Eiseley, Loren, review by Peter Wild. Biography (probably autobiography) of author of *The Immense Journey* and *The Firmament of Time*.

An Attached Solar Greenhouse, by Yanda, W.P. and Susan, review by Joan Nice, Sept. 10, 1976. Design, construction and operation manual.

Brown Bagging It, a guide to fresh food cooking in the wilderness, by Nagy, Jean, review by Joan Nice, Oct. 8, 1976. Suggestions for cooking in wilderness not practical, in opinion of reviewer.

Canoing: an outdoor encounter resource book, by Michaelson, Mike and Ray, Keith, review by Peter Wild, May 21, 1976. A guide to canoing.

Climbing in North America, by Jones, Chris, review by Sarah Doll, Dec. 31, 1976. Exhaustively researched book that is fun to read.

Contemplate, by Frostie, Gwen, review by Marge Hickey, Jan. 16, 1976. Small book, not quite poetry, packs a wallop: iron fist in velvet glove.

"Corporate Connection" reveals ties of energy, banking interests, 1970, 1976. Study available from Colo. Open Space Council Mining Workshop, shows multi-national energy companies interlocked.

The Cost of Urban Growth, by Bradley, Richard C., review by Peter Wild, Dec. 17, 1976. Refutes idea that growth means lower taxes, greater employment, better life for community.

Country Women, by Thomas, Sherry & Tetrault, Jeanne, review by Peter Wild, Oct. 22, 1976. A guide for newcomers to the country.

Dangerous to Man, by Caras, Roger A., review by Peter Wild, Nov. 5, 1976. Truth about animals reputed to be dangerous.

The Desert, by Butcher, Russell D., review by Bruce Hamilton, Sept. 10, 1976. Book to whet appetite of desert adventurers.

Desert Notes. Reflections in the Eye of a Raven, by Lopez, Barry Holstun, review by Gary Nabhan, Sept. 24, 1976. Brings reader into contact with the desert's elements.

Energy and Order, by Terry, Mark and Witt, Paul, review by Mark Peterson, Nov. 5, 1976. Teachers' handbook for teaching energy.

Field Guide to Animal Tracks, by Murie, Olaus J., review by Peter Wild, Mar. 12, 1976. Clues all around tell stories of daily lives of mammals, if we know how to read and interpret evidence.

The Forest Service, by Robinson, Glen O., review by Peter Wild, May 7, 1976. Conflict between exploitation and conservation on Nat'l forests.

From grassland to glacier: an ecology of Boulder County, by Mutel, Cornelia Fleischer, review by Rob Pudim, Nov. 5, 1976. Ecosystems of area as a complex and dynamic whole.

The Grass Roots Primer, by Robertson, James and Lewallen, John, review by Peter Wild, Dec. 31, 1976. Citizens can save the things they love.

I Heard the Owl Call My Name, by Craven, Margaret, review by Peter Wild, Jan. 2, 1976. Novel which reveals man's relationship to nature.

John Muir's Longest Walk, by Earl, John, review by Peter Wild, Jan. 16, 1976. Biog. of Muir with photos of trip from Kentucky to Florida.

Losing Ground, by Mitchell, John G., review by Peter Wild, Jan. 30, 1976. Focus on short-sighted approaches.

The Milagro Beanfield War, by Nichols, John, review by Gary Nabhan, July 16, 1976. Two ways to farm and live in the West: wrap up resources, or endure.

Golden Eagle Country, by Olendorf, Richard R., review by Bruce Hamilton, Dec. 3, 1976. Reading book a "field trip" with an expert.

One Time Harvest, by Jacobs, Mike, review by Marjane Ambler, Feb. 13, 1976. Jacobs calls strip mining "skinning the earth alive." Technical material translated into lay language.

Other Homes and Garbage, by Leckie, J., and others, review by Dave Brook, Mar. 26, 1976. Purpose of the Sierra Club book is to place design tools and information into hands of non-specialists.

Points of Rebellion, by Douglas, William O., review by Myra Connell, Feb. 27, 1976. Unsolved problems in our society may result in revolution.

The Poverty of Power, by Commoner, Barry, review by Dave Brook and Peter Wild, July 30, 1976. Two responses to Commoner's latest book.

Rendezvous Country, by Pike, Donald G., review by Peter Wild, Aug. 27, 1976. Story of mountain men who trapped beaver in 1820s, '30s, in Wyo., Idaho, Utah, Colo.

A River Runs through it and other stories, by Maclean, Norman, review by Peter Wild, Dec. 17, 1976. What it was like to grow up in the mts. on Idaho-Mont. border 50 years ago.

Season of the Elk, by Krakel, Dean, review by Sarah Doll, Feb. 27, 1976. Author observed Yellowstone-Teton elk in photographing and gathering material.

A Separate Place, by Jones, Charles, review by Peter Wild, Sept. 24, 1976. Celebrates essential part of healthy life.

Simple Foods for the Pack, by Kinnmont, Vikki and Axcell, Claudia, review by Peter Wild, June 4, 1976. Sierra Club recipe book for backpackers.

Taking charge: a new look at public power, by Morgan, Richard and others, review by Marjane Ambler, Oct. 8, 1976. Environmentalists' concern with public power. Analysis of public versus private.

To Save a Bird in Peril, by Zimmerman, David R., review by Sarah Doll, Feb. 27, 1976. Account of successes and failures of endangered bird guardians.

The Town that Fought to Save Itself, by Schell, Orville, review by Peter Wild, Oct. 22, 1976. How residents of one town slowly awake and begin to assert themselves.

Waterfowl of North America, by Johnsgard, Paul A., review by Bruce Hamilton, Apr. 23, 1976. Not just another bird book; a major reference work; integrates wildlife biology, ecology, and behavior.

Wilderness World of John Muir, by Teale, Edwin Way, Ed., review by Peter Wild, July 2, 1976. Selections from 11 books by Muir.

BRIDGER WILDERNESS

"Bridger Wilderness survey a labor of love," by Gregory T. Ray, June 4, 1976. Report on 7 year survey of Bridger.

BROWN'S PARK (Utah)

"County pushing Brown's Park highway," by Mark Peterson, Nov. 19, 1976. Unique qualities of area may be lost to modern highway.

BRUNEAU WILD & SCENIC RIVER PROPOSAL

"Rocks, rivers snakes, solitude — Owyhee Loneliest place around," by Wilder Bellamy, Oct. 8, 1976. Area in Idaho being studied for possible National wild-scenic area.

BYRCE CANYON NATIONAL PARK

"Byrce, Zion concessions to stay," Jan. 2, 1976. National Park Service will extend park concessions seven more years.

BUFFALO

"Buffalo: one bison's story," by Jeremy Schmidt, Feb. 27, 1976. Author-photographer dramatically describes buffalo's existence in Yellowstone in winter. Notes on history of buffalo's near extinction.

"Buffalo face winter squarely," by Jeremy Schmidt, Feb. 27, 1976. Survival tactics of buffalo in Yellowstone.

BUREAU OF RECLAMATION

"Reckoning" from Washington, "Bureau capitalizes on inflation," by Lee Catterall, Mar. 12, 1976. Rep. Moorhead criticizes bureau for wasteful and unauthorized expenditures.

BURGDOFF NATIONAL HISTORIC SITE

"Will a logging road ruin Burgdorff?" by John Bacon, June 4, 1976. Impact of proposed road on area, pro and con on proposed routes.

CAPITOL REEF NATIONAL PARK

"Protection for Capitol Reef," May 21, 1976. Most of park to be protected from development.

CARIBOU (Alaska)

"Hope remains for caribou: Harsh environment a protective force," July 30, 1976. Summary of article in Audubon Mag. re: caribou and chances for their survival.

CARTER, JIMMY (as environmentalist)

"Carter 'outstanding,' Ford 'hopeless,' Conservationists examine the candidates," Oct. 8, 1976. Analysis of candidates stand on economy vs. environment; strip mining; water development; land use planning; air, nuclear power; coal; etc.

CHILD, BOB

"Cattle Ranching in a recreation area," by Lloyd Levy, Mar. 26, 1976. Rancher Child participates in land use planning.

CLOUD SEEDING

"Cloudseeding planned for five states," May 7, 1976. Bureau of Reclamation planning 13 million seedling program for Wind River Range, and other mts.

COAL

"Coal moves east because of automatic fuel clause," by Norman Kilpatrick, Jan. 30, 1976. An attempt at analysis of illogical shipping of western coal to Eastern markets.

"Carter says he opposes move West, Environmentalist is his advisor," by Lee Catterall, July 16, 1976. Carter said to favor deep mining East over strip mining West.

"COALITION lists criteria for leasing," by Marjane Ambler, July 30, 1976. COALITION meets in Billings; declare no further leasing needed.

"Colstrip applicant misrepresented air regs," July 16, 1976. Montana Power Co. said to have misrepresented ability to comply with air regs.

"Colstrip expansion finally approved," July 2, 1976. Units 3 and 4, Colstrip, finally approved.

"Colstrip plant hearing battle continues to flare," Feb. 27, 1976. Hearings on Colstrip Units 3 and 4 continuing after a year. Excerpts from testimony.

"Court lifts Powder River injunction; Major mining roadblock removed," by Marjane Ambler, Jan. 16, 1976. Supreme Court lifts injunction against four mining companies; agrees to hear Sierra Club suit.

"Crow Chairman Chastised," Dec. 31, 1976. Patrick Stands Over Bull of Crow tribe suspended for dealing independently with Shell Oil.

"Dialog opens for protecting common water hole; Indians, environmentalists, agriculturists, meet," by Marjane Ambler, Jan. 2, 1976. Conference about energy development in Northern Plains.

"Gillette to Douglas spur approved Lamm happy, Judge enraged, BLM flooded by coal applications," Feb. 13, 1976. Three short articles to bring coal development up to date.

"Governors respond to attack from coalition," Feb. 27, 1976. Western Governors Regional Energy Policy Office versus COALITION, a citizen effort for more effective dealing of Western states with Fed. Gov't.

"Interior doesn't understand NEPA," Jan. 16, 1976. Sierra Club attorney Terris explains need for EIS; criticizes Dept. of Interior attitude.

"Interior proud of leasing procedures," June 18, 1976. Interior department outlines precise steps for leasing of Fed. coal to include public input.

"Law demands diligence, dollars; Boon to state treasuries," Aug. 27, 1976. Congress overrides veto of Fed. Coal Leasing Amendments bill.

"Lawsuit forces landowners to drop mine protest," Aug. 27, 1976. Whitney Benefits withdraws \$14 million suit.

"Montana only state to plan lease nominations: WGRCPO report," July 16, 1976. Montana only state so far to participate in Interior's coal leasing plan.

"New Coal Policy," "Reckoning" from Washington, by Lee Catterall, Dec. 17, 1976. State versus Fed. strip mining legislation.

"Northwest Colorado Coal: Regional impact scrutinized," by Joan Nice, July 30, 1976. Extensive review of EIS for N.W. Colo. coal development.

"Public asks, 'Who needs EMARS?'" June 18, 1976. Environmental groups criticize Interior coal leasing plans; plan to participate in making recommendations.

"Reckoning" from Washington, by Lee Catterall, Mar. 26, 1976. Discussion of coal prices and various aspects of coal development.

"Reckoning" from Washington, by Lee Catterall, Apr. 23, 1976. Latest on Sierra Club suit re: EIS in Powder River Region.

"Reckoning" from Washington, by Lee Catterall, May 7, 1976. Mendicino and Sierra Club in Supreme Court in case re: regional impact.

"Reckoning" from Washington, by Lee Catterall, Sept. 24, 1976. Wyoming coal lease would provide coal for Pioneer plant in Idaho.

"Sec. Kleppe says coal moratorium over," by Marjane Ambler, Jan. 30, 1976. Much criticism follows Kleppe announcement of end to fed. coal leasing.

"Supreme Court coal ruling not a surprise for Northern Plains," July 16, 1976. Comment on Supreme Court decision.

"Supreme Court hears plains coal case, 22 states enter debate," May 7, 1976. Report on Supreme Court hearing of Sierra Club vs. Morton.

"Texaco announces gasification plant," Jan. 30, 1976. Demonstration gasification plant funded partly by U.S. Gov't, planned at Lake DeSmet.

"Who is Interior protecting?" Nov. 19, 1976. Criticism of EMARS program.

"Wholesale exploitation of N.D. coal delayed," Apr. 9, 1976. Four major decisions would delay development.

COAL GASIFICATION

"Gasification plant has new opposition; Miners, farmers join in N.D. fight," by Sheldon Green, Apr. 23, 1976. Problems for American Natural Gas Co. which proposes gasification of coal in Mercer Co., N.D.

"Mercer County, N.D., approves rezoning for gasification plant," Dec. 17, 1976. Hazen, town of 2000 totally unequipped to handle impact of pop. increase.

"Texaco gasification effort raised citizen eyebrows," by Randall Cox (Powder R. Basin Resource Council), July 16, 1976. ERDA to exclude WYOSYN GAS from demonstration program.

"Texaco turned down," July 2, 1976. Texaco and Natural Gas Pipeline Co. turned down by gov't for funding Lake DeSmet plant.

COAL SLURRY PIPELINE

"Madison test hole," July 16, 1976. Exploratory hole near Sundance expected to help resolve question of water availability.

"Reckoning" from Washington, by Lee Catterall, Jan. 2, 1976. Sen. Abourezek of S.D. accuses ETSI and Bechtel Corp. of conflict of interest.

"Slurry line stymied by railroads, water questions," by D. Sawyer Whipple, Nov. 5, 1976. Serious problems re: slurry line.

COSC

"COSC to survey candidates for legislative seats," July 2, 1976. COSC learns from legislative session. Review of last Colo. Legislature.

COYOTES

"Dec. 17, 1976. U.S. Fish and Wildlife receives \$1.1 million for coyote killing. Defenders of Wildlife enraged."

CRANES — WHOOPIING

"Two whoopers missing," Mar. 12, 1976. Two of the whooping cranes fostered on sandhill cranes have disappeared.

DANISH, PAUL

"Diminutive Danish against growth," by John Sabella, Nov. 19, 1976. Profile of leader against unrestrained growth in Boulder, Colo.

DEATH VALLEY

"Picturesque miner" myth destroying park," by Chuck Williams (Friends of Earth), Jan. 16, 1976. Destructive effects of modern mining in Death Valley Nat'l Monument.

DEER — MULE

"Deer populations down," Mar. 26, 1976. Regional symposium at Utah State Univ. to explore causes of decline in deer population.

DIRTY DOZEN

"Conservation lobbyists announce dirty dozen," Apr. 9, 1976. 12 anti-environmental congressmen listed according to votes on key issues.

DOGS (wild)

"Dog chase Wyoming wildlife, stock," by Carol M. Ryzek, Oct. 8, 1976. Homeless dogs as well as pets a problem to wildlife and ranchers in S.W. Wyo.

EISs

"Regional EIS not required; High court rules against Sierra Club," July 2, 1976. U.S. Supreme Court rules regional EIS not necessary for fed. coal development in N. Great Plains.

ELECTIONS (Western states)

Nov. 19, 1976. Election results in Colo., S.D., N.D., Idaho, Utah, Ariz., Wyo., Mont., incl. initiatives on nuclear plants.

ELECTRICAL GENERATING PLANTS

"Andrus fights new coal power plant," Mar. 26, 1976. Andrus urged Public Utilities Comm. to reject Pioneer plant near Boise.

"States fear California's power needs," May 21, 1976. California's proposition to limit nuclear plants will affect power decisions in neighboring states.

"Utah industrial corridor proposed," May 7, 1976. String of small power plants proposed, as alternate plan to Kaiparowits.

ELECTRICAL TRANSMISSION

"Big Sky energy need questioned," Feb. 27, 1976. Transmission line for Big Sky threatens potential wilderness.

"State approves transmission line through Grand Teton Nat'l Park," Dec. 17, 1976. Jackson residents protest Wyo. Public Service Commission approval of line through park.

ELK (Teton Park)

"Bob Wood and the park hunt," by Mary Inman, Apr. 23, 1976. Facts and justification for various aspects of elk management.

"Elk Hunting in Teton Park," by Mary Inman, Apr. 23, 1976. Facts leading to a rationale for hunting in park.

ENDANGERED SPECIES

"Filming endangered wildlife: The Stouffer brothers," Apr. 9, 1976. Stouffer brothers special interest with endangered wildlife.

"Sh-h-h," the butterflies have something to say," by Rob Pudim, Aug. 27, 1976. 41 species of butterflies on endangered list.

ENERGY CONSERVATION

"Citizens meet to hatch energy conservation plot," by Bruce Hamilton, Mar. 26, 1976. Revolutionary meeting plans strategies for energy conservation in western states.

"How to get out the conservation message," by Bruce Hamilton, Mar. 26, 1976. Rocky Mt. News reporter Schneider and KOA Sci. Ed. Kinney discuss ways to get media to publicize energy conservation.

"Modest proposals: A depletion allowance for you," by Paul Danish (Reprint from New Mex. Independent), July 2, 1976. Proposed allowance for consumer of substitute fuels.

ENERGY CRISIS

"Natural gas, oil prices plague states," Oct. 22, 1976. WCREPO meet in Billings; discuss possibility of oil shipment to Japan, Alaskan natural gas, gas pricing.

"New lifeline rates would conserve energy," by Dorothy Bradley, Jan. 30, 1976. Center for Public Interest in Mont. suggests plan for new energy rates that do not penalize small user.

"Conservation starts in the home," Dec. 3, 1976. General discussion on energy situation esp. re: Carter administration.

"City Council finds way to save energy simply," by James Ridgeway, Jan. 31, 1976. Davis, Calif., adopts building regs that will save energy.

"Gov. Rampton wants resources used in Utah — not exported," June 18, 1976. Gov. Rampton favors growth.

"How does West Germany manage to use less energy than the U.S.?" by Robert O. Pohl, Dec. 31, 1976. Space heating, hot water heating, transportation, industrial methods that conserve energy, described.

"Reckoning" from Washington, by Lee Catterall, July 30, 1976. Demo. party platform supports legal prohibition against corporate ownership of competing types of energy.

"Reckoning" from Washington, by Lee Catterall, Nov. 5, 1976. Common Cause studies people who are making energy policies; finds possible conflict of interest.

ENERGY SOURCES

"AERO dramatizes alternate energy: New Western energy show," by Joan Nice, June 4, 1976. AERO to take show on road in Montana.

"Montana coal tax money will build alternative energy homes," Nov. 19, 1976. Coal severance taxes going directly into solar homes.

"Reckoning" from Washington, by Lee Catterall, Oct. 8, 1976. Gov't map shows projected energy sites; looks messy.

ENVIRONMENTAL PROTECTION

"Attack on public information," Mar. 26, 1976. Editorial enumerating numerous efforts by enemies of environment to "pull teeth" of NEPA.

"Environmentalists, labor share many goals, Woodcock believes," May 21, 1976. President of United Auto Workers supports environmentalists.

"Rendezvous draws crowd, commissioners absent," by Rodney Barker, July 30, 1976. Report on Western Slope region of Colo. conference on environmental problems.

"Of coal mines and canaries," by John A. Ward, Apr. 9, 1976. Poem deplores extinction of species.

"Favor farming over coal," Sept. 10, 1976. Survey in N. Dak. shows most residents favor conservation, farming, clean air.

ENVIRONMENTAL PROTECTION — LEGISLATION

"Congress protects new wild areas," by Bruce Hamilton, Oct. 8, 1976. Roundup of legislation in closing sessions of Congress of interest to environmentalists.

"Regional legislative review: Land use opponents push legislators to compromise," Feb. 13, 1976. Roundup of current proposals in legislatures of Idaho, S. Dak., Colo., and Ca.

"Regional legislative review," Mar. 26, 1976. Colo. lawmakers taken to task; Senate labeled anti-environmentalist; Utility siting, bottle bill killed in Idaho; South Dakota loses ground on bottle bill.

"Regional Legislative Review: Colo. senate blasted by newspaper," Apr. 9, 1976. Rocky Mt. News finds fault with Colo. senate for killing transportation bill, siting bill, weakening reclamation bill and increase of severance taxes.

"Region's legislators tackle conservation problems," by Glen Dodge, Jan. 30, 1976. Summary of legislation enacted in Colorado, Idaho, Wyoming, New Mexico.

ENVIRONMENTALISTS

"Montana governor fires Gary Wicks, natural resources head," Dec. 31, 1976. Two state officials who have taken pro-environmental stands, Wicks and Woodger, fired by Gov. Judge.

"Scientists who challenge the technological society. A look at some naturalists," by Ann L. Schimpf, Jan. 2, 1976. Resume re: J.J. Audubon, Aldo Leopold, Margaret Nice, Ms. Cockerell, Ellen Swallow, Rachel Carson; Opportunities in Environmental Careers.

"Environmentalists say they're supporting full employment, too," May 21, 1976. New organization points out how improving environmental quality can produce jobs.

ESCALANTE AREA — PHOTOS

"The Escalante's bleakness has been its saving grace," by Sarah Doll and others, July 30, 1976. Problems connected with area discussed in short article accompanying centerpread photos.

ESCUJILLA MT.

"Doggedly working to save Escudilla Mt.," by Buz and Mary Ann Youens, by Peter Wild, May 7, 1976. Efforts of the Youens couple to stop Watts timber sale and save mt. from destructive timbering.

EXOTIC SPECIES

"Park Service to eliminate exotics," Dec. 31, 1976. Non-native species in nat'l parks to be controlled or eliminated.

FALCONS (Peregrine)

"Duck hawk's fate linked to wetland," Mar. 12, 1976. Artist donates painting to raise money for saving peregrine.

FENCING

"Fences can devastate deer, antelope; New killer fences discovered," June 12, 1976. BLM fences kill incredible number of wild game animals.

FERRETS — BLACK-FOOTED

"What good is a black-footed ferret?" by Sarah Doll, Jan. 30, 1976. Habits, behavior, and efforts to prevent extinction.

FISHERIES (Columbia R. System)

"Dams take their toll; Salmon steelhead struggle," by Sarah Doll, July 2, 1976. Problems of saving salmon fisheries on Idaho-Wash.-Oregon rivers.

"Endangered Chinook Salmon," Nov. 5, 1976. Idaho Dept. of Fish and Game declares chinook endangered.

FLAMING GORGE RESERVOIR

"Reservoir ups pollution 32%," Jan. 2, 1976. Fluctuation of water in reservoir pulls salt-laden water into reservoir.

FLOAT TRIPS

"Private, commercial river runners face new limits," by Verne Huser, May 21, 1976. Use ceilings imposed on several rivers, conflict precipitated.

FROME, MICHAEL

"Mike Frome nails resource scandals; Fired twice for naming names," by Joan Nice, Feb. 13, 1976. Biog. facts, activities of subject.

GAME MANAGEMENT

"Mitigation slow in coming," July 16, 1976. Idaho Fish and Game working to get land trade with BLM to replace winter range loss at Dworshak Dam near Orofino, Idaho.

GEESSE — CANADA

"Honking heralds of spring," by Sarah Doll, Mar. 12, 1976. Habits and behavior of species, drawn from *World of the Canada Goose*, Van Wormer, Joe.

GRAND CANYON NATIONAL PARK

"Grand Canyon," Aug. 27, 1976. Hearing held on enlargement of park.

"Taxing Parks," by Michael Sellett, Feb. 13, 1976. Teton County Commissioners concerned about suggested expansion. Hansen and Roncalio give views on proposed Fed payments to counties of 75 cents per acre of fed land.

GREAT DIVIDE BASIN

"An invitation to a very strange place; Wyoming's Red Desert needs defenders," by Dick Randall, June 18, 1976. Extensive description of area, wildlife, features; suggestions for management.

"GREAT RIFT PRIMITIVE AREA — PROPOSAL," by Bruce Hamilton, Oct. 22, 1976. 270,000 acres near Craters of Moon proposed for protection.

GREEN RIVER

"Locals oppose moving Green to Platte," May 21, 1976. Green River citizens opposed to trans-basin diversion.

GROWTH

"Boulder adopts plan to slow growth; Limits new housing starts," by Bruce Hamilton, Nov. 19, 1976. Details of city plan to limit growth to 1 1/2 to 2% per year.

"Joy, shipmates, joy! Survival with honor in the Rocky Mountain West," by Edward Abbey, Sept. 24, 1976. Emphatic opposition to industrial growth in Rocky Mt. West.

HIGH COUNTRY NEWS — POLICY

"Elation, inflation at High Country News; Report to stockholders," Aug. 27, 1976. Semi-annual report on financial situation.

"Encouraging news: we are not broke," Feb. 13, 1976. Summary of financial situation; recognition of contributors; suggestions for means of further expansion.

"HCN announces award winners," Dec. 31, 1976. Satirical environmental awards.

"HCN survey and reader profile: Tell us where to go," Jan. 30, 1976. Questionnaire survey to determine readers' preferences.

"Readers find HCN accurate, lively," May 7, 1976. Summary of survey of Jan 30, 1976.

HIGH TRAILS (Environmental Education, Colo.)

"Camp fosters environmental awareness; Award-winning study center," by Mark Peterson, Dec. 3, 1976. Description of environmental summer camp program.

HOMESTEAD LIFE

"Luxurious life in the Sweetgrass Hills," by Ruth Evans, Mar. 26, 1976. Review of homestead area in Mont.

HUSTON PARK ROADLESS AREA

"Wyoming wilderness sought for water," by Bart Koehler (Wilderness Society Rep.), Oct. 8, 1976. Three year planning compressed into three months, for unknown reason.

INDIAN PEAKS WILDERNESS PROPOSAL

"Indian Peaks wilderness gem within cities' reach; USFS proposes narrow strip of wilderness," by Mark Peterson, Dec. 31, 1976.

INDIANS (Navajo)

"Navajo Nation faces development: Agriculture or industry?" by Rodney Barker, May 21, 1976. Lengthy discussion of development of agriculture and industry on Navajo reservation.

INDUSTRIAL DEVELOPMENT

"Corporate Connection" reveals ties of energy, banking interests," Sept. 10, 1976. Study available from Colo. Open Space Council Mining Workshop, shows multi-national energy companies interlocked.

INDUSTRIAL SITING

"Changes may be needed in Wyoming siting act; A close look at Wyoming's new law," Apr. 23, 1976. Analysis of siting act; operation up to present. First of two parts.

"Council sets conditions for Wheatland plant," May 7, 1976. Summary of siting council decision re: Wheatland plant.

"MBPP clay was already fired," Apr. 23, 1976. Editorial analysis of Industrial Siting Council's first case.

"Ranchers disillusioned with siting," Apr. 23, 1976. Harsh criticism of siting council.

"Siting act holes may let impact problems grow; A close look at Wyoming's new law," by Marjane Ambler, May 7, 1976. Shortcomings revealed in siting law.

"Wyoming's secret tapes," July 2, 1976. District court decides against releasing taped record of siting council meeting.

IRRIGATION (Idaho)

"BLM farm plans hold promise, problems; Making the Idaho desert bloom," by Bruce Hamilton, Feb. 13, 1976. Analysis of advantages and disadvantages of desert land entries near Snake R. Birds of Prey Nat'l Area.

JACKSON HOLE — AIRPORT

"Bob LaLonde: bringing jets to Jackson Hole; Not after another O'Hare," July 16, 1976. Views of LaLonde re: expansion of airport.

"JACKSON HOLE (Land use planning)" "Jackson Hole wrestles with growth," by Mary Inman, Mar. 26, 1976. Review of efforts to plan orderly development in Jackson Hole since 1968.

KAIPAROWITS POWER PROJECT

"Kaiparowits coal power plants scuttled; Glee and gloom in Utah," by Jack McLellan, Apr. 23, 1976. W. R. Gould announces plans for plant abandoned for now.

"Kaiparowits press conference forces confrontation; Primitive dialog develops," by Rob Thompson, Jan. 30, 1976. Southern Utahns fight environmentalists over Kaiparowits.

KECK, EMIL AND PENNY

"Largest Wilderness in capable hands," by Peter Wild and Everett Peirce, Sept. 10, 1976. Caring for forest and preserving wilderness values, job of well-qualified couple.

LAND USE AND PLANNING

"Country-city conflict in Colo.," Oct. 22, 1976. 50 farmers raise ? — is urban growth putting agriculture out of business?

"Earl Cross challenges 'top thinker's' philosophy. Why not give power to the people?" July 30, 1976. Views of one resident of Shell, Wyo., on land planning.

"Only ghostly guidelines remain," June 18, 1976. Adverse criticism of permissive rather than mandatory guidelines of Wyo. Land Use Commission.

"Planning progresses unevenly in West," Jan. 16, 1976. Summary of land use legislation in states and fed.

"Shell says, 'We'll plan — our way:' Outlaws agricultural water transfers," by Marjane Ambler, July 30, 1976. Details of land planning activity at small town of Shell.

"Weld County fights to preserve farm land," by Glen R. Smith, Dec. 31, 1976. Details of efforts to save ag. land in Weld Co., Colo.

"Whatever happened to the federal land use bill? David Calfee, lobbyist, answers," by Bruce Hamilton, July 2, 1976. Fed. land use bill killed in 1975.

"What should the state demand from counties? Wyoming land use debate," June 18, 1976. Report on final two meetings of state land use commission.

LCV (League of Conservation Voters)

"Conservation voters focused on Montana races," Dec. 3, 1976.

LECHEFSKY, DAN

"Organizing wilderness sympathizers: Don Lechefsky in Idaho," by Wilder Bellamy, Oct. 8, 1976. Biog. info. and activities of subject.

LOBBYING

"Regional Legislative Review," Feb. 27, 1976. Wyo. may raise coal tax — a little; House, Senate defy Gov. Andrus in Idaho; Committee kills slurry pipeline in Neb.

"Regional legislative review," Mar. 12, 1976. Colorado considers siting, tax bills S.D. — Omb vote, no — guarded on Garrison; Wyoming legislators refuse to raise coal taxes.

"The twain shall meet," by D. Sawyer Whipple, Sept. 24, 1976. New columnist offers advice to lobbyists.

"The twain shall meet," by Dan Whipple, Oct. 8, 1976. Suggestions on how to influence federal government.

MACE, STUART

"Stuart Mace, Teacher, of Toklat-at-Ashcroft," Jan. 2, 1976. "... strength to ... stand up for the wildlife, for the green world ... and for the young people of the area when they have legitimate beefs."

MATHER, STEVEN

"Steven Mather rescued languishing national parks: a conservation pioneer," by Peter Wild, Dec. 3, 1976. Biog. of Mather; history of parks.

McCOMB, JOHN

"John McComb: a natural for the job, Sierra Club's Southwest Representative," by Peter Wild, Jan. 30, 1976. Biog. of Mather and activities of subject.

McKEOWN, MAXINE

"Creating a university on S.D. plains," by Robin Tawney, Aug. 27, 1976. Teaching activities of subject.

MINING

"Mineral withdrawals: death of 1000 cuts" by Bruce Hamilton, Jan. 16, 1976. Review of status of mining exploration on public lands.

"Miners want public lands: Salt Lake hearings," Sept. 24, 1976. Hearing dominated by mining interests.

"Mining regs draw fire from all," Jan. 2, 1976. Proposed federal coal mining regs severely criticized at hearings in Cheyenne and Billings.

NATIONAL MONUMENTS

"Mining at monument," Mar. 26, 1976. Panjea Resources Corp. is exploring for copper at Organ Pipe Cactus Nat'l Monument; bill in congress would ban mining in all nat'l parks and monuments.

"Six Park Wildernesses proposed; Conservationists disappointed by size," Feb. 27, 1976. House subcommittee approved six units for nat'l wilderness classification.

NATIONAL PARKS

"Ford seeks more dollars for parks: Too late?" Sept. 10, 1976. Pres. Ford proposes \$1.5 billion for parks, refuges, etc. in speech at Yellowstone, late in Congressional session.

"Vote comes soon on parks mining bill," Mar. 12, 1976. Crippling amendment added to parks mining bill. Roncalio and several others fail to show at sub-committee meeting.

NATIONAL WILDLIFE REFUGES

"Refuge abuses alleged: public hearings planned," Feb. 27, 1976. Controversy over management of refuges: suggested alternatives.

NORTHERN ROCKIES ACTION GROUP

"NRAG tells how to rock boat," May 21, 1976. Action group helps public interest organizations operate more efficiently.

NUCLEAR POWER

"California nuke initiative backers claim progress," by Joan Nice, July 16, 1976. Analysis of nuclear initiative vote.

"Insiders quit over nuclear risks," Feb. 13, 1976. Gen. Electric engineers quit jobs to join Project Survival.

"Joint Atomic Committee abolished, Morris Udall to head Interior," by Lee Catterall, Dec. 17, 1976. Joint Committee on Atomic Energy stripped of power. Conservationists regard Udall's heading of Interior committee as bright spot.

"Nuclear initiative no cause for more coal plants in West, Friends of Earth Rep. says," June 4, 1976. "Real culprit is uncontrolled growth in consumption of electricity."

"Politics prevent fair nuclear initiative contest," by Marjane Ambler, Oct. 22, 1976. Unfair means used to oppose Montana initiative re: nuclear plants.

"Were we outspent or outfoxed?" Nov. 19, 1976. Editorial re: results of initiatives in several states to outlaw or control nuclear plants.

"Will Colorado nod to initiative that California nixed?" by Joan Nice, Oct. 22, 1976. Initiative proponents hopeful in Colo.

OAHE IRRIGATION PROJECT

"James River destined to become drainage ditch" Mar. 26, 1976. Channelization of James for drainage purposes would destroy important wildlife habitat.

ODASZ, FRANK

"Railroads, water plague Frank Odasz," by D. Sawyer Whipple, Nov. 5, 1976. Problems and personality of man who is working to get slurry line.

OIL SHALE

"Backing out of shale," July 16, 1976. Gulf and Standard ask two-year delay in shale development.

"Interior hawks Colorado oil shale leasing program for one year," Aug. 27, 1976. Department criticized for bailing out leading companies.

"Oil Shale dropouts," Jan. 2, 1976. House of Reps. refuses 6 billion loan guarantees to synthetic fuel producers, so several companies pull out of oil shale leasing.

"Utah oil shale boom: not if, but when leases suspended, what next?" by Dorothy Harvey and Bruce Hamilton, Dec. 3, 1976. Various aspects of shale development and suspension of leases.

OPEN SPACE

"Jeffco buys open space with sales tax: Organizers tell how to sell tax," by Marjane Ambler, July 2, 1976. Jefferson County, Colo. solving some of problems of open space needs.

OREGON TRAIL

"Oregon Trail: a tie to the past," by Sarah Doll, Oct. 22, 1976. Review of Oregon Trail history.

ORVs (Off Road Vehicles)

"Utah ORV regs, maps ready," by Ann Schimpf, Dec. 17, 1976. Forest Service produces ORV plans for Intermountain West.

"What ever happened to ORV plans?" by Ann Schimpf, Apr. 9, 1976. Important administrative steps taken by Forest Service re: ORVs.

OWYHEE RIVER PROPOSAL

"Rocks, rivers, snakes, solitude — Owyhee: Loneliest place around," by Wilder Bellamy, Oct. 8, 1976. Area being studied for possible designation as nat'l wild and scenic river.

OWLS

"Silent hunters of the night," by Sarah Doll, Jan. 16, 1976. Habits and behavior of many owl species.

PETROLEUM INDUSTRY (Alaska)

"Report from Alaska," by Gregory Paul Capito, Jan. 2, 1976. Lack of refineries on West Coast may result in shipment of Alaskan oil to Japan.

PHOSPHATES (Idaho)

"Environmental impact statement paints a grim picture of southwest Idaho phosphate development; Air and water pollution expected," by Bruce Hamilton, June 4, 1976.

PHOTOGRAPHS — OLD WEST

"Idaho photographer catches new images of Old West," June 18, 1976. Barbara B. Brown manipulates photos of old buildings to get unusual effects.

"Ron Mamot celebrates well-loved Wyoming sights," Dec. 17, 1976. Description of work of photographer Mamot.

PIONEER POWER PLANT (Idaho)

"Idaho rejects Pioneer plant; Environmental objections," Sept. 24, 1976. Idaho Public Utilities Comm. rejects application for plant.

"Idaho voters say no to coal plant," June 4, 1976. Citizens for Alternatives to Pioneer halt building of Pioneer Plant, at least temporarily.

"Pioneer opponent looks to rate reform," Oct. 8, 1976. Advice from leaders of movement that has stopped Pioneer.

PLATTE RIVER POWER PROJECT (Colo.)

"Coal plant proposed in urban backyard," by Glen Smith, Oct. 22, 1976. Problems re: project brought at public hearing.

POISONS

"EPA threatens 1080 lawsuit," Sept. 24, 1976. U.S. attorney proposes compromise.

"Ford rules for, judge against poisons," June 4, 1976. Ford and U.S. Supreme court make contradictory decisions.

POLLUTION — AIR

"Air rules soft on smelters; Nat'l parks protection weakened," Feb. 27, 1976. Proposed bill would allow power plants, e.g. Kaiparowits, to be built near parks.

"Bridger plant to scrub stacks," Jan. 16, 1976. Various energy companies versus state air quality standards.

"Cabbage soup skies overhead," by John Bartlett (Guest Editorial, Los Alamos Monitor), July 30, 1976. Specifics of air pollution levels legally acceptable.

"Clean air act changes to protect West," Jan. 2, 1976. Amendments to Clean Air Act discussed and analyzed.

"Clean air act fight focuses in House," Aug. 27, 1976. Review of "Air-Water Pollution Report."

"Colstrip decision awaits Cheyenne's," Sept. 24, 1976. Cheyenne tribe throws roadblock against expansion of Colstrip in Montana on basis of air quality.

"EPA defends air standards: L.A. Times claims figures deliberately distorted to prove sulfur dioxide effect on health."

"More Time for Scrubbers," Dec. 31, 1976. Pacific Power, Idaho Power, Black Hills Power, agree to scrubbers at Bridger and Wyodak. Suit against Wyoming dropped.

"Moss attacks clean air act," Mar. 26, 1976. Sen. Moss, Utah, expected to introduce crippling amendment to Clean Air Act.

"Moss attacks states' rights in air amendments," Apr. 23, 1976. Clean air amendments would assure states' authority to classify land re: clean air.

"Northern Cheyenne want Class I air: First in nation to make request," by Marjane Ambler, July 16, 1976. Northern Cheyenne asking EPA for Class I air designation.

"Reckoning" from Washington, "Clean Air Act," by Lee Catterall, Aug. 27, 1976. Congressional action re: clean air.

"Regional refineries called big polluters," Jan. 16, 1976. Council on Economic Priorities reports of pollution control by 61 companies.

"States flunk EPA air quality standards test," Aug. 27, 1976. Review of present status of air pollution control in several states.

"Sulfur dioxide control battle rages," Feb. 13, 1976. Rundown of efforts to keep sulfur dioxide levels down.

"Train proposes clean air compromise," July 2, 1976. Pending clean air legislation in Washington.

"Utah charts air future," Dec. 31, 1976. Proposal to divide state in four categories in respect to air quality.

POLLUTION — WATER

"EPA sets water goals, Mar. 26, 1976. EPA issues regs to prevent further pollution of water."

POPULATION CONTROL

"Time to tackle population issue," by John Return (Zero Population Growth), (Reprinted from COSC Conservator), Oct. 22, 1976. Question of when and how to stop pop. growth the real issue.

POWELL, JOHN WESLEY

"John Wesley Powell tests El Dorado," by Peter Wild, Aug. 27, 1976. First of a series on early Rocky Mountain conservationists.

"John Wesley Powell explores West: Conservation pioneer, part II," by Peter Wild, Sept. 10, 1976. Second of a series on pioneer conservationists.

PUBLIC HEARINGS

"Notice of hearing reaches few," Aug. 27, 1976. Complaint that Interior Dept. does not give sufficient notice of hearings.

"The twin shall meet," by D. Sawyer Whipple, Oct. 22, 1976. Public hearings useless in opinion of writer. Especially critical of hearings in Cheyenne re: reclamation laws.

PUBLIC LANDS

"BLM caught in multiple use bind," by Bruce Hamilton, July 16, 1976. Implementation of multiple use a thorny problem.

"Haskell says range-aid bill backfired," May 21, 1976. Bill to rehabilitate range lands amended in Senate to give range permittees vested interests.

"House bill prompts public land alert," May 7, 1976. Comparison of HR 5224 and S 507.

"Public lands should stay public," by Mike Leon (Reprint from Sheridan Press), July 2, 1976. Question of who should control public lands, state or fed.

PUDIM, ROB

"Rob Pudim, Cartoons, counseling and but-terflies," by Bruce Hamilton, Apr. 23, 1976. Biog. facts and activities of subject.

RANDALL, DICK

"Dick Randall: a life with coyotes: Desert rat turned defender," by Bruce Hamilton, June 18, 1976. Views and activities of subject.

RANGE MANAGEMENT

"A grass man looks to the future of the range: Home on the range not suitable for cattle," by Gary Nabhan, Mar. 26, 1976. Alternatives to present range policies.

"Local rancher challenges AMAX grazing permit," by Marjane Ambler, Dec. 3, 1976. Meetase ranchers have problem of keeping range permits against corps.

"Ranchers weigh grazing rules: New BLM proposal," by Joan Nice, Sept. 24, 1976. Both environmentalists and wool growers critical of new regs.

"Reckoning" from Washington, "Increasing grazing fees," by Lee Catterall, Apr. 9, 1976. Past history and present status of livestock grazing fees on public land.

RECLAMATION

"Citizen watchdogs must be stubborn," Sept. 10, 1976. Efforts of COSC and EDF to enforce reclamation and mining regs in Colo.

"Minuted (finally) for ignoring Colorado regs," by Marjane Ambler, Sept. 10, 1976. Efforts to enforce reclamation and mining regs in Colo.

"Ranchers challenge Montana reclamation study," by Marjane Ambler, Dec. 17, 1976. Bitter controversy between Mont. ranchers and researcher Hodder re: Hodder's study of feasibility of reclamation of stripmined land.

"Will state regs cover federal coal: Wyoming balks at Interior proposal," by Bruce Hamilton, Oct. 8, 1976. Wyo. official and Interior Dept. in conflict re: reclamation laws.

"Zap mine rapped," Dec. 31, 1976. N.D. miners charge reclamation laws violated. Photo shows top soil not piled separately.

RECORDINGS — REVIEWS

"Wilderness McCall, C.W., review by Dave Foreman, Aug. 27, 1976. Songs to appeal to 'redneck' society re: environment."

RECYCLING

"Get your mind in the gutter," Nov. 5, 1976. Need for recycling, esp. aluminum, in editorial.

"Voters face bottle, nuclear initiatives: Colorado — will bottle bill work?" by Bruce Hamilton, Oct. 22, 1976. Pro and con re: proposed bottle bill.

"Paper recycling business expanding," Aug. 27, 1976. Friedman and Sons will complete \$1 million paper recycling plan.

REDDING, BUD

"Bud Redding knew the truth of Sarpy Creek," by Donald Tobkin, Jan. 16, 1976. Bud Redding's fight against strip mining. Biographical; tribute to Redding after his death.

REDFEARN, DON

"Don Redfearn, elk refuge manager," by Mary Inman, May 21, 1976. Redfearn's work in Jackson Hole refuge.

ROBINSON, PRISCILLA

"Success formula: don't waste time losing: Arizona activist Priscilla Robinson," by Peter Wild, Apr. 9, 1976. Director of SES studies ways for cities to maintain quality of environment and surroundings.

ROCKY MOUNTAIN NATIONAL PARK

"Would park status save or destroy the solitude? Never Summers never crowded," by Mark Peterson, Sept. 24, 1976. Rep. Tim Wirth would add Never Summers to Rocky Mt. Park.

RONCALIO, E.

"Reckoning" from Washington, "Roncalio may become power," by Lee Catterall, July 2, 1976. Roncalio may become atomic energy committee chairman.

SALMON — CHINOOK

"Endangered chinook salmon," Nov. 5, 1976. SALMON RIVER BREAKS AND IDAHO PRIMITIVE AREA WILDERNESS

"Either we share it or we lose it. Idaho's secret: Chamberlain Basin," by Carl Brown, Apr. 9, 1976. Many details of hearings on proposal; far-reaching land management decision.

SAVERY-POTHOOK IRRIGATION PROJECT

"Savery-Pot Hook destined to hurt elk," Sept. 24, 1976. USFWS opposes construction because of wildlife habitat damage.

SAWTOOTH AREA

"One million acre park-NRA proposed," July 30, 1976. Two new Nat'l parks and two new NRA areas proposed in central Idaho.

SEWAGE DISPOSAL

"Toilets: a revolution from the bottom up," by Glen Dodge, Jan. 2, 1976. Alternative systems of human waste disposal outlined.

SKIING

"Colorado ski management plan unveiled," Oct. 22, 1976. State becoming involved in ski area planning.

"Lamm OK's new ski area near Vail: Valley faces new recreation boom," Feb. 27, 1976. Compromises finally lead to approval of new ski area.

"Four Seasons resort nears approval: More skiing in Utah," by Mark Peterson, Nov. 5, 1976. Details of development near Provo.

SOCIAL IMPACT

"The boom town — after the statisticians go home. A talk with Rock Springs residents," by Marjane Ambler, Nov. 5, 1976. Interviews with Rock Springs people.

"Pilot study to help towns meet quandary of impact," Dec. 3, 1976. Freudenthal, coordinator of governor's planning office, helps design plan for impact assistance for small towns.

"Uranium firm wrestles with growth," by Mary Trigg, Sept. 10, 1976. Western Nuclear example of company town with growth problems.

"Wheatland crime rate rising," Sept. 10, 1976. Following MBPP project, town notices crime increase.

"Women face boom town isolation: Jeffrey City, Wyoming," by Mary Trigg, Sept. 10, 1976. Personal notes re: women's life in fast-growing mining town.

SOLAR ENERGY

"Domestic technology offers low-income people opportunity: Air heaters, greenhouses show," by Joan Nice, Dec. 17, 1976. Article about Malcolm Lillywhite's Domestic Technology Institute.

"How to reach sun people in the Northern Rockies," July 16, 1976. List of education-oriented groups in Rocky Mt. region who specialize in alternate energy.

"Lively professor makes Laramie's sun, wind work. Built courthouses collectors," by Phil White, Oct. 22, 1976. Hill demonstrates possibilities of alternate forms of energy.

"Low-income families build solar homes: Colorado Rural Housing Development Corp.," Nov. 5, 1976. Simple system of solar heating used for partial heating.

"Mountain homes use sun: Ideas from Zome-works," Mar. 26, 1976. Description and diagrams of solar heated home at Snowmass, Colo.

"Non-plumbers build water heater," by Joan Nice, May 7, 1976. Demonstration solar water heater built at Billings conference. Details of construction.

"People's corporation to build solar, methane greenhouses," Dec. 17, 1976. Laramie Co. Community Action to build solar greenhouses with manure digester for supplementary gas and fertilizer.

"Plans for a solar water heater, drum wall, bedwall, dehydrator," Oct. 8, 1976. Addresses where plans may be obtained.

"Plant vegetables now," by John M. Pena, Sept. 24, 1976. Solar greenhouse built by Cheyenne young people.

"Salesmen with sun power too West; Colo. companies offer solar heaters now," by Joan Nice, Feb. 27, 1976. International Solarthermics, Solar Energy Research Corp., Solaron, Energy Dynamics, CSI Solar compared.

"San Luis Valley shows rural ingenuity: Solar made simple, cheap," July 2, 1976. Inexpensive ways to utilize solar energy developed in San Luis Valley, Colo.

"Sheet metal firm sells Sun Grabber; For pools, hot water and houses," by Joan Nice, Sept. 24, 1976. Don Erickson busy experimenting and learning about solar heating.

"Should you buy solar now — or wait?" by Joan Nice, Mar. 12, 1976. Estimating costs; solar workshop; solar garden; getting correct information from solar firms.

"Solar electric power plant," July 2, 1976. Solar electric generating principle demonstrated at Albuquerque.

"Solar fire station," Dec. 3, 1976. First solar system in southwestern Colo.

"Solar homes cool, easily damaged," June 4, 1976. Report on W.A. Shurcliff's observations.

"States push insulation and alternative energy," Mar. 26, 1976. Workshops, conservation programs to boost insulation, alternatives to fossil fuels, announced.

"You can invent an energy system, solar workshop leaders say," by Joan Nice, Apr. 9, 1976. Report on solar energy workshop in Billings. Greenhouse concept, annual cycle solar heating, etc. Addresses for info. on solar devices.

"Zonemaster soaks up sun," July 16, 1976. Details of solar heated home by Steve Baer and Zoneworks, Corp.

STRIP MINING

"Coal Royalties are nice, but..." Feb. 27, 1976. Editorial on Gov. Herschler's attitude toward strip mining regs.

"Landowners challenge BLM secrecy: Who's stripping our homes?" Nov. 19, 1976. Landowners and environmentalists attack Interior EMARS policies.

"Melcher says regs don't protect water, landowners. Sponsor outlines bill, strip regs," May 21, 1976. Interview with Rep. John Melcher on strip mine regs. legislation.

"Melcher takes new tack to pass House strip bill," July 2, 1976. Melcher trying to get signature on discharge petition.

"Ranchers protest Tongue Valley mine," July 16, 1976. Ranchers and environmentalists try to block mine by Wyo. law that would not have been allowed if fed. strip mining law had been passed.

"Reckoning" from Washington, by Lee Catterall, Feb. 27, 1976. Stripmining bill reintroduced. May be combined with other coal legislation.

"Reckoning" from Washington, "Strip mining bill lingers," by Lee Catterall, May 21, 1976. Present status of strip legislation.

"Reckoning" from Washington, by Lee Catterall, Sept. 10, 1976. Status of fed strip mining legislation at close of session.

"Reckoning" from Washington, "Fight may begin anew," by Lee Catterall, Nov. 19, 1976. Strip mining leg. in new Congress.

"Rule committee stops strip bill," Mar. 26, 1976. Rules committee stalls strip mining bill. "Strip mine bill down but not dead," Apr. 9, 1976. Melcher attempting to force strip mine bill onto house floor.

"Strip mine laws loopholes cited," Apr. 23, 1976. Inadequacies found in strip mining laws show need for Fed. strip laws.

"Toughest strip mine law a pushover?" July 16, 1976. NPREC says Montana strip mine law still not tough enough.

"Visit with Navajos convinces N. Cheyenne to oppose mining," Oct. 22, 1976. N. Cheyenne opposed to strip mining after visit to Navajos.

SUTTON, ANN & MYRON
"A lifetime watching the wilderness," by Bruce Hamilton, Feb. 27, 1976. Biog. activities and philosophy of subjects.

SYNTHETIC FUELS

"Groups oppose synfuels bill," by Kevin Markey (Friends of Earth), July 30, 1976. Review of synthetic fuels subsidy bills.

"House synfuel bill delayed," by Kevin Markey (Friends of Earth), June 4, 1976. Present status of HR 12112.

"Oilmen, conservatives v. synfuels bill: Money needed for alternative energy" by Kevin Markey (Friends of Earth), May 7, 1976. HR 12112 would subsidize development of synthetic fuels.

"Synfuels face congressional dead end," Sept. 24, 1976. GOA opposed to loan guarantee bill. TELLURIDE (Colo.)

"Telluride blues, a hatchet job," by Edward Abbey, Oct. 22, 1976. Excerpt from future book "Malice aforethought: Essays in defense of the American West."

TETON DAM BREAK

"Dam failure no act of God," Oct. 8, 1976. House committee blames Bur. of Reclamation. Makes recommendations for future.

"High Country," by Tom Bell, June 18, 1976. Tom Bell's comments on dam break; review of circumstances re. building of dam.

"Open up Teton Dam inquiry," July 16, 1976. Editorial, objecting to closed door inquiry into Teton break.

"Reporters uncover Teton Dam errors," July 2, 1976.

"Teton Dam: a sorry lesson," June 18, 1976. Editorial on Teton Dam and its flood.

TIMBERING

"Awards for forest destruction," by G.M. Brandborg, Mar. 12, 1976. Brandborg protests Forest Service practices.

"Big chance for timber reform," by Pamela Rich and Ted Whitesell, Apr. 23, 1976. Summary and discussion of Randolph Brown Timber Management Reform Act, S. 2926 and H.R. 11894.

"Both sides try to revamp timber law," Mar. 12, 1976. S. 2926 and H.R. 11894 would restrict clearcutting and prevent overharvesting. Sen. Humphrey and Rep. Foley would remove restrictions.

"Congress timber Management reform bill vote expected soon," July 30, 1976. Debate over forest management reviewed in wilderness publication.

"Forest service timber plans attacked," by Tim Mahoney, Feb. 13, 1976. Timbering plans for five nat'l forests in Colo. challenged in by conservation groups.

"Group stalls plan that would allow logging of Elkhorn Range," Aug. 27, 1976. Conservation groups in Montana asks reconsideration of plan that would allow road through potential wilderness.

"Timber EISs required," June 4, 1976. Major timber cutting will require EIS.

"Timber reform: rely on Congressional standards or professional?" Apr. 9, 1976. National Forest Timber Management Reform Act known as Randolph-Brown bill and Humphrey-Johnson bill compared.

TNC (The Nature Conservancy)

"The Nature Conservancy: a quiet approach to preserving land," by Sarah Doll and Mark Peterson, Nov. 19, 1976. Up-beat description of land acquisition activities of TNC.

TPL (Trust for Public Land)

"Open letter to High Country News Readers," by Huey D. Johnson, Nov. 5, 1976. Policies and activities of TPL.

TUNDRA (Drawings)

"Tundra, land of the Lilliputian," by Ann Zwinger, Oct. 8, 1976. Author and illustrator Ann Zwinger sends charcoal drawings of plant life at high altitudes in Rockies.

UINTAS WILDERNESS PROPOSAL

"Wilderness advocate fears timber threats in Uintas," by Bart Koehler, Apr. 23, 1976. Description of area; pro and con of expansion for wilderness classification.

UMWA (United Mine Workers of America)
"The train shall meet," by D. Sawyer Whipple, Nov. 5, 1976. Relationship of mine workers unions and coal development in West.

URANIUM MINING (Big Horn Basin, Wyo.)
"BN probing Big Horns," by Dan Whipple, Dec. 3, 1976. Possibilities, growth and impact of uranium exploration in basin.

URANIUM MINING

"Stresses and strains," Aug. 27, 1976. More comprehensive statement needed on Exxon's plans for uranium on Navajo reservation.

URANIUM MINING (Colo.)
"Uranium experiment moves into NE Colorado: A permit an arm's length long," by Kathy Kaiser, Nov. 5, 1976. Uranium miners using new method of in situ with conflict with ag interests.

VIDEO-TAPES

"Video-tape opens up county politics. Need a new tool?" by Glen R. Smith, Sept. 24, 1976. Video-tape project makes possible better communication citizen to officials.

WATER

"Court affirms state water jurisdiction," Apr. 23, 1976. U.S. Supreme Court affirms states' rights in water rights cases; called "landmark."

"Denver growth demands more dams; Plugging the Platte," by Jim Scott, Oct. 8, 1976. Serious problems re. water for metro area, Denver and surroundings.

"Idaho water plan charts the state's future; Agriculture favored over wildlife," by Bruce Hamilton, May 21, 1976. Report of public hearings in Idaho re: state water plan plus summary of recommendations.

"Herschler challenges Corps," Apr. 23, 1976. Constitutionality of federal water laws to be challenged in court.

"Water policies to start at local basins; Yellowstone Basin level B. study," by Marjane Ambler, Mar. 12, 1976. Studies to be made to determine water use priorities.

"Water problems plague Wyoming boomtown," by Dan Whipple, Oct. 8, 1976. Gillette has conflicts with DEQ over water and sewer.

"Wyoming ag water loans aid energy industry," by D. Sawyer Whipple, Oct. 22, 1976. Industrial water provided by state loans.

WATERFOWL (Protection)

"Trona companies try to rescue birds they endanger," Mar. 26, 1976. Efforts of Stauffer Chemical, FMC Corp., ineffective to prevent death of waterfowl on waste ponds. Better solution must be found.

WEISBUCH, JONATHAN

"Air, Water concern won't hamper development," by Mike Jacobs, Dec. 17, 1976. North Dakota state health officer discusses environment in relation to health.

WESTSIDE IRRIGATION PROJECT (proposed)

"Can we afford new desert cropland? Westside project," Jan. 16, 1976. Proposal to pump water from Big Horn R. for irrigating land in Big Horn and Washakie Counties.

WETLANDS

"Dollars, diligence make the difference; How to save a wetland," by Marjane Ambler, Mar. 12, 1976. Several suggestions for saving wetlands explanation of Sec. 404 permit system.

"Rural landowners' cooperation essential to help save wetlands," Mar. 26, 1976. Wetlands can be profitable to farmers.

"Saving swamps for ducks and men; Bulldozers threaten," by Bruce Hamilton, Mar. 12, 1976. Importance of saving wetlands; value to ecosystem.

"Wetland protection law is endangered," May 7, 1976. Section 404 amendment would limit wetland protection program.

WGREGO (Western Governors Regional Energy Policy Office)

"Governors agree on multi-state problems tactics," by Marjane Ambler, Oct. 22, 1976. New process could be breakthrough in defining role for future.

"Western governors to shed federal constraint," Nov. 5, 1976. Affairs of governors' organization.

"Governors disband WGREGO," Dec. 17, 1976. Functions and staffs of Western Interstate Nuclear Board and WGREGO.

WHEATLAND POWER PLANT

"Citizens challenge Wheatland ruling," by Marjane Ambler, Apr. 23, 1976. LRCC to take sitting council to court re: ruling on Wheatland plant.

"Fishing hole may become mud hole," Feb. 27, 1976. Wyo. Game and Fish Dept. opposes plant because diversion of water will damage fishing.

"Nebraska sues over Wheatland project," Dec. 3, 1976. Neb. claims EIS not adequate; fails to consider recreation, whooping cranes.

"Quality of life crucial at Wheatland hearing; Wyoming's first siting hearing," by Marjane Ambler, Mar. 12, 1976. MBPP attorney claims "quality of life" not a legal consideration. Attorney for Laramie River Cons. Council argues opposite.

"Two groups sue but won't stop construction of Wheatland plant," June 4, 1976. Groups sue but no injunctions sought.

"Wheatland — should permit be revoked?" Dec. 3, 1976. Opponents of plant win new siting decision.

WHITE RIVER DAM PROPOSAL (Utah)

"White dam a white elephant?" Oct. 8, 1976. Concerned people urged to write for info. or to protest damming of White R.

WILD HORSES AND BURROS

"Bill amends burro act," Feb. 13, 1976. HR 2835 would amend Wild Horse and Burro Act of 1971.

"Burros only part of problem; Desert ecosystem suffers," by David W. Kitchen, Feb. 13, 1976. Kitchen answers HCN article: "America's Sacred Cow?"

"Burros threaten Grand Canyon; Wild horse law upheld," July 2, 1976. Burros having devastating effect.

"Donkey dilemma damages public land; America's sacred cow?" by Miriam A. Romero, Jan. 30, 1976. Time to take a hard look at the burro and act protecting it. Besides severe impact on vegetation and soils, burros have detrimental effects on native wild life populations.

"Wild horse roundup ruled illegal," Sept. 10, 1976. Federal judge rules Idaho roundup illegal.

WILDERNESS

"America (somehow) produced Wilderness Act; Anachronism for growth-worshipping nation," by Jennifer Lee, June 18, 1976. Discussion of principles of wilderness.

"Designating wilderness — asking for destruction? Neon sign syndrome," by Dave Foreman, B. Koehler, Bill Bishop, Art Wright, June 4, 1976. General philosophy of wilderness; plea for continuing to designate; problems of overuse.

"In defense of wilderness freaks," by Dave Foreman, Nov. 5, 1976. The philosophy of wilderness preservation.

"Uinta timber plans need change," by Bart Koehler, May 21, 1976. Appeal from Wilderness Society representative for letters re: North Slope Roadless area.

"Who's the purest of them all?" by Bart Koehler, Feb. 13, 1976. Wilderness Act carefully interpreted. Forest Service accused of subverting act in recommendations to Congress.

"Wilderness myths exploded," by Bart Koehler, Jan. 2, 1976. Guest editorial by rep. of Wilderness Society clarifies legalities of wilderness classifications.

"Will man destroy his last oasis?" by Alexis Parks, June 4, 1976. Reasons for setting aside wilderness areas and rationale for individual responsibility for wilderness preservation.

WILDLIFE — HABITS AND BEHAVIOR

"Wildlife in winter: a struggle for survival; Adaptations abound," by Sarah Doll, Jan. 2, 1976. Migrations, hibernating and other means of adapting to winter.

WILDLIFE MANAGEMENT

"Can funds be found for the unwanted?" by Mark Peterson, Sept. 10, 1976. Need for funds for management of non-game species.

"Proposals for poachers; Identify with ear tags? Or spray them out?" by R.C. Burkholder, July 2, 1976. Fanciful suggestions for dealing with problem of game being killed by poachers.

WILLIAMS, ELEANOR

"Elean Williams: preserving the past," by Mark Peterson, Nov. 19, 1976. Postmaster at Dutch John, Utah, works to preserve quality of life in Brown's Park.

WILSON, DAVID

"Dave Wilson — a pen for preservation," Nov. 5, 1976. Art work and bio. notes about artist.

WIND POWER

"Giant windmill test," Dec. 3, 1976. Windmill test in N. Mex.

"Lively professor makes Laramie's sun, wind work; Built courthouse collectors," by Phil White, Oct. 22, 1976. Hill demonstrates alternate energy.

"What to do when the wind stops; Wind furnaces," Jan. 2, 1976. Combined wind-solar heating system outlined.

"Windstudies promotes," Jan. 16, 1976. William H. Ward speaks up for the wind power energy alternative.

WOLVES — MEXICAN

"Mexican wolf classified as endangered species," May 21, 1976. Subspecies added to list of 428 endangered animals.

WOLVES (Alaska)

"Report from Alaska," by Gregory Capito, Feb. 13, 1976. Summary of wolf killing controversy by ADF&G.

"No title," Nov. 19, 1976. Alaska Fish and Game plan to kill 80% of wolves in Brooks Range.

"The wolf's ways defy generalization," by Sarah Doll, May 21, 1976. Wide-ranging discussion of wolves' habits and behavior, control methods, studies.

WOOD — PHOTOS

"The language of wood," by Judy Summer, Sept. 24, 1976. Photos showing textures and contrasts in wood.

WOOD — POEMS

"Springtime at Moccasin Creek," by Richard Huffstodt, Sept. 24, 1976. Poem accompanying wood photos in centerspread.

YOUTH CONSERVATION CORPS (YCC)
"Teenagers work hard for Utah forest conservation," by Ann Schimpf, Sept. 10, 1976. YCC active in Utah.

ZION NAT'L PARK

"Bryce, Zion concessions to stay," Jan. 2, 1976. Park Service will extend park concessions seven more years.