

CHECK YOUR ADDRESS LABEL

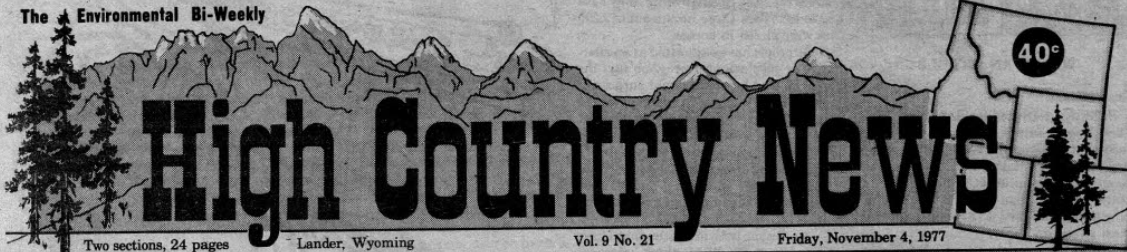
The numbers after your name stand for the month and year your subscription expires. If it's about due, how about sending in \$12 today? It assures you good service and saves HCN both time and money.

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX

RTE. 2
7449

11-78

The Environmental Bi-Weekly



Two sections, 24 pages

Lander, Wyoming

Vol. 9 No. 21

Friday, November 4, 1977

Solar heating industry troubled by installation, operating problems

by Joan Nice

The collectors are there. So are the fans, the ducts, the dampers, and the rock box in the basement. It looks like a solar house.

But according to its owner, James G. Johnson, it doesn't operate like one. He's been trying to get the completed system going for almost a year now. When he started to build a new home in Boulder,

Colo., Johnson says he went to the most reputable company he could find. He paid almost \$10,000 for the system. But Johnson's home is still heated by a conventional furnace, not by the sun.

Was he the victim of a solar fast buck artist? Not exactly. Johnson just had the bad luck to strike the current Achilles heel of the industry. The equipment he bought,

which is presumably sound, was rendered ineffective by a faulty installation.

The system may be repairable. But for now his home must be listed among the casualties left by the rapidly growing solar heating and cooling industry. His story and that of other solar homeowners indicate that harnessing the sun for heat by putting collectors on a roof may not be as simple as it appears. In systems that have been operating for a year or more in the Denver area, reports of problems are common, even in custom-designed projects sold by reputable firms that cost \$10,000 to \$20,000 per home.

David Moore, program manager for the U.S. Department of Housing and Urban Development's (HUD) solar heating and cooling demonstration program, says that most of the problems he has seen after awarding \$11 million in grants, are typical of the air conditioning and heating industry — not special solar problems, however.

He stresses the need for careful control of installation quality. Whether or not a solar system works depends partly on the installing contractor's attitude the day he puts it in, Moore says.

Most solar homeowners downplay their problems and defend the companies that sold them their solar equipment.

"I've had problems, but you must remember, mine was one of the first solar homes," says John VanDerwalker of Denver.

VanDerwalker's system, which has been operating for about a year and a half, is providing most of the heat needed for his home. He figures his solar equipment will pay for itself in 10-12 years.

"We are on the front end of this technology," he says. "Somebody has to be the pigeon."

Since his system doesn't work at all, James Johnson is not such a willing "pigeon." He bought his equipment from Solaron, a company that he had heard was the best in the business. Solaron provided equipment, blueprints, and gave Johnson a list of recommended subcontractors who could install the system. The installation was completed in August of 1976. By December, Johnson was sure that the system wasn't working. Every time the house needed heat, it was provided by the conventional furnace, not the solar system — even during sunny days.

Johnson called Solaron. They told him to



DON ERICKSON of Rocky Mountain Products advocates simplicity as a way of minimizing operating problems on solar heating systems. "It's tough getting very specialized systems to operate," he says. "We have to really struggle to stay simple."

talk to the firm that installed the system. But the installer had gone bankrupt. It took Solaron "some time" to find another installer for Johnson, according to John Meeker, manager of engineering services at Solaron.

But even now, over a year after the first installation was complete, the system is still not working, Johnson says. He concludes that Solaron, despite its reputation,

(continued on page 4)



JOHN BAYLESS OF SOLARON points to the company's early installations. Solaron has provided the hardware for approximately 500 installations in 40 states, he says.

THIS SOLAR "RETROFIT," a solar heating system added onto an existing home, was designed by architect Richard Crowther of Denver. It was one of Solaron's first installations. Crowther says most homes aren't suitable for retrofits. Usually too many compromises in design are involved to make it worth the money.



The Clean Air Act amendments have passed, so now it's up to states, tribes, and the federal government to make them work. Here's how you can help. See pages 6-7.

2-High Country News—Nov. 4, 1977


HCN
Letters

WANTS AN ARTICLE

Dear editors,

In letters to the editor September 23rd, Dick Hogan brings out some interesting facts that question the validity of a caption and picture of antelope that had appeared in an earlier issue of HCN. He deserved a better answer than given in the editors' note that "grassland is not worth a hoot for most wildlife."

Are antelope and other wildlife doing well on the 11,000 acres of disturbed land mentioned in Hogan's letter? Why doesn't HCN send someone out there to write an article based on the facts? Preservation of the natural environment and reclamation of disturbed areas are worthy efforts that would be better served by factual reporting rather than cop-out polemics.

Edward F. Haase
 Bisbee, Ariz.

(Editors' note: Upon receiving Dick Hogan's letter, we did send a reporter to write an article on wildlife habitat in southern Wyoming. It will be appearing soon. Making predictions about wildlife's fate will not be easy, however, since the 11,000 acres referred to in Hogan's letter are only now being considered for strip mining. They have not been mined yet.)

WILD HORSE ALTERNATIVE?

High Country News,

I would like to comment on the article which appeared in the October 21st issue of High Country News' Distaff Corner, "Patrick H Said it," by Myra Connell.

I do not consider myself an expert on the subject, although I have actively participated in trying to save the wild horse for the last 30 years. I was responsible, with the support of several Sweetwater County residents and the National Humane Society, for stopping the slaughter and roundup of wild horses some 15 years ago here in Sweetwater County.

It is very easy to criticize a program without proposing an alternate. Any time any animal grazes any land, private or public, there is always the need to control this animal in numbers so that the carrying capacity of the land will not be exceeded. If this is not done, then we have serious overgrazing and eventually starvation of the animals.

To my recollection the adopt a horse program was developed by Wild Horse Organized Assistance, (WHOA), the organization that was headed by Wild Horse Annie. This program is working and to date 1,200 horses have been adopted from the Rock Springs Bureau of Land Management (BLM) district.

There may be a better way to remove the excess horses from the public lands and still allow a viable wild horse herd to be managed on public lands. If there is a better way, maybe the critics could and should make their proposal known. It is difficult for me to know, from a wild horse's view, whether or not they are better off in a well-cared for home with plenty to eat or out on the winter range starving to death.

We must remember that all horses are not very good prospects for adoption. Most people like young horses as they are the easiest to handle and break. At the present time there are 207 older horses in the BLM

corrals in Rock Springs. Some of these horses have been here approximately three months and the longer they stay in captivity the more susceptible they are to disease. The BLM has even proposed to castrate the studs (which usually makes them easier to handle) for people wishing to adopt one.

From the Rock Springs office, they have had to take back three horses out of 1,200 that were placed in homes.

Some people have suggested as an alternative or supplemental program that the horses be used for commercial purposes if they have to be wasted. This is what we had many years ago, with a slaughter place set up five miles west of Rock Springs. The result was management to completely eliminate the horses from the range. Place a dollar sign on an animal and all good reasonable management goes out the window.

In conclusion: with statistics that I have received from the BLM, three horses returned out of 1,200 adopted — how can anyone criticize the adopt a horse program? What is needed now is support of this program so that the BLM can get on with a management program that will be best for the wild horses and our public lands.

John C. Borzea
 Rock Springs, Wyoming

USEFUL FOR LANDOWNERS

Dear HCN,

Keep up the good reporting. It helps to know how conservationists and preservationists are thinking and faring. When you own and manage land today (such as we do), High Country News is a big help to us to know what is happening with the feds as well as the "do gooders" and "empire builders," etc.

D. B. Fuller
 2nd Vice-President
 Wyoming Stockgrowers Assoc.
 Parkman, Wyo.

12 MILLION ORVS

Dear HCN,

In response to Sarah Doll's article on off road vehicle (ORV) use (HCN 9-9-77), it seems ironic that in a time of increased concern toward energy conservation, protection of the environment, and greater awareness of physical fitness that the number of ORV vehicles has increased from 5 million in 1972 to 12 million in 1977.

Although federal and state land management agencies are struggling with regulation of ORV use, the solution of the problem is not in government regulation, but in changing lifestyles and values on the part of the American people, which has not yet happened. Granted some ORV activity



seems legitimate, such as ranch work, cutting firewood, retrieving game, or limited driving for pleasure. But should 12 million ORVs be used to adversely impact the very areas the users are supposedly out to enjoy? It's a sad consequence that the occupants are denied the quiet and physical exercise they frequently need.

Mark Story
 Cody, Wyo.

GIVE THEM HAY

Dear Editor,

I was amazed to read that the Bureau of Land Management (BLM) and the Wyoming Agriculture Department plan to spray 2,4-D and picloram on 250,000 acres in Wyoming (HCN, August 12, p. 12). I'd like to submit some background information on these chemicals.

This combination of chemicals is the Agent White used in Vietnam, according to Thomas Whiteside's book *Defoliation*. Picloram, sold under the trade name of "Tordon" has been called "a herbicide analog of DDT" by Dr. Arthur Galston, professor of biology at Yale. The FDA's publication *Consumer* said in March, 1974, that, "A 1973 blueberry crop was ruined on three farms in southwestern Michigan by two utility companies applying the herbicide picloram to their rights-of-way adjoining the farms..."

Poisonous weeds become attractive to animals after spraying because of an increase in their sugar content. Some plants increase their content of poisonous nitrates following 2,4-D spraying. Also, 2,4-D is suspected of causing cancer. Cows that graze on pastures and rangelands treated with 2,4-D excrete 2,4-D in their milk. Residues remain in plants for many months.

It appears to me that the use of 2,4-D and picloram along the Big Sandy River will result in the eventual contamination of several rivers as well as surface and underground reservoirs. The destruction of willows along stream banks will cause erosion, and will increase water temperatures resulting in loss of fish habitat.

Some ranchers — if their cattle aren't poisoned by the herbicides, and if grass will grow on land sterilized by picloram — will theoretically gain a few pounds of forage

per acre. The public interest would be better served if BLM simply estimated the amount of grass that would grow if the weeds were removed — and bought an equivalent amount of hay — and GAVE IT TO THE RANCHERS.

Sincerely,
 Betty Lou Whaley
 Secretary, Environmental
 Protection Center
 Fort Bragg, Calif.

(Ed. note: The plan has been shelved. Please see the story on p. 12.)

UPGRADE THE NEIGHBORHOODS

Dear People,

Your editorial of October 7th did a fine job of putting into some rational perspective the increasing competition for water being carried on by Western cities on one hand and other water users (agricultural users, smaller communities, wildlife) on the other. Clearly, there is only so much water to go around, and its use must be guided by principles of social justice as well as ecological sensitivity.

The one point in the editorial that requires some clarification is that the demand for more water for growth in Denver is not really a demand by Denverites, but by suburban developers and their allies who have, temporarily, captured control over the city and county of Denver, i.e. our mayor and his appointed water board.

Most ordinary folks in the neighborhoods of Denver are opposed to the proposed Foothills Water Treatment Facility, which would fuel suburban sprawl and the consequent inner city decay. We heartily disagree with our mayor and his water board in their contention that the answer to Denver's problems lies in fostering suburban growth at just about any cost. We contend, instead, that the key to Denver's future lies in upgrading the quality of life in its neighborhoods, where Denverites live!

So, again, please be aware that the thirsty mouth of the water board is not necessarily speaking for all us Denverites.

Bernie Jones, Ph.D.
 Social Change Systems, Inc.
 Denver, Colo.

Presenting!

High Country News,
 the only newspaper
 specializing
 in the
 environmental news
 of the
 Rocky Mountain
 West
 and the
 Northern
 Great Plains
 Subscribe
 today.

HCN, Box, K, Lander,
 Wyoming 82520
 \$12 for 25 issues.

(Ask for a sample copy.)



HCN editorial

Caution: living here is unsafe

Under the Clean Air Act, many areas of the country are being classified as "non-attainment areas." Translated, this bureaucratic jargon means simply that these areas are not healthy places to live. They are not meeting even the minimum federal standards for one or more pollutants.

We Westerners like to think all the dirty air is in the East, with a couple of smoggy spots like Los Angeles.

Unfortunately, the problem is more widespread than that. Residents of Kellogg, Idaho, home of the Bunker Hill smelter, found lead in their children's blood. A doctor in the Durango, Colo., area has reported higher incidences of respiratory diseases after the Four Corners plant began

operation. San Francisco and Los Angeles announced last week that the high number of lung cancer cases in these cities seems to be related to air pollution.

Under the new Clean Air Act amendments, a list of non-attainment areas will be published in the *Federal Register*. Denver, Salt Lake City, and Billings will be on the list as well as some of the smaller towns in the West — Colstrip, Mont.; Rock Springs, Wyo.; and Anaconda, Mont., according to EPA.

We think Congress should have gone a step further than requiring the listing. How about requiring a sign on the city limits alongside the "Welcome to Stacksville" sign? The new sign could say, "Caution: breathing in this city may be hazardous to your health." Why not require the Chamber of Commerce to add a similar footnote to its promotional material?

We suspect this identification would do more than protect the sensitive traveler. It also would make the city's business community more conscious of the smudge that air pollution can make on the city's image — and eventually on its economic outlook.

Our suggestion may be superfluous because, of course, visitors and the residents don't need to read a sign or study the *Federal Register*. Coughing and squinting, they know when there is a problem despite the myths of the wide open blue skies of the West.

—MJA



Nov. 4, 1977 — High Country News-3



©Carol Snow

Are we degrading the Wilderness System?

by Dave Foreman

If you've dealt with the Forest Service (FS) or Bureau of Land Management (BLM) in an effort to designate a wilderness area, which they oppose, then you've probably heard their concern that over-eager citizen conservationists are degrading the National Wilderness Preservation System by including inferior areas in it.

There are two aspects to their argument. One is that dull, uninteresting, commonplace areas, though wild, will "degrade" the Wilderness System; that only unusual, spectacular, outstanding areas qualify for the signal honor of being included in the Wilderness System.

They also argue that including areas with any sign of man's former presence "degrades" the "purity" of the Wilderness System. They say it lessens the value and standards of those truly wild areas merely by association — in other words, this tarnishes the shine of all wilderness.

I call the first argument, against commonplace wilderness designations, the "Jewels in the Crown Syndrome." At a recent meeting with some top officials of the BLM, I expressed the concern that we need to preserve some commonplace, ordinary areas as wilderness, too, in addition to the unique areas. The meeting exploded! First one and then another BLM official leapt up to denounce such a heretical notion. Finally, one asked, "How many millions of acres of sagebrush flats do you want in the Wilderness System?"

Well, I must admit that whether or not

sagebrush flats have any personal appeal to me, sagebrush flats that qualify for wilderness should be in the system.

The Forest Service and the BLM use several criteria in rating "wilderness quality." They have included such things as the lack of the marks of man and basic ecological integrity. But most of the weight falls on such items as: abundance of water, availability of campsites and trailheads, scenic quality, abundance and diversity of wildlife, variety of wilderness experiences, and forms of recreation available.

These qualities can and do add to the interest and possibly even to the value of an area, but they don't determine if it is wilderness or not. These criteria discriminate against desert-type areas and in favor of high alpine areas. They also reveal a considerable bias towards wilderness as merely a primitive recreation area — a high mountain area of rugged scenic grandeur with outstanding trout streams and potable water, classic campsites, abundant big game for viewing or hunting, and a good trail system — all prerequisites for a two-week trail ride "vacation of a lifetime."

Well, this just isn't it. The purpose of the National Wilderness Preservation System should be to preserve in its natural condition as many varieties of the American wilderness as possible — to identify those still-wild areas or those areas capable of reverting to the wild and zoning them for management to maintain, protect, and restore (if needed) that wildness.

The Wilderness Act defines wilderness by saying it is land that, in comparison to the rest of the country, is generally undeveloped and natural appearing. It should have opportunities for solitude or primitive recreation (which any wild country regardless of scenic value, etc. will have), and it may (not must) contain other values. These other values are what make an area outstanding and especially noteworthy, but they are not requirements

Guest opinions printed in *High Country News* do not necessarily represent the opinions of the editors.

to make it wilderness. They merely add to its appeal to most people.

(Ed. Note: The second half of this essay, Foreman's comments on the agencies' reluctance to include any areas with any signs of man's former presence, will be published in the next issue of HCN.)

Dave Foreman is the Southwest representative of the Wilderness Society.

Special Edition

High Country News



\$1.50

A roundup in magazine format of HCN's formative years, 1969-1975. News stories on the people, wildlife, lifestyles, and politics of the Rocky Mountain West. Glossy cover, 48 pages, 10 by 14 inches.

(Would make a lovely addition to any library, coffee table, comfort station, etc.) Postage and handling: 50 cents.

To order please use combined form on page 24.

Gift subscription...
Western Jitters

You can give a friend everything from the jitters to an increased awareness of the Rocky Mountain-Great Plains west by sending a HCN gift subscription. A separate card bearing your name is sent by HCN telling your friend of the gift.

HCN Gift subscription
 25 issues \$12.00
 Enclosed is \$_____ Send HCN to:
 name: _____
 address: _____
 city: _____ state: _____ zip: _____
 name: _____
 address: _____
 city: _____ state: _____ zip: _____

Be sure to include your name and address so HCN can send a gift card to your friend(s).

HCN
 Box K
 address: _____
 state: _____ Lander, Wyo. 82520
 zip: _____

High Country News

Published biweekly at 331 Main, Lander, Wyo. 82520. Telephone 307-332-4877. Second class postage paid at Lander.

Publisher Thomas A. Bell
 Managing Editor Joan Nice
 Associate Editor Maryann Ambler
 Office Manager Mary Margaret Davis
 Advertising Manager August Dailer
 Contributing Editor Dan Whipple
 Staff Artist Hannah Hinchman
 Circulation Manager Georgia Nations
 Editorial Assistant Sarah Doll

Subscription rate \$12.00
 Single copy rate 40 cents

Copyright High Country News 1977. Call for permission to reprint any articles or illustrations. Contributions (manuscripts, photos, artwork) will be welcomed with the understanding that the editors cannot be held responsible for loss or damage. Articles and letters will be published and edited at the discretion of the editors. To get a sample copy sent to a friend, send us his or her address.

Write Box K, Lander, Wyoming 82520.

4-High Country News — Nov. 4, 1977

Solar industry. . .

(continued from page 1)

is "big on promises and short on doing things."

"NOT SOLARON'S PROBLEM"

John Bayless, president of the Denver-based firm, says, "I know it sounds cavalier, but that (Johnson's solar system) is not Solaron's problem."

"We are the fountainhead of technical information on how to layout a system," he says, explaining that Solaron does not do installations, and, therefore, can't be held responsible for them.

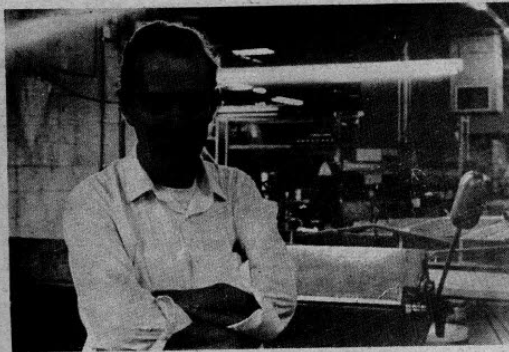
"If you have problems with your Chevrolet, you go to the Chevrolet dealer, not to Chevrolet," he says.

Johnson maintains that the blueprints provided by Solaron to the installer are part of the reason his system doesn't work.

Solaron's Meeker admits that there was a standard note on Johnson's blueprints, relating to the amount of insulation necessary for ductwork, that has been amended in subsequent blueprints. Solaron now recommends more insulation on outside ductwork. But Meeker says that he's not sure the note caused any severe problems in Johnson's system. Furthermore, if the note had caused problems, he says, the error still would not be Solaron's responsibility. The installing contractor is trained by Solaron, Meeker says, and should have known that outside ductwork requires added insulation.

A Solaron competitor, Don Erickson of Rocky Mountain Products in Denver, says subcontractors are "a tremendous problem for the whole industry." He thinks that Solaron has made a reasonable effort to insure proper installations. They have almost spent themselves out of business trying to train people," he says.

"Solaron has the best talent in the industry," according to architect Donald Frey of Crowther-Solar Group-Architects in Denver. The company is also a financial success, unusual at this stage in the industry. Incorporated since 1974, Solaron has been operating at a profit since last May. Bayless says that their sales are up 400% from



DON ERICKSON of Rocky Mountain Products says, "I think homeowners should be aware that there is no guarantee. You are going to have problems if you put in a solar energy system."

business of laying out systems for individual projects.

"We are just like Westinghouse, Lennox, and G.E.," Bayless says. "We manufacture equipment. We provide technical assistance for those who must design and specify."

In the process of specializing, is he losing control of his product? "Not really," Bayless says. "But to some extent everybody does."

Procedures are somewhat different at American Heliothermal, a slightly younger Denver firm specializing in manufacturing a collector made in Israel since 1959. President Bill Phillips says that on projects his company has designed, the company monitors installations. He also says it would take responsibility for any design flaws in those systems.

Rocky Mountain Products doesn't have the problem with installations faced by the other two firms because its parent company, Rocky Mountain Air Conditioning, has been an air conditioning and sheet metal subcontractor for 30 years. The company can do a "turn key" job, which includes everything from designing and

says Donald Frey. Problems in most solar systems manufactured by reputable firms generally crop up elsewhere, in the water or air handling systems that move heat from the rooftop into rooms or storage.

Although homeowners had told HCN stories of equipment supplies by Solaron that had to be replaced or modified, Bayless of Solaron was reluctant to admit that his company had had any operating problems. Erickson of Rocky Mountain Products was more forthright.

"I think homeowners should be aware that there is no guarantee. You are going to have problems if you put in a solar energy system," Erickson says.

He sees "no real consistency" in the types of problems that have occurred on Rocky Mountain Products' systems. Problem areas have included thermistors, pumps, and the seals around the glass on the collectors.

"Collecting the heat is simple. The operating of the pumps and thermostats is complicated," says John VanDerwalker, who has a Rocky Mountain Products system at his home in Denver.

VanDerwalker's thermistors, devices that measure temperature in the storage tank and near the collector, had to be replaced. Neither he nor Erickson can say for sure why these devices failed.

Meeker of Solaron reacts with equanimity to stories of his company's equipment problems.

"We as a company have gone through an evolutionary process since 1974," he says. "We have learned the hard way. We have experienced the problems. The trouble with going to a brand new company is that they might not have the benefit of that kind of experience."

Nine solar installations designed and built by Solaron before November of 1975 are what the company calls "pre-production handcrafted prototypes." With information gathered from these prototypes, Solaron has moved to standardized assembly line production techniques.

After several damper motors failed on prototype houses, Solaron switched from conventional motors to those designed to function in the heat produced by solar systems. Meeker says he hasn't had a problem with motor failure since the first of this year, when the company made the change.

Solaron's air handler has gone through a similar evolution. So has its collector's absorber surface, which captures incoming light and turns it into heat.

Anne Vickery of Boulder, Colo., had a prototype Solaron system installed on her home three years ago.

"We knew there were bound to be problems," she says. "The company has been

learning. It has a well-deserved (good) reputation."

The biggest problem, Vickery says, is the excessive heat generated by the system in the summer. This has caused mechanical elements to fail. But Solaron has been cooperative about replacing them, she says, and has come up with improved equipment.

Solaron says that its newer systems are much more reliable than its prototypes of two and three years ago. But an engineer who has worked with Solaron products says that while their equipment is good, "they're still having a hard time controlling their installations—mistakes are still being made."

Architect Frey says the problems point out the need for homeowners to deal with firms that have been in business for a while. If reliable companies are having trouble controlling installations, think of the perils involved in buying from a new company—one you're not sure will be around when your problems arise, he says.

STRUGGLE TO STAY SIMPLE

Rocky Mountain Products' Erickson advocates simplicity as a way of minimizing operating problems.

"It's tough getting very specialized systems to operate," he says. "We have to really struggle to stay simple."

Fully automated systems, for instance, can be troublesome. The only problem with the solar heated and cooled visitor center at the entrance to Bighorn Canyon National

"We are on the front end of this technology. Somebody has to be the pigeon."

Recreation Area in Wyoming was its control computer. The controls, in turn, were marred by only one small flaw. They were programmed to draw outside air into the rock storage bin whenever the auxiliary heating system came on.

That particular flaw was devastating to the system's performance. It meant that on a cold December night when the building needed gas to supplement its solar heat, freezing cold air was pumped into the rock-filled storage bin. That made the rocks so cold that they had no heat to offer the next night, even after a sunny day. When the gas heater kicked on, the cold air started flowing into the rock bin again.

The short-term solution was for Leon Robinson, the park's maintenance supervisor, to go down to the basement each night and unplug the fan that pulled cold air into the storage bin. Since last winter Honeywell Inc., the company that designed, built, and installed the controls, has repaired them.

Now that the controls are working, Robinson says the system is only slightly more troublesome than a conventional heating and cooling system. It demands routine maintenance of fans and air filters.

In addition, five panels of glass covering the solar collectors have mysteriously broken and had to be replaced, but "that hasn't discouraged anybody."

"I've had more serious trouble with the sprinkler system here than I have with the solar system," he says. "And I thought they'd perfected sprinklers years ago."

COMMERCIALIZATION PAINS

The technology spawned by another firm in the region, International Solarthermics Corp. of Nederland, Colo., has had its share of commercialization pains. Nevertheless, President John Keyes claims that his



"WE KNEW THERE WERE BOUND TO BE PROBLEMS," says Ann Vickery, who bought a solar heating system from Solaron in 1974. "The company has been learning. It has a well-deserved (good) reputation." Vickery's house is shown above.

last year, and that they have a total of around 500 installations in 40 states.

"We are among the six to ten companies that provide half of the solar equipment in America," Bayless says. Solaron is the single largest supplier of equipment for federal solar demonstration projects. In fact, 26% of the company's revenue comes from sales to contractors financed by federal money, Bayless says.

But the burden in this case was on the installing contractor, who had much less experience in the solar field than the company that manufactured the equipment, provided the blueprints, and inspired James Johnson's confidence.

Bayless says Solaron is now out of the

manufacturing the system to installing it. Rocky Mountain Products has a smaller number of systems to keep track of than Solaron does. It has sold about 60 systems and has 25 systems under contract, most of them in the Denver area. The company limited its sales to places in or near Colorado, so that it can take care of the problems that arise.

TECHNICAL PROBLEMS

Installation seems to be one of the most critical problems facing the solar industry today. Other problems experienced by solar homeowners are related to the technical aspects of solar energy systems or of heating and cooling systems in general.

"The solar collector panels are great,"

"I've had more serious trouble with the lawn sprinkler system than I have with the solar system."

"backyard furnace" design has been used on 87% of all the solar heated buildings in the U.S. today.

The design consists of an A-frame unit in which air is blown over a metal absorber plate and then blown to either a rock-filled storage bin behind the plate or into a building. It is small; critics have called the small collectors (furnaces come in 96-, 128-, and 160-square foot sizes) attached to a smaller-than-standard volume of rock storage mere "toys." But the backyard furnace has appealed to people who want to adapt solar energy to a conventional home without remodeling.

Keyes' eight licensed manufacturers have made changes in his original design, but they are mostly "of a cosmetic nature," according to Keyes.

However, Dennis Boydston, a former dealer of the backyard furnaces manufactured by Sunglow of Lakewood, Colo., gave up the \$5,000 he paid for his dealership for reasons that seem more basic than mere cosmetics.

"It was a new concept," he says. "A lot of research still had to be done and I didn't have the money to see the whole thing through."

Though he was officially a dealer for two years, he only installed one unit — a 96 square foot backyard furnace for his own home. His biggest disappointment was that the unit cost as much in electricity to run blower motors as it saved him on his natural gas bill.

He also says the unit didn't have the applicability he'd hoped it would. He found that even the largest unit available wasn't big enough to provide a significant share of the heat for most houses. It was also hard to find enough unlit space for the furnace in many backyards, without eliminating other backyard activities. In houses with yards on the north side of the home, the units would have to have been about 50 feet from the house to avoid the house blocking available sunlight, and this wasn't feasible in most cases, Boydston says.

"We all were a little bit overly optimistic," Boydston says.

SOLD ON FURNACE

However in Rapid City, S.D., another dealer of backyard furnaces, Sam Clausen, is still "sold on the idea." He's lived with his 128 square foot unit for three years now. Last winter it provided about 70% of the heating needs of his well-insulated 1,300



JOHN KEYES of International Solarthermics Corp. says that his "backyard furnace" design has been used on 87% of all the solar heated buildings in the U.S. today. One former dealer claims that the unit cost him as much in electricity to run as he saved on his natural gas bill, however.

square foot house. He has sold and installed four other units since he took on the dealership.

But Clausen and his manufacturer in Parker, S.D., Solar Stor, Inc., have taken the solar furnace concept and made a long list of changes. They have altered the shape to allow easier assembly of the storage unit and better use of available backyard space.

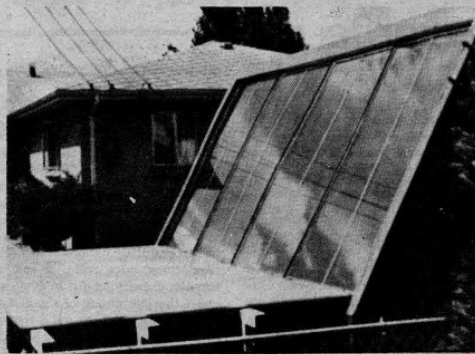
They have revamped the fan blower assembly and the air flow pattern inside to cut the furnace's electrical demand by 30%. Clausen says more savings on electricity are possible if homeowners are taught some tricks of operation. In addition, his company has an improved box cover design to minimize air leaks.

Proper installation is critical to the system's performance, Clausen says. Undersized and uninsulated ductwork are two pitfalls that he has learned to avoid by doing installations himself.

Clausen says that some salesmen made too many promises when the unit first came on the market and left some customers feeling cheated. He says that now he and his manufacturer are trying to avoid "overselling" the unit — promising more heat than it can provide.

Keyes admits that five of his original manufacturers went bankrupt. But he maintains it wasn't through any problem

(continued on page 12)



THE BACKYARD SOLAR FURNACE designed by International Solarthermics Corp.

Solar heating ideas from homeowners and pros

5

In preparation for the article above, HCN interviewed 26 homeowners and professionals, about half of whom had had personal experience with a dozen or more solar heating installations. Many had tips they wanted to pass along to our readers who are in the process of choosing and supervising commercial installations or who are building their own systems. Many of the people interviewed emphasized that, to protect themselves, solar consumers are wise to become solar students. Listed below are some of their ideas.

Readers interested in a comprehensive discussion of solar heating system components should study one or several of the excellent books available on the subject. Some titles that we have found useful for the general reader are: *Sun Earth* by Richard L. Crowther, AIA, Crowther-Solar Group-Architects, A. B. Hirschfeld Press, Inc., Denver, Colo., 1976 \$12.95; *Designing and Building a Solar House* by Donald Watson, Garden Way Publishing, Charlotte, Vt. 05445, 1977 \$8.95; *The Solar Home Book* by Bruce Anderson, Chesire Books, Church Hill, Harrisville, N.H., 1976, \$7.50.

FIRST THINGS FIRST

Have you insulated walls and ceilings, put on storm windows, caulked, weatherstripped, turned down the thermostat on your water heater, and looked into passive solar heating techniques and heat pumps, before you go to the expense of buying a motorized commercial solar heating system?

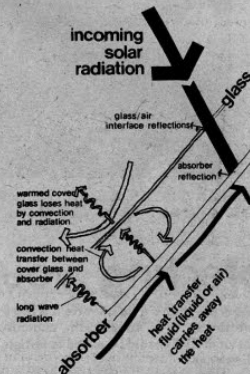
COLLECTORS

Good collectors, we're told, are double-glazed, well-insulated, and air tight.

If any outside air has access to the collector, it will bring in dust, which can cut down on light transmission and cause other problems.

One homeowner we talked to had an "open system," in which the black absorber plate was cooled by letting outside air in from the bottom of the collector and venting it out the top. This process was bringing dust into the collector, he said, which was collecting on the absorber plate.

The collector absorber surface. The efficiency with which some absorbers change light to heat decreases over time, sometimes



Drawing from **SUN EARTH**

by as much as 10%. Ask a commercial firm about accelerated weathering tests and tests of systems that have been in operation for several years. Are you buying an expensive surface that won't last or that will decrease in efficiency?

If paint is used for the absorber surface, it should be temperature-tested automotive or industrial paint. It should also have been baked on in some way, at a temperature at least as high as an unvented collector would be likely to reach. If this baking doesn't take place, either in the sun or in an industrial oven, the paint may vaporize (outgas) later under stagnation temperatures and cloud the glazing material. This will block a certain

amount of sunlight from reaching the absorber plate, causing efficiency to dip by as much as 5-10%.

The collector glazing. Glass with a low iron content is preferable, since particles of iron will reflect, rather than transmit the sun's rays. Iron in standard glass can block as much as 10% of the available sunlight from your collector.

In fiberglass, the resin that holds the particles of glass together will eventually yellow when exposed to sunlight. This will also block the sun's rays. To avoid yellowing, coated fiberglass is used for solar applications.

The collector box. Collector boxes can be made of wood, but care must be taken to seal the wood to prevent warping and outgassing. Generally metal boxes are lighter and more efficient. They are also generally more expensive and require more insulation.

DUCTS

Ducts must be tightly-built and well-insulated, especially on outside ductwork. Typical construction methods are not adequate.

The more sharp bends in the ductwork design, the more energy it will take to move the air around, so it's wise to try to keep it simple.

THE STORAGE SYSTEM — GRAVEL

"People think they know how to wash gravel," says solar consulting engineer Bob Bushnell of Boulder, Colo., but "washed gravel" as delivered is not good enough for your rock-filled solar heat storage bin. Somehow, it must be rewashed. Small amounts of dust can block air flow in the system and reduce heat transfer.

ELECTRICAL DEMAND

How much electricity will it take to run the system? One homeowner we contacted found that his system's fans cost him as much in electricity as he would have otherwise paid for the natural gas heating fuel he saved.

MOTORS

If a motor is in the hot air stream, it must be designed with special bearings to withstand the heat. An alternative solution is to isolate a standard motor from the hot air stream.

PUMPS

Pumps used in solar applications will also be subjected to heat stresses and should be of high quality.

Liquid systems should be designed to use one metal only or similar kinds of metals to as great an extent as possible. Otherwise a dielectric current, a current of electrons moving between two dissimilar kinds of metals, can cause corrosion.

"Just as you called I was up on my roof, fixing my solar system," David Lavallee of Ft. Collins, Colo., told us. He had made the mistake of running water from a copper absorber plate into an iron pump. After a year and a half of operation, he had just started to notice corrosion. He's using a corrosion inhibitor to try to stop further damage.

Solar homeowner John VanDerwalker suggests designing a water system so that the pump is below the storage tank water level, so that a self-priming pump is not necessary. He says this can cut the system's demand for electricity dramatically — by as much as one-half.

VanDerwalker's system heats water that flows through a black copper absorber plate. To avoid freezing at night, the system drains by gravity. To cut his electrical demand further, VanDerwalker says he could have designed a two-stage pumping system, which would allow use of a high level of power to pump the water into the system in the morning, and a lower level of power to keep the water circulating. Currently his system uses one pump to do both chores.

THE COMPANIES

Are both the manufacturer of the equipment and the installing contractor likely to be in business for a while? You may have problems. If they go bankrupt, you're likely to take a loss,

6-High Country News — Nov. 4, 1977

CLEAN AIR ACT: making it work for you

by Marjane Ambler

So you're interested in reducing the poisons spewing out of that smelter and into your children's lungs. You have a favorite national park and want to be sure you can still see across its canyons to the bluffs beyond when you go back again. You fear you'll have to live with the constant fear of radiation poisoning if a nuclear plant is built or uranium tailings are dumped nearby.

The new Clean Air Act Amendments, passed in August after months of bitter battling, may help with each of these quests.

Lobbyists for utilities and automakers knew the power that these amendments could potentially put into your hands. There was more attention paid to this bill in the 1975-76 Congress and when it was reintroduced in the first session of the present Congress than to any other bill, according to Rafe Pomerance of the National Clean Air Coalition, a coalition of environmental groups that lobbied for strong air protection amendments.

In fact, industrial pressure against the bill inspired a filibuster by Sen. Jake Garn (R-Utah) that killed last session's bill. However, Pomerance points out the bill that survived is stronger in many ways — especially in sections affecting the West — than last year's bill, despite the fact that auto pollutant deadlines were delayed again.

Now that the bill is passed, much of the burden for protecting the air in the West is shifting to this region. The National Clean Air Coalition will be watching for weakening amendments that are already being introduced in Congress. The coalition will also be keeping an eye on the Environmental Protection Agency (EPA) to be sure the regulations it prepares are consistent with the intent of the Congress. Already, industrial pressure has forced EPA to delay implementation of a provision to require scrubbers on new plants, much to the consternation of some members of the Senate committee that composed the regulations, according to the New York Times News Service.

Now, the coalition says, the people of the West will have to be the watchdogs, keeping an eye on state regulations and attending public hearings. States retain previous powers and have some new ones under the new amendments.

For the first time, states will have authority over emissions from nuclear power plants (if the EPA determines radiation is



THE SALT LAKE CITY AREA, nestled beneath the scenic Wasatch Mountains in Utah is becoming nearly as notorious for smog as the Denver area.

hazardous to health). This could lead to siting restrictions in some states.

States will continue reviewing all new sources that might emit pollutants to determine whether or not they can be built and what controls might be required.

In addition, only state governments and Indian tribes have the authority to redesignate air to either Class I or to Class III in most cases. This means the states and the tribes will determine where air will be kept the most pristine and where more industrial development will be allowed. Congress designated large national parks and wilderness areas and some other federal lands as Class I (see separate story) and

retains the authority to designate some other federal lands as Class I. It also restricted the states from changing some federal lands to Class III. But overall, final authority in redesignation decisions — including most federal lands — belongs to the states or, in the case of reservations, to the Indian tribes.

Indian tribes are the only governing entities with as much power under the new Clean Air Act amendments as the states: they can redesignate air quality classifications.

"We had a devil of a time getting this authority for the tribes," says Karl Braithwaite of the Senate Subcommittee

on Environmental Pollution staff.

The Northern Cheyenne tribe in Montana was the first entity, Indian or non-Indian, to request Class I protection under the old Clean Air Act regulations. The tribe's redesignation has caused a flurry of controversy in this region because of its potential effects on the nearby Colstrip power plant and on strip mines in the area (see HCN, 10-21-77).

However, this apparently was not the reason for the controversy in Washington, D.C. While Sen. Pete Domenici (R-N.M.) supported the concept of Indians having authority for redesignation, Braithwaite says Domenici and other senators worried about the consequences if small reservations near urban areas, such as the many pueblos near Albuquerque, N.M., became Class I areas. The problem was solved by giving the states two bases for appeal: if reservations are too small and if they don't have the "attributes" of Class I areas.

Tribal sovereignty was also an issue. "They (the committee members) told us they don't want to try to resolve all the Indian jurisdictional issues in this bill," Braithwaite says; they wanted the impact of the bill to be limited to air. As the bill now stands, tribes have clear authority over their own lands' classification — even when it affects pollution sources outside the reservations.

"The Clean Air Act is one of the more pro-Indian acts ever passed," Braithwaite believes.

The Northern Cheyenne tribe had hoped to also get authority to review new sources to determine their effects on the air quality



CLEAR VISTAS. The Theodore Roosevelt National Memorial Parkway in North Dakota is designated Class

I by Congress. This may affect plans for coal development in western North Dakota.

Protecting your favorite place

If you would like to use the Clean Air Act to protect a certain area, here are a few brief guidelines to help you. For more specific advice, contact the National Clean Air Coalition or state or federal air officials in your area.

1) Is the area near a mandatory Class I area? Congress said that all existing national parks over 6,000 acres and all existing wilderness areas over 5,000 acres are Class I. It also applies to Glacier-Waterson International Peace Park in Montana and the Theodore Roosevelt National Memorial Park in North Dakota. If your area is near one, then watch federal officials and state officials to be sure they evaluate the impact of any potential pollution source within a reasonable distance of your area. The federal land manager is supposed to

notify the state if a new source is a possible threat. If he doesn't, the administrator of EPA should be asked to initiate the review.

2) Is the area you want to protect near any other federal land? Some other federal lands can be protected by redesignation.

a) National monuments, national primitive areas, national preserves, national recreation areas, national wild and scenic rivers, national wildlife refuges, national lakeshores, and national seashores cannot be reclassified as Class III. They must remain either Class I or II.

b) National monuments, national primitive areas, national preserves, and national recreation areas are to be evaluated by federal land managers within one year (by August 1978). The

land manager is to recommend which should be redesignated Class I, but the state has the final say.

c) New wildernesses or national parks can be designated Class I by Congress at the time they are created. If they are not designated Class I, but are larger than 10,000 acres, they are protected by law from being designated Class III.

3) Is there community sentiment for clean air? If so, you may want to consider asking the governor of your state to redesignate the area Class I. Only North Dakota has a procedure to allow for citizen petitions at this time. However, its system is very cumbersome and has so far proven unworkable. It requires citizen groups to file the equivalent of an impact statement on their proposal for clean air at their own expense. (To illustrate the

problem, the Northern Cheyenne's study cost \$200,000.)

You may want to watch your own state and be wary of a requirement for a privately-funded study such as North Dakota's. Try to convince your legislature to provide funding for such studies.

4) Are you near a pollution source in Canada or Mexico? The new regulations do not protect you much. The U.S. has always had little if any control over pollution from other nations. Under the new regulations, such pollution can be ignored in classifying air. In other words, under the prevention of significant deterioration regulations, a U.S. source will be able to emit pollutants up to the Class I, II, or III level, regardless of what Canadian sources are also adding to the pollution level.

of the reservation, but only the states and EPA were given this authority.

While handing these powers over to the states and the tribes, Congressional leaders took several precautions to be sure the objectives of the Clean Air Act will be fulfilled. The states' regulations must be at least as stringent as the federal regulations. A state will sacrifice its authority to issue air permits if its revised State Implementation Plan telling how it will meet federal standards isn't approved by EPA by July 1, 1979. No new polluters can be al-

lowed in areas that are below national standards (non-attainment areas) unless an existing power plant or other source agrees to reduce its emissions accordingly.

Congress set smaller increments so less deterioration of air quality will be permitted in Class II or Class III areas. This means that even if a Western state chooses to designate much of its land Class III (the lowest category), "substantially less" pollution will be allowed than under EPA's former regulations.

In addition, presently clean areas will

never be allowed to deteriorate below national ambient standards if regulations are enforced. Areas within the West that are presently below ambient standards will have to be brought up to that standard by the end of 1982.

There is also a section of the law designed to prevent a pollution source in one state from damaging air in another state beyond the allowable limits.

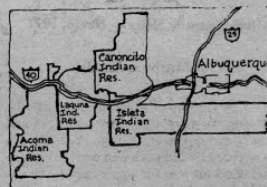
Penalties will be levied against polluters if they are not in compliance by mid 1979. The penalty must be equal to the cost of complying. Karl Braithwaite of the Senate subcommittee staff that wrote the amendments says the penalty was intended as an economic equalizer, so that companies that don't meet standards won't have an economic advantage over competitors that do. When the company comes into compliance, the penalty is to be refunded with interest.

Despite these safeguards, however, representatives of the National Clean Air Coalition emphasize that no one should sit back and relax, thinking his or her air will be taken care of. In the process of implementing these amendments, many subjective decisions will have to be made on the part of state governments, EPA officials, and federal land managers.

For example, while the law now says that new sources will use the "Best Available Control Technology," it also says that economic, environmental, energy impacts will be taken into account on a case-by-case basis. When EPA defines how much sulfur the best technology should be able to remove, it will be a "very political decision," according to Pomerance of the coalition. He says technology exists to remove 85%-90% of the sulfur, but the Congress left it up to EPA to set the percentage. The utilities are asking EPA to demand only 70% sulfur removal or less.

Public hearings will be held at various stages of the decision making, including when the states propose their implementa-

Nov. 4, 1977 — High Country News-7



SMALL RESERVATIONS near Albuquerque, N.M., could cause problems for city industries if the Indians redesignated their air Class I, Sen. Pete Domenici feared. An amendment was added to allow states the right to appeal redesignations in such cases.

tion plans. Other decisions will be published in the *Federal Register*.

CLEAR AIR, TOO

The first public hearings will be held on the visibility regulation. This region's hearing will be held on Nov. 11 at 3 p.m. at the Lakewood Senior High Auditorium, 9700 W. 8th Ave., Lakewood, Colo.

This regulation was specifically directed at the Navajo and the Four Corners coal-fired power plants in the Southwest, which will most likely have to add clean-up equipment. But it could apply to any sources near national parks, wilderness areas, and other areas that were designated Class I by Congress.

The old regulations did not recognize visibility — clear air — as a factor in determining air quality. Now, even if an existing or a new power plant or other source would meet Class I standards, it can be (continued on page 14)

Alphabet soup translation

Lost in a soup of abbreviations and bureaucratic terms? Translating them can help you understand and use the regulations.

SIP — State implementation plan. Must be filed by each state by January 1, 1979, telling what emission limits and other measures will be necessary to prevent significant deterioration in air quality or assure reasonable progress toward reducing emissions in nonattainment areas.

BACT — Best Available Control Technology. Required for all new sources, but the state granting the permit is allowed to consider each application on a case-by-case basis taking into account energy, environmental, and economic impacts and other costs. Use of low sulfur coal will not be considered sufficient for coal-fired power plants. Scrubbers are also required.

AMBIENT AIR STANDARDS — Limits on pollution as measured at the level people would be breathing near the plant. Different from emissions standards, which are measured at the point of emissions.

NON-ATTAINMENT AREA — An area that exceeds any national ambient air quality standard for an air pollutant. Regulations are stricter than in other areas for the pollutant. Regulations are stricter than in other areas for the pollutant to assure attainment by December 1982. If any new source of pollution is sited in a non-attainment area, an existing

source will have to reduce its emissions first.

ATTAINMENT AREA — An area that meets national ambient air quality standards for all air pollutants.

PARTICULATE MATTER — Refers to any dispersed matter, solid, or liquid, the individual aggregates of which are larger than a single molecule or smaller than 500 microns.

PREVENTION OF SIGNIFICANT DEGRADATION (PSD) — EPA regulations resulting from a Supreme Court ruling on a Sierra Club suit and now contained in the new amendments. Provides for retaining air quality in clean air areas through an air classification system — Class I, Class II, Class III. Pertains now to sulfur dioxide and particulate matter and will later also cover hydrocarbons, carbon monoxide, and nitrogen oxides.

CLASS I — If an area is designated Class I, almost no change in air quality is allowed — a maximum increase of five micrograms of particulate matter and two micrograms of sulfur dioxide per cubic meter over a year.

CLASS II — A small amount of degradation is allowable — a maximum of 19 micrograms of particulate matter and 20 micrograms of sulfur dioxide per cubic meter added over a year.

CLASS III — More degradation is allowed than under the other two classifications. However, a maximum (about twice as high as Class II) is set for both particulate matter and sulfur dioxide increases.

Controlling a source

If you would like to know how the Clean Air Act could protect air in your area from certain pollution sources, here are a few brief guidelines to help you put it to use. For more information, contact the National Clean Air Coalition or state or federal air officials in your area.

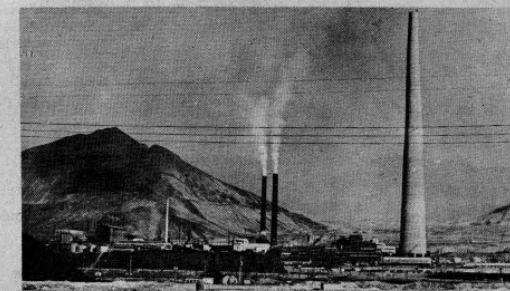
The Clean Air Act applies to smelters, refineries, fossil-fuel fired electric plants, pulp mills, fuel conversion plants, iron and steel mills, municipal incinerators over a certain size, and several other specific sources that emit more than 100 tons of any air pollutant per year.

In addition, it applies to any other source that emits more than 250 tons per year, which includes many strip mines and large teepee burners, according to EPA.

OLD SOURCES

By this December, your state will have to identify Air Quality Control Regions or parts of those regions that are "attainment" or "non-attainment" areas. Check to see how the state designated the area where the power plant or other source you are concerned about is located.

For example, Wyoming presently has only three regions. Yellowstone National Park is in the same region as the trona plants near Rock Springs, Wyo., which are a pollution problem. If such an area were designated a non-attainment area, it would mean that Yellowstone theoretically could not be protected by Prevention of Significant Deterioration regulations (PSD). PSD applies only to attainment areas and is the regulation under



KENNECOTT COPPER SMELTER stacks in Salt Lake City, Utah. Smelters are the biggest stationary source of air pollution in the West, according to Rafe Pomerance of the National Clean Air Coalition. But EPA officials say EPA often stands alone at public hearings defending pollution controls.

which Class I, II, or III can be applied.

Also watch your state's revised implementation plan, which will tell what the source you are concerned about is required to do to meet air standards. The deadline for the plans is January 1979, and public hearings must be held first.

The visibility regulations also apply to "old" sources (see separate story).

NEW SOURCES

If the source you are concerned about plans a major expansion, it should be treated under the regulations for new sources.

Both Prevention of Significant Deterioration (PSD) regulations and the requirements for use of BACT (Best Available Control Technology) apply to new sources. PSD applies to any source that had not "commenced construction" by 1975. The date when BACT becomes applicable is March 1, 1978, according to a recent ruling from EPA. Public notices will be issued when EPA or the state determine if new sources can meet both standards.

A limited variance provision was passed by Congress. A source may be allowed to construct even if it would violate the

Class I increments — if it can demonstrate to the satisfaction of the state and the federal land manager that it will have no adverse impact on air quality values, including "visibility" in Class I lands. A public hearing is required prior to granting the variance.

SMELTERS

"Smelters cause the most serious air pollution problems in the West — for both visibility and health," according to Rafe Pomerance of the National Clean Air Coalition. However, he says that when a public hearing is held on a smelter's air permit, there is usually little interest shown by the public.

The new bill doesn't help much. Chris Goddard of the coalition admits, "It's one of the poorest parts of the new bill."

Congress granted long-term compliance delays of up to five years for non-ferrous smelters for sulfur dioxide emissions — the first extension without a public hearing required. Two of the other emissions from smelters, lead and arsenic, are not now covered under national standards. Arsenic is being studied to determine if it endangers health. A lead standard is to be set in the near future.

NUCLEAR POWER PLANTS

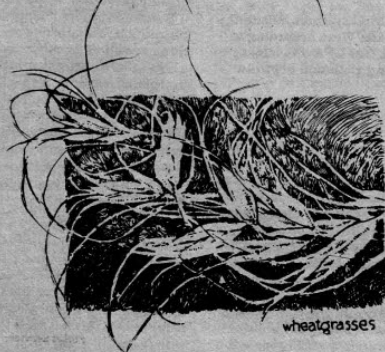
State control over radiation slipped through as a "sleeper," according to Pomerance. Under the amendment, states have control over source material, byproducts, and "special nuclear material" that send pollutants into the air. The Nuclear Regulatory Commission can set state requirements only if it finds they interfere with "safety."

8-High Country News — Nov. 4, 1977



USDA-SCS photo by John McConnell

TYPICAL SPECIES of National Grasslands include sand sage, yucca, and some grama and sideoats grasses. Jointed goatface grass, common blowoutgrass, and stoneyhills muhly are among the more vividly named natives. Photo taken near Portales, N.M.



wheatgrasses

Remnants of a prairie wilderness the national grasslands

"At the horizon the dust came up like a yellow band between earth and sky then it kept on rising and rolling toward you till you were right inside it. Small and large twisters and tumbleweeds all mixed up with it and the sand sifted into every pore in your body. I always know when one is coming because the light changes. It gets yellow and real still all around. When the sand hits, it's dark and cold."

Mrs. Willman talking in *THE QUILTERS*

by Hannah Hinchman

The sodbusters broke their plows turning the thick hide of the grasslands. The grasses had, over eons, created a dense mesh of root systems that not only bound the soil, but stored nutrients ready to regenerate the sod after a prairie fire. Their growth slowed to near dormancy during a cyclical drought. Where conditions were right, the grasses built up exceptional beds of soil.

The native grasses — from the luxuriant plumes of big bluestem to the wiry spikelets of blue grama — were able to adapt to a climate of extremes. The sea of

grassland, bounded roughly by the Mississippi River and the Rockies, is characterized by aridity increasing towards the west as the land gains elevation and as the rain shadow of the Rockies becomes more pronounced. To the east, the climate allowed for tallgrass prairie, with its deep sod that easily accommodated cash crops. In the west, an equally well adapted, though shorter, group of grasses flourished.

The relatively unbroken terrain fosters high winds, but the grasses protect the soil with their dense foliage and suspend their flowers so that the wind will do the work of pollination. When moisture finally does come, it is mostly in the form of torrential summer thunderstorms. The grasses are an effective buffer between the force of the rain and the soil.

In his haste to make his quarter section of land productive, the pioneer farmer failed to recognize the reasons grass had been successful for so long. He laid his fields open to be baked, blown, and scoured. He introduced crops that were not drought resistant. In the early '30s, after a long spell of drought, the soil was so desiccated that when the winds came across Wyoming, the Dakotas, Nebraska, Texas, and Oklahoma they drew dust 20,000 feet into the atmosphere.

Promising years always lured farmers back to the grasslands, though they have periodically been driven out by drought from the 1880s through the 1950s. But in 1934, when an especially severe dry spell was accompanied by serious economic depression, the Department of Agriculture began to buy tracts of eroded, depleted farm and rangeland as an emergency measure under President Franklin Roosevelt's Resettlement Administration. The newly formed Soil Conservation Ser-

vice initiated a program to return the land to grasses. The National Forest System Grasslands in 1940 had four million acres.

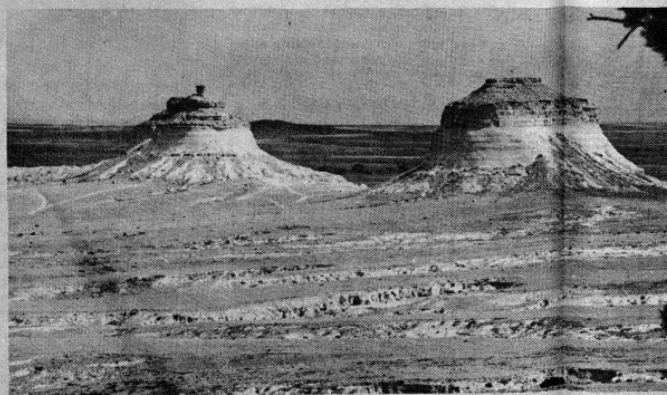
Until recent decades, the grasslands of rich, range remained a part of the nation's heritage. Other mineral resources, such as oil, gas, and coal, have been discovered in the last remnants of the prairie.

Conservation of the grasslands is an opportunity known to the public. The process of finding the National Forest System Grasslands for which one can apply for National Wildlife Refuge status is a long one. The first stages of the process have not been completed. The idea of grasslands that have not been found much in the past are a number of lands that are essentially open grasslands to Great Plains.

A characteristic of the grasslands is its unbroken expanse. Some of the grasslands are rugged topography in the Pawnee National Grassland, are large areas since the area.

In the grasslands, the Little Missouri River flows through the area.

PAWNEE BUTTES in the
Pawnee National Grassland.



Nov. 4, 1977 — High Country News-9

wilderness — national grasslands

Missis-
sippi
charac-
ters the
and as the
es more
nate al-
its deep
h crops.
adapted,
grasses

a fosters
the soil
and their
work of
lly does
rential
sses are
ce of the

section
farmer
ass had
laid his
scoured,
drought
a long
ssicated
Wyom-
cas, and
feet into

farmers
ey have
drought
But in
try spell
omic de-
iculture
depleted
ergency
ranklin
stration.
ion Ser-

vice initiated a project to restore the range to grasses. The tracts of land changed hands and became part of the National Forest System, delineated as 19 National Grasslands in 1960. They comprise about four million acres in 11 states.

Until recently, the goal for the grasslands of rich, self-sustaining, wilderness range remained unchallenged. But attention has begun to shift to seams of coal and other minerals that underlie some areas of them. Future water projects, transmission lines, pipeline routes, and roads threaten the last remote areas.

Conservationists, however, are finding an opportunity to make their suggestions known. The U.S. Forest Service is in the process of finding all roadless areas in the National Forests and Grasslands to see which ones are suitable for inclusion in the National Wilderness Preservation System. (The process is the second Roadless Area Review and Evaluation—RARE II.) In the first stages of the process, the grasslands have not been adequately inventoried and the idea of grassland wilderness has not found much public support, though there are a number of areas in the national grasslands that qualify as wilderness. This is essentially our last chance in the national grasslands to set aside a remnant of the Great Plains in its natural state.

A characteristic quality of the grassland is its unbroken horizon line, which is pleasing to some and monotonous to others. Yet the grasslands include some varied and rugged topography as well. Pawnee Buttes in the Pawnee National Grasslands of Colorado, are landmark relics of rock layers long since eroded away everywhere else in the area.

In the grassland bearing its name, the Little Missouri River has cut 600 feet into



USDA-SCS photo by L. F. Bredemeier

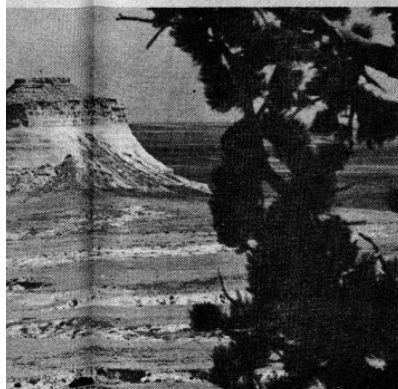
NATIVE GRASS mixture planted in Dundey County, Neb. This field has had four years of growth. Switchgrass predominates, intermixed with sand lovegrass.

the upland surface, creating striking badlands.

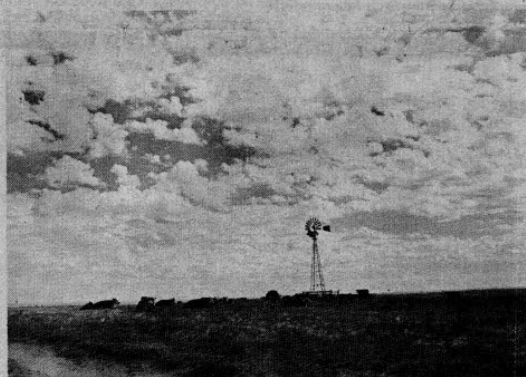
Nor has grass excluded other forms of vegetation. Drainages harbor the familiar cottonwood. Steep arroyos shelter juniper, wild rose, chokecherry, and currant. Flowers scattered in the grass include many species of sunflower, globe mallow, and the catclaw sensitivebriar.

SIGNS OF MAN like the windmill and the water tower near the prairie ghost town of Keota, Colo., are the crux of the controversy over grassland wilderness designation. Should either of these intrusions exclude an area from consideration as wilderness? Forest Service criteria do not specifically say. Both photos are in the Pawnee National Grassland.

"All those fall afternoons were the same, but I never got used to them. As far as we could see, the miles of copper-red grass were drenched in sunlight that was stronger and fiercer than at any other time of the day. The whole prairie was like a bush that burned with fire and was not consumed."
—MY ANTONIA by Willa Cather



Forest Service, USDA photo



Forest Service, USDA photo



Forest Service, USDA photo

10-High Country News — Nov. 4, 1977



The HCN Hot Line

energy news from across the country

GOVERNMENT SOLAR SUPPORT.

Rep. Paul Tsongas (D-Mass.) has proposed a \$28 million appropriation for the federal government to purchase solar cell equipment in fiscal 1978. This could buy about 4,000 kilowatts of solar cells at prevailing prices, about four times the current production. Producers of solar cells say that their product has been going down in price and up in efficiency, and that the only way to make them cheaper is to automate the production. A floor fight is expected over the Tsongas amendment, which faces strong Administration opposition, according to the *Washington Post*.

GAS-GULPING GALLIVANTING.

American motorists increased their travel last summer over even the record high consumption of the 1976 bicentennial vacation season, according to the Department of Energy. Only the Rocky Mountain region kept at the same level of consumption.

TROJAN TRAINING. The Trojan Decommissioning Alliance is beginning training in non-violent direct action in preparation for a demonstration at the Trojan Nuclear Plant in Oregon on Nov. 25. The group wants to end construction and operation of all nuclear power plants.

A House-Senate conference committee is arguing over President Carter's energy program, passed virtually intact by the House but changed almost beyond recognition by the Senate.

Here are some of the major items the negotiators had agreed on, as of the time we went to press: (Agreement by the negotiators does not guarantee passage; both the Senate and House have to vote on whatever the conferees recommend, and, assuming both full houses ultimately approve the same package, Carter can sign it or veto it.)

Solar energy: The conference committee agreed to provide relatively low interest loans of up to \$8,000 for installing solar heating equipment in homes. Under the \$100 million plan, families could get loans at interest rates ranging from 7.5% to 12% from the Government National Mortgage Association for installing solar heating panels and other solar devices. Some contractors have estimated it could cost between \$10,000 and \$20,000 to heat a home with solar energy.

Insulation: Homeowners could borrow up to \$300 from a utility company to insulate their homes, then repay the money through regular payments of gas or electricity bills, the conferees agreed. It costs far more than that to fully insulate a home, but another part of the legislation would provide moderate-interest loans for the bigger jobs, though those loans would not come from utility companies.

Low-income: Low-income families could get grants of up to \$800 for insulating their homes or installing other energy-saving devices such as storm windows.

The committee also set up a \$900 million

program to encourage schools and hospitals to save energy. In addition, it tentatively proposed that the Department of Energy within two years develop energy efficiency standards for home appliances such as washers, clothes dryers, and air conditioners. Manufacturers then would have six months to meet those standards.

The conferees, however, rejected a Senate proposal to ban gas-guzzling automobiles by 1980. Twenty-three of the 24 House members of the conference committee voted against the measure. Their stated reason was that American Motors Corp., by far the smallest of the Big Three automakers, had reported it could not meet the deadline.

As yet, the panel has not taken up the major part of the energy bill — the tax package. Carter had proposed four major tax increases aimed at conserving energy,

and his proposals passed the House virtually unscathed. The Senate, however, essentially reversed the proposals and voted instead to provide tax cuts and tax credits of up to \$32 billion over eight years to stimulate energy production and conservation.

The conference committee also has yet to deal with gas price deregulation, an issue upon which the entire energy package possibly hinges. Presently, the price of natural gas is \$1.46 per thousand cubic feet. Carter proposed that the price gradually be increased to \$1.75, and the House agreed. The Senate, however, voted to deregulate prices entirely, which is what oil and gas companies lobbied for.

After meeting with Carter last week, congressmen said the President told them he would veto any energy bill that would raise the price of natural gas any higher than he proposed.



MINE FOR LAND? A Brigham Young University research group has advised the Crow tribe to mine its coal, oil, and bentonite in order to buy reservation land back from non-Indians. Such inholdings, brought about by federal policies several decades ago, are causing many confrontations between Indians and non-Indians on reservations in Montana and elsewhere. The university group says that by using the royalties, the tribe could try other projects, too, such as building a shopping center and starting tribally-owned lumber and ranching operations. Some tribal members present at the meeting with the group objected to the idea of mining on the reservation, according to the *BILLINGS GAZETTE*. Photo of Crow Agency, Mont.

Searching for a bargain?

Tax deductible donations to the High Country News Research Fund can go a long way. A one hundred dollar contribution could pay for: research (one whole week's worth), or freelance writing (up to three full pages in HCN), or photographs (between 30 and 40 at HCN's prices), or travel expenses (2000 miles at 5 cents a mile). It would be hard to find a better bargain at today's prices. If you care to contribute, please write out a check to Wyoming Environmental Institute — HCN Research Fund and mail it to WEI, P.O. Box 2497, Jackson, Wyoming 83001. Thank you.

Amount and date of payment will be recorded and reported.

Grants, loans in latest national energy package

MEN

WOMEN



WORK OVERSEAS!!

Australia - Europe - Japan - The South Pacific - Africa
Far East - South America - Central America - Middle East
\$800.00 to \$4000.00 Per Month - Tax Benefits

U.S. Government, Private Corporations and Organizations.

Construction - Engineering - Sales - Transportation - Teaching - Oil Refining - Medical - Accounting - Manufacturing - Secretarial - Aircraft, etc., etc.

If you like travel, excitement and adventure, then overseas employment is for you. To allow anyone the opportunity to explore overseas employment we have published a complete set of Overseas Employment Guides. Our Overseas Employment Guides contain the following information...

- List of CURRENT OVERSEAS JOB OPPORTUNITIES with a special section on overseas construction projects, executive positions and teaching opportunities.
- How, Where and Whom to apply for the job of your choice OVERSEAS!
- FIRMS and ORGANIZATIONS employing all types of Personnel in nearly every part of the Free World.
- Firms and organizations engaged in OVERSEAS CONSTRUCTION PROJECTS, MANUFACTURING, MINING, OIL REFINING, SECRETARIAL, AIRCRAFT, ENGINEERING, SALES, SERVICES, TEACHING, ETC!
- COMPANIES and GOVERNMENT AGENCIES employing personnel in nearly every occupation, from the semi-skilled laborer to the College trained professional.
- How and Where to apply for OVERSEAS GOVERNMENT JOBS!
- Employment on U.S. Government ships "MERCHANT MARINES"!
- Directory of U.S. Businesses operating in AUSTRALIA that employ Americans.
- List of U.S. DEFENSE CONTRACTORS with operations OVERSEAS THAT EMPLOY Americans!
- Information about TEMPORARY and SUMMER JOBS OVERSEAS!
- You will also be told How to write your resume or application letter! How to plan your job hunting campaign! How to conduct yourself in a job interview! Plus many professional tips that may mean the difference between landing the job of your choice or missing out.

MAIL OUR ORDER FORM TODAY!!!

The Job You Want OVERSEAS May Be Waiting For You Right Now!!

ORDER FORM

Overseas Employment Guides
1727 SCOTT ROAD, SUITE C
BURBANK, CA 91504

I am enclosing \$10.00 cash, check or money order. Please send me your complete set of OVERSEAS EMPLOYMENT GUIDES immediately.

NAME _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

Or charge this order on your BankAmericard or Master Charge

BankAmericard Account No. _____

Expiration Date _____

Master Charge Account No. _____

Expiration Date _____

30 DAY MONEY BACK GUARANTEE

If you are dissatisfied with our Overseas Employment Guides, for any reason, simply return our Guides to us within 30 days and your \$10.00 will be refunded to you immediately. NO QUESTIONS ASKED.



HERSCHLER WANTS SELECTIVE LEASING. Wyoming Gov. Ed Herschler says he agrees with the Natural Resources Defense Council (NRDC) that the programmatic impact statement describing the federal government's overall coal leasing plans was inadequate. NRDC and several other environmental and rancher groups recently convinced a federal judge that the statement should be redone, resulting in a moratorium on coal leasing in the West. Herschler says he hopes the result will be selective leasing. He thinks some leases need to be granted, according to the Associated Press.

AFTER THE LAST MILE. Old tires that have been retired from highway use are being recycled into oil by Tosco Corp. near Denver. One ton of tires yields about \$38 worth of oil, \$60 worth of carbon black, and \$2 worth of scrap steel. The pilot plant was built by Tosco and Goodyear Tire & Rubber Co. A Tosco official says the firm is close to a commercially feasible plant design, according to the *Denver Post*. However, he is cautious about the economics of going commercial since transportation costs for old tires and interest rates for loans might change.

METHANOL FROM COAL. A Cincinnati, Oh., engineering group has proposed a massive coal-to-methanol conversion plant to be located in the lignite fields of western North Dakota. The plant would produce 25 tons of methanol, or about 7.5 million gallons, per day, according to Wentworth Bros., Inc., the company making the proposal. United Press International says that current plans call for carrying the fuel by pipeline to Minneapolis and Duluth, Minn., where it would be distributed by tankers to industrial complexes on the Great Lakes and the Mississippi River. The company has begun a \$450,000 feasibility study and will take two years to conduct a study of the environmental effects. It hopes to have the plant on line by 1982. UPI says that this would be the world's largest coal conversion facility.

N.D. considers new siting rules

The North Dakota Public Service Commission (PSC) is considering changes to its energy plant and transmission line siting rules that would remove prime farm land from the list of areas on which power plants are forbidden.

The prime farm land siting prohibition is the last major hurdle to the siting of the ANG coal gasification plant and Basin Electric Power's Antelope Valley power plant, both in Mercer County. These two plants proposed to locate in an area containing 1,575 acres of prime agricultural land, as designated by the U.S. Soil Conservation Service.

However, even if the changes are approved, PSC chairman Richard Elkin says that the proposed revisions would not affect the siting decisions of the ANG and Basin facilities. Elkin told HCN, "Those facilities will be permitted under the rules that were in force when they applied." Nevertheless, he says, there appears to be

As the result of a Sierra Club petition, the California Public Utilities Commission has ruled that before California utilities can build new power plants outside the state to serve Californians, they must prove need for the energy. The petition was instigated when two California utilities and other companies proposed the 3,000 megawatt Kaiparowits power plant in southern Utah. The Utah Public Utilities Commission refused to hold a hearing on the need for the facility, which meant the public would never have the opportunity to consider the question of need.

After the Kaiparowits project was dropped by the utilities, the Sierra Club continued its legal action because of the many other existing and potential power projects that might be affected. "This is the most important single energy decision ever made for the future of the southwest United States," according to Tony Ruckel, Sierra Club attorney.

The ruling will affect all private or shareholder-owned public utilities in California that want to build power projects outside of California. For example, any major expansions of Four Corners plant in New Mexico or Mojave plant in Nevada will be covered since Southern California Edison owns part of them. Several other power plants are proposed outside the state. Ruckel explains that sulfur dioxide standards in California prevent building more power plants there.

The ruling will not affect the Intermountain Power Project, proposed in southern Utah, because it is sponsored by public — not shareholder owned — utilities.

Explaining the significance of the decision, Ruckel says this guarantees that the public will have an opportunity to consider need and demand. While he can't say what the California Public Utilities Commission will rule on a given proposal, he expects it to thoroughly consider need before issuing a certificate of public convenience and necessity. With a bigger staff and larger budget than most other states' public utilities commission, California is ahead of other states in its decision-making process, Ruckel says.

California has an energy commission that continuously studies energy demand and produces a regular forecast of demand in the state. This information helps the utilities commission decide whether an in-

"no reason" not to grant the permits. He cautions, however, that this is his personal opinion and not that of the three man commission or the PSC staff.

Elkin told *The Onlooker* that the proposed PSC revisions will provide "more latitude" in siting energy facilities, and that they do not represent a softening of the guidelines. He argues that the current restrictive rules would prohibit siting of plants in areas where they are really needed.

In addition to the prime farmland changes, the revisions would no longer require that power line routes and lists of landowners be published in the newspapers in affected areas.

An initial hearing on the rules was held on October 25, with a final hearing scheduled for December 1. PSC chairman Elkin says that site compatibility certificates will be decided for ANG and Basin by the end of November.

California must certify 'need' before another Kaiparowits could be built

dividual utility's projections of future energy need are accurate.

The utilities argued that it would be "absurd" for the California Public Utilities Commission to have to rule on electric generating plants and transmission lines in Utah, Arizona, and Nevada. They said it would be hard for them to get financing for their projects if another permit were required. They also said the Department of Interior was considering need in its impact statement on the Kaiparowits proposal.

The Sierra Club pointed out the precedent set by the state of New Mexico, which took jurisdiction over a dispute about

whether two New Mexico public utilities should participate in a nuclear power plant project proposed to be constructed in Arizona. The New Mexico Public Service Commission said the new plant would have an important effect on New Mexico ratepayers and the future of energy supplies in the state and that no Arizona agency could or would protect New Mexicans.

That precedent was ignored by other states. However, Ruckel believes now that both New Mexico and California have taken such a stand, all the other states in the region will follow within the next 10 years.



Photo by Dave Cline and courtesy of the U.S. Fish and Wildlife Service

FILLETING SALMON on Nunivak Island off the coast of Alaska. Miles away, in lower Cook Inlet, fishermen wait with apprehension as oil exploration, which may threaten their salmon fishing, begins.

Oil lease sale shocks Alaskans

Interior Secretary Cecil Andrus shocked Alaska officials last month when he released the official notice of sale of oil in the lower Cook Inlet off the Alaska coast.

Missing from the notice were several safeguards that Alaska Gov. Jay Hammond had expected to be included to protect the environment, fishing grounds, and state's rights, according to the *Alaska Advocate*.

"Frankly, it was a big shock," says Commissioner of Natural Resources Robert LeResche. "We were not really harassing them as we would have been harassing (former Interior Secretary Thomas) Kleppe at this time because we'd had verbal assurances that things would be done to our advantage."

In fact, Hammond had reassured critics that there was no need for him to litigate against the leases because "the federal government has done virtually everything we'd asked to mitigate potential problems." The sale of the leases without the conditions put Hammond in a particularly uncomfortable position, since he won the 1974 governor's race as an anti-lease candidate, according to the Washington Post News Service.

One of the conditions the state had re-

quested was that nine tracts not be leased, both because they were in biologically sensitive areas and because oil companies might be able to drain adjacent state oil reserves. However, these tracts were included in the sale. The state also wanted authority to levy state penalties for oil spills, but it was denied.

An Interior Department memo advised Andrus that "the probability of at least one major spill (greater than 1,000 barrels) over the life of the field is very high. . . There is a strong possibility that the crab population would be reduced in the event of a spill."

The memo said most of the fishing and recreational losses would be short term, but fishermen aren't so sure. "We have a feeling of impending doom," Larry Hollinshead says. He catches salmon in the summer, herring in the spring, and crab and shrimp in the winter.

Oil spill would do more damage in enclosed areas such as Cook Inlet than on the open sea. "Of all the offshore areas leased in the U.S., this is the only one in an enclosed area," according to a biologist with the Alaska State Fish and Game Department.

12-High Country News — Nov. 4, 1977

Environmentalists attack RARE II grasslands plans

Dreams of thousands of acres of grassland wilderness in the West have all but died as the result of administrative decisions made last month in separate Forest Service offices throughout the region. At least as far as national grasslands are concerned, the new roadless area review (RARE II) is not working, environmentalists charge.

Using the Forest Service's criteria, conservationists found more than 40 areas in the Rocky Mountain and Great Plains states that qualified as roadless. The Forest Service only accepted four of them.

The Forest Service and environmentalists have different explanations of what

identifying them, according to Bruce Hamilton, Northern Plains Sierra Club representative and coordinator of the national grasslands work for environmental groups. "We haven't called out the troops to support the areas yet," he says.

Hamilton says the Forest Service was directed by its leadership to consider grasslands even if they had short stretches of fence and minor range improvements. Since most of the grasslands were private property until the 1930s, there is little virgin prairie with no marks of man.

Bob Tice, who conducted the Forest Service inventory for Nebraska and South Dakota, says one of the problems is the definition of "major range improvements." He says there are many areas with water structures several acres in size, which he thinks must be considered major improvements. "We're still confused about the definition," he says. However, he says he feels safe in saying the rejected areas are too developed.

One of the four surviving grassland roadless areas is in Tice's area — the Indian Creek area of the Buffalo Gap National Grassland in South Dakota. This area has only 11 stock watering developments and five or six miles of fence in 26,000 acres, he says.

The other three areas chosen for possible further wilderness study are all in the Pawnee National Grassland in Colorado.

One of the biggest disappointments for environmentalists was the Little Missouri Grassland of North Dakota. "It had the best potential of any national grassland," Hamilton says. A North Dakotan found 15 areas that met Forest Service criteria for roadless areas where there were apparently no conflicts with other resources such as minerals or grass. While both mining and grazing are permitted in wilderness areas, there are restrictions on the use of motor vehicles or motorized equipment.

Hamilton says the decision there ignored a specific directive from the head of the Forest Service saying that RARE II planning was supposed to be done in addition to the Forest Service's other land use planning. Robert Miller, Forest Service planner with the Custer National Forest, says RARE II "really wasn't necessary" in the Little Missouri Grassland because the agency had already conducted a three-year roadless area study locally.

After public comment, the agency decided to designate the areas "roadless," and to manage it accordingly. Miller says he doesn't see the need for any Congressional action to support this management decision.

Wilderness advocates disagree. They say that without Congressional wilderness designation, a roadless area can be easily changed into a different management category by the agency. Rules for management are not consistent from area to area and depend upon the Forest Service staff members in each place. In addition,

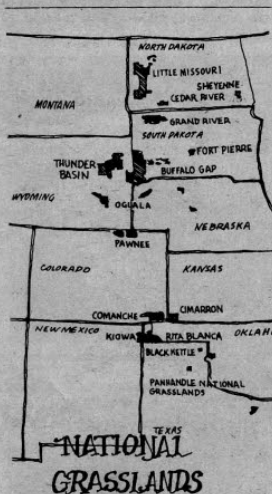
Hamilton says, wilderness is a national resource and needs to be given more than local consideration.

Miller says many people in the area resisted wilderness designation because they would like to continue using vehicles to manage their cattle herds. This would be forbidden under the Wilderness Act, although grazing is still allowed.

In other areas of the West, different criteria have been used to reject grasslands. In the Kiowa National Grasslands of

New Mexico, for example, Hamilton says one area was rejected because an introduced species lives there, the Siberian ibex.

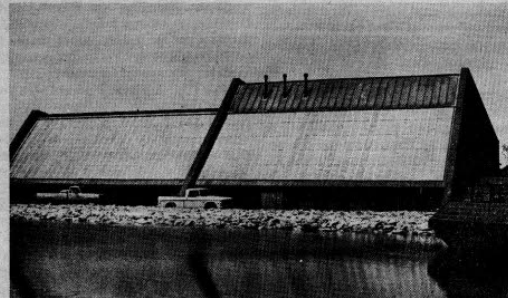
Environmentalists aren't sure what to do next. They are appealing the grasslands decisions to the Washington, D.C., office of the Forest Service. Tim Mahoney of the Wilderness Society told the agency he finds the grasslands inventory "unsatisfactory in its entirety," Hamilton says. "It leaves us at a loss. We just wanted to follow Forest Service rules."



happened. The Forest Service says that most grasslands are too developed to be considered as potential wildernesses. They have too many roads and ranch improvements, and the public sentiment is for other forms of management.

Environmentalists say the agency has been ignoring its own guidelines for RARE II studies, which stipulate that roadless areas should just be listed at this stage of the process and not evaluated. They quote a June 27, 1977, memo from Forest Service Chief John McGuire that says, in effect, the same thing: "No evaluation will take place during the workshop meetings."

One reason the Forest Service hasn't been getting much comment in favor of wilderness protection of grasslands is that environmental groups have been concentrating solely on inventorying areas and



SINCE THE CONTROL SYSTEM WAS FIXED ON the solar heating and cooling system on the Bighorn Canyon visitors center near Lovell, Wyo., the system has been only slightly more difficult to maintain than a conventional heating and air conditioning system, says the center's chief maintenance man.

Solar industry...

(continued from page 5)

with the system. There just wasn't the volume of sales to sustain all the manufacturers, he says.

GROWING RELIABILITY

Clearly, the first generation of solar heating systems has had problems. A few of the initial consumers, like Boydston and Johnson have been badly hurt by it. Others, like VanDerwalker and Vickery, say their problems have been minor and the companies they are dealing with have been cooperative. In the face of rising energy and building costs, they feel they have made a good investment. They look back on their struggles as interesting and, hopefully, useful for others.

Architect Frey thinks the second generation of products from established companies is becoming more reliable. On his own home, he has a Solaron system, installed in 1975, that is "working great."

The biggest financier of solar heating systems in the country, the federal government, confirms this assessment. "Our concerns get fewer and fewer," says David Moore of the federal heating and cooling demonstration program.

In the first cycle of grants awarded in

January of 1976, he worried about "outgassing," for instance, because the companies didn't seem to be paying attention to the problem. Outgassing usually involves paint or insulation that under high temperatures gives off a gas that solidifies and sticks to the inside of the clear collector cover, blocking sunlight from the absorber plate.

"But now there's been enough talk about outgassing that people are starting to pay attention to it," he says. He hasn't seen evidence of the problem in demonstration projects lately.

In fact, he says that now he thinks the industry is "responsible and mature enough" to live up to the set of tough guarantees required by the federal government in its fourth cycle of grants.

The limited warranties submitted by most companies on previous rounds of grants didn't fulfill the requirements outlined by the federal act controlling warranties and guarantees, Moore says.

Now to get the U.S. Department of Housing and Urban Development's money for a project, the burden is on the installing contractor to guarantee parts and labor on the collector for five years and on the entire installation for one year.

Moore says the new guarantees were not inspired by any history of failures in the demonstration program. Nevertheless, there seems to be hesitation in the industry to offer such guarantees.

Bayless of Solaron points out that the pumps, ducts, and motors that make up a solar system are sometimes only guaranteed by their manufacturer for 90 days. "And no manufacturer can put any more of a warranty on its hardware than is on the component parts," Bayless says.

Erickson of Rocky Mountain Products says flatly that he won't submit any applications for this round of grants because he can't make promises like that yet. "I don't think any of the other companies can either," he says.

Big Sandy herbicide spraying plans shelved

A program to kill noxious weeds with herbicides on public lands in Wyoming has been shelved, because of fears the herbicides may destroy wildlife habitat.

The Weed and Pest Division of the Wyoming Department of Agriculture had proposed a five-year plan to spread 2,4-D, Tordon 22K, and Tordon beads along the Big Sandy River and several tributaries to control giant whitetop and Canadian thistle. The Bureau of Land Management (BLM) had allocated \$13,000 for the program.

However, reacting to complaints by environmentalists, the Wyoming Game and Fish Department, and BLM officials, Weed and Pest this summer put aside the plan, at least until specifics could more clearly be worked out.

Art Tait, manager of the Sandy Resource Area in BLM's Rock Springs District, said in a telephone interview, "The plan has been pretty well held up because of environmental concerns. It's a viable program and we are interested in controlling noxious weeds, but the main concern is to

do it in a way that's environmentally acceptable."

Weed and Pest's environmental analysis for the project, Tait said, did not spell out what methods would be used, nor specifically where the herbicides would be applied. There was some concern, for example, that the herbicides might destroy willows, which are prime moose habitat.

Critics of the program had maintained that, in addition to harming wildlife habitat, the toxic herbicides also may kill trout and leach into the soil.

Western Roundup

HCN

Carter reassures Westerners on water

President Jimmy Carter went to Denver in October to tell the Western governors what he has been saying from Washington — the federal government will not preempt state prerogatives in the use or management of water. Carter's personal discussions with the governors apparently conveyed the message better than at other times, because several governors and Congressional representatives pronounced themselves "extremely pleased" with Carter's assurances.

Host governor Richard Lamm (D-Colo.) said, "I think the President certainly understands the vitalness of the water issue." Governors Scott Matheson of Utah, Thomas Judge of Montana, and Lamm also said that Carter's "understanding of the

importance of water in the West has increased since his so-called 'hit list' days," the Associated Press reported. Matheson also said, however, that he would reserve judgment, but that Carter did seem "more open."

Virtually every western governor expressed satisfaction with Carter's "revised" approach. Governor Arthur Link of North Dakota said he was "encouraged" by the President's assurances. The Denver speech actually represents no change in the Carter Administration policy. Both Carter and Interior Secretary Cecil Andrus have continually said that the federal government water policy would not preempt the states' rights.

88,000 Denver homes get water meters

Pressure to institute water conservation measures has resulted in the abolition of the flat rate for water in Denver and in plans for installation of water meters in 88,000 households. The Denver Water Board announced that all of the city's unmetered homes would get meters at a cost estimated to be between \$20 million and \$30 million.

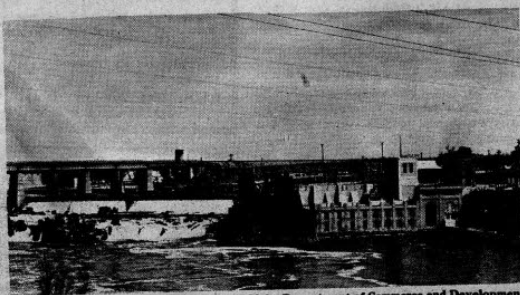
The Rocky Mountain News reports that the water board has traditionally resisted requiring meters for older homes. It recently rejected a \$4 million offer of federal assistance to install water meters. This action drew criticism from several quarters, including Colorado Gov. Richard Lamm.

The cost of installing the meters will be

paid for by expected federal loans and grants. Part of the cost may be levied against each individual household, however. The cost per household for a meter is about \$350.

Presently, most of the water users in the water board's jurisdiction are metered. There are 900,000 customers, and meters are installed in all of the suburban homes and all city homes built after 1957.

Studies commissioned by the water board have shown that metered water use in all of Denver's homes would result in a saving of about 10 million gallons daily. The shift will be most effective for small families, according to a water department official.



Courtesy of Idaho Department of Commerce and Development

MINIMUM FLOWS are being urged in Idaho to guarantee sufficient water for hydroelectric power plants. Photo of the Snake River at American Falls, Idaho.

Citizens push for minimum stream flows

Some citizens in Idaho are starting a petition drive to place a referendum on minimum stream flows before the state's voters. The purpose of the legislation is to assure adequate water flow for hydroelectric facilities and for preservation of fisheries.

The Water and Power Initiative Committee says that there is no legal limitation on the right of private individuals to divert public water for industrial, domestic, or agricultural purposes. Approval of the initiative would establish base flows in all Idaho rivers and streams with unappropriated water. The "base flow" would be equal to the average flow of the 5 driest years out of the last 50.

The committee says that such a law would protect current flows in the Snake River that produces \$20 million worth of

low-cost hydroelectricity. The committee argues that to replace this power with a coal- or nuclear-fired power plant would cost \$350 million.

Legislation has been proposed in the Idaho legislature in previous years, but has always been defeated. Farmers have generally opposed the legislation because they fear that it would interfere with their existing water rights. One of the committee's organizers, Mary Mech, says that the proposed law would protect existing water rights and, in a dry year, those rights would be met first, even if some of the base flow was required. It would limit new water appropriations out of the base flow, however.

For the referendum to be placed on the ballot next year, the committee must collect 25,964 signatures before July 7, 1978.



Photo by Conrad Hillman and courtesy U.S. Fish and Wildlife Service

Black-footed ferret seen in Montana

A black-footed ferret, described as "the most endangered animal in the U.S.," has been spotted in Montana. Keith Seaburg of the Montana Fish and Game Department, Game Warden John Ramsey, and a farmer spotted the animal on private land on September 13, the Associated Press says. This is the first confirmed sighting of a ferret in Montana since 1953, when one was struck by a car.

Montana Defenders of Wildlife representative Hank Fischer immediately charged that the state Fish and Game Department was not adequately protecting the ferret. The department made no announcement of the sighting because the agency didn't want to be premature, according to director Robert Wambach. Fischer charged that the time wasted between the sighting and the

announcement should have been used to develop a management plan. Fischer said, "We have to map out where the prairie dog towns are in the vicinity and make sure that no one shoots or hurts the prairie dogs." Prairie dogs are the primary food for the endangered ferret.

Ironically, the sighting of the ferret took place while the two officials and the farmer were shooting prairie dogs.



1977 environmental awards announced

This year's Rocky Mountain Center on Environment (ROMCOE) awards for individuals and organizations in the Rockies that have made significant contributions in the areas of environmental awareness, action, education, and research are:

Communications, Media Activity — The University of Colorado Information Services and Department of Geography, and KBTW Channel 9, Denver.
Educational Activity — Denver Public Schools Balarat Center. **Citizen Conservation Activity, Individual** — Dr. Robert

Witzeman, a Phoenix, Ariz., physician and president of the Maricopa Audubon Society. **Citizen Conservation Activity, Organization** — Wyoming Outdoor Council, Cheyenne, Wyo. **Government Activity, Individual** — George "Kip" Hinton, Chief of Public Affairs for the Colorado State Office of the Bureau of Land Management. **Government Activity, Agency** — City of Northglenn, Colo. **Ralph Sargent, Jr. Industrial Award** — Native Plants, Inc., Salt Lake City, Utah. **Edward Hobbs Hilliard, Jr., Award** (for an outstanding citizen or group) — Lois Webster of Denver.

Colo. trout may be off endangered list

The greenback cutthroat trout, found only in Colorado, has made a comeback and may be taken off the federal endangered species list, according to the U.S. Fish and Wildlife Service. The fish was placed on the endangered species list in 1969 because of threats from hybridization with introduced species of trout and the effects of mining, logging, grazing, and irrigation projects on its habitat. Today, introduced populations are doing well on the cutthroat's former

range in the headwaters of the South Platte and Arkansas River drainages. Comments on the Fish and Wildlife Service's proposal to remove the fish from the endangered species list, a move which eventually could mean resumption of limited sport fishing of the species, will be accepted until Dec. 27. Comments should be sent to the Director, U.S. Fish and Wildlife Service, Department of the Interior, Washington, D.C. 20240.

Road closures help Boise Forest elk

The Idaho City District of the Boise National Forest will close about 700 miles of roads over the next five years in an attempt to increase elk populations in the forest and create roadless wildlife sanctuaries. By the time the program is completed, about 14% of the district will be roadless wildlife areas, according to the Idaho Statesman.

U.S. Forest Service and Idaho Fish and

Game officials say that elk harvest is directly related to roads. Records show that the introduction of roads into an area displaces elk from their habitat. Officials say that when the roads are closed, the elk relocate in the area.

The district affected by the closures covers 730,000 square miles and contains a total of 3,000 miles of roads.

14-High Country News — Nov. 4, 1977

Clean Air Act. . .

(continued from page 7)

required to install control equipment to prevent haze in the air.

The regulation applies, however, only if visibility is determined to be an important value of the Class I area. An Interior Department source told *Air-Water Pollution Report* that by mid-October, the agency had determined that visibility is important for all but five of the 158 Class I areas in the country.

Environmentalists are afraid that unless the public supports Interior, there will be pressure to limit the number of national parks and other areas included so that only the large parks with panorama views will be protected.

The visibility regulations no doubt will affect the siting of the Intermountain Power Project, a 3,000 megawatt power plant proposed for southern Utah.

Another new amendment already hurt prospects for that plant since it said tall stacks are not a sufficient means for controlling pollution. IPP had planned 700 foot stacks to disperse pollution and reduce its impact on the ambient air quality near the plant.

For more information, contact the National Clean Air Coalition at 620 C St. SE, Washington, D.C. 20003 or call (202) 543-0305 and ask to be put on their mailing list. Send a contribution if you can. Or call your regional EPA office, your state air pollution authority, the Sierra Club, or your local environmental group.

ECOLOGICAL EMPLOYMENT. Contrary to popular bumperstickers, the environmental movement is apparently good for employment. The *Chicago Daily News* reports that environmental concerns "spawned a major industry — pollution control — that kept expanding." The newspaper says thousands of new jobs have been created that are "a by-product of the fundamental change in society's attitudes toward the use and abuse of natural resources." Experts say that the environment-related job market, after years of steady growth, "is following a trend line that goes nowhere but up."

UNDERGROUND WATER QUALITY. The Environmental Protection Agency has proposed regulations designed to protect drinking water quality in underground supplies. The regulations establish procedures to designate for special protection aquifers which, if contaminated, would create a significant hazard to public health. They also propose to review projects receiving federal financial assistance in those areas. Comments on the rules should be addressed to EPA's Office of Water Supply (WH-550), 401 M St. SW, Washington, D.C. 20460.

REFRIGERATION OR RADIATION? Several pharmaceutical companies are experimenting with gamma rays as an alternative to freezing and canning fresh foods. Martin Welt, president of Radiation Technology, Inc., says that "hundreds of millions of barrels of oil" could be saved yearly

by converting to the radiation preservation technique. He says that foods wrapped in airtight containers and protected from contamination can last several years without any additional means of preservation. Potatoes and wheat are already legally preserved by gamma rays in the U.S. and Holland has approved the method for poultry, fish, spices, potatoes, wheat and mushrooms.

VOTE TO TAX THEMSELVES. Missouri voters have approved an amendment raising the state sales tax one-eighth of a cent and earmarking the funds for state conservation. Conservationists say the state first plans to use the money to acquire land that is threatened and to expand educational programs. Later, it will provide for new nature study areas, upland and wetland wildlife refuges, stream access, lake development, and research. For an estimated cost of \$3 or \$4 per year to each Missourian, the fund is expected to bring in about \$26 million annually, the Associated Press says.

WHO TO BELIEVE? "Major amendments to weaken the Endangered Species Act of 1973 are anticipated next year," says the National Audubon Society in an Oct. 28 issue of its newsletter *Audubon Leader*. "The steam has gone out of the effort to weaken the law protecting endangered species," says *Environmental Action* in its Oct. 8 issue. According to the Audubon Society, both the House and Senate will consider amendments to the act early next year. One major reason for the renewed opposition, says Audubon, is that a court suit has halted construction by the Tennessee Valley Authority of the Tellico Dam, which could endanger the habitat of the endangered three-inch snail darter fish. That ban could be used as a precedent for other such projects, and so construction companies and pork-barrel minded congressmen would like to see the ban rescinded. While *Environmental Action* does not dispute that, it says improved nets and new techniques for tuna fishing reduced by 75% the number of porpoises killed in those nets and thus quieted the protests of fishermen who had claimed the Act may damage their means of making a living. As a result, "Congressional efforts to weaken laws protecting porpoises and endangered species have fizzled," says *Environmental Action*. Both publications agree that, in 4,500 cases where proposed federal projects

threatened endangered species, solutions were worked out that were acceptable to builders and conservationists.

CANOE CLEAN-UP CREWS. Canoeists who rent canoes from the Shenandoah River Outfitters of Luray, Va., can pay for them with bags of trash instead of the regular \$16 a day fee. Anyone bringing back at least two bags of trash from along the river gets the special deal.

Christmas and all occasion notecards... plus other environmental publications.

write for free catalog



STONECROP
PO BOX 685
GREELEY CO 80631

Mothering
a quarterly publication

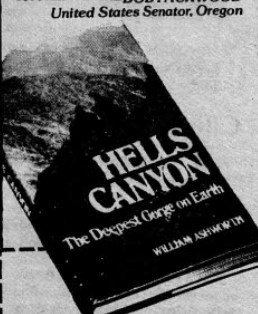
ON NATURAL MOTHERING

Home births midwifery nutrition
natural child care alternative education

Single Issue: \$2.25
One Year \$8.00
Box 184, Ridgway, Colo.
81432



"Bill Ashworth has excitingly recreated every moment, every meeting, every hope that was dashed and reclaimed until finally the greatest jewel of the American landscape was saved forever."
—BOB PACKWOOD
United States Senator, Oregon



By your bookseller or
HAWTHORN BOOKS
Dept. 8, 280 Madison Avenue, New York, N.Y. 10017
Enclosure check or money order \$5.00
plus \$1.00 shipping and handling
Please include \$1.00 per book to cover postage and handling
Name _____
Address _____
City _____ State _____ Zip _____
Allow us to bill you when applicable

COUNTRY CRAFTSMEN®

FORGE AND FOUNDRY

Low Cost Wood Burning Heater Kits



Model 15/55 for 15 to 55
Gallon Drums

\$27.50

Plus \$7.50
UPS Shipping
& Handling

HEAT YOUR GARAGE, CABIN OR WORKSHOP FOR A FRACTION OF WHAT IT WOULD COST WITH GAS, FUEL OIL OR ELECTRICITY. BURN SCRAP WOOD AND LOGS IN A STEEL DRUM HEATER YOU BUILD YOURSELF. (NO WELDING IS REQUIRED.)

With our low cost kits you can convert any size steel drum into a highly efficient wood-burning heater. All of our doors and flues are made of heavy CAST IRON that will outlast a dozen drums.

Each kit contains Steel Legs, Cast Gray Iron 5 inch Stovepipe Flange, Patented Gray Iron Door Assembly with Primary and Secondary Air Draft Controls, all Assembly Hardware and Easy Bolt-together Instructions. Model 15/55 has a 9 1/2 inch round door opening to accept large logs as well as scrap wood and trash. (Drum and flue pipe not included.)

For fast factory to you delivery send check or MO to:

COUNTRY CRAFTSMEN P.O. Box 3333 N.
Santa Rosa, Calif. 95402

Classifieds

POSITIONS. The Powder River Basin Resource Council, a citizens' resource conservation organization concerned with energy development in eastern Wyoming, plans to hire three field organizers this winter. Energetic, enthusiastic people with a potential for leadership are desired. Rewarding work, invaluable experience. Send resumes to PRBRC, 150 W. Brundage, Sheridan, WY 82801.

PIANOS AND ORGANS. used and new — some repossessions now available. An "Organ and Piano Mobile Showroom" will soon be in your area with the best prices in the state on Wurlitzer, Lowrey, and Thomas pianos and organs. If interested write: Wyoming Mobile Division, Home Entertainment Center, Box 947, Vernal, Utah 84078.

PHOTOGRAPHER. HCN needs high quality black and white photographs of air pollution in the region. City smog, power plant stacks, smelters, traffic, dust from coal mines, plumes from teepee burners. We pay \$2-\$4 per photo published, depending upon quality. Send to Box K, Lander, Wyo. 82520. Indicate if you would like them returned. Other subjects are also needed.

ALTERNATE ENERGY EXPO 77 will be held at Expo Square in Tulsa, Okla., Nov. 11, 12, & 13, 1977. The Expo will be a people centered event geared to educate all of us on ways to improve our lives and our environment. It will present the latest innovations in the fields of solar, wind, wood, methane, etc. The expo will also focus on conservation of energy, health, ecology,

education, wilderness skills & much more. This exposition will be the largest of its kind ever held in the Midwest, with over 200 display booths and parking facilities for 25,000 cars. For further information, contact Ron Surface, Liberty Enterprises, Inc. 7729 E. 21st., Tulsa, Okla. 74129 918-663-2291.

PLACEMENT SERVICE. Organizers Clearinghouse, operated by the Western Office of The Youth Project, is a job and internship placement service connecting non-profit community organizations looking for staff with organizers looking for work. Our organizational clients are located in the Western Region of The Youth Project, including most of the states west of the Mississippi River, Alaska and Hawaii. Contact: Organizers Clearinghouse, The Youth Project, 149 Ninth Street, San Francisco, California, 94103. (415) 626-5570.



HCN

Bulletin Board

Nov. 4, 1977 — High Country News-15



LOONEY LIMERICKS

by Zane E. Cology

His system was wisely selected,
But installing it, sorely neglected.
"No heat is delivered!"
He cursed as he shivered,
Then moaned, finding ducts unconnected.

NUCLEAR POWER

Jon Sawyer of the *St. Louis Post-Dispatch* this year published a series of articles on the costs, risks, and politics of nuclear power development. The Coalition for the Environment, 6267 Delmar, St. Louis, Mo., 63130, is offering reprints of the series for 25 cents each.

RECYCLED OIL

State and local governments interested in recycling used oil may find helpful information in William A. Irwin's *A Model Used Oil Recycling Act*. The pamphlet proposes a method to set up such a program. Write to: Environmental Law Institute, Suite 620, 1346 Connecticut Ave., Washington, D.C., 20036; or: Federal Energy Administration, Washington, D.C., 20461.

PIEDRA RIVER

The U.S. Forest Service has determined that a segment of the Piedra River in Colorado is eligible for inclusion in the National Wild and Scenic River System. The study team will now evaluate the wild and scenic river and land management alternatives. Comments are requested, addressed to: John Cooley, San Juan National Forest, P.O. Box 341, Durango, Colo. 81301; or Duane Helton or Tony Martinez, Colorado Water Conservation Board, 823 State Centennial Building, 1313 Sherman Street, Denver, Colo. 80203.

IMPACTS OF ROCKY FLATS

A draft environmental impact statement on the activities at the Rocky Flats nuclear weapons facility near Golden, Colo., has been published by the U.S. Energy Research and Development Administration. Among the plants' activities are processing plutonium and making uranium, beryllium, and stainless steel components for nuclear weapons. Comments on the statement are due 90 days from when the document was released, Sept. 23. For a copy write to W. H. Pennington, Director, Office of NEPA Coordination, ERDA, Mail Station E-201, Washington, D.C. 20545.

CANYONLANDS EXTENSION

The National Park Service has given the public another 30 days to comment, in writing, on its proposed management plan for Canyonlands National Park. The new deadline is Dec. 12. Lynn H. Thompson, the Park Service's regional director in Denver, said widespread public interest was the reason for the extension. The agency earlier had proposed paving a road in the park to the confluence of the Green and Colorado Rivers, but its published plan did not include that proposal. Local businessmen objected to that omission, while environmentalists welcomed it. Copies of the plan are available from the Park Service's Canyonlands office, 446 S. Main, Moab, Utah.

ENERGY MAPS

Curious how coal, gas, oil, electricity, and other forms of energy are moved from one place to another? The United States Geological Survey has published a series of 19 maps that detail the transportation routes. Each 19- by 28-inch map costs \$1.50 and can be ordered from: U.S.G.S., Branch of Distribution, Box 25286, Building 41, Denver Federal Center, Denver, Colo. 80225.



FUEL ECONOMY GUIDE

The U.S. Environmental Protection Agency (EPA) Gas Mileage Guide is available from any new car dealer and from EPA, Fuel Economy, Pueblo, Colo. 81009. The guide shows the results of EPA's tests for fuel economy in city, highway, and combined driving. It also offers names and model numbers of cars, with a separate listing for manual, automatic, or semi-automatic transmissions. Engine size, number of cylinders, fuel system, and interior and trunk space are also given.

STRIP MINE BLASTING

Inadequate blasting regulations and negligence have contributed to massive property damage, according to a report by Albert Fritsch of the Center for Science in the Public Interest. The report, *Strip Mine Blasting*, examines current strip mine blasting practices and their impacts on people in Appalachia and the Midwest near coal mines. For a copy, write the center at 1757 S St., N.W., Washington, D.C. 20009. The cost is \$5 for nonprofit groups and \$20 for industry.

HUD SOLAR STANDARDS

The U.S. Department of Housing and Urban Development and the Federal Housing Administration have set minimum quality standards for solar heating and hot water systems for their mortgage programs. Write to Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 and send \$12. Ask for the "Intermediate Minimum Property Standards for Solar Heating and Domestic Hot Water Systems (4930.2)."

SALMON MANAGEMENT

A public hearing will be held in Lewiston, Idaho, at 7 p.m. Nov. 21 to discuss methods of managing Idaho-bound salmon while they are still between three and 200 miles offshore. The hearing, at Morgan's Alley Theater, 300 Main St., is one of six such hearings on the Pacific Fishery Management Council's Salmon Management Plan and Environmental Impact Statement. The other hearings will be held in California, Oregon, and Washington between Nov. 19 and 22.

Service Directory

STATE OF THE ART WALKING LUGGAGE

Handcrafted, laminated hardwood pack frame incorporates lateral flex with vertical rigidity.

Canvas, leather, wool, and woven rush... naturally superior materials for the earth traveler.

Send for free brochure.

190 River Loop One
Dept. HCN 1
Eugene, Oregon 97404

IMPORTED BIRD MODEL KITS

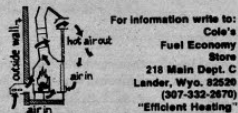
Barn Swallow	\$3.95
Kingfisher	\$4.95
Little Owl	\$5.95
Pigeon Hawk	\$5.95

all four for \$17.80

CARVING SCULPTURES OF WILD BIRDS IN PLASTER, WOOD, OR BRASS. REALISTIC IN EVERY DETAIL. EASY TO MAKE IN A FEW HOURS. IDEAL GIFT. ARIEL, Dept. L, 2894 Meadowbrook, Cleveland Ohio 44118

Shaw's Fireplace

Efficient—burns fuel at 70-80% (wood, coal)
Safe—withstanding temps. to 3200 f.
Durable—stainless steel firebox
Easy to install—wood framing



For information write to:
Cole's
Fuel Economy
Store
218 Main Dept. C
Lander, Wyo. 82520
(907-332-2870)
"Efficient Heating"

SKI TOURING FOR BEGINNERS

48 page, illustrated booklet. 6th edition. \$1.25 includes post. & handling. FREE-wind chill calculator & metric converter. Hiking & Ski Touring, P.O. Box 7421, Dept. H, Colo. Spgs., CO 80933

LARSEN'S BICYCLES

233 EAST 2nd ~ PHONE 754-5481
POWELL, WYOMING 82435



RALEIGH

BACK TO THE LAND LISTING SERVICE

Receive mailings from dozens of back-to-the-land publications and businesses. From solar and wind energy to dehydrators and drip irrigation. Keep informed; save time and postage. Receive mailings for six months, just \$2.00.

G & J Distributors, Dept. MM, 4523 Labath, Santa Rosa, CA 95401

Country Craftsmen
STOVE KITS
Convert metal drums into wood burning heaters.
Free brochure. Box 3333-H
Santa Rosa, CA 95402

CONVERTIBLE...
Jotul (Yotul)
No. 4
Combifire

Converts from open fireplace to an airtight heater.
Cast iron, 300 lbs., 3½ feet tall
From Norway.



Hillcrest Antiques
Jim and Ann Fontaine
Rt. 63, Box 16, Dept. H.
Lander, Wyo. 82520
(307) 332-9611
"Wood heating at its best."

16-High Country News — Nov. 4, 1977

Smokey forgot: bears (and others) need fireweed

by Carl Brown

Smokey Bear got where he is today because he had a revolutionary idea: If you don't want to get burned, put out the fire. It was a good idea. It saved resources and a lot of lives. But Smokey was in the Washington Zoo for so long he lost touch with reality. His mistake was to stop going into the field. Life was fat. He had gotten pretty good at the tricks he once hated. He forgot that his brothers and sisters still made their living from the land.

Now, not many people know this, but a few years ago a delegation of Western bears sneaked back to Washington and paid Smokey a visit. It included, of course, members of the National Park Bear Clique, but it also included real bears, bears that make their living digging roots, catching mice, and swiping an occasional lamb. Smokey's policies were infringing upon their way of life, and they intended to do something about it.

They climbed into Smokey's enclosure at night. One bear carried a pawful of magenta-colored flowers. Smokey was wary of his visitors. It was after office hours and they had a healthy, robust look about them that made him uneasy. Only the sight of flowers kept him from bolting over the back wall.

Smokey used his nonchalant greeting on them. "Howdy, neighbors," he said.

One of the elders came forward, bearing the bouquet.

"Aw, you didn't have to go do that," Smokey said with practiced humility.

"We know," said the elder. He handed the bouquet to Smokey.

Smokey accepted it. He was puzzled. The look and smell of the flowers jingled neurons that had been hibernating for decades. "Nice flowers," he said, "but their name slips my mind."

"You don't gawk at them, you eat them," said the elder.

"Why of course," Smokey grinned. He took a nibble. "Not bad." He took another nibble. "Not bad at all." Then, in one slob-

bering chomp, he wolfed down the entire bouquet. His memory banks rolled over, and flashed scenes of his childhood against the back wall of his thick skull. He remembered! "Fireweed," he screamed. His eyes sparkled like those of a cub. "Fireweed," he repeated. "I had forgotten all about this stuff. Say, you guys don't have any more fireweed, do you?"

The delegation was silent. A long moment passed. Then the elder spoke. "Nope." "Aw, come on," Smokey said, "that stuff was all over the place when I was a cub. You could graze all day in it. All you had to do was find a forest fire and..."

The elder stared at him. All the other bears stared at him, too. Smokey stared back, not like a poster, but like a bear that

understood.

Morning found Smokey on the phone. Not long afterwards, the first controlled fires began to burn in the national parks. Then the Forest Service let a few go. Most of the fires were at higher elevations, places where bears like to forage. The official explanation was something general about fires having a place in a natural environment. Only Smokey, a few fire management officers, and the bears know the truth. To explain otherwise would have been folly. How could people understand the importance of fireweed to bears?

Other creatures appreciate fireweed, too. Moose and deer nibble at it. Chipmunks gather the seeds. Pika cut a few stalks and dry them for winter. Honeybees like it so

much that beekeepers sometimes follow forest fires to harvest fireweed nectar.

People also use fireweed. French Canadians eat it almost as enthusiastically as the bears do. They call it "asperge" or "wild asparagus." Englishmen dry the leaves and use them to extend their tea supply. Russian Cossacks once used its pithy core as a light-weight traveling ration. Several western tribes, half a world away, used the same stuff to thicken soups. But nobody considers fireweed a staple.

If fireweed has a pragmatic reason for existence, it is to hold the soil in place after forest fires, a function it fulfills so grandly that it claims its common name from the job.

But the value of fireweed cannot be expressed in terms of wildlife menus or cubic yards of retained soil. Spires of magenta fireweed are, most simply, beautiful. More beautiful, perhaps, than their cousins clarkia and evening primrose. And like all objects of beauty, they inspire weary souls.

A notable example of this happened in London. That city took a horrible pounding in the Second World War. Entire neighborhoods were leveled. With the exception of an occasional wall, little was left standing. The morale of the people was in similar shape. Then spring came and fireweed mistook London for the remains of an enormous forest fire. It sprouted everywhere, but it grew most prolifically where the scars were deepest. If you have wandered into a sea of fireweed, you understand the boost fireweed gave to London. It cannot be explained logically. But then, neither can the real reason Smokey Bear changed his policy on forest fires.

The most common species of fireweed, *Epilobium angustifolium*, grows in Alaska, south along the backbone of the Rockies and east to the Appalachians. From there it forms a wreath around the northern hemisphere. Where you find mountains and disturbed soil, you are likely to find fireweed.

Other common names are blooming sally and, from the shape of the leaves, willow herb. Plants grow to eight feet tall. In late autumn the showy flowers are replaced by silky tufts that carry the tiny seeds on the breeze, carry them to other places, places in need of brightness.



Drawing by Carl Brown

Dear Friends,

We're about to see aids to the commercialization of the solar heating industry emerge — in the form of the low-interest loans to homeowners included in the latest version of President Jimmy Carter's energy bill. We're happy to see the industry may get a boost. But, as you probably noticed, we have injected a note of caution in this issue. We believe that people who are about to invest in this promising technology should know what risks they are taking.

We'd be the first to admit that we didn't do a comprehensive survey and can make no sweeping statements about the nationwide state-of-the-art. We did call 26 people, mainly in the Denver area. About half of them were solar homeowners. The others were professionals who were intimately connected with the growth of the industry and had had personal contact with a dozen or more installations.

The companies we talked to were chosen — not because we thought they were either "good" or "bad" companies — but because they each have had a few years of experience. If you live in the Northern Rockies, they're among

the established firms you'll be most likely to choose from.

We realize that some questions remain. Some can only be answered by keeping a watchful eye on the industry. Others, we hope to explore in future issues. What about economics? Does it pay to buy a commercial heating system now? What about solar water heaters? Who is buying them and why?

What about passive systems? Don't they avoid many of the complexities and much of the expense associated with active (motorized) solar heating systems? What are the drawbacks? (We've heard it said that a passive system demands an active human being, while an active system can tolerate a passive one.)

Our objective in publishing the story, and those to follow, is not to discourage you about solar heating systems, but to let you know that they have been an adventure, not just an investment, for many early buyers. The troublesome "prototypes" discussed are only two or three years behind us.

We believe you stand to lose a lot if you act as a passive consumer at this stage of the development of the industry. And we believe you have much to gain if you're ready to be a participant

— at least to the extent that you know what you need and can make sure you get it.

For our new readers, a word about our survival and your privacy. We send out sample copies of HCN each year to lists of people we hope will be interested in subscribing. We buy some of these lists; others we get by trading for our list of subscribers. That means that occasionally, no more than four times a year, you may receive a solicitation from a publication or group that has received your name through us. This helps us stay alive by keeping our promotion costs down.

Most of our readers don't seem to mind. Others prefer to not have their names included on anybody's promotional mailing list. If you're among the latter group, let us know. We'll mark your address plate with a "Q" to remind us that we can't use your address in list trades.

An apology: The caption on the photo at the top of page 17, "At left, David Brower," should read "At right..." When that section came back from the printer's this morning, we were appalled to find we'd implied that the lazy fellow hiding behind a newspaper was "on conservation's cutting edge." Brower, of course, is the thoughtful accordion player on the right.

In The News

Solar heating

a critical look.

1

Clean air

activist's manual.

6

National grasslands

remnants of our heritage.
too civilized?

8

12

Fireweed

abused, popular.

16

David Brower

conservation pioneer.

17

"There's a recklessness to Dave that's terrifying. It's like driving down a city street with a man who's going 90 miles an hour."

members, an indication of the public's ecological commitment. Still, visionary leadership clashed with self-preservation. Apprehensions among club leaders grew over what the quixotic Brower might do next. Opponents accused him of using the same high-handed tactics that he criticized in the government. A new board of directors elected in the spring of 1969 forced him to resign.

The executive director had done what he saw as necessary, but he had moved too fast and too far for an organization undergoing growth pains and a change of philosophy. In an apt turn of phrase, he called his demise "expansion cracking."

However, the internecine warfare turned out much better than expected. Brower left a club awakened to John Muir's principles. Three months later, armed with

\$80,000 from the board chairman of Atlantic Richfield, he announced creation of the educational John Muir Institute. More importantly, he founded Friends of the Earth, a citizens' organization that has cooperated with the Sierra Club while sometimes taking stronger stands.

John McPhee's biography, **Encounters With The Archdruid**, reveals the cagey Brower personality as he hikes in the Cascades with a mining engineer, hobnobs with a developer, and careens through the Grand Canyon with none other than the Commissioner of the Bureau of Reclamation. "Brower Power Awaits the Verdict," by Harold Peterson, offers a shorter sketch in *Sports Illustrated* of April 14, 1969, pp. 36-38, 41-43.

Reckoning from Washington

by Kay Coates

A handful of individuals lucky enough to own small tracts of land in Grand Teton National Park have found to their dismay that the United States Senate has become their unwelcome real estate agent. The problem is a tricky one and it's causing headaches deep inside the Interior Department bureaucracy and on Capitol Hill.

The problem, explained an aide to Sen. Cliff Hansen (R-Wyo.), is that when the Rockefeller family gifted the federal government with the 303,000 acres that were to become Grand Teton National Park in 1928, there were a few chunks of land owned by persons other than the fabulously wealthy Rockefellers. Then, too, John D. Rockefeller couldn't quite bring himself to part with 3,000 acres he owned.

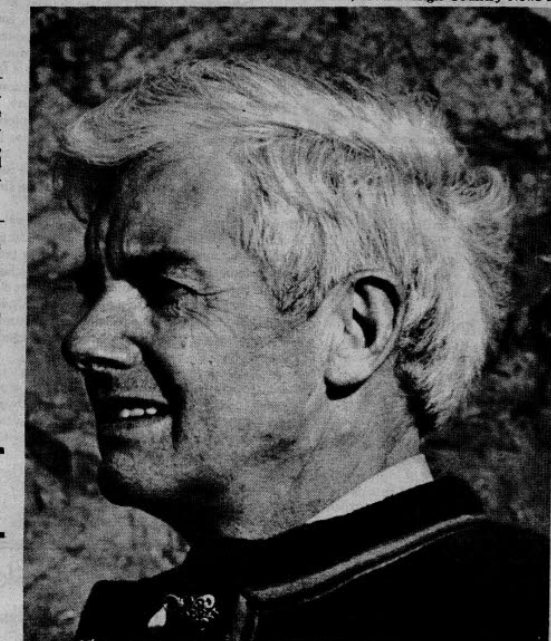
The result is that today nestled within

the national park are about 300 acres owned by a number of private persons, 1,200 acres owned by the state of Wyoming, and the Rockefeller 3,000 acres.

Decades ago Park Service bureaucrats named these private lands "inholdings" and set about to acquire them, hoping eventually to place the entire park in federal hands.

For most of the time since the Teton National Park was founded nobody was much concerned about the tiny bits of park land in private hands. Occasionally an owner would put up a summer cabin, or maybe somebody would create a trail road to his tract, but the overall impact was almost nil.

But prosperity came to Jackson Hole and with it the condominiums, the vacation homes of the wealthy, and all the rest. And



David Brower

Photo courtesy of Friends of the Earth

the impact was felt in the inholdings.

Where once stood simple log cabins grew brick and glass homes—hardly in keeping with the bureaucracy's idea of the idyllic qualities of that park, with its world famous row of soaring peaks.

The Park Service went to Congress and got money to allow it to purchase inholdings from those persons who indicated they planned significant development of their land. The plan was, Interior Department

documents show, to buy only that land where development was planned. Last year Congress voted \$17 million to finance a major effort to buy up as much of the in-park land as possible.

Congressmen warned that the bill would encourage speculation. Individuals would suddenly come up with plans for development to force the government to buy their land, the lawmakers said.

The rules finally drafted called for paying "fair market value" for the park land to hold speculators at bay. Thus, if one person sold land to another person, the Park Ser-

Where the Grizzly Walks

The land is nearly untouched by man. The waterways remain fresh, and the quiet is seldom broken by any but nature's sounds. Here, nature works in polished harmony.

But will it always be?

Lewis and Clark formally introduced the grizzly bear to the world, and from that time on, the great bear has been feared, misunderstood, crowded, and hunted.

For over 150 years, man has forced confrontations with Old Ephraim, the grizzly bear. In his fight to conquer the western wilderness, man has steadily encroached upon the grizzly, drastically altering the bear's habitat.

Existing land use policies and the inability of wildlife experts and government agencies to agree on management threaten the grizzly with extinction.

Where the Grizzly Walks by Bill Schneider is a history of the big bear's struggle for existence. The author reveals who is to blame for the silvertip's plight and outlines a strategy for the bear's salvation.

The book is more than a story about bears; it concerns people, their life styles, their government, their land, and their dreams.

Bill Schneider has written extensively on conservation in dozens of periodicals. His writing focuses on protecting wildlife habitat and wilderness. He has been the editor of *Montana Outdoors*, the official magazine of the Montana Department of Fish and Game, for eight years.

Mountain Press publishing company of Missoula, Mont. is sharing the profits on sales of this book with HCN. To order, send \$9.95 to HCN, Box K, Lander, Wyo. 82520. Price includes postage.

(For convenience in ordering, there is an order form on page 24 of this issue.)

256 pages, illustrated, clothbound



Doug O'Leary photo



vice would set its "fair market" price without regard to the selling price.

Each sale is subject to the Senate Energy Committee, in effect making each land sale nothing less than an act of Congress.

Which brings us to the famous Wyoming conservationist and grizzly bear expert, Frank Craighead, who owns one of the inholdings and this year decided to sell.

Craighead has spent years disputing the Park Service over its bear management programs. He suddenly found himself arguing not for grizzlies but for Frank Craighead.

The naturalist went to Park Director Robert Kerr at Teton Park headquarters and said he had firm offers for roughly \$50,000 an acre for his land. The bureaucracy went to work and eventually came up with an offer of about \$25,000 per acre as "fair market value" for the land.

Environmentalist Craighead found himself calling the federal government "socialist" for its interfering ways, and, with the approval of conservative Sen. Hansen, the energy committee approved the Park Service's price.

ENERGY & CONFLICT

The Life and Times of **EDWARD TELLER**

by Stanley A. Blumberg
and Gwinn Owens

Energy & Conflict: The Life and Times of Edward Teller, by Stanley A. Blumberg and Gwinn Owens, G.P. Putnam's Sons, New York, 1976. \$12.95, hard cover, 492 pages. Photographs.

Review by Peter Wild

Unlike most of the books reviewed here, this one was not written for conservationists. Yet *Energy & Conflict* will reward those who are fascinated by the larger political, historical, and psychological contexts of today's environmental movement. John Muir and Gifford Pinchot, early founders of conservation, railed against lumbermen cutting their way across the West's mountains. They never felt, however, that their lives were threatened by the loss.

On July 16, 1945, scientists exploded the world's first atom bomb on the New Mexico desert. Before the blast, some of them feared that "the oceans and the heavens would catch fire" as its heat ignited the nitrogen in the air and the hydrogen in sea water. The world-wide conflagration did not take place, but for the first time in history the public realized that scientists were twisting the tail of a tiger that could destroy the entire planet. Conservation -- along with politics, foreign policy, military strategy, and general hopes for the future -- has not been the same since.

By concentrating on one great nuclear theorist, *Energy & Conflict* throws light on current environmental concerns. Like any good biography, it treats not only the man but also his times -- and with a richness that would make the book a delight, were it not for the specter of nuclear power overshadowing its pages.

From the outset the authors note their liberal bent in contrast to Edward Teller's conservatism. The difference does not affect their evenhandedness in dealing either with the physicist personally or with his political views.

Teller comes across as a warm and diligent figure. He delights in treating his students to ribald stories and in flailing away at his piano into the wee hours, oblivious to grumbling neighbors. He still agonizes over decisions that, rightly or wrongly, have made him anathema to many of his fellow scientists.

His parents understood when their precocious child announced at the dinner table: "Please don't talk to me -- I have a problem." He meant that he was lost in some mathematical calculation. In a similar vein, years later he explained his herculean efforts in developing the atom bomb that killed thousands in Hiroshima and Nagasaki: "I worked because the problems interested me . . ." For the most part, a buoyant sense of exploration, not altruism, patriotism, or any other virtue, motivated Teller and his co-workers -- a situation that raises large questions about scientists' responsibilities for their creations.

Yet politics did play a part. Like many who worked on the first nuclear projects, Teller is a refugee from Hungary's dismemberment early in the century. His hawkish stances -- largely responsible for development of the hydrogen bomb and the fall of liberal scientists' hero, J. Robert Oppenheimer -- owe much to the Teller family's suffering through the chaotic

takeover of Hungary by the Bolsheviks in 1919. As it documents the viciousness, both from left and right, over the Oppenheimer scandal during the Eisenhower administration, the book confirms the view that few people, scientists included, are as rational about politics as they'd like to believe.

There's more: the interplay of domestic secrecy and international intrigue; insights into Truman, Eisenhower, and Kennedy; the author's evidence that Russia, not the United States, built the first hydrogen bomb.

Since fostering the nation's arsenal of nuclear weapons, Edward Teller has put his mind to work on civilian energy problems. Predictably, he pooch-pooches the fears of many environmentalists and views nuclear bombs as super steam shovels. Underground blasts could release the treasures of oil and gas under Colorado's mountains.

Teller notes that much of Alaska's coal deposits lie unused because of a lack of port facilities. "The Father of the hydrogen bomb" calculates that "only four nuclear explosions" could provide Alaska with a splendid harbor. It pays to lift our heads occasionally from the environmental books to see what others are planning for our world.

The Copper Spike

By Lone E. Janson, Alaska Northwest Publishing Company, Anchorage, 1975. \$5.95 soft cover, 175 pages. Available "outside" from Colorado Railroad Museum, Box 10, Golden, Colo., postpaid.

Review by Doug Long

Peter Wild, recounting the close relationship between forester Gifford Pinchot and Teddy Roosevelt and the resultant clash with Robert Taft (HCN, 5-6-77, page 16) mentions a squabble over Alaska:

"The petulant Pinchot, stung and his ire up, picked a fight with Taft's Secretary of the Interior, Richard Ballinger, implying that he was corrupt in dealing with coal leases on Alaskan forest lands. Taft finally lost patience . . . and fired him."

In *The Copper Spike*, Lone E. Janson expands on this in a section called "Coal, Politics and Railroads," which is about Alaska in the early 1900's, not Wyoming in the 1970's.

In 1900 and 1904 Congress took actions that opened up Alaskan coal lands to miners. A coal rush followed in 1905. A year later President Roosevelt decided, "It is not wise that the nation should alienate its remaining coal lands," and by executive order put a clamp on all mining of coal in Alaska.

It was not clear whether his decree was simply to end new entries on public land or to withdraw all coal lands, including those already claimed. Claimants, having paid their money, assumed the property was theirs to mine and continued preparations to do so.

It was clear that Pinchot, as chief forester, wanted to cancel all the claims and set up a Forest Service leasing system. Towards this end he got Roosevelt to establish the Chugach National Forest, which included most coal lands in the Bering River area, the site of most of the contention. The dispute went on for years, depriving Alaskans of coal, oil, and industry such as copper smelters and railroads.

Hallelujah, we might say today. Alaskans in 1910, with their money and their

future tied up by the scoundrels in Washington, had a different perspective.

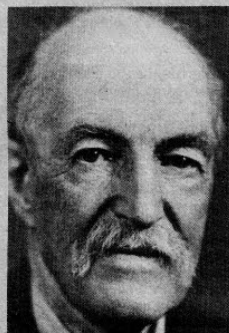
Enter Richard A. Ballinger, once mayor of Seattle, and now commissioner, under Roosevelt, of the General Land Office. He considered it his duty to resolve the Bering River coal claims rapidly, one way or the other, as a matter of fairness. But resolving legitimate claims would bring mining, which was contrary to Pinchot's plan. This is why, after Taft appointed Ballinger Secretary of the Interior, pistol-packing Pinchot "picked a fight" with Ballinger, to put it mildly. Pinchot attempted to implicate Ballinger with fraud and monopoly, involving

excessive combining of claims by prospector Clarence Cunningham and his associates (including the capitalist Guggenheim brothers). Pinchot apparently succeeded so far as the media and the public were concerned and hounded Ballinger out of office in 1911.

President Taft, Taft's attorney general, and a joint committee of Congress, however, successively exonerated Ballinger. In essence they found Pinchot and his forces to be, at best, liars. During the congressional investigation, which lasted some four months, Taft ordered all contacts between the executive branch and Congress regarding the investigation to be approved by department heads. Pinchot defied Taft by writing directly to a senator, who read the letter to his colleagues on January 6, 1910. Taft fired Pinchot the next day.

Meanwhile the coal claims of 1905 remained in limbo despite favorable public reaction to the "Cordova Coal Party" in 1911, when Cordovans made a show of dumping imported Canadian coal into the sea to demonstrate the absurdity of "alienating" coal lands, 1,000 miles away but not their own. At last, in 1914 Congress passed a leasing law that required all claims to be resolved in a year or less. Interior got around to propounding lease rules early in 1916, by which time hardly anybody was left.

Janson sums it up: "The coal leasing system in Alaska can be called nothing but a socialistic experiment, and it was a resounding flop. The Katalla-Bering River area, until North Slope discoveries, was



Gifford Pinchot

the richest mineral section of Alaska. Today it boasts not one single resident."

Whether or not leasing was socialistic, the 10 year delay in effecting it stalled the main subject of *The Copper Spike*, a railway, from extending to Fairbanks. The nearly unknown Copper River and Northwestern Railway reached 195.6 miles, from the port of Cordova (near Valdez)

HCN BOOK REVIEWS

north and east to Chitina and the copper town of Kennicott, named after Alaskan explorer Robert Kennicott. (Kennecott was an accident that persevered in the company title.) The CR&NW was completed in 1911 with the driving of, naturally, a copper spike.

Lone Janson has organized her book into four parts, one of which sheds light on Pinchot. In the book as a whole there is a shortage of maps and of some of the bolts that intrigue rail nuts, but there is plenty of non-boring history. Rail fan or not, Janson is an Alaska fan. Her lesson for us folks down under is that environmentalists, too, can be high-handed megalomaniacs.

Doug Long is a ferroquinoologist (railroad buff) and *High Country News* reader from New Concord, Ohio.

TEN THOUSAND GODDAM CATTLE



*A history of
the American cowboy
in song, story and verse*

by Katie Lee

Illustrated by William Moyers

by Katie Lee, 1976, Northland Press, P.O. Box N, Flagstaff, Ariz., 86002, 254 pages, illustrated, hardcover, \$12.50.

Review by Bruce Hamilton

"Today is the birthday of Country and Western star . . . Katie Lee," reads the local radio announcer over the air. Then after a long pause, he asks aloud, "Who's Katie Lee? Oh well, here's another hit tune for your enjoyment today."

Ordinarily I would have slipped over this bit of drivel buried in the hum-drum beebop of local Wyoming radio. But this canned tribute had special meaning for me because at the time I was reading a book called *Ten Thousand Goddam Cattle* by Katie Lee. She's not only a writer and a singer, but also a river rat, whale worshiper, arch foe of the dam-building Wreck-

the-Nation Bureau, song history sleuth, filmmaker, actress, and friend. Another friend of hers, Burl Ives, when asked about cowboy songs and singers said, "The best cowboy singer I know is a girl... Katie Lee."

The reason more people don't know Katie Lee is because cowboy songs are seldom heard on radio stations these days — in the East or the West. What passes for "country and Western" music is really "city and Southeastern" music in most cases.

Peter Thorpe, an associate professor of English at the University of Colorado, notes the difference in a critique of country and Western music: "Thought to celebrate the wide open spaces, it is actually fraught with tight, closed-in areas like jail cells, cabs of trucks and locomotives, little honky-tonks, telephone booths, small



Katie Lee

truck stop cafes, cottages or railroad shacks, and mines and tunnels. . . . "The old Western hero was proud of his solitude, "which implies a self-sufficiency, an ability to endure loneliness, whereas the C&W hero, like a child, is afraid of being alone," Thorpe says.

And I agree. That's why I spend so little time listening to country and Western music on the radio, but I can get so excited about a book like *Ten Thousand Goddam Cattle* about cowboy songs, the places they were written about, and the people who wrote them. This book is about people and songs that celebrate the freedom of the wilderness and the unfenced public lands; unpolluted open skies; cool, clear, free-flowing rivers; and the fellowship between wild creatures and the people who chose to live in the wilds. In many ways I regard myself and other Western environmentalists as the spiritual descendants of the old time cowboys.

When a cowboy song writer great like Charles Badger Clark comes up with lines such as "We like to breathe unbranded air" or "I loved my fellow man the best when he was scattered some," I know I'm listening to a kindred soul. The same goes for Henry Herbert Knibbs. Here's a piece of his work called "The Hills" from *Songs of the Outlands*:

To barter the sting of the mountain
wind for the choking fog and smoke?
To barter the song of the mountain
stream for the babble of city folk?
To lose my grip on the god I know
and fumble among the creeds?
Oh rocks & pines of the high, far hills,
hear the lisp of the valley reeds!

Talking blues was never a cowboy way of singing, but here's a few verses from a modern song that's an heir to the old cowboy philosophy called "The Subdivided Cowboy" by James E. Cook:

Worked half my life on the old home
spread
Till one cold day my dad, he said,

"I'm too broke to move and too old to
ride
So we'll sell the cows and subdivide."

Well, I just up and quit.
Loaded up my pickup with all that I
had

(Most of the stuff belonged to Dad)
Went lookin' for a roost that I ain't
found yet.

The old home place is a hundred ranch-
ettes.

I got the subdivided blues.
... Wore out twelve tires on my sorry
truck.

Everybody said I was out of luck.

I got the subdivided blues.
... Wore out twelve tires on my sorry
truck.

Everybody said I was out of luck.

"Them dudes pay cash for this mes-
quite
So raisin' cattle is obsolete. . . ."

©Northland Press and Katie Lee

Another problem is that all too often, when a real cowboy song is played today, it is picked up, plagiarized, and perverted by some silver-tongued devil with no sense of the history of the song. Most cowboy songs have a strong sense of place, and when they're transplanted in time and space they're often ruined. Lee has spent a lifetime tracking down the history of cowboy songs, and the story behind the songs is often every bit as delightful as the melody itself. *Ten Thousand Goddam Cattle* traces the evolution of cowboy songs from early folk chants composed on horseback to modern parlor songs composed on a typewriter.

Early cowboy songs were composed more to the gait of a horse than the strum of a guitar. A rollicking familiar tune like "The Irish Washerwoman" might be slowed down to the gait of a horse to come up with the familiar "Cowboy's Lament." Words were often picked up and slightly altered, too. Lee points out that it took little poetic genius to alter "The Ocean Buriel:

She hath been in my dreams. . . .
his voice failed there.
They paid no heed to his dying prayer
They lowered him over the vessel's
side,
Above him rolled the cold, cold tide.

to "The Dying Cowboy."
"O bury me not" . . . and his
voice failed there.
Not that it's a shabby recourse. The Wil-
derness System that is slowly and doggedly
being established is one end of a spectrum
that ranges from man-made Manhattan to
the sprawling immensities of a Yellow-
stone, Gates of the Arctic, or Selway-
Bitterroot. That it exists at all seems to me
nothing short of a miracle.

The song title that Lee uses as her book
title, "Ten Thousand Goddam Cattle," has
a history that's harder to trace. Owen Wis-
ter wrote the words to "Ten Thousand Cat-
tle Straying" in 1888 in Wyoming. "He put
it to an air from an old French opera, which



probably didn't sound very cattle-like,"
writes Lee. "Later, in 1904 he composed
another melody for it which was published
by Witmark and used in the stage version
of his famous novel *The Virginian*."

But Lee has heard cow folks sing the
song with different words, title, and tune.
It's hard to say whether the "goddam" ver-
sion or the operatic version came first. To
complete the evolution, Lee notes that be-
fore her old time Arizona brush popper
friend Shorty Mac McGinnis died, "he was
singing it out of the other corner of his
mouth as 'ten thousand goddam people, or
fences, or freeways, politicians, whatever.'"

Lee's primary goal throughout the re-
search for her book was to discover the
origins of her favorite song, one that she
regards as the quintessential cowboy song
— "The Town of Old Dolores." She tracks
down dozens of plagiarizers and finally lo-
cates the real song writer, a man who
smashes her last cowboy illusion. The song
writer is James Grafton Reers. Not a
grizzly cowhand but a former assistant se-
cretary of state in the Hoover Administra-
tion.

All too quickly the cowboy songs, the
cowboys (and statesmen) who wrote them,
and the places they were written about are
passing from the scene. In *Ten Thousand
Goddam Cattle*, Lee has done a job of
helping to preserve this important part of
our cultural heritage. She eventually plans
to release two LP records of the cowboy
songs she writes about in the book. The
records will be available for \$15 a set from
Katydid Records, Box 395, Jerome, Ariz.
86331.

Man in the Landscape

by Paul Shepard, 1972, Ballantine
Books Walden Edition, paperback,
\$1.25, 296 pages.

Review by Jeff Gailion

For those of us who choose to exercise our
option of experiencing the natural world
with as few reminders as possible of our
culture, wilderness is our only recourse.

Not that it's a shabby recourse. The Wil-
derness System that is slowly and doggedly
being established is one end of a spectrum
that ranges from man-made Manhattan to
the sprawling immensities of a Yellow-
stone, Gates of the Arctic, or Selway-
Bitterroot. That it exists at all seems to me
nothing short of a miracle.

What we often fail to appreciate, how-
ever, is the historical process that preceded
the document that emerged as the Wilder-
ness Act of 1964. And by history I don't
mean the relatively short history of the
wilderness ideal in America. I mean the
whole history of man's appreciation of na-
ture. Fortunately, men like Paul Shepard
are around to remind us of a debt to the past
that reaches back to the very origins of
vision and perception.

Even through the book's title, *Man in
the Landscape*, Shepard attempts to
abolish the dualism that has plagued
Western man's relations with nature. In
the text he explores that reciprocal process
of seeing and being affected by the natural
world. It is a process that we need to know
more about. Almost everything we read of
an environmental nature deals with what's
there, how it came to be there, what we
stand to lose, and what we intend to do with
it. When it comes to the question of why we
go to all the trouble we do to preserve it, the

Nov. 4, 1977 — High Country News-21
discussion usually trails off into obscure
personal or patriotic clichés.

Shepard has made it his job to illuminate
some of the obscurities and place them into
historical sequence. He begins with "The
Eye" in chapter one, continues through
such archetypal themes as "A Sense of
Place," "The Image of the Garden," "Var-
ieties of Nature Hating," and concludes
with a theme dear to all of us, "The Ameri-
can West."

Shepard manages to present these
themes forcefully, though at times his con-
struction becomes complicated and subtly
allusive. The rather thick mechanics in his
opening chapter are balanced later by
graceful and illuminating passages.

"A stationary observer," he says, "tends
to presume that all objects extend at right
angles from his line of sight, as they do in a
painting. But as he moves through an ac-
tual terrain the sense of being at the center
of a three-dimensional world falls upon
him with the delight of a continuously un-
folding revelation. Perhaps this suggests to
him that he is the center and therefore the
master of all the world. We might expect
the eagle, lion, stag, and man to have more
egocentric personalities than such crea-
tures as mice, grouse, opossums, or even
whales."

In "A Sense of Place," Shepard puts his
finger squarely upon a symbol shared by
all of us at one time or another — the camp
fire: "Before a small fire the hushed mem-
ory of the past, the evocation of the un-
known, and the mystery of life are ad-
mitted to the communal mind. In this, though
perhaps unrecognized, it has an incredible
hold on the modern psyche. There is in its
presence an expectancy as though some
secret were about to offer itself as a clue to a
greater reality."

His treatment of the evolution of the
garden, from the classical artifice of Greek
and Roman design, to the open and care-
fully cultivated manorial estates of Eng-
land, to, finally, the establishment of the
great wild parks of Western America, is
crucial to understanding Western man's
deepening relationship to the natural
landscape. Today some people no longer see
it as a howling wilderness of evil, danger,
and death, but as a unique repository, of
value both as a sacred place that reveals to
us our origins and as a wild place that al-
lows us to exercise our special relationship
to things not man. As he says of wildness in
his concluding chapter, "It is neither
wholly an intellectual nor wholly a cul-
tural matter, but partly the expression of
an impulse to hold on to an aspect of the
environment that has always been real to
humanity: the uninhabited place and the
reality of wilderness and danger."

Man in the Landscape is a scholarly
work of history which undoubtedly has li-
mited appeal to an audience distrustful of
history and the intellectualizing of nature.
This is unfortunate. Like most scholarly
works, it is short on humor and long on
intricately formulated intellectual con-
structions. But what it lacks in spontane-
ity, it more than makes up for in its
evocation of a process from which our cur-
rent environmental attitudes have evolved.
It makes the all too infrequent
effort to trace our beginnings; to show us
that environmental sensitivity didn't
begin on Earth Day, 1970. Instead, it began
in those dim recesses of the primitive mind.

After reading Shepard's book your next
trip to the Bob Marshall, or Cabeza Prieta,
or your own backyard for that matter, will
never be quite the same.

Note on the text: Unfortunately, most
Ballantine Walden and Style-of-Life edi-
tions are now out of print.

Most university and metropoli-
tan libraries will have a copy of the original
1967 Knopf edition.

22-High Country News — Nov. 4, 1977

Cooperation — not condemnation

Northglenn, farmers share water through reuse

by Jill Susan Rowe

Water is blood in Colorado, John Gunther wrote some 40 years ago. It is still. Coloradans have been fighting over water since miners settled disputes with pistols and fists a century ago. One hundred years later weapons are more genteel — lawyers and subpoenas — but the fight is every bit as earnest.

Disputes between farmers and towns over water supplies are almost as common as divorce in Colorado, and as divisive. Farmers nearly always lose the fights — state law gives domestic water use higher priority than agricultural use.

But one Colorado community, using the motto "cooperation — not condemnation," is trying a new approach. Northglenn, a town of some 35,000 north of Denver, needs water. Instead of condemning the water held by a nearby farmers' irrigation company, Northglenn will "borrow" it. The town plans to use it for municipal purposes, treat the wastewater and return it, with interest, to the farmers for agricultural use. The interest on the farmers' "loan" of water will be a bonus of 10% — for instance, if the city borrows 5,000 acre feet of water, it will return to the farmers 5,500 acre feet. In July Northglenn's citizens vote on a proposed \$31 million bond issue to pay for the water treatment and sewage disposal system needed to put the plan in action. The issue is expected to pass. (Ed note: Since this article was written, the issue did pass. See story below.)

"This cooperative approach will provide an adequate supply of water to Northglenn at a fraction of what it would cost the city to buy all of the water rights necessary to satisfy municipal demands," said Dick Lundahl, Northglenn's director of public works. "But most important, this actually provides more water to the farmers rather than taking it away from them. Municipal needs must not be met at the cost of drying up valuable and productive farmland."

"There's no sense in going out and stealing someone else's water," said Northglenn's mayor Alvin Thomas, a high school math teacher. "Too many towns have the attitude, 'We want our green lawns and we don't care about your fields.' I think our approach will set a pattern for the entire country."

The water will be "borrowed" from the Farmers Reservoir and Irrigation Company (FRICO), which holds its water in the Standley Lake Reservoir northwest of Northglenn.

The farmer-members of FRICO at first heard Northglenn's plan with some suspicion.

"Farmers have been burned by cities more than once," said Adolph Bolender, president of FRICO's board of directors, and, like all the directors, a farmer himself. FRICO is one of three irrigation companies currently fighting condemnation suits from Thornton, a town just south of Northglenn. Bolender said FRICO has spent \$100,000 fighting condemnation suits in court during the last three years.

SICK OF CITIES

"We're sick of cities, and we told the people from Northglenn that this would have to be a darned good offer to appeal to us," he said. "They convinced us. This is a plan that can work. We're all going to destroy ourselves if we keep up this condemnation — that's just stealing water and making it legal. We're aware that cities need water.

But down the road they need us farmers, too. Look, water don't wear out. There's no reason it can't be reused."

Recycling water isn't a brand new idea — it's been tried a few places in the U.S. and other countries — but as a rule American communities have always found it easier to



NORTHGLENN MAYOR Alvin B. Thomas uses stationery that says, "Sharing water — Northglenn cares."

simply buy, or if necessary condemn, water supplies.

"In the past, cities have been able to buy land and water rights without resorting to condemnation," explained Fred Anderson, president of Colorado's State Senate and a farmer from Loveland who recently fought and lost a condemnation procedure himself. "This hasn't been a serious problem until the last few years, with Colorado's

tremendous growth and increasing demand for water."

Anderson last session helped pass HB 1555, a bill that prohibits Colorado municipalities from condemning water for needs more than 15 years in the future, and was heartened by the coalition of farmers and Denverites who voted for the measure. But merely preventing towns from condemning water before they actually need it isn't enough, he said.

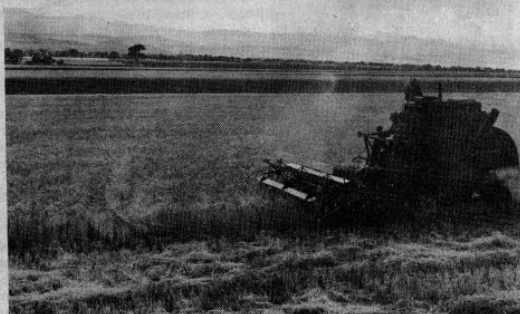
"There has to be a better way than this constant confrontation between agriculture and the community. I think Northglenn's plan can work for the benefit of both agriculture and the community. It's a 'good neighbor' approach."

Anderson said he would like to "mandate

this type of approach before any town can begin condemnation proceedings — at least make them try to come up with something like this."

Colorado Gov. Dick Lamm called Northglenn's plan "the kind of creative solution we need for these water problems. I feel strongly about protecting agriculture and I'm very enthusiastic about this arrangement."

Just down the hall from Lamm's office is a mural of the countryside and the words "Here is a land where life is written in water." Ironically Colorado, the source of some of America's greatest rivers — the Colorado, Arkansas, and South Platte — has never had enough water for her own people. A semi-arid state, her eastern half,



AGRICULTURE IN THE FRONT RANGE in Colorado has been threatened by water condemnation suits. However, Northglenn is trying a different approach that benefits both city taxpayers and nearby farms.

City's idea may become model

Since this article was written last spring, there has been growing enthusiasm about Northglenn's idea, as city officials continue promoting it.

On July 12, Northglenn voters themselves endorsed the plan by giving a two to one approval to the \$31 million bond issue. "The turnout for the election was the largest of any ever held in Northglenn, so it is a good indication that the citizens of this community are most acutely aware that we in the West must seek out innovative solutions to our resource problems," Northglenn Mayor Alvin B. Thomas said.

A Denver suburb that had been involved in condemnation suits, Westminster, has now adopted a plan similar to Northglenn's for trading effluent to the Farmers High Line Canal and Reservoir Co. for raw water from Clear Creek. Westminster's deal, however, is giving an equal amount of water rather than paying water interest to the farmers. Westminster's project is planned around 75% federal findings according to the Denver Post.

Northglenn Director of Public Works Richard P. Lundahl proudly testified at several hearings this summer about the advantages to plans such as Northglenn's.

Testifying at hearings on the Federal Water Policy Study, he was one of the few speakers supporting Carter's emphasis on conservation and not pushing

for federal dam dollars. Lundahl said the federal government should consider special grants to local governments that emphasize conservation and reuse, provide agriculture with water at a cost it can afford, and price municipal and industrial water based on consumptive use.

Lundahl also testified at a Senate water hearing and at an Environmental Protection Agency water hearing last summer, emphasizing the environmental and economic advantages of plans such as Northglenn's for both the farmer and the city resident.

Following his comments at the Senate hearing, Sen. Gary Hart (D-Colo.) told him, "You are to be commended for looking in the future and anticipating the time when there are limits on water of the sort that we are not familiar with yet even in the semi-arid West. I think for communities such as yours to be looking down the road is very encouraging. We are going to try to do what we can to help you."

Since the hearing, EPA has adopted regulations that provide for preferential consideration for communities that use land treatment of wastes and that encourage water conservation and reuse. The new policy will apply to all future applications for federal wastewater treatment plant construction grants.

where 90% of the population lives, is the driest part of the state. The cluster of fast-growing front-range cities there is putting increasing pressure on already scarce water supplies.

The change from irrigated to dryland farming can be disastrous. Many of the farms are too small for profitable dryland farming. Capital investment in irrigation equipment, field ditches, and holding ponds is large and sometimes not yet paid for.

Here's how Northglenn's plan will work: water from Standley Lake will be piped to Northglenn, treated, and used by residents. Storm and waste water will be collected, treated, stored, and recycled to the farmers for irrigation. About 60% of the water borrowed from the farmers' reservoir and used by the city can be returned to the farmers. The rest of the water, plus the 10% "interest," will be obtained from deep wells and storm runoff.

Northglenn now buys its water from nearby Thornton at a cost of more than \$1.8 million annually, and city officials estimate that the \$31 million bond issue needed to pay for the system will cost the town considerably less than the anticipated future cost of buying water and sewer services from Thornton. The \$31 million will buy transmission lines, reservoirs, a water treatment plant, wells, and a secondary sewage treatment facility.

Using sewage effluents to irrigate crops is nothing new either; it's been used with varying degrees of success in several areas around the country. If the sewage water is untreated or badly treated it can be detrimental to crops. But good quality effluent

— as Northglenn is promising FRICO — is actually better for crops than pure reservoir water. Some of the nitrates and phosphates found in effluent can reduce the farmer's need for fertilizer.

Why haven't other communities attempted a joint use of water with surrounding farmers? Partly, as Sen. Anderson explained, because it has been easy enough for most municipalities to simply buy the land and water rights they needed. But farmers, feeling the pressures of urbanization, are becoming more militant, more likely to respond with a counter lawsuit than a bill of sale.

Years of buying water rights piecemeal

have accustomed towns to a short-range, fragmented approach to their water supply. And now, with bond financing already stretched to the limit, they lack the resources for a capital-intensive project like Northglenn's. Seeking to acquire water as cheaply as possible in the short run, they buy and if necessary condemn, irrigation water.

"We don't want their money anymore," said FRICO's Bolender. "We won't take it. It's water we need."

Albert Sack, a dairy and crop farmer and director of FRICO, explained why "twice burned" farmers trust Northglenn's plan. "We know we're not home free yet," he said.

"We might have some adjustment problems. But the thing that makes us feel safe and sure about it is that farmers hold the key. If at any time we're not satisfied with the arrangement, if we begin having problems with the effluent water, we can just shut it off — stop giving Northglenn our water. It will still be our water."

Sack, who calls condemnation proceedings the "Gestapo approach," speaks wondrously of the "willingness of Northglenn to spend \$20 million in defense of the farmer. They have my total admiration."

And Northglenn, the town that hopes to become a model for other communities with water supply problems, is enjoying its

Nov. 4, 1977 — High Country News-23 reputation as a peacemaker. "Farmland taken out of production hurts us all," said Lundahl. "It has a short-range impact on the housewife's weekly grocery bill and a long-range impact on the food supply, in a world that needs all the food it can get."

Colorado, a state that needs all the water it can get, is watching Northglenn and the FRICO farmers to see how these traditional rivals succeed in sharing instead of fighting over water.

Reprinted from Farmland News, Box 7305, Kansas City, Mo. 64116.

DISTAFF CORNER THE BIRD WATCHER'S BIBLE

by Myra Connell

The Bird Watcher's Bible by George Laycock describes bird watching as an interesting, easy, inexpensive, and universally popular outdoor hobby.

The earliest of all recorded bird watchers in the western hemisphere was Christopher Columbus. Flocks of plovers and curlews, migrating across the ocean to their wintering grounds brought hope to the commander and reassured his mutinous and fearful crew. Thomas Jefferson is also mentioned as an avid watcher but his contemporary, John James Audubon, is conspicuously absent.

However, Laycock has included so many aspects of bird watching that, aside from the omission of Audubon, it is hard to think of anything important that has been left out.

Many black and white and some color photos lead the beginning bird lover into this most fascinating avocation. Many astonishing experiences involving birds would inspire the novice to become a bird watcher while detailed and non-technical information supplies him with necessary knowledge for success. In addition to his Bible, Laycock recommends a complete identification guide such as Peterson's A Field Guide to Western Birds, and several others, depending upon the watcher's locality.

Bird species, their estimated numbers, equipment, body parts, migrations, flight, place in the ecological system, and factors in their identification are discussed in concise terms free of technical jargon.

There is a short chapter on techniques of recording bird songs, and a convincing sec-

tion explaining the value of scientific nomenclature. For instance, a certain chicken-like bird called ruffed grouse, pheasant, or partridge, depending upon locality, is known everywhere by the name Bonasa umbellus.

Concrete and specific instruction is given in stalking skills, including use of artificial bird calls. Invention of the latter is credited to the Indians.

The chapter on bird photography is quite explicit and not overly technical. However, following it would require more than a beginner's knowledge of photography. There are also helpful hints on successful movie and slide shows of bird life.

Laycock lectures the would-be Samaritan who throws the eco-system out of balance by adopting young wildlings. He describes procedures and legal aspects of helping birds that have encountered oil slicks.

Legal regulations, purposes, and methods of bird banding are followed by instructions on what to do upon finding a banded bird. The Audubon Christmas bird

count, its history, methods, and value are described.

Numerous practical as well as philosophical suggestions for bird watchers' pleasure, success, and safety are followed by word descriptions of many of the commoner and easily identified birds.

The chapter on equipment — cameras, binoculars, boats, blinds, and clothing — is extensive and lavishly illustrated. Likewise is the section on bird houses, feeders, baths, and plantings. A bird brush pile is highly recommended.

Favorable locations for sighting birds are listed by region, state, and city.

At the back of the book is ample space for a life list, where names of species seen, the date, and the place may be recorded. Keeping a life list of species identified can be one of the most exciting activities of bird watching.

Best of all, the Bird Watcher's Bible has an index.

At \$2.95 this is in my opinion a real bargain for bird watchers. It was published by Doubleday and Company, Inc. in 1976 and has 172 pages.

STATE OF WYOMING PUBLIC NOTICE PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT 65-602 et. seq., WYOMING STATUTES 1967, CUMULATIVE SUPPLEMENT 1973.

IT IS THE STATE OF WYOMING'S INTENTION TO RENEW (2) TWO INDUSTRIAL DISCHARGE PERMITS AND (15) FIFTEEN OIL TREATER DISCHARGE PERMITS WITHIN THE STATE OF WYOMING.

PERMIT INFORMATION

(1) PERMIT NAME: CONTINENTAL OIL COMPANY
MAILING ADDRESS: P.O. BOX 2197
HOUSTON, TEXAS 77001
FACILITY LOCATION: SUSEX GAS PLANT
SECTIONS 2 AND 3, T4IN, R78W,
JOHNSON COUNTY, WYOMING
PERMIT NUMBER: WY-0000612

Continental Oil Company's Sussex plant is a natural gas processing plant located near the Town of Litch, Wyoming. Proposed permit requires compliance with standards considered to be "best practicable" effective immediately. The discharge is to Anderson Draw (Class III stream).

The permittee is required to monitor the quality of the effluent on a regular basis and report the results quarterly. The permit is scheduled to expire December 31, 1982.

(2) PERMIT NAME: PHILLIPS PETROLEUM COMPANY
MAILING ADDRESS: P.O. BOX 2920
CASPER, WYOMING 82402
FACILITY LOCATION: DOUGLAS GAS PLANT
DOUGLAS, WYOMING
PERMIT NUMBER: WY-0001287

Facility extracts natural gas liquids from natural gas by the propane refrigeration method. The plant is water cooled and the waste stream is made up of cooling tower blowdown, water extracted from the natural gas and plant drainage. The discharge is to Antelope Creek (Class III stream) via an unnamed draw.

Proposed permit requires compliance with standards considered to be "best practicable" for this type of facility effective immediately. The permittee must monitor the quality of the effluent on a regular basis and report the results quarterly. The permit will expire December 31, 1982.

(3) PERMIT NAME: ATLANTIC RICHFIELD COMPANY
MAILING ADDRESS: 1800 LINCOLN STREET, SUITE 301
DENVER, COLORADO 80202
FACILITY LOCATION: ARCO - WESTATES LEASE, SW,
SECTION 10, T44N, R89W,
HOT SPRINGS COUNTY, WYOMING
PERMIT NUMBER: WY-0005461

(4) PERMIT NAME: C. E. BREHM DRILLING COMPANY
MAILING ADDRESS: P.O. BOX 658
CASPER, WYOMING 82401
FACILITY LOCATION: C. E. BREHM NO. 1 ANDERSON, NW¼,
NW¼, SECTION 34, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001395

(5) PERMIT NAME: C. E. BREHM NO. 1 BREYMAN, NW¼,
NW¼, SECTION 26, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001396

(6) PERMIT NAME: C. E. BREHM NO. 1 BREYMAN, NW¼,
NW¼, SECTION 18, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001397

(7) PERMIT NAME: C. E. BREHM NO. 1 WILCOX, NW¼,
NW¼, SECTION 30, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001398

(8) PERMIT NAME: HAROLD B. HOLDEN
MAILING ADDRESS: P.O. BOX 1740
SULLY, MONTANA 59108
FACILITY LOCATION: HOLDEN RICHARDS WELL NO. 1, NW¼,
SECTION 18, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0000486

(9) PERMIT NAME: MARATHON OIL COMPANY
MAILING ADDRESS: P.O. BOX 130
CASPER, WYOMING 82401
FACILITY LOCATION: BYRON OIL FIELD, CASPER A UNIT,
LOT 46, SECTION 28, T36N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001782

(10) PERMIT NAME: NORTH WATER COLLECTION PIT,
NW¼, SECTION 16, T44N, R89W,
HOT SPRINGS COUNTY, WYOMING
PERMIT NUMBER: WY-0001813

FACILITY LOCATION: C. E. BREHM NO. 1 DILLON, SW¼,
SW¼, SECTION 14, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001399

(11) PERMIT NAME: C. E. BREHM NO. 1 DOVE, SW¼,
SW¼, SECTION 15, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001393

(12) PERMIT NAME: C. E. BREHM NO. 1 GARLEY HUGHES,
SW¼, NW¼, SECTION 34, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001341

(13) PERMIT NAME: C. E. BREHM NO. 1 WEBB-ANDERSON,
NW¼, NW¼, SECTION 34, T37N, R87W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0001350

FACILITY LOCATION: SOUTH WATER COLLECTION PIT
SW¼, SECTION 26, T44N, R89W,
HOT SPRINGS COUNTY, WYOMING
PERMIT NUMBER: WY-0001805

(14) PERMIT NAME: OIL DEVELOPMENT COMPANY OF TEXAS
MAILING ADDRESS: P.O. BOX 960
THERMOPOLIS, WYOMING 82448
FACILITY LOCATION: HAMILTON DOME FIELD, TANK BATTERY
C, NW¼, SECTION 18, T44N, R87W,
HOT SPRINGS COUNTY, WYOMING
PERMIT NUMBER: WY-0001344

(15) PERMIT NAME: SOHO PETROLEUM COMPANY
MAILING ADDRESS: P.O. BOX 673
RUSSELL, KANSAS 67662
FACILITY LOCATION: ALKALI ANTICLINE UNIT, SW¼,
SECTION 28, T36N, R89W,
BIG HORN COUNTY, WYOMING
PERMIT NUMBER: WY-0000507

Facilities are standard oil production units located in Hot Springs and Big Horn Counties, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skim ponds. All facilities must meet Wyoming's Produced Water Criteria effective immediately, with the exceptions of the Soho facilities which must meet Wyoming's Produced Water Criteria effective immediately, with the exceptions of the Soho permit, which has been given a total dissolved solids limit of 7,500 mg per l and a sulfate limit of 4,000 mg per l, due permit, which has been given a total dissolved solids limit of 7,500 mg per l and a sulfate limit of 4,000 mg per l, due to the extreme aridity of the area and its beneficial use to area wildlife, and Marathon WY-0001805 and WY-0001813.

Both of these Marathon facilities are water reinjection plants located in the Grass Creek oil field. Discharges of produced water in this area have been very controversial with some landowners sending letters of beneficial use while the L.U. Sheep Company claims that the produced water is very detrimental to their operation. The City of Worland has also protested the issuance of these permits based upon the detrimental effect on the City's water supply.

This Department has negotiated an agreement between Marathon, L.U. Sheep Company and the City of Worland in which the permits would be issued with a TDS limitation of 7,500 mg per l, however, the Company would be limited to discharging no more than fourteen consecutive days or more than a total of thirty days in any calendar year. The Company would also be required to inform this Department, L.U. Sheep Company and the City of Worland whenever a discharge occurs and self-monitoring of any discharge would be required.

In the view of the Department, the negotiated compromise adequately protects the quality of Wyoming waters, allows the Company reasonable flexibility in its operations should a breakdown occur and involves the parties who have been most concerned about the quality of these discharges.

Brehm WY-0001325, WY-0001341 and WY-0001350, have been given limitations of 1.0 mg per l undissociated hydrogen sulfide since these discharges are directly to Class I streams. In addition, specific conductance and total residual chlorine are required to be monitored semi-annually at these facilities since they are using a hypochlorite solution for H2S removal.

Chapter VII of Wyoming Water Quality Rules and Regulations infers that every produced water discharge is beneficially used if the total dissolved solids content is 5,000 mg per l or less.

The expiration dates for the permits are July 31, 1980 and December 31, 1981.

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

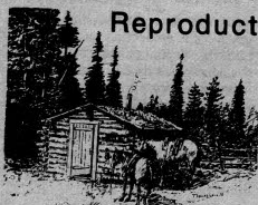
PUBLIC COMMENTS
Public comments are invited any time prior to December 5, 1977. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permit Section, Hathaway Building, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permit Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80202. All comments received prior to December 5, 1977 will be considered in the formulation of final determinations to be imposed on the permits.

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

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

Public Notice No. WY-77-015

Reproductions of pen and ink drawings by Thomas Connell



I. "TIME FOR A BITE OF GRUB"



II. "A FRIENDLY GAME OF POKER"



III. "INDIAN ATTACK"

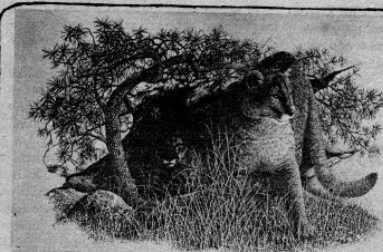
Tom Connell paints distinctively Western scenes: the spirit and essence of Old Wyoming is inherent in his work. With an artist's natural sensitivity to his surroundings, he has stocked his memory with countless impressions from his early years and from local folklore. These scenes come to life in his work.

Tom's work centers largely on the early days of the West. The days of starting with nothing, the beginning of the creation of a Western heritage. Tom has his work on display in his new studio at 805 Amoretti in Lander. Stop by and visit for a spell with the "homestead artist," as he is called.

Reproductions of three of Tom's works are being offered through HCN's gift shop. They can be purchased either as 7 1/4 by 8 1/4 inch black and white prints or as 4 1/4 by 5 1/4 inch sepia and white notecards. The prints are reproduced on talisman, textured finish, cover paper. The notecards are teton-text paper.

The prints sell for \$2.00 each or a set of three for \$5.00. Postage is included.

The notecards are packaged 12 to a pack with envelopes. Four cards of each design are included. Cost is \$3.00 per package plus 50 cents for postage and handling. Please use the combined order form found on this page. Order prints by their numbers. Thank you.



Mountain Lions, 17 x 22 in.,

Paul M. Breeden is a noted calligrapher and illustrator. His paintings and drawings have appeared in *Audubon*, *Defenders of Wildlife*, and *National Geographic* magazines to name but a few. Breeden and his agent, Singing

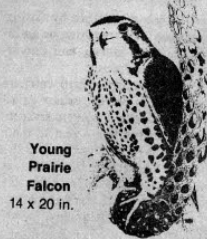
Sparrow gallery, are generously giving any proceeds from prints sold through HCN to HCN. Each print is from a series of 500 signed and numbered prints. Sets of matched numbers are available upon request at no additional charge.

Prints

Paul
M.
Breeden



Great Horned Owl, 19 x 24 1/2 in.



Young
Prairie
Falcon
14 x 20 in.

To order, use form below. (Available also in *Gray Hawks*, 17 by 22 in., \$30. To be shown next issue.)

Seasonal profiteering

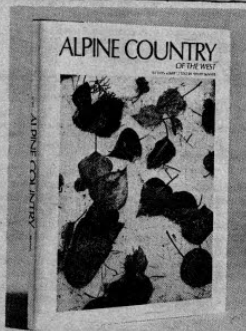
HCN ALTERNATIVE GIFT SHOP 1977

ALPINE COUNTRY

OF THE WEST
PHOTOGRAPHY BY DON LOWE
TEXT BY DAVID SUMNER

Alpine country is a land of many gifts. Air is clean, heights imposing, distances vast, scenery grand, and solitude immense. Most immediately, it is a realm of vivid, impressionist scenes, of definitive, angular peaks and graceful volcanic summits, of ridgeline and slope etched sharply against the sky. Equally important it is a land where life thrives despite sub-zero cold, gale force winds, bright sun and wave upon wave of severe mountain storms.

The scope of this book is the eight mountain states of the American West:



Washington, Oregon, California; Idaho and Utah; Montana, Wyoming and Colorado. All are renowned for their high country, most of which is as wild and beautiful today as it was when the first white trailblazers discovered and explored it in the 1800s.

Follow Don Lowe and David Sumner on a journey that travels high above the cone of California's Lassen Peak, deep into the forests of Washington's Olympic Range, across the tundra of Colorado's Rocky Mountain National Park, far up the slopes of Oregon's Mt. Hood, and to many other sites in alpine country.

Alpine Country — 128 pages, size 10 1/2 x 13 1/2 in., 12,000 words of text, 101 illustrations, full color. Photography by Don Lowe, text by David Sumner. \$22.00 until January 1, 1978, then \$25.00.

The World of Mira Atkeson — 120 pages, size 10 x 10 in., 1500 words of text, 105 illustrations, full color. Photography by Mira Atkeson. \$19.50. To be featured next issue.

Rocky Mountains — 192 pages, size 10 1/2 x 13 1/2 in., 14,000 words of text, 162 illustrations, full color. Photography by David Muench, text by David Sumner. \$30.00

Explore the wondrous Rockies from New Mexico to Montana with the ardent words and photos of two people who know and love the wilderness. To be featured in December 2 issue.

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



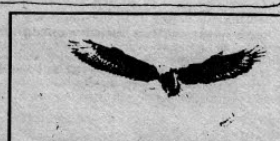
Moose

Greeting Cards

Holly Merrifield, wildlife artist and friend, has designed these notecards for High Country News. These cards were so popular last year, we're trying them again. Ready for your personal notes,

the cards are 3 1/2 by 7 inches on ivory stock with gold envelopes. Designs are in wheatfield gold. A handsome complement to any message.

Ten cards and envelopes per set. \$2.



Eagle

Combined Order Form

Circle or mark selections

Tom Connell Prints and Notecards

Prints: ☐ I. Time for a bite of grub.
☐ II. A friendly game of poker.
☐ III. Indian Attack.

Prints are \$2.00 each. Set of three for \$5.00

NUMBER	AMOUNT	TOTAL
☐ prints at \$2. each		
☐ print sets at \$5. each		
☐ packs of notecards at \$350 each		

Graphic Arts Center Books

☐ Alpine Country	\$22.00
☐ Rocky Mountains	\$30.00
☐ The World of Mira Atkeson	\$19.50
Total	

Paul Breeden Prints

☐ Gray Hawks	\$30.00
☐ Great Horned Owl	\$30.00
☐ Mountain Lions	\$30.00
☐ Young Prairie Falcon	\$30.00

Please add \$2. per print for insurance, etc.
prints at \$32. each. Total

HCN Greeting Cards

Moose ☐ Eagle ☐

\$2.00 per package of ten.
Postage and handling: 30 cents per pack.
☐ packages at \$2.30 each

HCN Gift Subscription

25 issues of High Country News \$12.00

Total

Mountain Press Books

Where the Grizzly Walks \$9.95

Price includes postage.
(See ad on page 12)

books at \$9.95 each

HCN Special Edition Magazine \$1.50

Postage and handling: 50 cents.

☐ HCN Special Edition at \$2.00 each

Enclosed is \$_____

Send the above marked items to:

name _____
address _____
city _____
state _____ zip _____

Send to High Country News, Box 14, Lander, Wyoming 82520 or call (807) 392-4677. Thank you. Your purchase is helping HCN. ☒

Reckless, visionary

David Brower — on conservation's

©1977 by Peter Wild

Part of the general tumult of the 1960s and early 1970s was the second growth of conservation into a movement at least as heady as its first surge at the turn of the century. At its center was the Sierra Club, expanding so fast it could hardly keep track of new members.

At the center of the club was a visionary dropout, the quizzical David Brower. Brower, while denouncing the profligate culture, could also hold forth on the esthetic simplicity of a beer can. In 1969, goaded by the famous nature photographer Ansel Adams, the club's old guard readied itself to fire Brower as executive director for his controversial attempts at greening the nation's oldest environmental group.

Brower's childhood was a mixture of misery and escape. A fall from a baby carriage when he was a year old knocked out his front teeth and damaged his gums. Schoolmates jeered him as "The Toothless Boob." In 1920 when he was eight, his mother went blind. To compound the problems, his father lost his position as an instructor of mechanical drawing at the Berkeley campus of the University of California.

The boy peddled papers and helped keep up the family's main source of income, two rundown apartments behind the Brower house. In his freshman year at Berkeley, he hoped to gain a little status and socializing by joining a fraternity. During rush, he saw a membership delegation come up the street, peer at his shabby home, and then pass on.

There were compensations. He wandered in the then-wild Berkeley Hills, gathering rocks for his collections. When he was 15, a curious black, white, and green butterfly caught his eye on Grizzly Peak. He had discovered a new species! — a boost for his flagging teen-age ego. Brower still amazes fellow hikers by calling out the names of butterflies swirling ahead over the trail or floating on the thermals along cliffs. He credits his sharp sight to the days when he walked through the Berkeley countryside describing what he saw to his blind mother.

Occasionally the family loaded the Maxwell and drove into California's Sierra Nevada. Yet even on vacations fears dogged him. Perhaps as a result of his scarring childhood fall, the future mountaineer often sat in the car trembling while the others peered over tourist vistas.

It took Brower years to settle down. College didn't help the financial and

It took Brower years to settle down.

psychological strains. He dropped out as a sophomore to alternate work in a candy factory with trips into the mountains. In 1933 Ansel Adams sponsored his membership in the Sierra Club. Two years later the candy factory fired Brower for his continuing wilderness absences, and he spent the next six doing office work in Yosemite National Park. There, enthusiasm for the surrounding peaks overcame his fears. By making 33 first ascents, he earned a reputation as one of the area's most aggressive climbers.

When World War II broke out, he was editing books for the University of California Press. The Army made use of his climbing skills in the Tenth Mountain Division and in Italy awarded him the Bronze Star. After the war he went back to editing. Then in 1952 the Sierra Club chose him as its

first full-time executive director, a job that lasted for 17 years. His career had begun at the age of 40.

To keep its machinery running, the club had a qualified middle-aged man, who could scale mountains as well as shepherd its occasional publications through the press. Yet Brower had seen change come to the Sierras. He had stood before the Royal Valhalla Motor Lodge, squatted in tinselled glory on the spot near Lake Tahoe where he camped as a boy. The club didn't reckon that its board had brought a smoldering firebrand to a receptive public.

Under John Muir the Sierra Club had been primarily a political lever to preserve the Sierras, secondarily an outing group.

However, zeal cooled after the death of its famous founder, and enthusiasm shifted to an elaborate hiking program for the largely well-off, if not wealthy, membership. Doctors, lawyers, and corporation executives — people not usually known for decrying exploitation — served on its board of directors.

They led a "posey-picking hiking society," as one thwarted activist called it, "a coterie of gentleman do-gooders," in the words of another. Protests, when made by the club, were feeble and polite, not designed to chafe. In defending the use of Diablo Canyon for a nuclear reactor, Ansel Adams noted, "Diablo, for example, is just another beautiful canyon. There are lots of those."

The words of another club official, a realtor fearful of militancy, summed up the

prevailing mood of many conservation organizations: "I believe we can accomplish as much by friendly persuasion. I don't believe in total capitulation of the enemy or pounding your shoe on the table. I don't believe we should be negative. I'm a realtor and I've never sold a house yet by being negative."

At the time of the Brower appointment, the Sierra Club had not won a single major environmental battle in the 38 years since Muir's death.

Former Secretary of the Interior Stewart Udall has dubbed David Brower "the most effective single person on the cutting edge of conservation in this country." That probably is the case. But as is true of other effective conservation movers — John Muir, Gifford Pinchot, Aldo Leopold — the new executive director succeeded by taking keen advantage of favorable winds already blowing.

After the war, California went through another of its periodic booms, and the restless population drifting West tended to be far more critical and activist than the state's old-timers. Newcomers arrived in search of Eden; instead they found their garden trampled by the new population shift. They wanted to put a stop to it, to make California as idyllic as they had imagined before leaving their homes in the crowded East. Many of them joined the Sierra Club, tame but tinged with a legacy of activism.

As with many other movements, frivolous or profound, the environmental trend spread eastward from the West Coast. When Brower took over his new job, the club had just 7,000 members, most of them

Nov. 4, 1977 — High Country News-17



At left, David Brower

Photo courtesy of the Sierra Club



in California. When he left in 1969, membership had swollen tenfold to a nationwide total of 70,000, reflecting the general ecological awakening. Both Brower and the new joiners wanted change.

As it happened, he had a rousing issue at hand to unite the clamoring and widespread troops. Government engineers decided to build a dam on the Green River



Photo courtesy of the Sierra Club

Brower led the Sierra Club out of the garden club and into the streets and halls of Congress.

that would back water into Dinosaur National Monument. The scheme sounded ominously like the Hetch Hetchy disaster of 40 years earlier, which had violated a national park by turning one of Yosemite's scenic canyons into a hydro-electric eyecore. Unwittingly the Bureau of Reclamation provided the catalyst that united conservationists across the nation for the first

(continued on page 18)

18-High Country News — Nov. 4, 1977

Brower. . .

(continued from page 17)

time in decades. Incited by Brower, even the mossbacks stirred themselves for the fight.

Under the clearly righteous banner of Dinosaur, Brower began his innovations. The 1954 book *This Is Dinosaur* marked the first of a large format exhibit series that has since opened the public's eyes to its wilderness heritage. The series not only won a name for the club as a quality publisher but also drew thousands to its membership. Foremost, though, Brower grasped what gentle nature lovers in the intervening decades since Muir had chosen to ignore: environmental issues are political issues. They are not won by friendly persuasion and pleas to the goodwill of the

Brower grasped what gentle nature lovers had chosen to ignore — environmental issues are political issues.

exploiters.

The new environmentalists stuffed envelopes, wrote their Congressmen, paraded, lobbied, appeared en masse to testify at hearings. The tactics that eventually squelched the dam in Dinosaur showed Brower's followers that only hard-nosed political clout could save the remaining 10 per cent of the earth not yet eroded, inundated, asphalted, and strip mined. Redirected by Brower and other leaders, the energy generated by Dinosaur went on to stop dams in the Grand Canyon and create national parks across the country. In 1964 it gave a final boost to the Wilderness Act. Brower had led the Sierra Club, along with conservation in general, out of the garden club and into the streets and halls of Congress.

The phenomenon was not due to successful tactics alone. Brower had anticipated the activist mood of the 1960s. Police were clubbing war protesters; the Hare Krishna sang in the streets. The college generation was frothing, blaming those over 30 for the world's sorry state.

As he jetted back and forth across the country, his personality — witty, ironic, if not quirky — matched the nation's mood.



David Brower

Photo courtesy of the Sierra Club

Brower won a following by what he still calls "The Sermon," leaning "up to the lectern with his feet together and his knees slightly bent, like a skier," as author John McPhee puts it. Through Brower, audiences saw a vision of coming ecological doom — unless they changed their attitudes toward the earth.

According to another Brower observer, Harold Peterson, the "patricianly handsome, disquietingly intense, preternaturally young man of 56 with a magnificent shock of prematurely white hair" not only

tourists can get nearer the ceiling."

"I am not at all anxious to go back to the Stone Age, but that's where our addiction to growth is sending us."

"When rampant growth happens in an individual, we call it cancer."

Brower had taken on the burden of saving the world from itself. To him, hardly anything could be excessive in achieving the goal. Looking around at the Santa Barbara oil spill, at species sliding toward extinction, at the world's dwindling food sup-

cretory fund beyond the control of the cautious board.

His words weren't salving to those responsible for the everyday solvency of the club. They recognized Brower's genius for swaying the public, but they also saw a different kind of apocalypse approaching. Commented one appalled official: "There's a recklessness to Dave that's terrifying. It's like driving down a city street with a man who's going 90 miles an hour."

Brower stepped on the gas. He saw the fruits of his campaign; people were lying



From left to right, David Brower, Raffi Bedayan, and Bestor Robinson on top of Shiprock in New Mexico, Oct. 12, 1939.

Photo courtesy of the Sierra Club

By making 33 first ascents, he earned a reputation as one of the area's most aggressive climbers.

had faith in the young — the requisite blind faith of leadership — but a bouncy hope for the future.

"I have to be an optimist," he said. "It keeps me in business. Otherwise, I'd open a waffle shop."

Often he cast his philosophy in witticisms. If not always accurate, they had a racy appeal, and they helped establish a vocabulary of ideas for the new environmentalists:

"Population is pollution spelled inside out."

"We don't flood the Sistine Chapel so

ply and its burgeoning population, others shared his alarm.

As the executive director's zeal approached collision with the club's ruling board, author of *The Population Bomb* Paul Ehrlich warned, "If somebody told me there was a 50-50 chance Brower would destroy the Sierra Club, I'd say go ahead, it's a bargain. The world is going to tumble around its ears if the Sierra Club — or someone — doesn't do a job in the next five years. If the Sierra Club's main worry is the preservation of its own existence, there won't be any environment left for it to exist in."

Most members of the club shared the outlines of Brower's concerns. One poll indicated that 85% wanted to move even faster. Yet fears also grew that Brower's brand of frenetic enthusiasm would wreck the nation's foremost environmental group by rendering it financially insolvent long before it could achieve Brower's ends.

That enthusiasm led him to act without the sanction of the volunteer and slow-moving board. "They want to run this place like a bank," quipped Brower as he shrugged off criticism, then plunged ahead. As popular as Sierra Club books were, the hard fact was that they lost the club nearly \$300,000. In spite of this, he launched plans not only to add an international series but documentary films, television programs, and advertising campaigns. Providence had always taken care of the Sierra Club; the money would come from somewhere, Brower assured critics.

Tossing salving words over his shoulder, on his own Brower approached large corporations, Xerox, Time-Life, for financing. He wrote checks and signed unauthorized book contracts, one giving him a percentage of sales. This was not for his own use — he continued to live with pans scattered around his house to catch rain dripping through the roof — but to create a dis-

down in the paths of bulldozers, chaining themselves to trees. When issues needed speedy attention, on his own initiative he placed full-page ads in the *New York Times* and the *Washington Post* in the name of the Sierra Club. His blitzkrieg stirred public clamors to save the redwoods from loggers and keep dams out of the Grand Canyon. But the ads cost as much as \$20,000 each, and they were blatantly unauthorized by his employers, the club's board of directors.

Furthermore, less than 24 hours after the first ad appeared, the Internal Revenue Service announced an investigation of the Sierra Club. Six months later, because of its activism the club lost tax-deductible status, a severe financial blow.

"Seldom in history," commented the *Nation*, "has a federal bureaucracy



reacted with such cobra-like speed."

To support dams in the Grand Canyon, the Central Arizona Project Association had spent seven times more than had Brower — without any stirrings from the government. Clearly the IRS action was a case of selective enforcement aimed at intimidating those opposing federal policy.

Happily, a year after the IRS decision the Sierra Club had gained nearly 10,000 new