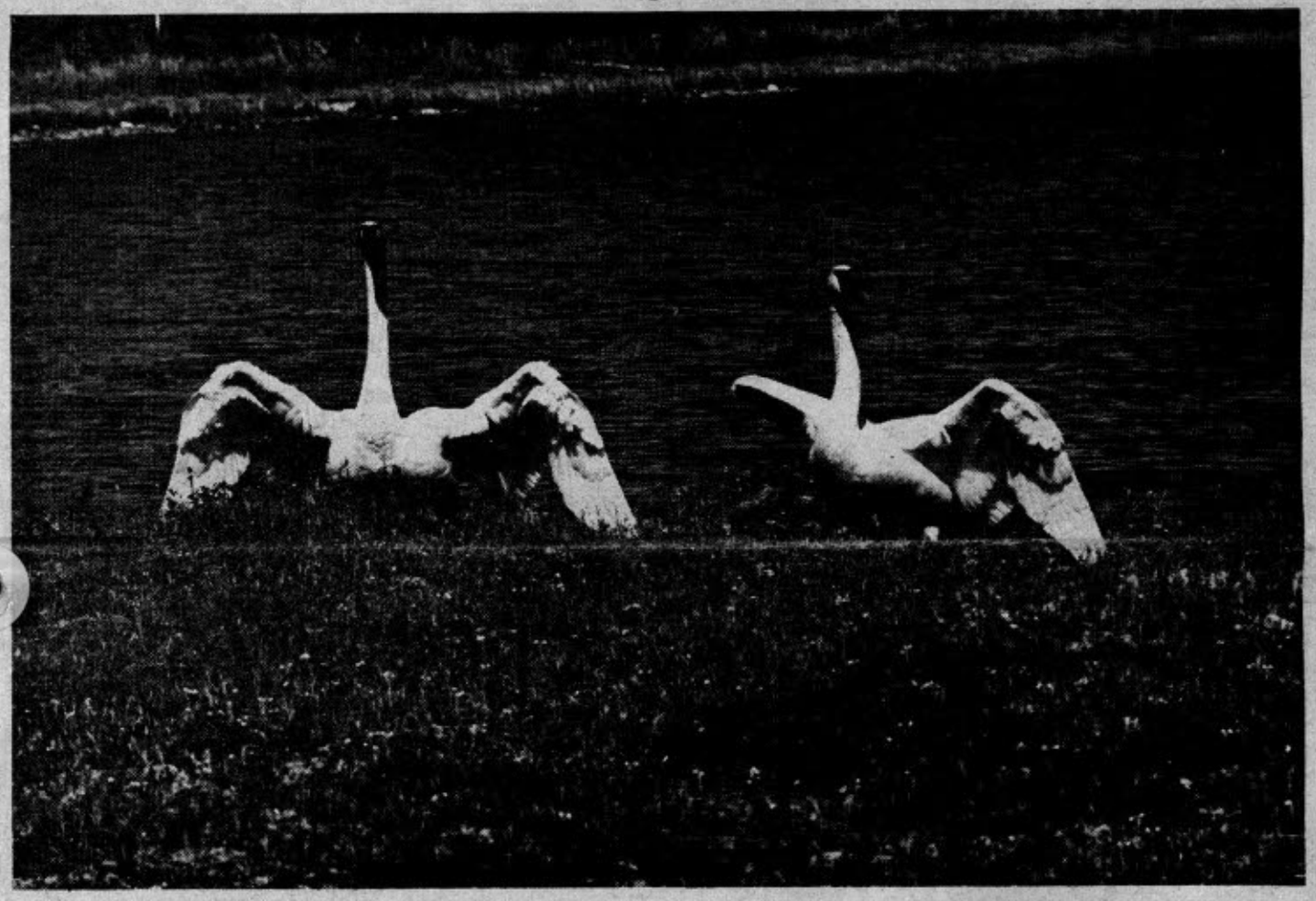
The Environmental Bi-Weekly

High Country News

Vol. 8 No. 6 | Lander, Wyoming | Friday, March 12, 1976

Bulldozers threaten

Saving swamps for ducks and men



WETLANDS ARE VITAL TO WATERFOWL. Many of our country's most valuable wetlands are found in Alaska where millions of ducks, geese, and swans nest and raise their young. These trumpeter swans are nesting in the Copper River-Bremmer River Valley area. Congress is considering legislation to preserve 80 million acres of Alaska wild lands including this area. Photo courtesy of the Fairbanks Environmental Center.

. . . She was like a mare in her heat
eyeing the stallion,
Screaming for life in the womb, her
atmosphere
Was the breath of her passion: not
the blithe air
Men breathe and live, but marsh-gas,
ammonia, sulphured hydrogen,
Such poison as our remembering
bodies return to
When they die and decay and the end
of life
Meets its beginning. . . .

—Robinson Jeffers
"The Beginning and the End"

by Bruce Hamilton

Some believe that the earliest form of life was spawned amid the primordial ooze of an ancient wetland. From that bizarre coincidence of lightning and foul swamp gas emerged a unique amino acid — the precursor of fish, birds, and humans.

Whether you believe this extraordinary theory, or prefer to believe in divine creation or other theories, human beings' ties with the earth's wetlands go back to our earliest days. Early man hunted in the swamps. Later, people drained the bogs to create agricultural land, and most recently, filled the marshes to support housing projects and highways.

For most humans down through the ages, wetlands have been an unattractive and seemingly unimportant natural resource. Wetlands were viewed as a breeding ground for snakes and mosquitoes, muck to get your tractor stuck in, or an unknown place where you could become lost in a tangle of rank vegetation and eerie noises.

The dismal view of wetlands led to death sentence legislation such as the Swamp Land Acts of 1849, 1850, and 1860. These federal bills paved the way for draining and developing nearly 65 million acres of wetlands in 15 states.

At the turn of the century, the U.S. Fish and Wildlife Service estimates that there were only 127 million acres of wetlands left in the contiguous 48 states. By the 1950s — the last official survey of the nation's wetlands — only 82 million acres remained, of which less than 25% was judged to be of significant value to waterfowl.

In the 1950s in the Rocky Mountain West, there were only 2 million acres of wetlands, with another 2¼ million acres in the famous prairie pothole country of the Dakotas.

Today, the trend is still downward nationwide. The National Shooting Sports Foundation estimates that 25% of the wetlands along the Atlantic and Gulf coasts have been lost in the last 50 years.

Wetlands are vital to the 100 million ducks, geese, and swans which migrate along the flyways from the Far North to the Gulf of Mexico. Wetlands also provide essential habitat for muskrats, beavers, and other furbearers, and offer seasonal food and shelter for big game. Wetlands help store ground water, stabilize runoff, and produce cash crops such as minnows (for bait), marsh hay, wild rice, blueberries, cranberries, and peat moss.

In 1974 the hasty nationwide destruction of our country's wetlands led then-Attorney General William Saxbe to say: "If we fail to save the wetlands, we will be losing more than an economic and esthetic asset that can never be re-created. The loss may also signal an impending and crushing defeat in the larger effort to maintain an environment that civilized man can inhabit."

TIPPING THE SCALES

Today we have replaced the Swamp Land Acts with federal laws designed to protect and buy up wetlands. But while the nation slowly becomes aware of the ecological value of wetlands, the destruction of this finite resource continues.

When natural features are reduced to dollars and cents, the beaver, muskrat, duck, and water lily still have trouble tipping the scales against a new subdivision or an industrial park.

Alfred Etter, now a naturalist for the Morton Arboretum outside Chicago, recalls a frustrating attempt to argue for the protection of a Wisconsin wetland in the

(Continued on page 4)

Special issue on wetlands.

For more, see pages 4, 5, and 8.

HIGH COUNTRY

By Tom Bell

Sunlight glistens from the icy surface of Eagle Creek this clear March day. I look down upon it as it wends its way through a floodplain studded with giant cottonwoods. This morning I could hear its muted roar as it leaped and tumbled toward a distant ocean.

But all is not well with Eagle Creek. Visible along its banks are great heaps of boulders and gravel. It became unruly in man's sight and so it was straightened and channelized. A D-8 caterpillar spent several weeks last fall dozing back and forth across its bed, erasing every natural pool and cutting off the little side streams where minnows were want to linger. Where once it was a living ecosystem, it is now a virtual biological desert.

Once salmon ran its length, and not so many years ago. Now they are gone because of the dams in the main stem of the Columbia and Snake Rivers.

Once it ran clear and relatively clean of silt. Logging roads and timbering on its watershed in the Wallowa Mountains have changed all of that. (Oregon has about 115,000 miles of timber access roads with an additional 3,500 miles built each year. This compares with the state's existing state and county road network of approximately 36,400 miles.)

The stream is a victim of man's progress, marked by his progressive ignorance of what he is doing to the finite planet which sustains him. These few miles of Eagle Creek are but a small portion of the many thousands of miles of the nation's streams, both large and small, that have been "tamed." It is only one example of the ugly rape of a beautiful, harmonious, natural system which helps to feed and nurture us both physically and spiritually.

The floodplain of a natural stream is an integral part of the stream. It is a safety valve during those times when, under natural conditions, the stream is required to carry more water. It is usually a rich area. The soils are derived from the silts washed down from upstream. The floodplain helps regulate water storage on either side of the main stream bed, an important feature often overlooked by the bulldozer technology. The combination of soils and available water makes the natural floodplain a productive area for plants and animals. It is a home for many creatures for it provides everything they need.

Man has turned this combination of rich soils and plenteous water to his advantage. Some of our richest farmlands occur on the floodplains. But unfortunately floods also

occur. Man must then undertake the "management" of the natural system. This is not always the wisest thing to do.

We may be learning. Sen. Jennings Randolph of West Virginia is chairman of the Senate Public Works Committee. That committee decides on how much money to put into dams, levees, channels, and other "improvements" on our streams. Last year, Sen. Randolph told the National Conference on Flood Plain Management, "Construction may not always be the best answer to a flood problem. The proper and less costly response may well be to let the floods come but to control the flood area so that personal and property damage will not occur."

Myriad forms of fish and wildlife make their homes on the floodplain. What man decides to do there directly affects them. Springs, sidestreams, old oxbows, and other water areas on the floodplain are the hatcheries for fish and the havens for small fish. Ducks and geese are provided nesting and brooding sites. Both aquatic and land animals, large and small, find needed food and cover there. All that can be erased when the stream is bulldozed into a straight ditch.

As in all other facets of our complex planet, we are finding that everything is tied to everything else. We share our planet with all other creatures, large and small. We need to save them for we may thereby be saving ourselves.

"HI. I'M YOUR NEW NEIGHBOR."

HCN Letters

MORATORIUM ADVISED

Dear editor,

My congratulations to the **High Country News** on your fine issue containing the pieces by Bruce Hamilton on the "promises" and "problems" of the continuing program of converting desert to farmland (Desert Land Entry **HCN** 2-13-76).

To illustrate how far we've come, I'd like to tell you that the Idaho BLM Multiple Use Advisory Board — composed of irrigators, ranchers, power representatives, timber representatives as well as a wildlife and environmental representative — has voted to recommend that the BLM write an environmental impact statement on the area along the Snake River covered in the article and develop a five-year plan for processing those Desert Land Entry applications now pending which **do not conflict with other public values.**

Special emphasis was recommended for consideration of wildlife values with attention given to developing and protecting those extra wildlife species which could accompany irrigated agriculture (pheasants, deer, etc.). A moratorium on further Desert Land Entry and Carey Act applications was recommended until studies could determine the availability of water and power.

Considerable pressure was brought on the BLM and the board at the Feb. 20 and 21 meeting by representatives of entry men to immediately make available those lands for which they had applied, some as long ago as 10 years. Much of this entry was to be made within the Birds of Prey Natural Area and were it not for publications such as yours focusing regional, national, and international attention on this unique raptor habitat there would have been little choice but to accelerate processing of these claims.

At present the BLM is committed to a three to four year study of the needs of these birds before a decision will be made on the release of desert lands within the natural area.

Richard R. Smith
Environmental Representative
Idaho BLM Multiple Use Advisory Board
Salmon, Idaho

NO GENERAL MOTORS

Dear **HCN,**

I can really appreciate your confusion about who's who and what's what in this free-lance capitalist venture (the solar heating business, **HCN** 2-26-76), but perhaps we should cherish the fact that there is no "general motors" in the field yet to dictate the quality, type, and price of solar components. At that time we can be sure of uniform, corporate junk.

So hold close your insecurity.

I tend to think that design (energy-optimized) is most important, and any solar furnace claims could be considered a hype if installed in your regulation energy-sucker house.

Anyway, wanted you to know that your last issue gave me a last push out of the cynic's pit to attempt some constructive efforts on the outside.

John Akeson
Cold Comfort Farm
Golden, Colo.

It's your choice!

Your opinion matters.

We want to know what you think about **HCN.** Please answer the survey that appeared in the January 30th issue.

Awards for forest destruction

by G. M. Brandborg

The following is quoted from the January 14 **Western News,** published in Hamilton, Mont.:

"FOREST SERVICE REWARDS PROFICIENCY"

"Bill Morgan, forester, and Don King, forestry technician on the West Fork ranger district, were each presented with a $200 cash award today by Supervisory Forester Roy Brogden. The cash awards were in acknowledgement of their outstanding accomplishments which enabled the West Fork District to meet timber sale preparation obligations and timber sell goals in 1975. Both Morgan and King demonstrated outstanding ability in applying their knowledge and experience to aggressively tackle and assist in the completion of a complicated timber sale program under difficult circumstances."

Montanans, including the governor, members of the state legislature, county commissioners, and soil conservation supervisors, should inform the President and the Montana Congressional Delegation that Forest Service employees are not enforcing the laws enacted by Congress as to the methods and limits on amounts of timber which shall be removed annually from national forests. As a consequence, violence is being done to the land and other resources. Violence is also being perpetrated upon the people of Montana by destroying their forest economy and other benefits that national forests contribute to the welfare and enjoyment of the citizens of the state.

According to reputable informants, there is also need to inform them that the timber industry influenced ex-President Nixon to issue a directive that increased the annual allowable timber harvest on national forests from 5.6 billion board feet, established as maximum by the Forest Service, to 10.6 billion board feet. At issue is maintaining timber supplies in perpetuity from the lands entrusted to the care of the Forest Service.

A recent unanimous decision by a U.S. Circuit Court of Appeals confirmed that laws which Congress enacted were being violated through the procedures the Forest Service is using to remove timber from a national forest in West Virginia. The violations consist of clearcutting and overcutting of immature trees, despite the fact that such practices violate the 1897 Organic Act and the 1960 Multiple Use-Sustained Yield Act.

In his State of the Union message, President Ford emphasized the necessity of enforcement of laws. Accordingly, it is appropriate for Montana people to inform him that if proper forest practices are to be restored in managing what limited timber resources remain in the National Forest System, he must rescind ex-President Nixon's directive.

In view of the existing unlawful forest land use practices and their economic and social consequences, it is ludicrous that timber managers be given cash awards from public funds for contributing to the exhaustion of timber supplies. On the contrary, when the public trust is violated by failure to enforce the mandates of Congress, these employees should be charged with personal criminal liability. In holding Forest Service employes accountable for permitting destruction of public resources, it would take few convictions to convince other employees in the Forest Service that it is their obligation to enforce the laws of the land.

An informed, aroused, courageous public, aided by the news media, must insist that elected local, state, and national representatives of the people prevent further destruction of the nation's private and public forest lands by demanding enforcement of the mandates of Congress.

- - -

G. M. Brandborg is former supervisor of the Bitterroot National Forest in Montana.

More Letters

TIDBIT FROM KANSAS

Dear **HCN,**

The New Luxurious Total Electric City Building in Wichita, Kansas, had a $52,000 electric bill for Jan. 1976. They receive a lower rate because they use lots of electricity.

Daryl Glamann
Cheney, Kansas

UPPER MISSISSIPPI THREAT

Dear **HCN,**

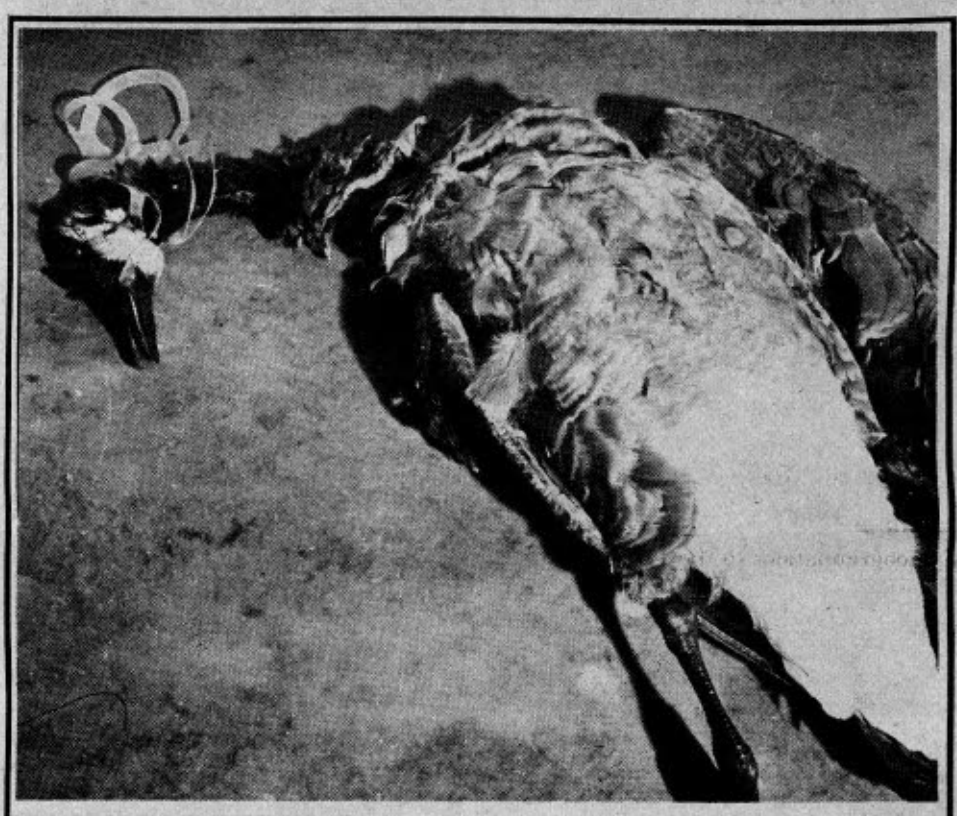
Now we are in the middle of a fight to try to save a bit of the all too scarce natural area still remaining in the Midwest. Despite 150 years of heedless exploitation of the Mississippi River, sizable areas in the upper reaches of the river, especially from Rock Island, Ill., north to Lake Pepin, are in a relatively unspoiled state. However, they will not long remain so, if the barge shipping interests and their ardent allies, the Corps of Engineers, have their way.

This issue concerns the proposed project to replace the Alton, Ill., Locks and Dam 26 on the Mississippi River. If this project is approved, the gate will have been opened to unlimited expansion of commercial barge navigation on the Upper Mississippi.

Although this problem may seem remote from Wyoming and its problems with strip mining and other exploitative development, it is I believe an important conservation issue involving resources that are of national importance.

Bills are now in Congress to authorize the Locks and Dam 26 project. It is expected that hearings on these bills will be held in the Public Works Committees of both houses within the next five weeks. We need all the help that we can get from every part of the country.

James F. Curtis, Chairman
Upper Mississippi Task Force, Sierra Club
Iowa City, Iowa



SIX-PACK THREAT

Dear **HCN,**

This goose (see photo) was found on the shore of Flaming Gorge Reservoir this winter. The plastic six-pack retainer had not strangled the bird, but had instead apparently prevented food from being swallowed and caused death by starvation — a tragic end for a magnificent animal.

John C. Combs
Area Ranger, Flaming Gorge Ranger District
U.S. Forest Service
Dutch John, Utah

MONUMENT DESTRUCTION

Dear **HCN,**

Organ Pipes Cactus National Monument, Ariz. — a monument unique in its plant life, ecosystems, and desert communities — is fast being destroyed by cattle. Cattle destroying the vegetation, polluting the waterholes, and scarring the delicate desert wonderland. Cattle illegally grazing since 1969. The National Park Service (NPS) refusing to reissue a grazing permit told the rancher to remove his cattle. The rancher did not remove the cattle, so the NPS has taken the matter to court.

It has been in the court since 1972 and the court has not heard the case. Why? Who has their hands in this one? Meanwhile, Organ Pipes is being defoliated at an alarming rate.

I have spent a number of years studying the ecology of Organ Pipes. I believe the problem of illegal cattle on our monument is a matter that should be resolved immediately. The NPS is trying, but needs all the public support it can get. Please write the NPS and Interior Dept. Washington, D.C. 20240. Urge them to press for immediate court action. Let your Senators and Congressmen also know how you feel.

Steve Zachary
29952 Dorothy Rd.
Evergreen, Colo. 80439

IT'S YOUR PAPER

Writers and photographers needed for **High Country News.** We need qualified, accurate, fair, objective freelance writers for investigative reporting. Also need black and white photos of the region and environmental events. A chance to advance your career or hobby while helping **HCN** and the region. Long hours and low pay. Send inquiries and material to **HCN,** Box K, Lander, Wyo. 82520.

Don't send us money.

Don't get us wrong: **High Country News** needs your dollars. We just thought if we could make contributions tax deductible we'd be helping the people who help us.

To make your contribution tax deductible simply write out a check payable to "Wyoming Environmental Institute — HCN Research Fund" and mail it to Wyoming Environmental Institute, Box 2497, Jackson, Wyoming 83001. We get the dollars and you get the deduction and our thanks.

High Country News

Published biweekly at 140 N. Seventh St., Lander, Wyo. 82520. Telephone 307-332-4877. Second class postage paid at Lander.

Publisher	Thomas A. Bell
Managing Editor	Joan Nice
News Editor	Bruce Hamilton
Associate Editor	Marjane Ambler
Office Manager	Mary Margaret Davis
Advertising Manager	August Dailer
Circulation Manager	Georgia Nations
Design Consultant	Jeffrey Clack

Subscription rate $10.00
Single copy rate 35¢

How to save a wetland

Dollars, diligence make the difference

by Marjane Ambler

Hunters and non-hunters who are beginning to realize that there isn't as much waterfowl around as there used to be are asking, "What can I do to help?" Although legislative mechanisms exist for every level of government to protect wetlands, none are fully utilized.

The public can help by becoming more aware of the regulations at their disposal and by keeping their eyes open for habitat that could be saved. Most of the tools that exist depend upon an informed public watching their governmental agencies and donating their time and sometimes money for the sake of wetland inhabitants.

While limited by financial constraints, buying wetlands is the surest means of guaranteeing their protection.

Oil and gas outer continental shelf lease revenues have helped federal and state governments buy natural lands through the Land and Water Conservation Fund. The fund was created by Congress in 1964. Bills now in Congress would increase the fund to cope with escalating land prices and rapidly encroaching development. At the end of 1975 the Senate passed a bill to increase the fund to $1 billion from its current level of $300 million.

The House bill (HR 2763) would authorize a maximum of $800 million, and a vote is expected this month. An amendment is being proposed by Rep. Keith Sebelius (R-Kan.) to delete language now in the bill which allows the money to be used to build indoor swimming pools and ice skating rinks.

STAMPS OFFER REFUGE

Hunters' dollars from the sale of duck stamps and hunting licenses and the revenue from excise taxes on sporting arms and ammunition have helped the U.S. Fish and Wildlife Service (FWS) and state wildlife agencies set aside millions of acres of waterfowl habitat.

Since 1934, when Duck Stamps first went on sale, over $160 million has been collected and used for the preservation of wetland acreage. Nonhunters can also purchase the Migratory Bird Hunting Stamp at their local post offices for $5.

A bill that accelerates the purchase program has just been signed by President Gerald R. Ford. The accelerated program, due to expire in 1976, provides advances from the general treasury to acquire important wetlands. The advances are to be repaid with future Duck Stamp receipts.

National wildlife refuges are partially supported by the sale of duck stamps. The refuges are specifically designed for preserving wildlife habitat, as opposed to other public lands which are managed under a multiple use concept. The U.S. Fish and Wildlife Service (FWS) manages most of them under its sole jurisdiction.

Refuge lands range in size from small prairie wetlands known as Waterfowl Production Areas to large waterfowl refuges such as the Bear River Migratory Bird Refuge in Utah. Hunting is allowed on some refuges as a management tool to harvest surplus numbers of wildlife and to provide recreation.

(For a directory of refuges in this region, write to the U.S. Fish and Wildlife Service, P.O. Box 25486, Denver Federal Center, Denver, Colo. 80225.)

NATURE CONSERVANCY

Citizens who are frustrated by the lack of governmental funds or bureaucratic red tape can turn to the Nature Conservancy to help protect a particular wetland. In Idaho, for example, the Nature Conservancy is purchasing and managing property near Sun Valley from Sun Valley Co. The Silver Creek property is known for its fishery and for other wildlife habitat, including a heron rookery.

The Nature Conservancy is a national, non-profit conservation organization dedicated to preserving natural land, including forests, swamps, marshes, prairies, mountains, and beaches. Lands are purchased with funds raised locally and nationally through donations and through cooperative programs with other public and private conservation groups. Since its founding, it has protected 750,000 acres.

In Idaho, the group bought an option to buy 479 acres. They hope to raise $600,000 to cover the price of the land plus interest and a management program. The group is looking into the compatibility of agriculture with the protection of natural values, according to an **Idaho Statesman** report. Public access for fishing will be allowed.

The Nature Conservancy does not always manage the lands it buys. Sometimes they are sold, at cost, to state game and fish agencies, for example. This idea was considered prior to the Idaho purchase but rejected, apparently because of bureaucratic foot-dragging.

Families which would like to see their land protected in perpetuity sometimes donate it to the conservancy. Staff members will work with people who donate land to determine the best tax advantages to be gained. Sometimes the tax credits add up to the fair market value of the land.

(For a membership or for further information, write The Nature Conservancy, 1800 North Kent St., Arlington, Va. 22209.)

STATE NATURAL AREAS

Many states in this region are also establishing natural area systems. These states include Montana, Idaho, Utah, Nevada, and New Mexico, according to a **Western Wildlands** report.

State natural area legislation applies to

Muskrat by Tom Baugh

"The fact is there is no federal wetlands program. What is operating is a patched together, gum-and-hairpin sort of operation made up of various partial authorities. . ."

Saving our swamps ...

(Continued from page 1)

late '60s: "At the hearing I took parts of the floating loosestrife mat which made up most of the marsh and introduced them as exhibits. I explained how the vegetation, with its web of filtering roots and interwoven stems, provided at no cost all the functions of an expensive sewage disposal plant — silt entrapment, aerobic and anaerobic decomposition, nutrient removal, and even cooling. I pointed out that wildlife habitat and beauty were extras which few disposal plants provide. It was obvious, however, that questions that dealt with who owned the lake bottom, whether the bay was navigable, cubic yardage of fill to be removed, and other engineering data seemed to be of more concern than ecological arguments."

WHO'S TO BLAME?

"Agricultural drainage and flood control have doubtless been the greatest destroyers of wetland habitat in the country as a whole," says the U.S. Fish and Wildlife Service.

Many projects which destroyed wetlands were federal public works projects carried out by the Bureau of Reclamation and the U.S. Army Corps of Engineers. In the West, large reservoirs for power, flood control, and irrigation inundated thousands of acres of wetlands and riparian wildlife habitat.

But big government bureaucracies don't deserve all the blame. Until recently there has been very little public interest in sparing wetlands from the bulldozers. Without public prodding, government reform has been slow.

Hunters were among the first to realize the value of wetlands for waterfowl production, and sportsmen's groups have been working to protect wetlands through legislation and purchase.

Today, there are many federal, state, and private projects still being promoted which would destroy wetlands. But the public awareness is growing, and news of these projects may raise an army of protesters.

Also, new laws and court decisions have forced parties to weigh the environmental consequences of destroying a wetland before dropping the blade.

Recently, the country's most notorious wetland destroyer — the Corps of Engineers — has reversed its role and started to build new wetlands. The Corps has completed a 352-acre man-made marsh in the Mississippi Delta by placing spoil from channel dredging on surrounding lowlands. The spoil dams catch and store enough water to create a near-natural wetland which is being accepted by marsh vegetation, wildlife, and aquatic life, according to the **Audubon Leader.**

The history of Americans' relationship to wetlands is a typical tale of tardy conservation. We misunderstand, mistreat, and practically destroy a valuable natural resource before we realize its intrinsic value and seek to make amends.

Only after waging a war against our wetlands have we come to cherish and respect these unique spots on earth. We sought to bury and forget what now affords us great pleasure and peace of mind. But have we realized the error of our ways in time?

In an essay entitled "Conservation" Aldo Leopold wrote: "Conservation is the bird that flies faster than the shot we aim at it. . . .The job we aspired to perform with a dozen volunteers is now baffling a hundred professionals. The job we thought would take five years will barely be started in fifty.

"Our target, then, is a receding one. The task grows greater year by year, but so does its importance. We begin by seeking a few trees or birds; to get them we must build a new relationship between men and land."

state and, in some cases, private land. Federal statutes provide for establishing natural areas on lands administered by federal agencies.

Montana's Natural Area System was created by the state legislature in 1974 under the sponsorship of Reps. Dorothy Bradley of Bozeman and Larry Fasbender of Fort Shaw. Bradley was subsequently named head of an advisory council which is helping state staff members develop rules for managing natural areas. The regulations will apply to state lands designated by the board and to private lands which are acquired with the consent of the property owner or as gifts.

(The Montana Natural Areas Advisory Council wants help from interested citizens. Anyone with a suggestion of a natural area that should be preserved may send a description to Bill Courter, Natural Areas Specialist, c o Department of State Lands, Helena, Mont. 59601.)

DOLLARS HELP

Wetlands can't all be acquired, but other financial incentives sometimes serve wildlife. Taxation laws can be written to benefit property owners who maintain their land as open space.

Conservation easements are another possibility, although it is considered a relatively expensive method of preserving open space, according to a report Colorado Gov. Dick Lamm wrote while serving in the Colorado Legislature.

The method involves the government purchasing a "negative easement" which prohibits the landowner from developing the property. The landowner is paid for the resultant loss of value. The landowner keeps title and can use the land any way that is not inconsistent with the rights conveyed to the government. Normally, the deeds creating the easements prohibit erecting structures, constructing roads, removing trees or other vegetation, or disposing of trash on the land.

PENALTIES TO PROTECT

Wetlands preservation in this country depends more on penalties than financial incentives. The Rivers and Harbors Act of 1899 prohibits dredging, filling, or obstructing navigable waters without a permit from the Army Corps of Engineers.

This program has been beset with problems from the start, however. Critics often point to the conflict inherent in an agency responsible for regulating an activity that it is also practicing.

The corps dredges and fills for navigation projects and some of them are "environmental atrocities," according to a government official quoted by the Conservation Foundation.

The corps is supposed to get recommendations from the FWS and then decide whether or not to issue permits. However, the Conservation Foundation says, manpower problems in both agencies result in thousands of applications which are never properly studied.

Another problem which has cropped up in regulation of wetlands has been controversy over Section 404 of the 1972 Federal Water Pollution Control Act amendments.

SECTION 404

Section 404 regulates the development of wetland areas. It requires the Corps of Engineers and the Environmental Protection Agency (EPA) to analyze wetland development plans before issuing or denying permits for such actions.

Critics of the law are now urging that Congress hold hearings on Section 404. They are asking that authority for the permits be transferred from the two federal agencies to state governments. They also want to restrict the permit program to a small rim of wetlands along major rivers and estuaries.

Conservation groups are defending the regulations. They feel that the permit program has the potential to stop unwise wetland development.

Only after waging a war against our wetlands have we come to cherish and respect these unique spots on earth.

"A brutal tug of war is underway in Congress which would decide the fate of much of our nation's remaining wetlands," Brock Evans, lobbyist for the Sierra Club, told **HCN.** Evans recommends writing to Congressmen and the President in defense of Section 404.

When the regulations were drawn up to implement Section 404, farmers and ranchers were worried that they would have to have a permit to plow their fields.

This is a misunderstanding, according to the EPA. "Normal farming practices are exempted from the permit requirement," says Steve Jones, a lawyer for EPA in Denver.

NO ADEQUATE PROGRAM

When the Conservation Foundation reported on the protection of wetlands in 1974, one of its marine ecologists said, "The fact is there is no federal wetlands program. What is operating is a patched together, gum-and hairpin sort of operation made up of various partial authorities — Corps' navigation, EPA's (Environmental Protection Agency) 404 Section, Fish and Wildlife's Coordination Act, a bit of water quality stuff.

"It is alive only because wetlands are sacred, thanks to citizen acceptance of scientific-wildlife findings. It is a long-term fad, and it's hard to say how long it will last."

The foundation ecologist's statement implies that these informed citizens have taken an active role as watchdogs over the nation's wetlands. Their role includes not only watching for notices of applications and demanding public hearings when necessary. It also includes watching for unauthorized dredging or filling and reporting it. Sometimes these citizens find that their own city government or a federal agency that should know better is the culprit.

The citizen can be assured that the corps has the right to deny permits if fish or wildlife factors outweigh other considerations. However, the corps must consider public and private needs for the project as well as several other concerns including flood damage prevention, recreation, and water supply.

OTHER PROTECTION

At all levels of government, a citizen can look to land use planning as a tool for protecting wetlands. The areas could be designated as state critical areas, open space, or protected through floodplain regulations against development.

WETLANDS INFORMATION

To further the goals of wildlife week, the National Wildlife Federation has free public information on wetland preservation. For a free color poster of the wildlife week photograph on this issue's cover, send a postcard to:National Wildlife Federation, Dept. NWM, 1412 16th St., NW, Washington, D.C. 20036. For a free teacher's kit, write to Dept. NWMT, in care of the National Wildlife Federation. U.S. Fish and Wildlife Service offices around the region and in Washington, D.C., can provide additional information.

Shorebirds near Vail, Colo. Photo by Jeff Clack.

Should you buy solar now — or wait?

by Joan Nice

Is the solar energy industry prepared to offer a reliable product that will save the consumer money?

Or should the smart consumer wait to buy a solar system, in expectation of lower prices, better technology, and companies with better established reputations?

An architect and an engineer interviewed by **HCN** had slightly different answers to these questions, but both agreed emphatically that every new building should be planned to include a solar system.

And they indicated that for most new homes, solar systems now available will work and will save the consumer money. Solar systems are less likely to save money when installed on existing homes, they say.

"If I were building a new house, I'd feel guilty if I didn't install solar collectors," says engineer Philip Stern, an investigator for environmental affairs in the Boulder County (Colo.) district attorney's office.

Richard Crowther, of a firm called Architects Group in Denver, Colo., said that whether or not a solar system is actually purchased now, every new house should be designed to accommodate a large, south-facing collector and a large, well-insulated container for heat storage.

Both men hesitated to recommend "retrofits," installing solar power devices on existing buildings.

Crowther, who probably has as much experience with solar energy equipment as any architect in the country, says "most of the time we recommend against retrofits" as not cost effective. He has completed six solar projects, has six under construction, and has six more in the planning stages. He estimates that only 5-10% of the homes in this country are good candidates for retrofits. The others would present problems which make a solar system either more expensive or less efficient — and therefore not competitive with fuels or electric heat. Such problems include weak roofs, roofs with the wrong angle or exposure, a chimney or trees blocking collector space, lack of heat storage space, and lack of space for proper insulation.

Crowther is more optimistic about the prospects for retrofitting commercial buildings, which often have large, unobstructed, flat roofs. Retrofits would probably pay on 30-40% of the commercial buildings in this country, Crowther estimates.

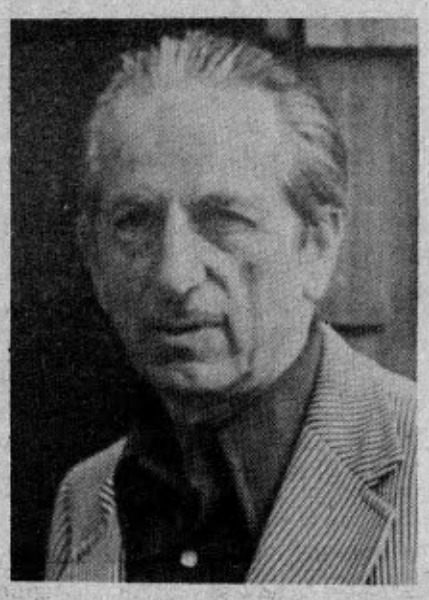
He says the question of whether or not it makes sense economically to buy a solar system now depends mainly upon architecture. In a typical building of the cheap-energy era, a solar system is almost always too costly, he says. If the building is designed or remodeled to make use of the sun and wind, however, then it may pay to add a solar system, Crowther says.

He claims a home's energy needs can be reduced by 50-70% without a solar system, by careful design. The house itself becomes a passive solar system. Hundreds of factors, including the home's shape, site, texture, color, and insulation are a part of designing that system.

(For more on Crowther's energy-saving ideas see the March 1976 issue of **National Geographic,** pages 392-393.)

Where Stern and Crowther differ is in the degree of caution they recommend in approaching solar energy companies.

Unless you are building a new house — wait, says Stern. "Time is on the side of the consumer." Stern has been investigating local solar companies for Boulder County and for the Metro-Denver district attorney's consumer units.



Dick Crowther — "It's a question of architecture."

"There's a lot of money to be made here," Stern points out. "And where do you find a consultant that doesn't have a conflict of interest? Anybody that knows anything about solar energy has gone into business."

Crowther admits that some deceptions are taking place in the industry, but says that he has found companies with sound engineering backgrounds which produce reliable equipment at a reasonable cost.

Some people say they are waiting to buy solar systems because the technology is in its infant stage. Both men interviewed by **HCN** said, however, that they didn't think the basic technology used by solar companies now would change very soon.

"I don't know of any new technology that has entered in," says Stern. "It's just old technology being packaged in new ways."

Crowther says that collectors now and in the future are going to take a large amount of space. As for storage facilities, "water and gravel are the simplest and most reliable sources — and will be for some time," Crowther says.

Some people say they are waiting for the price to go down. Crowther says that he's sure that mass production will bring some reduction in price, but that inflation may bring the price back up again. "And in the meantime, you've not had the benefit of using the system," he says.

NEW YARDSTICK

Solar system companies are careful to point out that the economic yardstick that should be applied to their systems is not the traditional one. The initial outlay for a solar system, which ranges from about $5,000 to $15,000, does not compare favorably with the initial outlay required to purchase an ordinary fuel-burning furnace. However, fuel from the sun is free, while fossil fuel and electricity costs are rising rapidly.

To compare solar and fuel-powered systems, one must look at the cost over the expected life of the system. (To roughly compare the cost of a solar v. the existing heat system in your home, see "Will Solar Power Pay?" box on this page.)

Consumers should scrutinize the people they're dealing with, says Rick Speed of Solar Technology Corp. "There are a lot of fast-buck artists in the business. But there are also a lot of small firms that are doing good things that need support."

Make a rough estimate
Will solar pay?

To roughly compare the cost of a solar system to the cost of your existing heating system, first add up the cost of your fuel projected over 20 years, which is the expected life of most collectors.

Then, roughly estimate the cost of a solar system. A guess can be made by figuring you will need about one-third of the floor space of your home in collector space (if you live in Denver or in a similar climate). Multiply the necessary collector space by an average price for installed solar systems — $17 a square foot or so. Then add about 25% of your 20-year fuel costs to the costs of the collector, because you will have to burn some fuel to supplement heat from the sun's rays. Comparing these two figures — 1) the collector costs plus auxiliary fuel costs and 2) the costs of your existing fuel projected over a 20-year period — should give you a rough idea about whether it would pay you to buy a solar system.

Keep in mind the limits of this general formula.

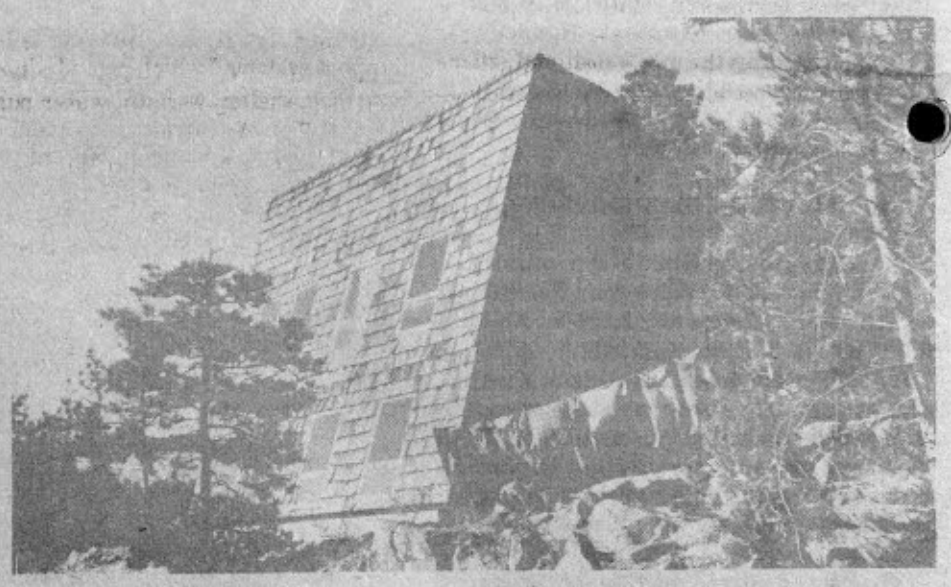
Some collectors on the market are cheaper and some are more expensive than $17 a square foot. Home design can vary heat demand dramatically. Some homes may need as little as one-fourth of their square footage in collector space and some may need as much as one-half. Different climates also change a home's heat demand.

The formula also ignores the cost of whatever maintenance may be required on the collector over its estimated 20-year life. Although most companies predict maintenance costs on their systems will be extremely low, no system we have reviewed is guaranteed for more than two years.

For a new home, one other additional cost must be added — the cost of a fuel-burning furnace to provide auxiliary heat to the solar system.

Topping off the complicating factors, is the difficulty of predicting how much fuel costs will rise over the next 20 years.

Despite its limitations, this formula allows you to make a rough calculation of your own situation, before you seek professional advice.



WALK-IN COLLECTOR. The unusual architecture of this home reduces the need for any kind of mechanical heating system — solar or otherwise. The large wall shown here faces south at a 65 degree angle. It collects so much heat from the sun near Gold Hill, Colo., that on clear days no auxiliary heat is necessary until the temperature drops below 10 degrees Fahrenheit. Note, too, the passive solar clothes drying system.

Build a collector
AERO solar workshop

Ready to do it yourself?

Some experts will put a hammer in your hand and give directions at a solar energy workshop in Billings, Mont., March 27 and 28.

Lee Johnson of **RAIN** magazine in Portland, Ore., and Ken Smith of Ecotope Group in Seattle, Wash., plan a discussion and slide show on solar energy utilization. Jack Park of Helion Company in California will discuss solar greenhouse construction.

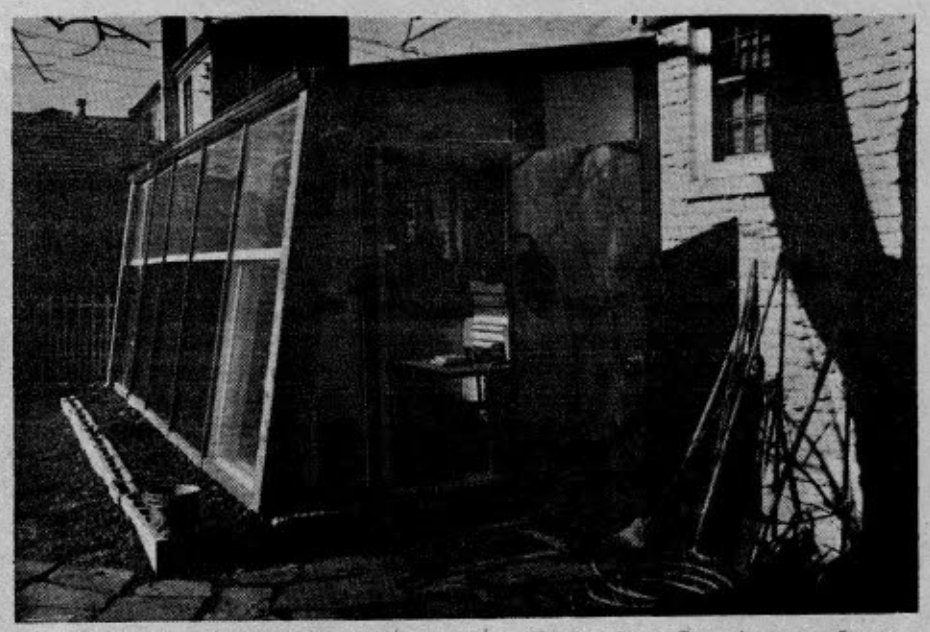
The talk will be followed by action. Participants will help build three solar water heating panels. If time permits, an air-heating solar panel will also be constructed.

The event is sponsored by the Alternative Energy Resources Organization, a non-profit communication group. It will be at the Billings Boys' Club, 20 South Broadway, Billings, Mont. Admission is $5 for both days, $3 for one day.

Johnson and Smith have already held similar workshops in Idaho and Washington.

For more information contact

← AERO
435 Stapleton Building
Billings, Montana 59101
(406) 248-1154



CONSERVATION GREENHOUSE. Solar Technology Corp.'s greenhouse attached to an existing home. The secret ingredient is energy conservation, says STC.

Solar Technology Corporation

Snug greenhouse today, 'life support' tomorrow

A structure which will provide both food and heat from the sun made its debut at the Denver Home and Garden Show last month.

The structure is designed and manufactured by Solar Technology Corporation of Denver. The firm has devised a greenhouse which captures the sun's heat and retains it through special energy conservation devices. Excess heat from the greenhouse can be used to supplement a home heating system. The structure can also be used as a home addition or as a solar sauna, says Carl H. Lehrburger, executive vice-president of STC.

Both Lehrburger and the company's president, Richard S. Speed, moved from environmental activism into the solar energy business. Both formerly worked against nuclear power in a group called Environmental Action of Colorado. Speed says he made the move when he was convinced they had won the nuclear battle.

"I didn't want to sit there kicking a dying dog," he said.

Speed and an engineering associate began the research which led to the development of the firm's patented Solar Garden unit in 1973. STC incorporated last spring and is now in full production.

Solar Gardens retain more of the sun's heat than ordinary greenhouses, Lehrburger says. The secret is a number of simple energy conservation devices: flat plate solar collectors at the base of the clear, south-facing wall; heat storage inside the greenhouse in large black barrels filled with water; double-paned windows; portable wall panels to insulate the glass portion of the greenhouse at night; and movable insulation curtains.

The cost, including installation, of a 100-square-foot Solar Garden attached to an existing building ranges from $945-$1,945. The low figure includes only the greenhouse shell. A shell with energy conservation devices and heat storage capacity would cost about $1,690, Speed says. The high figure, $1,945, buys an energy-conserving structure with storage — plus electrical subsystems to provide everything from auxiliary heat to automatic plant-watering devices.

For a minimum of $250 the company also offers sections with 32-square feet of floor space which can be added to the basic model to build a larger greenhouse.

Prices will be reduced for the do-it-yourselfer in about two weeks, when STC kits are ready, Speed says.

While it is possible to build free-standing greenhouses, Speed recommends against it. Using a house's south-facing wall as the north wall of the greenhouse allows heat exchange between the house and the Solar Garden.

STC figures that a 100-square-foot unit attached to an existing structure will collect about 128,000 Btu on an average January day in Denver. They claim the unit will retain a little over half of that heat — 66,000 Btu.

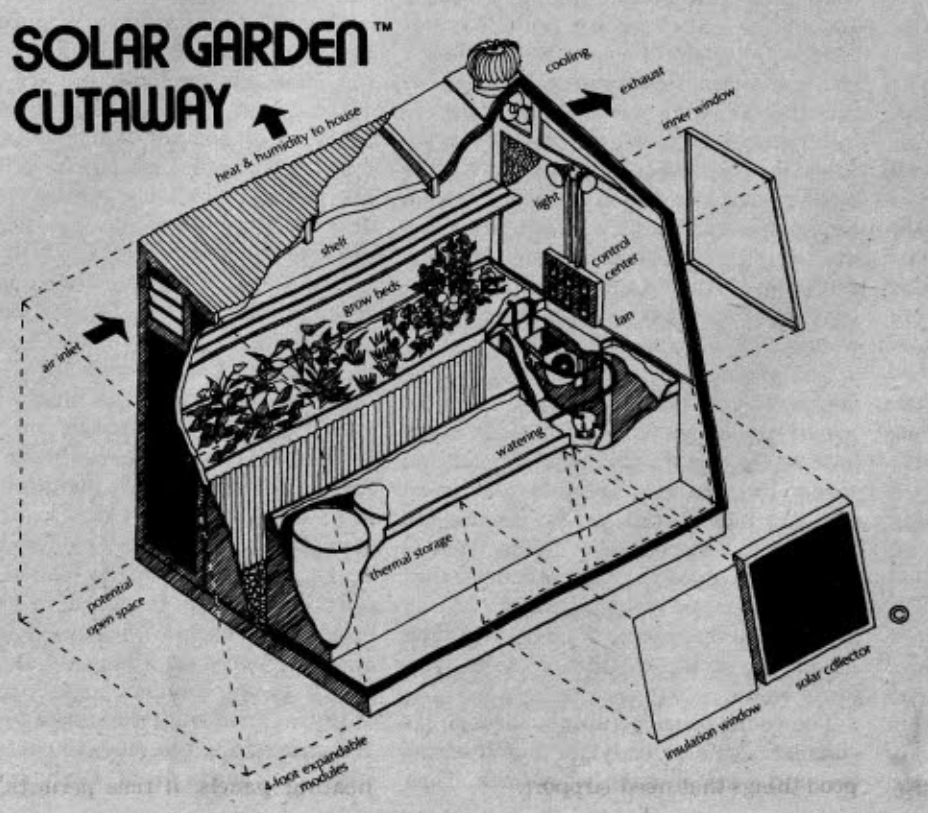
The company's products are guaranteed for one year.

Ultimately STC hopes to offer "solar life support systems," which provide inexpensive food, shelter, warmth, water purification, and waste treatment for individual homes. Household wastes could be used to grow vegetables and feed fish. Water could be recycled after processing in a solar still.

In the meantime, "we have to start building our houses correctly," says Speed. "Our Solar Garden is a miniature model of a house. If people would make houses walk-in solar collectors, they could probably fill their heating needs with only a small wood stove. The trick is cutting losses."

STC has installed three systems in Boulder, Colo., and one in Denver.

For more information, contact Solar Technology Corporation, 2160 Clay St., Denver, Colo. 80211 or call (303) 455-3309.



How to interrogate solar heating and cooling firms

One of the best signs for the future of commercial sun power is that consumers are starting to ask the right questions, says Philip Stern of the Denver and Boulder district attorneys' offices. Well-informed interrogators will eventually stop the fast-buck companies and reward reputable firms with increased business.

The following is a list of questions to ask before you buy a solar system. The list was prepared by one of the firms reviewed in our last issue, International Solarthermics Corp. of Nederland, Colo. The excerpts below are part of a copyrighted booklet prepared in 1975 by ISC entitled: "Hey Buddy. 'Wanna buy a solar furnace?"

—"Hire an independent professional engineer to advise you! An . . . engineer can help you evaluate performance claims and advise you about possible structural modifications your house may need.

—"Have your attorney check all contracts and warranties.

—"Investigate the solar heating firm with your local BBB (Better Business Bureau) and Chamber of Commerce.

—"Does your deposit go into escrow? Because demand is often greater than supply capabilities in this new field, it is usual for dealers to ask for 50% with the order and 50% upon delivery or installation. Determine if your deposit is either escrowed or bonded until delivery. If not, beware.

—"Be sure all costs are included. For example, in your new home, if half the basement is taken up by storage, half the cost of that basement (excavation, foundations, concrete, etc.) is part of the cost of that system. Similiarly, if the collector is on the roof, it must be framed at a 60 degree angle. That will cost $2,000 to $6,000 more than a standard 15 degree roof.

—"Does the system have blanket certification by your local building department?

—"Insist on seeing a product's liability policy from the manufacturer. Any reputable manufacturer will have a product liability policy from a major insurance company which protects him against harm to the public. . . .

—"Get a firm contract price for installation unless it is a do-it-yourself kit. This installed price should include building permit, electrical and all plumbing and sheet metal. If remodeling is involved, cost of repair to drywall, landscaping, etc., should be included. Be sure that glazing is included. . . .Since this can be a major expense, some firms may leave this 'for you to have done.'

—"Do-it-yourself kits. Since installation of any solar heating system includes a lot of labor, major savings can be effected by the do-it-yourselfer. But before you buy, get a set of assembly instructions. Be sure they are clear and easy to follow. Be sure of just what is included and what is not in the kit. For example, a rock storage system will not usually include the gravel since it is uneconomical to ship. Check the price of the needed quantity delivered to your site from the local sand and gravel company.

—"Check the required maintenance costs. A collector with thin plastic film covers, for example, may be expected to require total replacement every one or two years. A system using ethylene glycol (antifreeze) will have to have replacement of that fluid at definite periods.

—"Perform solar insulation. Good home insulation is a must if you're considering solar heating. At a cost of probably less than $700, it is much cheaper than engineering larger solar collectors or storage systems.

—"Check with your insurance agent. Be sure that your solar heating system can be included in your present homeowner's insurance policy. Find out if a price increase will be involved."

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Denver lawyer Kenneth J. Burke lists a few other pitfalls for the consumer interested in solar energy in a report entitled "Alternative Forms of Energy." Among the items which he says deserve attention:

—"The possible over-design of the solar system (making it too large for the job — and too expensive;

—"The need for and sizing of a back-up system;

—"The response of the local public utilities due to the need for a backup system, which may make full demands during peak load periods, yet not operate to produce revenues during other times;" (Will your rates go up, even though you're using less?)

—"Structural problems associated with the modification of the home or other structure housing the system;

—"Groundwater intrusion and soil problems (might affect underground solar equipment);

—"Water quality problems affecting collector and system performance;

—"The response of financial and mortgage institutions to what they may view as an 'overimprovement;'

—"The response of appraisers."

ENERGY BOOK

Richard Crowther and his associates have completed a book entitled **Sun Earth,** which includes information on natural energy systems and how to utilize them in a building. The 240-page book will be published at the end of April and will cost $12.95. For more information contact Richard Crowther, Architects Group, 2830 E. 3rd Ave., Denver, Colo. 80206.

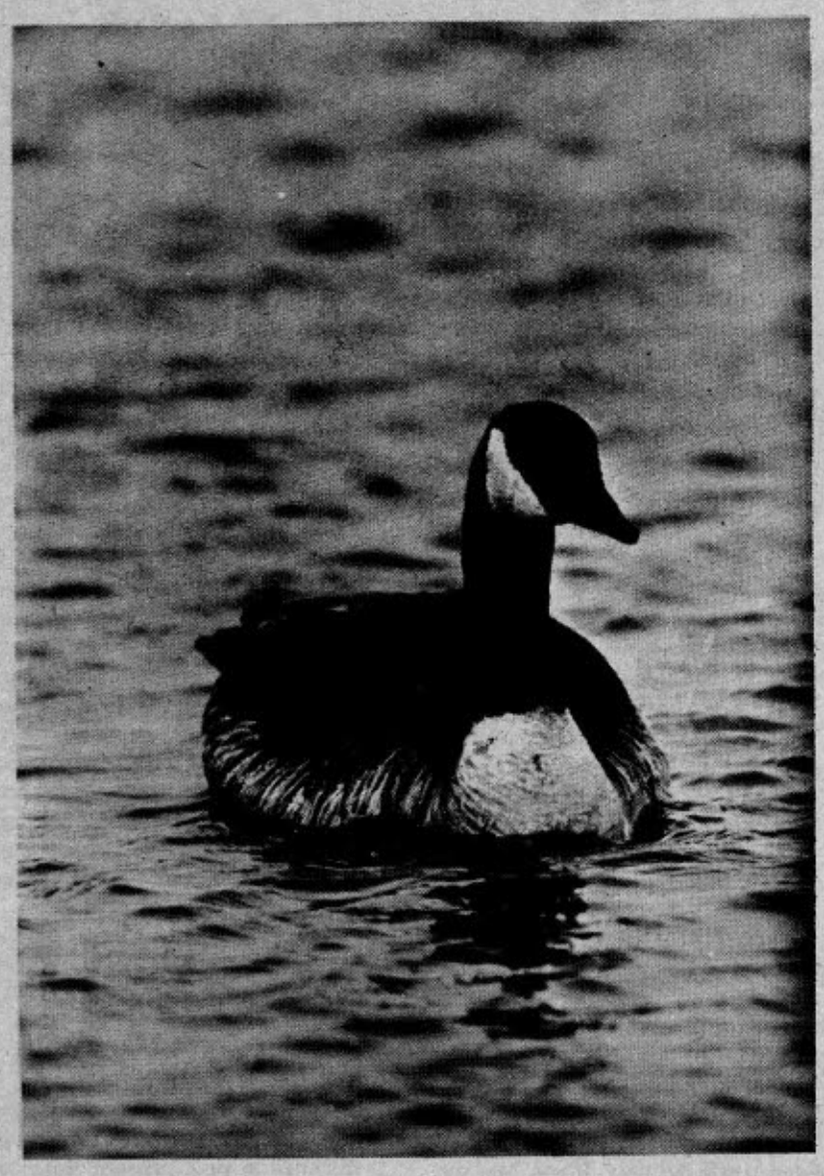

Photo by Tom Baugh

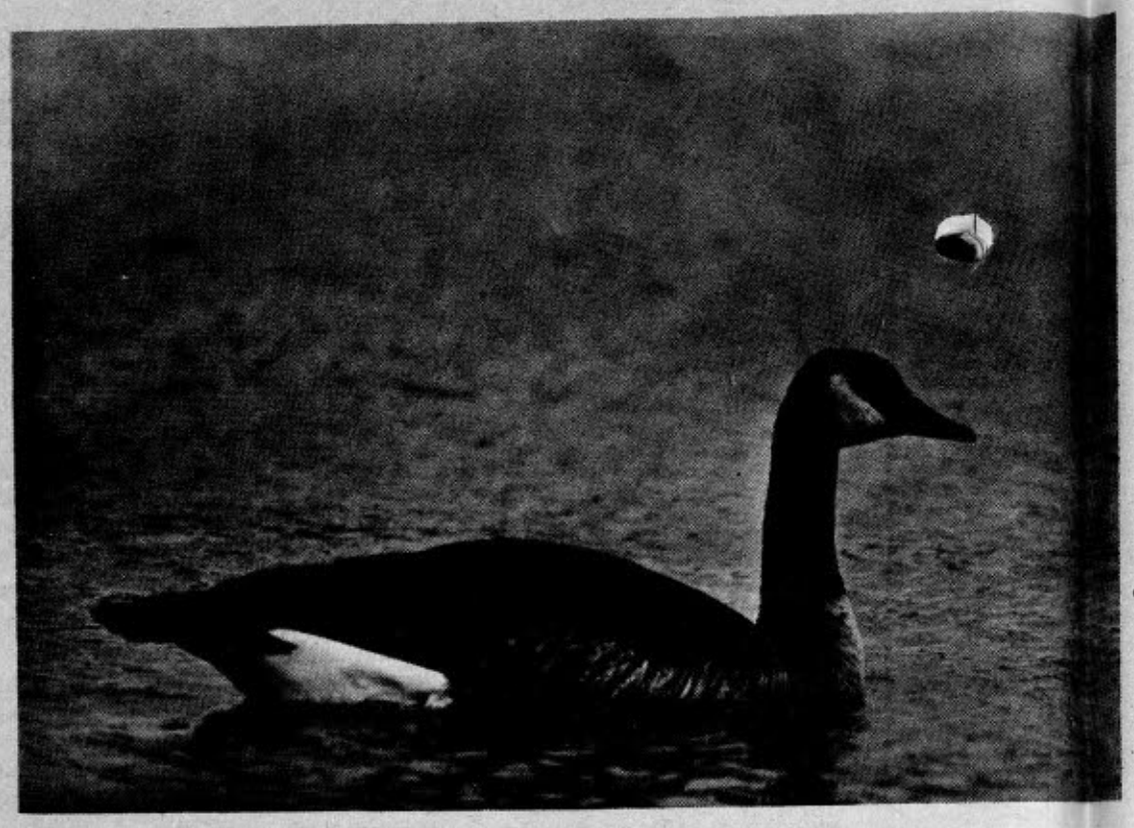

Photo by Tom Baugh

And when the dawn-wind stirs through the ancient cottonwoods, and the gray light steals down from the hills over the old river sliding softly past its wide brown sandbars — what if there be no more goose music?

—Aldo Leopold

Honking heralds of spring

by Sarah Doll

Few birds have worked their way into this country's collective conscience like the Canada goose. Subject of countless poems, songs, and paintings, this bird seems symbolic of what many people consider the human ideal. It is non-predatory, faithful to its mate and a good parent, strong, independent, intelligent, and has few bad habits. It is not the only North American goose (there are seven others), but it is by far the most numerous and best known.

There are 11 generally accepted subspecies of **Branta canadensis,** with varying coloration and size, but they all feature distinctive white cheek patches on a black head. The smallest is the cackling goose, about the size of a mallard, weighing two and a half to four pounds. The largest, the giant Canada, can reach 20 pounds. At one time it was believed extinct, but was rediscovered in the early 1960s.

The Canada goose is basically a grazing animal, with a bill adapted to snipping off grass stems. Toothed serrations, called lamellae, along the sides of the bill strain out food when the goose feeds underwater.

Geese are a little less specialized than ducks and swans. Their legs are positioned close to the center of the body, giving them good balance on land. They are strong swimmers and especially strong in the air, capable of flying 60 miles per hour and as high as 9,000 feet.

The geese usually pair off at the wintering grounds. Generally, the mating is for life, and breeding pairs show strong attachment to each other. After the northward migration in the spring, breeding takes place and nests are built. A small island or a muskrat house affords isolation and is the ideal nesting site, but Canada goose nests have been found everywhere — in haystacks, in trees, on rooftops, in the abandoned nests of other birds. Even rocky cliffs are not uncommon nesting sites, although these present a problem in getting the newly hatched goslings safely down to the water. Artificial nesting sites consisting of tires or washtubs elevated above the water have been successful in many areas.

The average clutch is five eggs. The female does all the incubating, while the gander stands guard nearby. After about four weeks, the downy chicks hatch. As soon as they dry, they are able to walk and run, and quickly start to feed themselves. The parents immediately guide them to open water, where they are safe from most predators. On the water, the goslings may be attacked by raptorial birds, but their instinctive ability to dive protects them fairly well.

The young develop rapidly through the summer, and are ready for flight around two and a half months after birth. Their plumage is not the most spectacular, but very well adapted and functional. The outer, or contour, feathers give a streamlined shape for flying, and shed water. Under these is a layer of down, small shaftless feathers that create a dead air space for insulation. By fluffing out the contour feathers, the dead air space is increased for additional warmth on cold days.

A month before the young are ready to fly, the rest of the goose population undergo a molt and totally renew their plumage. They become flightless for this period. The young start flying at about the same time their parents regain their flight powers, and migration follows.

The flying V's of southbound geese converge on four main routes, or flyways: the Atlantic, the Mississippi, the Central, and the Pacific. Each represents the safest route of travel with the most abundant food. The smallest subspecies, migrate the farthest. Cackling geese go from western Alaska to central California. Richardson's Canada geese, also a small subspecies, migrate from the Northwest Territories to the Gulf Coast and Mexico. The large Vancouver subspecies breeds in an area from southern Alaska to Vancouver Island, and most members don't migrate at all. The dusky goose, another large subspecies, migrates from southern Alaska to Oregon.

Hunters are the most important predator of Canada geese. Early settlers in North America used them extensively for food, and found that goose feathers made excellent feather beds and comforters. Goose grease was another item useful for cooking and for medicinal purposes. As market hunters for geese developed more efficient methods — for example, scattering whiskey-soaked grain on feeding grounds, resulting in helplessly drunken geese — inroads were made on their populations. Many of these methods are illegal today, and hunting is more strictly regulated. Geese are considered a "good" animal (like deer) that everyone, especially hunters, wants to protect.

It's well accepted that wetlands are necessary for geese, but it's hard to assess the total effect of man's tinkering with the environment on their populations. The goose has been willing to include more grain in its diet as grasslands under the flyways are plowed and planted. Sufficient wetlands habitat must be maintained for breeding grounds, as overcrowding causes many cases of nest desertion. The Canada goose has a bright future if we maintain a responsible attitude towards its habitat.

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Material for this article was drawn from **The World of the Canada Goose,** by Joe Van Wormer.

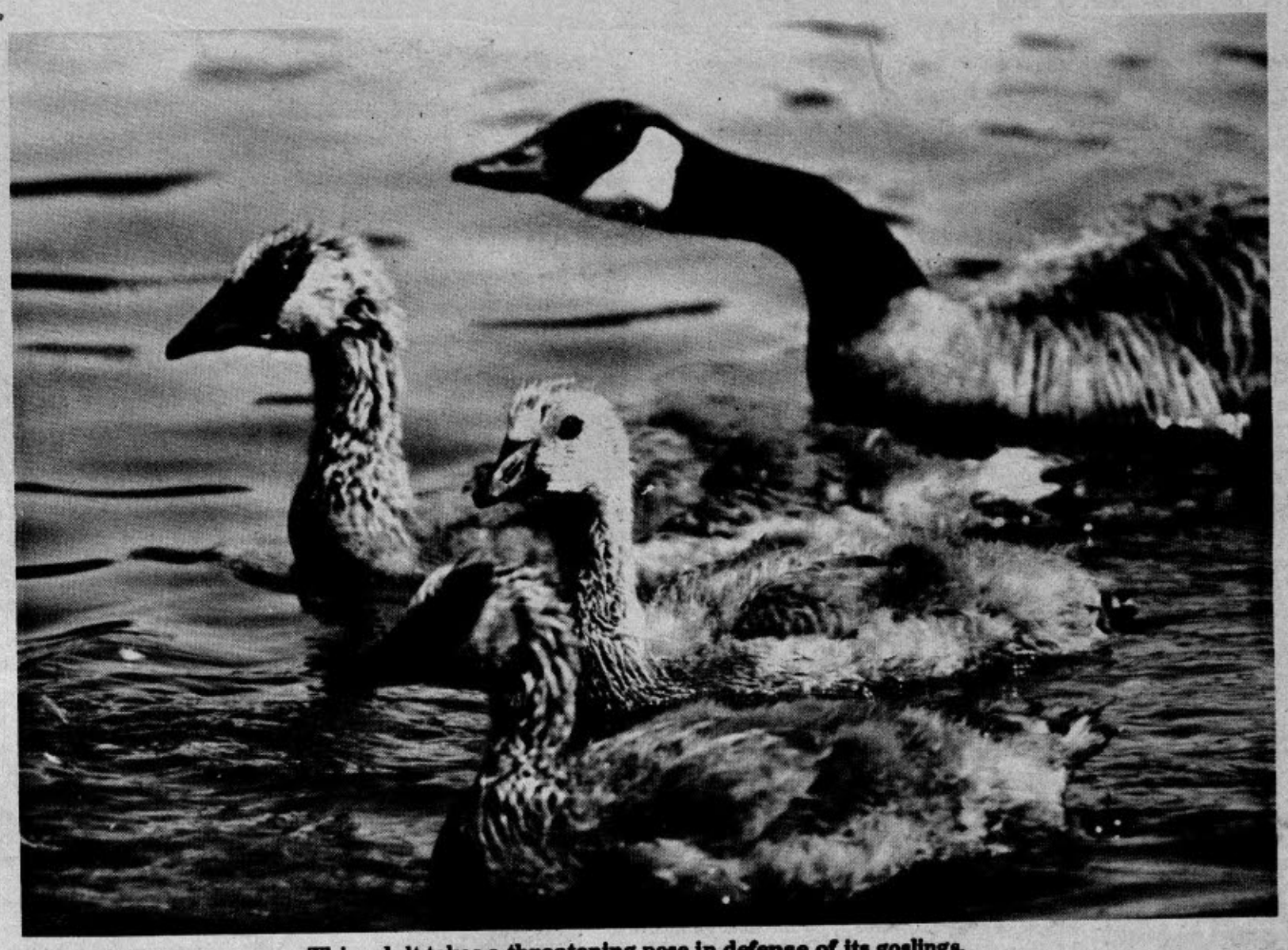


Photo by Tom Baugh

This adult takes a threatening pose in defense of its goslings.

Photo courtesy Colorado Game and Fish Dept.

This is a choice nesting site. It is close to the water and offers both cover and nest-building materials.

Photo by Tom Baugh

Reckoning from Washington

BUREAU CAPITALIZES ON INFLATION

by Lee Catterall

As Westerners eye more sagebrush prairie they want converted to farmland, the government bureau called upon to do the job is being called to account for not keeping its accounts straight.

The Bureau of Reclamation never has been immune from complaints of Easterners that its water projects are wasteful "porkbarrel" schemes for the Western congressmen who dominate the Interior Committees, which rule on such public land and water matters.

The latest jab comes from a House Government Operations subcommittee headed by Rep. William S. Moorhead (D-Pa.). His subcommittee last week reported the bureau has overestimated the cost of many projects and, in at least one case, planned to use the extra money to build new ones not authorized by Congress.

The bureau has taken the "limited" authority given it by Congress to change cost estimates because of inflation and "stretched it beyond recognition," the report charges.

The bureau is authorized by Congress to spend more money for a project than was originally planned when the money is needed to keep up with inflating costs of work and material, as long as it keeps Congress informed of the increases.

For example, if the government were building a billion dollar dam and, halfway through building it, the price of concrete and labor went up, say, five per cent, the bureau could go ahead and figure in the extra $25 million (five per cent of half a billion). It would tell Congress and the extra money would be routinely written into the federal budget.

However, the report says, that's not the way the bureau is doing it. Instead, it is figuring five per cent of the project's entire cost, including the part that's already been finished, and ending up with more money than it needs — double the amount in the example given.

After the Flaming Gorge Reservoir was completed in Wyoming and Utah in August, 1972, the bureau was still figuring the inflationary impact of building it into its cost estimate for the rest of a larger program of which it is a part. That resulted in a cost overstated by $14.3 million.

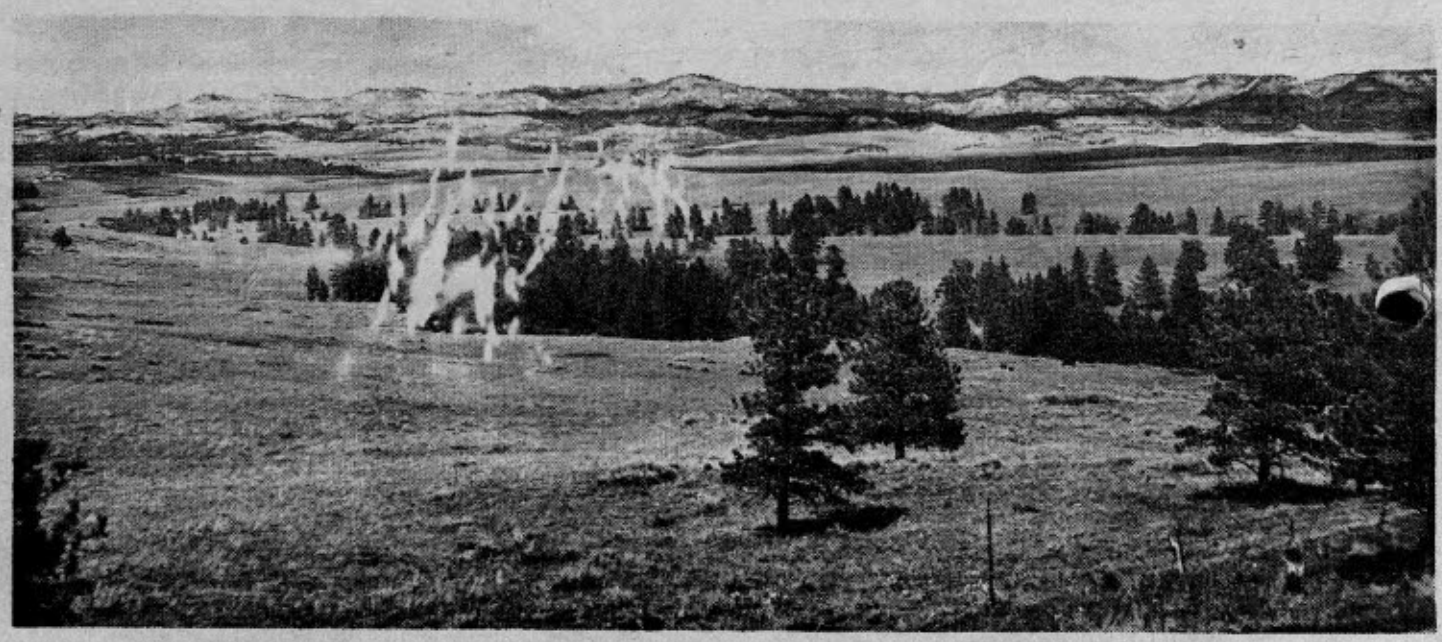
The bureau saw the same thing happening with other parts of the larger program, called the Bonneville Unit of the Colorado River Storage Project.

The report says the bureau came up with a clever plan to spend the extra money it had been promised by Congress; the bureau decided to use $45 million of it to irrigate part of the Ute Indian Reservation in Utah, called Leland Bench, although Congress had not said anything about irrigating Leland Bench.

Then the bureau rechecked its figures and found its arithmetic slightly off. It didn't have the money for Leland Bench after all. Only then did it decide it would need to ask Congress for the money.

The committee discovered no other Leland Benches, but Moorhead is no less angry. He says Congress is unable to make decisions on the bureau's projects if it is not given information it knows is accurate.

"Believe me, it is not esoteric, and it is not a detail," he says in the report. "We are concerned here with hundreds of millions of dollars and with questions of accountability and responsibility that are at the heart of government."



CROWS VOTE NEW TAX. The Crow Indians in Montana have voted to assess a 25% "business license" fee on coal produced on their reservation or from the Sarpy Creek mine in the Crow ceded strip. Westmoreland Resources — operator of the mine in Sarpy Creek — already pays a 30% severance tax under state law, and sees the Crows' tax as a political ploy to wrest control from the state, according to COAL WEEK. Above, the Sarpy Creek Valley, looking toward the Little Wolf Mountains.

Photo by E. L. Frost

ILLEGAL RECOMMENDATION SOUGHT. A member of the Department of Interior's Oil Shale Environmental Advisory Panel charges that the panel is being expected by two oil shale companies to recommend "an action that is not legal." Mrs. V. Crane Wright of Denver says, "Gulf Oil Company and Standard Oil of Indiana, lessees of Colorado federal oil shale tract C-a, do not have the legal authority to use vast off-tract acres of public land for dumping millions of tons of shale waste. Yet, all the studies and plans submitted to the panel to date insist on this unauthorized use of additional public lands."

COLO. ENERGY GROWTH TOO HIGH. The national growth rate in electrical use is now two per cent per year, but Colorado's will hold at eight per cent, according to a Colorado Energy Research Institute prediction cited in the **Denver Post.** "If nothing is done to reduce the projected demand, Colorado residents will certainly be faced with a continuing series of requests by utilities to construct additional generating capacity and raise rates," says the Environmental Defense Fund.

OIL IN COAL'S WAY. The expansion of Amax Coal Co.'s mine in northeastern Wyoming has been protested by a Denver oil man. Walt King of the Davis Oil Co. said that his firm has a producing oil well within the proposed mining area. King would like to see Amax mine around the well, but Amax's application calls for cutting off wells within the mining region.

SLURRY TO PIONEER? Northwest Pipeline Corp. wants to run a coal slurry pipeline from Gillette, Wyo., to Boardman, Ore., with a possible stop near Boise, Idaho, to unload fuel for the proposed Pioneer plant. An alternative route would cross Idaho north of Boise and by-pass Pioneer.

ENERGY 1976 HCN

energy news of the Rockies and Great Plains

ENERGY COMPLEX FEARED. The Sioux and Assiniboine Indian tribes on the Fort Peck Reservation and three conservation groups in Montana and North Dakota are protesting a proposed energy park just over the border in Saskatchewan, Canada. The Saskatchewan Power Corp. (SPC) is presently proposing a reservoir on the Poplar River to serve four 300 megawatt coal-fired power plants. But SPC also has plans for 3,900 additional megawatts of coal power, two gasification plants, and two ammonia fertilizer plants in the same area, according to a long-range plan cited by the groups. The site is just 2½ miles from the Montana border. The groups are asking Secretary of State Henry Kissinger to take action to prevent pollution from the complex entering the U.S.

MINE ESCAPES SCRUTINY. The state needs authority over clusters of industrial developments, such as the strip mines planned for the Powder River Basin, says a Wyoming official. The official, Blaine Dinger, is head of the state's industrial siting staff. The 1975 siting law covers plants and new industrial developments with an investment of $50 million or more. Coal mines, such as Atlantic Richfield's Black Thunder mine with an estimated investment of $47.6 million, have managed to avoid siting council scrutiny so far.

TAILINGS THREAT. Uranium mill tailings piles in the West are potential human health threats, according to a U.S. Environmental Protection Agency study. Radioactive tailings have been blown or washed away from disposal piles and now contaminate hundreds of acres of nearby land, the study says. EPA regional administrator John A. Green says the health danger comes from radium in the wastes which has a half-life of more than a thousand years.

TOP LEASE AREA. In 1973, about 9 out of 10 of all mineral leases, licenses, and permits on public lands in the U.S. were issued in the Rocky Mountain region. The region is composed of Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming. These figures are included in a recent publication of the Federation of Rocky Mountain States, "The Rocky Mountain Region: A Unity of Interests."

Commissioners deny vote on Pioneer plant

"All we are asking for is a free election. It's a hell of a way to act in a Bicentennial year," said Jon Robertson of The Committee to Put Pioneer on the Ballot. Robertson was referring to a decision by the Ada County Commissioners in Idaho rejecting a motion to put an advisory vote on construction of the controversial Pioneer power plant before county voters.

The commissioners offered as a reason for their decision: "... the coal-fired plant is an entity of regional impact and therefore a regional vote would be the only viable means of receiving a valid voter concensus on the issue." The plant would be in Ada County, but impact would be shared by Elmore and Canyon counties.

In a straw vote of Elmore and Canyon County Commissioners conducted by the **Idaho Statesman,** a majority favored holding advisory votes in their counties. Also, Gov. Cecil D. Andrus has endorsed the advisory ballot.

The Committee to Put Pioneer on the Ballot, an Ada County organization, has gathered 6,000 signatures encouraging a vote in the county. The organization doesn't plan to give up the effort in Ada County.

The Ada County commissioners told the **Statesman** they firmly believe the utility building Pioneer — Idaho Power Co. — should be required to meet all county land use ordinances prior to construction. This would allow citizen input, they say.

Ada County Deputy Prosecuting Attorney Jim Harris, however, told the commissioners that the Public Utilities Commission, under state law, can override any county land use decision.

The Pioneer issue is now before the Public Utilities Commission.

There is presently no move to request a regional advisory vote on the plant; the Pioneer question is being taken up county by county.

Robertson says his citizens organization will "stick behind" any other counties if they hold Pioneer advisory votes. But he told the **Statesman** his group is strictly an Ada County organization and would not circulate petitions in adjacent counties.

Wyoming's first siting hearing

'Quality of life' crucial at Wheatland hearing

by Marjane Ambler

The region's first comprehensive hearings on the siting of a new power plant concluded last week in Wheatland, Wyo., after eight days of testimony and cross examination from more than 50 witnesses.

The Wyoming Industrial Siting Council says it will reach a decision in early April on the proposal for the 1,500 megawatt coal-fired plant. The siting act which created the council was passed by the 1975 Wyoming Legislature.

Most of the testimony at the hearing focused on specific legal or technical questions of economics, engineering, or sociological statistics. But in their closing remarks, both the applicant and the opponents' attorney brought the council's attention to the philosophical question of whether or not "quality of life" should be a criteria for deciding if the plant poses a threat.

Don Sherard, an attorney for the Missouri Basin Power Project (MBPP), said it should not. "There is no reference in the statute (siting law) to 'quality of life.' Quality of life is in the eyes of the beholder," he said. He added that every council member would have different ideas about what it means, and that specific impacts should be considered instead.

Dave Palmerlee, attorney for the Laramie River Conservation Council, disagreed. He said, "The whole force and direction of the siting act is quality of life... That's what it's for." He pointed out that the council had the option to deny the permit if it felt the plant would threaten quality of life. (The Laramie River Conservation Council (LRCC) is a local group comprised primarily of farmers and ranchers which formed to oppose the power plant.)

Under Wyoming's siting act, the council has several options initially. It can grant the permit, grant the permit with conditions, or require further study. After the additional studies are complete, the council can deny the permit if it believes the plant will pose a serious threat.

In his plea for immediate issuance of a permit, Sherard said that delaying the project by one year would cost the applicant — and ultimately the consumer — $52 million. In addition, he said, "any major delays would throw the whole mitigation effort out of focus" since efforts now being taken to prevent serious impact are directed toward the currently proposed schedule for construction. Population projections were based upon a starting date of April 1 of this year. Sherard indicated the town of Wheatland had already made some irreversible commitments to capital expenditures.

MBPP is a consortium of power groups that includes Basin Electric Power Cooperative of Bismarck, N.D.; Tri-State Generation and Transmission Association of Northglenn, Colo.; Heartland Consumer Power District of Madison, S.D.; Missouri Basin Municipal Power Agency of Sioux Falls, S.D.; Lincoln Electric System of Lincoln, Neb.; and the Wyoming Municipal Electric Joint Powers Board. This board includes the towns of Cody, Lusk, Wheatland, Guernsey, Fort Laramie, Lingle, Torrington, and Pine Bluffs.

Throughout the hearing, MBPP witnesses emphasized the project's efforts to avoid seriously impacting the community. They also cited long-term benefits of a higher tax base, money coming into the community, and energy.

LRCC, Powder River Basin Resource Council, and Platte County Farm Bureau, were intervenors opposing the project. They attacked the reliability of the studies done by the applicant and the inadequate consideration given to the impact on the agricultural economy. The Sierra Club also opposed the plant at the hearing, concentrating its attack upon the effects of air pollution.

VOLUMES OF STUDIES

Mayors of both Wheatland and Guernsey, a town to the north, said they had had "excellent cooperation" from MBPP. MBPP, through guarantees and underwriting, will assume financial responsibility for between $15 and $19 million for development of community facilities, schools, housing, and roads, according to testimony by Lloyd Ernst, manager of MBPP Wyoming operations. To prevent housing shortages in Wheatland, MBPP is building a subdivision for construction workers' trailers and assisting with other housing.

Sherard said that some 19 volumes of studies had been prepared for MBPP to assist in planning.

Several witnesses speaking for the opponents of the plant challenged the validity of the socio-economic studies.

Charles Scott, an expert witness for LRCC, pointed out the need for contingency plans. He said that if the population projections were off by just 10%, 287 more school children would come than expected. The difference in school operating costs alone could be nearly half a million dollars based on this year's budget, he said.

Palmerlee said MBPP's own witnesses used terms such as "rough estimates," "arbitrary assumptions," and "ballpark figures" when referring to the population projections. The figures project that

(Continued on page 15)

HEARING CONFERENCE. The Wheatland hearing breaks while attorneys for both parties confer with the siting council. Pictured (left to right) are Richard Stacy, Ed Whitehead, Marilyn Kite, Claire M. Olson, Randy Cox, Donald Sherard, and David Palmerlee. Seated is Steve Freudenthal, legal counsel for the siting council. John Troughton, chairman of the siting council, is on the far right of the picture. Stacy, Whitehead, Olson, and Sherard were attorneys for the Missouri Basin Power Project. Palmerlee was the attorney representing the Laramie River Conservation Council. Kite is the attorney for the siting staff, and Cox represented the Powder River Basin Resource Council.

The HCN Hot Line

energy news from across the country

DO IT THEMSELVES. The federal energy agency is so unsure that Congress will accept its plans for private nuclear fuel enrichment that it has begun plans to expand its own monopoly on enrichment of uranium. Energy Research and Development Administration (ERDA) sources indicate that Congressional objections — particularly from the Joint Committee on Atomic Energy — make the expansion of federal enrichment most likely, according to a **Rocky Mountain News** report.

ICELAND IN A QUANDRY. Iceland is currently weighing the pros and cons of massive development of its hydroelectric and geothermal power potential. While some Icelanders would like the economic boost, "there are deep misgivings over this potential energy bonanza among Iceland's 218,000 inhabitants," reports the **L. A. Times**. "Icelanders are wary of developing a resource in a virtually barren country that many fear may end up benefitting foreigners (for their investments of capital) at the expense of their own society." The country's economy is currently based upon fishing, sheep-raising, and dairy farming.

OIL SHALE, COAL GAS PERIL. The President's Council on Environmental Quality says improving the efficiency of oil development is more environmentally desirable than shale oil and synthetic fuels production. The council's sixth annual report states that oil production "is less polluting than shale oil and liquids from coal," adding that "strong implications for the focus of energy research and development emerge from the comparison."

NEW NUKE RULES. The Nuclear Regulatory Commission has issued new operating rules for 17 nuclear power plants in 11 states. The new rules — which will double safety margins — were drawn up after discovering that the safety of the main cooling system was "less than expected."

FEDERAL IMPACT AID. President Gerald R. Ford has asked Congress to authorize $1 billion of financial assistance to help states and localities cope with energy development impact. The grants, loans, and loan guarantees would be earmarked for roads, schools, water, sewage disposal, and other community development needs. Rep. Teno Roncalio (D-Wyo.), attacking Ford's bill, says that in contrast, the impact aid bills proposed by the Congress "are far less restrictive, give far more authority to state and local officials, do not require a new Washington bureaucracy, do not require annual approval of Congress, and do not end arbitrarily in 13 years."

NO PROTESTS ALLOWED. President Gerald R. Ford has proposed legislation to speed construction of a natural gas pipeline from Alaska's North Slope to the lower 48 states. The bill would give Ford power to select one of two competing routes early next year, with a limited time allowed for Congress to reject the choice, according to the **Wall Street Journal**. "The legislation provides that if Congress approved the route selected by the President, legal challenges by environmental groups or anyone else would be prohibited," says the **Journal**. One route is proposed to parallel the Trans-Alaska oil pipeline, while a competing proposal would cut across Canada.

ENERGY SPENDING EXPANDED. President Gerald Ford's new budget proposes expanding the energy budget to $10.4 billion while the defense budget is set at $112.7 billion. Of the $2.6 billion that would be spent on research, development, or demonstrations of energy technology, $1.6 billion would be spent on nuclear power, $304 million on fusion, $116 million on solar energy, and $91 million on energy conservation, according to an **Idaho Statesman** story.

EFFICIENT LIGHT BULB. A Placentia, Calif., inventor, Donald D. Hollister, has come up with a new light bulb design that uses 70% less energy and may last 10 years longer than existing incandescent models. His new bulb is the same size and shape as ordinary light bulbs, but it is actually a small fluorescent light filled with mercury gas. Hollister came up with the idea eight years ago, but without a recognized energy crisis it was "a solution looking for a problem," he was told. Now the federal Energy Research and Development Administration is reviewing his hand-made models.

RADIATION INCREASE. The Environmental Protection Agency has proposed increasing the present permissible dose of radiation to the public by five times. "EPA wants to raise the dose from five millirems to 25 millirems," says the Environmental Policy Center (EPC). Low level radiation can cause cancer and genetic damage. EPC feels an increase in the permissible dose could endanger public health.

Regional legislative review

Colorado considers siting, tax bills

Colorado legislators are considering an impressive battery of environmental bills this session. Issues range from a utility siting act and a severance tax to a bill protecting solar collectors from neighbors' trees.

Already three important environmental bills have been killed, while none have passed. The majority Republicans in the Senate Judiciary Committee lined up against the Democrats to defeat a bill which would have required nuclear power plant operators to be financially liable in the event of a nuclear accident. The House Business Affairs and Labor Committee canned a beverage container bill on a 9-2 vote. The bill would have required a five cent deposit on all beer and soft drink containers sold in Colorado. The House Transportation and Energy Committee voted down a bill that would have penalized the purchasers of new cars which get less than 20 miles per gallon. The bill would have taxed poor-mileage cars and offered cash bonuses to buyers of fuel-efficient models. The vote was 6-4.

Environmental bills still alive in the General Assembly include the following:

—**HB 1253, an energy facilities siting act.** So far attempts by electric utilities to weaken the bill in committee have failed, according to the Colorado Open Space Council. The bill sets up a board of county commissioners, state agency heads, and citizens to rule on siting matters. Strengthening amendments are expected to come on the House floor. The committee has given HB 1253 a favorable recommendation.

—**HB 1109, a severance tax.** The Colorado House Finance Committee has approved a bill to impose a four per cent severance tax on mineral production in the state. The bill taxes gross production, but Republicans tend to favor a tax on net profit instead. A gross production tax could turn a marginal operator's profit into a loss, say the Republicans. Gov. Dick Lamm and his fellow Democrats say the gross production tax is "a real tax, not an empty gesture." There is already a state scaled severance tax (up to five per cent) on oil and gas, but no severance tax on metallic minerals, coal, and oil shale.

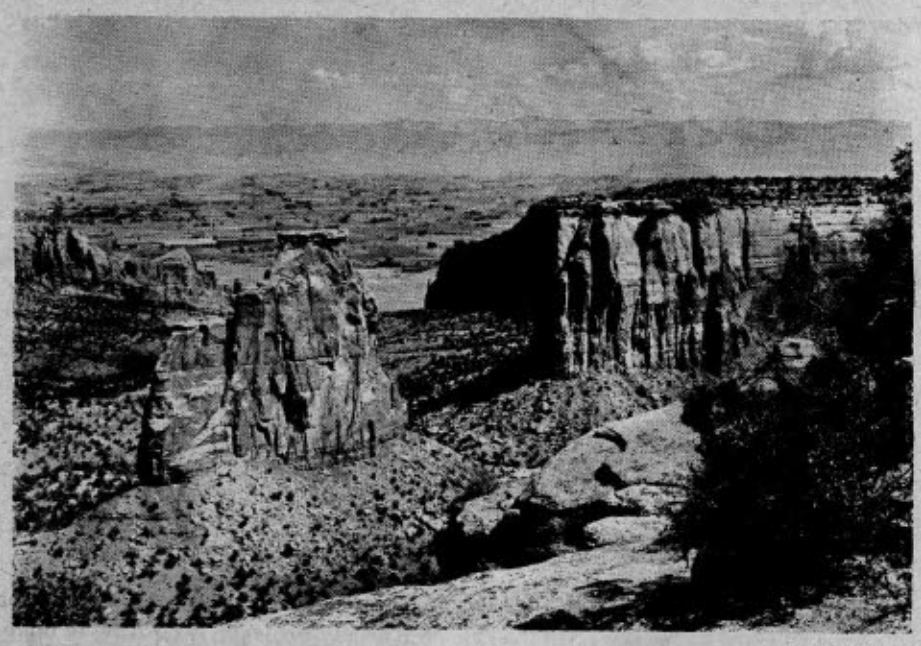
—**SB 38, solar collector shading.** The Senate is considering a bill that would label trees that block solar collectors a public nuisance. If trees or shrubs in a neighbor's yard block a collector, the efficiency is cut down. The Senate gave initial approval to the bill last month, but said the bill wouldn't apply to trees planted before the collector was installed. Last year, a bill was passed allowing a solar collector owner to purchase a solar easement from neighbors.

—**HB 1065, a mined land reclamation bill.** The House Local Government Committee approved this bill unanimously and it is now in the Appropriations Committee. The bill strengthens Colorado's 1973 law by upgrading reclamation standards increasing funding for administration, and adding enforcement powers. The bill still is not as strong as conservation groups would like but it's a definite improvement over existing law, they say.

—Other bills of interest include HB 1174, a tax on fluorocarbon (aerosol) use; SB 59, a bill allowing for conservation easements by creating a separate development right; and HB 1192, a bill allowing for differential taxation of open space.

COLORADO BULLETIN

For a detailed summary of Colorado environmental legislation, subscribe to the Colorado Open Space Council's weekly **Legislative Bulletin.** A $10 subscription will buy the **Bulletin,** a year-end analysis of legislators and bills, and helps support the COSC lobbyist. Send $10 ($5 for COSC members) to COSC, 1325 Delaware, Denver, Colo. 80204. COSC sponsors an environmental legislation luncheon every Tuesday noon in Room B in the Capitol basement. Bring a sack lunch and help COSC form legislative policy. For more information call (303) 573-9241.



SUITABLE POWER SITE? Pictured above is Colorado National Monument with irrigated farms in the Colorado River Valley near Grand Junction, Colo., in the background. Conservation lobbyists in Denver hope to amend a proposed energy facilities siting bill to give the state power to protect environmentally sensitive areas and prime farmland — particularly irrigated land. Under present state law, each county has the power to develop its own standards for dealing with energy siting.

South Dakota legislature adjourns

Oahe vote, no— guarded on Garrison

The South Dakota legislature considered two important bills this year concerning controversial irrigation projects — one on the Oahe project in South Dakota, and one on the Garrison project in North Dakota. The Garrison resolution passed, the Oahe bill was killed in the Senate.

By a House vote of 60-3 and a Senate vote of 25-2, the legislature approved a resolution urging South Dakota Gov. Richard Kneip and Atty. Gen. William Janklow to monitor the impact of North Dakota's Garrison Diversion on South Dakota. The officials were urged "to take whatever action they deem appropriate to safeguard the health and welfare of the people of this state from any possible adverse effects of the Garrison project."

One sponsor, Rep. Jerry Radack (D-Yankton), says it will prevent "North Dakota from dumping polluted flood waters into South Dakota." Janklow says the resolution gives him no new powers or duties; all it does is tell him that the lawmakers want the situation carefully watched.

Sponsors of the bill are fearful that Garrison Diversion promoters may dump polluted return flows into the James River which flows into South Dakota. The original Garrison plan was to drain waste water into a river that flowed into Canada, but the Canadians are fighting that proposal.

The Oahe proposal, which passed the House before dying in the Senate, called for an advisory referendum vote in 15½ counties affected by the project. Opposition to Oahe has been steadily growing among farmers in the project area. The bill would have allowed local residents to advise the U.S. Bureau of Reclamation on whether or not to continue with the controversial project.

Wyoming legislators refuse to raise coal taxes

Gov. Ed Herschler attacked Wyoming legislators for "favoring industry and special interests," and accused them of leaving "the doors open to serious problems" for Wyoming. He was especially critical of the two legislative bodies for not passing any legislation that would raise the coal tax in the state although several measures were introduced. He accused the House of "bowing to the strong coal lobby and to partisan interests."

The session adjourned March 1.

"We can work with the forces of development, and one way to do this is through an equitable tax situation, so that we may have some real influence over the changes the development brings; or we can continue to listen to the voices of company lobbyists threatening to leave us high and dry if we tax them.

"Some of these companies which are claiming to be hurt the most by our severance taxes could buy and sell Wyoming, were it available," he said. "And I can guarantee you that once our minerals are depleted, and the large companies have no more reasons to be interested in Wyoming, we will be lucky to hear them say goodbye."

Herschler rarely is so outspoken on environmental issues, and Wyoming environmentalists assessed the speech as one of the strongest statements he had made against the coal industry's power in the state. Observers commented that Herschler's anger was perhaps prompted, at least in part, by the awkward position the legislature had forced him into.

After recently affirming his belief that Wyoming state regulations would properly protect the state, he withheld his support of a federal strip mining bill.

However, not only did the legislature subsequently refuse to raise any coal taxes, it also cut the budget for the Department of Environmental Quality.

Herschler commented, "I am neither an environmentalist nor an industrialist, and I want to see the continued orderly development of this state. But if we are going to assure that our environment is properly maintained and protected, we must have a strong and effective Department of Environmental Quality."

The legislature also cut funds for travel and technical assistance for land use planning, which was enacted statewide during the 1975 legislative session. The travel money was needed to assure participation and cooperation with local planning groups, he said.

Pointing out the importance of the coal tax proposals, Herschler said coal will put more impact on Wyoming than any other industry.

At the Industrial Plant Siting Council hearings in Wheatland after the session, the head of the local mental health center was asked about the 1976 legislature's responsiveness. The psychologist, Dr. Gary Payne, said he thought the Missouri Basin Power Project had been more responsive and aware than state government.

Three environmental lobbyists were asked to assess the session for **HCN.** Colleen Kelly, executive director of the Wyoming Outdoor Council, said she felt the coal industry had lobbied harder than ever before.

Bart Koehler, also lobbying for the Outdoor Council, said he thought the session reflected a blacklash in the Senate where senators were overwhelmed by last year's successful environmental legislation.

Speaking as the lobbyist for the Powder River Basin Resource Council, Lynn Dickey was also very critical. She pointed out that North Dakota, Arizona, and Montana all have coal taxes higher than Wyoming's. Wyoming has a severance tax of four per cent, an ad valorem tax of about 26 cents per ton, and an impact tax of two per cent, she said.

Vote comes soon on parks mining bill

The House Interior Committee is expected to consider in late March the bill outlawing mining in national parks. The bill has been "weakened considerably," according to Chuck Williams, Friends of the Earth national parks representative. Only four subcommittee members of 25 showed up for the final subcommittee markup. A "crippling amendment" was added which allows existing mines to be expanded although no new mines can be added, Williams said. Subcommittee members from this region who didn't attend the crucial markup session included Reps. John Melcher (D-Mont.), Teno Roncalio (D-Wyo.), Allen Howe (D-Utah), Steve Symms (R-Ida.), and James Johnson (R-Colo.). At stake are Death Valley National Monument, Glacier Bay National Monument and Mt. McKinley National Park in Alaska, Crater Lake National Park in Oregon, and Coronado National Memorial and Organ Pipe Cactus National Monument in Arizona. Williams suggests that anyone interested in the bill write to their Congressmen on the Interior Committee or to Rep. James A. Haley (D-Fla.), who is chairman. The Senate has already passed a similar bill.

In other action, environmentalists have filed suit to compel the Interior Department to take steps to protect Death Valley National Monument from mining. The suit was filed by the Sierra Club Legal Defense Fund, Friends of the Earth, and George Service, a leader of guided expeditions into Death Valley.

'Family' plans meeting in Glacier Park

The Glacier National Park superintendent and the Flathead National Forest supervisor agree the "worst thing we can do is get excited." But the two are calling meetings with other agencies to try to figure out what to do about the Rainbow Family, which has announced that it will set up camp for 5,000 to 15,000 "family members" in the national park this summer. This may be more people than all the campgrounds in the park can hold, according to Park Superintendent Philip Iversen. The area they plan to camp in is fragile. The park service previously refused to let large groups of Boy Scouts camp there. The Rainbow Family has already sent out announcements of the meeting.

Ranchers fight ranchers on reservoirs

Ranchers squared off against ranchers in Buffalo, Wyo., recently in what is becoming a familiar confrontation when reservoirs are proposed. A ranchers' corporation has asked the Bureau of Land Management (BLM) for authority to inundate 1,164 acres of land for a reservoir for irrigation. But other area ranchers opposing the Powder River Middle Fork Reservoir point out that at least half of the water will be used by industry, and neither of the firms involved are willing to say how the water will be used. Roger Wilson, a member of the Powder River Basin Resource Council, questioned how the draft environmental impact statement could be written until the use is determined. Many people are assuming that two gasification plants are being contemplated by Atlantic Richfield and Carter Oil. Another rancher, Jim Harlan, said, "They can shut the river off. It scares me. This is my whole life." Harlan, who was quoted in the **Sheridan Press,** said there are no minimum flow regulations in the state to protect him. The draft environmental impact statement also says many prehistoric camp sites will be inundated.

Regional forester Bill Lucas retires

After waiting until the major roadblock to Forest Service approval of Beaver Creek ski development was out of the way, Rocky Mountain Region Forester William Lucas has retired. Lucas, 59, told a Denver newspaper that the timing of his decision was affected by Colorado Gov. Dick Lamm's announcement recently that he was removing state objections to approval of a Forest Service special use permit for the ski area. Lucas had served as head of the five-state Rocky Mountain region since July 1970 and boasts of 38 years of government service. The Rocky Mountain region includes Colorado, Wyoming, South Dakota, Nebraska, and Kansas. He regards as notable regional achievements during his period as regional forester: support of Colorado mountain counties in land use planning as exemplified by the results at Beaver Creek; the snowmobile trails program on the Medicine Bow National Forest in Wyoming; the helicopter logging project on the Black Hills in South Dakota; and development of Wyoming's Mountain Men Trails Program. He was considered a formidable opponent of wilderness preservation by many conservationists.

Water Board plans 'crippled' by action

"Denver's Water Plans Crippled" read the headline on the **Denver Post** March 4 after a key vote in the U.S. House Interior Committee on the Eagles Nest Wilderness proposal. The committee rejected 29-7 an Eagles Nest Boundary plan that would allow Denver to divert 170,000 acre-feet of West Slope water to the East Slope where the city lies. The sponsor of the wilderness bill, Rep. James Johnson (R-Colo.), was accused of subverting the objectives of the Wilderness Act by using it to block Denver's claims to West Slope water. Johnson said two reasons he opposed diverting the water were 1) the need for about 170,000 acre-feet of water on the West Slope if oil shale development proceeds as proposed and 2) the increase in salinity of the Colorado River if water is diverted from its West Slope tributaries. A Denver Water Board official said that if the city doesn't get the Eagles Nest land it wants, it will have to divert the water with an expensive system of pumping and collection facilities. The electric energy to pump the water would equal the amount of power needed to serve a city half the size of Denver, he said. Water board lobbyists intend to try again on the floor of the House. The Senate has already passed a companion bill that is slightly more acceptable to the water board. The Senate bill includes East Meadow Creek, which conservationists view as a critical area. It was deleted from the House bill.

TWO WHOOPERS MISSING

Sandhill cranes will soon be returning to Idaho. Many of the large, gray birds are now in Colorado. But two of the six whooping crane young they "adopted" aren't with them, and U.S. Fish and Wildlife Service employes fear they may have died. Neither have been confirmed alive since they left Idaho last fall, and one left with its foster parents in a snowstorm. Four have returned to the Monte Vista National Wildlife Refuge area, about 160 miles southwest of Denver. The six were part of an experiment last May when 14 eggs were taken from nesting whoopers in the only surviving flock in the world, which summers in northern Canada. The eggs were taken to Grays Lake National Wildlife Refuge in Idaho and placed in the nests of sandhill cranes. According to a ROCKY MOUNTAIN NEWS story, the parents have treated the whoopers like sandhills. "That has meant disciplining away the whooper tendency to head for water in moments of danger. Proper sandhills head for high grass, and the parents have laid down that law," the story said. The young whoopers now stand a fourth taller than their 40-inch high foster parents. The key question now is what the whoopers will do at breeding season — will they find their fellow whoopers or interbreed with sandhills? The U.S. Fish and Wildlife Service has asked that Western Slope residents of Colorado report if they see a large white bird in the midst of gray sandhill cranes. Photo of sandhills courtesy of Idaho Fish and Game.

Both sides try to revamp timber law

In the wake of two court decisions restricting clearcutting, both timber interests and conservationists interested in reform have introduced bills. The Monongahela decision in the Fourth Circuit Court (see **HCN,** 10-10-75) and the Tongass Forest decision in the Ninth Circuit both based their decisions on the 1897 Organic Act.

The timber lobby and its supporters would like to overthrow the Organic Act, according to the **Sierra Club National News Report.** Sen. Ted Stevens (R-Alaska) has introduced a bill to exempt Alaskan forests. Rep. Roy Taylor (D-N.C.) has introduced interim bill (HB 10364) which allows the Forest Service to continue the timber management practices which have been barred by the courts until an overall reform bill is passed. The Forest Service is also expected to introduce its own reform ideas.

Concerned professional forest experts and representatives of environmental organizations have helped draft the National Forest Timber Management Reform Act of 1976. It is being introduced in the Senate as S. 2926 by Sen. Jennings Randolph (D-W.Va.) and in the House as HR 11894 by Rep. George Brown (D-Ca.).

Dr. Arnold Bolle, forestry professor and former dean of the University of Montana School of Forestry, has helped draft the Randolph bill. Clearcuts, in the Randolph bill, would be restricted generally to not over 25 acres and could not be located within 1,000 feet of another clearcut made within 10 years.

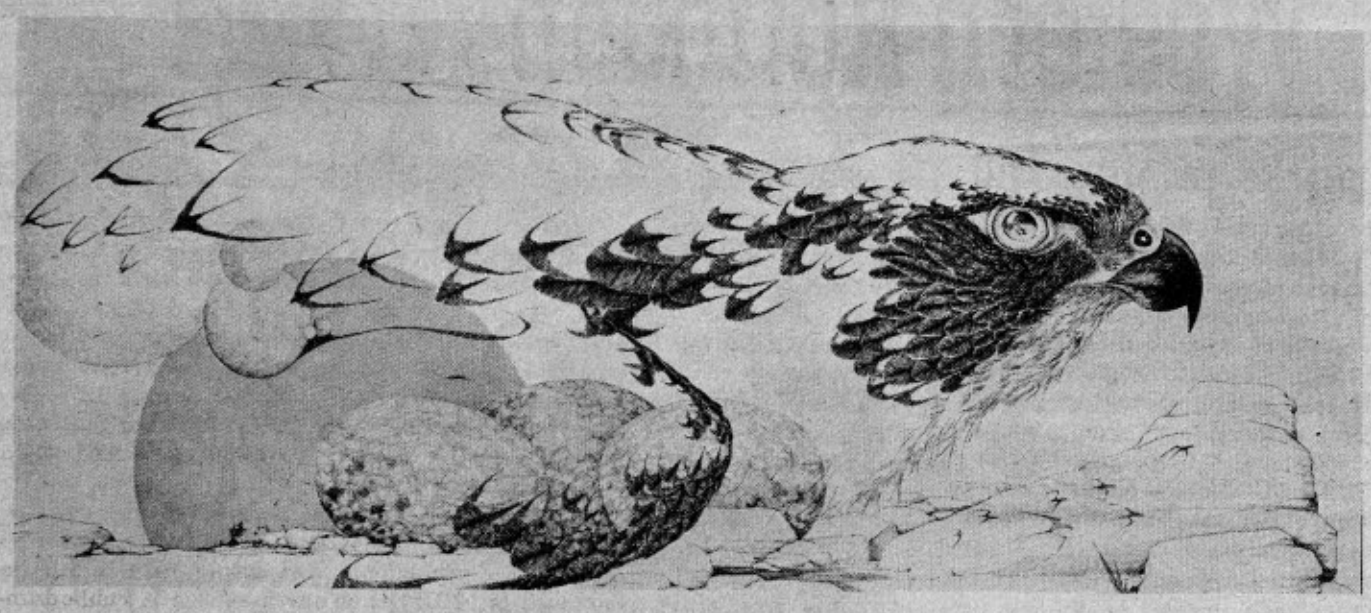
Overharvesting would be prevented by management right down to the local ranger district level, according to Bolle as quoted in **The Missoulian.** This would be done by requiring the Forest Service to formulate a multiple use-sustained yield plan for each national forest. This would assure that more timber wasn't cut than could be replaced.

Another section was written into the bill, at Randolph's insistence, to protect eastern hardwood forests from being replaced by faster growing conifers under Forest Service management.

Public review of the forest plans is required. Future Forest Service timber contracts are limited to three years in the proposed legislation.

The agriculture committees in both the House and the Senate are trying to block the reform legislation, according to the Sierra Club. Sen. Hubert Humphrey (D-Minn.) and Rep. Tom Foley (D-Wash.) are prepared to introduce a bill which would allow timber to be harvested from the national forests without benefit of any firm legislative safeguards, the club says.

More information on the legislative situation is available from the Coalition to Save our National Forests, which has been formed to support the Randolph-Brown legislation. The coalition's address is 1425 H St., NW, Room 714, Washington, D.C. 20005.



ART TO AID LIVE ONES. "Peregrine Falcon" by artist Peter Parnall. Prints of this color painting are being sold to raise money to save this endangered bird. For details, see the story below.

Duck hawk's fate linked to wetland

The peregrine falcon, a majestic hunter famous for its swift swoops after quarry and magnificent flight, is tied to the fate of our wetlands. As the nation's swamps, potholes, sloughs, and marshes have been destroyed, the peregrine has disappeared from the American scene.

Environmental contamination from the pesticide DDT has been a major cause of the bird's downfall, but wetland habitat loss is an equally important factor.

The peregrine — or duck hawk — feeds on waterfowl found in the wetlands. "A diving peregrine is a hurtling wedge of streamlined feathers, its feet lying back against the tail and wings half closed," says a U.S. Fish and Wildlife Service writer. "At such speeds it delivers a fierce blow to the prey with half-closed foot, the usual method of disabling or killing its prey."

In 1973 there were only 14 active nests in the Rocky Mountains, from which only three young were fledged. In the contiguous 48 states, southern Canada, and western Mexico only 65 active nests remain.

To combat this downward trend, recovery teams have been set up in the eastern U.S. and in the Rocky Mountain region. The Eastern team must start from scratch, since no active peregrine eyries are known in the region.

The Rocky Mountain team plans to focus on improving breeding success. Eggs from pairs with a history of unsuccessful nesting because of the DDT problem will be replaced with eggs produced by captive peregrines. Releasing captive-produced young in unused Rocky Mountain eyries is a future management option.

Much of the captive breeding and other valuable research crucial to the peregrine's survival has been conducted by Dr. Thomas Cade and his associates at the Laboratory of Ornithology at Cornell. To raise money for the laboratory and future peregrine research, world-famous bird artist Peter Parnall has donated the painting above entitled "Peregrine Falcon" to the program. One thousand signed and numbered color prints of this painting are being offered to contributors.

For $55, plus $3.50 shipping and handling charge, a contributor will receive Parnall's "Peregrine Falcon" and a one year membership in the laboratory. To order your print, or to receive more information contact: The Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, N.Y. 14853.

Clarks Fork to start plan

Montana and Wyoming residents of the Clarks Fork River Basin will meet Wednesday, March 24, at Powell, Wyo., to outline their ideas for an environmental quality plan for the basin. The meeting will be held at 10 a.m. at Northwest Community College.

Members of the Clarks Fork Study Teams for the Yellowstone Level B study have prepared position papers for the meeting. According to Paul Shore, assistant study manager, other residents interested in the future of the basin are welcome to attend.

The Lower Clarks Fork reservoir proposal will be discussed by Frank Trelease of the state engineer's office. Shore says this is the only reservoir in which there is local interest. Power development on the Clarks Fork will be discussed by a representative of the Bureau of Reclamation. Shore says power dams were proposed 20 years ago and don't look feasible at this time.

Following this meeting, the Clarks Fork and the Wind-Big Horn study teams will be combined and won't meet again until May. The Tongue-Powder team will also meet in May.

HCN Bulletin Board

LOONEY LIMERICKS
by Zane E. Cology

A hunter took to the bog
Expecting to find goose and frog
But where he'd once shot
Was a big parking lot
And the best he could bag was his dog.

DAM FIGHTERS CONFERENCE

The Environmental Policy Center and the American Rivers Conservation Council have scheduled a dam fighters conference in Washington, D.C., on April 3-4. The get together of conservationists fighting destructive water development projects is scheduled to coincide with House and Senate Appropriations Committees' hearings so that lobbying can be dovetailed with the conference. Conferees will share strategies and ideas. For more information call or write Brent Blackwelder or Bill Painter, Environmental Policy Center, 324 C St., S.E., Washington, D.C. 20003, (202) 547-6500.

MIDDLE FORK TIME EXTENDED

The deadline for comments on the draft environmental impact statement (EIS) on the proposed reservoir on the Middle Fork of the Powder River in Wyoming has been extended to March 25. The reservoir would be used by energy companies and irrigators. Copies of the EIS are available from the BLM, Casper District Office, P.O. Box 2834, Casper, Wyo. 82602. Send your comments to the BLM at the same address.

YOUTH CONSERVATION CORPS

The Wyoming Department of Education will accept applications from Wyoming youths aged 15-19 to participate in the Youth Conservation Corps up until March 26. The purpose of the program is to accomplish conservation-oriented work while helping young people understand the value of the natural environment. The program runs for eight weeks in the summer, with pay from $66 to $88 per week plus room and board. The camps are conducted by the U.S. Department of the Interior, U.S. Department of Agriculture, and the Wyoming Recreation Commission.

GRAND CANYON WORKSHOPS

The National Park Service will be holding six public workshops on a River Management Plan for Grand Canyon National Park. Input from these meetings will be used to prepare a river running management plan for the Colorado River and an environmental statement on the proposed plan. Meetings sites: March 23 — State Office Building, Salt Lake City, Utah; March 24 — Denver Foothills Ramada Inn, Lakewood, Colo.; March 29 — Community Building, Grand Canyon Village, Grand Canyon, Ariz. For more details write: Bruce W. Shaw, National Park Service, Grand Canyon National Park, Grand Canyon, Ariz. 86023.

GREENHOUSE CONFERENCE

On April 4-6 the University of Arizona's Environmental Research Laboratory will host a workshop entitled "Solar Energy: Fuel and Food." The workshop will cover the utilization of solar energy in greenhouses and integrated greenhouse-residential systems. Solar energy systems will be on display at the conference. Participation fee (registration, copy of the proceedings, and some meals) ranges from $55 to $65. For more information contact Dr. Merle Jensen, Environmental Research Lab, Tucson International Airport, Tucson, Ariz. 85706 or call (602) 884-2931.

EIS ON KAIPAROWITS

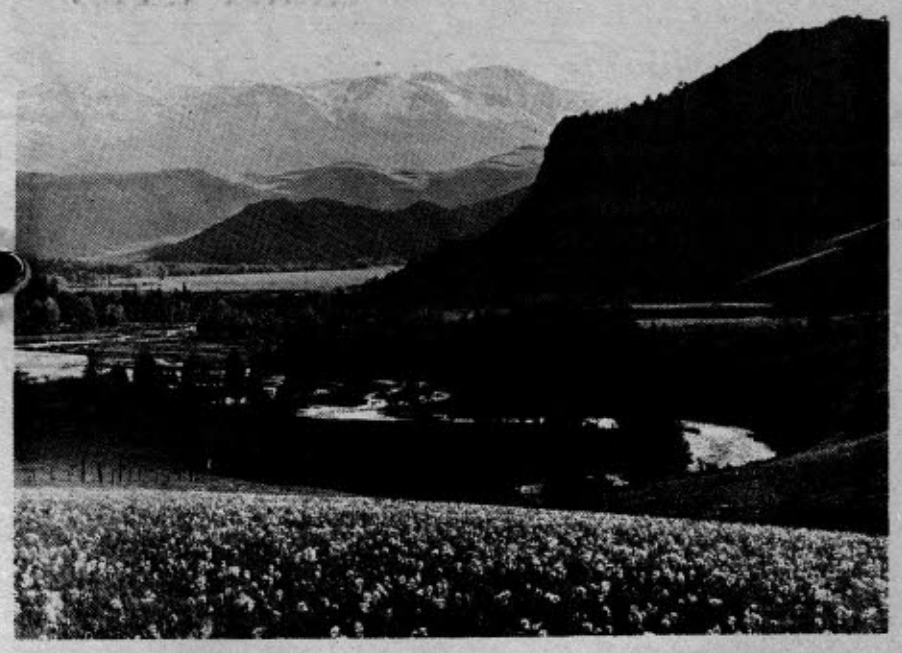
The final environmental impact statement (EIS) on the proposed Kaiparowits power plant in southern Utah was issued March 4. The 3,000 megawatt coal-fired plant is being opposed by conservationists because of the impact of air pollution on the national parks and monuments. For a copy of the final EIS write to the Bureau of Land Management, Federal Building, 125 S. State, Box 11505, Salt Lake City, Utah 84111. Interior Secretary Thomas Kleppe has less than a month to decide whether to approve the plant.

Eavesdropper

environmental news from around the world

HOLE FOR ISOLATED PLANTS. A Ford Administration sponsored loophole in the Senate version of the Clean Air Act would allow major polluters in isolated areas to avoid investing in air pollution control equipment for 10 years. Pollution dispersal methods would be allowed during the interim period. The National Clean Air Coalition fears that this amendment would give the affected industries additional time to convince Congress to allow them to use intermittent controls on a permanent basis.

BLM ORGANIC ACT MOVES. The Senate passed the Bureau of Land Management (BLM) Organic Act which provides a statutory base for the agency. The bill would require the Interior Department to conduct an inventory of BLM property, according to Land Use Planning Reports. The BLM would be required to prepare land use plans for natural resource lands, giving priority to the designation and protection of areas of critical environmental concern. Similar legislation is now in the House Interior Subcommittee on Public Lands.



SUNLIGHT BASIN. Sunlight Creek flows through this basin and into the Clarks Fork of the Yellowstone. The need for reservoirs in this area will be one of the things considered as basin residents develop their preferred plan for water use. Photo by Lynn Bama.

Report from Alaska

by Gregory Capito

The environmental implications of the Trans-Alaska Pipeline project have generated tremendous concern. However, the socio-economic effects have been largely ignored. And nowhere has energy-related growth had a more serious impact than in the city of Fairbanks.

In 1973 this Alaskan community had a population of only 19,000. By 1975 the number had skyrocketed to an estimated 35,000. This 84% increase in population has caused serious demand and supply problems.

One of the most critical shortages is housing. For example, in August of 1975 a simple efficiency apartment rented for $330 per month, a furnished one-bedroom for $388, and a two-bedroom for $600. During this same year, the vacancy rate was less than two per cent. As the housing situation worsened, pipeline workers signed up for classes at the University of Alaska to utilize Fairbanks dormitory facilities, much to the consternation of school officials and legitimate students.

An analysis of food prices showed a staggering 12.5% increase during 1975. According to the Bureau of Labor Statistics, the nation as a whole experienced only a 6.5% increase.

As expected, prostitution and commercialized vice also skyrocketed, with 16 complaints filed during 1974 and 68 in 1975, for an increase of 325%. Public drunkenness and disorderly conduct are commonplace on city streets.

Due to more traffic, more ice fog, and more inexperienced drivers, the number of traffic accidents escalated by more than 40% during 1975 for an estimated dollar loss of $2 million. Deteriorating air quality, a disrupted school system, chaotic phone service, and urban sprawl complete a community profile of Fairbanks, a 20th century Alaskan boom town.

It is disconcerting for long-time residents to witness the demise of their community. For while private industry is largely responsible for the disruption of their lifestyle, it is the residents who must ultimately bear the hidden costs of growth.

Yellowstone Basin Level B study

Water policies to start at local basins

by Marjane Ambler

Many residents in the Missouri River Basin of Montana, Wyoming, and North Dakota are now being asked to wrestle with a problem that has harassed bureaucrats for years — determining water use priorities.

—How many more acres of land should be irrigated in the next 30 years in this river basin?

—How much water will be required for the energy facilities which will be supplying the energy for the added irrigation and [illegible]ential use?

—How do we weigh the non-monetary benefits of keeping water undeveloped for wildlife or for recreation against the dollar benefits of developing it?

—In whose backyard or pasture will the next reservoir be built?

—Is there enough water to supply only our own needs? Should we refuse to allow our water to be used by energy companies which will be sending their electricity outside this area?

When groups as varied in their interests as irrigation districts, Chambers of Commerce, coal companies, and environmental organizations meet together to explore these questions, their individual answers are bound to differ radically.

However, study leaders for the Yellowstone Basin Level B Study hope that in the local river basins in the three state area, these divergent groups will be able to work together and compile a plan for water use priorities in their areas.

The Missouri River Basin Commission (MRBC) has been charged with answering such questions as are listed above for the Yellowstone Basin and related coal fields. The study is part of its plan for water development in MRBC's 10 state jurisdiction. The Level B study is the commission's way to share this responsibility with local people.

As the energy industries scramble to get w[illegible]r for their facilities, the MRBC realizes that local people might have their own ideas of how much water should go for this relatively short-term use and how much should be allocated for more long-term needs.

Work by the individual study teams for each basin is to be completed by the end of November of 1976. There are seven study teams. In Wyoming, there are two — the Wind-Big Horn-Clarks Fork and the Tongue-Powder. In Montana, the Wind-Big Horn-Clarks Fork, the Tongue-Powder, the Upper Yellowstone, and the Lower Yellowstone. The North Dakota study team is looking at all the tributaries west of the Missouri.

When the basin study team reports are compiled by the Level B management team, they will be sent to the Missouri River Basin Commission. The plan will be informational, not an authorizing document, according to Paul Shore, assistant study manager in charge of Wyoming.

COULD DEAUTHORIZE PROJECT

"We'll end up with some sort of compromise, but for once we have the opportunity to put together what we'd like to see. If we flub, it's our own damn fault," Shore said.

He explained the impact the study might possibly have on federal and state decision-making. Although the MRBC has no power to veto projects, it has established credibility in Congress since its creation in 1973, he said. If a federal agency asks for funding for a project which does not have the MRBC's blessing, then the agency will have a difficult time explaining its justification, Shore said.

Although the MRBC is composed of both state and federal agency representatives, it has much less influence on decisions made at the state level, according to Shore. He explains that this is because state legislation is less complicated, and legislators tend to believe they can make their own decisions rather than relying upon the MRBC's recommendations.

If local people working on the Level B study recommended against a particular project in their plan, and if the three state management team agreed, the MRBC could ask Congress to deauthorize a project, Shore explained.

Local input is essential to determine how much water should be preserved for future uses, Shore said. "Perhaps there isn't any surplus water at all in the Big Horn," he says, as an example. The people in the basin might believe it is all necessary for potential irrigation projects, instream minimum flows, and municipal growth.

In addition to the input from the meetings being held throughout the area, Shore is utilizing questionnaires which he sends to land owners. A questionnaire in the Clarks Fork Basin, for example, revealed that land owners generally support additional irrigation in the basin but are opposed to most other types of development. These results will be used by the task force in preparing its plan.

HIRED CONSULTANTS

The management team has hired a Chicago consulting firm, Harza, Inc., for $105,000 to do an energy study which will also be used as baseline information for the Level B study.

Harza was commissioned to investigate energy use and to make energy production projections. The firm will determine what economic constraints there are on the use of Yellowstone Basin coal in the international market. This will be used as the theoretical highest level for energy development for the basin, assuming that business won't do anything that isn't economical, Shore said.

Then the firm will determine the theoretical lowest level of energy development by figuring how much coal is needed to supply the energy needs of the basin.

"There's nothing sacred about the results of Harza's study," Shore said. "But it will give us limits about how much coal development we should be worried about," he added.

Other background data provided to the task forces will include an analysis of Indian water rights, an update of information on needs for agricultural water, and instream flow data.

STUDY MANAGERS

For further information about schedules for study team meetings, contact the assistant study managers in your states:

Wyoming: Paul Shore, Northfork Star Route, Cody, Wyo. 82414.

Montana: Keith Corrigall, c/o Dept. of Natural Resources, Water Resources Division, 32 S. Ewing, Helena, Mont. 59601.

North Dakota: Donald Ohnstad, 601 East Bismarck Ave., Bismarck, N.D. 58501.

Wheatland hearing

(Continued from page 11)

Wheatland's population will double within three years.

While commending MBPP for its efforts to help plan for impact, the Wyoming Industrial Siting Commission staff testified that MBPP population projections are "suspect."

STAFF STANCE STARTLING

They asked that a monitoring system be set up prior to approval of the permit. The monitoring system would assess impact as it progressed. If set up with an enforcement mechanism, it would assure that there would be less of a time lag before steps were taken to deal with problems.

Staff members recommended that the permit not be granted until more information was available in four different areas, including monitoring. This strong stance apparently startled many people in the audience.

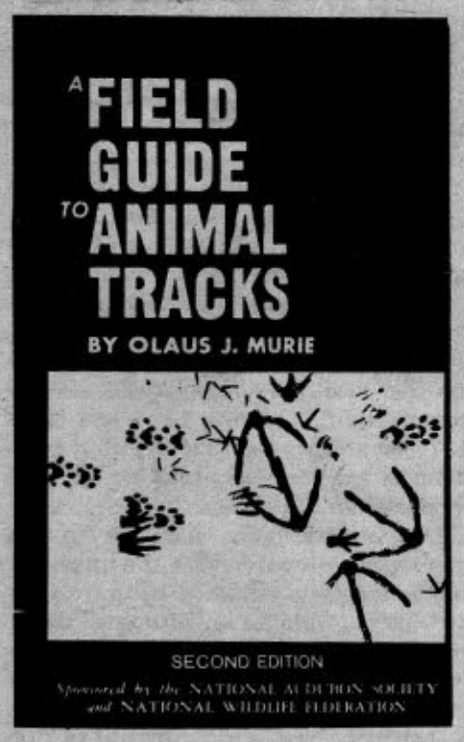
John Troughton, chairman of the siting council, reminded the audience, however, that the staff recommendations are not binding on the council and will be given the same weight as the testimony of other witnesses. The council is the decision-making body, and the staff serves it.

The staff also recommended requiring additional information on dam design, transmission lines, and pumping tests to assure an adequate water supply. A reservoir is part of the proposed project.

Several LRCC members testified about negative effects on agriculture that they expected. The effects included loss of crop land to transmission lines, to the plant itself, and to the proposed reservoir. Inflated wage scales and lack of available capital would also hurt the agricultural economy, they said.

Sherard countered in his closing remarks that the plant would have a positive impact on agriculture by providing needed power.

HCN Books



A FIELD GUIDE TO ANIMAL TRACKS, 2nd ed., by Olaus J. Murie, Houghton Mifflin Company, Boston, 1975. $4.95, paper cover, 375 pages. Illustrated by the author.

Review by Peter Wild

How often we've all walked in the woods for the better part of a day without seeing wildlife. Were we hiking in a biological desert, or were the animals hiding, watching our awkward ways? The truth is that most creatures fear and flee us; many move about while we're asleep. Yet the signs of their activities are all around, clues that can tell the stories of their daily lives, if we know how to read and interpret the evidence.

For 25 years Olaus Murie worked as a field biologist for the federal government. After retiring, he directed The Wilderness Society. Though his base was Jackson Hole, Wyo., he gathered material on the mammals of North America from the jungles of Mexico to Alaska's ice fields. First published in 1954, his **Field Guide To Animal Tracks** is an authority for naturalists. Now revised and reissued in a convenient paperback with covers that defy destruction, it can be the handy trail companion of both laymen and specialists wishing to sharpen their awareness of wildlife.

Murie covers virtually all the feral mammals from Mexico to the Arctic Circle. Each section deals with the members of a specific family, their distinguishing features and habits. Each compares and contrasts drawings of their tracks in perhaps the most thorough and inexpensive study available. Knowing from long experience that the signs of animals can be confused, Murie presents one-page charts showing the tracks of related species, thus greatly helping identification. Armed with his guide, there's no longer any need for us to puzzle over whether we're looking at the

Fig. 112 Boreal red-backed vole tracks and droppings (drawn by Carroll S. Colby from specimens in The American Museum of Natural History, New York City).

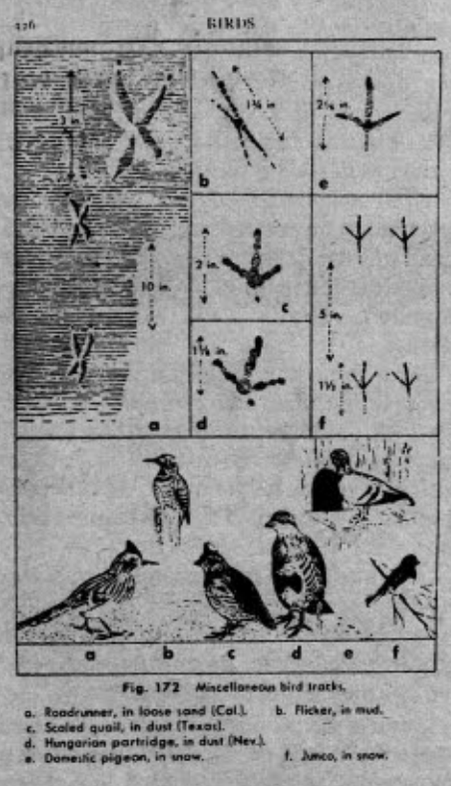


Fig. 172 Miscellaneous bird tracks.
a. Roadrunner, in loose sand (Cal.). b. Flicker, in mud.
c. Scaled quail, in dust (Texas).
d. Hungarian partridge, in dust (Nev.).
e. Domestic pigeon, in snow. f. Junco, in snow.

Signs of wildlife activity are all around, if we know how to read and interpret the evidence.

hoofprints of a mere domestic cow or the trail of an elk.

Other detective work can be more challenging. Most of us would like to see a wolf. What about the dog-like tracks in the mud by a wilderness stream? We'd like them to


Wild Boar

be a wolf's, but do they belong instead to a coyote or a stray dog? In this case, divination by tracks alone will be difficult, unless the prints are unusually clear. Here the writer points to other clues. Scats, or droppings, hair left on bushes, evidence of feeding habits, and methods of kill can be conclusive. He further advises that, "The wolf song is a long monotone, lacking the 'yapping' and tremolo of the coyote."

A Field Guide To Animal Tracks clearly is the result of a man who wants others to enjoy his life's work. Murie's drawings are charming in themselves while remaining scientifically accurate.

His anecdotes let us in on the humor and perception of his career in the outdoors. He tells in passing about the river otters at Yellowstone Lake who insisted on nightly forays to foul the rental boats of the concessioner and about the wail of the mountain lion, so eerie that it is impossible to describe. The guide gives introductory material on how to identify birds, reptiles, and insects by the imprints they've left, and suggests a simple method for preserving animal tracks with plaster of Paris. The price is more than reasonable for the 375 pages of wit, charm, and information.

"If I were to make a study of the tracks of animals and represent them by plates, I should conclude with the tracks of man."

Henry David Thoreau

'Run, River, Run' wins a medal

Ann Zwinger has won the 1976 John Burroughs medal for her book, **Run, River, Run.** The book is a story of the cultural and natural history of the Green River, from its source in the Wind River Mountains in Wyoming until it meets the Colorado River in Canyonlands National Park in Utah (see HCN 6-20-75).

In past years the Burroughs medal has gone to other distinguished nature writers, including Ernest Thompson Seton (1927), Roger Tory Peterson (1950), Rachel L. Carson (1952), Joseph Wood Krutch (1954), Loren Eiseley (1961), Adolph Murie (1963), and Sigurd F. Olson (1974).

Run, River, Run is published by Harper and Row, 10 E. 53rd St., New York, N.Y. 10022. Zwinger, a native of Indiana, lives in Colorado Springs, Colo.

Dear Friends,

At the mention of the word "wetland" the hunter thinks of ducks. If you don't hunt, you might think about dragonflies.

Actually dragonflies are probably a far more reliable sign of wetlands than ducks. Some marshes are too choked with vegetation to interest a duck, but you always seem to find a dragonfly darting along its zigzag course in the summer sun, patrolling the territory for prey.

But there's nothing glamorous about the dragonfly's life. In fact, as its name implies, there's something almost sinister in its habits. If you look closely, below its compound glistening eyes, you will see a hooked, unfolding lip — one of the cleverest inventions in the swamp, and one of the ugliest.

Dragonflies know no moral code other than eat or be eaten. Edwin Way Teale says a dragonfly numph "has even been seen climbing up out of the water on a plant to attack a helpless dragonfly emerging, soft and rumpled, from its nymphal skin."

This is not a pretty scene — more likely the stuff that nightmares are made of. It's much more pleasant to remember the ducks diving playfully on open water.

The fact that we can so easily relate to one form of life, and shun another utilizing the same wetland habitat, may indicate why we have tolerated the destruction of wetlands up until recently. The graceful ducks fly away as the bulldozers advance, but the distasteful dragonfly larvae and a hundred other unknown creatures remain to be covered over by 10 feet of dirt. It was a shame to see the ducks leave, but no one gave a second thought to the other marvelous creatures now buried below a new shopping center parking lot.

"American conservation is, I fear, still concerned for the most part with show pieces," wrote Aldo Leopold. "We have not yet learned to think in terms of cogs and wheels. . . .We need knowledge — public awareness — of the small cogs and wheels, but sometimes I think there is something we need even more. It is the thing that **Forest and Stream,** on its editorial masthead, once called 'a refined taste in natural objects.'"

This year's wildlife week theme is "Save Our Wetlands." In this issue, we've tried to put together some thoughts and pictures — from the lowly dragonfly to the regal Canada goose — to try and convey why we feel it's important to save pieces of the earth that were once regarded as wasteland.

But we hope your thoughts won't stop at wetlands. If you've only gained a new appreciation for sloughs and swamps, we've only partially succeeded. What wildlife week is really about is "refining taste" — nurturing an appreciation for all forms of life and a willingness to defend all types of habitat, from the bogs to the mountain tops.

In The News