



High Country News

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Lander, Wyoming

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Wheatfield photo by Mike McClure

by Ann Schimpf

In what appears to be an about-face, the U.S. departments of energy and agriculture and several major oil companies are beginning to embrace the notion that alcohol production can play a role in solving the country's energy problems.

Events of recent months strongly indicate that the credibility of gasohol, a mixture of alcohol and gasoline, is on the rise:

— During the first week of July, Amoco became the first major oil company to set up a test market for gasohol. Amoco spokesman Carl Mayerdirk said, "Five stations will be selling Amoco's gasohol in Ottumwa, Iowa, and six other Midwestern towns for one year." (Currently over 800 independent dealers market gasohol.)

— The Department of Energy's Alcohol Fuels Policy Review released July 11 predicted that by 1982 gasoline will constitute three percent of present gasoline consumption. According to the report, ethanol, a type of alcohol fuel, "is the only alternative fuel commercially available now, and the only likely to be available in quantity before 1985."

— In May Secretary of Agriculture Bob Bergland announced his department

would be helping to set up two alcohol conversion plants — one in Florida to make alcohol from sugar cane and one in Texas to make alcohol from sweet sorghum.

Are these developments merely a smokescreen to distract a public irate over skyrocketing fuel prices and willing to embrace almost any alternative to OPEC fuels?

They could be. For example, while federal research and development funding for alcohol fuels rose from \$2.9 million in

FROM THE FIELD to your tank.
Gasohol can be made from many
crops grown in the West.

fiscal year 1977 to \$24.9 million in fiscal year 1980, DOE is still spending only 0.2 percent of its budget on alcohol.

But whether industry and government's commitment to alcohol fuel is real or fancied, the new lip service being paid to it has caught the eye of news media. The gasohol

primer that follows is designed to help readers separate the facts from the fervor.

What are gasohol, alcohol, methanol and ethanol?

Gasohol is a mixture of alcohol and gasoline. In the United States, the mixture usually contains 10 percent alcohol, but many cars can take mixtures of up to 25
(continued on page 6)

Barry Commoner boils ecology down to basics: 'There's no free lunch.'

by Peter Wild
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Government reports, reference books and manuscripts in progress overflow the desk and filing cabinets of the microbiologist's office at Washington Uni-

versity. With, as one observer describes it, "thick greying hair standing straight up from his head like a crew-cut gone to seed," the professor of environmental sciences looms tall in the small room, aggressive behind his black-rimmed glasses. He justifies the apparent chaos around him: "The main thing is that everything is interrelated. It's like nature and ecosystems — intrinsic complexity."

In 1970 *Time* magazine hailed the professor as the "Paul Revere of Ecology." Long before environmental activism became fashionable, Commoner was preaching to assemblies in church basements and union halls, warning about the dangers of nuclear fallout.

He continues to draw on his own prize-winning research "to shake them up." By "them" Commoner means the entire nation. And if disturbing people is the goal of his witty, sometimes abrasive lectures, his best-selling books and scores of popular

and professional articles, he has succeeded. This year he's gone a step farther, into the political arena to shape the Citizens Party, a group that he says will address such issues as jobs, inflation, alternative energy and citizen control of natural resources in the 1980 election.

Activists expect to draw a certain amount of fire put up by the industries, government agencies and politicians whose policies they question. However, Commoner has made himself a large target for his own colleagues as well. Noting his ubiquity, some fellow scientists say that he represents the diligent researcher turned showman. Others strike closer to home, attacking the research that forms the basis for his professional standing. A thrust by Paul Erlich, author of *The Population Bomb*, indicates the emo-

(continued on page 4)

In the News

Energy mobilization

West's senators desert states' rights on energy board vote.

Geothermal study

IPGA drilling blocked
while research continues 10

Living pincushion

of porcupines and porcupettes. 8

Acid rain

now it's falling
in the Rockies, too. 10

2-High Country News — Oct. 20, 1979

The 'fast-track' energy board has no time for states' rights

When the U.S. Senate got down to business this month to pass a bill creating an Energy Mobilization Board, the choice for Western senators appeared to be clear. On the one hand there was a bill from the Senate energy committee that closely resembled President Carter's sweeping proposal to speed approval of energy projects; on the other was a bill creating a board with more limited powers.

The second bill, named after sponsors Edmund Muskie (D-Maine) and Abraham Ribicoff (D-Conn.), was the favorite of environmental groups and, supposedly, senators who felt strongly about states' rights.

The energy committee bill would give the board power to waive federal, state and local laws passed after an energy project had been started and to make decisions for state and local agencies when they failed to act on energy projects within two years. The Ribicoff-Muskie substitute drew the line at such powers. And where the Ribicoff-Muskie version set a limit on the number of projects which could ride the "fast-track," the energy committee version would let any number climb aboard.

The energy committee bill should have sent shivers down the spines of states' rights advocates, including the senators from the Rocky Mountains and Great Plains states who have beaten loudly and regularly on the states' rights drum in the past.

But when the crucial vote came, several Western senators seemed to forget which camp they had pitched their tents in. Many of them joined the majority that killed the Ribicoff-Muskie substitute, 58-39, paving the way for easy passage of the energy committee bill.

Sen. Gary Hart (D-Colo.), who voted against the energy committee proposal, called it "an unprecedented usurpation of power reserved to state and local governments" that would create an "energy dictatorship."

More political rhetoric? If the Senate bill prevails, wait till a state agency fails to meet the two-year deadline for approval or disapproval of a coal gasification

project; or watch what happens when a state passes a law to cope with the as-yet-unknown hazards of oil shale production, and the board waives it. Jimmy Carter may claim that he will look out for the environment, but such a law would outlive his tenure in the White House.

The energy committee bill is a radical theft of states' rights. Even a pro-business conservative like Sen. Jesse Helms (R-N.C.) could not stomach it. What, then, made it palatable to some of our Western senators, who have so much more to lose?

Most of the senators who voted to kill Ribicoff-Muskie said they were satisfied that the energy board's power had been diluted by amendments to the energy committee bill. Indeed, the Senate seriously considered an even more powerful board. But that does not make this one harmless or its powers negligible.

For the record, the senators from our area who helped kill the Ribicoff-Muskie substitute were: Sens. Frank Church (D-Id.), James McClure (R-Id.), John Melcher (D-Mont.), Alan Simpson (R-Wyo.), Malcolm Wallop (R-Wyo.), Pete Domenici (R-N.M.), and Dennis DeConcini (D-Ariz.).

Now it is the House's turn to look at the same issue. An even more powerful board than the Senate approved has been concocted in a House commerce committee bill, which is competing with a more moderate bill authored by Reps. Mo Udall (D-Ariz.) and Timothy Wirth (D-Colo.). Both bills are being revised, and there is some hope that the House legislation will be an improvement on its Senate counterpart.

Whatever their reasons, several of our Western senators have helped create a legislative monster that should make the Constitution tremble. Perhaps the House, which is often accused of being too "parochial," will on this occasion think narrowly of the back-home interests of the Western energy-producing states and save us from the Senate's Energy Mobilization Board. They would be doing our Constitution a favor.

-GOG

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Opinion



Guest editorial

Gasohol: a strain on grain?

by David Holzman

The concept of limits to growth, which is generally regarded as heresy to respected economists, must be swiftly accepted if our nation is to make a smooth transition to an economy based on renewable energy sources. This will become clear as biomass, particularly alcohol, begins to replace fossil fuel, for it is my feeling that the U.S. already gobbles more energy than the land can produce.

Land produces much of importance, but these products could become unprofitable if energy gets preferential treatment. The best way to insure proper allocation of resources would be to encourage conservation, to minimize all subsidies and to discourage the existence of businesses that are big enough to distort the "free market."

Even now, transportation of fuel consumes 20 quadrillion Btu annually (out of approximately 80 quads total energy consumption). The Council on Environmental Quality, in a survey that was generally perceived to be optimistic, found that estimates of biomass available for energy conversion in the year 2020 ranged from 5 to 11 quads (certainly much of this would go into non-transportation uses).

If billions of dollars were to be pumped into alcohol fuels, we could expect huge land grabs by large companies intent on

cashing in on the resulting government subsidies. Of course, the price of land would skyrocket, driving up the price of all commodities that depend upon the land. This would put the squeeze on the 10 million Americans who already cannot afford proper nutrition. Housing costs would rise out of sight, not only because of direct increases in land costs, but because timber, which is already imported into the United States, would increase in cost.

The same politicians who rail for a balanced federal budget had better start thinking about balancing the energy budget, which means encouraging conservation, not supply. Otherwise, the other basic necessities will be sacrificed to our gluttonous energy appetite.

Renewable energy sources are already developing naturally at the grass roots level, and if the meddlesome officials in Washington can restrain themselves from handing the industry to the big companies, these grass roots efforts will have a chance to establish themselves. Then, divestiture and strict enforcement of anti-trust laws will allow the market system to operate as it was supposed to, with natural checks and balances to keep the system from exceeding its limits.

David Holzman is editor of *People & Energy*, 2408 18th St., N.W., Washington, D.C. 20009, which is published by the Institute for Ecological Policies. A version of this article appeared in *Solar Age*.

Dear Friends,

Because of his Conservation Pioneer series and his many book reviews, Contributing Editor Peter Wild has been a constant part of our lives here at High Country News. We'd become familiar over the phone and through letters, but some of us had never met him.

So when the Wyoming Humanities Council lured him away from his teaching post at the University of Arizona last weekend, we crossed the divide to join him in Jackson Hole. We crept in late to the back rows of the Pink Garter Theater to hear Peter read some of his own poetry to an attentive audience.

He has a leaping imagination; his poems are full of disturbing, chaotic imagery. Reading a poem called "Roaches", he relished its shock value:

"...crouched like lions in the ledges of sewers, / their black eyes in the darkness / alert for tasty slime... / I can feel their light feet probing in my veins."

He explained that the roaches might represent evil lurking in us. "I'm evil," he said and asked us if we ever felt we were. The poems which he read so unassumingly, relaxed and jovial, left us with questions. If we asked why he wrote a poem about roaches he might typically have answered, "For fun."

"What better reason is there to do anything?" he said.

Yet the author of such unsettling poetry is the same person who has put hours of exhaustive research into understanding the pioneer conservationists, reading everything they've written and everything written about

them. A full time nihilist wouldn't see much point in that kind of devotion.

The next morning we met around the fire in the big room at the Teton Science School for Peter's seminar called "Poetry of the Earth" and made our way into the thick of poems by Robert Bly, Pablo Neruda, Gary Snyder, James Dickey and others.

Peter is the sort of teacher who can set a whole group on the trail of a poem. We felt encouraged to follow our wildest leads to get at a poem's meaning. He played devil's advocate, offering interpretations that caused quick, heated reactions from participants. With humor or a deft remark he steered attention back to the poem. If one piece seemed to be getting overworked, he'd quickly set us on another course.

With his fine brow he resembles John Muir as a young man. He is lean, athletic, dressed in blue jeans. We played frisbee over the lunch break, walked down the lane telling jokes and looking at the light on a hillside. When we returned, some of the participants wanted to continue the seminar outside in the sun. Peter thought that would make it too much like fun, and "learning should be suffering," he said, laughing — but we continued inside.

A long-time ambassador for High Country News, he steered people toward the paper more than once during the seminar. Discussing HCN with us, he mentioned some things he thought "we" should be exploring. His reference to himself as one of the staff was an appropriate extension of the presence he's established through his writing, for which he has refused any payment over the years. We're grateful for his support and glad we had the chance, before the snow fell on Togwotee Pass, to get better acquainted.

— HH

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October 1, 1979 Jazmyn McDonald

Boycott Tacos

It is heartening to see that, in some areas at least, the energy crisis has not smothered all popular sentiment favoring environmental protection. To wit:

During a radio call-in opinion show in Houston recently, environmental militancy ran rampant. The Texas coast has been assaulted by runaway Mexican oil slicks, and many Texans are outraged that



POPULAR REALITIES

there is no legal recourse. Undeterred by legal niceties, a woman caller told the radio station, "Since we can't sue Mexico, I think people should get together and take some action. So, let's all agree not to eat so much Mexican food, not buy so many Mexican souvenirs, and not go to Mexico for our vacations." That'll show 'em.

And a Central Intelligence Agency employee, who spent his last 14 years in a Cuban jail (where there have been few



gasoline lines) said that during his past two years of imprisonment, he became deeply concerned about the environment. He said he favors additional wilderness and would like to keep snowmobiles out of primitive areas. He said that we live in a "very spoiled nation," and he noticed that "you sometimes can't see the mountains from Denver...That makes me very sad." One can only comment that, with CIA agents entering the environmental movement, things have come a long way since 1970.

—DSW



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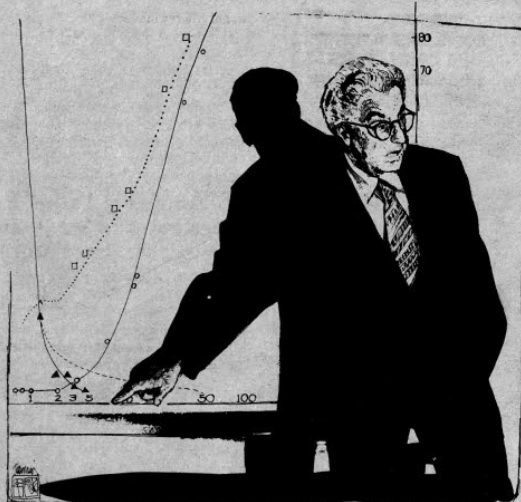
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To keep afloat

4-High Country News — Oct. 19, 1979



Hannah Hinchman drawing from Bill Pierce photo

Commoner down to basics...

(continued from page 1)

tional intensity of the running battle that has gone on between them for years. From the pages of *Science*, Erlich complains that Commoner's "one-sided treatment of the complexities of the environmental crisis are typical of a dangerous trend of politically active scientists who appeal to the public for support when they receive little or none within their professions."

The first charge, of playing to the cameras, Commoner dismisses as "one of the hazards of doing your social duty as a scientist." That responsibility, Commoner insists, includes not simply work in the laboratory but public airing of the results. Far-reaching decisions about nuclear power, pesticides and population control, he believes, should be made through the democratic process — not by coteries of specialists. As to the second, he fights fire with fire, condemning the ideas of Erlich and others as "inhumane, abhorrent political schemes put forward in the guise of science."

Commoner's career illustrates how the study of nature's workings can pit one scientist against his equally well-intentioned colleagues. Victory in such prolonged tussles can give the winner "an enormous kick," as science writer Anne Chisholm describes it. On a different level, the prospect of personal satisfaction also furnishes the grist for the mill that, one hopes, eventually will grind out significant scientific truths.

STREETWISE

Isidore Commoner was a Russian immigrant who worked as a tailor until he went blind. His son, Barry, grew up streetwise amid poverty. He roamed the slums of Brooklyn with the toughs in a block gang. It was one kind of preparation for the jungles of academe.

Among Commoner's favorite reading today is the 1934 novel by Henry Roth, *Call It Sleep*. The book portrays the life of a sensitive boy growing up in the rough-and-tumble of Brooklyn's tenements. The professor's admiration for the novel points

back to another side of the youthful Commoner's personality. Within the walls of James Madison High School he was so shy that teachers assigned him to a special class in speech correction.

A course in biology sparked his intellectual avidity, and soon the former gang member was roaming the steel-and-concrete landscape looking for bits of nature to study. An uncle gave him a micro-

EXPLAINING research on chemical carcinogens at a conference in Seattle.

cope. The teen-ager spent hours off in Prospect Park, returning home with samples of goop that danced with life under the eyepiece.

At nearby Columbia University he supported his studies in zoology by, among other odd jobs, doing research on medieval coins for an economics professor. He also acquired enthusiasm for such liberal causes of the day as the plight of the Spanish Loyalists. In 1937, at the age of 20, the boy graduated with honors, the first in a succession of awards that have marked his scientific career. In one sentence the writer of the *Time* feature sums up the student's accelerating interests: "Bright and ambitious, he went to Harvard, closeted himself in a laboratory for three years, and left with a Ph.D. in biology."

By then World War II was on. Ironically, Navy Lieutenant Commoner spent much of his time promoting the pesticide DDT, then the delight of pathologists. Working with engineers, he helped contrive a rig for fighter planes, which, equipped with their array of tanks and nozzles, sailed off to spray troops in the South Pacific. The experience sowed in him some early doubts about technology, reflects Commoner. "What they told us was only that DDT was a substance with a wholly unprecedented ability to kill insects of all sorts." However, "We learned from a few unpleasant experiences in a jungle in Panama that

POPULATION isn't the main problem, so population control isn't the key to ecological sanity, according to Commoner.



EPA Documerica photo by Dick Swanson

DDT makes snakes very excited. We learned another lesson when we sprayed an island shoreline in New Jersey and brought millions of flies to that unhappy place — to enjoy the huge mounds of fish that we killed."

After the war, Commoner married psychologist Gloria Gordon, then took a job as an associate editor of *Science Illustrated*. In 1947, restless for the laboratory, he left New York City for a position as associate professor of plant physiology at St. Louis' Washington University. Students at the university liked this lively, witty professor with a Brooklyn accent, who might begin the traditionally dull course in basic biology by throwing a challenge out to those from Ohio, "How is

Ecology subverted the former street-gang member.

the swimming in Lake Erie?" He filled the semester by expanding on the biological principles that affect the life of one of the nation's most assaulted ecosystems.

Early in his career, he also established himself as a brilliant researcher. His genetic studies of the tobacco mosaic virus shed new light on such viral diseases as hepatitis and poliomyelitis. Widening circles of investigation led to insights on cancer, petrochemicals and the reproductive mechanisms of cells. For his work on the tobacco virus, in 1953 the American Association for the Advancement of Science honored him with the prestigious Newcomb Cleveland Prize, awarded to the person deemed the most outstanding young scientist of the year. Soon after, Washington University showed its appreciation by promoting its up-and-coming researcher, still in his 30s, to full professor. Twelve years later, eyeing a host of subsequent honors, it rewarded Commoner with the chairmanship of its botany department.

Meanwhile, ecology was subverting the former street-gang member. His own work with radioactive materials helped arouse his curiosity about the effects of fallout from the A-bomb testing of the 1950s. With other citizens he founded the St. Louis Committee for Nuclear Information. As one of its projects, the volunteer group collected babies' teeth from across the country. Analysis revealed the presence of radioactive strontium 90. "I was making speeches in every church and hall in St. Louis," Commoner said, "describing the facts of atmospheric testing." Government agencies, he charged, were ignoring or suppressing the realities of fallout dangers.

At first, it was not a popular crusade. Supporters of Sen. Joseph McCarthy heckled the professor, branding his efforts at informing the public as un-American. But the evidence proved undeniable, once brought out into the open. The debate led to widespread concerns resulting in the nuclear test-ban treaty of 1963. For Commoner, it marked a shift from closeted scientist to the scientist with a public conscience.

THREE LAWS OF ECOLOGY

As they have become elaborated in his mind, Commoner's scientific views concern nothing less than the complex workings of the entire biosphere. They range from the chemistry of individual cells to the functioning of ecosystems. Encompassing as they must such disciplines as

physics and economics, microbiology and sociology, the spread has been the nemesis of many an earnest ecologist. Nevertheless, the broad outlook can be summarized by what Commoner calls "my three laws of ecology: First, everything is connected to everything else; second, everything has to go somewhere; and third, there's no such thing as a free lunch."

Today few scientists or laymen would disagree with the statements; they seem obvious and innocent enough. But Commoner has applied his theory to everyday environmental problems and proposed it through lectures and a continuous stream of articles in *Harper's*, *Ramparts* and the *New Yorker*. The main outlines of his thinking — and an indication of the antagonisms they often generate — can be seen in his four books.

Science and Survival (1966), mostly about the atmospheric contamination from atomic fallout, also touches on other "pertinent examples of folly" as the *London Times* called them — pollution of the earth by detergents, insecticides and carbon dioxide. "Sooner or later," the author warned, "we must pay for every intrusion on the natural environment." And we would have to pay, Commoner said, because industry, government and the writer's fellow scientists were irresponsibly pushing ahead with pet projects while disregarding the long-term consequences to the public. He urged a change in perspective. Instead of aiming for dramatic discoveries, often conceived in self-interest and abetted by secrecy, scientists should exercise moral judgment, he said.

THE CLOSING CIRCLE

The Closing Circle (1971) struck two related nerves with its observations on technology and population. *Newsweek* called the book "the calmest, most convincing call to alarm in years." And the reaction from Commoner's detractors was all the more pained and immediate as sales placed *The Closing Circle* on the best-seller list.

The book pointed to World War II as the watershed period for the earth. Since then, industrialized societies have undertaken a major shift from natural to synthetic products that place heavy strains on ecosystems. The shift is leading the world into an ecological dead end. "We have broken out of the circle of life," Commoner said, converting the earth's "endless cycles into manmade, linear events." Glibly swept up in the "progress," people often don't recognize the consequences. We have, the book estimated, 20 to 50 years before the damage becomes irreversible. It was a disturbing judgment.

But Commoner pressed on with the line of thought, leading his readers toward a controversial conclusion about population growth. From 1946 to 1966 pollution in the United States increased by somewhere between 200 to 2,000 percent. The population, slightly more affluent over the 20-year period, increased by only 42 percent. Hence, Commoner said, the critical factor in the ecological crisis is the new technology — not increased population.

Commoner asserts that the earth has the resources to support perhaps twice as many people as it now does. He dismisses, many experts say simplistically, population control as a key to ecological sanity. In doing so, he cites research indicating that in some countries a standard of living raised by an income increase of only a few hundred dollars a year per family automatically results in fewer children. Ac-

BARRY COMMONER dismisses criticism as "one of the hazards of doing your social duty as a scientist."

According to his thinking, the poor need economic help, not family planning.

It is this point that causes the bitterness between demographers Paul Ehrlich and Garrett Hardin on the one side, who have pegged their careers to promoting zero population growth, and Commoner on the other. The debate continues, as one scientist observes, each faction spending "valuable time figuring out ways to embarrass the other."

Appropriately, the most recent Commoner books probe another troubling aspect of modern life, the worsening energy crisis. Reviewing the laws of thermodynamics, *The Poverty of Power* (1976) proposes that the problem is not one of shortages but of profligacy. Burning

whether the people who run government and industry will permit the sane solutions to become realities.

So far, Commoner maintains, the nation's leaders have gone in the opposite direction. He reviews the economic fallacies and safety hazards of nuclear power — the diminishing supplies of uranium and the bizarre dangers of plutonium, the most toxic substance known to man. He sees the decision of government and industry to go for broke with nuclear power as a modern-day pact with the devil.

'PASS UP THE ECONOMICS'

Many critics applaud Commoner's thorough analyses of energy and environmental problems but balk at his extrapolations into economics, which urge an unspecified form of socialism. "Read it for the science; pass up the economics," suggests Professor Peter Passell of Columbia University. Less delicately, a *Forbes* article entitled "Latter Day Wizard of Oz" depicts

Far-reaching decisions about nuclear power, pesticides and population control should be made through the democratic process — not by coterie of specialists.

coal or oil in centralized power plants to heat homes by electricity, for example, wastes 97 percent of the energy, says Commoner. The nation has the opportunity — if it can seize it — of solving its energy ills without wrecking the environment, he argues. All the buildings in the country could be heated and cooled by solar power — a benign, limitless and cheap source of power. The question is

the author of *The Poverty of Power* as "a second-rate scientist and a no-rate economist."

Commoner's writing has become more strident as the energy crisis has worsened. In *The Politics of Energy* (1979), he levels his pen at the Carter administration and its energy "shenanigans." On the surface, the president's policies advocate conservation. In substance, however, the Na-

Oct. 19, 1979 — High Country News-5

tional Energy Plan calls "for an increased dependence on nuclear power and a greater production of coal products. The proposal, in fact, advocates a far heavier drain on our nonrenewable energy resources," according to a summary of the book by Robert Dahlin, an editor of *Publishers Weekly*. Commoner presses the point by claiming that former Carter energy czar

"Sooner or later we must pay for every intrusion on the natural environment."

James Schlesinger suppressed information on the one hand and juggled figures on the other. It is Commoner's loudest indictment of officialdom, which, he says, motivated by politics rather than concern for the nation's welfare, is hoodwinking the public.

Commoner is not a gloom-and-doom environmentalist, however. Despite what he sees as the prevailing "shenanigans," he thinks that change can take place. He cautions that "the big danger is for people to throw up their hands. Because then it will be possible for the oil people to have their way with us."

Commoner's forte, notes reviewer Passell, is his "remarkable ability to translate the conclusions of a half-dozen disciplines for those with little knowledge or interest in science." Another virtue is his writing style. "The reader," said journalist Philip Herrera, "rides as easily on Commoner's prose as on one of his favorite electric trains."

Yet there are, as Commoner himself has said in a different context, no free lunches. Over the years he has paid a price for the acclaim, one levied not only by critics in industry and government but at his own university.

Since 1966 he has directed Washington University's Center for the Biology of Natural Systems. The first-of-its-kind institution takes an interdisciplinary approach to environmental problems and to graduate student training. In a brouhaha not uncommon in academic circles, the university administration tried in 1976 to unseat its most controversial faculty member by dissolving the center. The student newspaper and St. Louis' television stations jumped into a fracas that Commoner labeled "pure Kafka." Embarrassed by media exposure, the administration backed off, and Commoner continues his job as researcher and popularizer at the university that has served as his base of operations for over 30 years.

When he is not traveling the lecture circuit — one year he gave over 30 major speeches — keeping up with his writing and research, he spends the day at his office then walks the mile and a half home. There he talks over the day's events with his wife while sipping a vodka on the rocks, seemingly his one regular relaxation. Some time back Gloria presented him with a bicycle to speed the trip from the office, but he insisted on the stroll, musing, "It's a great time to use your head."

on the tide
of change

Sizing up gasohol...

(continued from page 1)

percent alcohol with no engine modification.

Ethanol is drinking alcohol, and methanol is the highly toxic "wood alcohol." Both may be produced from similar substances, although ethanol is generally made from non-woody biomass and methanol from wood or coal. Chemically they are different. Ethanol is produced by fermentation, the decomposition of an organic compound into a simpler compound through the use of enzymes. Methanol is produced by gasifying carbon-containing materials and then subjecting them to methanol synthesis, which involves the use of pressure, temperature and a catalyst.

Farmers are most interested in ethanol production. However, methanol may eventually provide the biggest boost to fuel resources, because its production methods are more conducive to large-scale operations.

Won't federal agents arrest you for having a backyard still?

Not if you follow the rules.

Producers of fuel alcohol must denature — make unfit for human consumption — the alcohol they produce by adding one percent gasoline or kerosene.

They must also obtain a permit from the Bureau of Alcohol, Tobacco and Firearms, a division of the U.S. Treasury Department. This can take anywhere from three months to three weeks, according to people who've tried.

Applications should be sent to: T.P. McFadden, Chief, Industry Control Division, Bureau of Alcohol, Tobacco and Firearms, Washington, D.C. 20226. Letters should seek permission to establish an experimental plant according to Title 27, Code of Federal Regulations, Section 201.65. They should describe the entire process, from distillation to dispensation. Vague descriptions will only delay an application. Generally bonds ranging from \$25 on up must be posted with applications.

What will gasohol do to my car?

Probably nothing different from straight gasoline.

The Department of Energy has received the results of four extensive tests conducted by the state governments of Illinois, Nebraska and Iowa and the American Automobile Association which indicate that the great majority of vehicles tested ran as well or better with gasohol than with fuel previously used. In none of the four tests were any modifications made to the vehicles," according to the DOE task force report on alcohol fuels policy.

While using gasohol won't hurt most cars, current studies differ on whether gasohol improves their mileage and burns cleaner. The DOE report claims, "Differing mileage results are attributable to the differing age, size and condition or adjustment of the vehicle, weather conditions and differing quality of the ethanol and the base gasoline used and the measuring technology employed."

Claims that gasohol has been corrosive to older engines are "pure rumor," according to Lance Crombie, a Minnesota farmer who has set up a solar ethanol still. "Right

now in Brazil there are hundreds of new and old cars running on pure and mixed alcohol with no problems. That story comes from an American Petroleum Institute study done by Ford Motor Company. The only situation where that occurred was an aluminum engine under very specific conditions."

Crombie said, however, that it is often necessary to replace the fuel filters on vehicles using high content alcohol fuels. "When you first switch over, the alcohol cleans and loosens sediments from the gas tank which plug up the fuel filter," he said. "But once that is cleaned out, there is no problem."

Alcohol fuels rate an "A" for their octane contents. The addition of 10 percent ethanol raises the octane value of gasoline two to three points. Higher octane values in fuel improve its performance and tend to eliminate engine knocking. (The Coordinating Research Council estimates 40-50 percent of all new vehicles using regular gasoline suffer engine knocks.)

What adaptations would have to be made to burn pure alcohol in my car?

The DOE task force claimed, "Retrofitting existing vehicles to use 100 percent methanol or ethanol would require extensive fuel and engine system modifications and cost hundreds of dollars."

However, evidence disputing that claim appeared in the March-April 1979 issue of *Mother Earth News*. The magazine interviewed Scott Skylar, Washington Director of the National Center for Appropriate Technology and driver of what is probably the only alcohol-powered vehicle in our nation's capital.

Skylar converted a 1964 Rambler to burn pure alcohol by doing the following things:

- 1) He installed a cold day starter for \$5. Pure ethanol won't vaporize as easily as gasoline at colder temperatures, so Skylar shoots a little gasoline (via a used electric window washer) directly into the Rambler's carburetor.
- 2) Because twice as much alcohol as gasoline is needed in the air-fuel mixture, he enlarged the carburetor's main fuel jet with a jeweler's drill bit. (Skylar says this operation can be handled by most service stations.)
- 3) He installed a manual choke for \$6.95. This enables better control of the coldstart mechanism and allows control of the ethanol-air mixture in changing atmospheric conditions.

Can diesel engines be converted to burn alcohol?

Opinions vary on this question.

The DOE task force concluded, "Agricultural diesel applications do not appear likely in the short term." It outlined necessary alterations for diesel engines to burn pure alcohol and mentioned that techniques for emulsifying alcohol in diesel fuel are under development. (Diesel will not mix with alcohol if any water is present.) However, the biggest problem appears to be the high cost of conversion.

Crombie, on the other hand, said that by December the W. Gear Co. in Illinois will be marketing a conversion unit for diesel vehicles for \$300-\$400. Crombie said, "The problem with diesel is that it uses an injection

tor pump to force the fuel into cylinders and alcohol is not a very good lubricant. This kit has a specially designed pump that doesn't need lubrication."

In summary, while the technology for converting diesel to alcohol exists, the unanswered question is one of economics. Truck drivers may not be switching to alcohol, but "there may be considerable societal reasons to use alcohol fuels in farm equipment which is largely dieselized," according to the DOE report.

Is alcohol production economically feasible?

"Things are going great guns," said Crombie. "There are some 20-30 on-farm alcohol plants in operation in the nation right now. When you look at the economics of production that utilizes the leftover mash for feed right on the farm so it doesn't have to be dried, you are talking 50 cents per gallon or less for alcohol production. On my farm, we're producing it at 32 cents per gallon from a 200-gallon still."

Farmers' claims of energy self-sufficiency and positive economics for on-farm alcohol production operations are seldom disputed. There is a special niche in the overall energy scene. The controversy about the economic merits of alcohol production concern large-scale operations.

The DOE task force report said that ethanol could be produced for less than \$1 a gallon and sold profitably by using low-cost waste materials as fuel and advanced fermentation technologies, and by finding more uses for the process' by-products. The question of what organic substance will fuel alcohol plants is critical — Secretary

of Agriculture Bob Bergland has repeatedly stated his opposition to using grains as the main fuel for alcohol plants. He argues that current grain surpluses cannot be counted on because of unreliable weather and foreign market needs.

Current technology also can make use of cheese whey, wheat straw, corn stover, cull potatoes and other farm wastes for commercial ethanol production. The DOE report said that the availability of such raw materials "far exceeds the production capacity of plants expected to be operating by the mid-1980's."

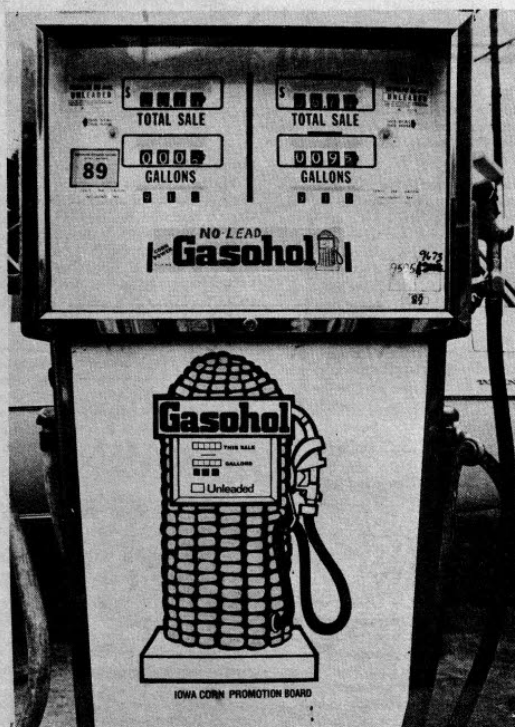
Methanol is the fuel being looked at for long-range contribution to the fuel scene. It can be used in gas turbines and other stationary equipment in addition to motor vehicles. Its production readily lends itself to large-scale operations. Cost projections for the mid-1980's for methanol range from 30 to 60 cents a gallon. The main problem with commercial production of methanol is that investors do not see it as a good investment, according to the DOE task force report.

If corn fluctuates so wildly in price, why is it most often cited as the raw material for ethanol?

"The political impetus for the gasohol movement is from Nebraska and Iowa," said Paul H. Blanchard, process consultant for Spreckels Sugar in San Francisco. "The corn farmers are stirring the pudding, so that's the process that has received the most attention."

However, Blanchard is quick to point out that although corn is garnering most of

(see next page)



GASOHOL is the only alcohol fuel being sold to the U.S. public, though race cars in this country currently run on 100 percent methanol. In Brazil, more than 16 percent of the 1 million cars manufactured in 1981 will be equipped with engines to burn 100 percent alcohol.

the media attention, researchers — himself included — are looking at a variety of feedstocks for gasohol fuels.

"In fact, the most attractive crop right now is sweet sorghum," Blanchard said. "It has few storage problems and a very good overall energy credit."

Are there any financial incentives to encourage the production of alcohol?

Effective Jan. 1, 1979, there is a four-cent a gallon federal tax credit for fuel containing alcohol made from sources other than petroleum, natural gas or coal. In addition, Iowa offers a 6½ cent a gallon tax exemption for gasohol, Colorado a five cent tax exemption and Nebraska a five cent tax exemption. The following states also offer an exemption for gasohol from all or a portion of the state highway excise or sales tax: Kansas, Montana, South Dakota, Wyoming and Indiana.

Alcohol fuels are now eligible for DOE entitlements worth two to three cents per gallon of ethanol. In addition, alcohol fuels facilities will soon qualify for a 20 percent investment tax credit.

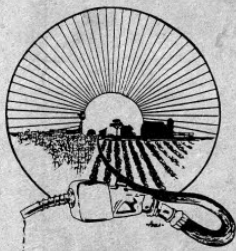
With Jimmy Carter's \$11 million loan program to set up 100 small gasohol plants and a host of other alcohol production legislation pending in Congress, the future of gasohol production is looking brighter.

What will be the effect on world food reserves if the U.S. seriously begins to produce fuel from food?

No one is proposing such a shift. Actually most projections on the potential role of alcohol in the U.S. energy scene base production figures largely on agricultural residues, wood residues (mill and forest), sugar crops and food processing wastes like cheese whey — not on grains. The DOE task force report stated, "The cyclic nature of grain availability dictates that any large national gasohol program cannot be based only on grains."

The real controversy centers around the set-aside and diversion program of the U.S. Department of Agriculture. Farmers want greater freedom in marketing their grains. They want to raise crops for fuel if the market warrants, rather than leave land idle.

But the Department of Agriculture program, with its disaster insurance and direct cash transfers, is strongly entrenched. Its goal is to maintain farm income through high crop prices by restricting supplies and building up reserves.



Solar Fuels from
Agriculture
to
Serve the Nation

LOGO of the National Alcohol
Fuel Producers Association
in Lincoln, Neb.

If residues that previously have been used for erosion control now go into ethanol production, what will happen to our country's topsoil?

"Nothing," Crombie said. "For serious erosion to occur, we're assuming that all of the residues would be used. That simply won't happen. It would take the removal of as much as 70 percent of my cornstalks from the field to cause topsoil erosion."

The DOE task force report assumed that 35 percent of agricultural residues will always be returned to the soil when it projects potential ethanol production from the residues.

Does alcohol really take more energy to make than it produces, as many big oil companies are claiming?

Few questions surrounding alcohol production are more controversial than the one of energy balance. The key to the issue is what assumptions are made. Oil companies wishing to prove a particular alcohol production has a negative energy balance may choose to assign energy input values to everything — from the fermentation and distillation process, to the energy required to make the fertilizer for the crop, to the energy required to fabricate the steel used in the tractors.

"A reasonable approach to the calculation of the net energy for producing ethanol from corn would be to consider the energy required to grow the crop as well as the fossil fuel and electricity required to ferment and distill the corn into ethyl alcohol," according to the DOE task force report.

Utilizing that process and accounting for the energy gain from the feed by-products produced, DOE comes up with an overall net gain in energy of five percent for corn.

It is important to note that energy balance is not the only criteria to look at when weighing the value of the alcohol produced. Energy credit figures for the gasification of coal can be shown to be negative if certain assumptions are made. However, the important point may be that both coal gasification and alcohol production are turning a less desirable fuel source into a more desirable or usable one.

Are alcohol fuels more or less polluting than gasoline?

According to the DOE task force report, "Compared with gasoline used in the same vehicle, gasohol generally decreased hydrocarbon and carbon monoxide emissions, and slightly increased aldehyde and evaporative emissions. Under the Clean Air Act, the Environmental Protection Agency has permitted gasohol to be used, at least partly on the basis that only small quantities would be burned in the near future."

Where can you buy gasohol?

Gasohol is currently being sold in over 800 outlets in the following states: California, Colorado, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, South

Dakota, Virginia, Wisconsin and Wyoming. On April 25, 1979, Iowa had 365 outlets.

How much does gasohol cost?

Any figures published would likely be out of date before they hit the press. However, with the price of regular gasoline hovering around the dollar mark this fall, gasohol can no longer be considered an expensive fuel. At most pumps it is being sold at or below the price of unleaded regular, depending on the state and the tax exemption that has been established for alcohol fuels.

What are (or aren't) big companies doing about alcohol production?

"Recognizing the growth in alcohol fuels use, two major U.S. auto manufacturers have broadened their warranty policies to permit the use of gasohol in cars and trucks to encourage development and use of alternative fuels. Three major automotive firms have active alternative fuels research programs; at least one is working on engines to use straight alcohol fuels as well as blends such as gasohol," according to DOE.

There is reason to question the seriousness of some of the major companies' commitment to alcohol fuels. For example, two executives from Gulf Oil Corp. re-

Oct. 19, 1979 — High Country News-7 recently testified at hearings on energy development held by the House Subcommittee on Energy Development and Application. They said that although Gulf has developed the technology for the commercial production of alcohol, the company has decided not to go ahead with the project for "commercial reasons." Vice-President for Science and Technology George E. Huff said that Gulf would be willing to sell its technology, but it had chosen to put its money into other things — like \$2.5 billion for exploration of new natural gas and petroleum sources and \$500 million to developing oil from shale and coal. (The cost of developing the alcohol plant which Huff testified could be profitable by 1983 would be \$112 million.)

Finally, how much of a role can alcohol play in this nation's energy future?

Alcohol proponents like Crombie claim anywhere from 20 to 50 percent. Some major oil companies have said less than one percent. The truth probably lies somewhere in between.

Ann Schimpf is a free-lance writer in Duluth, Minn.

This story was paid for in part by your donations to the HCN Research Fund.

Teton's Potholes opened to snowmobiles

Bowing to pressure from the Wyoming Congressional delegation, the National Park Service has temporarily reopened a favorite snowmobiling area in Grand Teton National Park in Wyoming.

National Park Service Director William Whalen said he agreed with the delegation's claim that the public had not been given enough time to comment on the closure of the Potholes area in Grand Teton.

When the National Park Service published its proposed snowmobile policy in December, snowmobiles were to be allowed in the Potholes area and an area in Acadia National Park in Maine. However, in August, the Park Service said snowmobilers in the two parks would have to conform to a national policy confining snowmobilers to routes such as frozen lakes and unplowed roads that are used by motorized vehicles during the summer.

Business people in Jackson say that 85 percent of the local revenue derives from tourists and that many come to snowmobile in the winter. Environmentalists say that noise from the snowmobiles disturbs wildlife, as well as people on snow shoes or cross-country skis. They also say they don't want to set a precedent by allowing snowmobilers off roadways in parks.

Assistant Park Superintendent Jack Neckels said he has had "superb cooperation" from snowmobilers, according to United Press International, with only isolated instances of wildlife destruction.

He was apparently referring to an incident last winter when three snowmobilers were accused of running down coyotes in the Potholes area.

"The basic philosophical question is, 'Is it an appropriate use for off-road vehicles to be roaming at will through a national park area?'" Neckels said.

The Park Service will hold public hearings in the next 12 months on whether to permanently close the Potholes area to snowmobiling.



THE POTHOLES AREA, a section of Grand Teton National Park frequented by snowmobile enthusiasts in years past, has been exempted this winter from new national park snowmobile regulations.

support
our craft

THE PINCUSHION

by Ken Walcheck

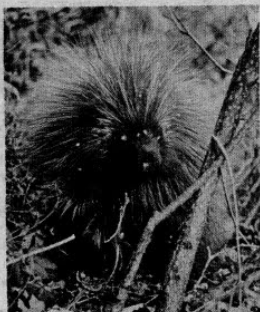


Photo by Ron Maier

It was about 4:30 in the morning when I abruptly sat up in my cot and remembered a statement made by the legendary Leroy R. "Satchel" Paige during his heyday as a major league pitcher back in the mid-1950s. As the story goes, Paige walked the first batter; before delivering his next pitch, he turned, pointed to the runner on first and said, "There you is, and there you stays!" He then proceeded to strike out the next three batters.

What stirred my memory at this early hour was a chomping sound which sent vibrations up the wooden leg of my camp cot. Switching my flashlight on, I was greeted by a pair of black, beady eyes and a portly body encased in a bundle of quills.

Well, there he was, and there I stayed. A half hour or so of exasperation followed as I tried to prod the waddling pincushion out of the tent.

When Theodore Roosevelt proclaimed that the United States should "speak softly and carry a big stick..." he might have been describing the porcupine.

Although several species of porcupines exist in the world, only one, *Erethizon dorsatum* (meaning "irritable back"), lives in North America. It ranges from the northeastern coastal states, through the Great Lakes states, into the Western states and north to Canada and Alaska. Only the Southeastern and Central states lack porcupines.

The porcupine has ranged over various landscapes for more than a million years.

Females usually bear a single porcupette covered with soft, wet quills that quickly dry and harden.

THAT WADDLES

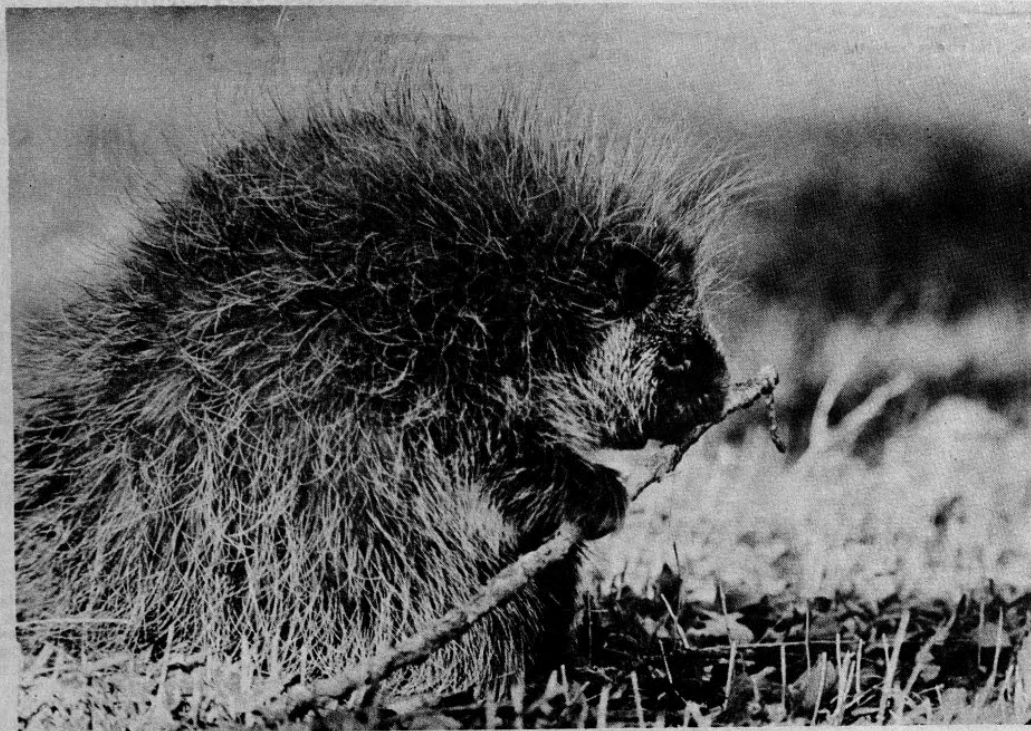


Photo by Ron Maier

He has roamed the forests, along with the saber-toothed tigers and elephantlike mammoths and mastodons. While these larger and more aggressive animals have become extinct, the porcupine has survived.

A porcupine's armor consists of some 30,000 multibarbed quills strategically located on the head, back, flanks and tail. They are absent only on the face, legs, belly and underside of the tail.

A porcupine's needle-sharp quills are sometimes 5 inches long. Contrary to some popular beliefs, the quills are not venomous nor can they be "shot." Because of the reverse barbs and the inevitable muscular contractions of the victim, quills are difficult to remove and tend to work their way deeper into the body. For the wild animal badly impaled in the facial region, death is inevitable because the animal can't eat.

Aside from man, only the fisher and mountain lion have much success in attacking the porcupine. Other predators — the great horned owl, lynx, bobcat and wolverine — occasionally do him in but often pay dearly for their brashness.

When danger confronts the heavy-bodied bearer of minispears, he lowers his head, braces his legs and pivots, presenting an armored back and tail. If the attacker pursues, it can expect to receive an excruciatingly painful "shower" of quills from a thrashing tail.

As many sportsmen will readily testify, hunting dogs sometimes suffer after muzzling the prickly creature. Home remedies are many, but few, if any, work. Because of the reverse barbs, the quills offer such stubborn resistance that the most humane action is a quick trip to the nearest veterinarian. If this is not possible, a quick jerk with a pair of pliers works best.

Porcupines are equipped with four wood-chiseling incisors. There is practically no type of plant — from trees to dandelions — which they can't chop up and grind with their beaverlike teeth. Porcupines are quite adept at chipping off a tree's outer bark and feeding on the inner cambium layer. The bark from willow, pine and aspen provides suitable winter forage. Their preference for wood, however, has caused some foresters to label them "pests" and blame them for killing and scarring trees.

Because of his "salty tooth," a porcupine will gnaw on items saturated with perspiration. In fact, anything impregnated with salt is considered prime nibbling material — from ax handles to toilet seats.

Active all year, porcupines are commonly afield at night. During the day, they hide in rock crevices, thickets or hollow logs. In coniferous forests, porcupines prefer a "rest tree" instead of a den. As clumsy as a climbing porcupine may first appear, he is very much at home in trees. With hooked claws, tubercle-studded soles and a stumpy tail which braces him, he can match any lumber jack in climbing. What

the porcupine lacks in speed, he makes up for in tenacity.

The porcupine's mating ritual would have to be rated a classic. Despite the fact that porcupines are essentially loners for most of the year, they always manage to get together during the fall mating season. Through a combination of high-pitched calls and urine scents, the two sexes finally meet. When they do, they engage in erotic courtship displays that include muzzling, squealing and teeth chattering. Occasionally, the male urinates on his partner. When the female is receptive, she controls her quills, arches her tail and carefully holds this position as the male cautiously approaches.



Photo by M. Aderhold

The gestation period lasts about seven months and females usually bear a single porcupette covered with soft, wet quills that quickly dry and harden. In less than an hour, the porcupette is armed for defense.

Despite the fact that some consider the porcupine no more than a dull-witted "mammalian slug" and a seemingly "useless prehistoric offshoot," it contributes to the diversity of our wildlife community. Its value is enhanced when it is recognized and appreciated as an example of a thing natural, wild and free.

Reprinted with permission from *Montana Outdoors*, the official publication of the Montana Department of Fish, Wildlife and Parks.

If ever an animal served as an example of how to live in peace by being perpetually prepared for massive retaliation, it is the porcupine.

10-High Country News — Oct. 19, 1979

ENERGY

Study says geothermal plan may hurt geysers

by Philip White

The U.S. Interior Department, which has ultimate authority over geothermal leasing on public lands, has reiterated that no drilling will be allowed in the Island Park Geothermal Area next door to Yellowstone National Park until there are scientific assurances that drilling poses no threat to Yellowstone's thermal features.

And a just-released study by a University of Wyoming geologist has added fuel to the debate over drilling dangers by giving the first scientific indication that interconnecting faults may exist between the IPGA drilling area and Yellowstone geyser fields.

The IPGA is a forested, undeveloped 500,000-acre area in Montana, Idaho and Wyoming abutting the southwestern border of Yellowstone. Several large energy corporations and a number of small firms and individuals have applied to lease portions of the IPGA under the Geothermal Steam Act of 1970. They would drill deep wells, hoping to locate water hot enough to generate electricity (see HCN 6-1-79).

An interagency team headed by Mickey Beland of the Targhee National Forest at St. Anthony, Idaho, has recommended that two-fifths of the IPGA be opened for exploratory drilling, but that recommendation is still under review at higher levels in the Forest Service. The final environmental statement, due October 1, has been delayed while the federal agencies involved juggle a number of IPGA hot potatoes.

The hottest item is the specter that drilling in the IPGA could disrupt the world's greatest geyser fields in Yellowstone. As the parent agency of the National Park Service, Interior does not appear ready to allow any commercial drilling in the near

future, even if the Forest Service decides that parts of the IPGA are suitable for geothermal exploitation.

In a letter to Rep. Richard Cheney (R-Wyo.) in October, Interior Solicitor Leo Krulitz said there would be no exploration or other operations unless Interior receives "assurances based on comprehensive, scientific evidence that such activities have no potential" for harming Yellowstone.

Drilling advocates have repeatedly contended that the possibility of a connection between IPGA and Yellowstone groundwater flows is minuscule. Bob Fournier of the U.S. Geological Survey was quoted in the *Billings Gazette* in June saying "the chance that they are (connected) is probably much less than one percent."

However, University of Wyoming geology professor Ron Marrs recently completed a study that indicated a greater possibility of interconnection.

Marrs used infrared imagery and other remote sensing techniques to describe the geothermal structures of southwest Yellowstone. "We found linear elements, which we interpret to be faults, extending away from the Yellowstone caldera toward the Island Park area in a radial pattern. Our work suggests that these radial faults are important conduits for hydrothermal water," Marrs said.

Marrs said that if these faults intersect others connected to the Island Park area, "then it is probable that the hydrothermal systems also interconnect." Marrs emphasized that his study provides no "definite information" of a connection and that geochemical tests and a hydrologic modeling project would help determine "whether there is a connection with rapid-enough

flow to have substantial effects in Yellowstone."

According to Alan Mebane, chief naturalist at Yellowstone, the USGS is running geochemical tests in the areas this fall.

Two other hot potatoes have come out of the oven in recent weeks.

Several West Yellowstone, Mont., citizens, led by *Old Faithful Times* publisher Joe Cutter, told the Forest Service in September that bringing IPGA waters to the surface could release enough hydrogen sulfide into the air to cause acid rains and serious pollution in the West Yellowstone area.

Another potential problem, not mentioned in the draft environmental statement, is that the waters beneath the IPGA's volcanic skin could be radioactive. University of Wyoming zoologists Ken Diem and Garth Kennington found high

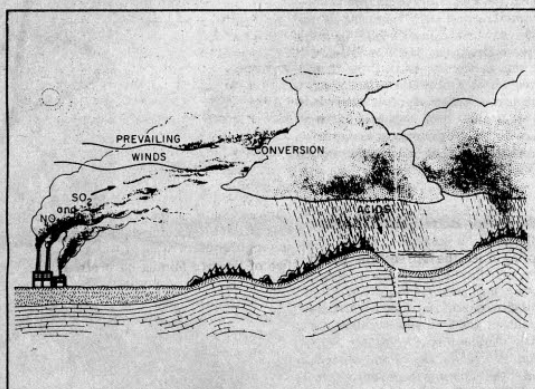
levels of beta- and gamma-emitting nuclides in artesian well water coming from similar substratum 190 miles southwest of the IPGA near Buhl, Idaho.

The interagency study team's recommendation would allow leasing on 207,000 acres, defer leasing on 193,000 acres until more is known, and prohibit geothermal activity on 88,000 acres (mostly wildlife habitat, but including a two-mile buffer along the park border).

Team leader Mickey Beland, in a *Billings Gazette* article, said politics had delayed a Forest Service decision.

"It may become totally political," Beland was quoted as saying, "I would hope the final decision will be based on what the USGS, the world experts on this, told us and not be involved with a political decision or a feeling about the park."

"We have three years of professionalism invested here and I don't apologize for it to either the opponents or proponents."



EPA Journal drawing

ACID RAIN is formed when sulfur oxides and nitrogen oxides combine with moisture in the air to form sulfuric and nitric acids.

Airborne California pollutants suspected in Rockies' acid rain

Pollution from as far away as California may be contributing to acid rain falling in the Rocky Mountains of Colorado, according to two researchers.

Reporting to the National Commission on Air Quality on Oct. 5, Michael C. Grant and William M. Lewis Jr. said they have found steadily increasing concentrations of acid precipitation during the past four years near the Indian Peaks Wilderness area 30 miles northwest of Denver.

Long recognized as a serious environmental concern in Japan and in northern Europe, acid rain is caused by pollutants — sulfur oxides and nitrogen oxides — combining with moisture in the air. The oxides are emitted primarily from power plants, smelters and motor vehicles.

Denver and other Front Range cities have serious automobile-caused pollution problems, but since prevailing winds are from the west and northwest, the researchers say "powerful atmospheric circulating mechanisms" would have to be operating to transport the substances from these cities to the Indian Peaks area.

The effect of acid precipitation on humans isn't known, but it is a threat to food crops and trees, lakes and fish populations, soil fertility, and cars and houses. In Kentucky last month, a U.S. district court jury awarded a company \$144,000 for damage to its soybean crops resulting from sulfur dioxide emissions from two coal-fired power plants.

Since timber, especially white pine, is vulnerable to acid rain, residential housing costs could rise.

Acid rain typically originates in one state and comes down in another, so some states in the East are now suing each other.

The Clean Air Act does not provide a remedy when pollution from one area causes suffering hundreds of miles away, according to Gary Hart, chairman of the National Commission on Air Quality and Colorado's senior senator.

The Colorado research is considered the first definitive study suggesting the presence of acid rain in the Rocky Mountains, according to the National Commission on Air Quality.

From the Source



The Rockies and Great Plains

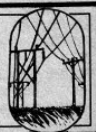
BPA NORTHWEST POWER ALLOCATION. The Bonneville Power Administration, the public power agency serving much of the northwest U.S., has unveiled a proposal to alter its formula for allocating electricity. The plan would guarantee virtually all the power needs for 60 small public utility districts in Idaho, western Montana, Oregon and Washington. The plan also includes an incentive for public utilities, which can get power from other sources as well as BPA, to conserve energy. Under the proposal, the utilities would be required to reduce their projected power needs for 1989-1990 by 15 percent or not receive their full share of BPA electricity. Those who conserve more than 15 percent would receive an increased portion of the cheap BPA power. The plan will go into effect on July 1, 1983, unless altered by Congress. A regional power bill has already been approved by the U.S. Senate which would make BPA the broker for all power generated in the Northwest.

SHALE MAY CAUSE CANCER. The Environmental Protection Agency says

that development of oil shale yields cancer-causing wastes. Terry Thoen, director of EPA's Energy Policy Coordination Office, says the benzo-a-pyrene, "a known carcinogen," has been found in processed shale, but it hasn't been determined how much of the substance would appear in the waste materials of a commercial plant. Oil from shale is one of the cornerstones of President Jimmy Carter's energy program. Carter is proposing eight shale plants by 1990, each producing 50,000 barrels of oil daily. Thoen says that EPA is still studying the problems presented by the existence of the carcinogen.

LOSS OF RAIL SERVICE DEBATED. The Milwaukee Road rail system, reportedly losing \$500,000 a day, is trying to disentangle itself from over 6,000 miles of track in the Rockies and Northwest. The railroad's bankruptcy trustee, a former Illinois governor, has asked the Interstate Commerce Commission for a quick decision that will allow it to stop hauling coal and grain from the Great Plains and Rockies. He hopes Milwaukee Road will then be able to survive with its more profitable Midwestern routes. Northern Tier states from Washington to North Dakota objected to the move in hearings before the ICC in Butte, Mont. However, the White House, the U.S. Department of Transportation and Midwest manufacturers who use the railroad all support the cut. If Milwaukee Road ends its service in the West, Burlington Northern will have a monopoly on rail service to coal and grain producers in the Northern Tier.

Hot Line

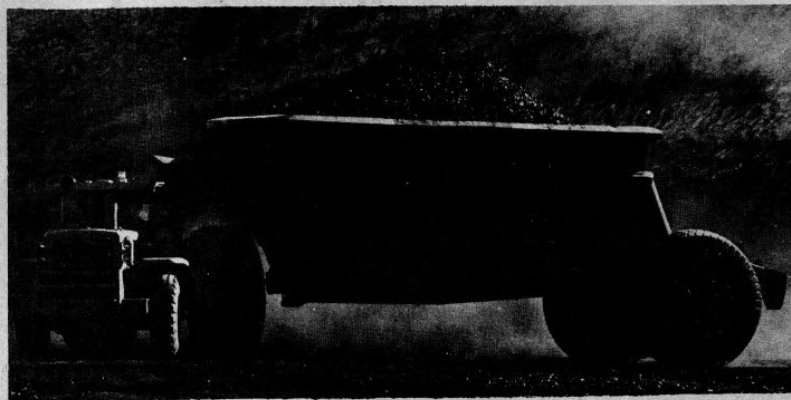


Across the nation and around the world

GERMANY JOINS WEST VIRGINIA COAL PROJECT. West Germany signed an agreement this month that should result in a German investment of \$250 million in coal liquefaction...in West Virginia. West Germany will be investing in a \$1 billion commercial-scale liquefaction plant to be built by Gulf Oil Corp., with the support of the U.S. Department of Energy and West German firms that hope to share the results of the experiment. New Secretary of Energy Charles Duncan said that Japan, too, is considering a 25 percent investment in the project.

JOBS FROM THE SUN. It may not provide more oil rig jobs, but solar energy, if it grabs an increasing share of the energy market, could cause a boom in jobs for sheet metal workers. According to a study by the Mitre Corp. of Boston, Mass., jobs for sheet metal workers will double if solar energy begins providing 20 percent of the nation's energy. In addition, a study presented at congressional hearings on solar energy predicted 2.9 million new jobs by 1990 in the solar field.

THREE MILE BUILDER CLEANS UP. Babcock & Wilcox, last heard from last spring when the Three Mile Island nuclear reactor the company designed nearly blew up in Pennsylvania, has won a \$35 million contract to build a coal combustion plant for the Tennessee Valley Authority, a federal utility. The 20-megawatt pilot plant, to be located in Paducah, Ky., would use the fluidized bed combustion technique to minimize emissions of sulfur and nitrogen oxides. The company, which began building coal-fired power plants a century ago in New York, will be studying ways to reduce coal dust emissions—which remain the biggest problem with the fluidized bed process.



STRIP MINING at the Decker mine near the Wyoming-Montana border.

Photo by Terrence Moore

Strip rules undermined

Rep. Mo Udall (D-Ariz.) took a firm stand against a drive to weaken the 1977 strip mine act this month, rejecting an attempt by members of the House Interior Committee, which he chairs, to move legislation that would wipe out federal strip mine regulations.

But Udall's defense of a strong strip mine reclamation law faces a serious challenge from the Senate, where opponents of the regulations written by the federal Office of Surface Mining have already argued their case successfully. The Senate passed a bill in September that would evaluate state strip mine reclamation standards on the basis of the general requirements of the federal law, rather than OSM's strict, controversial regulations.

Rep. Nick Rahall (D-W.Va.) collected 25 signatures of Interior committee members on a letter calling for quick consideration of the Senate bill. Udall, however, told the *New York Times* he would not bring up "a simple-sounding amendment that would gut the act."

The strip mine reclamation standards issued by OSM this year after several delays have been challenged in court by both

coal industry groups and states, but no suit has been successful.

A spokesman for Rahall said he would look for other ways to force consideration of the Senate bill, perhaps by attaching it to legislation that would not go through the Interior committee.

In addition, a move is afoot in the Senate to find another bill which has already been approved by the House, attach the strip

mine amendments in the Senate, and return it to the House, thus forcing consideration of the Senate proposal.

Asked if he thought Udall could successfully kill the bill, an aide to one Appalachian senator said, "It's only the first session (of this Congress). We've got another year, an election year, to find a way."

Northern Tier pipeline proposal gets nod from Interior chief

Interior Secretary Cecil Andrus recommended this month, for primarily economic reasons, that a 42-inch oil pipeline be built along the country's Northern Tier to transport Alaskan oil from the West Coast to the Midwest.

The Northern Tier proposal, designed to alleviate projected shortages of oil in Northern Tier and Midwestern states, was selected from among four competing oil pipeline proposals. The other three proposed pipeline routes were across Canada.

Andrus' recommendation will be acted on by President Jimmy Carter by mid-December, according to an Interior Department spokesman. Observers, including environmentalists opposed to the pipeline, expect Carter to approve the pipeline.

A pipeline spokesman told United Press International that he expects to have oil flowing by October 1982. The pipeline could handle up to 933,000 barrels of oil, most of it brought by tanker from Alaska to Port Angeles.

At the same time, however, a Senate committee report has cast serious doubt on the availability of oil for such a pipeline. According to the Senate Energy Committee, Alaskan oil producers have recently refused to provide more oil to West Coast refiners, preferring to ship it through the Panama Canal to the Gulf Coast.

"If producers are not willing to sell to independent refiners on the West Coast, one must question how much will be avail-

able for a northern pipeline," said Sen. Henry Jackson (D-Wash.).

Tom Kryzer, an official with the Northern Tier Pipeline Co., a consortium of companies and investors, said the company would not begin its search for financing until "all the permits are in." He said negotiations with shippers have not been held.

Kryzer took issue with Andrus' recommendation that the pipeline move its West Coast terminal away from Port Angeles, possibly to a port further west on the Olympic Peninsula. "We studied a number of locations," said Kryzer "and decided Port Angeles was the best technically and environmentally."

Andrus said the \$1.6 billion project beat out the other proposals because it would provide more jobs for Americans, stay within U.S. borders, and have a better chance for financing.

Opponents of the project have argued that the pipeline is not needed to get oil to refineries along the Northern Tier and that it would involve great risks of oil spills in previously pristine areas of Montana, Idaho and Washington. The pipeline still needs final approval from the states of Washington and Montana.

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12-High Country News — Oct. 19, 1979



Bulletin Board



WOMEN AND TECHNOLOGY

A 30-page booklet that explains how women can develop appropriate technology is available Nov. 1 from the Office of Appropriate Technology, P.O. Box 5651, San Jose, Calif. 95150. Advance orders of the book are \$1.50. After publication, regular price is \$2. The publication is entitled *Women and Technology: Tools for Change*.

NUCLEAR POWER PRIMER

A *Primer on Nuclear Power* is now available from Anvil Press for \$2.50. The booklet deals with numerous aspects of the nuclear industry, including radiation hazards, nuclear accidents, costs and other issues. The book, by Jack Miller, can be obtained from Anvil Press, Box 37, Millville, Minn. 55957. Bulk rates are also available.

SOLAR GUIDE

Detailed information on hundreds of solar products is available from *Solar Age* magazine of Harrisville, N.H. The guide for professionals is published in loose-leaf form, and updates on new products or specifications are published bimonthly. Technical specifications, performance data and current price information on everything from solar-heating greenhouses to photovoltaics are included. For more information, write *Solar Age*, Church Hill, Dept. SG9, Harrisville, N.H. 03450. The guide and one year of updates sell for \$120.

ENDANGERED SPECIES RULES CHANGED

In order to protect their favorite housewren or three-toed furbisher, individuals will have to become acquainted with the Interior and Commerce departments' new proposed rules for listing endangered and threatened species and removing them from the lists. Lynn Greenwalt, director of the U.S. Fish and Wildlife Service, calls the new proposals "a how-to manual that the public and other agencies can follow in either petitioning the departments to list a species or in participating in our decision-making process." The proposal was published in the August 15 *Federal Register*. Copies may be obtained from and comments sent to the Director (OES), U.S. Fish and Wildlife Service, Washington, D.C. 20240. Comments will be accepted until Nov. 15.

ROCKY FLATS DEFENSE

A legal defense fund has been organized in support of the 284 defendants involved in the April 29, 1979, Rocky Flats Nuclear Weapons Plant (Colo.) trespass case. The organizers of the fund say that fines were assessed as a political punishment, not appropriate to the nature of the offenses. The purpose of the fund is: to lessen the impact of the fines; to pay for appeal costs; and to educate the public regarding the nature of the trials and the issues involved. Contributions should be sent to The April 29, 1979, Legal Defense Fund, Ann Grodsky, 1695 Orchard Ave., Boulder, Colo. 80302.

MOONSHINERS?

People interested in modern moonshining — that is, producing their own fuel from biomass — are banding together in a group called the National Alcohol Fuel Producers Association. The group, which formed last March, is active in education, research and development. Members receive a 300-page workshop manual; a catalog of suppliers, equipment and technical consultants; a monthly newsletter; and more. Dues are \$75 a year.

WILDERNESS WORKSHOP

Author Edward Abbey and historian Roderick Nash will be the featured speakers at the Colorado Wilderness Conference to be held on Nov. 3 and 4 in Denver. The conference, which coincides with Congress' consideration of Colorado wilderness and wild and scenic rivers legislation, is intended to generate interest in preserving Colorado's wild lands. For information contact Meg Nagel, 2239 E. Colfax, Denver, Colo. 80206 or call (303) 333-0932.

HOME BUILDING

A new newsletter, which will "act as a central forum for people concerned with quality homes and lives," is now being published quarterly. *Housesmiths Newsletter* is "based on the growing popularity of timber-frame construction and owner-built housing." The newsletter will give advice, answer questions, give encouragement and provide hard knowledge, according to its editors. A one-year subscription is \$6.00. To order write Dovetail Press, Ltd., P.O. Box 1496, Boulder, Colo. 80306.

WYOMING WATER QUALITY

The state of Wyoming has issued its draft 208 Water Quality Management Plan. According to Gov. Ed Herschler, the plan's "most important aims are to establish ground rules on how water quality decisions will be made...and to describe the roles of governmental institutions in the decision making process." Copies of the plan may be obtained from the Wyoming Department of Environmental Quality, Cheyenne, Wyo. 82001.

ENERGY FUTURE

Resources for the Future has published a study entitled *Energy in America's Future*. The book "lays out the facts, prospects and policy issues regarding U.S. energy sources and technologies and analyzes their environmental, health and safety aspects." Copies of the book are \$30 for cloth bound and \$10.95 for paperback. The book claims to be "unique (among all the energy studies recently spawned) in its comprehensive treatment, balance and readability." It may be ordered from the Johns Hopkins University Press, Baltimore, Md. 21218.

SOLAR BIBLIOGRAPHY

In *A Bibliography for the Solar Home Builder* author Donald W. Aitken describes over 70 solar-energy publications that he feels are "the most useful, honest, and worth the cost." Each listing contains a brief description of the contents, the price, the publisher's address, the size of the volume and number of pages. Also included is a list of solar energy organizations, describing the groups' activities and membership fees. The 38-page booklet may be obtained by writing the Office of Appropriate Technology, 1530 10th St. Sacramento, Calif. 95814. The cost for out-of-state residents is one dollar.

LOGGING DEVASTATION

Two posters showing scenes of logging devastation in national forests are available for \$3 from the Natural Resources Defense Council (122 East 42nd St., New York, N.Y. 10017). Proceeds from the sale of posters will be used to promote wilderness.

Three states urge grizzly hunting season

The states of Wyoming, Montana and Idaho are planning to ask the U.S. Department of Interior to allow a grizzly bear hunting season around the perimeter of Yellowstone National Park next year. Resolutions either passed or being considered by the three states' game management agencies were prompted by reports of marauding of livestock by grizzlies and poaching of the bears by hunters.

So far, Montana is the only state to officially make the request. However, Wyoming made a similar request to Interior last year, which was refused, and Idaho will consider its resolution soon. The grizzly bear is classified as a threatened species, and hunting is outlawed.

The U.S. Fish and Wildlife Service, the U.S. Forest Service and the state agencies calculate that the grizzly population in the "Greater Yellowstone Area" has increased

from 300 to 350 since 1975, assuring a "viable grizzly population." The greater number of bears has led to more human-bear conflicts and increasing reports of grizzly predation on livestock, particularly sheep.

Wyoming Game and Fish director Earl Thomas said that his agency believes a grizzly hunting season would allow better control of the bears and reduce poaching. "We think it is better for them to be killed by a hunter than by these helter-skelter, willy-nilly, never know where it is going to come from type of things."

However, a leader of the Interagency Grizzly Research team says that the hunting should not be allowed until poaching has been controlled. Dick Knight told the *Billings Gazette*, "What the states want to do is substitute controlled mortality for uncontrolled mortality."

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Oct. 19, 1979 — High Country News-13

Western Roundup

North Dakota

Audubon Society sues to halt Garrison irrigation project

The National Audubon Society has filed a suit to stop all further work on the Garrison Diversion, a massive irrigation project in North Dakota. The Society contends the Secretary of Interior has not complied with the National Environmental Policy Act.

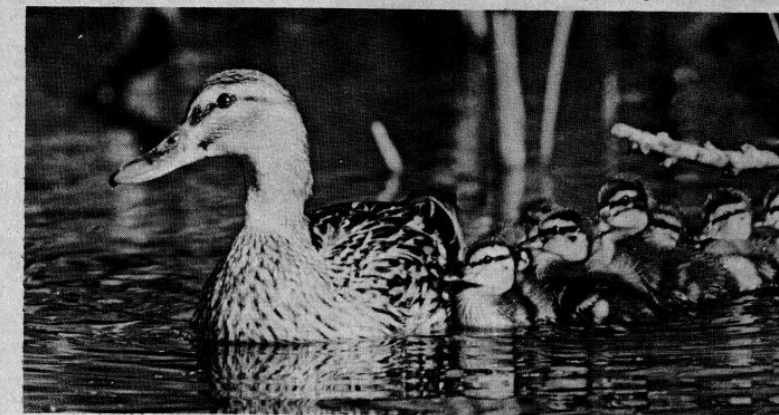
The diversion has been the subject of controversy in North Dakota since it was first authorized by Congress in 1965. While proponents say the project is needed to increase yields on thousands of acres of North Dakota farmland, opponents contend the project will remove more land from farming than it will eventually irrigate. The Audubon Society also says the project will reduce waterfowl habitat, and the Canadian government objects to its expected effects on water quality in rivers flowing north to Canada.

In the spring of 1977, Audubon and Interior reached a temporary settlement of an earlier suit filed by Audubon after Interior Secretary Cecil Andrus re-evaluated the Garrison Diversion, a 250,000-acre irrigation project, and prepared a new impact statement. Andrus recommended in 1977 that the project be scaled down to a 96,000-acre alternative.

However, North Dakota's congressional delegation would not agree to the compromise, and Congress as a whole has not acted on Andrus' proposal.

In the interim, Audubon has attracted several supporters for its new suit. The Manitoba Indian Brotherhood and a number of other Canadian organizations concerned about fisheries in that country have filed briefs supporting Audubon. In addition, many North Dakota farmers who would lose land as a result of the project have come out against it. The U.S. Fish and Wildlife Service says 146,000 acres would be needed to replace wildlife habitat lost to Garrison.

"It's almost unbelievable how public opinion has turned against Garrison in the past year," said Richard Madson of the Na-



WATERFOWL HABITAT will be lost to the Garrison Diversion, according to the Audubon Society.

tional Audubon Society.

In its lawsuit, filed in U.S. District Court in the District of Columbia, Audubon contends that money is presently being spent on the larger project, not the smaller one agreed to in the 1977 settlement, and demands that all further work be halted.

Madson said the National Environmental Policy Act "not only requires Secretary of Interior Cecil Andrus to prepare an environmental impact statement on the project which adequately discloses all its harmful effects and considers less damaging alternatives, but it also requires him to take that impact statement into account when he decides whether and how to build the project. Otherwise, the impact statement process would be a meaningless exercise."

Wyoming

Taconite mine employees want clean air

Union members at the Atlantic City taconite mine near Lander, Wyo., faced with possible lay-offs if federal clean air regulations close a Utah steel mill, have voted unanimously in support of clean air.

In a letter to the Lander newspaper, the local president of the United Steelworkers, Ken Sanders, said, "We have expressed our views on clean air over the past several years, and I don't think the closure of Geneva Steel (in Utah) is going to change our views in the least. We're in favor of a clean environment, and we've screamed, more than anyone else, insisting on a clean environment..."

U.S. Steel appealed to the workers at the Atlantic City mine to write letters to the Environmental Protection Agency and to their Congressmen saying they might lose their jobs if EPA requires U.S. Steel to install expensive pollution control equip-

ment at its mill in Utah. The company says it can afford to spend \$62.6 million and no more to clean up, but EPA says more improvements are needed.

The Geneva Works mill now processes all the ore from the Atlantic City mine (HCN, 10-5-79).

In Utah, mill employees and state officials have been more responsive to U.S. Steel's plea than the mine employees. Utah Gov. Scott Matheson, the director of the state division of health, and the executive secretary of the Utah Air Conservation Committee reportedly support the company's latest pollution control plan.

Despite the mine union's vote, the Wyoming congressional delegation has appealed to the EPA to consider the welfare of U.S. Steel mine employees.

The union represents 475 of the 550 employees at the mine.

Idaho

Idaho wilderness compromise readied

A compromise River of No Return Wilderness bill is being hashed out by Idaho's two U.S. Senators, Frank Church (D) and Jim McClure (R) and should be released from committee within a week.

Considered by many the most important environmental issue affecting the state this year, the bill is the focus of attention for both the timber industry and wilderness advocates.

Sen. Frank Church, who faces a tough election challenge from Rep. Steve Symms (R) next year, introduced three separate wilderness bills earlier this year: a conservationist bill calling for 2.3 million acres; a timber industry bill calling for 1.3 million acres; and the administration bill, calling for 1.9 million acres. The administration support was later broadened to include about 2.1 million acres.

The River of No Return Wilderness Council and the Idaho Conservation League received copies of a draft compromise bill from Church's office that calls for at least a 2 million acre wilderness area.

The draft also provides for:

- inclusion of some portion of the Magruder Corridor, a mountainous region to the northeast of the River of No Return area, in the existing Selway-Bitterroot Wilderness;

- a deadline for the Forest Service chief of Feb. 1 to rule on an appeal by the Idaho Wildlife Federation and other groups of Forest Service timber plans. The federation is appealing plans for timbering in two planning units near the proposed wilderness, and McClure asked for the expedited timetable. The bill would also expedite the potential court review of the timber plan.

- continuance of existing uses, such as airstrips, motorboats and grazing within the proposed wilderness;

- designation of 125 miles of the Salmon River into the Wild and Scenic Rivers System (the conservationists' bill would have designated 237 miles);

- releasing 400,000 to 500,000 acres for non-wilderness uses. Pat Ford of the Idaho Conservation League expects the bill to be out of the Senate by the end of October.

Arizona

Babbitt orders radioactive tritium seizure

Arizona Gov. Bruce Babbitt ordered the National Guard to seize and remove 550,000 curies of radioactive tritium from an American Atomics Corp. plant in Tucson. The governor declared a state of emergency and ordered the seizure when it was reported that the facility, closed since June, was leaking excessive radiation, and that food to feed 40,000 students had been contaminated.

The tritium was placed in sealed 55 gallon drums and removed to a temporary storage site further from the city. The plant was located in a mixed residential and business neighborhood and was near the central kitchen for Tucson's Unified School District. Food in the kitchen showed contamination.

A spokesman for the facility operators said of the removal, "They have people

running this thing who don't know what they're doing." He said he feared someone would push the wrong valve.

Babbitt responded that he found the statement about an accidental release "interesting, coming from the very people who released 300,000 curies of tritium through unfiltered stacks."

A curie is a unit of radiation measure. A release of 100,000 curies is considered substantial over a short period of time. Tritium is used to make self-illuminating watch faces and signs.

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14-High Country News — Oct. 19, 1979

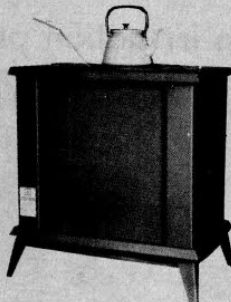
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WANTED: To Save You Money — Send in your renewal check for \$12 by Nov. 30th and beat the rate raise (up to \$15), which is effective Dec. 1st. Please mail a copy of your address label with your check to: HCN, Box K, Lander WY 82520.

WANTED: Freelance writers or photographers to cover North Dakota natural resource news. Pay is two to four cents a word or \$4 per photo. One-sided distributives unacceptable. Contact Marjane Ambler, High Country News, Box K, Lander, Wyo. 82520.

MEDIATOR: Office Of Environmental Mediation. The Office of Environmental Mediation, established with funds from the Ford and Rockefeller Foundations to offer mediation services in environmental conflicts, is seeking a person to serve on a mediation team which assists in the resolution of environmental disputes. The applicant should have a strong background in the private or governmental sector and broad contact and acceptance with the various groups and interests involved in environmental conflict. A working knowledge of economic and environmental issues and experience with the political structure in the western United States is essential. Applications, which should include a resume and three personal references, must be received by 15 November 1979. For additional information, contact: Leah K. Patton, Office of Environmental Mediation FM-12, Institute for Environmental Studies, University of Washington, Seattle, Washington 98195. An Equal Opportunity-Affirmative Action Employer.

PERSONNEL: The Northern Cheyenne Research Project, an independent research office of the Northern Cheyenne Tribe, has openings for 3 VISTA Volunteers beginning in October. Commitment for one year desirable. College graduate with Science or Educational skills preferred. Experience with Mini-Computers desirable. Benefits total about \$100-week. Rewarding work, invaluable experience. Send resume to NCRP, P.O. Box 388, Lane Deer, Montana 59043, or call (collect) (406) 477-6278.

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FOR SALE: Two adjacent 10 acre lots, Driggs, Idaho. Sensational view of the Tetons. \$1,500-acre. Easy terms. 307-332-2871 or write Griffin, 965 Cliff, Lander, Wyo. 82520.

State of Wyoming Public Notice

PURPOSE OF PUBLIC NOTICE

THE PURPOSE OF THIS PUBLIC NOTICE IS TO STATE THE STATE OF WYOMING'S INTENTION TO ISSUE WASTEWATER DISCHARGE PERMITS UNDER THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 (FWPCA), P.L. 92-500 AND THE WYOMING ENVIRONMENTAL QUALITY ACT (35-11-101 et. seq., WYOMING STATUTES 1987, CUMULATIVE SUPPLEMENT 1972). IT IS THE STATE OF WYOMING'S INTENTION TO MODIFY (7) SEVEN OIL TREATERS AND (1) ONE INDUSTRIAL DISCHARGE PERMIT WITHIN THE STATE OF WYOMING.

PERMIT INFORMATION

(1) PERMIT NAME:	AMOCO PRODUCTION COMPANY
MAILING ADDRESS:	P.O. BOX 1400 RIVERTON, WYOMING 82501
FACILITY LOCATION:	HAPPY SPRINGS UNIT, SECTION 4, T28N, R93W, FREMONT COUNTY, WYOMING
PERMIT NUMBER:	Wy-0024244
(2) PERMIT NAME:	HUSKY OIL COMPANY
MAILING ADDRESS:	P.O. BOX 380 CODY, WYOMING 82414
FACILITY LOCATION:	OREGON BASIN FIELD RAUSCH BATTERY NW¼ SECTION 9, T51N, R100W PARK COUNTY, WYOMING
PERMIT NUMBER:	Wy-0003565
(3) PERMIT NAME:	JUNIPER PETROLEUM CORPORATION
MAILING ADDRESS:	Suite 2410, LINCOLN CENTER 1860 LINCOLN STREET DENVER, COLORADO 80264
FACILITY LOCATION:	LANCE CREEK, APEX 1 & 4 AND OPC SUNDANCE BATTERY, SECTION 27, T38N, R66W NIOBRARA COUNTY, WYOMING
PERMIT NUMBER:	Wy-0000841
(4) PERMIT NAME:	MARATHON OIL COMPANY
MAILING ADDRESS:	P.O. BOX 120 CASPER, WYOMING 82601
FACILITY LOCATION:	OREGON BASIN FIELD BATTERY A SECTION 4, T51N, R100W PARK COUNTY, WYOMING
PERMIT NUMBER:	Wy-0001899
FACILITY LOCATION:	OREGON BASIN FIELD BATTERY B SECTION 21, T51N, R100W PARK COUNTY, WYOMING
PERMIT NUMBER:	Wy-0001902

FACILITY LOCATION:

OREGON BASIN FIELD
BATTERY C
SECTION 4, T50N, R100W
PARK COUNTY, WYOMING

PERMIT NUMBER:

Wy-0001911

FACILITY LOCATION:

OREGON BASIN FIELD
KIRK DRY CREEK BATTERIES
W¼ SECTION 9, T50N, R100W
PARK COUNTY, WYOMING

PERMIT NUMBER:

Wy-0025623

Facilities are typical oil treaters located in Niobrara, Park and Fremont Counties, Wyoming. The produced water is separated from the petroleum product through the use of heater treaters and skid ponds. The discharges are to Class IV waters of the State with the exception of the Juniper facility which discharges to Lance Creek (Class II w.w. stream) via an unnamed draw.

Letters of beneficial use have been received by the Bureau of Land Management concerning these discharges, therefore, the permits are being modified to waive the chemical limitations (total dissolved solids, chlorides and sulfates). There is no evidence to indicate that more stringent limitations are needed to meet Wyoming's Water Quality Standards at these seven facilities.

The Department will continue to evaluate these discharges and, if necessary, will modify the permits if evidence indicates that more stringent limitations are needed. Semi-annual self-monitoring is required for all parameters with the exception of oil and grease which must be monitored quarterly. The proposed expiration dates are December 31, 1983, for all of the facilities with the exception of the Juniper lease which is December 31, 1982.

(5) PERMIT NAME:	AMAX COAL COMPANY "BELLE AYE MINE"
MAILING ADDRESS:	P.O. BOX 3005 GILLETTE, WYOMING 82716
PERMIT NUMBER:	Wy-0003514

The Amax Coal Company was issued a permit to discharge from its Belle Ayr Mine on December 4, 1978. The company has now requested that three additional points of discharge be added in the discharge permit. The modification grants the company's request of the three additional points. Limitations on the parameters at these points remain unchanged as those applying to the original four discharge points and comply with national "best practicable" treatment standards. Periodic self-monitoring of the discharges is required with monthly reporting to the regulatory agencies.

Because of uncertainties concerning pending EPA regulations on toxic substances associated with coal mining, a short term permit with an expiration date of December 31, 1980, is proposed.

STATE-EPA TENTATIVE DETERMINATIONS

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

PUBLIC COMMENTS

Public comments are invited any time prior to November 19, 1979. Comments may be directed to the Wyoming Department of Environmental Quality, Water Quality Division, Permits Section, Hathaway Building, Cheyenne, Wyoming 82002, or the U.S. Environmental Protection Agency, Region VIII, Enforcement Division, Permits Administration and Compliance Branch, 1860 Lincoln Street, Denver, Colorado 80298. All comments received prior to November 19, 1979, will be considered in the formulation of final determinations to be imposed on the permits.

ADDITIONAL INFORMATION

Additional information may be obtained upon request by calling the State of Wyoming, (307) 777-7781, or EPA, (303) 837-3574, or by writing to the aforementioned addresses. The complete applications, draft permits, and related documents are available for review and reproduction at the aforementioned addresses.

Public Notice WY-79-011

Oct. 19, 1979 — High Country News-15

SERVICE DIRECTORY

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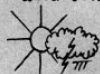
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WE NEED YOUR HELP!

The National Forest Management Act of 1976 requires each National Forest to prepare an integrated Land and Resource Management Plan. These plans must be completed by 1983. The Shoshone National Forest is in the preliminary stages of developing its Forest Land and Resource Management Plan. This plan will determine the future long term management direction for the Forest. The first phase involves identifying the various public issues and concerns related to managing the National Forest. Once these issues are identified, the planning process will develop various strategies or alternatives for resolving these issues.

It is vitally important that we hear from you! Please take a few moments and write down any concerns or issues you feel need to be addressed for the Shoshone National Forest.

Your comments can be mailed to the Forest Supervisor, Shoshone National Forest, P. O. Box 961, Cody, Wyoming 82414, or you may drop off your comments at any of the District Ranger offices in Powell, Cody, Meeteetse, Lander, or Dubois.

We need your ideas by November 19, 1979.

(Optional) Name _____

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() I would like to receive further information about the Forest Land Use Plan as it becomes available.



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16-High Country News — Oct. 19, 1979

THE ADIRONDACK PARK

A Political History by Frank Graham, Jr.

THE CENTURY-LONG STRUGGLE TO CREATE AND PROTECT
THE VAST WILDERNESS PARK IN NEW YORK STATE'S ADIRONDACK
MOUNTAINS—AND HOW THAT STRUGGLE HAS INFLUENCED THE
FATE OF AMERICA'S GREAT LAND RESERVES



by Frank Graham, Jr., Alfred A. Knopf, New York, 1978. \$15.00, cloth, 314 pages. Photographs.

Review by Peter Wild

Piqued by curiosity, prominent citizens of the Montana Territory set off over a hundred years ago to investigate wild rumors about an unexplored land to the south. They returned from their expedition bewildered by the "infernal region" of

bubbling mud fields and periodic geysers. In the public mind, the discoveries confirmed what the West should be — a majestic tapestry punctuated with exotic phenomena. At the Montanans' urging, President Grant created Yellowstone National Park in 1872.

We Westerners often think that was the country's first park of its kind. But was it? Some eight years earlier, Abraham Lincoln had responded to a petition from California by withdrawing the Yosemite

Valley from the public domain and deeding it to the state as a recreation ground "for all time."

Since then, those who enjoy debating such things have wrangled over whether Yosemite, later returned to federal control, or Yellowstone should have the honor of being "first" in our national park system. However, as *The Adirondack Park* superbly shows, toward the end of the last century a multitude of frequently vague preservation impulses around the nation coalesced to give the country its present system of state and federal preserves. Which is listed "first" in the record books makes little difference.

For a moment, Westerners might turn from Yellowstone and Yosemite to consider the primary role that an Eastern park — administered by the state of New York — played in the early preservation movement.

At 5,927,600 acres, Adirondack Park dwarfs such mammoth national parks as Yellowstone (2,221,722 acres) and Mount McKinley (1,939,493 acres). Unlike federal parks, Adirondack includes an unusual hodgepodge of state and private lands that has caused administrative headaches and public uproars since the day in 1892 that Gov. Roswell Flower signed its enabling legislation.

Located a mere 300 miles from New York City, the Adirondack Mountains provided a pleasuring ground for such wealthy and influential luminaries as Teddy Roosevelt. They were the very kind of people who, once "converted" by their love of wilderness in their own state's back yard, went on to bless the West with an expanded park system. In this respect, Adirondack Park served as a seedbed for conservation in the West.

Frank Graham, Jr., a past publicity director for the Brooklyn Dodgers and now a

field editor of *Audubon* magazine, does an admirable job of bringing together the bizarre incidents, unusual tidbits and political feuds that form the history of the park. He shows us early tourists — notably Sigmund Freud and Robert Louis Stevenson — holding their hats and risking their lives as they chug across Lake Champlain in steamboats famous for the frequency of their boiler explosions.

He shows us the eccentrics of the area, the hermits and castle builders — and Verplanck Colvin. Colvin spent years in a frenzied effort to preserve the Adirondacks. Then, rejected and embittered, he did an about-face and tried to destroy the wilderness.

The book brings to light the valid, and some invalid, reasons contributing to the success of conservationists in establishing the park. Businessmen in New York City rightly argued that a reliable water supply depended on preserved woodlands to the north. Some of them also believed that forests purified the air of noxious malarial vapors.

Besides contributing a study essential to an understanding of the developing park idea, Frank Graham's latest book demonstrates another point. Each of our parks has a unique story to tell, a story that in many cases still waits to be written with the comprehension and lively accuracy of *The Adirondack Park*.

Books



SKI TRAILS AND OLD TIMERS' TALES OF IDAHO AND MONTANA

by Ron Watters, Solstice Press, Moscow, Idaho, 1978. \$7.95, Paper, 272 pages.

Review by Glenn Oakley

Ron Watters began a ski trip across the Idaho Primitive Area last winter with several companions. The long, arduous journey forced most of them to turn back before crossing the incredibly steep and rugged backbone of Idaho. But Watters finished the trek alone — making the first recorded ski crossing of the area.

Watters' ambition and thoroughness are evident in his book on cross-country skiing in Idaho and Montana. *Ski Trails and Old Timers' Tales* is primarily a guide book to 15 popular cross-country skiing regions in Idaho and Montana.

Watters also included a compendium of stories about 19th and early 20th Century Western cross-country skiers, tips on equipment and avalanche safety, and lists of conservation groups, periodicals and cross-country ski clubs and shops.

The old timers' tales are quick, short glimpses of pioneer skiing and skiers — quite interesting, but lacking in depth and character. Behind every tale could lie an entire chapter or book. Nevertheless, Watters did an excellent job of gathering information and photos on a number of early skiers and their methods of handling the

skis, up to 14 foot long, which they called "long snowshoes."

There is the story of mail carrier Silas Romer, who lost his life skiing during dangerously high avalanche conditions bringing medicine to an ill child. And there is George Henninghouse, another mail carrier, who became lost in a storm and panicked when wolves began howling nearby.

Watters points out trails that are susceptible to avalanche and explains where and when to look out for them. His warnings are brought home with a series of four photos that show a skier unwittingly starting and narrowly avoiding an avalanche.

The guide section is superbly organized. Each of the 15 regions is introduced by a hand-drawn map with numbered trails. The length, difficulty, access, avalanche danger and terrain are described for each trail. Pictorial keys indicate at a glance such information as whether dogs are allowed or if the trails are groomed.

For some of the more difficult tours, aerial drawings present an overview of trails and surrounding mountains, including alternative descent routes for the advanced skier.

The maps are not detailed enough to be used as the only information source for some of the tours. Watters has included the names, addresses and phone numbers of the appropriate folks, usually the local Forest Service, to contact for more detailed information.



Photo by Glenn Oakley

SKIING at Ponderosa State Park in the McCall region in Idaho.