The Outdoor and Environmental Bi-Weekly

High Country News

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Disaster A Matter Of Timing

by Lee Turpin

Magnificent Lake Powell in southern Utah is only a scant few years old, but already two major disasters have overtaken it and a third hangs ominously over its headwaters just waiting for the right time to happen.

The first disaster is history. Although its effects have yet to be felt by the huge lake and the growing numbers who enjoy it, these effects are inevitable. The disaster? A simple matter of timing — but with results that will fill the crystalline air of Glen Canyon National Recreation Area and other Park Service areas within the Four Corners region, with choking, unsightly smog as bad as that in any industrial city in the nation.

All this from bad timing — the initial planning for the several immense, coal-burning power plants to be built near Lake Powell and now in various stages of construction or advanced planning, started BEFORE the enactment of the National Environmental Policy Act and are thus, by court decree, exempt from its provisions. Had the NEPA been law a little earlier, or the power plant planning started a little later, the environmental impact provisions of the NEPA would have doubtless ruled out any construction of fossil fuel power plants anywhere near Lake Powell. As it is, one plant will be right on the shores of the lake, and others will be near enough to contribute their massive air pollution to the air basins of Lake Powell, the Colorado River and their many long tributaries. An area renowned for its clean, pure air will soon be renowned for its metropolitan smog— many hundreds of miles from any big metropolis.

How could it be that a power plant is being built on the shores of a lake within a National Recreation Area? Unfortunately, a considerable amount of Powell shoreline is not within the Recreation Area. A quick glance at a map will show that the south shore of Lake Powell up to and including the San Juan River arm, a shoreline distance of several hundred miles, constitutes the northern border of the vast Navajo Indian Reservation. So, to get a site for the power plant near the shore, and a plentiful source of cooling water, all the power plant consortium had to do was bully and confuse a mere handful of Indians, a pliable "tribal council" set up by the Bureau of Indian Affairs.

Occasionally one hears news of a threatened law suit in which the majority of the Navajo tribe contend that the "Uncle Tom" tribal council had no right to legally represent the entire tribe, but then somehow nothing ever comes of this perfectly valid question. The matter can be summed up by pointing out that white Americans have had almost 200 years of experience at pushing American Indians around, and that the reservation system has provided a very effective means of selecting Indian leaders that are subservient to the white man's desires, no matter how

(Please turn to page 6)

Photo by Lee Turpin

Typical San Juan River gorge between Bluff, Utah, and the waters of Lake Powell, with the towers of Monument Valley in the distance. This type of terrain made it impossible to stop the spilled oil and the great masses of oil-saturated organic debris washed into the river by heavy regional flash flooding. The first place that it was practical to reach the river and stretch booms was near an area called Paiute Farms, where the river passes through a short stretch of open country. Here, a pair of booms was placed to stop downstream movement of the oil and debris, only a mile or so from the waters of Lake Powell.

HIGH COUNTRY

By Tom Bell

Being editor of **High Country News** has greatly curtailed my travel. There are three good reasons — I can't afford it, I don't have that much spare time, and I think it is one of the places where I can sacrifice to save dwindling natural resources. I have come to the place where I ask myself, "Is this trip necessary?"

Last week, The Montana Wilderness Association held its annual meeting at Great Falls. Co-presidents Cecil Garland and Liz Smith asked me if I could attend, and would I be on the program. They very kindly and graciously offered to pay my expenses.

Since I have been trying to make the Association's annual convention for the last three years, the answer to my own question was in the affirmative. It was a wonderful meeting and one which I am most grateful I could attend.

Part of being an environmental editor is the contacts with other concerned individuals. You can sit at a desk only so long before you realize that it would be most valuable to get a reading from others. How do they feel, what progress have they made, what are they doing, and what do they plan to do?

Every day, mail comes across my desk from people I have never met, and whom I may never meet. But it is gratifying to meet some of them face-to-face once in awhile. And without fail, they are the warm, kind persons they have projected themselves to be in their letters.

When you are involved in the environmental cause and you go to an environmental meeting, a stranger there is just a friend you haven't met. And so you get to meet them. The conversations you have with them — the thoughts which they pass on — are enriching. You come away blessed because they have touched your life.

And the rewards of friendships renewed are of course the priceless possessions of the human spirit. There are no greater rewards than those kinships of soul where nothing is expected but the common bonds of respect and esteem.

I have never been to a convention of university presidents, or petroleum geologists, or chamber of commerce directors. But I suspect they all have something in common — a need to talk to others with common interests and common problems. And with that, a need to feel that what you are doing is important. Almost any line of human endeavor has its virtue, or something to commend it to others. But the cause of the environment, like that of religion, has something going for it. There is nothing tangible to be bought, sold, or exchanged to make it appealing to an individual. There is no monetary reward for the effectiveness of your sales pitch.

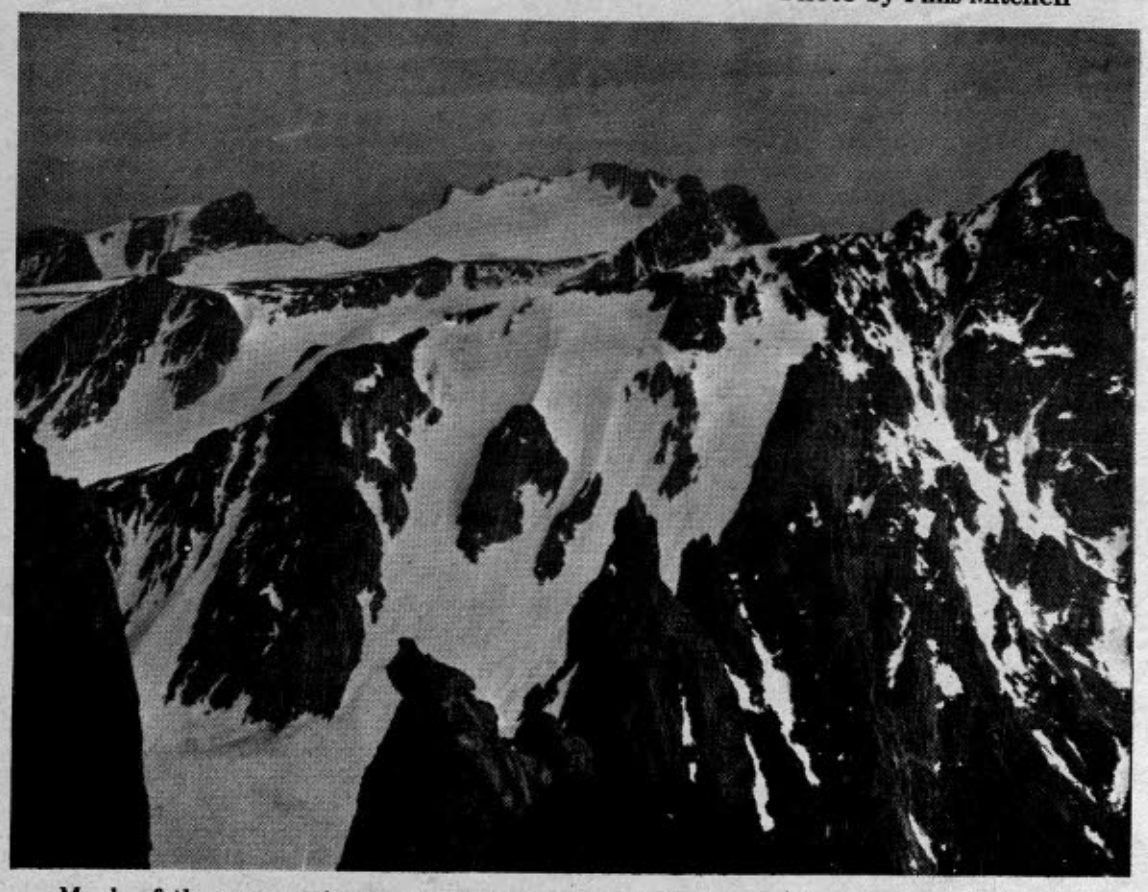
On the other hand, being an avowed environmentalist these days can haveits lumps. If you want to reserve some lands for future generations to despoil at their pleasure, you are a wilderness freak. If you would prefer to have your kids breathe clean air rather than be assured of a job in the nearest coal-fired generating plant, you are some kind of eco-nut. If you raise searching questions about the safety of a nuclear plant, you are standing in the way of a better life for your neighbor. He has been conditioned to live better electrically and so how can you be so dead set against progress and development!

But in spite of brickbats and grim forebodings, environmentalists maintain a sense of humor. They have to retain their sanity. It was in evidence at Great Falls where some annual "eco-awards" were dispensed right and left.

I came away from the meeting with a feeling that we are getting somewhere. There are fresh, new faces, and many more of them. They come from all walks of life and they are not hesitant about speaking out. They are convinced that we must do things differently or we may all perish. And they are ready to put their convictions on the line.

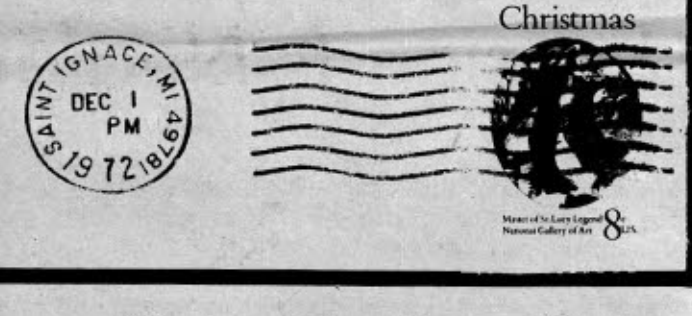
And so my deep and heartfelt thanks to the Montana Wilderness Association. They have opened new windows on my life and I hope I can reciprocate.

Photo by Finis Mitchell



Much of the mountainous wilderness area of the West is similar to this "real estate turned on end." Groups such as the Montana Wilderness Association, the Idaho Environmental Council, the Colorado and Wyoming Coordinating Councils, and others have worked diligently to protect areas of critical wildlife habitat. The Rocky Mountain elk, the grizzly bear, the wolverine and other animals depend upon large areas of wilderness for survival. Such areas include a diversity of land types and not just "wilderness on the rocks." Shown in the photo is 13,730-ft. Fremont Peak (center) in Wyoming's Glacier Primitive Area. It is flanked on the left by 13,400-ft. Jackson Peak, and on the right by 13,607-ft. Mt. Sacajawea (off right shoulder of Fremont Peak) and 13,600-ft. Mt. Helen (at right).

Letters To The Editor



Editor:

My subscription to the **High Country News**, given to me by Mr. and Mrs. David Dominick as a gift, simply will not suffice as a pass-along. It just does not reach enough people. Therefore, please find enclosed my check to provide a subscription for my students as well.

The **News** has been invaluable in our Environmental Ethics class for both its ecological and photojournalistic content and form. In my experience the paper is unique. Although you particularize much of your material from the West, the implications of what you show and tell far exceed any geographic and political barriers.

Please continue what you have so ambitiously started and so significantly accomplish.

Best wishes,
Richard M. Shohet
Concord Academy
Concord, Massachusetts

* * *

Editor:

I was in Sheridan in late October for the "Energy Conference" and heard good things about your paper. Through the Ecology Center, I'm trying to develope a supporting organization here to help the groups in the Powder River Basin. Five or six of us are actively researching corporate activities and relationships as they relate to strip mining and energy production up there. We are also working with the media. If you need any help from out here, please don't hesitate to call.

Sincerely,
Bill Mitchell
San Francisco Ecology Center
San Francisco, California

HIGH COUNTRY NEWS

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Guest Editorials

Reprinted from the DESERET NEWS, Sept. 8, 1972.

Go Slow Advocated

Last July this page cautioned that all possible safeguards should be taken against environmental damage before allowing oil and gas drilling in Great Salt Lake.

That opinion is reinforced with recent warnings that drilling could, indeed, upset the delicate ecological balance of the lake, world-renowned for its salinity and one of Utah's best-known landmarks.

One spokesman has warned that tampering with the lake bottom could possibly result in a substantial drawdown for the lake level by penetrating underlying strata.

Salt companies claim that even the thinnest oil film on the brine surface would reduce the evaporation rate and endanger the purity of the lake's products. An oil spill, says one official, could wipe out the entire salt crop if it came during the pumping season.

There are other dangers if an oil spill should occur: It could harm recreation areas, for example, or the lake's production of brine shrimp which are used for tropical fish food. Despite Great Salt Lake's salty nature, many birds feed and nest along its shores, and one of the nation's largest remaining colonies of white pelicans is located on Gunnison Island.

Weighed against these real or imagined possibilities must be the revenue that would be produced for the state's schools by the leases. At $1 an acre per year, the leases possibly could bring in nearly $1 million a year if all the land currently under consideration were leased.

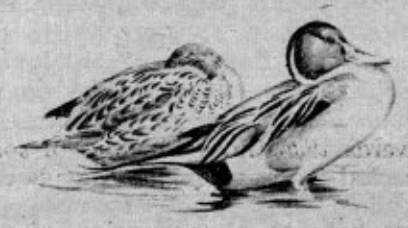
The two oil and gas companies seeking the leases have promised "elaborate precautions" against any environmental damage. One prospective leasee, AMOCO Production Co. of Denver, says it has drilled 25 wells on waterfowl and recreation lands, including Audubon Society land, and has received "no complaints."

This argument apparently hasn't swayed the Utah Audubon Society, which has called for an environmental impact study before any permission is given for drilling activity.

That sounds like a prudent course. Rather than rush into a leasing arrangement within the next 30 days, the State Land Board would be far wiser to insist on an impact study to more fully determine the environmental factors that will be operating.

It also should consider alternatives such as reducing the size of the area to be leased, particularly near recreation areas and places where drilling activity may be injurious to bird and other wildlife.

Until all the facts are in, the best course is to go slow on allowing oil and gas drilling in Great Salt Lake.



Reprinted from THE IDAHO STATESMAN, Boise, November 6, 1972.

Erosion Is Neglected Subject

Soil erosion is a neglected subject, despite the work of the Soil Conservation Service and the ecology movement. Recent studies tell us that millions of acres in Idaho are subject to excessive erosion, most of it range and forest land.

The tremendous erosion figures tell us something about the land abuses of the past (and some not past). Black Canyon Reservoir is one-third filled with silt. Barker Dam, a small dam near Boise, holds more silt than water. Far too much of Idaho's soil is going down our rivers.

This soil problem and what to do about it gets only superficial treatment in the preliminary report of the state water plan, prepared by the Idaho Water Resource Board. It is one of numerous deficiencies of that report. (The Water Board this week is beginning a series of informational hearings on the report.)

Excess erosion is washing away tons of farm land on hundreds of thousands of acres. The cost of conservation practices is high — often too high for the farmer. It makes sense for the public to subsidize soil conservation to protect and preserve a vital element of Idaho agriculture, the soil.

The state water plan ought to have a detailed evaluation of this problem. It doesn't even mention the figures on excess soil erosion available from the Columbia North Pacific Framework studies. Talking about our land and water resources without adequately looking at one of our basic land problems is an amazing omission.

We suspect that the Soil Conservation Service could generate considerable public support for a more ambitious approach to erosion problems if it would present them to the public in detail, with possible solutions.

Some of the tax dollars that are going into other less-beneficial programs ought to be going to help land owners conserve the soil.

A stepped up effort in soil stewardship would be an appropriate goal for Idaho as the nation approaches its 200th anniversary. The Water Resource Board could provide some leadership in this direction. But first it has to recognize that a greater effort should be made.

Reprinted from the WILDERNESS REPORT,
The Wilderness Society, November, 1972.

High Yield Forestry?

If you watched ABC-TV's coverage of the 1972 Olympic Games you may have received some 60-second sermonettes on the virtues of clearcutting from "Weyerhaeuser, The Tree Growing Company." You may not have realized it, however, because they used some strange names.

In a 60-second spot by the same title, clearcutting is presented as "Sunlight Harvesting." Since another nearby tree shades out a seedling's chance, Weyerhaeuser's ad explains, ". . . we must harvest in sunlit blocks instead of cutting a tree at a time." This spot actually uses the word clearcut once, but hastens to point out at the end that "We call this High Yield Forestry."

In another 60-second spot "High Yield Forestry" is presented as ". . . a program to speed up the forest. . ." (Ellipsis theirs.) Amphetamines, also known as speed, do that for the body, with similar side effects to those plaguing the Bitterroot and other national forests which have been subjected to the "sunlit blocks" treatment.

Weyerhaeuser takes great pains to point out how well they've tended their lands over the long haul. But the proof of the clearcutting tragedy — which the ads don't communicate to the audience — lies on many of our public national forests where nobody's producing national TV spots. There "sunlit blocks" look more like the bomb craters of Vietnam. We call that High Handed Forestry.

Reprinted from JACKSON HOLE NEWS,
November 9, 1972.

No! To Growth

Someday, when the national pundits stop celebrating over the dimension of President Nixon's landslide, they might learn something about the "national mood" by studying two referenda in Colorado and Wyoming. One dealt with the 1976 Winter Olympics, the other with Project Wagon Wheel in Sublette County.

On the surface the two referenda had little in common. The Colorado vote to cut off funding for the '76 Olympics was a highly publicized vote carrying with it the force of law. The informal "straw vote" in Sublette County which indicated that county's strong opposition to the nuclear stimulation project, can only hope to make another appeal to the conscience of El Paso Natural Gas and the AEC.

In a deeper sense, however, the two referenda were surprisingly similar. In both cases, the voters were saying "No" to more growth, unnecessary development, possible degradation of the environment, and a continuing influx of people.

Colorado has been faced with this problem for several years so that the vote against the Olympics might be more symbolic than realistic. Nevertheless, it would appear some people are trying to reverse that state's present growth profile.

In Sublette County, the vote against Wagon Wheel would appear to be good preventive medicine aimed at eliminating the problem before it has a chance to become a reality. Only a refusal by the AEC or El Paso to open their eyes could strip it of its significance.

Sheeptight Fencing...

by Tom Bell

A controversy which has raged intermittently since 1951 came to life in Wyoming again in 1972. The controversy revolves around the effect of sheep-tight fencing on game populations.

Blizzards raged across Wyoming's Red Desert in October, November and December, 1971. By December, pronghorn antelope herds had been driven southward into fenced sheep pastures and the impregnable barrier of Interstate 80.

Wyoming's high plains and deserts are always subject to se ere winter weather. The Wyoming Game and ish Department estimates normal winter losses i parts of the Red Desert to be approximately 13 percent. In those same areas of the Red Desert, the losses of antelope during the 1971-1972 winter went to approximately 56 percent. That figures out to an estimated 2,900 adult antelope.

The Department's winter mortality study also estimated 40 percent of the antelope herd in the South Pass Antelope Management Area was lost, and 35 percent of the Bison Basin herd, all in the Red Desert.

Sportsmen and biologists knew the animals were in trouble when large numbers of them appeared along highway fences. During November and December many antelope were seen along fencelines in the fenced pastures west of Rawlins. All appeared to be in trouble as they walked the fences looking for a way to move southward before the storms.

In December, game biologists, Bureau of Land Management men and sportsmen began a systematic check of the fencelines. What were easily found were counted but it was obvious that many were buried by deep snows. The photographs shown here were taken by Mr. Lee Trejo of the Carbon County Sportsman's Association at Rawlins, Wyoming.

Game biologists began a systematic sampling of the antelope area in March, 1972. Using helicopters and ground observers, 100-yard wide transects were sampled to locate dead antelope. Transects were laid out in areas where there were fences and where there were no fences. A statistical analysis of their findings indicated twice as much antelope mortality in the fenced areas as in the unfenced. Even in the unfenced control area, more than three-fourths of the dead antelope found were within one-half mile of the fence along Interstate 80.

The researchers found that in their sampling transects about half the fences were the so-called sheeptight, woven wire fences. But 83 percent of all the dead antelope were found along the woven wire fences. And of all the dead antelope found along all fences almost a fourth were actually entangled in th ences.

The research also indicated that alm st half of all the dead antelope were fawns. Yearling bucks also had a high mortality. In one particluar area where the antelope had only one or two fences to negotiate to reach available food, there were three times as many yearling bucks still alive as there were in areas where there were three to eight fences to cross.

Sportsmen and biologists have long contended that the Rouse-type fence is an antelope killer. This was borne out by the recent research The Rouse-type fence was found to have the highest mortality rate per linear mile of fence of any fence type.

The Rouse fence is usually constructed of 26-inch woven wire with two barbed wires above it. The barbed wires are separated by some 10-12 inches, and the total fence height averages 38-42 inches. It gets its name from Charles Rouse, a U.S. Fish and Wildlife Service biologist who first studied the fencing problem beginning in 1952. After reports of antelope dying in fenced pastures in 1950 and 1951 in the same areas near Rawlins, he was sent to study the situation. His limited

observations and the recommendations of a sheep rancher led him to recommend the fence. He said antelope could negotiate the fence by jumping through the two strands of barbed wire. Following his recommendation, thousands of miles of sheep-tight fence were constructed on both private and public lands in the West.

But even Rouse, who made such a monumental mistake, found fences and antelope don't mix. In his conclusions in a report issued January, 1954, he said, "Fences are obstacles to the movement of antelope. . . If fences are so constructed and so located as to prevent antelope from reaching needed water, seasonal forage or shelter, the fences are definitely detrimental to their welfare. . . There is a tendency for some sheepmen to graze pastures too closely. This practice is detrimental for both sheep and antelope. Antelope cannot compete with sheep for forage and cannot thrive on areas overused by sheep because of the similarity in their forage preferences. Due to the greater divergence in forage preferences, antelope do better on ranges used by cattle. In the management of sheep pastures on public lands, also used by

Photos by Lee Trejo

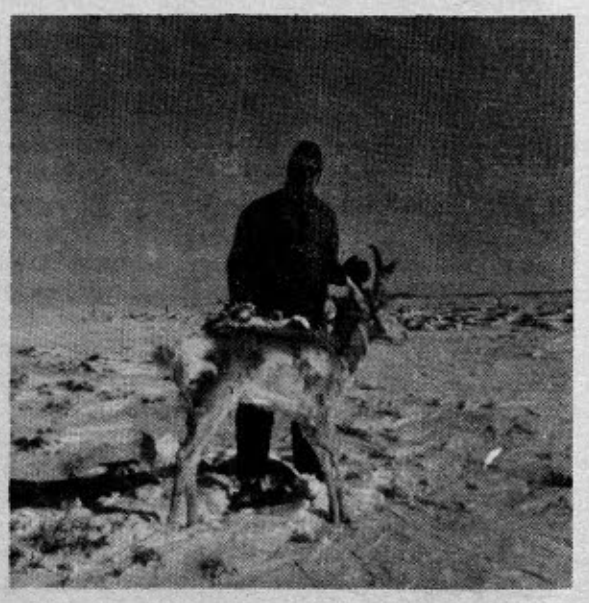
antelope, the operator should be required to leave sufficient forage on the area to provide for the antelope needs."

Needless to say, this has not happened. It has recently been documented by James Nathan Miller in the current **Readers' Digest**. ("The Nibbling Away of the West," December, 1972.) And in the meantime, sportsmen and conservationists discovered in the mid-1960's that sheepmen had been diligently fencing the public lands with unauthorized and illegal fences. Most of those fences were of the Rouse-type. Beginning with the discovery of thousands of miles of illegal fences on the public lands in Wyoming, the Bureau of Land Management was able to document some 13,000 miles of illegal fencing on all public lands in the West. Sheepmen were not required to remove any but an infinitesimal amount of those fences.

Herman Werner, now under indictment for killing eagles, was found to have built some 68 miles of illegal fence. He was later required to modify a few miles of fence and remove one short stretch.

Loss of antelope because of fences was duly reported in Wyoming papers, and the October, 1972, issue of **Colorado Magazine** carried a feature article on the problem. Pointing a finger at stockmen, the article said that fences authorized by the BLM and the Wyoming Highway Department may have caused the deaths of at least 5,000 antelope in the Red Desert area.

Sheepmen were quick to deny the allegations. Bill Mau, president of the Wyoming Woolgrowers Association, jumped to the defense. He said, "Fences played a very minor role in the death of 5,000 head of antelope in the Red Desert area. . . The true cause for the demise of the antelope was starvation brought about by the worst winter experienced in that area."



It is true that many of the antelope died of starvation — some of the dead antelope were

(Continued on page 5)

. . . Kills Antelope

found to have severely lacerated front legs from pawing in heavily encrusted snow. But starvation may have been secondary to the exposure and loss of energy from walking back and forth along fences. Many of the fences block migration routes to areas traditionally used by antelope to seek food and shelter during severe blizzards. And overgrazing by sheep, inside of the fenced pastures, undoubtedly contributed to the starvation factor.

Meanwhile, back at the ranch, the sheepmen have taken umbrage against **Colorado Magazine**. The November, 1972, issue of **Wyoming Wool Grower** headlined "Boycott **Colorado Magazine** advertisers." And the ensuing article says, "**Colorado Magazine** has done it again! They have taken circumstances which were acts of God, turned and twisted the facts into a fictional story, added touched-up photographs, and managed to show Wyoming sheepmen as **VILLAINS OF THE WEST!**"

The article then went on to urge Wyoming sheepmen, and other stockmen throughout the country, to refuse to patronize the national companies that advertise in **Colorado Magazine**. A small cut-out coupon was included, as well as a list of the advertisers.

At the recent convention of the Wyoming Woolgrowers, the sheepmen submitted a resolution to President Nixon asking that Secretary of the Interior Rogers. C. B. Morton be replaced. (Morton has since been reappointed. ed.) The sheepmen said Morton was not sympathetic and that a westerner should be appointed who better understood their problems.

The latest in the fencing controversy involves a film produced at the University of Wyoming for educational television. The two Wyoming Game and Fish Department men who did the research on the antelope losses were interviewed. Slated for release in December, Game and Fish Department officials interceded and asked that it be withheld. A spokesman for the Department said additional information would be obtained by Spring, 1973, and incorporated into the film. It is slated to be released then.

The fact still remains that the Wyoming Game and Fish Department is ultrasensitive to stockman influence. A prominent member of the Wyoming Wool Growers has traditionally held a seat on the Wyoming Game and Fish Commission. He is joined by another member representing the cattlemen, and usually several other members from small communities where the livestock industry is dominant.

If it were not for the fact that facts speak for themselves, the sheepmen of Wyoming would still be telling the public that woven wire fences were good for antelope. As it is, the deaths of thousands of antelope may have served a purpose. In the environmental consideration of fencing, sagebrush spraying, and grazing on the public lands, all for domestic livestock, there has to be consideration for the land, the water and the wildlife resource. Overgrazing has done immeasurable damage to all three.

Photos by Lee Trejo

The Bureau of Land Management and the U.S. Forest Service should be required to do environmental impact statements on grazing allotments and grazing management programs. Both agencies have been trying for years to adjust grazing rates to the carrying capacity of the public ranges. One of their methods to try to bring about an adjustment has been fencing. But many times the fencing has been detrimental to game, and in some areas it has eliminated wild horses.

The public must speak out on how it wants its public lands managed. The public must also support legislation establishing a Department of Natural Resources on the federal level, establishing an organic act for the Bureau of Land Management, and removing from the books the Taylor Grazing Act. Grazing interests, which are legitimate and recognized users of the public lands, can have their interests protected in new legislation. But their interests should not be paramount to those of other public interests.

Coal Gasification Viewed

The following article by John Bartlit was first printed in the **Santa Fe New Mexican**, August 8, 1972. The author is an engineer specializing in air pollution problems. He is associated with New Mexico Citizens for Clean Air and Water.

The editor.

by John Bartlit

Seven giant coal gasification plants within the decade are in plans for New Mexico's Four Corners region. El Paso Natural Gas plans three, and a combine of Texas Eastern Transmission, Utah International, and Pacific Lighting Service plans four. The plants, which will turn coal into man-made natural gas, are so huge the questions they raise extend into nearly all aspects of man's environment. These range from tangibles like resource usage and pollution to thinner disciplines like priorities.

To describe the plants' size, each of the seven will use as much strip mined coal as is now stripped from the nation's largest strip mine to feed all the existing Four Corners power complex. New Mexico strippable coal will last 25 years at that rate. The seven together will require 70,000 acre-feet of water per year. In perspective, this is one-third of all water used in the State in 1965 to satisfy all urban, rural (except irrigation), manufacturing, minerals, military, livestock and stock ponds, power, and fish and wildlife needs combined. Crop irrigation is the largest use, so large increases in usage hasten the day water must be taken from this segment.

The enormity of the projects will result in large tonnages of pollution being released to New Mexico's air, even though gasification is considerably cleaner than burning as a way to utilize a ton of coal. The seven plants together will emit nearly 300 tons per day of sulfur and nitrogen oxides if reasonably good process controls are installed.

Federal and State air quality standards, combined with the new construction permit system have put limits on pollutant concentrations permitted in any air shed. It follows that those favoring maximum job growth should favor maximum clean-up for all large industries so one industry does not pre-empt air resources. For example, pollutants emitted by the present Four Corners plants, in effect, 'keep out' several gasification plants which would employ more workers. Federal Environmental Protection Agents announced last week that Four Corners plants must reduce sulfur emissions by 92% before more emitters can be accommodated nearby. Over our objections, the State allows future emissions from the plants eight times greater than this, thereby restricting future development.

Are the gasification plants proposed as clean as possible? No. The industry proposed to produce the energy needed to run each plant is large — 500 megawatt equivalent coal-fired boilers. NMCCA&W and other groups tried to point out at hearings that over 100 tons of gaseous pollutants daily could be eliminated by burning product gas and oil in place of coal in the boilers. But industry attorneys tried to block consideration of the idea's merits by a legalistic gimmick. Attorneys argued for the 100 extra tons of pollution by saying our suggestion had to do with the "process" and not "pollution control" and therefore was irrelevant. Public and governmental pressure since has encouraged El Paso, but not Texas Eastern Transmission, to switch to gas-fired boilers — another example of a so-called "clean" plant being made much cleaner through homework done outside the industry.

New Industries, with gasification plants being no exception, are fond of saying they will meet all applicable State and Federal pollution standards. One reason this statement offers little reassurance to New Mexicans is because applicable standards admittedly permit reduction of visibility to 12-15 miles on the average. Studies show polluted urban flatlanders do not notice degradation of

(Continued on page 13)

Disaster . . .

questionable the legality of these may be.

So, disaster number one has already happened to Lake Powell. Those who live in the region soon to be used as an aerial garbage dump can only cringe at every newly-completed stage of power plant construction. They can only stand hopelessly on the countless magnificent panoramic viewpoints in the region and gaze at what is soon to be lost. They can only store up memories against the coming day when such vistas will be a thing of the past.

"Why, I remember a few years ago, son, when you could see the Henry Mountains from here any time, and the Blues down that way, and . . . . ."

"But, Dad, you've gotta be kidding! We can't even see Monument Basin from here, and I KNOW it's almost straight below us 'cause the Park Service map says so!"

Yes, all too soon, maps and memories and photos will be all that remain of the crystalline desert panoramas of southeastern Utah.

But with a number one disaster of this magnitude, what other significant tragedy could happen to Lake Powell.

What else but massive water pollution?

And how do you pollute a remote desert lake whose tributary rivers and streams pass through arid and semi-arid terrain that is virtually empty of significant human population centers?

Well, it's not easy, but when development-minded humans are in full control of a situation, any type of environmental ravishment is not only possible but highly probable.

The Colorado Riv · and its tributaries have long suffered hidec s pollution, some continuous, some sporac :. For the last decade or two, various Federal agencies have analyzed water samples from selected sites along the Colorado and its major tributaries. A computer printout of these analyses reads like an environmental horror story. Yet such a printout, even though it is several inches thick, tells only a small part of the story because there was little or no system or logic or consistency to the sampling, virtually no coordination between the various agencies doing the sampling, and no analyses were made for biological content.

Thus, even though the printout can point no accusing fingers at riverbank communities that contribute bacteriological pollution to the Colorado River and Lake Powell, other culprits are firmly indicated. These are mines and oil drilling sites, both active and abandoned, that seep hideous messes of noxious and corrosive fluids into watercourses and flowing water. Active mines, ore mills, oil drilling sites and refineries are famous for the mess they make of the environment, and even abandoned mines and drilling sites all too often continue for years to leak oil or mineral solutions into nearby waterways. Since locating the past owners of such wells is often nearly impossible, this leaves the detection and correction of such pollution sources to such badly understaffed Federal agencies as the Bureau of Land Management, the Forest Service and Park Service.

Not content with this slow but continual pollution of the precious waters of the Four Corners region, the mineral industry has now managed to massively pollute the waters of the San Juan River and Lake Powell with an enormous oil spill.

As everyone knows by now, huge oil spills on oceans, and even lakes, are not only possible but increasingly probable as the size and quantity of oil-transport tankers increases to meet this country's insatiable demand for fuel. But who would dream that an oil pipeline across the arid desertlands of northwestern New Mexico could conceivably put a huge mass of oil onto the surface of Lake Powell, over 100 miles away?

Scientists have long since discovered that the most fundamental axiom of the universe is that if anything CAN happen, it WILL — given time.

So, an oil pipeline in New Mexico ruptured, poured untold thousands of gallons of oil into a dry watercourse, this in turn led into the San Juan River, then unseasonal flooding flushed the oil spill through well over 100 miles of the San Juan River gorge and into the San Juan arm of Lake Powell. A highly unlikely series of events, but GIVEN TIME, they happened.

The key cause of the tragedy? Who will ever know for sure? It is human nature to hide and obscure any evidence of negligence, and certainly there was negligence involved. The most likely cause was reported by a news media representative who inspected the actual site of the oil pipeline break:

At the site of the leak, an earthen dam had been constructed across a normally dry ravine as a retainer dam in case of a leak. The dam had filled with water at some time in the past. A nearby rancher in need of water, had cut the dam and allowed the water to flow into prepared irrigation ditches. Thus, when the dam might have served its purpose and stopped the leaking oil from entering the San Juan River, it was useless, and an environmental tragedy occurred.

What caused the pipeline break? Again, who will ever know? Rumor has it that the pipeline company had increased pipeline pressures in order to accelerate deliveries. But whatever the cause of the oil leak, behind every material failure there is a human failure, as any reliability engineer can testify, and whatever the sequence of events that led to the subsequent pollution of Lake Powell, this tragedy could certainly have been prevented by careful, routine inspection of the pipeline by its owner, the Texas-New Mexico Pipeline Company. Quite obviously, aerial inspection was not enough.

Even after the leak was discovered, there were delays in reporting the news to the proper authorities. Then, to compound the problem still further, none of these authorities had given even the slightest prior thought to such a disaster. They were thus totally unprepared to handle the matter in an efficient manner. Several futile attempts were made to contain the oil mass, by then mixed with great quantities of organic debris swept into the San Juan by local flash flooding, but the force of the raging water inexorably shoved the oily mess on into upper Lake Powell, leaving hundreds of miles of San Juan River shoreline and sandbars coated with black, oily scum and oil-coated driftwood.

At the junction of the San Juan River and Lake Powell, during a couple of days of clearing weather, the mass of oil and oily debris was stopped behind two booms across the narrow lake. But not for long. Another flood crest on the San Juan River pushed great quantities of the black horror over and under the booms, forcing the release of the booms.

(Continued on page 7)

Photo by Lee Turpin

Copper Canyon, just below the Paiute Farms area on the San Juan River, was the containment and cleanup site first selected for the massive oil spill. It was a rugged job even getting equipment to the site and maintaining communications. Here, plans called for removal of the oil and debris by cranes, draglines, etc. The removed material was either to be buried or burned, but work had hardly gotten underway when another powerful flood crest on the river forced the debris over and under the retaining booms. These were then released. This photo was taken the next morning. Note the several pieces of heavy equipment still there, and the pile of black material already removed.

. . . A Matter of Timing

Thus, only one slender boom, several miles downlake, stood between the delicate ecosystem of Lake Powell and an estimated 8000 tons of oily, surface-choking scum that could block off the air-water interchange of oxygen and thus annihilate great masses of marine life in the deep, narrow lake.

What happened next should have happened years ago. A huge log-and-cable boom used during the construction of Glen Canyon Dam and subsequently stored near there, was moved to a site just downstream of the oily debris and stretched from shore to shore. This boom restrained the mess from further downlake progress. However, cleanup was still hampered, because strong currents in the upper lake often moved great masses of the debris back uplake. A second boom was finally positioned above the mass to hold it for the long, tedious and expensive job of removal.

In reviewing this entire affair from the viewpoint of prevention and possible contingency planning, several questions occur to those concerned with environmental matters:

1. **Is there no Federal agency responsible for assuring that oil pipelines receive regular, meaningful inspection?** Certainly, the recent furor over pipeline construction across Alaska should have alerted such an agency to the disaster potential inherent in such pipelines.

2. **Why didn't the Park Service authorities responsible for Lake Powell give some advance thought to the prevention of oil pollution and to contingency plans "just in case"?** At the very least, storage of the huge log boom used during dam construction could have been at a site more convenient for stopping possible oil pollution.

3. **Will the Texas-New Mexico Pipeline Company reimburse the various Federal and State agencies involved in the cleanup for their expenditures of manhours and materials?** Federal law requires that oil companies pay for the cleanup of their spills, but will our government agencies bill the oil company for their cleanup efforts — or must the taxpayer not only suffer the damage but help pay for its cleanup, too?

4. **Have the public officials involved in this mess learned anything from it?** Are they now trying to identify other potential sources of massive pollution and devising prevention and contingency plans?

The answer to this last question, of course, is NO! There are still almost countless major and minor sources of actual and potential pollution located on or near the Colorado River and its tributaries, and no one yet has come up with any sort of plan for the investigation of these sources. One horrible example of a disaster-waiting-to-happen lies just 16 miles upstream from Canyonlands National Park, right beside the Colorado River. This particular site is the third disaster noted as imminent in the first paragraph of this article.

Here, just upstream of Cataract Canyon and Lake Powell, many hundreds of thousands of gallons of concentrated brine solution stand in open, earth-walled, plastic-lined evaporation ponds. These ponds were built across a system of watercourses that are normally dry — but down which a local cloudburst could pour millions of tons of rock and water within a few minutes. The frequency of such cloudbursts in the surrounding region gives this potential disaster to the Colorado River-Lake Powell ecosystems far greater probability than the oil spill that has already occurred.

Despite this, earlier letters to Park Service authorities expressing concern over this serious threat to major values of one National Park and two National Recreation Areas were brushed off with casual unconcern. Since the oil spill, however, a Moab-based environmental organization has decided to re-open this issue, in hopes that Park Service authorities might have changed their thinking and be more prevention-minded. This environmental group, the Moab Chapter of ISSUE (Interested in Saving Southern Utah's Environment), is preparing a report on the subject which will be sent to Park Service authorities in the form of a letter requesting action. This letter is scheduled for publication in these pages at a later date.

In the meantime, individuals or organizations interested in promoting a prevention-is-better-than-cure campaign for the protection of Colorado Plateau waterways should write to: Water Pollution Committee, ISSUE, Moab Chapter, P.O. Box 534, Moab, Utah 84532.

Editor's note: The Environmental Protection Agency announced last week that clean-up of oil-soaked debris was about two-thirds finished. Thirty oil company workers are using two draglines, four dump trucks, two front-end loaders, two bulldozers, and other equipment to remove the material. The remaining debris is being held by booms in Zahn Bay on Lake Powell. The material is being buried at the 3,600-ft. mark. The reservoir is later to be filled to the 3,700-ft. level.

Reprinted from The Idaho Statesman

Earth Isn't Expandable

Growth has suddenly over-taken pollution as the most worrisome aspect of the environmental crisis. People are finally realizing that the earth isn't expandable — that there are limits to the materials that can be used to raise living standards.

Disenchantment with growth is coming from two directions. Wide publicity has been given recently to computer studies at Massachusetts Institute of Technology which show that rising populations and increasing use of resources could lead to environmental crises much worse than anything now experienced. Ever-faster growth of human societies could literally burn up the earth, the MIT scientists predict.

More impressive to the average person, though, are symptoms of the growth syndrome that must be faced each day. Traffic jams get worse, Privacy is harder to find, even in National Parks. Prices keep rising, a symptom of a basic malfunctioning of economic checks and balances. Increasing incomes simply don't buy the pleasures that affluent people have come to expect.

Finding answers to those questions is going to take years of political struggle. In the meantime many conscientious people are placing voluntary limits on growth out of a sense of duty. They have fewer children, drive small cars, or ride bicycles.

Others are penetrating even further into no-growth philosophy and activism. They are fed up with the rat race in the truest sense, and seek release from social pressures by adopting a more relaxed out-look on life. To them, no-growth is truly a better way to live.

Here are some of the general principles of no-growth living. You might want to give some of them a try, even in the still-growing society in which we now live;

1. Make more things yourself, so you have to buy less. Activities like gardening, subsistence farming, and food processing in the home are important in any culture that grows slowly. If handled properly, land has tremendous power to produce food in small gardens, without imputs of expensive resources. Personal production also cuts down on needs for transport and packaging of goods.

2. Set a limit on your income goal, so you don't spend the best years of your life trying to acquire more than you really need. You can do that by developing a resistance to advertising and sales pressure. Try to visualize what would happen if everybody were able to buy all the things they wanted. There would be no room left for anyone to enjoy their possessions.

3. Try to devote less time and energy to transport. Moving around causes a great part of the "growth-stress" now placed on our environment. Many trips are unnecessary, or could be shared with others to make better use of automobiles.

4. Focus your leisuretime energies on hobbies that require few material resources. Art and music will become popular in a non-growth world. Walking, conversing, and nature appreciation are a small drain on essential resources. Activities that annoy others or burn gasoline hasten the time when this small world gets too small entirely.

5. Think internationally. Remember that pollution is now spreading beyond national borders. A permanent solution to environmental problems is going to require cooperation between nations, and that could mean cooperation on use of resources, too. The days when one country can grow at the expense of another are probably numbered.

Hopefully, the idea of no-growth living will catch on and become popular. If that happens, our institutions could change gradually from within, and violent struggles over political solutions could be avoided.

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Photos

The released oil and debris (lower right) finally
downstream from where it tore loose from the
mendous mass of spilled oil and oily debris fro
Even after this heartbreaking second disaster,
several days.

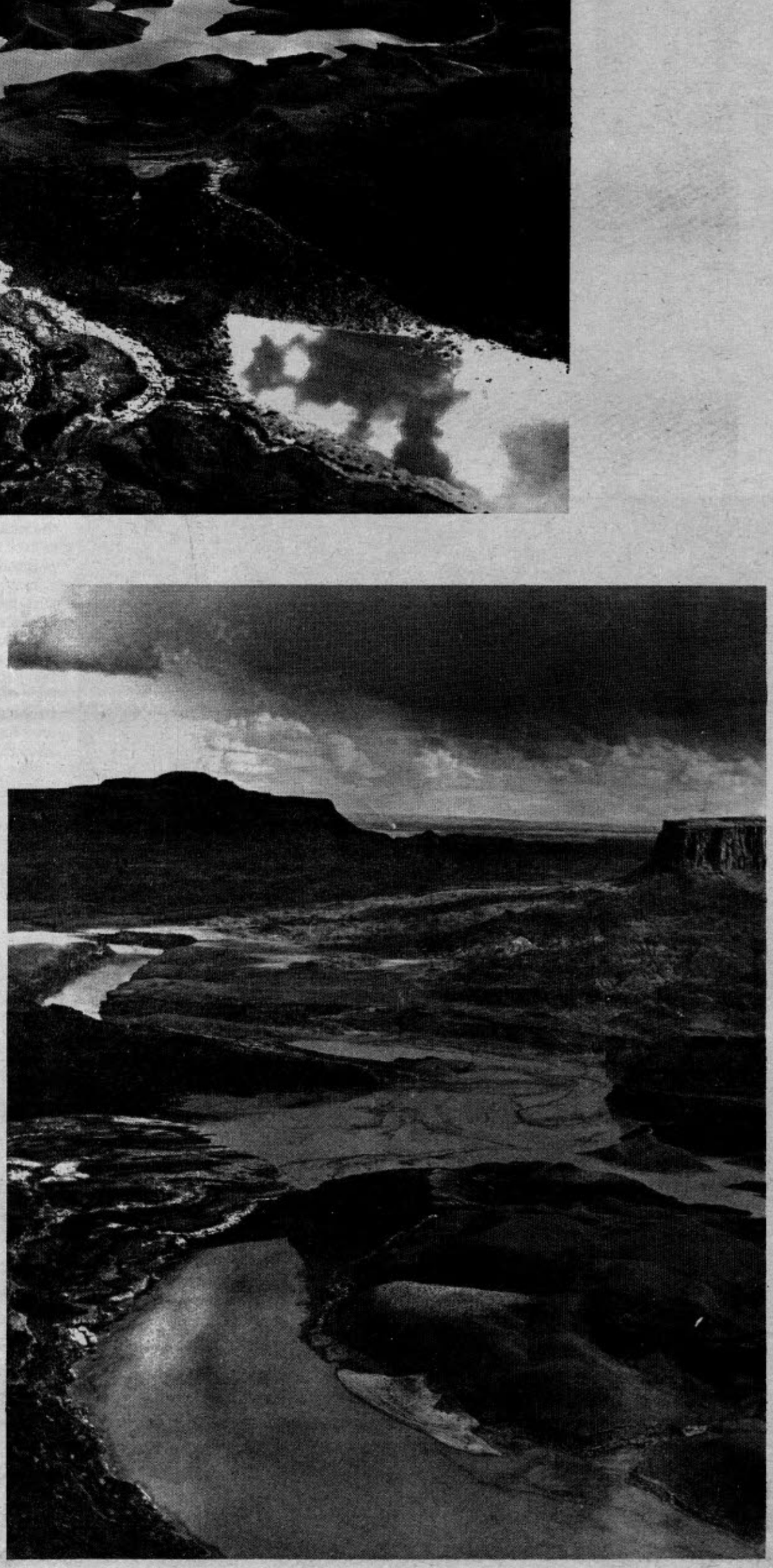
This "close up" of the oil spill where it finally
1000 feet above the lake. From this vantage point
choking the lake from shore to shore was estim
remote area. To get equipment to the site, road
river currents tended to move some of the oily mas
was positioned just below the mass, a second o
cleanup.

After the flood crest forced release of the oil
mass of debris and oil moved four miles before b
of floating oil still contaminated the lake and ri
the water, great streaks and swirls of oil can be
left of the photo. Total damage to the riverban
may never be due to the remoteness of the river
in favorable weather.

When the oil spill (lower left) was torn loose f
it and the main body of Lake Powell except th
Two large cabin cruiser boats beached by the b
debris was stopped by a narrow neck in the lak
massive destruction to the lake's marine ecosyst
be limited to the San Juan River and three or fo
by anyone.

OIL SPILL!

Photos by Lee Turpin



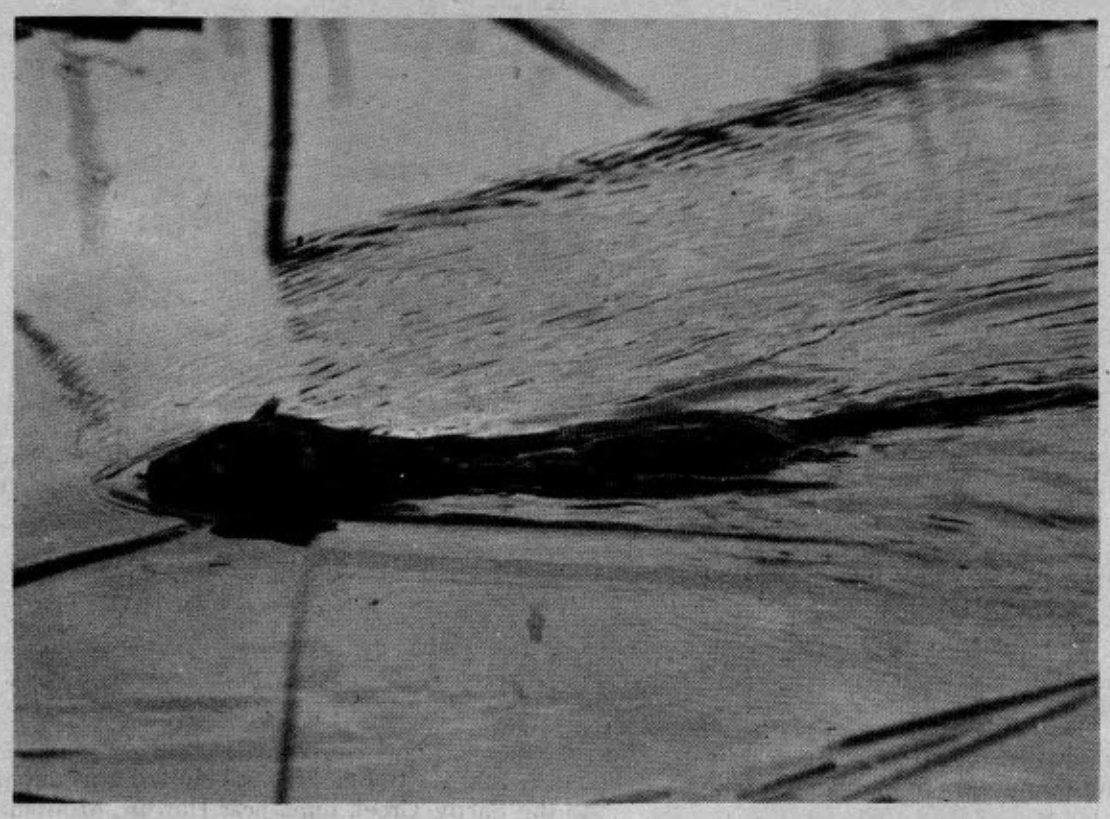
ower right) finally stopped in a narrow place on upper Lake Powell, some four miles loose from the original booms. The last San Juan River flood crest moved the tre- oily debris from Copper Canyon to a mile below Nokai Canyon on Lake Powell. econd disaster, rain, snow and winds continued to plague cleanup operations for

ll where it finally stopped in upper Lake Powell (upper right) was taken from about his vantage point the mess seemed less frightful, but the mass of oily material shown shore was estimated to weigh some 8000 tons, an awesome cleanup task in a very to the site, roads had to be constructed. After the rains stopped, complex lake and ne of the oily mass back upstream, thus hampering removal operations. After a boom nass, a second one had to be placed above in order to hold the material in place for

release of the oil spill from the site of its first containment (upper left), the largest ur miles before being stopped by a narrow place in Lake Powell, but great quantities d the lake and river above the blockage. In this photo, taken about 1500 feet above rls of oil can be seen on the surface of the water. Note the rain storm in the upper e to the riverbank ecology of the San Juan River has not yet been estimated, and eness of the river gorge. The river can only be traveled by rubber raft, and then only

was torn loose from the booms that first contained it, nothing then stood between Powell except the slender floating boom barely visible in the center of this photo. eached by the boom illustrate the grand scale of this scene. Fortunately, the oily neck in the lake before it reached here. Had the oil reached this area and beyond, 's marine ecosystems would have occurred. As it is, ecological damage will probably er and three or four miles of the San Juan arm of Lake Powell, an area rarely visited

The Muskrat



Nature's Mini-Engineer

Photos and text by Thomas M. Baugh

One of the interesting, smaller mammals inhabiting the ponds, lakes and waterways of a great portion of our land is Ondatra zibethieus; better known as the muskrat.

Although widely distributed, the muskrat's habits and habitat remain essentially similar. You'll find this small furry creature in the swamps of Louisiana, the marshlands of the eastern coast and the irrigation impoundments and canals of California's beautiful central valley. His five toed, partially webbed track and the mark of his tail can be found in the mud and soft earth of the wetlands of over sixty percent of our nation.

Referred to as a "primary consumer," the muskrat feeds upon a variety of marsh plant life. His food, depending upon the region he inhabits, includes the roots, stems and leaves of the cattail, water-lily, bulrush, cordgrass, and sawgrass among many other emergent plant forms. Although the bulk of his diet is composed of plant life, the muskrat will partake of a succulent mussel, crayfish, or aquatic snail and even an occasional fish.

The designation "primary consumer," places the muskrat in the lower levels of the pyramid of lifeforms which interact to provide nature with her all important balance. Breeding prolifically, a female may produce up to three litters a year. Without the population controls provided by predators of all sizes, this small rodent could, and on occasion does, become a serious ecological problem.

The muskrat lists among it's enemies such marsh dwellers as the mink, otter, raccoon and many of the birds of prey. The coyote and bobcat, frequent visitors to the marsh fringe, also prey upon the muskrat. Man finds the fur of this small gnawing rodent attractive and for this reason must be considered as one of the muskrats' prime predators.

In the quiet backwaters of marshes and ponds you are likely to encounter the dome shaped lodges of the muskrat. These lodges bear a similar but smaller resemblence to the home of a relative — the beaver. Whereas the beaver builds solidly from the branches of trees such as the aspen; the muskrat builds, equally solidly, from the cuttings of rushes, cattails and other plants which constitute his habitat. The muskrat does not limit his dwellings to plant constructed lodges. Where nature provides steep banks he will tunnel into water softened walls constructing snug subterranian burrows with the main chamber located above water level.

The muskrat's prime economic value to man is that of a fur-bearer. His value to nature is, however, manyfold. He provides food for the larger wetland predators; and he acts as a check upon the rapid growth of plants which might otherwise seriously block natural water systems. He's part of nature's scheme and he's nice to watch quietly navigating the fringes of a marsh in the grey, halflight of early morning.

Photo by Roger Clawson, Billings Gazette

Forseeing a gigantic increase in strip mining for coal in Montana, the Montana Wilderness Association has gone on record favoring a four-year phase-out of stripping. Friends of the Earth is actively working to prohibit anymore stripping, and many eastern Montana ranchers are joining forces to oppose wholesale destruction of their lands.

Alaska Pipeline Still In Court

WASHINGTON, D.C. — The Alaska pipeline lawsuit has been in the hands of the U.S. Court of Appeals, D.C. Circuit, since October 6, when oral argument in the case was presented by environmental attorneys for Friends of the Earth, The Wilderness Society, and Environmental Defense Fund, the three co-plaintiffs.

Eight judges of the Appeals Court heard the case en banc; the ninth judge of the D.C. Circuit, Judge McGowan, disqualified himself from the case for reasons he did not disclose.

The case now awaits the release of the Appeals Court's opinion, which could happen any time this winter or spring.

If the ruling allows the pipeline to go ahead, the plaintiffs will consider taking the case to the Supreme Court, which will be in session approximately until June and will reconvene in October. George Alderson, Legislative Director of Firends of the Earth, says: "If the Appeals Court rules on the pipeline by January, it's entirely possible that the Supreme Court could take up the case, consider it, and finish it up by next summer."

"We're cautiously optimistic," said Alderson. "During the oral argument, the court gave serious attention to the width limit which the Mineral Leasing Act imposes on rights-of-way for pipelines. The oil companies are trying to evade this limit by getting special land-use permits for a wider right-of-way."

"The Interior Department also has never explained its failure to analyze the advantages of a combined oil and gas pipeline route through Canada, as opposed to separate pipelines. Interior's position is that the oil should come out via the Trans-Alaska pipeline, and that the gas should go east through a Canadian pipeline. The department's environmental impact statement never analyzed the greater impact of these two separate pipelines," Alderson said.

He declared, "If the Alaska pipeline is ever built, in spite of the massive evidence against it, it will be a monument to the political power of the oil industry."

Trash Is Resource

According to Max Spendlove, director of the Bureau of Mines Research Center in College Park, Md., our only growing natural resource is garbage. The research center has perfected a machine which recycles trash. Since 1969 it has been trying to interest municipalities in the construction of a $3 million recycling plant. To date, only Lowell, Mass., has had the foresight to do so.

Cities spend approximately $4 a ton on traditional waste disposal methods of burning or burying. Salvageable material from the recycling process could save up to $15 a ton. It is estimated that the average person produces a ton of trash a year. The economic as well as ecological benefits of trash recycling are obviously large.

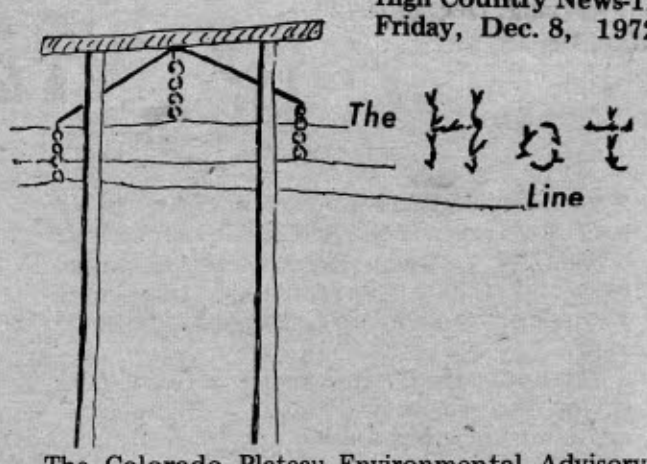
Why then this reluctance to adopt the new method? Perhaps one reason is that the present machine is designed to recycle the residue of incinerator plants. The research center is already working on two other recycling devices which may make its first machine obsolete. One will be designed to reclaim paper and plastic as well as glass and metals from raw trash. Another is to convert garbage into oil.

Rates Delayed

The Interstate Commerce Commission has delayed rail freight-rate increases of 3% to 5% on recyclable goods pending environmental impact hearings. Rail freight-rate increases are already in effect for non-recyclable items. The suspension, which will be effective through June 10, is the result of petitions by several groups including the Environmental Protection Agency and the President's Council on Environmental Quality.

SCRAP, an environmental group comprised of George Washington University law students, contends that lower rates would encourage greater use of recyclable materials, thus conserving resources. SCRAP has brought a major suit against the commission asking for the nullification of all ICC approved rail rate increases since the Environmental Policy Act became effective in January 1970. It charges the commission with failure to prepare impact statements in connection with the rail freight increases. The group also requested an injunction barring further increases until ICC has complied with federal environmental laws.

W. Graham Claytor Jr., president of the Southern, the largest railroad system in the South, said that railroads "desperately" need "highly selective" freight rate increases to offset higher labor costs.



The Colorado Plateau Environmental Advisory Council says further development of powerplants in the Southwest will have a significant impact on land use. A report by the Council says the impact will come from increased numbers of people, from strip mining, from potential air pollution, and from a network of transmission lines.

* * *

Marion Power Shovel Co. has announced a contract with Morrison-Knudsen Co. for more than $6 million for one of the world's largest walking draglines. The behemoth has a 75-cubic-yard bucket and a 320-ft. boom. It is scheduled for shipment to the Sarpy Creek mine near Hardin, Montana, in February, 1973, It is scheduled to begin coal stripping in February, 1974.

* * *

The Texas Railroad Commission has quietly lifted all production limits on oil fields in that big state. The Commission, which regulates oil production, will still apply a maximum efficient production, level. The move underscores a growing shortage of oil reserves in the United States.

* * *

The Bonneville Power Administration was forced to cut industrial power consumption over a four-state area on December 5. BPA administrator Don Hodel issued a statement requesting customers to "cut back on the use of power whenever possible, including turning down thermostats, wearing sweaters and turning off Christmas lights." It was a first time ever for the huge power supplier.

* * *

On the night of Monday, December 5, Seattle's chamber of commerce sponsored a "light's on" project to usher in the holiday season. Lights on all of downtown Seattle were left on from dusk to midnight.

* * *

Ohio's Columbia Gas System says it hopes to serve 30,000 new potential natural gas customers with bottled propane gas over the next five years. The chairman of the Columbia System says the use of propane will enable it to continue building profitable sales volume during the shortage period (of natural gas). The propane will cost twice as much as natural gas, but the company says it will be less expensive than an all-electric house.

* * *

The Committee on Air Quality Monitoring of the National Academy of Engineering says present technology cannot remove the smallest particles of industrial particulate emissions. It recommends spending $5 million per year for the next ten years on research to find better controls. The fine particles which now escape from smokestacks are the most injurious to health and, along with other pollutants, limit visibility. The fine particles remain suspended in the atmosphere longer, and are also more readily deposited in the lungs.

THE WILD WORLD

by Verne Huser

California's Highway 49, named for the bygone era, traverses the gold rush area just west of the high Sierras — fantastic country of tall trees and rushing streams, the kind of country you see on the way up to Yosemite National Park.

Most of these wild raging torrents that siphon snow-melt water into the Sacramento and San Joaquin valleys are considered unrunable. But ten years ago the Stanislaus River was run by kayakers. Since then it has become California's most frequently floated white-water river.

Now, in the decade of the environment, an environmentally-damaging water development project is about to inundate the floatable stretch of the Stanislaus, the ten miles between Camp Nine Road and Parrett's Ferry Road that 25,000 boaters floated or kayaked this year.

And what will the water be used for? Frankly, no one seems to know. The excuses for the dam, authorized in 1962 — the year it was first run — include the usual list: recreational facilities, flood control, hydroelectric power, improved water quality, better fishing and irrigation.

Let's examine these excuses (I can't honestly call them reasons): **recreational facilities** — with floating activities nearly doubling every year, how can we justify inundating such a popular white-water stream? An Idaho study (Game and Fish Dept.) indicates that white-water use is 12 times as popular as flat-water use. How can we justify another reservoir?

Flood Control — the Corps of Engineers, who would build the dam, estimates that $15 million in flood damages would have been prevented between 1963 and 1969, but I would suggest that prevention of clear-cutting on the national forests in headwater areas would be wiser and a better longer-range flood preventative.

Hydroelectric power — the proposed dam would produce enough electricity for a town of only about 70,000 — a drop in the bucket for California. In fact, that's less than a half of one percent.

Improved water quality — you've got to be kidding. Remove a third of a million acre feet of water from the Sacramento-San Joaquin Delta each year, and you not only concentrate the pollution already there, but you upset the saline balance of San Francisco Bay.

Better fishing — I've heard that excuse before, but I've seen the Hells Canyon reservoirs and dozens of other dead rivers; you trade salmon and steelhead and trout for bass and crappie and carp. But the Corps says the dam will double salmon runs. What do you think?

Irrigation — turn a free-flowing river into a reservoir to provide irrigation water to grow things in the desert, things like alfalfa and cotton that will be subsidized? The Federal Government paid California farmers and ranchers nearly a hundred million dollars last year **not** to grow some of those very same crops.

Proposed and authorized before the NEPA, the New Melones Dam would cost nearly $200 million — not to mention the loss of stream habitat and white-water recreation. The 62-story dam would back up 2.4 million acre feet of water behind the 1,560-foot-long structure. The reservoir would range between 808 and 1,088 feet deep and back water up for miles and miles, destroying hundreds of acres of wildlife habitat and winter range, costs not counted in the juggled figures.

To make the notorious Army Corps of Engineers toe the mark and obey the law, the Sierra Club and the Environmental Defense Fund, joined by eleven raft trip companies, have gone to court. California Senator John V. Tunney, a Democrat, has suggested that construction of the dam should be stopped until solutions have been found to replace inundated white water, preserve riverbank wildlife habitat, and provide public access to the river.

Conservationists fighting the dam include UCSB vice-chancellor Robert Collins, history professor Roderick Nash (both river runners), David Kay of the American River Touring Association, and Gerald H. Meral of the California River Conservation Committee of the Sierra Club.

Some conservationists have already given up fighting the dam; they feel that it is inevitable and the best they can do is support it subject to protection and enhancement of the environment during and after construction.

But others are still fighting — as some are still fighting the building of the Teton Dam in eastern Idaho. Who will win? Only time will tell, but the river may be a loser either way. Too much river traffic can be as destructive as inundation, but not as permanent. How much river traffic is too much?

That question is currently being asked in several national parks — Grand Canyon, Canyonlands, Grand Teton, Dinosaur National Monument — and by the Forest Service in an ever-increasing number of areas: the Middle Fork of the Salmon; the Snake River in both Hells Canyon and in the canyon south of Jackson, Wyoming; the Selway and the main Salmon River in Idaho, and several others.

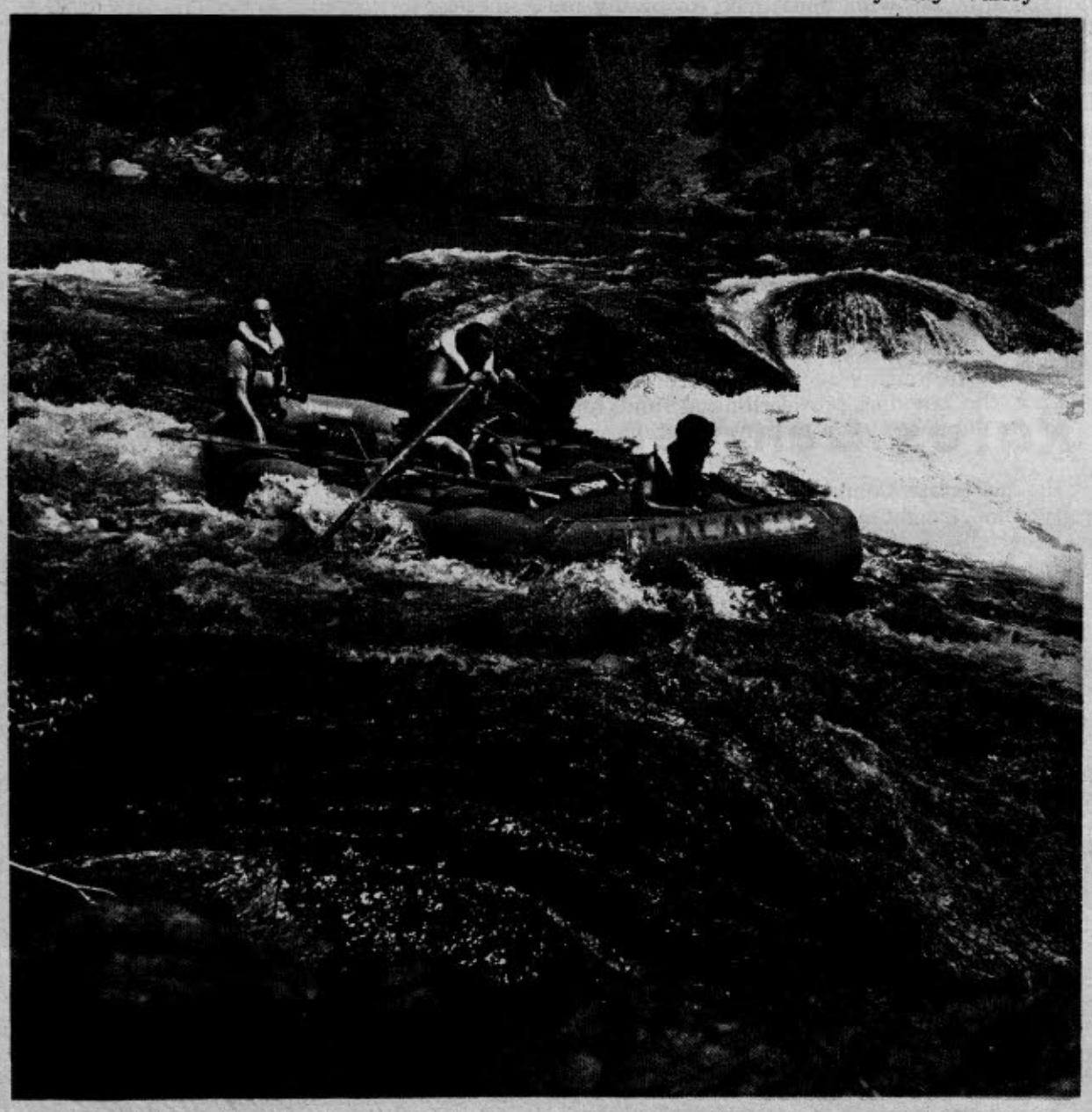
But back to the Stanislaus and the impending dam: "There are dozens of possible negative impacts from the dam, all of them very serious," says the EDF attorney. "Until they are evaluated, we think it is illegal to construct the dam." EDF's contention is that the 86-page environmental impact statement prepared by the Corps is not adequate.

Opponents to the dam are urging people to write President Nixon in an attempt to stop the dam and to write their Congressmen. (Congressmen outside the State of California may be more effective because they don't stand to lose votes over the issue.)

One wonders when the Army Corps of Engineers will be phased out or at least brought under the jurisdiction of the Law of the Land. President Nixon vetoed the clean waterways legislation, but Congress over-rode his veto (52-12 in the Senate, 247 to 23 in the House.) Why not put the Corps of Engineers to work cleaning up our waterways under Senator Muskie's S.2770, and for that matter, why not put the Bureau of Reclamation to work in that realm, too. Let them reclaim clean water instead of destroying it and marring the landscape with boondoggle water-development projects?

(Since I wrote the above material, I've had a call from the U.S. Army Corps of Engineers in Sacramento on another matter. I asked about the New Melones Dam Project and was told basically that the Project would go through — no doubt about that! I get the impression that the Corps considered the NEPA merely a minor obstacle that would no more than delay what was inevitable — the Corps needn't listen to the people of the nation since they have the ear of Congress!)

Photo courtesy Ray Varley



Floating the Stanislaus River in California, along a stretch of white water scheduled to be inundated by the New Melones Dam. Left to right, Ray Varley, Vice President, University of Utah; at cars, Bob Collins, Vice Chancellor, University of California at Santa Barbara, and Roderick Nash, history professor, UCSB. Nash is author of "Wilderness and the American Mind."

Western..... Roundup

Environment Wins

A signal victory for the forest environment was won last week in a California court. The U.S. Forest Service agreed to file environmental impact statements on all future timbering contracts in some 54 million acres of roadless areas on the national forests.

A Sierra Club lawsuit was to have come to trial later in the week. In agreeing to the impact statements, the Sierra Club said the Forest Service had settled the suit's major issue. Sierra Club attorneys accepted the pretrial agreement and filed a draft order dismissing the suit.

Brock Evans, northwest representative of the Sierra Club, said the agreement "will require a readjustment (of the Forest Service) away from a policy that stressed timber and lumber above all other purposes." He said he thought that it would make the Forest Service a truly "multiple use agency."

Evans also said that in the long run, the decision should benefit the timber industry, although he expected immediate "complaints and anguished cries." He said, "It will assure that what is allowed will be in places that can continue to grow crops of trees over and over and over again."

Forest Service spokesmen said it may take as long as 20 years to do the basic studies needed for adequate environmental impact statements.

The U.S. Forest Service has agreed that environmental impact statements must hereafter be done on all timber sale contracts. Such impact statements would have prevented the kind of timber sales shown here. This was done by U.S. Plywood along the Continental Divide (open area at upper center) on the headwaters of the Gros Ventre River, a tributary to the Snake River. It is located on Wyoming's Teton Forest. Timber cutting here has had a serious effect on elk populations and lesser effects on soil erosion and stream pollution. It has obviously not done much for beauty and aesthetics.

Fences Opposed

Sportsmen and conservationists at Rock Springs, Wyoming, got almost 2,000 signatures on petitions asking the Bureau of Land Management not to build anymore fences in a three million acre grazing area west of there. In a separate action, the Wyoming Wildlife Federation has issued a statement also opposing the fencing. The Federation said it had been fighting fences for 22 years — without much success.

Gasification . . .

visibility at this level. However, it is certain that most in the Southwest — including industry lawyers, officials, imported technical witnesses from California, and Chamber of Commerce presidents usually found at hearings arguing us down — would be among the unhappy if visibility were 15 miles in the Land of Enchantment. Furthermore no present standards consider effects of cumulative pollutant deposition on land and water — effects which, for example, can cut forest production significantly according to the Swedish government's report to the recent U.N. Environmental Conference in Stockholm.

Because of these problems, NMCCA&W favors total tonnage emission limits for air basins which do not allow degradation of present air quality to become significant. Toward this end, NMCCA&W recently joined the Sierra Club and San Diego and Washington, D.C. citizens' groups in a lawsuit to compel enforcement of that part of the Federal Clean Air Act dealing with degradation. The suit was won in a half-hour. Now under appeal, the suit has been joined by the State of New Mexico, in part to avoid being forced to ship all its clean natural gas to dirty states in accordance with Federal proposals. Loss of gas would be a catastrophe for New Mexico's industries and environmentalists alike.

The issues, like the gasification plants themselves, are big and far reaching.

Editor's Note: As High Country News goes to press today, the U.S. Supreme Court is to hear the EPA appeal on the air degradation lawsuit brought by the citizens groups and the State of New Mexico.

Forest Volunteers Needed

Applications from persons who want to contribute their time and skill to perform volunteer work in National Forests are being accepted at Forest Service offices throughout the Intermountain Region, announced Regional Forester Vern Hamre today.

The Volunteers in the National Forests Act permits the Forest Service to accept offers of unpaid services from citizens interested in enhancing the renewable resources of National Forests. Although volunteers will receive no salary, the law does provide limited funds for certain expenses, such as transportation and special equipment.

"Volunteering service for worthwhile projects is part of the American tradition," said Hamre. "This Act provides opportunities for volunteers from all walks of life and age groups to achieve personal satisfaction while benefitting the conservation mission of the Forest Service."

Hamre noted that volunteers under 18 years of age must have written permission from parents or guardians in order to participate.

Kinds and locations of work that lend themselves to volunteer activity will be identified by individual Forest Service units. These projects must meet the intent of the program by providing a high degree of personal satisfaction for the volunteers.

Volunteers may assist in any Forest Service program or activity. However, their service will not replace regular employees, or impair existing service type contracts.

Additional information concerning this program is available at all National Forest headquarters in the Intermountain Region and the Regional Office at Ogden, Utah.

Stockmen Dismayed

The president of the American National Cattlemen's Association told the Utah Cattlemen's Association in Salt Lake City that cattle and sheepmen were "appalled and dismayed" by the political defeat of congressmen who had been their "friends." John Trottman of Birmingham, Alabama, said the congressmen had been replaced by young urban-oriented, consumer-oriented congressmen.

Trottman said the livestock industry had its back to the wall and must fight for survival against environmentalists and consumer groups.

Meanwhile, in Washington, the weekly newsletter of ANCA carried a message from Trottman saying the Washington staff was going to be increased in order to deal with a number of issues to come before Congress. Those issues would include grazing fees on public lands, predator control and use of poisons, pesticide use, animal drugs, tax reform, and consumer bills.

Floaters Notice

Floaters on the Middle Fork of Salmon River in Idaho will have to have reservations for trips scheduled next summer. The reservations can be made through Richard Estes, Wild River Ranger, Salmon, Idaho.

Estes says, "Through correspondence with this office, the person will inform us of the date he wishes to go onto the river, and we'll reserve that date for him."

Reservations have become necessary because of the crush of people on the river. Some 4,000 persons floated the river during a 72-day season last summer.

Snow falling and night falling fast oh fast
In a field I looked into going past,
And the ground almost covered smooth in snow,
But a few weeds and stubble showing last.

The woods around it have it -- it is theirs.
All animals are smothered in their lairs.
I am too absent-spirited to count;
The loneliness includes me unawares.

ROBERT FROST: Desert Places

Legal Decisions Significant

by Anne Turner

Two unprecedented environmental victories have recently been scored by California citizens. The Highway Action Coalition, a citizens' lobby group, blocked a proposed freeway in a California court decision of November, 1971. The ruling, which is being appealed by the state, was won on three charges: lack of an adequate environmental impact statement; failure to certify the necessity of eliminating three public parks; inadequate relocation plans for 5,000 people.

In what legal experts call a "very significant" decision, U.S. District Court Judge Robert F. Peckham awarded court costs in the highway suit to the state of California rather than to the plaintiffs, environmentalists and poor Mexican Americans. The decision, made on October 19 of this year, is also being appealed. If upheld, it will open the road for further successful anti-highway action by private citizens nation-wide. It will especially benefit the poor who are most often affected by, yet lack the funds and political pull to fight urban highway expansion.

Partly as a result of the California ruling, Congress will convene next year with a bill proposing that funds from the heavily endowed Highway Trust Fund be spent on mass urban transit rather than on interstate highway construction. No federal highway aid bill had been successfully countered since the establishment of the $5 billion a year Highway Trust Fund in 1956.

Private citizens achieved another impressive court victory on environmental grounds recently. Cabin owners in the High Sierras won an unprecedented 6-1 California Supreme Court decision against a private land developer. The defendant, who was constructing a high rise apartment building on private land, was charged with environmental degradation.

As a result of the ruling, before private construction plans which have a "significant" effect on the environment can be approved, state and local government agencies must prepare and make public environmental impact statements. It is the first time this law has been applied to private development. Other states are expected to follow suit.

Golfers at the Anglesea Golf Course near Melbourne have lately encountered an unexpected handicap — kangaroos on the fairway!

What was presumed to be instinctual behavior in certain so-called "nocturnal" species, may be habit stemming from conscious self-protection. Studies in Australia show that kangaroos and koalas freed from the threat of predation tend to lose their nocturnal habits.

Kangaroos introduced several years ago to the Anglesea Golf Course as nocturnal "lawn mowers" may soon be used as caddies. Having lost their fear of man, they now perform their function as ground caretakers in the day rather than at night.

A similar change in marsupial habits may be observed on Australia's Philip Island where tame koalas now compete against the famous Fairy Penguins for top billing.

Literally stealing the spotlight from the miniature penguins which parade each evening on the island's floodlit beaches, the koalas now appear during the day as well. Natural hams, they perform periodically for daytime diners at the Erehwon Hotel on the island.

Thoughts from the Distaff Corner

By Marge Higley

On the back page of a notebook on my desk I have jotted down the names of some of our readers who stopped in to see us while on summer vacations. Glancing over the list, I had to smile when I saw the notation: "Duane Baldwin family, Gary, Indiana." I remember their visit especially, because it really gave me something to think about. The family consists of Mr. and Mrs. Baldwin and three eager, active children. They dropped by towards the end of August, on one of those rare afternoons when last week's paper was an accomplished fact, and next week's paper was pretty well on the way, but not yet near that frantic last-minute period that happens just before press day. So we all had time to visit.

While the adults conversed with the boss in his office, Mary Margaret and I entertained the three youngsters. (To be truthful, I should say that they entertained us!) They were interested in everything. We showed them the copy-setting machine, and how it makes the lines come out even. We showed them the long, slanted paste-up table, with the sheets spread out in a row. They wondered, inquisitively, why were those black paper squares stuck here and there on the sheets? We explained that that's where the pictures would be when the paper was printed. They asked about how we made the pictures, so that led to a tour of the dark-room. Their eyes widened upon seeing the row of brown glass jars.

"Do you have formaldehyde in any of those bottles?" the boy asked. I told him no, those are photo chemicals. "On TV they always have formaldehyde," he said, sounding a little disappointed.

Next, we showed our little visitors the mailing counter where, on press day, we bundle up the papers and get them in the mail sacks to go to the post office. Nearby is the addressograph and the machine we use to make address plates. It's big and it's noisy, and we jokingly call it "the monster." (Sometimes it's no joke!) To demonstrate, I slipped one of the thin metal strips into the vice, and with motor going, letter plate revolving, and keys clanking, I thumped out their name and address so they could see how their very own name was on the paper they get through the mail. The noise and all those revolving parts must have seemed quite impressive to one of the girls. She looked up at me and remarked, almost wistfully, "Gee, this must be a fun job!"

"Yes, I answered, truthfully, "it's a real fun job."

Her parents were calling, and as she left, she added, "I'll bet it pays real good, too!"

She didn't wait for my answer, but I have thought about her question often. I'm sure that most of our constant and long-time readers are aware that putting out an environmental newspaper which is paid for by subscription (no ads!) doesn't leave much in the bank account for sizeable salaries. Nevertheless, my answer to her question is clearly and unequivocally, "YES, it does pay well!"

You see, I'm not talking about money. I'm talking about a fringe benefit named "education." I was born in Wyoming, and grew up learning to love the mountains, the deserts, the sparkling rivers, the bright blue sky, and the way of life in the Rocky Mountains. But until I started to work at **High Country News**, I had not truly realized that all those things I held so dear were in jeopardy. Like many other people, I'm afraid I just took it for granted that they would always be there, to be enjoyed and loved by my children and their children.

I know better now. In the past three years (almost) I think I've probably proof-read miles of copy and printed acres of pictures. You can't do that without learning a lot about strip mines, clearcutting, power plants, and the damming of rivers. On the brighter side, I have learned that there are foresighted men and women who have been fighting for years to protect those things (which I once took for granted) against the onslaught of unplanned progress. Fighting, with meager funds and insufficient help, to awaken the complacent public to the fact that this is a time for concern. If these cherished treasures are to be preserved for future generations, the public is going to have to become aware, alert, and active. The stark, shocking realization of that fact is part of my "education."

If my job here at **High Country News** plays any small part in convincing even one "convert," then I can say "Oh yes — this job pays REAL GOOD!"

Environmental Eavesdropper

LOONEY LIMERICKS

by Zane E. Cology

A boater named Henry McDowell
Put up a horrible howl —
"My fishing they spoil
When New Mexico oil
Is piped right into Lake Powell!"

* * *

Zero population growth has been achieved in the United States during the first nine months of 1972. The birth rate dropped to an all-time low of 2.08 children per family. The actual ZPG figure is 2.1 children per family. New federal statistics also show 19 consecutive months in which the birth rate has been lower than in the same month one year before. The September birth rate dropped nine percent from September, 1971.

* * *

Britain's Office of Population Censuses and Surveys now predicts that its population will be some 4.5 million less in the next 38 years than previously predicted. The world's most densely populated nation, Holland, has a population which is still increasing. It now has a total population of 13.3 million.

* * *

Jojoba, a wild plant indigenous to the American Southwest, may be a life-saver to sperm whales. The seeds of the jojoba plant produce a lubricating oil which may be used as a substitute for sperm whale oil — thus preventing the commercial slaughter of the big mammals. A University of California genetics professor who heads the Jojoba Project says commercial cultivation of these plants could provide a profitable industry for the Indians of California and Arizona.

* * *

The Washington State Game Department plans legislation next year which would eventually provide up to $250,000 annually for nongame wildlife programs through the sale of personalized automobile license plates. The proposal, which would not increase public taxes or license costs, is expected to receive strong support from sportsmen and conservationists.

* * *

Three Kansas State University scientists claim nuclear radiation can be used to convert trash and sewage into useful, wood-like materials, some as strong as concrete or aluminum. Plastic composites resulting from this conversion process are odorless, sterilized, look "like beautifully burnished wood," and most of them can be sawed, drilled and lathed like wood. The scientists report that, ironically, nuclear wastes might provide the necessary radiation to convert these solid wastes into useful products.

* * *

Arch-conservative William F. Buckley is not so conservative when it comes to the environmental health of the nation. Buckley, tongue uncharacteristically out-of-cheek, recently proposed that Congress empower a Bicentennial Committee to sell to the public ten-year tax deductible bonds at just-below prevailing interest rates. The proceeds derived from the sale of these bonds (Buckley optimistically estimated 20 billion dollars) would be used toward cleaning up our environment.

It's Not The Same Bird

by John Madson

The supermarket turkey that you're having for Christmas dinner took a mighty long trip from the woods to your table.

It was an odyssey that began in ancient Mexico.

Long before the Spaniards sought the Seven Cities of Gold, turkeys had been tamed by the Aztecs. It's said that the Emperor Montezuma kept a menagerie of hawks and eagles so vast that it needed 500 turkeys per day for food.

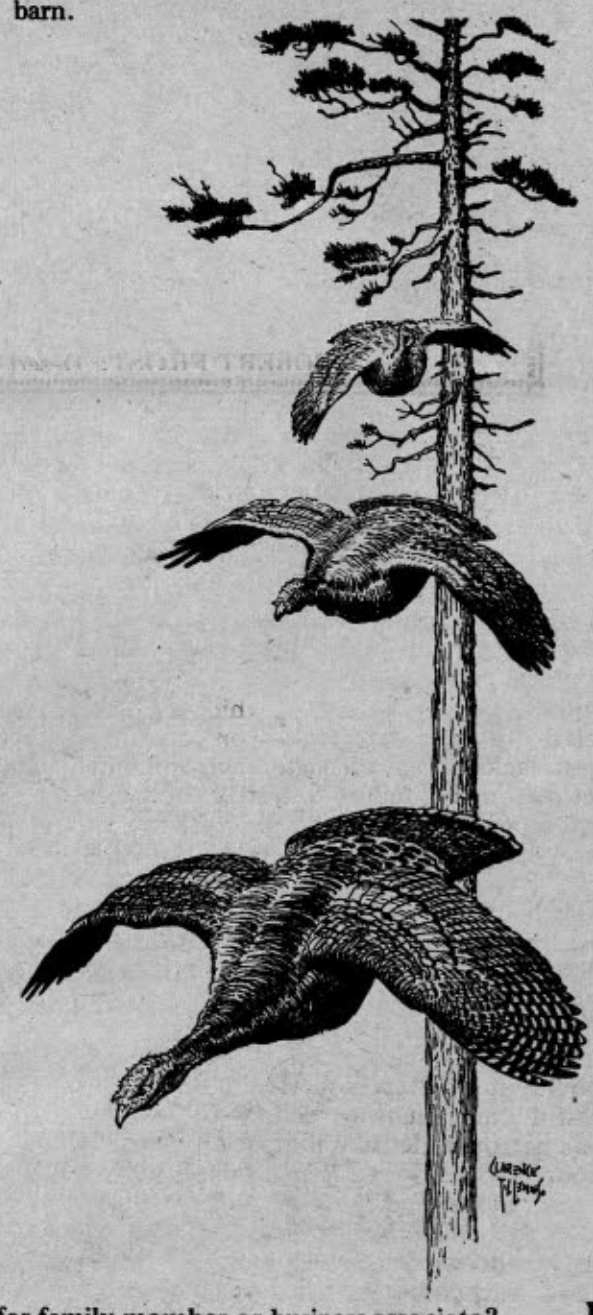
Mexico didn't have a corner on tame turkeys. Farther north, turkeys had been kept in Indian pueblos for centuries. Some of these birds were raised for their feathers, not their meat. Old-time Apaches wouldn't eat turkeys at all, just as they wouldn't eat quail or doves.

Anyway, the Spanish conquistadors saw their first Mexican turkeys soon after 1518, and by 1530 turkeys had been brought to Spain. It's strange that there aren't clear-cut records of the turkeys' arrival. Maybe they were confused with guinea fowl from Africa, or peafowl from Asia Minor. It's a cinch that somebody was confused, thinking the big bird was from Turkey and naming it accordingly.

From Spain, turkeys spread swiftly through Europe. They were in England as early as 1541, and eventually taken into all parts of the civilized world and bred into a great variety of colors and sizes. Some even had feathered crests.

In the fullness of time, the turkey returned to the New World via the northern route, arriving on the Atlantic Coast. Those domestic turkeys were smaller and blacker than the big, bronze wild birds, and many colonists preferred the wild variety for eating.

So when we talk turkey, we're talking about two vastly different birds. The original Thanksgiving gobbler was a big, wary bird that Captain John Smith ground-swatted in the New England woods. But today's supermarket gobbler — he of the full breast, tender drumstick, and dull mind — goes back to Captain Cortez, who swiped it out of Montezuma's barn.



Cooking Made Easy

The Sierra Club Totebook Series has come out with a new book, Cooking For Camp And Trail, by Hasse Bunnelle, with Shirley Sarvis.

Although it is written especially for campers, backpackers and hikers, the book contains many recipes that you will want to try even if you never prepare a meal anywhere except in the kitchen. The basic theme is that with proper planning and preparation, it is easy to enjoy gourmet food in camp or on the trail.

The first few pages cover menu planning and marketing; the appendix covers packaging, equipment lists, food storage, camping ethics, etc. In between, there are 149 pages of recipes. Some are for dishes to be prepared at home and carried along, some to be cooked over campfire or coals. Many of the recipes give a home version, and a simplified trail version.

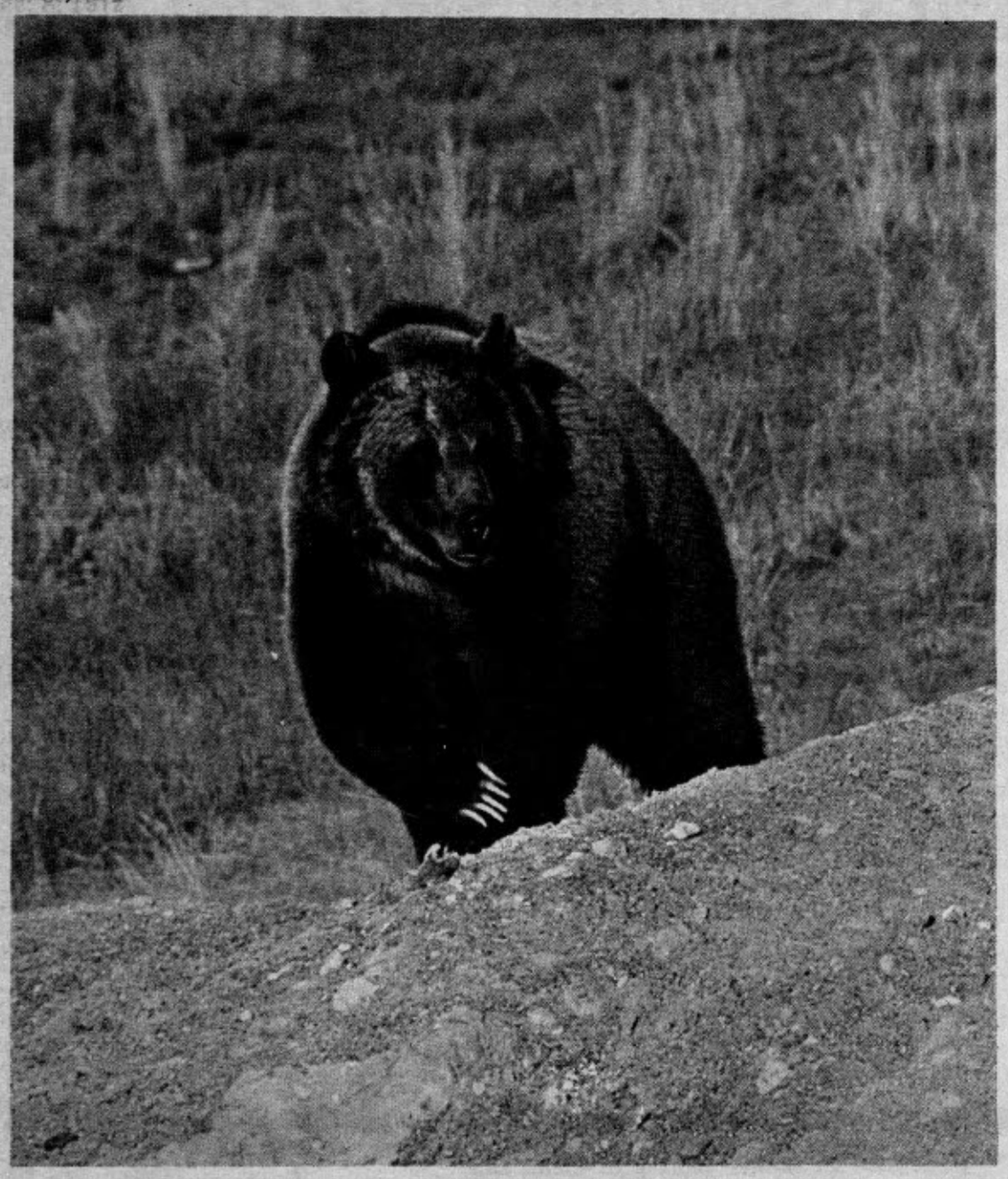
There are soups, and there are marinades to be used in skewer cooking of meat, fish, vegetables, and fruit. One-dish meals, to be cooked in a frying pan or dutch oven, include such tasty food as "Sweet and Sour Pork Steaks," or "Baked Ham with Guava and Sherry." Or "Hekka," which is a delicious-sounding combination of thinly sliced sirloin tips, oil, soy sauce, brown sugar, mushrooms, bamboo shoots, onions, celery, and bean curd, all cooked up and served over hot rice.

The book presents about a dozen different ways to serve eggs, not one of them just plain fried or scrambled! There is a section on salads — including directions for growing your own alfalfa sprouts for fresh greens on your camping trip. (All it takes is ¼ cup of alfalfa seed, water, a wide-mouth glass quart jar, and the know-how, which is explained on page 139.)

Bread recipes are for a variety of biscuits, dumplings, corn breads, and pancakes, including sourdoughs. Many of the desserts are to be prepared at home, but are easy to pack and to store. Some can be made at camp, such as "Sauteed Bananas," "Camp Baked Apples," "Coffee Pudding," and "Peach Cobbler."

If you love hiking and camping, and also love good food, this book is for you. It is published by Sierra Club Books, 250 West 57th Street, New York, N.Y. 10019, and is priced at $3.95. Publication date, May 4, 1972.

Photo by National Park Service



Controversy still swirls around the hunting of grizzly bears. Some who are concerned with the fate of the grizzly contend that hunting is further decimating a declining population. Others feel that the pressure of human populations is forcing the bear into situations where individuals must be killed. The Montana Fish and Game Department says the bear ultimately depends for survival on a large area of quality habitat.

Umbrella Group Formed

What do the Motor Vehicle Manufacturers Association, the National Campground Owners Association, professional foresters, landowners, sports and outdoor enthusiasts, equipment manufacturers, and environmentalists all have in common? You may well wonder.

The answer is the Outdoor Nation, a new organization with the somewhat incongruous purpose of representing the outdoor recreational interests of business, environmental and public groups alike.

Essentially, the Outdoor Nation is a forum designed to "disseminate various viewpoints on recreational problems to the public and government." It may accomplish this. Whether or not it will be capable of posing viable solutions to these problems agreeable to such diverse interest groups is a different matter altogether.

Three critical environmental and recreational problems constitute the Outdoor Nation's first project study. These are: 1. The effect of off-road recreational vehicles (trail bikes and snowmobiles) on the environment; 2. The impact of camping and other outdoor recreational activities on national wildlife refuges, and 3. The need to coordinate private and public recreational developments.

Pat Canfield, interim chairman of the organization, predicted summary reports on these issues by December. Canfield said, "The reports will present possible solutions in areas where members of the Outdoor Nation reach agreement. They also will point out dissenting opinions when agreement is not possible." Canfield anticipates the assignment of future problems to individual task forces within the organization which share a common interest in the problem.

The Ford Motor Company proposed and helped organize the Outdoor Nation, lending initial financial support. Its interests will be represented by the Motor Vehicle Manufacturers Association.

No Vacancies?

No vacancy signs may soon be appearing on city limits and state boundary lines. In an attempt to stem the tide of over-population, Los Angeles's city planning commission has recommended a ceiling for population growth up to the year 1990. At the same time, the commission adopted a 20-year rezoning plan to help make the ceiling a reality. While city and state officials may welcome visitors, a growing number are either openly or covertly discouraging new residents.

Bears Need Room

In view of increased concern about the future of the grizzly bear, the Montana Department of Fish and Game features the wilderness monarch in the November/December, 1972 issue of its official publication, **Montana Outdoors.** In it, the department states that a moratorium on hunting will not stop the killing of grizzlies and might, in fact, increase it.

The magazine's editor, Bill Schneider, says "Without a hunter harvest, the bear population will experience a normal, annual increase together with increased strife between bears. This can only mean an increase in administrative kills — bears shot as rogues, marauders, stock killers and campground nuisances. Population losses will occur anyway to meet the dictates of the habitat."

The department stresses hunting is not pushing the mighty grizzly toward extinction. As with most wildlife, grizzlies are very territorial and have a definite social structure. The animal is believed to defend its territory against intrusion by other bears.

The editor emphasized that neither the idealistic sport hunter nor the well-wisher-of-wildlife from a megalopolis will have a significant effect on the fate of the grizzly unless they realize the bear requires large amounts of quality habitat.

Department information on hunter harvest has convinced professional wildlife managers that, at this time, more restrictive hunting regulations aren't needed. A moratorium won't change the basic fact that the grizzly needs wild areas to survive.

Fish Displayed

Specimens of Montana's rare and colorful grayling are now on display in the National Aquarium at Washington, D.C. according to Art Whitney, fisheries division administrator for the fish and game department.

About two dozen of the silvery specimens averaging near four inches long arrived at the aquarium in early November snugly packaged in plastic bags. Pure oxygen had been pumped into the bags to sustain the fish during their eight hour air freight trip from Montana to Washington, D.C.

The fish were spawned especially for the museum at Rogers Lake southwest of Kalispell. They were hatched and custom-reared to fingerlings in the Big Springs Trout Hatchery at Lewistown, Montana.

Grayling share with cutthroat and Dolly Varden a distinction of being the only members of the trout family native to Montana. Large, rather irridescent scales and a large colorful fin on the back are distinguishing characteristics. Another characteristic is a delicate mouth that opens readily to a variety of fishing tackle.

Early records show the "Lady of the Streams," widespread above Great Falls in the Missouri River Drainage. They were also abundant in Michigan. The retreat of the glaciers in the last ice age had left them isolated from their near relatives in northern Canada and Alaska. They became extinct in Michigan in the 1930's.

Degrading of water quality and competition from non-native fishes have also reduced the native range of grayling in Montana. The species has been perpetuated, partly through transplanting. Reproducing populations now inhabit 39 lakes and 14 streams in western Montana.

Whitney says, "Grayling are not in imminent danger of extinction in Montana, but they are classified as a rare species."