

High Country

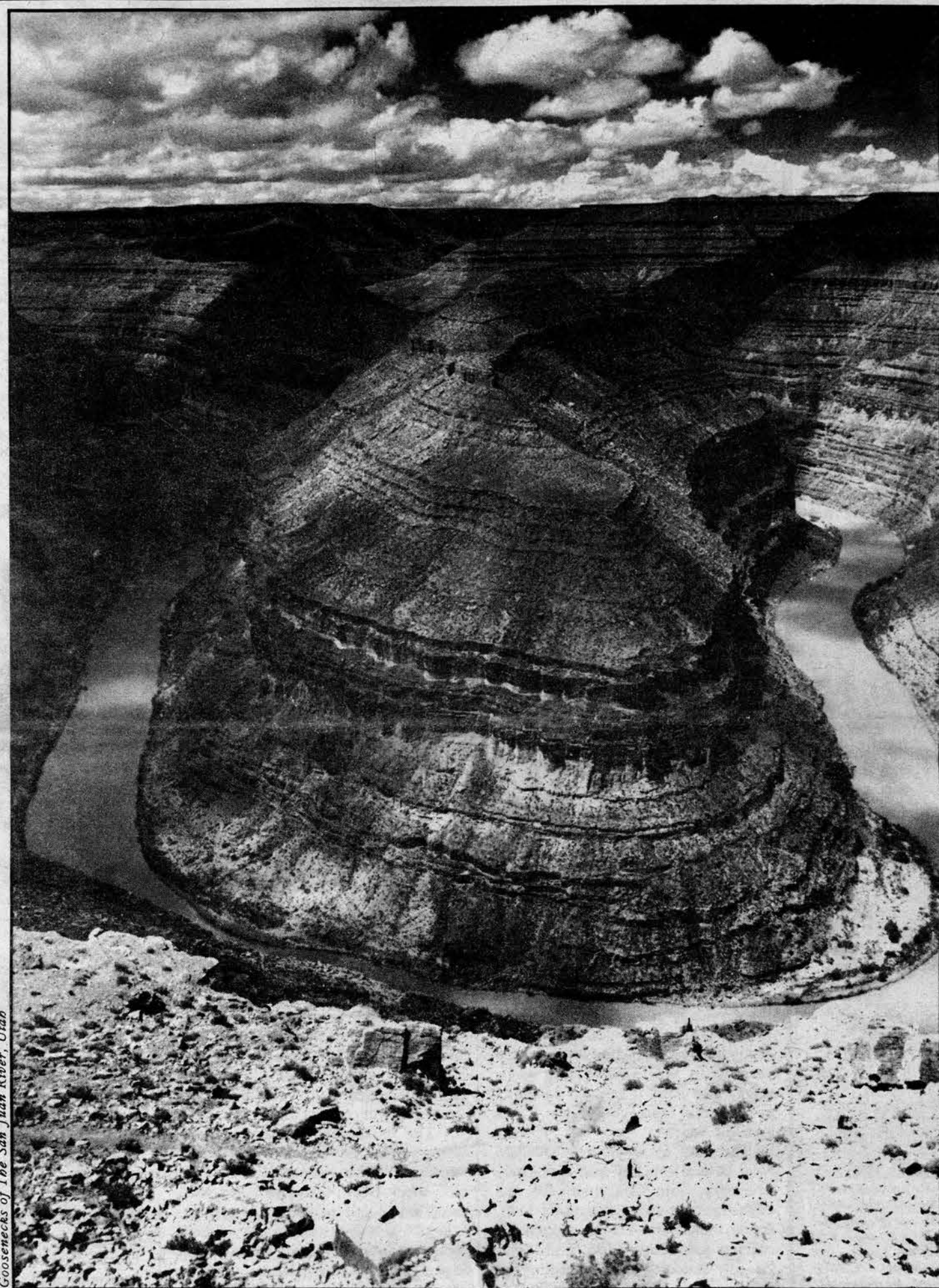
news

June 25, 1984

Vol. 16 No. 12

The Paper for People who Care about the West

\$1.00



Goosenecks of The San Juan River, Utah

Kent and Donna Danner

GEOLOGY OF THE WEST

Dear friends,



High Country News

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We like to think that each issue of High Country News is in depth. But this one is deeper than usual, dealing as it does with the geology of the West. Since editing the stories, the staff has been looking at the surrounding mountains, mesas and basins with new eyes. Never again will we take the talus at the base of a peak for granted, or look at a mountain without wondering whether its parent was a volcano or a fault.

We are especially interested in faulting because for the past couple of Sundays we have been tramping around a peculiar local mountain called Marcellina. We ignored Marcellina in the past because it is barely 11,000 feet high. But this year the snow remains deep on the other, higher mountains in the area, leaving only Marcellina hikeable.

Marcellina is different from the surrounding mountains because it doesn't have bowls or several peaks. Instead, it is an isolated piece of rock with a very steep front face and a gently sloping, grassy back. For all we know it's of volcanic origin. But to us newly-minted geologists, Marcellina is a textbook example of a trapdoor-fault mountain -- a mountain formed the way a trapdoor is opened. The gentle, grassy approach is where the

large rock which became Marcellina Mountain was "hinged." The front, steep face is where the rock rose steeply out of the ground at the fault.

Not everyone at HCN is running around recklessly analyzing the local geology. Mary Moran, who wrote the general story on the geology of the West, and whose idea was this issue, is a geologist by training. She has an advanced degree in the subject from the University of Wyoming at Laramie and has worked on drill rigs and the like. As a result, she is cautious in labelling structures and in thinking up neat physical models to describe what nature did a few million years ago. She cringes a little bit when we explain to her what we have just figured out about the origin of the Bookcliffs, but still seems pleased at the enthusiasm she has roused.

Editing the issue has done more than made our physical surroundings more interesting. It has also helped us be patient with the local road situation. We no longer see the closures as inconveniences. Instead, we're pleased at the opportunity to see geologic time tick.

Although the chambers of commerce in the West don't like to hear it, at times geology has closed enough roads around Western Colorado to make us feel shipwrecked. The accompanying photo shows what it did



Black Mesa Road

to the Black Mesa road. Actually, this slide is not a very good example. The Black Mesa road -- all half lane of it -- is being kept open. In the still wild West, roads are closed only when they are totally obliterated.

Also on the subject of geology, the spectacular photo of Canyonlands in the May 28, 1984 issue was miscredited to the National Park Service. It was really taken by Jack McLellan of Bountiful, Utah, who tells us that the tiny figures in the photo are Linda Warnock and his two daughters.

--the staff

WESTERN ROUNDUP

Bulldozers nibble at National Monument

Ground was broken June 14 for a 3200-acre subdivision on the north rim of the Black Canyon of the Gunnison National Monument. The property, a roadless ranch, is highly visible from both the north and south rims of the canyon. It will be divided into 40-acre plots for summer homes -- if the Park Service doesn't buy it first.

The major recreational development of the Monument is on the south rim 20 miles from the town of Montrose in western Colorado. Any buildings on the north rim will severely affect the view across the narrow Black Canyon. Michael McGinnis, a ranger on the north rim, told the Rocky Mountain News that if the development went forward, south rim visitors would be looking at condominiums and houses in a few years. "To me, you've lost something," he said. "It's no longer a natural area. Once you've lost it, it's gone forever."

The land is owned by Richard Mott, a local rancher and real estate developer. Tom Chapman, the real estate agent and spokesman for Mott, claims Mott must sell the property in order to pay debts. Mott, he says, is "deadly serious" about needing the

money by the end of July, and is "fully prepared to sell in forties." The lots will be sold beginning July 1 for \$60,000 to \$80,000 per lot.

The Park Service has tried to get Congress to authorize purchase of the land or development rights. The authorization was to be voted on this June 20, but Chapman says that unless the actual appropriation of money is attached to the bill it won't stop the subdivision. The Nature Conservancy has also attempted to halt development, offering to bridge the gap between the authorization and the actual purchase. But by charter it can't act until the Park Service files a letter of intent to purchase.

The Mott property follows the canyon rim for seven miles. Currently twenty 40-acre lots are being laid out along the rim; a water line is also being installed. Fully subdivided, the property will contain 132 lots.

The bulldozers started working from existing roads, with access through the Monument. But on June 18 after HCN's deadline the work was scheduled to start in earnest. They "can't work another day without that machine doing substantial damage," Chapman claims, pointing

out that the real road will be "over the ridge, and pioneering with a D-7 will irreparably change the hillside."

He claims that Mott "doesn't want to develop, but will be broke... The Nature Conservancy, the environmental community, the senators involved, the Congress, the people of Montrose are doing it to the canyon, not us," he adds.

"No reasonable person could ask Mott to go broke so folks can see the view."

--Lisa Lombardi

BARBS

Do environmental statements assess bad taste? All the world -- especially the film world -- loves a scenic backdrop, and that love is causing problems for Wyoming's Bridger-Teton National Forest near Yellowstone. According to Associated Press, those making commercials for Marlboros, Jeeps, and Maxwell House Coffee, as well as those filming "Days of Our Lives" aren't giving National Forest officials enough time to prepare environmental assessments of the impacts of the filming.

New excuse needed. The nuclear industry is fond of saying that anti-nuclear groups force up the cost of power plants by their delaying and nitpicking tactics. If that's so, the Grand Gulf I nuclear power plant in Mississippi should have come in on budget and on time. It was ignored by local and distant activists, and approved in 1974 at a 17-minute hearing. Despite the benign neglect, the Wall Street Journal reports the plant is 400 percent over budget and five years late. Regulators call it "Grand Goof" because it has so many problems. When it starts up, it will double rates for many southern consumers unless state lawsuits succeed in cutting their utilities free of obligations to take the electricity.



Richard Mott's bulldozers at Black Canyon, June 14

Residents asked to banish 'Brown Cloud'

A recent poll taken by the Denver Chamber of Commerce, which is not generally considered an environmental advocacy group, found that improving air quality was first among 15 issues rated "most critical" by Denver residents and business leaders. A whopping 81 percent of the residents sampled said they were willing to pay more in taxes to address the problem; 89 percent of the business leaders also agreed to higher taxes for clean air.

This public consensus arrived on the heels of a number of significant developments in Denver's efforts to clean up its Brown Cloud. Colorado Governor Richard Lamm, Denver Mayor Federico Pena and an array of corporate leaders have unveiled plans for implementing the city's controversial share-a-ride plan beginning with this winter's high pollution season. Under the plan, Denver motorists would be asked to leave their cars at home on a specified day each week from November through mid-January. Meanwhile, the Colorado Legislature passed a bill to control pollution caused by residential wood burning. That law requires establishment by July 1985 of emission standards and testing procedures for new wood stoves and design specifications for new fireplaces. It also authorizes the state to establish a program of voluntary no-burn days during high pollution "episodes."

There is also talk of a new bipartisan spirit favoring pollution control efforts in the legislature. Corporate officials are stepping forward to lend public support to the wintertime ride-sharing plan, and Denver's much-maligned bus system, the Regional Transportation District, has also agreed to substantially reduce its fares during the high pollution season.

Yet, there remains considerable uncertainty about the success of air pollution control strategies that rely on voluntary public participation. The Denver Chamber of Commerce poll also found that fewer than one-third of the respondents consider improvement in mass transit to be among the "most critical" issues facing Denver. This despite the fact that almost



Denver

three-quarters said they drive to work alone in their own cars. Even if traditional commuting habits are curtailed, the state has found that only 25 percent of all metro area trips are attributable to getting to and from work. The bulk of car travel involves shopping, errands, recreation, keeping appointments and transporting children -- trips that are difficult to coordinate with a mass transport system.

Wood burning presents a similar problem. Still another survey found that over 48 percent of Denver residents burn wood in fireplaces or stoves. Of that group, over half (52.2 percent) said they do so for enjoyment rather than for heat. While the new Colorado law will stiffen requirements for new stoves and fireplaces, the stoves already in existence will remain uncontrolled even though present levels of wood burning added 6,000 tons of haze-producing particles to Denver air last year.

Reviewing the results of the Denver Chamber of Commerce poll,

Chamber president Rex Jennings told the *Denver Post* that the difference in Denverite's attitudes toward air pollution as a problem in general and their much more negative feelings toward mass transit represents inadequate public education. "We've apparently done a poor job of explaining these things to the public," he said. In an editorial, the *Post* itself characterized the problems as a "very confused citizenry and a serious public education problem for our public leaders."

Agreeing to pay higher taxes is, in a way, an agreement to fund someone else's effort to clean up the air, but changing one's personal lifestyle is a different kind of commitment. The first major test will be Denver's voluntary no-drive days this winter, and public officials hope the plan will be a smashing success. But even the program's slogan carries a mood of uncertainty: "Better Air -- You Hold The Key."

--Hal Winslow

HOTLINE

A new Dirty Dozen

Environmental Action, the Washington D.C. based conservation group, decided this year not to single out twelve members of Congress with the worst environmental records for its "Dirty Dozen" awards. Instead, the "dirtiest disciples" of President Reagan have been targeted, including John Crowell, assistant secretary of agriculture, who has "pushed to drastically increase harvesting of the federal forests," and John Block, secretary of agriculture, who "has helped to make the American family farm an endangered species." Among others named are Joseph Coors of Colorado, "an intimate member of Reagan's kitchen cabinet (who) gave us James Watt...," and William Ruckelshaus, the EPA administrator who has "failed to push for promised acid rain controls or stronger pesticide regulations."

Getting ready to sue

The National Audubon Society has announced it is considering legal action this summer against the controversial Ski Yellowstone project. The resort planned for 6,500 skiers would encroach on grizzly bear habitat, said an Audubon official in June. Ski Yellowstone would be on 1,700 acres of National Forest land and 1,000 acres of private land at the southern end of the Madison Range.

Administration to study nuclear aftermath



The death of agriculture as seen by the 1983 conference on "The World After Nuclear War."

The Reagan Administration, after initial suspicion that the "nuclear winter" scenario (*HCN*, 11/28/83) was a veiled attack on defense policy, has initiated a study on the effects of nuclear war as a "nonpolitical scientific mission." The program now underway will cost several million dollars a year for at least three years. Experiments include mathematical modelling as well as the setting of city-sized fires to measure the intensity as well as the quantity of particulates they send into the upper atmosphere.

In a related move, The House of Representatives recently passed a bill ensuring publication of the administration's nuclear winter study. The bill also calls for annual reports from 1985 to 1987 to address what a nuclear winter implies for American policy on civil defense, nuclear weapons and arms control. A similar bill has been introduced in the Senate.

Upset in Montana's Democratic primary

Incumbent Montana Democrats Governor Ted Schwinden and U.S. Senator Max Baucus easily won their Democratic primaries. But in a surprise, Public Service Commissioner Thomas Schneider, a Democrat, lost his seat to Thomas Monahan by 94 votes in an anemic turnout.

Monahan ran on a strong pro-consumer platform -- handbills proclaimed that he would cut electric rates. Despite that, Don Reed, a spokesman for the Montana Environmental Information Center in Helena, said that Schneider's loss was a big disappointment to consumer groups. "He sought creative solutions to problems."

As of now, Monahan has no Republican opposition for the general election, but some are urging Schneider to mount a write-in campaign. Monahan's claim that he can cut electric bills is seen as unrealistic. The PSC is especially important now because it is in the midst of marathon proceedings on Montana Power Company's request for a 55 percent increase in electric rates.

In a series of hearings held around the state, the PSC heard from critics who charge that the rate increase is needed to pay the costs of Colstrip III, a new coal-fired power plant the critics say is unneeded and should not have been built. The PSC must decide first whether the power is needed, and then whether the utility's owners or consumers should pay for any unneeded power. The importance of the issue is heightened by Colstrip IV, due on line in a year.

Only 35 percent of the registered

voters cast ballots in the primary, which Secretary of State Jim Waltermire called "a calamity." Montana did not have a presidential primary; it chose delegates to the national conventions in caucuses, reducing interest in the primary.

Speaking generally, MEIC's Reed said environmentalists lost some friends in the state legislature as a result of the primary, but he also said that some new faces might make up for the losses.

--John Day

BARBED WIRE

Startling Revelations. Under a headline reading "Hathaway Says Water Key to Future of Agriculture," former Wyoming governor Stan Hathaway revealed to readers of the *Casper Star-Tribune* that it is important to build reservoirs so the water doesn't flow out of Wyoming. He addressed a conference on "Water Resources and Range Management" at Laramie.

If at first you don't succeed... A new, 100-pound, nine foot tall jackalope now welcomes visitors to a hotel in Douglas east of Casper, Wyoming. The jackalope's predecessor, a similar statue of a bewhiskered, antlered bunny, "was killed by an allegedly drunk driver," reports the *Star-Tribune*. The old jackalope stood in a traffic median; the replacement is protected by a metal fence.

HOTLINE

Thumbs down at Priest Lake

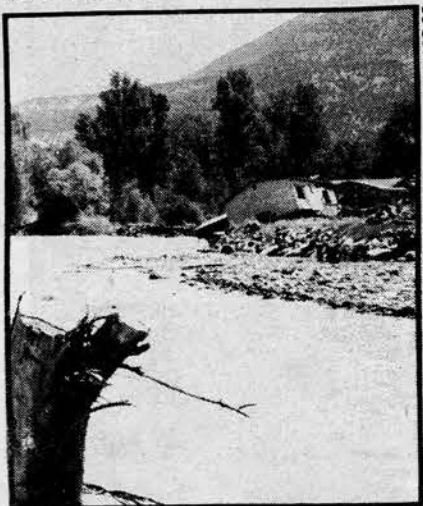
Diamond International, the match maker turned land developer, did not find much support for its proposed 15,000-acre Priest Lake resort complex at public hearings in Idaho May 29 and 30. At the Priest River hearing, 100 spoke against the plan to build a ski area, 5,000 homes and 1,000 resort units near Idaho's third largest lake in the undeveloped Selkirk Mountains. At the Sandpoint hearing, 250 were against and one for the proposal. The development depends on a land swap between Diamond and the state of Idaho. Governor John Evans (D) and attorney general Jim Jones have both indicated that the full exchange will not be allowed.

--Janet Ocrowley

Stock Growers endorse wilderness

The Wyoming Stock Growers Association can live with another 635,000 acres of wilderness, so long as it isn't followed by yet another wilderness bill. The 2000-member organization, meeting for its 112th annual convention, also asked that state control of water be ensured in any wilderness bill. According to Associated Press, the Wyoming Association of Municipalities has also endorsed the bill. The 635,000-acre proposal is 200,000 acres larger than the Wyoming legislation's initial proposal, but wilderness groups are asking for additional acreage.

Floods wash away tourists



North Fork River claims a home in Paonia, Colorado

According to a western promotion organization, the heavy snows of 1983-1984 will hit the west twice. The heavy spring runoff and flooding is keeping spring and summer tourists away. And hunters are likely to stay away because of this winter's loss of big game to cold and deep snow. Those conclusions came from Club 20, which held three public meetings in Western Colorado in late May and June on tourism, water development, and other regional issues.

Albrecht takes over

After nine years as the Colorado Representative of Friends of the Earth, and the environmental movement's expert on oil shale, Kevin Markey (HCN, 4/2/84) is going into the computer business, joining ComputerLand in Aurora, Colorado. According to Rafe Pomerance, president of FOE, Markey will be replaced by Connie Albrecht. Albrecht has headed up FOE's Western Colorado office since 1982. The new FOE headquarters will be located in Palisade, where Albrecht and her husband run a vineyard.

I-70 penetrates Glenwood Canyon

Construction of four-lane Interstate 70 through Glenwood Canyon in Colorado will keep rolling along. An attempt by a coalition called Citizens for a Scenic Glenwood Corridor failed to stop this summer's construction of a 1.4-mile section at the center of the canyon.

The coalition saw the Colorado Department of Highway's intent to build at the center, near the Shoshone hydropower plant, as a preemptive strike -- an attempt to make meaningless the coalition's larger lawsuit. Federal Judge John Kane, sitting in Denver, indicated that in his view the preemptive strike has already occurred. In denying the stay, he said the canyon has already seen a century of highway and railroad building. He failed to see evidence of additional irreparable harm.

Coalition head Mark Skrotzki disagreed with the implication that the canyon was already ruined. "There are more beautiful canyons in the West. But there are none I can bring my 75-year-old grandmother to," Glenwood Canyon, he said, is accessible, but hasn't been ruined.

He also said, "We're discouraged, but it's only round one." He said the more general lawsuit, based on an alleged conflict of interest and damage to de facto park land, is coming to trial. The coalition went into court for

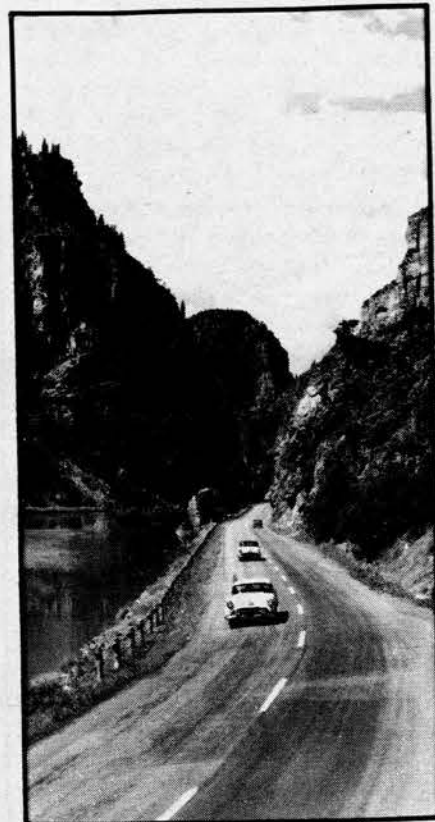
a restraining order, Skrotzki said, because of the threat the coming construction poses to the center of the 7.5 mile-long canyon.

Until now, the Highway Department has been letting contracts only at the two ends of the canyon, an area the group thinks can be four-laned. Is the center-canyon construction a plot? Skrotzki said, "The construction at the center doesn't agree with their previously published schedules. Nine other road sections should have been built before this one."

Glenwood Canyon project engineer Ralph Trapani replied: "That's a bunch of baloney. We can't build any more on the ends of the canyon. We've built everything we can. A half-mile of construction from either end gets us into the central part of the canyon."

Trapani, who testified at the hearing, said the environmentalists and the highway department switched roles before Judge Kane. "They were talking about traffic volumes and the economics of the project. And we were showing the judge how we've provided for recreation and safeguarded the environment within the canyon."

Trapani said in the interview that the ultimate effect of the project shouldn't be judged by the road sections built so far. He said a recently



Colorado's Glenwood Canyon before road construction

completed section of eastbound lane does isolate drivers from the canyon. "But when we get the westbound lane open, the drivers will get a whole new feel for the canyon that you couldn't have from down on the old road."

--Ed Marston

Can Kemmerer cash in on Riley Ridge?

Small towns in the West could increase their tax base substantially if local people could be persuaded to shop at home -- not at distant shopping malls.

The desire to stanch 'sales leakage' is especially strong in a town like Kemmerer in southwest Wyoming (pop. 7,000), which is looking forward to the new jobs Exxon's recently approved Riley Ridge sour gas project will create. The town would like to hold on to the dollars the construction workers and later the permanent workforce will have to spend.

Kemmerer is already a part of America's retail history thanks to James Cash Penney, who opened his first Golden Rule Store there on April 14, 1902. Penney went ahead despite a local banker, who warned that in Kemmerer the coal miners bought goods at the company store with company coupons. Despite the allegedly cashless society, when his first day ended Penney had \$466.59 in cash sales and was on his way to creating the chain's present 2,000-plus store empire.

Much has changed in the last 80 years, and today Dan Leoni, general manager of the Mother Store, says of his Kemmerer customers: "Basically, they buy out of town." They shop in Rock Springs, Evanston and Salt Lake City, Utah, just as residents of Cody and Powell, Wyoming go to Billings, Montana and Cheyenne people head for Denver, Colorado.

Leoni, 39, who has been with Penney's for 17 years and at the Mother Store for four years, says Kemmerer stores play the role of a 7-11. "People will go to Rock Springs or Salt Lake City and spend a hundred dollars for school clothes." Then, he continues, they come home and realize they forgot to buy underwear so "they'll look to us."

There's a lot of underwear at stake. A Kemmerer 'market leakage analysis' estimated that Kemmerer residents have about \$15 million to

spend each year, and that they spend \$4 to \$10 million of that out of town. Put another way, the Kemmerer Chamber of Commerce study estimated that half the population spends half their income out of town.

The chamber interviewed 600 people to find out why they were preventing Kemmerer from becoming a paradise. The results were typical for a small town. They gave Kemmerer low marks on cleanliness, variety and quality of goods, and cost. But the 600 did like the convenience, friendliness, and concern they found at home -- the personal touches a local business uses to make up for limited variety and higher prices.

But there was some fundamentally bad news in the survey. Even if the stores improved variety, quality and choice, and Kemmerer went ahead with downtown beautification, with restoring an Old West image, and with capitalizing on its unique Triangle Park, it might not be enough. That's because the survey showed that people shop out of town to get out of town.

Evanston Chamber of Commerce executive director Beth Carlson says: "In any city people like to get away. They always seem to go to the bigger city. There's always a feeling you need to get away." Penney's Leoni

says, "It's recreation to get out of town."

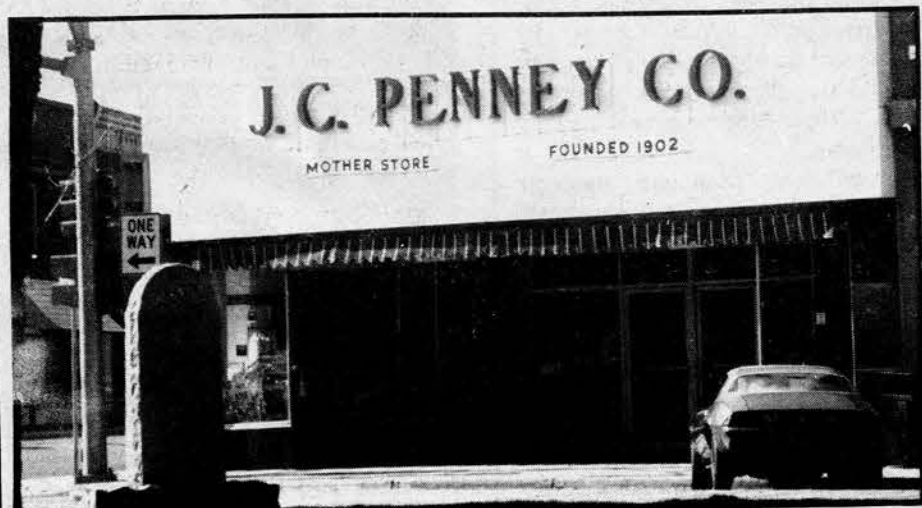
Carlson says the need is to provide the recreation at home. "The merchants recognize the need to have something exciting going on" through promotions. And Leoni talks about "the shopping experience -- when you don't have it, it's in and out and gone."

Savvy city managers know that it takes more than merchant promotions to keep a small downtown healthy. They say strong community spirit and lots of civic events are even more important. One city manager says, "It may seem crass, but a Saturday softball league or a fair or anything that keeps people in town over the weekend is worth lots of dollars."

According to the same manager, community efforts to beautify and to attract new industry may be most important as a way to raise residents' awareness of the town's economic situation and of the need to keep dollars at home.

If Kemmerer does solve the sales leakage problem, it may not want to share its secret with La Barge, Wyoming. La Barge is a town of 500 whose residents travel to the 'big city' of Kemmerer to shop.

--Ken Rand and staff



Ken Rand

Stagecoach Dam is almost driven out

However much they are fought by environmentalists and distant budget cutters, Western water projects almost always receive strong support at home. But in Steamboat Springs, a ski, coal and cattle town in northwest Colorado, a proposed small reservoir was almost defeated by a coalition of ranchers, businessmen and consumer activists. The final tally was 1,525 for approving a construction bond issue to 1,206 against. Absentee owners of subdivided second-home land near the reservoir site provided most of the victory margin.

The very effective coalition, organized as the Taxpayers Against Stagecoach Reservoir, raised three issues: the effect on ranching; the effect on taxes and electric rates; and whether the decision to build was made democratically.

At stake was a \$13 million, 34,000 acre-foot reservoir to be located in what is now hay meadows along the serpentine Yampa River. The high-altitude, multi-purpose reservoir is designed to provide irrigation, municipal, recreation and wildlife water.

The reservoir will be built with grants from the state and from the U.S. Bureau of Reclamation, as well as with a locally-backed bond issue. The Colorado Legislature demanded, and got, the project sponsors to dedicate land around the reservoir to public use. To qualify for the Bureau grant, the project will keep 19,000 of the 34,000 acre-foot storage in a permanent pool for recreation and wildlife. Approximately 4,000 acre-feet will be for agriculture, which at that altitude means hay meadows, and 10,000 acre-feet for possible power plant cooling.

Steamboat was a cattle and coal town before it tilted toward skiing and summer recreation, and the most effective member of the opposing coalition was Joe Rossi, president of the Routt County Cattleman's Association. In campaigning against the reservoir, he said:

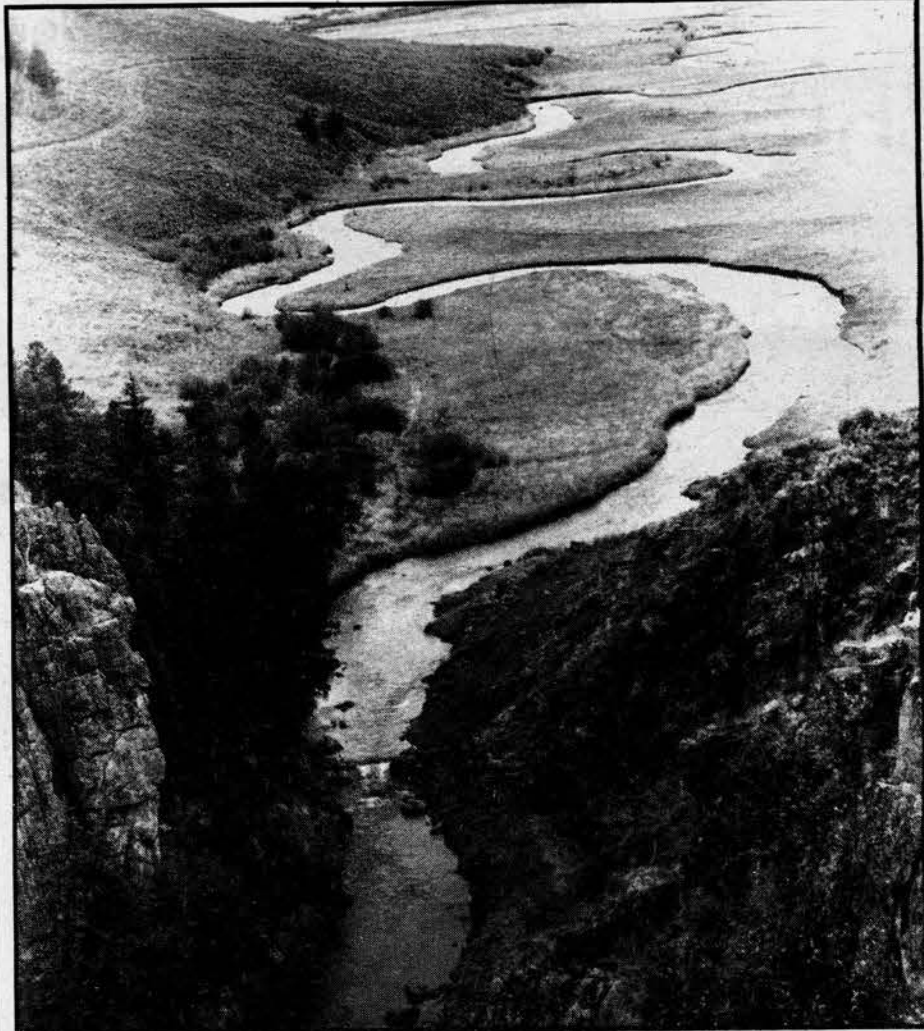
"We are flooding as much productive hay meadow as would be produced elsewhere." The new water will cost ranchers only \$3.50 an acre-foot. But "even at that price, most ranchers still can't afford it."

Another member of a ranching family charged, "Stagecoach Reservoir is a case where the taxpayer makes the price of future development cheap."

Taxes were a second issue. Property owners in Routt County now pay 0.9 mills for another small reservoir -- the Yamcola. Stagecoach will add an extra mill to that. The tax increase plus agricultural opposition helped keep the development-minded Steamboat Chamber of Commerce on the fence. Chamber president Les Limon said, "Whenever the Chamber board is so split on a development project, it's going to run into problems." And Steamboat did vote down the reservoir, although it easily passed in the nearby communities of Oak Creek and Hayden.

The opponents also charged that there would be an indirect tax. The project is possible only because Colorado-Ute, which owns power plants at nearby Hayden and Craig, will buy 10,000 acre-feet of water for \$350,000 a year. The utility has no need for the water, and consumer Elaine Gay said, "We'll be paying for Stagecoach through our electric bills, too."

Ute spokesman Paul Hathaway



Area of proposed Stagecoach Reservoir

disagreed. He said Stagecoach will be built on land the utility now owns, and filled with water rights it will sell to the project sponsors. The land and water sales, he said, balance the \$350,000 annual payments. Hathaway said Ute acquired the land and water from a bankrupt land development company in the mid 1970s, when it expected to build a fourth plant at Craig.

The democracy issue surfaced with a very loud noise. The opponents discovered that the terms of 7 of the 9 board members of the Upper Yampa River Water Conservancy District had expired. In Colorado, conservancy boards are appointed by the district judge. So the opponents submitted their own slate of candidates to Judge Richard Doucett. During the hearing, Doucett complained that the law gives him no direction as to the qualifications of board members. But in a hearing held the day before the election, he reappointed six of the seven incumbents. The seventh, a board member of Colorado-Ute, was rejected because of the conflict of interest.

Charla Palmer, a spokesman for a local conservation group called the Northwest Rivers Alliance, said that as a result of the campaign against Stagecoach, the group had joined other Colorado citizen groups to change the water conservancy law. Palmer said, "If members were elected instead of appointed, the people of Colorado would gain a greater voice in managing their water."

Cary Atwood, a member of the same group, said, "A little over 100 people voted in the last dam referendum. This spring almost 3,000 people voted." She saw that as a trend toward more citizen involvement in water projects.

The major project proponent, John Fetcher, a rancher and head of the conservancy district, agreed with much of what the opponents said about the project. But he disagreed with their interpretations.

He said of cattleman Rossi, "He is full of beans. But I'm having trouble

convincing him of that." Fetcher said Rossi's senior water rights run even in dry years. But Fetcher said Stagecoach water will be important to ranchers who have no water, and therefore no hay, in dry years. He agreed that agricultural land will be drowned. "We're going to lose 800 acres of meadowlands. I hate that. But the only good reservoir sites are in valleys."

Fetcher also agreed that the project will aid land development. But, he said as a result of an abortive attempt in the 1970s by the now bankrupt Woodmoore Corporation to develop a ski area near the reservoir site, "That land is already subdivided into 1800 lots and has a sewer plant. This reservoir will revive that development, but the area is already committed." Lot owners are believed to have voted heavily for the reservoir. The absentee vote was 266 for and 61 against.

Fetcher said the main problem for a ranching community moving toward recreation is to balance the two. Because the land is attractive and because of the large ski area outside of Steamboat Springs, he said, there is strong demand for second-home land. The challenge, he said, is to prevent scattered development. Fetcher, who has a ranch, said, "It's impossible to raise cattle with a subdivision next to you."

Fetcher did not agree that Colorado's conservancy district's are modern-day King Georges, levying taxes without representation. "You can go to the statehouse and get the law changed. Moreover, in order to do the bonding, we had to hold an election."

In defense of appointed boards, he said conservancy districts couldn't tolerate board members who oppose a project. If we had six or seven against, we might as well roll over and play dead. We need unity."

How did the board come to have seven lapsed members? "Our attorney forgot."

--Ed Marston

HOTLINE

A grizzly plot

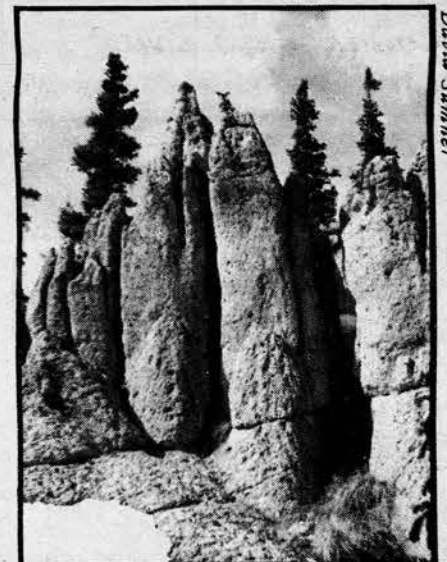
Senator Alan Simpson (R-Wy.) thinks there's a plot afoot to keep people out of Yellowstone Park. As a result, he has attacked a Park Service and U.S. Fish and Wildlife Service attempt to close camping facilities at Fishing Bridge in Yellowstone National Park. The campground is in the midst of prime grizzly habitat, and the proximity of people to the threatened grizzlies persuaded park officials to propose the closure (HCN, 4/16/84).

The closure was part of an agreement which allowed new visitor facilities to be built at Grant Village on the south shore of Yellowstone Lake. But plans for dismantling the Fishing Bridge campsites and recreational vehicle slots were dropped temporarily after the Wyoming Congressional delegation objected. Both Fishing Bridge and Grant Village will be open this summer.

"I think the people of Wyoming and our country are interested in the grizzly bear population," Simpson told the *Cody Enterprise*. "But they're going to say 'wait a minute'" to campground closures.

The justification for closing the Fishing Bridge site because of the bear habitat "just (doesn't) have the ring of credibility," Simpson said. "What we're seeing here is an extraordinary effort to limit human use of Yellowstone National Park."

Wilderness bill passes



Wheeler Geologic Area

A Colorado wilderness bill designating 564,000 acres was passed by the House of Representatives last week. The bill was a compromise between Rep. Ray Kogovsek's original bill of 400,000 acres and Senator Gary Hart's bill, introduced in the House by Rep. Tim Wirth, which included 733,000 acres.

One of the most controversial areas was the William's Fork, 45,000 acres on the Continental Divide, which is valued both for recreation and for trans-divide diversions of water to the water-hungry east slope population centers. The compromise legislation designates 40,500 acres as wilderness, but won't affect the Denver Water Board's right to take water.

Oh-be-Joyful, another controversial area, will have 5,500 acres designated wilderness. Fossil Ridge will continue to be classified as a Wilderness Study Area. The Wheeler Geologic Area will be designated an 18,000 acre National Monument. The Sangre de Cristo mountains will be protected, with 235,000 acres set aside as wilderness.

The bill now goes to the Senate where Colorado Senator Bill Armstrong is expected to finally introduce his wilderness legislation.

David Sumner



Geology of the West

Idaho's Great Rift is a huge blotter that swallows all streams and river rivers

by Glenn Oakley

From the top of Bear Paw Kipuka Island a solidified sea rages in all directions. Huge swells of titanium blue rise up against its flanks. Rivers within rivers swirl and fall back upon each other. Eddies spin below the surface.

Out across this sea of lava now hardened into shining basalt, a line of low volcanoes and spatter cones mark Idaho's Great Rift. When the rift last opened 1,800 to 2,000 years ago, magma poured out like hot honey over several hundred square miles. That was the latest episode in a series of eruptions that have spanned five to ten million years and created the Craters of the Moon National Monument and the proposed Great Rift Wilderness of Idaho.

The lava flows, coming one after another from the Great Rift and other rift zones now camouflaged by time, also formed the Snake River Plain, a crescent-shaped volcanic plateau stretching over 300 miles across southern Idaho. Extending from the Tetons and Yellowstone Park in the east to just short of the Oregon/Idaho border in the west, the Snake River Plain is bounded on the north by the Idaho batholith and by a series of basin and range, block-faulted mountains. From that boundary, the plain, 30 to 100 miles wide, tilts gently southward.

The Snake River follows the southern boundary and rides atop the lavas in its eastern headwaters. But as the river moves west, it slices 500-foot-deep gorges through the successive layers of basalt and plunges over vertical falls, like the 212-foot-high Shoshone Falls north of the city of Twin Falls.

The Snake River Plain is a geologic anomaly. Basalt rift zones form the floors of the oceans, but their occurrence on continents is a mystery. In addition to this geologic anomaly, people, in the course of adapting to and using this volcanic plateau, have produced an additional set of anomalies.

THE GREAT RIFT

The story starts with the Great Rift. In some places along its 65-mile length, the open vents of the Great Rift are more than 800 feet deep. Another ten or fifteen miles deeper into this crack in the earth are believed to rest the magma chambers from which roughly every 2,000 years, pulses have surged to pour out across southern Idaho.

Each new flow buries the previous flow, except for occasional points of high ground, which remain as islands. The islands, standing out in the lava fields because of their relatively lush vegetation, are called kipukas, the

Hawaiian word for "window." They are windows to the past, for the surrounding barren lavas have kept away the domestic cattle and sheep which have altered the botanical structure of the West's grasslands. The kipukas of the Great Rift are remnants of the ecosystem which once covered much of Idaho, Utah, Wyoming and Nevada.

Bear Paw Kipuka, roughly three-quarters of a mile long and one-half mile across, is one of the largest of 450 kipukas scattered across the Great Rift proposed wilderness. In its reddish-brown soil grows blue bunch wheatgrass, dark blue penstemon, Hood's phlox, bluebells and arrowleaf balsamroot, whose flowers turn the slopes of the kipuka bright yellow. There is also prickly pear cactus and giant sage and bitterbrush (pruned back by visiting deer), mountain snowberry, giant wild rye, Indian ricegrass, buckwheat and more.

The season of active life on the kipuka is short. Winter at its 5,000 foot elevation blankets the lavas and kipukas with several feet of snow. And by late June the sun and the blue-black lavas have combined to turn the Great Rift into the Great Oven. But from March through early June, the kipukas ring with the songs of meadowlarks and mountain bluebirds, the males declaring territory from the tops of sagebrush and serviceberry. Mice and marmots and pikas burrow through the thin, soft soils, feeding on seeds and plants. Golden eagles, in search of rodents, glide the thermals which rise from the heated lavas. Coyotes, fluidly padding along the shoreline between lava and kipuka, join the hunt at night along with Great Basin rattlers.

There are no streams, pools or reservoirs on the entire Great Rift. But in narrow, deep craters and in north-facing caves within large craters, the winter's snow remains through May, insulated by the air-pocketed basalt.

It is not just the kipukas which sustain life. Despite the stark and barren appearance of the lava fields, they too support a startling diversity of life. On the smooth pahoehoe lava that looks and feels and cuts like glazed pottery, blood-red drops of Indian paintbrush grow. In three-foot-deep cooling cracks, rock sword ferns grow in the thin accumulations of wind-blown desert dust. A century-old bristlecone pine grows out of a five-inch-wide fracture in the lava, the cambium of the trunk overflowing the confines of the crack.

Because the junipers and bristlecone pines are few and very far between, and because there is no water, no known mineralization and practically no arable land, there is

little opposition to the Bureau of Land Management's proposal to designate 341,000 acres of this area as the Great Rift Wilderness. However, in a state whose leaders see wilderness as something to be rationed out, there are political considerations. Idaho's Senator James McClure has made known his intentions to designate all BLM wilderness in Idaho in a single bill. As a result, conservationist Bruce Boccard, chairman of the Committee for Idaho's High Desert, fears the Great Rift will be used as a bargaining chip in a package bill.

"We believe," says Boccard, that McClure is going to hold the Great Rift hostage, to trade it for the Owyhee (Canyonlands Wilderness Area). CIHD and other conservation groups are pushing for action on the Great Rift proposal prior to the completion of other BLM wilderness studies.

THE AQUIFER

One of the things that makes the Great Rift unattractive for development is its dryness. In the west, where water is everything, the Great Rift is anti-water -- a huge blotter that absorbs all moisture.

For over 200 miles across the northern Snake River Plain not a single river or stream makes its way to the Snake River. The porous basalt, which extends to an estimated depth of 5,000 feet (no one has drilled deep enough to know for sure) soaks up rivers borne from the snowmelt of the mountains to the north: the Lost River Range, the Lemhis, the Beaverheads, the White Knobs, the Pioneers.

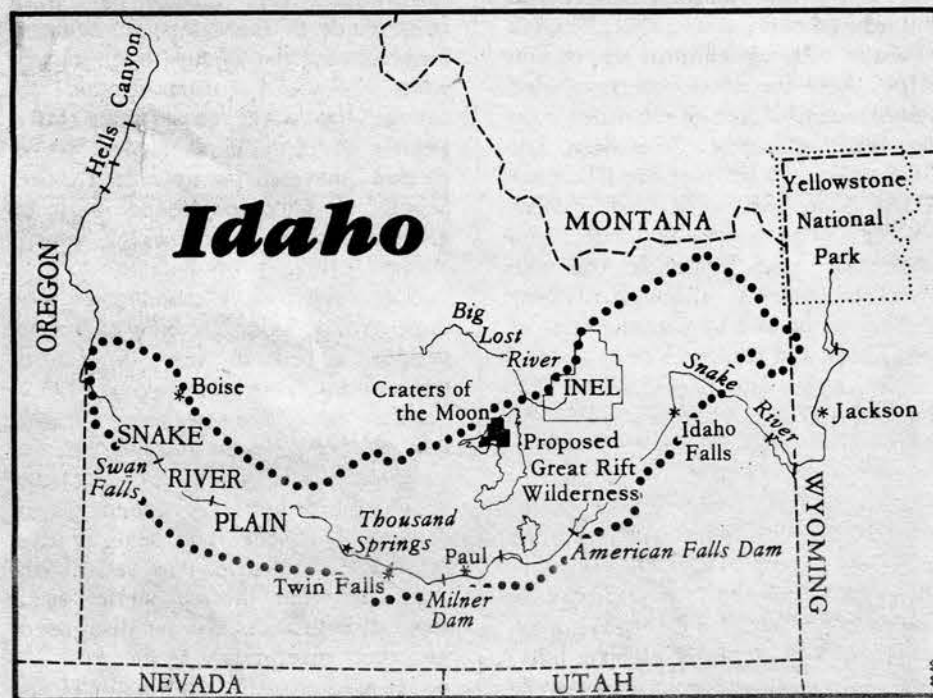
The Big Lost River winds through a high mountain valley and then sinks out of sight when it leaves the sedimentary rock of the mountain valley and enters the Snake River Plain. The Big Lost River, other smaller rivers and snow and rain on the plain itself percolate down through

the gas bubbles, fissures and spaces in the basalt to feed what is one of the largest and most heavily used aquifers in the country.

The Snake River Aquifer is estimated to hold enough water to inundate the state of Idaho under a 20- to 50-foot sea. This water cruises along in a southwesterly flow at 5 to 25 feet per day, following the rubbly spaces between flow layers and sneaking through lava tubes, and then bursting free of its subterranean captivity in what was once a spectacular series of waterfalls cascading from the basalt cliffs above the Snake River in the Hagerman Valley.

The Thousand Springs, as the outpouring of the aquifer is called, is best seen today in old postcards. A hydroelectric plant built in 1912 siphons off the biggest of the springs in a mass of giant tubes that funnel the water through a power plant below. The 8-megawatt plant built in the form of a castle by the Thousand Springs Power Company was sold to Idaho Power Company in 1917 for \$350,000, water right and all. In the 1930s and again in the late 1960s, the National Park Service studied the area for preservation as a national park or monument. The 1930s study, according to Paul Fritz, former state coordinator for the National Park Service, anticipated including not only some of the springs but the 500-foot-deep Snake River canyon all the way upstream to Twin Falls.

By the 1960s, when Fritz began renegotiating with landholders in the Thousand Springs area, the goals had become much more modest—to simply preserve part of the springs. But even that plan was squelched, despite what Fritz said was Idaho Power's willingness to consider blowing up and ripping out its Thousand Springs generating plant. "It's hard to say



East Twin Butte near Idaho National Engineering Lab



EG&G Idaho, Inc.

what happened," Fritz recalls. "Something happened back in D.C."

Today there is but one major spring left undeveloped. Blue Heart Springs has been spared because it bubbles out of the ground at the base of a cliff alongside the Snake River, with access only by boat. The state Department of Parks and Recreation received its long-awaited water right to Blue Heart Springs just this year, ensuring its survival. The department has no plans to develop the springs as a recreational area. Says the department's deputy director, Bob Meinen, "Our feeling is to preserve it as it is, to allow the spring to well up and go into the river."

While the power plant covered up and diverted the major concentration of springs, hundreds of other springs have been systematically developed into commercial fish hatcheries. There are the sophisticated concrete-row raceway hatcheries of major producers, like Rangen and Clear Springs as well as the back-yard hatcheries--cement tanks and earth ponds outfitted with the telltale fish food feeders hanging above the water. Everybody seems to raise rainbow trout in the Hagerman Valley -- it produces almost 90 percent of the commercial trout in the entire country.

While people have siphoned and transformed the Thousand Springs, they have also increased its flow. With the construction of American Falls dam and reservoir on the Snake River, the persistent effort to turn the Idaho desert green accelerated at an amazing rate. Water from the reservoir was poured out across the virgin desert soils of the Snake River Plain to produce wheat, sugar beets and the Idaho spud.

Soon water was being pumped directly from the river, up 500-foot sheer cliffs, before being pumped out across the plain. On the wings of cheap, subsidized electricity the Snake River Plain became one of the richest agricultural regions in the nation.

Some of the irrigation water pumped up from the river is evaporated or taken up by the plants. But the rest, like all other water on the plain, soaks down and joins the aquifer. By increasing the volume and thus the pressure on the aquifer, the flow at Thousand Springs jumped from a pre-irrigation period flow of 4,000 cubic feet per second to a high of 6,800 cfs in 1951. Since 1951 the flow has steadily declined to its present flow of 5,100 cfs to 6,100 cfs.

The decline was caused by the tapping of the aquifer itself for even more irrigation water. Deep irrigation wells have bred like jackrabbits on the plain, and some isolated areas have been declared "Critical Groundwater

Areas," meaning additional wells must meet approval by the State Department of Water Resources.

The endless demands on water from the aquifer and the Snake River have alarmed conservationists. They note that everyone seems to have a water right on the river except the fish and wildlife. In one out of every four years, irrigation withdrawal completely drains the Snake River at Milner Dam. Only recharge from the Thousand Springs keeps the river flowing.

Ironically, it has not been conservationists, but rather the Idaho Power Company which put a halt to wholesale tapping of the Snake River and the Snake River Aquifer. A 1982 Idaho Supreme Court decision surprised and stunned the state by upholding Idaho Power's 8,400 cfs water right at its small and archaic Swan Falls Dam south of Boise. That ruling put the brakes on new irrigation withdrawal upstream of the dam by preventing further irrigation development. (See related story.)

All of the environmental water problems on the Snake River Plain are not associated with water withdrawal. The injection of water into the aquifer--water laden

with pesticides, herbicides, sewage, petroleum and radioactive wastes--has produced some of the most emotional environmental battles in the state.

Wastewater from an Amalgamated Sugar Company plant near Paul, Idaho, has resulted in local contamination of domestic wells. And U.S. Geological Survey hydrogeologist Dick Whitehead said an estimated several thousand private wells carry excess irrigation runoff directly back into the aquifer, carrying with it herbicides, pesticides and any other chemical applied on the ground. All major cities and towns along the river also use the aquifer to dispose of stormwater runoff. This water contains petroleum residues and anything else lying in the gutter.

All of this wastewater is discharged into an aquifer which is so heavily used for drinking, agriculture and industry that Idaho is fourth nationwide in groundwater consumption.

But it is the Idaho National Engineering Laboratory's practice of disposing radioactive wastes above and in the aquifer that has produced the most acrimonious debate (HCN, 11/28/83). INEL, situated just 20 miles northeast of the Great Rift, is a 900-square-mile area used by the

federal government to conduct experiments on nuclear reactors, process spent nuclear fuel rods from government reactors, warships and submarines, and dispose of radioactive wastes. There are also secret projects, like "Project X", and additional proposed projects, like the \$4 billion New Production Reactor. The Department of Energy, which operates INEL, has selected INEL as the site for the massive breeder reactor which would supply the nation's nuclear arsenal with tritium and plutonium.

INEL has produced tritium and other radioactive materials for over 30 years, and this radioactive waste has been injected and percolated into the Snake River Aquifer. From 1952 to February 1984, the Chemical Processing Plant (run by contract by Exxon) injected an average of one million gallons per day of radioactively contaminated water down a 600-foot deep well.

INEL officials and the USGS staff assigned to INEL say that dilution in the aquifer, radioactive decay, and bonding of certain of the radioactive elements to the basalt combine to make the waste disposal of no harm to the aquifer outside the boundaries of

[Continued on page 10]



Composite cinder cone at Craters of the Moon National Monument

National Park Service



Navajo Ray, Gros Ventre Mountains, Wyoming, 1983

C.L. Rawlins

S.O.B.

Heat that day wavered off
hard-baked hills in long stripes
nudging bluegray sage into a kind of pulse
as we sweated under a lone cottonwood;
too damn hot.

He rode up fast and hard,
scattering calves as he jerked rein,
angry as a blister
beneath his widebrim hat.

"I ain't payin' you to sit,
git off your butts an' git to work!"

"Jes' catchin' some shade
under this here tree, boss."

"I don't wanna hear it.
Git!"

Next day, just as hot. Sweat pops
on our foreheads just from sitting.
We herd toward that same valley
thinking of a little shade
if Boss ain't around.

Boss, he ain't round
but no shade neither:
just boss' axe buried deep
in the stump of that hacked-down tree.

Karl David Johnson

September 1

They call it the op
this hot, flat asph
fenced on both si
no water for miles

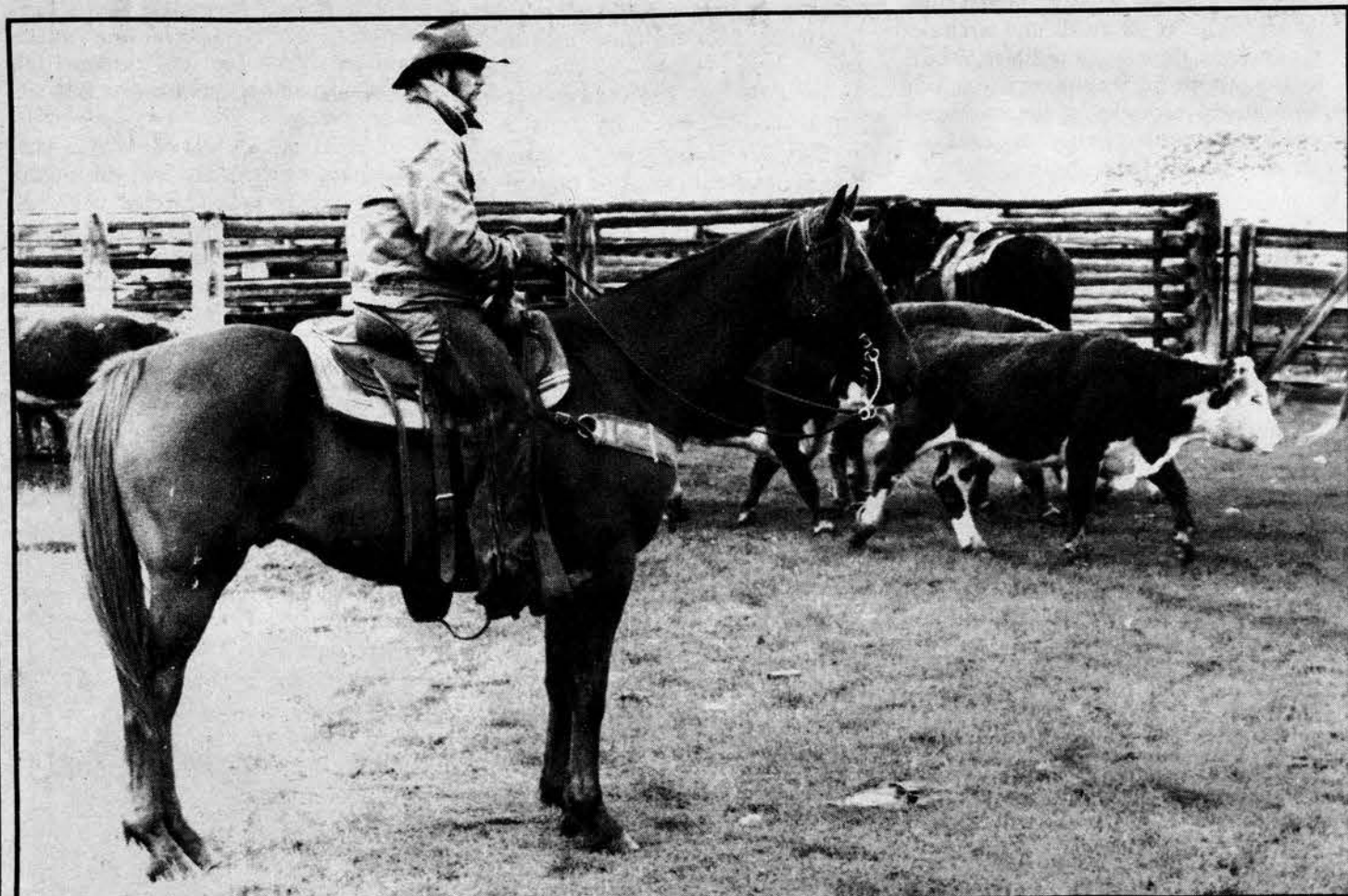
The herd trails en
raises dust from
renders a single c
a slow flood of so

Ewes and lambs t
that soon will be
ewes to winter ra
lambs to the knife

Day before yester
we camped in a h
where clouds cros
and sunset could

Today we belong
the hot black,
a long descent fr
no trail back.

SHEEPHERDERS an



Tom Marple on 'Chili,' Bar Cross Ranch, Cora, Wyoming, 1983

C.L. Rawlins

Borreguero

(Recounted from a conversation with a Peruvian
shepherd in the Wind River mountains, 1982.)

Buenas dias, you will stay and eat,
we will have good *carne y arroz* -- how you say,
rice? *En Ingles?* I don't speak too good,
pero no importante, nobody come here
y mi patron dice "you don't go in town,
you are arrest, *policia* don' like
borregueros Peruanos."

Yo soy Indio, we have our *lingua*,
Espanol I learn in the school, from the radio,
in my village, *si*, we don' do good,
hay nada comer, so I come here, *tengo contrato*,
how you say? Ah, contract, *tres anos*, I make
mucho dinero aqui, soon I go home, buy land,
I miss my wife, my *chicos*, *Americanos* don'
speak me, how you say? Ah, don' talk to me,
pero yo tengo un American Dream, I hear this
on *mi radio*. *Es verdad*.

Mucho dinero, *pero* I lonely, I try
talk *con una rubia muy guapa en la vereda*,
how you say? Ah, trail. She is backpack.
She say "go way. No like talk shepherd,"
she is laugh at my teared clothes, *mi botas*,
Aiii! Mi patron, he give me, say I don' go to town
comprar nada, *policia* gon' arrest, he get *botas*,
mejores from *el Threefstore*. I don' like, this
rubia to laugh, I am injury, *si en mi corazon*,
I have proud, *es verdad*. I man, *si?* Have proud.

Americanos tienen much dinero, muchos car,
muchas
cosas, mucha comida, *Aiii! Ricos*, I don' like.
They are laugh me. I man, *si?* I have proud.
This mountain, I like. *La tierra*... lonely,
coyote sings *en la noche, la noche fria*, *pero*
this *montana*, she don' laugh.

C.L. Rawlins

NOTES ON CONTRIBUTORS: Drummond Hadley
the Guadalupe Ranch near Douglas,
and has published many poems,
a book, *Strands of Rawhide* (Hilos de

Gretel Ehrlich has worked with sheep and
cattle on Wyoming ranches and has published
widely in national magazines including *The*
Atlantic Monthly. Her book of poems, *To*
Touch the Water, is available from Ahsahta
Press.

Karl David Johnson is a student, mountaineer
and the director of an outdoor program in Utah,
a good job for a desert rat.

C.L. Rawlins has worked on cattle and sheep
ranches and is currently a range rider in
Wyoming's Wind River mountains. His up-
coming book *A Ceremony on Bare Ground*, will
be published by Dream Garden Press. He is
also Poetry Editor for *High Country News*.

ember 17

all it the open road:
 , flat asphalt,
 on both sides,
 er for miles.

nd trails empty-bellied,
 lust from the margin,
 a single cry in two thousand voices,
 flood of soiled white,

nd lambs together
 on will be parted:
 winter range,
 to the knife.

fore yesterday
 ped in a high pass
 clouds crossed from the west
 nset could bring tears.

we belong to the road,
 black,
 descent from summer,
 back.

C.L. Rawlins

Reminiscences of an Old Cowboy

"Well, I've been followin' 'cowboyin' now
 for over fifty years," Leo Turner says.

I've had some rough days, and some pretty high-
 heeled times too.
 I've known a lot of men,

I've seen a lot of country,
 made some good friends,

and I don't have any enemies-
 They're all dead.

Drum Hadley

Horseshoeing

"Well one day I was watchin' a feller
 and he was havin' some trouble shoein' a
 horse,"

Old Walter Ramsey says,
 "But that feller he always had his troubles
 shoein'."

I sat there and watched him wrastlin'
 with that horse's hind leg and cussin' for a
 while,
 and saw he was a drivin' them horseshoe nails into
 the hoof
 with the curved side pointed in instead of out.

He was hammerin' them nails in backwards so
 they didn't want to come out,
 and naturally that horse was a givin' him some
 trouble.

I sat there a little while longer and watched him
 some more...

Course I didn't say nothin'.

I figured to myself, if that feller was as old as he
 was,
 and had cowboied all of the years that he had,
 and was still a doin' it that way,
 he just must not a wanted to know."

Drum Hadley

*and COWBOYS**Other Seasons*

Long flanks of snow straddled and
 drifted my cabin all winter.
 Held me the way a man would
 if there had been one here.

If only I could drift into a place and
 hold a time of year so elegantly.
 Then break my legs leaving
 to embrace the awkward spring decay.

You should hear the way snow
 sizzles and shrinks, hisses and rots away.
 Overnight someone new steps into
 those white thighs and drags herself downhill
 towards

the next season. A thunderstorm
 unties the sky. It composes and decomposes
 darkness,
 and forgives what is has gathered there
 by letting it rain.

Rain opens like a woman's shirt and
 showers milk on corn.
 A flood starts inside those ears,
 a stranger's teeth drown in silk.

The rest of summer is
 dust and under that, a thousand miles of
 surface straight down.
 Autumn comes

on bruised light, its knives and forks of
 electricity carving sheets of rain.
 Fall is breeding time. The bucks
 are put in with the ewes

Gretel Ehrlich

A Sheepherder's Binge

He rattles on ballbearings and spikes and mostly spikes
 across the room.

He does the St. Vitus dance.

After a binge he can't walk the world flat.

His sleepwalker arms shake air in front of him with
 staccato, off-center tilting.

He fights demons to get to the bathroom.

None of these tricks gives him buoyancy.

There are cuts on his face and feet.

In the rust of the pickup he hides his brain-scratches,
 the suicidal loops, the terrible rusting liver.

He hides rust inside rust.

Brown whiskey, loose from the bottle, breaks into flames.

I swear, I saw him swallowing swords....

His upper set of teeth spin out of his mouth as
 he gags on the redundancy of family.

He goes back to the bars: the Cactus, the Medicine
 Wheel, the Shoshone.

Now the gum-and-tongue gate passes only liquid. For two
 weeks this goes on: whiskey in - vomit out.

Small town confidences dry heave him into a panic.

Passing cars lay a long slicker of slush against

his bowed legs as he weaves the streetloom,

braiding footsteps into tangled wants,

reversible conclusions.

Then he's through with it.

The batfaced woman who tends bar returns his teeth by
 mail.

Gretel Ehrlich

Snake River...

[Continued from page 7]

the site. Critics, notably the Snake River Alliance, an Idaho peace and anti-nuclear group, argue that no one knows enough about the aquifer to say for certain where or when the radioactive wastes will end up.

What would happen if the Great Rift reopened and began flooding the area with lava? "If the entire site were buried under lava it would be buried for eons," Department of Energy

spokesman Peter Mygatt says, adding that such an occurrence would please the anti-nuclear people. He adds, "That's a 'What if' scenario."

USGS geologist Mel Kuntz studied that scenario and wrote, "The chief volcanic hazard would be the rupture of waste containers and the explosive dispersal of buried and surface stored wastes from areas within and near the eruptive fissures. Dispersal of radioactive wastes in tephra and steam clouds could cause severe contamination of the atmosphere, soil, surface water and possibly, groundwater."

Just how likely is renewed volcanic activity on the Snake River Plain? A pat answer to that question is not possible. As Kuntz wrote in the same study, "The Snake River Plain, particularly the eastern part, constitutes one of the most poorly-known geologic areas of the United States."

But most geologists tend toward what geologist Harold Stearns wrote in 1928: "It seems unlikely that on the Snake River Plateau, where thousands of volcanic outbursts have occurred during long ages and up to very recent time, (that) all the volcanoes should

have become extinct in this last moment of time.

"Instead it appears that we happen to be living in a period of repose. The next eruption may come without any appreciable warning, although it is likely to be preceded by earthquakes...It seems safe to predict that another eruption may occur in this area in the not too far distant future."

□

Glenn Oakley, a free lance writer-photographer, is a frequent contributor to *High Country News*.

Swan Falls blocks development in Idaho

The small, archaic Swan Falls hydroelectric power plant on the Snake River has been overtaken by time. Its two megawatts were important when it was built in 1920. But today that dab is meaningless.

Nevertheless, Swan Falls is the most powerful force in Idaho. Thanks to a 1982 decision by the Idaho Supreme Court, it is -- for the moment -- preventing the irrigation of 850,000 acres of publicly-owned desert lands, the dewatering of the Snake River, and construction of 2,000 megawatts of coal-fired power plants in the northern Rockies.

Swan Falls is an unlikely candidate for such a role. But after a great deal of litigation, the 1920-plant has ended up having the most crucial location in southwest Idaho. Its water right protects the downstream dams in Hells Canyon, which produce enormous amounts of cheap electricity, from being dewatered.

Perhaps more important, Swan Falls has frozen development of the Snake River plain, forcing Idaho to confront a situation many would prefer to ignore (HCN, 2/4/83, 3/18/83, 4/15/83).

The situation is the dewatering of Snake River by potential irrigators -- many of them corporate and speculative land developers -- who would pump water hundreds of feet up out of the Snake River to the desert lands above (HCN, 9/3/82).

The irrigation would put more land into cultivation. But the new land would reduce the electricity generated at Snake River dams by removing water from the river. And, in a Catch 22 situation, the irrigation would increase the demand for electricity to pump water out of the Snake River to the fields above them.

The expansion of irrigated land and the resulting dewatering might have gone on until the Snake River was dry, or at least until it hit the state minimum stream flow level of 3,300 cubic feet per second. But on November 19, 1982 the Idaho Supreme Court stopped the drying up of the river by banning new diversions above Swan Falls.

It ruled that such diversions would be an illegal taking of Idaho Power's Swan Falls water. The court also found that 5,000 present water users may be using Idaho Power water illegally and directed a lower court to settle that question. The court is yet to rule on the 5,000 users, but no one expects them to lose their water. The major issue is additional diversions.

The Idaho Legislature has fruitlessly spent the last two sessions sawing at the Gordian knot the court tied. On one side are Idaho Power, the Idaho Public Utilities

Commission, consumer groups, and the Idaho Conservation League fighting to keep water in the river and power coming out of the hydroplants. On the other side, Governor John Evans (D) and most Idaho farmers and farm groups are fighting to subordinate the Swan Falls water right so that the state's plan to put 860,000 acres of now-desert land into agriculture can be achieved.

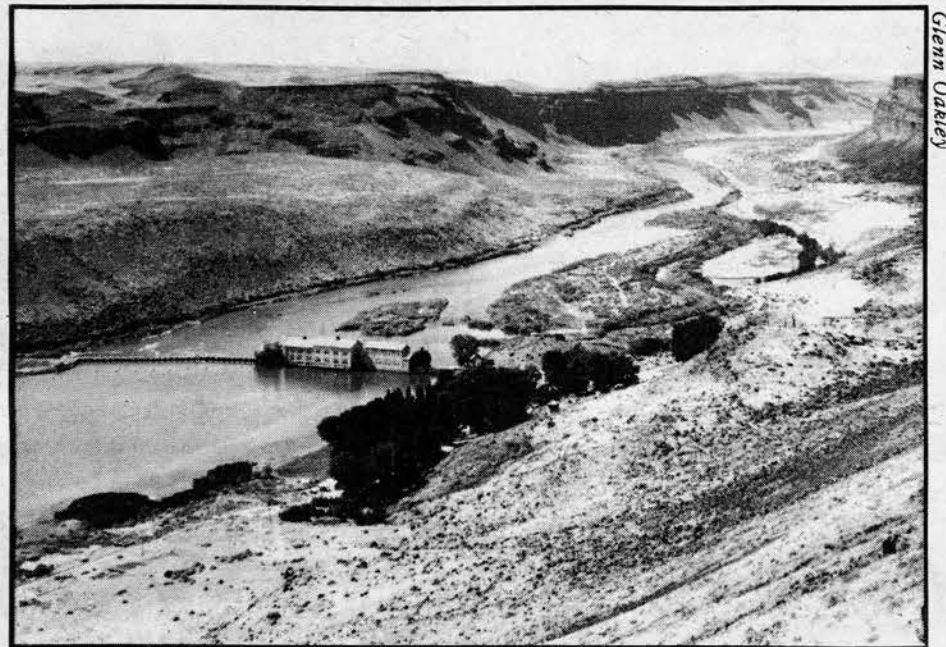
The coalitions are not firm. Pat Ford, executive director of the Idaho Conservation League, says he is confused as to the best course to take. The ultimate ICL objective is to keep water in the Snake. "But I have no clear idea how to get there in the present political situation."

A second Idaho Power ally, the Idaho Public Utilities Commission, is concerned about cheap electric rates. The PUC fears that if the Snake is dewatered, Idaho Power will turn from cheap hydro to expensive coal power. Idaho Power agrees. It says that if it loses its hydropower and is forced to build coal plants, residential bills will rise \$200 a year; irrigators will pay 50 percent more. The utility's TV commercials denounce those who would take away the public's cheap hydroelectricity "so these (land) developers can profit."

The "land developers" would use the federal Desert Land Act and the Carey Act to claim BLM desert land for agriculture. The land would cost no more than \$10 an acre. But developing the land, which means either sinking wells into the Snake River aquifer or pumping water 800 feet up from the Snake River, would be expensive. Since the 19th century, those two surviving homestead acts have already brought 2 million acres of federal land into private ownership.

The issue is complicated by confusion about the amount of water remaining in the Snake. Some argue the horse is already out of the barn. PUC attorney Jack McMahon says, "The water permits in existence right now can draw the Snake River down to 1,900 cfs in an average year." The state has a minimum stream flow of 3,300 cfs, so McMahon says, "It's already over-appropriated." Ford says that because of Idaho's primitive method of recording water rights, "No one knows how much water is left to be appropriated. And no studies have been done."

In theory, the Supreme Court decision guarantees Idaho Power at least 5,500 cfs. But if the Snake River is already over-appropriated, the politics changes. It is one thing to stop additional water diversions; it is another to cut off people who already have rights.



Swan Falls Dam on the Snake River, Idaho

Although Swan Falls dramatized the dewatering issue in 1982, it is not new. The battle started in the mid-1970s, when Idaho Power forecast a need for a 1,000-megawatt coal-fired power plant by the 1980s, with similar plants to follow. Much of that projected demand was to come from the need for power to pump water to newly irrigated desert land.

Pat Ford of ICL recalls, "We put together a conference on agricultural land development back in 1977 to quantify the economic impacts. The facts came across: water pumped out of the Snake River and out of the aquifer would raise electric rates. There were substantial pumping lifts to the canyonlands above the river." And since the lower elevation land had been already developed, he says, the new land had higher electric energy needs per acre.

Ford says that as a result of the growing concern, the Bureau of Land Management in the late 1970s imposed a temporary moratorium on new transfers of public desert lands to private agriculture under the Desert Land and Carey acts. During the moratorium, "The BLM did an EIS which also publicized the effects of further development." Partly in response, "The Public Utilities Commission then imposed a moratorium on Idaho Power hooking up major new irrigators. The PUC recently lifted the moratorium, but Swan Falls now does the same thing."

Ford says Idaho Power's defense of its water rights is new. The Swan Falls decision came out of a citizen lawsuit seeking to force the firm to defend its water rights. Five years ago, Ford says, Idaho Power was pleased to see its Snake River flow being dried up; it meant more demand for power.

"They were encouraging more irrigators and they wanted to build coal power plants. There's no guarantee they won't switch again. Many folks at Idaho Power think they'll eventually be back in the power plant business."

What happened to the firm's need for a new 1,000-megawatt power plant in the Boise area? Ford says, "Idaho Power's growth projection was wildly high." The slowdown in expansion of new irrigated land, the declining economy, and the new conservation ethic all cut into the 1,000-megawatt expectation.

Idaho Power attempted in the mid 1970s to build a 1,000-megawatt coal-fired power plant in southern Idaho. Idaho Power spokesman Larry Taylor says the 1970s power plant fight taught the firm something about the residents of southern Idaho. "Pioneer (the proposed plant) was a real controversy and the bottom line was that we were denied permission to build at one site. We came away with the pretty solid understanding that a coal plant wasn't wanted in Idaho."

But Taylor adds that extra power was still needed, so the firm went out of state for new coal-fired plants. It has 900 megawatts of coal-fired power out of the Jim Bridger plant in Wyoming, the Boardman plant in Oregon, and the Valmy plant in Nevada. Despite that, the bulk of its capacity comes from dams -- 1,800 megawatts.

With dirt-cheap hydropower making up two-thirds of the utility's total load, the way in which the Swan Falls question is solved will have a large effect on Idaho's power consumers and agriculture production.

--Janet Ocrowley, staff



Mike McClure

An overview of the layered volcanic rocks of the Washakie Wilderness in northwestern Wyoming's Absaroka Range.

The West was formed by clashing crustal plates

by Mary Moran

The West appears to be miners and loggers and conservative, development-oriented politicians. But its economics and personality are no more than symptoms of what the West really is: geology.

Geology explains why the Rocky Mountain's gold and silver mines are found in spectacular mountain ranges; why oil companies drill in the mountains in western Wyoming but in the basins or foothills in the rest of the state; and why coal is found both under flat areas like the Powder River Basin of Wyoming and Montana and in Colorado mountain ranges.

There is more to geology than explanations of energy and mineral wealth. It also tells what formed the sandstones of Utah's spectacular canyon country; why the Great Plains slope from Colorado's Front Range eastward to the Mississippi; and how the puny Colorado River made the immense canyons of Utah and Arizona.

Generalizations are always dangerous; and they are especially dangerous in geology, where the exception is the rule and the untangling of hundreds of millions of years of history is never simple. But one acceptable generalization is that we live in a time of erosion. The great mountain building and filling of state-sized lakes which created the Rockies and the gold and oil shale deposits are done for the moment. Now wind and water are dominant, and they are levelling the work of the past or cutting downward, as in the Colorado River canyons.

The power of erosion can be seen by going back 300 million years to the Paleozoic Era when the Ancestral Rocky Mountains were rising out of the shallow sea that covered much of the West. The primeval Rockies, like most mountain chains, were probably pushed up because of forces generated by clashing crustal plates -- plates on which the surface of the earth rode back then and rides today.

The ancestral Rockies are gone today. But remnants of the alluvial fans which eroded off those mountains are visible today in the red rocks of the Maroon Bells near Aspen, Colorado and along Colorado's Front Range from the Garden of the Gods near Colorado Springs to Boulder's flatirons.

When did those original Rockies disappear? It is estimated that the dinosaurs, which appeared 230 million years ago at the beginning of the Mesozoic Era, didn't get to see them -- they had already been ground down.

For at least some of their long reign, the dinosaurs lived in an age of accumulation, as limestones, sandstones and shales built up in shallow basins. Large parts of today's West are covered with these Mesozoic sedimentary rocks, including the red, crossbedded sandstones of Utah's canyon country and the Morrison

Formation sandstones and mudstones, the "dinosaur-bone rocks" of Dinosaur National Monument in northeast Utah and Como Bluff near Medicine Bow, Wyoming.

Also accumulating were the West's great coal deposits, from the plains deposits in New Mexico's San Juan Basin and Wyoming and Montana's Fort Union seams to the coal in the mountains of Colorado's Western Slope. They were all formed in swamps during the late part of the Mesozoic Era of the dinosaurs and the beginning of the Cenozoic Era dominated by the mammals. Whether they ended up as shallow deposits out in the plains suitable for stripping or as deep mountain deposits depended on what geologic forces hit the swamps.

Today's Rockies are relatively recent. They sprung up -- 'sprung' in geologic terms, at least -- 100 to 50 million years ago, produced again by

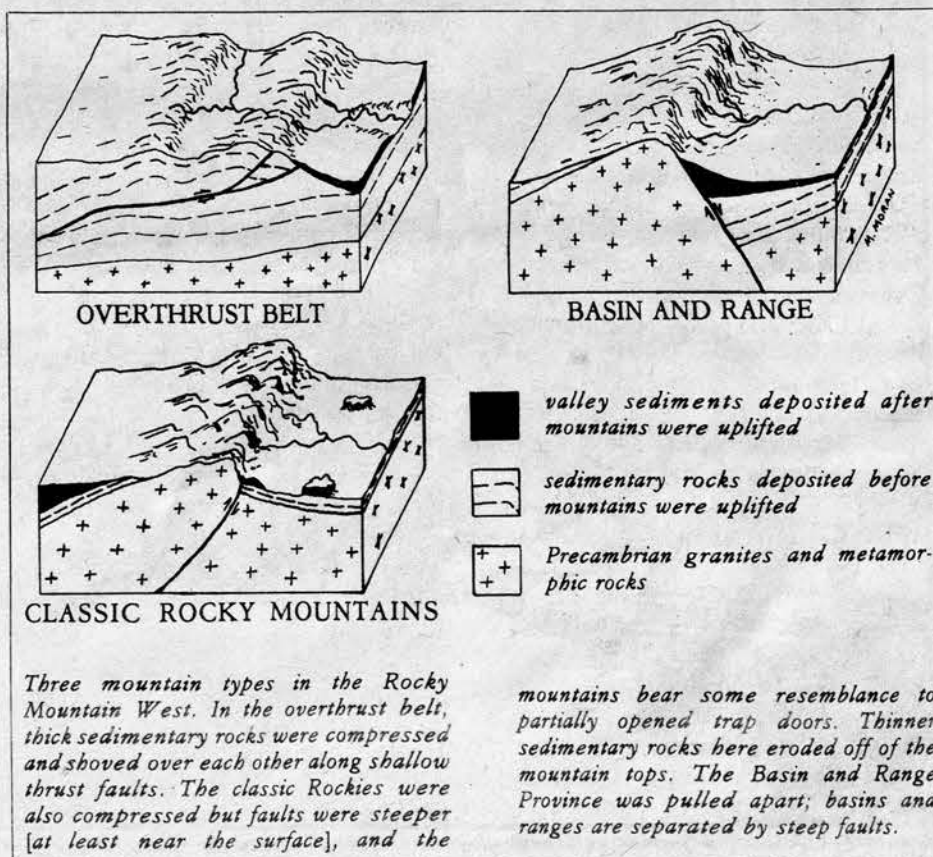
forces created by the clashing of crustal plates. It would be nice, for the purpose of telling a story, if all of the West's ranges were the same. But they're not. The Western overthrust belt mountains are very different from the classic Rockies to the east. And because of those differences, it is to the Overthrust Belt that Arco, Amoco, and the rest go in their quest for crude oil.

The oil and gas is there because, back in the Paleozoic depositional era, thick ocean sediments were deposited in the deep inland ocean of the area of today's overthrust mountains. Then, when the earth was stressed, the sediments were folded and squeezed and piled up one atop the other. The compression was so intense that areas such as the Idaho-Wyoming-Utah Overthrust Belt was squashed to half its original width. And under the right temperatures and pressures, the organic matter found in the sedimentary rocks were transformed into hydrocarbons.

Some of the hydrocarbons "leaked" out of the rocks into the atmosphere. But when conditions were right, the hydrocarbons moved through cracks and pores in the rock until they ponded in porous "reservoirs" from which there is no escape. It is these reservoirs that the oil companies seek out today with their drill rigs.

Drill rigs don't pepper the Rockies as they do the overthrust belt of southwest Wyoming because the Rocky Mountains of Colorado, most of Wyoming, northern New Mexico and much of Utah and Montana aren't made up of rock permeated with organic matter. This area was covered by a much shallower inland sea during Paleozoic times, so less sediments accumulated. The thin sediments were quickly eroded away when the Rockies were uplifted, leaving only ancient Precambrian rocks -- rocks from a time when life was either non-existent or scarce.

(Continued on page 12)



Geology...

[continued from page 11]

Because they were built largely out of sterile rock, the mountains have no oil or gas. But the intermountain basins between them -- filled with old sediments as well as with new sediments eroded off these most recent mountains -- can contain oil and gas.

The formation of the present Rockies brings us to the 'present'. As mountain building subsided, gravity and water took over as the dominant force. Together, they wore coarse sediments off the mountains and into alluvial fans.

Further from the mountains, meandering streams deposited finer grained sand and mud. The West's thick oil shale deposits formed in a huge freshwater lake covering southwestern Wyoming and parts of Colorado and Utah. The oil shale, which has more oil than all of Arabia, was brewed in a mix of mud and living organisms at the bottom of the lake -- a lake which later met the end of all lakes -- it dried up and was covered with other material. The world's largest and most intricate fish fossils come from these lake deposits.

The West's hard-rock wealth comes from volcanic and intrusive rocks which fought their way toward the surface 100 to 20 million years ago. In some cases, the molten rocks forced their way into existing mountains. In other cases, the upwellings formed their own mountain ranges, both during and after the uplift of the Rockies. The fact that these volcanic ranges are sprinkled among the more classic Rockies adds an additional complication to the picture.

Some of the gold and silver which came up from deep in the earth with the molten rock was eroded away with time. The first miners went after these eroded minerals by panning stream-bed sands and gravels. Later, mining went to the source -- veins and other ore bodies in the volcanic rocks. Rich mother lodes are still nice, when they can be found. But modern mining has the material-moving and processing ability to mine lower grade ores found in large volcanic bodies.

In terms of time, the first mineral-rich intrusions invaded central Idaho, western Montana and northwestern Wyoming. A little later, volcanic and intrusive eruptions occurred in an area from southwestern Colorado's San Juan Mountains up through Creede, Crested Butte, and Leadville to the Colorado Front Range. At the same time (in geology that means within a few million years), intrusions were pushing their way into Utah, Nevada, Arizona and New Mexico.

For the geologic moment at least, rich mineralized areas are no longer being formed. Most of the volcanic rocks younger than 20 million years are non-mineral-bearing black basaltic lavas. The basaltic giants are the Columbia Plateau and the Snake River

Plain. Together, they cover most of eastern Washington, Oregon and southern Idaho. (See related articles on the Snake River Plain.)

Idaho's recent Mount Borah earthquake (HCN, 11/28/83) was no surprise to geologists -- they knew that faults on the margins of Nevada and Utah's Basin and Range Province are still active today, and that that region is still in the mountain-building business.

Basin and range mountains are very different beasts from those found in western Wyoming's overthrust belt of the Colorado Rockies. Western Utah and Nevada's parallel north-south ranges and intervening desert basins are the result of pull-apart forces. These forces form steep faults at the boundaries between the basins and the ranges.

The area's eastern margin is marked by the Intermountain Seismic Belt -- an earthquake prone fault zone reaching from southern Utah north along the Wasatch Front into southeastern Idaho and northwestern Montana. There is also some basin and range faulting outside of basin and range country. The Teton Range is bounded on the east by such a fault -- one that is active today.

What of the West's great canyons -- the Grand, the Canyon of Lodore, and the Black Canyon of the Gunnison, to name a few? And why is it that you can start at the Mississippi River near sea level and drive west across the seemingly flat Great Plains to arrive suddenly at mile-high Denver at the foot of the Front Range?

Both questions have the same answer. And in both cases, our gut feelings about how things happened are wrong. How wrong they are can be seen by the fact that today's Rockies were only a few thousand feet high when first formed. Only later did they gain in height, not as a result of their own rising, but because the entire region was broadly uplifted as a single unit.

As a result of that uplifting, water coming off the mountains had more

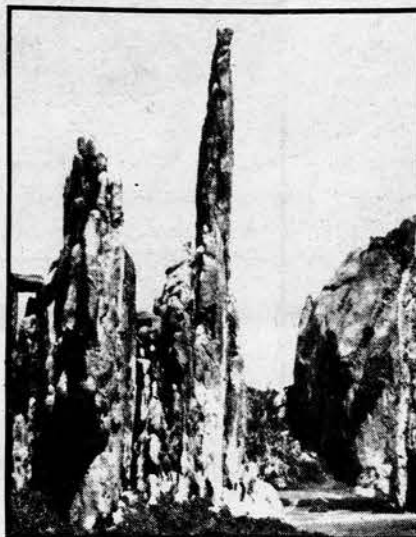
cutting power -- power which eroded away the plains as they rose and created the height differences between the mountains and the plains. The same thing happened with many of the West's canyons, with the Grand Canyon the best-known example. The Colorado River cut down to form the canyon as the entire land mass rose.

The erosion wasn't only a function of a rising land mass. It also depended on the fact that the climate became wetter at the onset of the ice ages about 3 million years ago. That provided the water to carve out the broad valleys in the soft Cenozoic and Mesozoic rocks and cut steeper canyons in the harder Mesozoic, Paleozoic and Precambrian rocks.

The ice age is said to have ended 10,000 years ago, but we may in fact be within a warm period within a continuing ice age. If so, Glacier National Park in Montana, with its 50 to 60 glaciers, may be a sample of what the world will again look like.

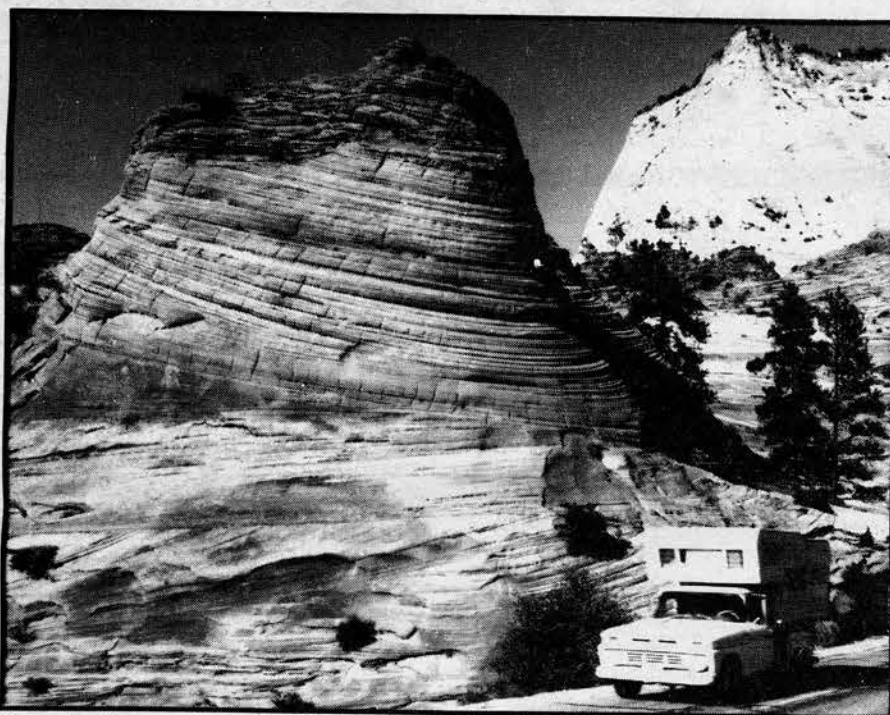
Today in the Rocky Mountain West, streams are eroding and reshaping the landscape. Basin

and range faulting continues. Earthquakes are common and volcanic eruptions not unimaginable. The earth, as always, is on the move, taking no more notice of man's work than it does of anthills.



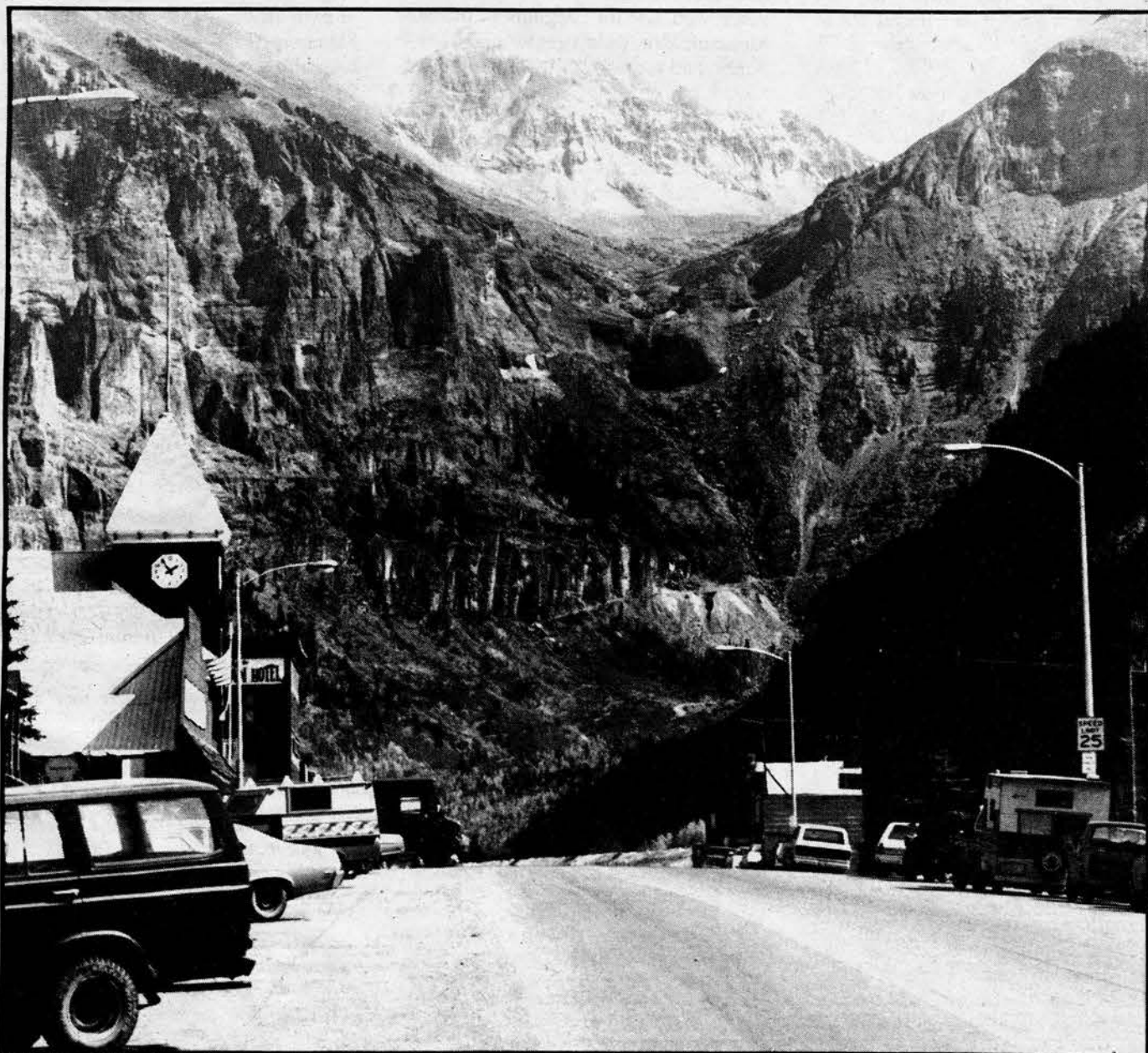
Garden of the Gods near Colorado Springs, Colorado. Red sandstones are remnants of alluvial fans shed from the Ancestral Rocky Mountains and later uplifted with the modern Rockies. Tallest spire is 200 feet high.

W.H. Jackson, USGS



Cross-bedded sandstones in Utah's Zion National Park, remnants of ancient sand dunes.

Fred Mang Jr., National Park Service



Telluride, Colorado, a former gold and silver-mining town turned ski resort sits at 8745 feet elevation amidst the volcanic cliffs of southwestern Colorado's San Juan Mountains.

Kent and Donna Danner

Geologic Time Scale

CENOZOIC ERA	mammals
— 65 million years —	
MESOZOIC ERA	dinosaurs, first birds
— 230 million years —	
PALEOZOIC ERA	marine life, first reptiles
— 600 million years —	
PRECAMBRIAN ERA	a few algae
— earth's formation; 4,500 million years —	



Geology of the West

The Henry Mountains are biological islands in a sea of desert badlands

by Edward Bovy

Somewhere "Out West" is a range of mountains unlike any other. Utah's Henry Mountains are biological islands surrounded and isolated by desert badlands. There, one can see eagles soar, mountain lions wander, and the nation's largest wild bison herd graze on alpine grasslands.

The Henry Mountains were the last in America to be discovered. A little over a century ago, when John Wesley Powell first explored the Colorado River, he saw the range in the distance and marked them "unknown" on the map. Later he named them for Professor Joseph Henry, then Secretary of the Smithsonian Institute and a Powell supporter.

Despite the naming, the mountains remained unknown and unexplored for many years. Hundreds of square miles of dry, rugged desert and deep, twisting canyons discouraged -- and still discourage -- visitors to the area.

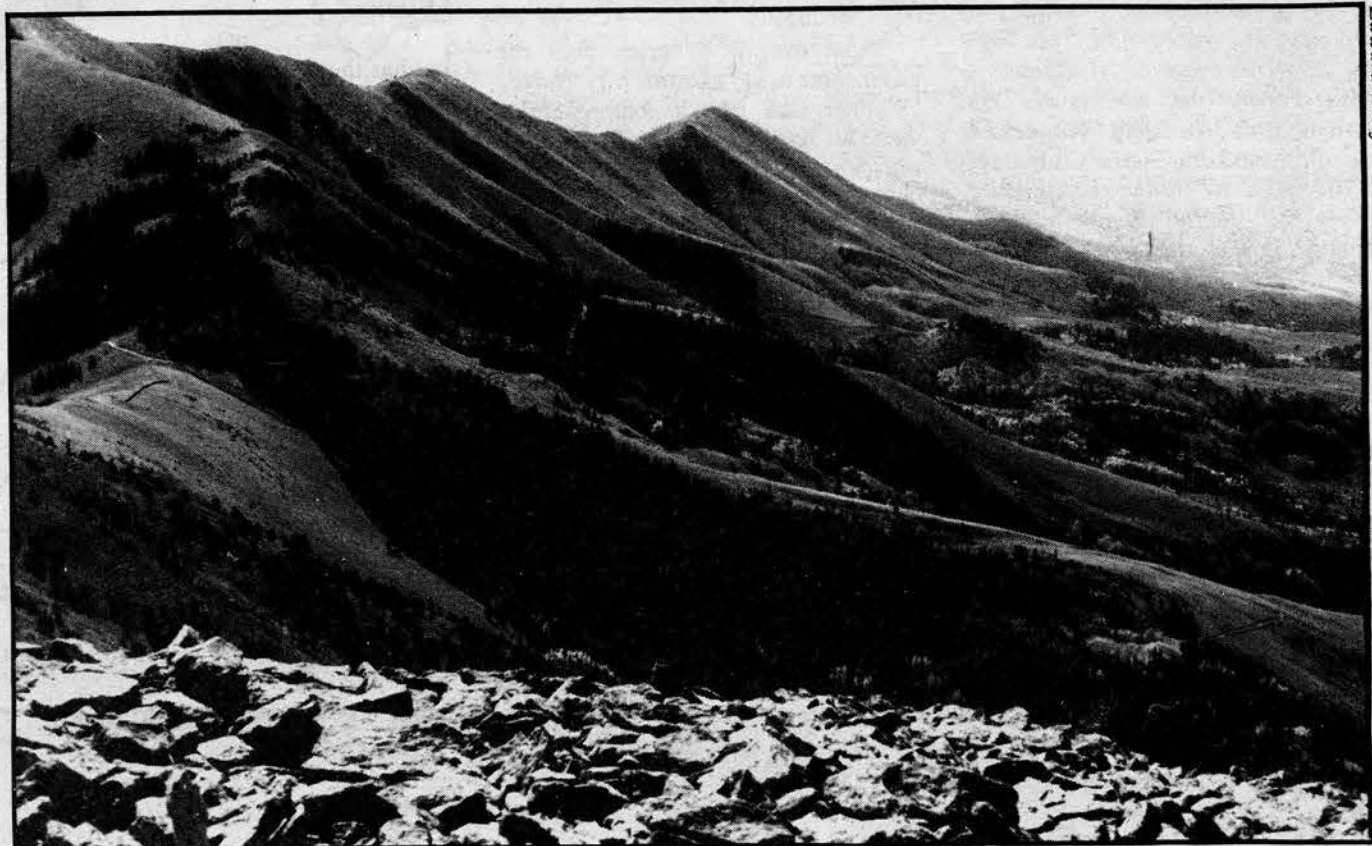
The Henry Mountains are near the Escalante River, which "was the last river to be added to the map of the United States," according to historian Bernard de Voto. Today, the winding slickrock canyons of the Escalante River are well known. Popular trailheads in the Escalante area are crowded with vehicles, especially during the spring and early fall.

But the Henry Mountains, towering more than a mile above the canyons, are left alone. Nearby highways carry travellers to Capitol Reef National Park and Lake Powell. But the dirt and gravel roads winding toward the mountains are rarely taken. (See map on page 14).

The range is made up of three large peaks: Mt. Ellen, 11,615 feet; Mt. Pennell, 11,361 feet; and Mt. Hillers, 10,723 feet; and two smaller peaks: Bull and Ragged Mountains. Two neighboring peaks -- Mt. Holmes, 7,930 feet and Mt. Ellsworth, 8,235 feet -- are also part of the Henrys and are often called "The Little Rockies."

In addition to isolation and wildlife, the Henry Mountains are interesting because of their geology. The peaks are made of large blocks of volcanic rock which have been thrust up through thousands of feet of sedimentary rock. The overlaying sedimentary rock was deformed and twisted as the volcanic rock rose -- a geologic process first recognized and described in 1875 by G.K. Gilbert, an associate of Powell.

On the south side of Mt. Hillers, near Starr Springs Campgrounds, the colorful sedimentary rocks are tilted on end and resemble the "fins" found in the Garden of the Gods, Colorado, or Arches National Park, Utah.



Henry Mountains, Utah. Mt. Pennell is in the distance.

In 1890, fifteen years after Gilbert's academic analysis of the range's formation, geology interceded again when gold was discovered in nearby Crescent Creek. Soon, 100 miners were working at Bromide Basin and living in the boom town of Eagle City. But the boom was short lived, and by 1890 Eagle City was deserted. The townsite, marked by one building, is still there, and visitors still pan for gold in the creek. Those searching for agate, petrified wood, chert and dinosaur bones generally have more luck.

Cattle ranching didn't do much better in the area. Several ranches were established on the lower slopes of the Henrys. But the cattle fell easy prey to outlaws who hid out in the nearly impregnable canyons of the nearby Dirty Devil River and its Robbers Roost. The stolen cattle were wintered in the canyon bottoms and then driven to Colorado for resale -- "no questions asked."

Although the surrounding desert receives only five inches of rain a year, parts of the Henry Range get over 18 inches. A variety of plant and animal life takes advantage of the range's moisture, shade, and cool temperatures, including elk, deer, mountain lion, weasel, fox, golden eagle and most species of hawks. One biologist recorded over 45 species of birds on a walk from McMillan Springs Campground to the summit of Mt. Ellen. The variety of life is not surprising -- a hiker can pass through four biological life zones (Upper Sonoran, Transition, Canadian, and Hudsonian) in a five-mile trek.

Perhaps the most surprising animal found in the range is the bison,

or American buffalo. A few of the large beasts were brought to the Henrys from Yellowstone National Park more than 40 years ago and they have thrived, increasing to over 200 head. It is today the largest free-roaming and huntable herd in the continental United States.

Unlike the docile bison one encounters in some state and national parks, annual bison hunts have kept the bison fearful of humans. But hikers frequently see the herd grazing on the sub-alpine grassland on the highest slopes of Mt. Ellen in midsummer. In the fall, as the south and east-facing slopes come alive with the colors of changing oak and aspen, the herd moves down to adjacent mesas to winter and calve.

The barren, windswept summit of Mt. Ellen is reached by a three-mile trail from Bull Creek Pass. From this 11,615-foot summit can be seen the canyons of Canyonlands National Park and the Dirty Devil River (including Robber's Roost), the unique Caineville Mesas, the Abajo Mountains, the entire Waterpocket Fold of Capitol Reef National Park, Lake Powell, Boulder Mountain, and the Kaiparowits Plateau. At night, the moon can be seen rising over the San Juan Mountains in Colorado, more than 100 miles away.

The proposed plant site for the Intermountain Power Project is just 20 miles to the north. Only a decision by the Secretary of the Interior Cecil Andrus in 1979 kept one of the largest (3000 megawatts) coal-fired power plants in the United States from rising there, next to Capitol Reef, the Waterpocket Fold and the San

Rafael Swell. The plant site has since been relocated to Lynndyl, Utah but there is talk of a smaller plant at the original site.

From the 11,361-foot peak of Mt. Pennell, the sunsets over the Aquarius Plateau 30 miles to the west and over the undeveloped Henry Mountains Coal Field just 10 miles east. The range is also bordered by uranium. A multi-million-dollar uranium mine, mill and residential community for 250 miners and their families has been planned and partially built at Ticaboo by a subsidiary of Consumers Power of Michigan. The Ticaboo complex is on standby, awaiting renewed demand for uranium.

As the power plant site and the Ticaboo mine, mill and new town show, the Henry Mountains can no longer depend on the surrounding badlands for de facto protection. The U.S. Bureau of Land Management, which administers most of the range, is now studying portions of the mountains for possible wilderness designation. (See related story.)

What will happen to the Henry Mountains is not clear, but at least one visitor to the top of Mt. Ellen left the following observation at the trail register: "...enjoy it while you can, for time is like the bison, almost gone... the days will be hard and sad for those who love this land..."

□

Edward Bovy was a land use planning specialist with the Interior Department in Utah for many years. He is now based in Anchorage, Alaska.

Southern Utah has no plan for its future

The Henry Mountain Range is the center of yet another wildland preservation battle in southern Utah. (See related story.) Although not as emotional as the Box-Death Hollow canyons issue, which last month led to hangings in effigy (HCN, 6/11/1984), it has that potential.

The range is presently being tugged in one direction by the Bureau of Land Management and in another by the Sierra Club and Utah Wilderness Association. At stake is whether the entire Henry Range -- which means mountain peaks, surrounding badlands, and canyons -- will be studied for wilderness, or whether only the mountains will be considered.

When the BLM laid out the original Wilderness Study Areas, it included only the mountains. But protests from the Utah Wilderness Association and the Sierra Club have put the question, for the second time before the Interior Board of Land Appeals in Washington, D.C. Meanwhile the Utah BLM is writing up a draft environmental impact statement analyzing the study areas it laid out.

Gary Macfarlane of the Utah Wilderness Association in Salt Lake City says his group's appeal asks for an additional 80,000 acres. "The BLM drew the boundary around the base of the mountains. We want some of the canyons. The area we've appealed is roadless; it isn't chopped up at all."

Larry Gearhart with the BLM in Hanksville, a town of 250 north of the Henry Range, disagrees. "We felt the areas they've appealed lacked the qualities for wilderness. We felt it was that lousy flat stuff. The land has significant impacts from exploration done in the past." But, he adds, wilderness classification "is a subjective decision."

Rob Smith of the Sierra Club in Salt Lake City says his organization wants enough canyon and badlands country included so that a Henry Mountains Wilderness area will connect to Capitol Reef National Park on the West.

Smith also says the issue in southern Utah goes beyond the Henry Mountains and the other wilderness struggles. The problem, he says, is best illustrated by the desire of the BLM and local government to pave the Burr Trail. The "trail" is a gravel road that now allows passenger cars to drive from Bullfrog on Lake Powell over Capitol Reef to Boulder, Utah. Paving and straightening the road would allow tour buses and cars pulling boats to use the now constricted road.

The locals see paving as a way to increase tourism, but environmentalists are fighting it. Smith says, "The locals are frustrated with us. We say no to coal mines, and then we say no to paved roads for tourism."

Smith doesn't see himself as opposed to progress. "We see no overall program. Each issue in southern Utah is ad hoc. They're going to pave Burr Trail for tourists, but they're not going to commit to protect the area. Rather than spend \$20 million to pave Burr Trail, we'd like to see a study of how to build a stable tourist economy... how to create attractive communities rather than have everything looking like downtown Moab."

What overall program does the environmental community have? "Neither side has a comprehensive view. We have wilderness proposals." But like the development folks, "We have no vision of the future."

Southern Utah now has a slew of National Parks and Monuments -- Zion, Canyonlands, Arches, Bryce, National Bridges, Capitol Reef. Smith says: "Someone asked me, 'Isn't it true environmentalists want to lock up everything in Utah south of I-70?' I replied: We also care about a lot of things north of I-70."

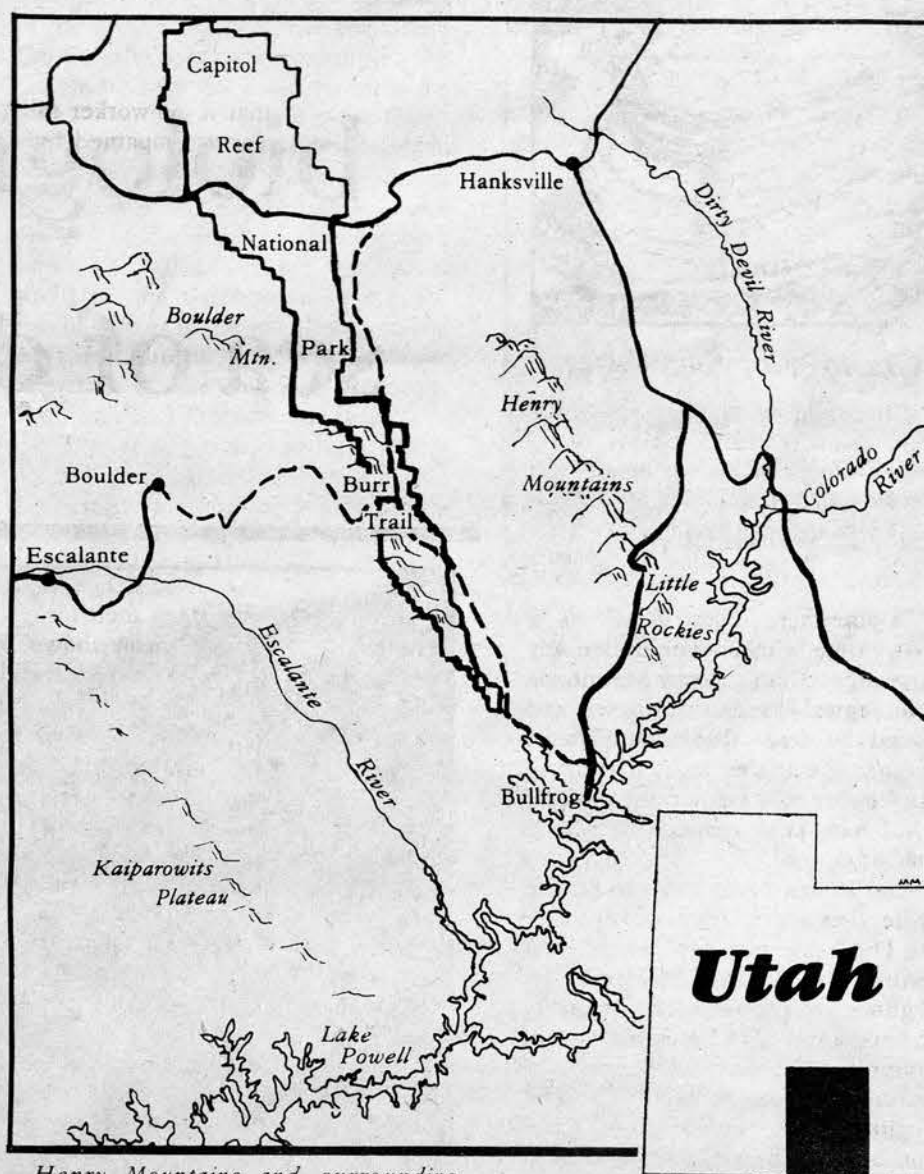
As the recent southern Utah hangings in effigy show, the joke isn't funny to many locals. Smith continues, "The other side sees us creeping toward a large lockup; we see them hacking away at existing natural areas."

"The Henrys are like the Escalante drainage, or Kaiparowits... big chunks of wild country faced with development. Carbon dioxide in Escalante, coal mining in Kaiparowits, coal and uranium on the flanks of the Henrys."

Since an overall plan appears a long way off, "We're trying to prevent ill-conceived projects from raising economic expectations." Even if the development doesn't happen, "It forecloses other options -- roads are built, land is sold, new people come in, the coal is leased with long-term rights."

Utah Governor Scott Matheson (D) has taken a strong stand against the latest development proposed for the state: the nuclear waste dump near Canyonlands National Park. But Smith says Matheson is fighting in a vacuum. "It begs the question of what we want."

Also begging the question, Smith says, is Matheson's just as strong advocacy of Project Bold -- an attempt to swap state and federal lands to



Henry Mountains and surrounding features of southern Utah. Paved roads are solid lines; unpaved roads are dashed.

Canyonlands National Park is just off of the map to the east.

make leasing and development easier. "The state wants to block up land near Escalante (which has carbon dioxide deposits) and get a toehold on Kaiparowits in the coal field." Again, he says, the state is proceeding without a plan for southern Utah.

Those who want to see large scale development in southern Utah have been disappointed several times, most spectacularly with the defeat of a huge power plant and coal mine on Kaiparowits Plateau in the mid-1970s.

A smaller, but similar frustration is now on display at Ticaboo, Utah. Located near the Henry Range, about an hour's drive from Hanksville, Ticaboo was conceived in the late 1970s, at a time of high uranium prices. Because the uranium ore deposit was in an isolated location, the firm decided to build not just an underground mine and mill requiring 250 workers, but also a model community to house them and their families.

The mine, mill and roads and

services for 98 homes were put in, along with a large mobile home court. But by the time the facilities were completed, the uranium market was on the way down. According to manager Ken May in Ticaboo, the facility is now on standby, with about 50 people remaining in the trailer court.

Ticaboo does not have a healthy corporate parent to come to its rescue. It is owned by Plateau Resources, a subsidiary of Consumers Power. The Michigan utility, which has two operating nuclear reactors, is in the national press almost daily because of the Midland, Michigan nuclear project it is building. It has thus far spent \$3.6 billion, and needs another \$5.5 billion to finish. The Michigan Public Service Commission wants the utility's stockholders to pay for a large chunk of the cost overrun. Cancellation of the reactors -- and of at least some of the need for Ticaboo -- is possible.

--Ed Marston

LETTERS

ONE FOR TWO

Dear Mr. Marston:

Two articles on Glen Canyon Dam in the May 14, 1984, issue of *High Country News* presents a very interesting contrast. The one entitled "Glen Canyon Spillways Won't Be Ready" is based upon interviews with a Bureau engineer whom HCN says asked to remain unidentified. I can see why he (or she) would want to remain anonymous because of the misinformation that apparently was given to your reporter, who also was not identified. The other article, "Colorado River Water Boils in Glen

Canyon's Spillways," is based upon a telephone interview I had with you. The translation of what I said to the printed page is remarkably accurate. Apparently the willingness to take responsibility for what is said and veracity are closely related.

I would like to set the record straight on a couple of matters. First, the aeration slot in the left spillway tunnel was completed on May 25, 1984. As of that date, the left spillway alone was capable of passing more water than the dam's entire system of powerplants, outlets and spillways passed during the peak runoff last year! Up to 139,000 cubic feet per second could be passed through the left spillway without causing the damage which was produced during the summer of 1983. It is true that work is continuing in the left spillway.

This essentially consists of final cleanup, removal of scaffolding required for the repair, and restoration of the tunnel to its pristine condition. Instrumentation is being installed in the tunnel so that engineering data can be obtained which will have benefits worldwide.

The concept of aeration is not on trial here because aeration has been successfully applied at Grand Coulee, Flaming Gorge, Yellowtail, Guri (Columbia), Fox do Arcaia (Brazil), and Bratsk (USSR) to name a few examples. Instead, the testing is intended to investigate certain details of the aeration process. With this data, the theories will be refined and the design will be further improved.

Secondly, Glen Canyon Dam is an arch dam. This means that the strength of the dam comes from the

fact that it is shaped like the arch in an egg shell. If blocks of the dam had shifted, the result would have been catastrophic. An egg is almost impossible to crush by squeezing in your hand, but put a crack in the shell and see what happens if you squeeze again! The shifting of blocks of the dam would be analogous to having cracks in the shell of the egg. Estimating that the margin of safety fell from 50:1 to 3:1 during the operation is not only impossible but also irresponsible.

Finally, although there were some disquieting moments during the 1983 operation, at no time was the safety of the dam in question.

Very truly yours,
Henry T. Falvey,
U.S. Bureau of Reclamation

OPINION

A requiem for the cattle industry

By now everyone in the Western World knows the Black Canyon of the Gunnison is in danger. This mini-Grand Canyon in Western Colorado is a National Monument operated by the National Park Service on its south rim. But just across the deep gorge, 7,000 acres on the north rim is rolling sage land in private hands.

One of the owners, Richard Mott, has spent the last four years trying to sell his 4,000 acres to the National Park Service. But the government saw no reason to buy a view it was getting for free. So Mott got nowhere until early this year, when he began talking of bulldozing in roads and utilities for \$100,000 vacation home sites along the rim.

The specter of bulldozers erasing yet another chunk of America's national heritage started the bills moving through Congress. Thanks in part to foot-dragging by Colorado Senator William Armstrong, the bills haven't made it there in time to satisfy Mott's bankers, to whom he reportedly owes about \$4 million. So Mott, as of this writing, has set his bulldozers to work, but slowly, so that Congress may still appropriate money before the land is irreparably spoiled.

If you have trouble understanding what is going on, recall how Italian kidnappers mail their victim's ear or finger to the money people as an indication of the seriousness of the matter.

The press has reported this as a Perils of Pauline episode, and the public, conservation organizations and elected officials have reacted in the same way. The Nature Conservancy District is doing what it can in Washington, D.C. and various chambers of commerce in Western Colorado are pushing on Armstrong (Congress Ray Kogovsek and Senator Gary Hart were already on board) for all they are worth.

It is warming to see so much concern about a piece of rimside rangeland. It would be even more warming if everyone understood that the peril of the Black Canyon is not a fluke. The Black Canyon is directly tied to the West's cattle economy and to the resource boom and bust the region has rollercoasted through during the last ten years.

In the press, Mott is almost always described as a rancher who must sell the Black Canyon property in order to save his main ranch. From what we have read, only reporter Bob Silbernagel in the Grand Junction *Daily Sentinel*, dug deeper. He wrote that much of Mott's debt is a result of his expectation that the Atlantic Richfield Company would open a 550-worker coal mine near Paonia, Colorado.

Mott, believing ARCo's 1980 predictions, brought some very expensive roads and utilities in to a large tract of irrigated pasture land near Paonia. He then watched the subdivision sites go begging as ARCo opened a 50-worker mine rather

than a 550-worker mine. That diminutive opening was accompanied by the closing of a 300-worker mine. Even the moving of *High Country News* to Paonia couldn't pull the area out of its financial troubles.

The story is familiar, whether we are talking of a closed iron mine near Lander, Wyoming; closed uranium mines in eastern Utah; closed copper operations in Montana and Arizona; unbuilt power plants everywhere; or vanished oil shale development in northwest Colorado.

Moreover, the reverberations of the expectations of the 1970s and the deep bust of the 1980s still echo through the region. Many of those who expected to ride ARCo's (or Exxon's, or Union Carbide's, or Internorth's, or Occidental's) coattails to riches have already gone bankrupt, or have taken their losses and moved on. But as the Black Canyon shows, there are many victims of that boom and bust still desperately trying to stay afloat.

The Black Canyon case is especially interesting because Mott was originally a rancher, rather than an investor who bought ranchland. And it's hard to fault him for switching from cattle to land development. Neighbors of Mott who stayed strictly with ranching are also having hard times. They may not be as spectacularly deep in debt as he, but the major difference appears to be that he is in danger of sinking more quickly than they.

Those who believe that nature abhors a vacuum should visit the rural West. Here there is an enormous economic vacuum as the cattle industry continues its several-decades-long decline -- a decline that has been hastened by the abortive natural resource boom.

With the resource boom gone, many who have bought or who have always owned the cattle land base are looking to recreation to save them. Mott, for example, will sell to the National Park Service so that visitors to the Black Canyon National Monument won't be offended by a rim-full of condos and cedar shake homes, or he will sell to those who wish to live in the condos and cedar shake vacation homes.

The lesson is that a recreation economy does not necessarily ride on a white horse. There may not be a large difference between resource development and recreation development. Given the skill with which Mott has managed the Black Canyon situation, we assume that the federal government will buy the scenic easement or the land outright. But the government can't buy every piece of land about to be subdivided for second homes or for more ambitious "resorts."

And because the western cattle industry is collapsing, that is exactly what may be needed if the West is to keep any resemblance to what it is

today. Despite the fact that some livestock people may do things that anger environmentalists, they also maintain incredibly beautiful valleys. For our taste, valley pastures -- just after the hay has been cut and baled, and with the ditches marking the boundaries between sage hills and grasslands -- are the most beautiful landscapes man has created.

They have maintained this beauty for free (if you don't figure in reclamation projects and low-cost grazing on National Forests) and the collapse of this economic base leaves millions of acres of the best land in the West up for grabs.

Some of this land is still owned by real ranch families struggling to make a living from cattle. Some is owned by wealthy people who appreciate the beauty of a cattle ranch. And some is owned by ranchers-turned-developers or by genuine developers. But no matter who owns the land, it is in peril. The difference between most of the West's ranch land and Mott's 4,000 acres is simply a matter of time.

The recent behavior of the resource companies and utilities in the West is less important than the collapse of the cattle economy. But the arrogance and irresponsibility with which they walked through here makes their actions more maddening than the workings of an impersonal economy.

Just as maddening is the lack of an on-the-ground awareness of what happened. Neither local elected officials in areas that have been trashed nor Senators and Congressmen recognize that the West's mindless pursuit of something they call growth has set the region's economy back at least a decade. But instead of analyzing what went wrong, the elected officials, the media, and the public spend their time putting band-aids on symptoms such as the Black Canyon.

We have no objection to seeing the Park Service buy out Mott's acreage to save it from development. But we think they ought to also allow the Park Service to buy out every endangered ranch in the Rockies. We can't imagine the West as the West without those ranches. If the West goes second-home ticky-tack at the lower elevations, the struggle to preserve the high country loses much of its meaning.

If the Congress doesn't think the nation can afford to buy up all the West's ranches, we have a second suggestion: pass a law banning resource firms and utilities from even talking about any more harebrained mines, power plants, oil shale projects and fertilizer slurry lines for -- let's say -- the next 50 years.

--Ed Marston

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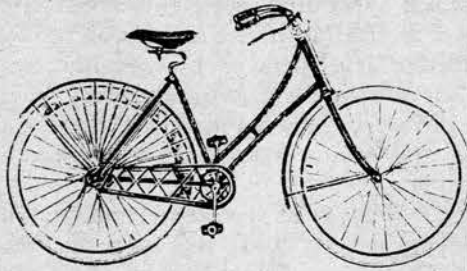
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BULLETIN BOARD

WESTERN PARKS CONFERENCE

Parks in the West and American Culture is the theme of this year's Institute of the American West annual summer conference in Sun Valley, Idaho. The four days of the conference will explore the national parks with regard to historical roots, American culture, today's standpoint, and ethics for the future. An impressive lineup of speakers and workshop participants includes National Park Service Director Russell Dickenson, Pulitzer-prize winning author N. Scott Momaday, grizzly bear advocate and desert rat Doug Peacock (see HCN, 5/14/84), and wilderness and wildlife writer Michael Frome. The Massachusetts-based Lincoln Institute of Land Policy is co-sponsoring the conference, which is free and open to all. Dates are August 15-18. For more information contact Richard Hart or Marcia Jones at the Institute of the American West, P.O. Box 656, Sun Valley, ID 83353.



COLORADO BICYCLE MAPS

The Colorado Department of Highways has issued a new pair of maps for bicyclists. The first depicts interstate highway corridors: the Front Range, Across the Rockies, Over the Plains, and the South Platte routes. It also has a Denver City insert. The second map, "Bicycle Colorado Above All," rates the state highways for bicycling based on factors such as shoulder width and traffic volume. It locates bicycle repair facilities, Colorado State Patrol offices, and campgrounds, and discusses tool kits, shipping costs, touring and safety tips. The set is available for \$3 from Map Sales (Room 17), Colorado Department of Highways, 4201 E. Arkansas Ave., Denver, Co 80222.

COLORADO BLM HEARINGS

The public hearing dates for the draft Resource Management Plan (RMP) and Environmental Impact Statement (EIS) for the BLM San Juan-San Miguel District have been set for 7 P.M. on June 25 in Durango, CO, June 26 in Cortez, CO, June 27 in Nucla, CO, June 28 in Golden, CO and for 2-4 P.M. on July 2 in Monticello, UT. Written comments will be accepted until August 1 by David J. Miller, Area Manager, San Juan Resource Area, Bureau of Land Management, Room 102, Federal Building 701 Camino del Rio, Durango, CO 81301 (303/247-4082).

NATIONAL PARK GUIDE

"Camping in the National Park System", the Park Service guide, is out in a 1984 edition. The booklet covers 105 National Parks with information on visitor's fees, campground rules, safety and recreation tips, and handicapped access. In addition, eight parks have computerized reservation systems, which can be used via Ticketron for a small fee. The booklet costs \$1.50, down from \$3.50 last year. Stock no. 024-005-00853-5, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

GEOLOGY TOUR

Take a tour through time with a new publication from the Geological Survey of Wyoming entitled "Self-Guided Tour of the Geology of a Portion of Southeastern Wyoming." The circular explains the geology and history of the roadside features on a tour through portions of Albany and Carbon Counties, Wyoming. The tour begins in the Southern Medicine Bow Mountains and passes through the towns of Centennial, Arlington, Laramie and Hanna, examining rock from a few million years to several hundred million years old. To obtain a copy of the Public Information Circular No. 21, send \$7 to the Geological Survey of Wyoming, Box 3008, University Station, Laramie, Wyoming 82071, or phone 307/766-2286.

SMOKEJUMPERS REUNION

Smokeyjumping started in 1940 and the first national smokejumpers reunion will be held in 1984. The reunion, for past and present Bureau of Land Management and Forest Service jumpers and their families, will include a Friday evening western barbecue, Saturday aviation show, golf tournament, footrace, banquet and dance, and concluding Sunday morning brunch. The setting is July 20-22 in Missoula, Montana. Contact Charles Rodgers, c/o Smokejumpers Welfare Fund, 5765 Highway 10 West, Missoula, MT 59802 (406/329-4881).

JACKSON LAKE DAM

The Jackson Lake Dam, built in 1916, in what is now Grand Teton National Park, has an estimated 40 percent probability of failure in the next 100 years. The BLM and the Park Service have come up with several options to decrease the probability of failure, and have drafted an Environmental Impact Statement on those projects. The public hearings on the EIS are scheduled on July 10, Idaho Falls, Idaho, 7:30 P.M.; July 11, Jackson, Wyoming, 2 P.M. and 7:30 P.M.; and July 12, Burley, Idaho, 7:30 P.M. For more information, contact Elaine Van Stelle, Bureau of Reclamation, Box 043-550 West Fort Street, Boise, ID 83724 (208/334-9581).

HIKING THE MONTANA WILDS

You can get a first-hand look at some Montana proposed wilderness areas through a series of hikes sponsored by the Montana Wilderness Association. The trips range from a three-day, 24-mile hike in the Nevada Mountain Alternative "W" Area (proposed for wilderness by the Montana Wilderness Association) near Helena to a one-day, five-mile hike in the Hyalite BLM Wilderness Study Area along Big Creek near Livingston. The trips will continue throughout the summer; they are free but some have size limitations or reservation deadlines. Contact Bill Cunningham, Montana Wilderness Association, P.O. Box 635, Helena, MT 59624 (406/443-7350).

THE FIRST GREEN LIGHT

The first edition of a new, 24-page newspaper called *Green Light News* emerged this May from New York. Its focus is peace, innovative thinkers and doers, and "solutions-oriented newspaper reportings..." Publishers Steven and Dianne Krulick say they've mailed out 100,000 free copies of the first issue to people all over the country. Coming up next are regional reports from Seattle, Hawaii, Cape Cod, Kansas and Southern Appalachia. *Green Light News* can be reached at P.O. Box 12, Ellenville, NY 12428.

CALL FOR WILDLIFE ABSTRACTS

A symposium on wildlife management in the western states has put out a call for papers to be presented in Glenwood Springs, CO, February 4-6, 1985. *Issues and Technology in the Management of Impacted Western Wildlife: A Symposium* is asking for abstracts of papers and poster sessions. The abstracts should be no more than 300 words, and must be received by September 15, 1984. For further information, contact Robert Comer, Thorne Ecological Institute, 4860 Riverbend Rd., Boulder, CO 80301 (303/443-7325).

A SUNSHINE DIRECTORY

The Geography Department at Denver University has published a fifty-page *Directory of Solar Heating Businesses for the Denver Metropolitan Region*. The directory serves companies involved in the industry as well as consumers. It lists locations, phone numbers, and contact persons as well as details about each organization. One table cites the number of years each company has been involved with solar energy, the type of firm, the type of customer, the type of facilities, and the number of employees. Another table lists the type of equipment, brand names, purposes of systems, storage or transfer media, and types of solar collectors marketed by each company. Send \$3.21 (tax included) for each directory to: Professor Joseph Beaton, Department of Geography, University of Denver, Denver, CO 80208-0183.

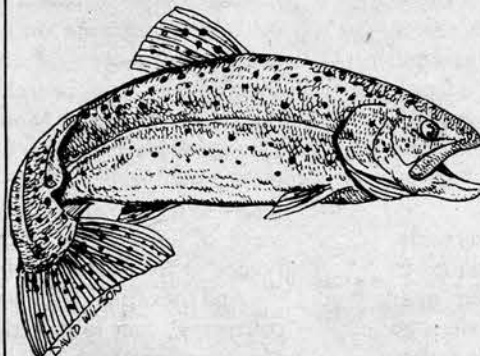


AGRICULTURAL REFORM WORKSHOP

A week-long workshop coming up this August in Nebraska will take a look at analyzing agricultural problems and agricultural reform. The 1984 Rural Institute is sponsored by the Center for Rural Affairs, a group that has worked for 11 years in the trenches of policy debates affecting small farms, organic farming, tax and credit policy, appropriate technology and land grant university research. The dates are August 5-11, but applications are due by July 1. The cost is \$200. Contact the Center for Rural Affairs, P.O. Box 405, Walthill, NE 68067 (402/846-5428).

UTAH LAND EXCHANGE

The BLM in Utah has classified 57,656 acres of federal land for state indemnity selection. This will allow the transfer of those lands to the State of Utah in order to repay the state for lands which should have been part of the statehood grant but were unavailable due to patenting, homesteading, or earlier federal reservations. The exchange tracts are in Carbon, Daggett, Grand, Iron, San Juan, Sanpete, Sevier, and Uintah counties. Copies of the legal descriptions of the tracts are available at all BLM district offices in Utah, and at the Utah State Office, where maps are also available. In addition, five open-house meetings have been scheduled. They are on June 25, Utah State Office, Salt Lake City, 3-7 P.M.; June 26, Cedar City District Office, 3-6 P.M.; June 27, Sevier County Courthouse, Richfield, 5-7 P.M.; June 28, Price River Resource Area Office, 3-7 P.M.; June 29, Vernal District Office, 2-4 P.M. and 7 P.M. For further information, contact Roland G. Robison, State Director, (U-942), Utah State Office Bureau of Land Management, University Club Building, 136 East South Temple, Salt Lake City, UT 84111 (801/524-5311).



SURVEY OF WYOMING FISHING

The Wyoming Game and Fish Department is surveying 13,000 fishermen to determine the fishing pressure on Wyoming waters for 1984. Both residents and nonresidents will be asked to fill out questionnaires. Information gained from the survey will allow the Department to estimate the fishing activity at the state's five major drainages, determine the numbers of resident and nonresident fishermen on certain waters, and find the type of waters -- streams or standing -- that fishermen prefer. The Department says that survey forms will be sent soon to persons who have purchased five-day tourist licenses. Residents and nonresidents who hold season licenses will be surveyed at the end of this year. A total of 13,000 questionnaires will be sent out.

SUMMER INSTITUTE FOR DEMOCRATIC ALTERNATIVES

TraNet, a quarterly newsletter from Maine put out by the Transnational Network for Appropriate/Alternative Technologies, tells us there will be an institute for democratic alternatives this summer from July 15-August 15. Formal courses can be taken at the University of Augusta; Common Cause will host a conference focusing on peace issues July 28; and informal discussions will go on continuously at the Institute's camp at Great Pond with participants such as Ivan Illich. For more information write Susan Hunt, RT 3, Box 650, Dexter, ME 04930.

KILLER STORM LOANS

Ranchers in Wyoming who suffered stock losses during April's killer storm (HCN, 5/28/84) are eligible for loans of up to \$500,000. The low-interest loans will be administered by several state agencies including the Wyoming Farm Loan Board and the Farmer's Home Administration. The blizzard devastated livestock in Wyoming, Montana and the Dakotas, killing at least 350,000 sheep and thousands of cattle and new-born calves. Eligible counties are Albany, Campbell, Carbon, Crook, Converse, Fremont, Goshen, Hot Springs, Johnson, Niobrara, Platte, Sheridan, Washakie and Weston. For more information call the Farm Loan Board (307/777-7309) or the Farmer's Home Administration (307/261-5271).

HOMEMADE ELECTRICITY

The National Center for Appropriate Technology (NCAT) has prepared a booklet for people interested in producing their own power. *Homemade Electricity* offers an overview of several technologies, questions to ask, and case studies of some successful generators. The booklet is available free from state energy offices or from NCAT, P.O. Box 3838, Butte, MT 59702 (406/494-4572). When supplies run out it can be obtained for \$3 from Government Printing Office, Washington, D.C. 20402, Stock No. DOE/CE/15095-10.

GUIDE TO A PRIMITIVE AREA

Wyoming's Cloud Peak (13,167 feet) Primitive Area now has a handy *Trail Guide, History and Photo Odyssey* by Michael Melius. The 96-page, soft-cover book tells hikers how to explore the area's 15 trail systems and recounts the effects of glaciers on the Big Horn Range of north-central Wyoming. There are also color photos and tips on weather and hiking in an environmentally-sound manner. The \$11.95 guide is published by Tensleep Publications, Box 925, Aberdeen, South Dakota 57401.

ADOPT-A-RIVER

The American Rivers Conservation Council has prepared a guide to help interested communities monitor the waterways around them. The Adopt-A-River Guide is a loose-leaf notebook full of information and strategies to help set up a protection program on a local, grass-roots level, with everything from a synopsis of the Clean Water Act to community service suggestions. Contact Brent Blackwelder, Environmental Policy Institute, 218 D Street, SE, Washington, D.C. 20003 (202/544-2600).

ACID RAIN WORKSHOP

David Brower, founder and chairman of Friends of the Earth, will be the keynote speaker at the Ninth Annual Water Workshop at Western State College in Gunnison, Co., July 23-25. The focus of the Workshop will be acid rain and the west, with programs on acid rain impacts on forest land, drinking water, and other sensitive resources, as well as the economic, social, and political aspects of acid rain legislation. Speakers from Germany and Canada, as well as U.S. government, industry, academia, and environmental groups will be featured, and a tour of the Rocky Mountain Biological Laboratory is planned.

Registration, which includes materials and meals, is \$100; dormitory housing for three days is \$23. Both undergraduate and graduate credit is available. For registration or further information, contact Paul Nazaryk, Colorado Dept. of Health, 4210 E. 11th Ave., Denver, Co 80220 (303/320-8333, ext. 3355).

IDAHO WILDERNESS TOUR

From July 5-10, Representative John Seiberling (D-Ohio) chairman of the Public Lands and National Parks Subcommittee of the House Interior Committee, will be touring Idaho's roadless areas by helicopter. He will see 10-12 areas, travelling north to south, and meet with both industry and conservation groups along the way. A hearing is scheduled for July 30, after Seiberling's tour. For information on the tour or hearings, contact the Idaho Conservation League, P.O. Box 844, Boise, ID 83701 (208/345-6933).

