

High Country News

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A Paper for People who Care about the West

One dollar

The nuclear wasting of the West

The nation's nuclear weapons industry has left a dangerous legacy of radioactive wastes strewn around the West. They are polluting our water, land and air. Even worse, Congress's Office of Technology Assessment recently concluded that the Department of Energy, which oversees this poisonous complex, isn't even capable of cleaning it up. *High Country News* examines the

current mess with four stories that report on Washington's Hanford Reservation, the Idaho National Engineering Lab, Colorado's Rocky Flats plant and the proposed underground storage facility at Nevada's Yucca Mountain, plus a policy overview from Washington, D.C. But amid the current federal disarray, Westerners now have an unusual opportunity to protect their environment.

DOE flounders over nuclear weapons policy

by William Lanouette

WASHINGTON, D.C. — Energy Secretary James D. Watkins warned President Bush last year that most of the sites in his agency's weapons-making complex "have safety deficiencies that impair our ability to ensure the health and safety of both our workers and the public." Since then, the situation has only gotten worse.

Earlier this year DOE finally issued a five-year budget for its sprawling nuclear-weapons production facilities that Congress had asked to get in 1989. The document provides lawmakers with the first details about how Watkins hopes to cope with widespread contamination and cleanup tasks at the 17 sites in his 12-state weapons-making complex.

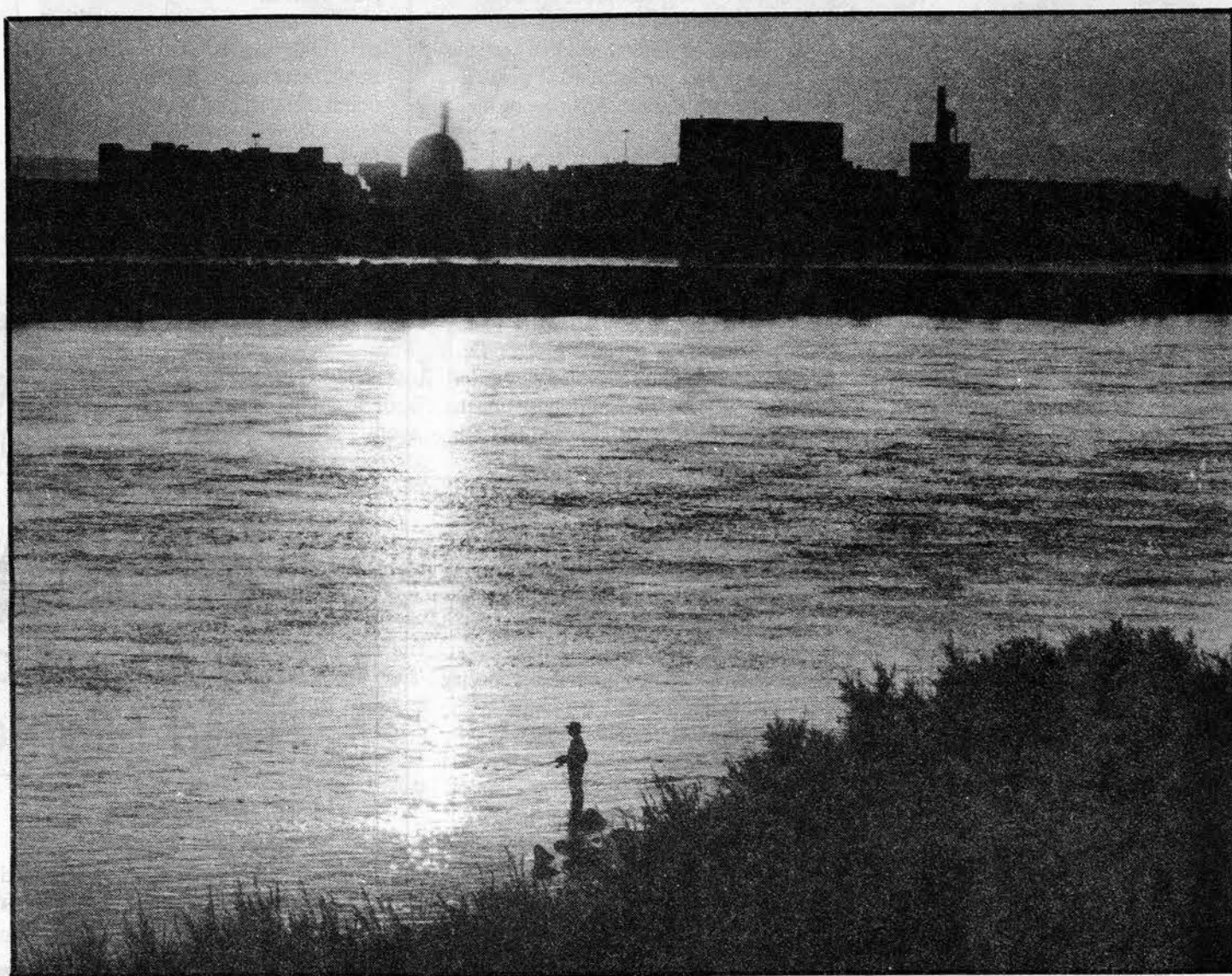
DOE also announced its "Complex 21" study, meant to help Watkins decide how to modernize and reorganize his whole aging, scandal-ridden weapons system by 2015. The plan, however, merely lays out "options" for Congress to haggle over. DOE plans to hold public hearings at its weapons sites. Some "preferred options" include relocating nuclear weapons production from Rocky Flats, Colo., to an unnamed location, and consolidating non-nuclear activities at a single site.

Then last month, Congress's analytical arm, the Office of Technology Assessment, concluded that Watkins's agency lacked the capability of cleaning up its nuclear pollution mess.

"DOE's stated goal — to clean up all weapons sites within 30 years — is unfounded because it is not based on meaningful estimates of work to be done, the level of cleanup to be accomplished, or the availability of technologies to achieve certain cleanup levels," the report said. "Neither DOE nor any other agency has been able to prepare reliable cost estimates for the total cleanup." Curiously, the DOE issued a press release to say it was "encouraged" by the OTA report.

Four sites in the West are especially ripe for congressional haggling — and concern. These are the Hanford Reservation near Richland, Wash.; the Idaho National Engineering Laboratory (INEL) near Idaho Falls, Idaho; the Rocky Flats Plant near Denver, Colo.;

Continued on page 11



Chris Anderson

A lone fisherman works the Columbia River across from the Hanford Reservation

Hanford's pollution is spreading

by Karen Dom Steele

The barbed-wire fences, security checkpoints and machine-gun stations at the remote, 560-acre Hanford Nuclear Reservation in south-central Washington have served for more than 40 years to protect the product made there — highly radioactive plutonium for nuclear bombs. While increasingly sophisticated security systems have been designed to keep terrorists from getting in, no security device was ever installed to prevent nuclear wastes, the deadly byproducts of plutonium production, from getting out.

In 45 years of bomb production at Hanford, these wastes have escaped into the environment from plant stacks, leaking tanks, ditches and deep injection wells. Contaminated groundwater is now reaching the Columbia River on the reservation's northern and eastern perimeters.

Hanford's nuclear burial grounds hold 63 percent of the volume and 37 percent of the radioactivity of all the

nuclear wastes generated by U.S. nuclear bomb builders since the 1940s. This makes Hanford the most contaminated site in the nation's nuclear weapons complex — and its biggest cleanup challenge.

To make matters worse, the soil contamination is spreading by more than 20 acres a year. Hanford officials concede they still do not have a complete inventory of all the wastes that have been poured and dumped into the soil. Such previously undisclosed hazards as potentially explosive hydrogen gas and ferrocyanide mixtures in huge nuclear waste storage tanks have surfaced in recent months.

Because the last of its nuclear production plants closed in 1988 for safety reasons, cleanup and not weapons production will be Hanford's future mission. Cleaning up a total of 1,400 waste sites and four groundwater contamination plumes at Hanford will be costly — an estimated \$3.1 billion for the next five years alone. The total cost could exceed \$50 billion.

But signs of trouble in the cleanup agenda are already evident. Officials in charge of the cleanup now acknowledge that they are only beginning to comprehend the depth and severity of Hanford's contamination problems. Also, the 30-year Hanford cleanup agreement signed less than two years ago by Washington state, the Department of Energy and the Environmental Protection Agency already faces a two-year delay. After the Energy Department proposed delays in the Hanford cleanup agreement last month, Washington Gov. Booth Gardner and other state officials charged that the Bush administration was retreating on its cleanup commitment.

Most disturbing, however, are the conclusions of an Office of Technology Assessment study released late last month. The study was highly critical of the Energy Department's cleanup efforts nationwide. The OTA, Congress's analytical arm, said the department had not yet developed the capability of dealing

Continued on page 9

Dear friends,



HIGH COUNTRY NEWS

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Visitors

Moments of balmy weather are encouraging drop-ins after a long cold spell. Melissa Paly and David Bachelder, from Boston, Mass., stopped to visit on their way to Telluride, Colo., to ski. Melissa, a film producer for the Environmental Protection Agency, formerly worked in New Mexico and Utah. Robin Baxter, formerly of Patagonia, Ariz., has taken to the road on a leave of absence from managing two Nature Conservancy preserves there. Asked if he was a subscriber, he said cheerfully, "I used to be, when I had an address."

Outdoor Education

HCN's annual guide to Outdoor Education in the West will not appear this spring. We concluded that our editorial and business resources are better spent doing what we do best — covering the region's environmental concerns. In this respect, we are hard at work on another special issue, this time on the future of the Pacific Northwest's salmon and steelhead fisheries. Also, we note that other publications are now doing an excellent job of providing information about outdoor education.

Recycling response

In our "Dear friends" report on shifting to partially recycled newsprint (HCN, 3/11/91), we mentioned that the average cost of fulfilling each subscription would go up by \$1.29. Now our ever-generous readers are making their own statements about the shift. Caren vonGontard of Whitefish, Mont., and Barry Kling of Columbia, Mo., wrote to thank us and included contributions to help offset the extra cost. Caren also asked us to "give up the 'whiteness' standard and forego the toxin-producing bleaching process."

Caren touches a hot issue here on whiteness. *High Country News* has prided itself in the past on its visual impact and the brightness of its graphics. We would be interested to know what other subscribers think about the tradeoff in giving up whiteness.

"Most arresting"

"It's never easy saying goodbye," says Michael Bencic, one of our winter interns who departed several weeks ago. One of the "fun duties" Mike said he will miss was going through the mail, because of the surprising news and organization names in some of the announcements. For Mike and his fellow interns Erika and John, the favorites were the Colorado West Sweet Corn and Broccoli Administrative Committees of Montrose, Colo., and the National Association of Dumpster Divers and Urban Miners of Old Dump Road, Big Fork, Mont.

Correction

The photograph of the gila monster that appeared on page 4 of the March 11, 1991 issue was taken by Charles S. Rau, not Karen Hayes. We regret the error.

And speaking of photographs, the picture on page 2 of the Feb. 11, 1991 issue in the "Dear friends" column was no "photographer's joke." It showed a bison behind a fence and a sign that read, "Don't cross this field unless you can do it in 9.9 seconds. The bull can do it in 10." Reader Catherine James wrote in to say the sign was put up at the Fermi National Accelerator Laboratory in Batavia, Ill., where she works, to warn joggers and visitors to the lab to stay out of



the bison's pasture. She adds that the sign was taken down shortly after it was erected three years ago. "Apparently some insurance person thought it constituted a challenge," she wrote, adding that the lab is restoring prairie grasses on its land.

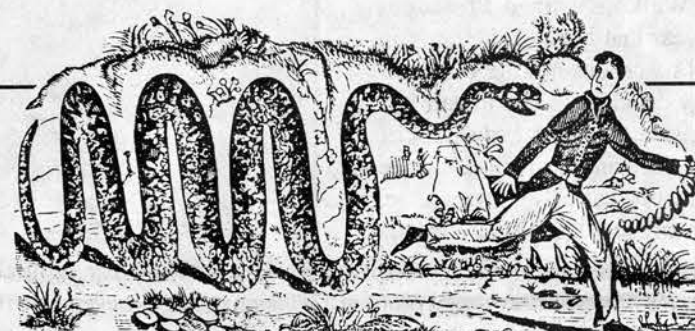
New Interns

Emily Jackson is from Albuquerque, N.M., where she worked as an occupational therapist after attending Colorado State University in Fort Collins. Looking for a change, she spent last spring and fall working in Canyonlands National Park, first as a volunteer through the Student Conservation Association, and then as a ranger. During the summer she was a "soda-jerk extraordinaire" in Moab,

Utah; this winter, until a few weeks ago, she was a lift operator at Telluride. Now she has landed at HCN to revive a long-standing interest in journalism and the environment.

Jacob Forman, a "mostly" New Yorker, is enrolled at Brown University in Providence, R.I. Yearning for travel and a "real-world" education, he decided to take a year off from his studies, beginning in Brazil, where he maintains dual citizenship. He first worked with an ecologist on an island in southern Brazil, and then joined an educational circus as a clown to tour the Amazon. Why Paonia now? After the Amazon, where else!

—Larry Mosher and Mary Jarrett
for the staff

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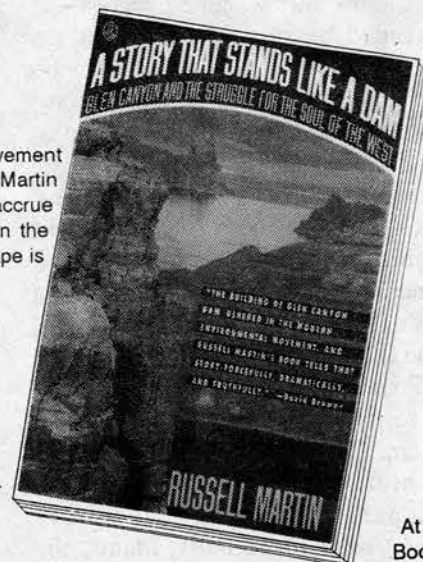
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—T.H. Watkins, Editor, *Wilderness*

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WESTERN ROUNDUP

Ranger Gillies meets the New Age in Sedona, Arizona

Nobody mentioned vortexes or prayer wheels when Bob Gillies trained to become a U.S. Forest Service ranger 20 years ago.

But now that he is district ranger for the Sedona area of the Coconino National Forest, Gillies is more than familiar with many of these concepts, buzzwords and shrines of the New Age movement.

In fact, he spends an increasing amount of time protecting the forest from New Age pilgrims and curiosity seekers who go to Sedona in search of crystals with healing powers and vortexes of cosmic energy that reportedly lurk among the red rocks.

Gillies said these New Age visitors may travel to Sedona shrines with the best of intentions, but the practice is wreaking havoc on the age-old environment.

"I don't know what they do there, but they construct these things," Gillies said. "There are a lot of folks leaving these shrines and symbols. It takes away from the enjoyment for other people."

The ranger said some of the structures involve the rearranging of large numbers of rocks. And they were erected in wilderness areas where man-made structures are banned.

"I'm sure these people don't think of it as vandalism, but when you get right down to it, whether you're rearranging the rocks into some three-foot-high circle, or knocking down a sign, it's still not the right thing to do."

But not everyone in Sedona agrees that there are environmental problems, said Tori Heide, manager of the Crystal Magic bookstore.

"There are definitely all degrees of opinion on this," she said. "There's no doubt in my mind that there was a problem. But there are many people who would argue that 'medicine wheels' belong on the land. The argument is that they date back to the American Indians and that they have a spiritual right to build them."

Heide said her bookstore and other businesses hand out flyers urging people not to trample plants or build shrines. But that position is not shared by everyone in the loosely defined movement.

"Once, the Forest Service tried to organize some volunteers to put the



Charles Allen

A modern-day medicine wheel is displayed by Gary Kiss, recreation manager for the U.S. Forest Service in Sedona

rocks from one of the medicine wheels back where they came from," she said. "Not many people showed up. A week later, they were all back in the shape of a medicine wheel."

Once the shrines are constructed, they become gathering points or focal points for practitioners and the curious, Gillies said. As a result of the heavier use, vegetation is trampled and erosion begins, he said.

On Schnebly Hill, adherents have created a prayer or medicine wheel, a ring of rocks several hundred feet across. Throughout the Coconino National Forest, crosses and little statues are left behind. And believers build sweat houses, little igloo-type buildings made of rocks and dirt. Boynton Canyon has a prayer wheel that is about three or four feet tall and about 20 feet across. Gillies says it looks like a fort.

And that is not the only problem. Organized tours amplify erosion problems at designated New Age stops, such as the vortexes. The vortexes are sup-

posed to be focal points for some sort of energy, Gillies said.

In some of these heavily used areas, the Forest Service has restricted the tours, he said.

"When these tours of New Age tourists or just plain curiosity seekers come through ... solitude can get disturbed real quick," he said.

At sites of heavy traffic, erosion begins with the grass and loss of soils, he said. And it spreads to the oak brush, and cypress and juniper trees common to the Sedona area.

"It affects the root systems of the smaller brush and trees," Gillies said.

Gillies said the New Age use of the Sedona-area forest began in earnest in 1986. He said it got even heavier with a large New Age event, the "harmonic convergence," in August 1987. Believers give many versions of what converging is. But it generally was agreed among participants that the convergence would usher in a new age of peace and harmony.

Gillies said he has no opposition to

New Age beliefs or its practitioners, just to disturbances of the woods and wilderness. "A lot of people go out there to meditate or find some kind of harmony," he said. "That's great. Everybody can appreciate a little peace and quiet now and then. I just want to make sure it's available to everybody."

Gillies said he never expected to become an expert on convergences or vortexes, but he has. "I found out what a vortex is, but I'm not even clear why these spots were chosen," he said. "And I still don't know what you do in a sweat house — sweat, I guess."

"Nobody even knew about those things in the days I trained to be a ranger. Some of it is real interesting. But even if it's interesting, it's my job to protect the forest."

— Jonathan Sidener

Jonathan Sidener is a reporter for *The Arizona Republic*, where this story first appeared.

HOTLINE

Forest Service OK's drilling in Montana wilderness

The Forest Service has approved exploratory oil drilling in Montana's Badger-Two Medicine Wilderness. The 130,000-acre roadless area in Lewis and Clark National Forest south of Glacier Park holds religious and traditional values for the Blackfeet people and contains prime habitat for grizzly bears and the returning gray wolf (*HCN*, 11/5/90). The Forest Service's decision to let Fina Oil and Chemical Co. drill comes despite overwhelming public opposition; over 95 percent of the comments submitted to the Forest Service asked that the Badger be left undisturbed. Sen. Max Baucus, D-Mont., and Rep. Pat Williams, D., have introduced legislation to block the drilling until further study can occur. "Such vast public opinion should be heeded," Baucus said in a statement. "The Forest Service is conducting a real exercise in futility." The Environmental Impact Statement for the project claims the Badger could hold 1 million to 10 million barrels of oil, or enough to

power the United States for one to 14 hours. Drilling is slated to begin July 1.

Pentagon's environmental regulations waived

If, in war, the first casualty is truth, then the second is the environment. As the military ravaged the deserts of the Middle East under a veil of secrecy, an environmental group disclosed that Pentagon facilities in the United States are operating in the same fashion. The National Toxic Campaign Fund, a Boston-based group studying pollution on the nation's military bases, revealed that the White House waived requirements of the National Environmental Policy Act. Environmental laws contain provisions allowing the President or the Cabinet to grant exemptions "if such action is in the paramount interest of the United States." The waiver came in August, just after Iraq invaded Kuwait; Pentagon officials say it has not been in effect since the war ended. The waiver, which affected more than 25 million acres of Pentagon lands, many of them in the West, allowed the Pentagon to launch new activities such as new weapons testing without the usual public scrutiny provided by environmental reviews. Terrence O'Donnell, the Pen-

tagon's general counsel, told *The New York Times* that he did not intend to abuse the exemption: "Our intention [is] that it be used with care and only when reason and good policy dictate." But Dyan Oldenberg, a National Toxic Campaign Fund regional director, says, "The waiver has given the Pentagon a license to pollute."

U.S. well water may be harmful

Nitrates were found in more than half the drinking water wells tested during a national, five-year U.S. Environmental Protection Agency survey. The \$12 million survey was the first of its kind ever conducted in the United States. More than 1,300 community and rural wells from every state were tested for 126 pesticides and pesticide breakdown products, including nitrates. Nitrates in groundwater have several sources, including fertilizers, human and animal wastes, and naturally occurring nitrogen in soils. Although EPA officials said the survey gave no cause for alarm, nearly 2 percent of the tested wells, most of them in rural areas, contained nitrate levels above the 10 parts per million considered safe for human health. To find out state-specific results of the survey, call

EPA Groundwater Project Officer Randy Brown at 303/293-1703.

In one payment, out the other

The Forest Service often misleads counties by saying that they will benefit economically from logging and mining within their borders, says a study by a New Mexico conservation group. The Forest Service makes two types of payments to counties: a fixed, annual compensation for tax-exempt federal lands within county lines, and a 25-percent share of gross receipts from projects like logging. The Forest Service emphasizes the latter revenue, the Forest Trust's Lane Krahl explained, "and starts telling counties, 'We've got to cut timber here or the county won't get any money.'" The catch is that the amount of the logging payment is subtracted from the fixed compensation. As a result, the county receives no more money than it would if it refused to allow the logging. "What the federal government gives to counties with one hand, it takes away with the other," says Krahl. "The bottom line is that logging does not directly benefit most counties."

HOTLINE

Flaming Gorge Dam hurts fish

Utah's giant Flaming Gorge Dam on the Green River is violating the Endangered Species Act with dam operations that threaten fragile populations of rare fish. The U.S. Fish and Wildlife Service says the dam must make major operational changes to prevent extinction of the Colorado squawfish, humpback chub, bonytail chub and razorback sucker. Since the dam's gates closed in 1962, only one Colorado squawfish has been sighted above Flaming Gorge in Wyoming. U.S. Fish and Wildlife biologists want the Bureau of Reclamation to curb the rapid flow changes at the dam that cause the river to rise and fall several feet in an hour, trapping fish in puddles away from the current. Biologists also want to nearly double Flaming Gorge's flows for six weeks each spring when fish are spawning. The proposals would cut peak hydropower generation but provide a boon for whitewater enthusiasts below the dam in Dinosaur National Monument. U.S. Fish and Wildlife will direct changes in the dam's operation with a formal decision, to be issued by July. Last year, concerns about the endangered fish helped block the \$580 million Animas-La Plata water project in southwestern Colorado.

Forest Service recreation sites deteriorating

A recently released congressional audit claims that Forest Service recreation facilities nationwide are rapidly deteriorating because of lack of funds and questionable budget practices. The General Accounting Office says there is a \$449 million backlog of necessary maintenance and reconstruction at Forest Service sites — more than twice the amount reported by the Forest Service five years ago. Over \$100 million worth of the repairs are directly related to health and safety hazards, such as deficient water-supply systems. The Forest Service manages 191 million acres and provides 250 million recreation visitor days a year, more than any other federal agency. But while recreation use has increased on Forest Service lands over the last 10 years, budget requests for recreation maintenance and construction have decreased by 78 percent, according to the GAO study. Actual appropriations in that category as finally approved by Congress rose from \$6 million to \$50 million in the past decade. The GAO report also revealed that although virtually all recreation activity occurs at the local forest level, less than 40 percent of the money allocated for recreation management was spent by district offices.

Nevada test site contamination

Nevada Gov. Bob Miller says he is "shocked and thoroughly infuriated about the hypocrisy of the Department of Energy." According to the *Las Vegas Review-Journal*, the DOE failed to notify state officials of groundwater contamination apparently caused by a 1977 nuclear test at the Nevada Test Site, 65 miles northwest of Las Vegas. In 1985 scientists discovered radioactive materials, including tritium and plutonium, in groundwater samples. The Energy Department signed an agreement with Nevada this year requiring that the state be notified if contamination is found at the test site. But the DOE contends that the contamination is contained within the test area and poses no public health risk. Gov. Miller has ordered an investigation.

Arizona golf courses suck water from domestic uses

Arizona is well on its way to becoming the Southwest's golf mecca. The state has 191 golf courses now, and could have 250 by the year 2010, according to Ed Gowan, executive director of the Arizona Golf Association.

Golf courses in Arizona currently use over 100,000 acre-feet of water each year — about 10 percent of Arizona's non-agricultural water budget. This is placing a rapidly increasing strain on groundwater and municipal water supplies.

The state's 1980 Groundwater Act has put limits on the amount of water that new golf courses can use; in the future it will limit their size. New courses are limited to 5 acre-feet of water per acre of turf. By 1999, new courses will be allowed only 4.6 acre-feet per acre, and will face a size limit of 5 acres of turf per hole. The goal of the act is to halt groundwater overdraft by 2025.

The groundwater act also encourages golf courses and other turf-related facilities to use treated effluent instead of primary water sources where they can. While Gowan agrees that "any green space should be irrigated by effluent water," he worries that Arizona's water restrictions are sending developers to other states.

The Foothills area northeast of Phoenix is a focal point of golf-course development in Arizona. It includes the semi-rural town of Cave Creek and wealthy, retiree-oriented Carefree, as well as the northern reaches of Phoenix and its eastern suburb, Scottsdale.

The 94-square-mile area of north Scottsdale is home to eight golf courses. At least 13 more are planned for the future, and more will undoubtedly be approved. As former Scottsdale Planning Commission chairman Richard Thomas said in 1987 when approving plans for a new golf course, "Scottsdale's number-one industry is tourism, and we must do everything we can to encourage it."

Developers in the Foothills and elsewhere in Arizona insist that their projects must include a "golf amenity" in order to succeed. Some developers have reported that banks are reluctant to lend money to projects that do not include a golf course.

In Scottsdale, the city council recently passed the controversial Environmentally Sensitive Lands Ordinance. One of its provisions, pushed by developers, allows 25 percent of a development's land scheduled for golf course construction — land otherwise considered "Developed Open Space" — to be classified "Natural Area Open Space." This allows developers to reduce the amount of land they would normally be

required to leave alone.

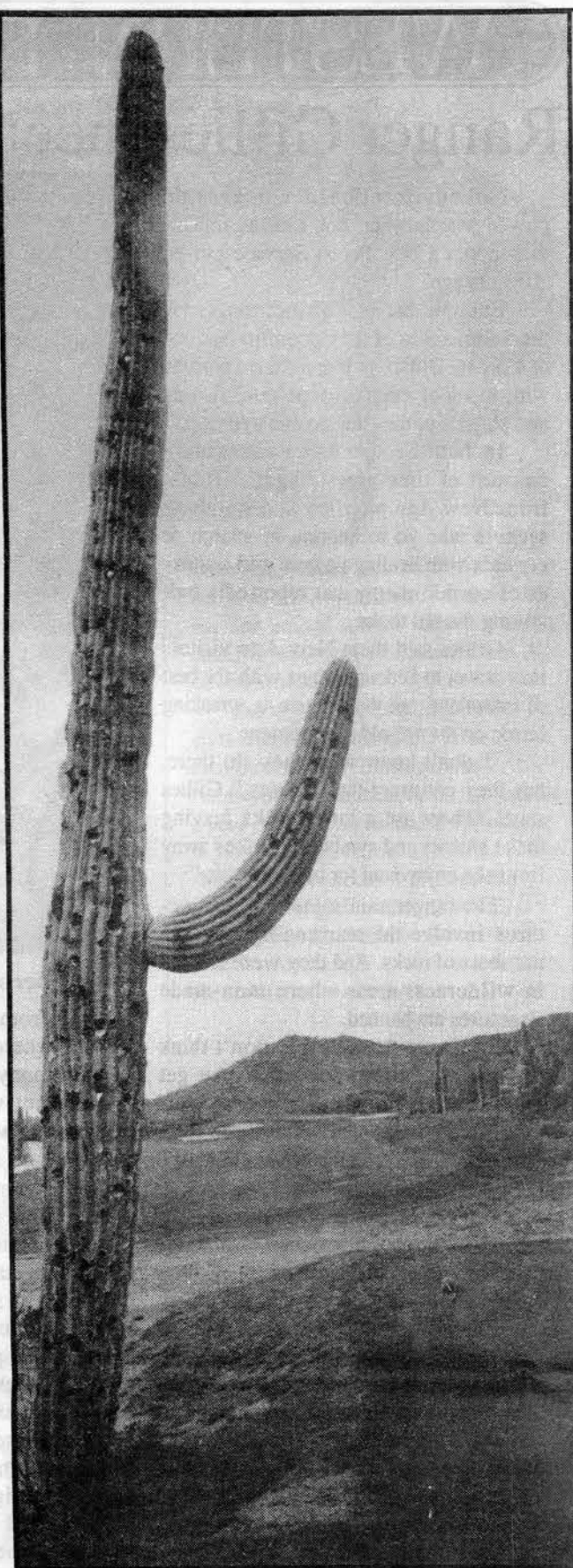
Three of Scottsdale's existing golf courses were built on land owned by Desert Mountain Development Co. in extreme northern Scottsdale, immediately east of Carefree. Construction of the private courses converted 600 acres of the Sonoran Desert into turf.

These courses use groundwater from a limited water basin upon which the towns are dependent — the 12-square-mile Cave Creek-Carefree aquifer. Desert Mountain, half-owned by the Mobil Land Development Corp., pumps 1,700 acre-feet of groundwater per year for its golf courses. By comparison, all the residential wells in the basin put together use about half that amount.

The water table in the aquifer has fallen at a rate of eight to 16 feet per year since the golf courses were built. Many residential well owners have had to drill their wells deeper. Anger over this situation provoked about 100 residents to picket Desert Mountain's "Tradition" golf tournament last year.

In order to receive a groundwater withdrawal permit from the Arizona Department of Water Resources, Desert Mountain was required to obtain permission from neighboring communities. In a 1986 letter seeking permission from the Town of Carefree, Desert Mountain stated that it would stop using groundwater from the aquifer by January 1, 1990, and would replace it with a 954-acre-foot-per-year allotment of Central Arizona Project water. Since 954 acre-feet is just over half of its current need, the company has been seeking the rights to other CAP allotments.

Desert Mountain did not meet the deadline, because of trouble negotiating with the City of Scottsdale over con-



Fred Goodsell

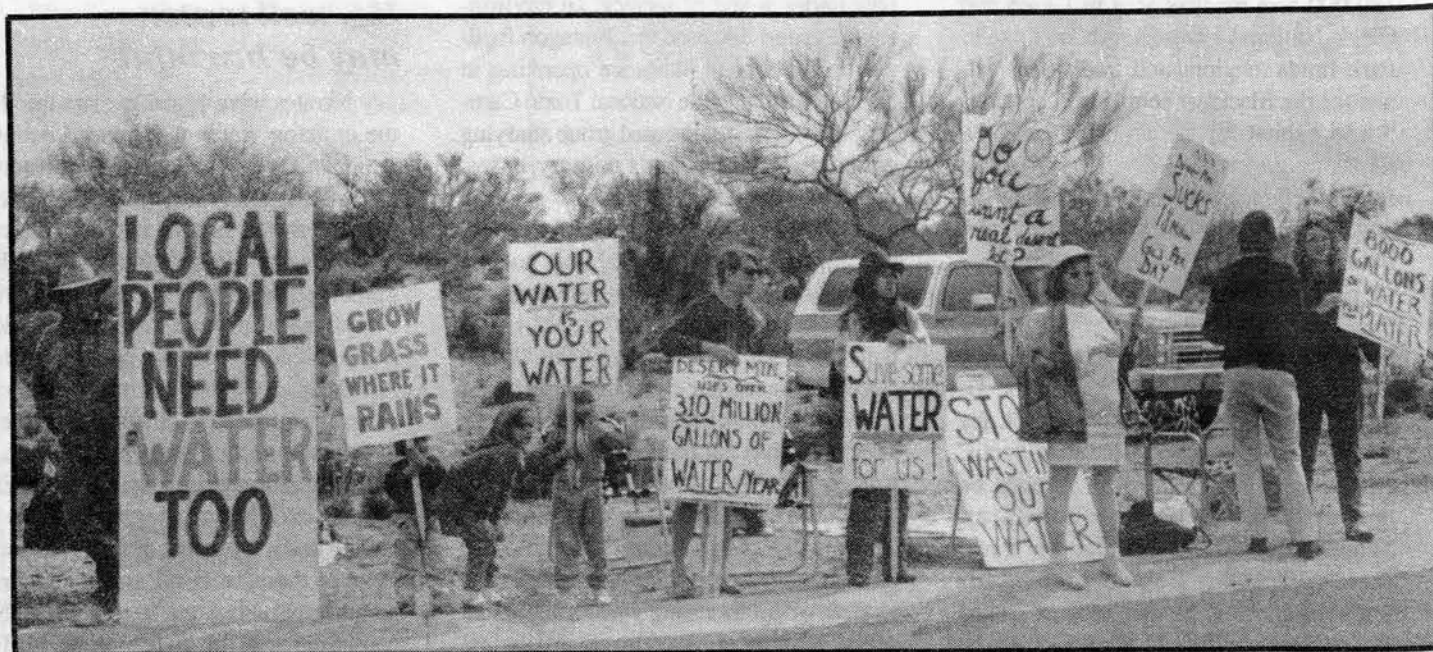
A golf ball-riddled saguaro at Eagle Creek

struction of the CAP pipeline. As a result, the Town of Carefree has taken the company to court, asking that pumping be stopped. The suit is in litigation.

In 1995, Scottsdale's CAP system will begin to mix treated effluent into the system, but it will be a long time before effluent makes up a significant proportion, since the effluent recovery area is sparsely populated.

— Stephen M. Jones

Stephen M. Jones is a botanist and free-lance writer in Cave Creek, Arizona.



Fred Goodsell

Pickers at last year's "Tradition" golf tournament at Desert Mountain

Winter-use plan for Yellowstone and Grand Teton debated

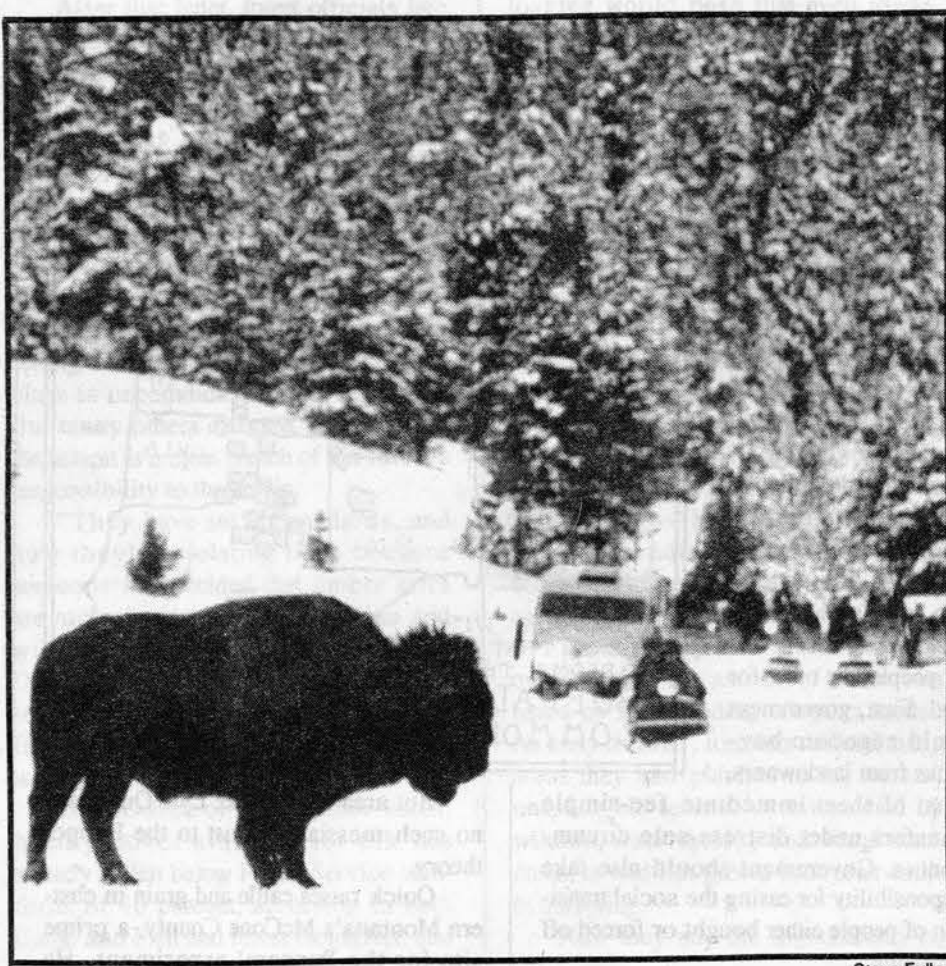
The battle over winter tourism in Yellowstone and Grand Teton national parks has come to a head with the release of a controversial winter-use plan and Environmental Assessment to guide park policy for the next 10 to 15 years. It could set a precedent that will doom attempts to protect the natural resources of other parks faced with similar threats.

Winter visitation to Yellowstone and the Grand Tetons has skyrocketed in recent years, raising serious questions about its impact on wildlife and aesthetics. Wintering elk, bison and moose encounter growing numbers of snowmobilers and cross-country skiers. The added stress of evading humans can prove fatal to wildlife barely surviving in harsh winter conditions.

Plowed roads and groomed trails in the parks provide animals with easy migration corridors, but the paths encourage wildlife to leave the relative protection of the park. Yellowstone bison, believed to carry brucellosis, are shot when they go outside the park. Dan Bachman of the Greater Yellowstone Coalition says bison may be straying more often because of snowmobile trails.

The new winter-use plan predicts a moderate rise in visitation over the next decade as existing facilities are renovated and services expanded. The experience of visiting the once-serene winter parks is itself deteriorating. "You have to work harder to find your special place in the winter, away from noise and people," says Yellowstone spokeswoman Joan Anzelmo.

Still, the Park Service concludes that the plan will have "no significant impact" on the environment. "There's a little room for more visitors," says Anzelmo. "If use goes up a lot over the next 10 or 15 years,



Steve Fuller

Snowmobilers and bison face off in Yellowstone

then maybe we could limit it."

Terry Martin of the National Parks Conservation Association says the winter-use plan represents a "seat of the pants" decision that high levels of use are acceptable. "They have refused to do a visitor impact assessment right away," said Martin. "They have no basis for their decisions about how much use is OK."

The biggest winter-use expansion called for in the plan is the Continental Divide Snowmobile Trail, a \$2 million,

370-mile groomed route from Lander, Wyo., through Grand Teton National Park to Yellowstone's south entrance. The Park Service stipulates that snowmobiles may be operated only as means of transportation rather than for off-road "snow play," and only on roads that are open to automobiles in summer. While the plan closes Grand Teton's roadless Potholes area to snowmobiles, it permits the entire Continental Divide Trail to parallel existing roads. Because the trail

adjoins existing roads, the Park Service, the National Forest Service and the BLM insist it does not require a full Environmental Impact Assessment.

Grand Teton concessionaires and the Wyoming tourist industry, not the parks themselves, will profit economically from the Divide trail. Travel promotions will bring snowmobiles in increasing numbers to Yellowstone and the Tetons, along with their noise, disruption and danger. But the trail has the support of Sen. Alan Simpson, R-Wyo., and the state's tourist industry.

"They've been working on it for years," says John Zelazney of the Wyoming Wildlife Federation. "They want to put Wyoming on the map as one of the foremost places for snowmobile use."

Critics of the winter-use plan feel the Park Service cannot hold up against powerful state lobbies and development-oriented politicians. "Of course people should be able to see the parks in winter," says Dan Bachman of the Greater Yellowstone Coalition, "but the Park Service, under pressure, is allowing use that can harm the resource."

Park officials say the plan represents a fair balance between preservation and use. "Certainly there are impacts," says Anzelmo. "There are people who would have us shut it all down, but that's not what the Park Service is all about. We have to provide for use and enjoyment, too."

Parts of the winter-use plan, including the snowmobile trail, need congressional funding before they can go forward. Grand Teton and Yellowstone intend to implement the plan after 1991.

— Erika Zavaleta

A recent HCN intern, the writer is a Stanford University student.

HOTLINE

Indian unemployment slips through the cracks

American Indians are severely undercounted in official unemployment figures, and this results in "less funding for government programs which attempt to alleviate these high rates of unemployment," according to a recent study. The report, "Native American Unemployment: Statistical Games and Cover-ups," was done by George Tinker, assistant professor of cross-cultural ministry at the Iliff School of Theology in Denver and by Loring Bush, a University of Denver graduate student. It compares unemployment figures from the Labor Department, the Bureau of Indian Affairs, and a 1985 "First Friday" report completed by the Lutheran Council U.S.A. In one example, the First Friday report gave an 87 percent unemployment rate for the Pine Ridge Reservation in South Dakota. The BIA showed a 78 percent rate, while the Labor Department figure was less than 5 percent for the two counties that make up Pine Ridge. Many Indians simply drop out of the labor pool, as far as government records are concerned. To be officially counted, a person must be actively seeking work through a state employment office and available for any appropriate work. Some members of Congress are sharply objecting to proposed budget cuts for the BIA, Indian Health Services and housing programs. "It's a mystery to me why the Indian people continue to get short-shrifted in the President's budget," said Sen. Daniel Inouye, D-Hawaii, chairman of the Senate Indian Affairs Committee.

'Grizzly Park' planned for West Yellowstone

The town of West Yellowstone, Mont., at least in the eyes of the Interagency Grizzly Bear Study Team, has earned the distinction of being an "ecological black hole."

In the 32 years that mortality data have been kept on grizzly bears in the greater Yellowstone ecosystem, some 25 federally endangered bears have wandered into this park gateway community, never to be seen alive again. Condemned as a threat to human safety because of their cravings for people's garbage, most of the bears were killed by wildlife managers.

Each year within the park itself, perhaps a dozen bears are trapped near developed locations and moved into the back country. Those bruins that demonstrate a chronic leaning toward recidivism are either destroyed or shipped to zoos.

Six years ago, real estate developer Lewis Robinson started thinking about the problem and arrived at a solution. He intends to build a \$28 million development in West Yellowstone that will use the park's miscreant bears as a centerpiece for a luxury resort.

Robinson says groundbreaking on "Grizzly Park" and its sprawling 87-acre compound — which includes a chic hotel, retail shops and a giant IMAX theater — could begin this summer. The development, when completed, would create 300 new jobs in a town of 900 residents and become "one of the most extraordinary resort/destination developments in the western half of the United States," says Robinson.

While there has been little official resistance to the development, environmentalists, downtown merchants in West

Yellowstone and the mayor of the town are worried. This could become a classic story of Main Street versus the mall, observers say. But it also forces one to examine the concept of Yellowstone versus the zoo.

Robinson says his sanctuary for 32 grizzly and black bears would be the development's primary drawing card.

"There's no other facility in the world that has been designed with a wild grizzly in mind and placed them in a state-of-the-art environment," he said, adding that a renowned zoo architect, Jack Jones, has been hired to construct eight bear pods that house four animals each. Also proposed is a multi-million-dollar visitor center in Grizzly Park to promote the idea of "ecosystem" preservation, Robinson said.

It sounds well-intentioned, but some people are skeptical. "Overall, we'd rather not see that type of facility on the boundary of the park," said Yellowstone's assistant chief ranger, Gary Brown, who is concerned about the precedent it establishes. Park officials including Brown and Chief of Research John Varley say the last thing Yellowstone needs is a series of get-rich-off-the-wildlife theme parks.

Yet Brown said that after lengthy discussion with the federal Interagency Grizzly Bear Study Team, the park has reluctantly agreed to give Robinson some of Yellowstone's bears as long as the developer meets state and federal guidelines for housing an endangered species. Why the park agreed despite its reluctance is unclear.

"There's been a lot of resistance from people because they think we'll be shuffling bears into the development

whenever we can," Brown said. "But I can assure you the bears we'd provide would be transferred out of the ecosystem regardless of whether this sanctuary was there or not."

Don Bachman of the Greater Yellowstone Coalition says the park could do a better job of eliminating reasons for having to expel bears from the park, and he thinks Robinson's sanctuary represents an ethical error. Bachman applauds the idea of promoting the ecosystem, but he says placing bears within a fenced compound less than a mile from where grizzlies roam wild in the national park is a contradiction.

"What this does is it gives the public the wrong impression of how a grizzly bear is expected to live in the wild," Bachman said. "A facility like this confuses visitors about the importance of preserving grizzly habitat. It makes it seem all right to put bears in captivity."

"I don't have any trouble with having a bear in the Denver Zoo," he continued, "but it bothers me a great deal to take a wild Yellowstone grizzly and place it in captivity on the edge of the national park for visitors to see."

The Gallatin County Commission was expected to decide March 22 on whether to give preliminary approval to the Grizzly Park development.

"The good things that will come out of this are going to more than offset any concerns relative to the commercializations of the bear," Robinson promises. "The proof will be in the pudding."

— Todd Wilkinson

The author is a free-lance writer in Bozeman, Montana.

Poppers defend their 'Buffalo Commons' vision in Montana

Frank and Deborah Epstein Popper took their "Buffalo Commons" vision on the road to Billings, Mont., in early March, and the show played to mixed reviews.

The Poppers, professors at Princeton University in Rutgers, N.J., say they have chronicled the decline of portions of the Great Plains and the prognosis is not good. They see empty, arid, depopulated spaces that eventually will have to return to their prehistoric uses as grassy habitat for native animals — hence the moniker "Buffalo Commons."

Drawing on census data, soil erosion records, falling land values and economic trends, the Poppers have picked out a number of rural counties from the Texas Panhandle up through the Dakotas and eastern Montana that they say might be better off without conventional agriculture, because further decline is inevitable.

Right now, according to a General Accounting Office report, they say most of the place is a de-facto welfare state, with much of the personal income derived from Social Security checks and federal farm subsidy payments.

At a forum at Rocky Mountain College sponsored by the local Harvard Club, the Poppers presented maps and charts indicating the breadth and depth of the region's patches of decline.

The provincial outposts of Billings, Mont., and Lubbock, Texas, say the Poppers, are the two biggest cities in an immense land area that supports only 6.5 million people. It has never been a consistently productive area. There always have been droughts, dust bowls, out-migration and recessions.

From the first federally subsidized settlement and booms in the late 19th century through the dying of small farm towns today, the cycle has about run its course, they say, adding: "All across the plains, there are future ghost towns."

Great Plains cattle ranchers face a declining red-meat market (down 25 percent since 1975) in an arid zone that produces only a small fraction of the nation's beef supply. Much of the area should never have been homesteaded and plowed because of marginal topsoil, lack of water and distance to markets. The USDA, say the Poppers, hasn't yet faced up to the realities of the plains, and

the federal subsidy programs paid to landowners not to grow crops in this "granary of last resort" haven't helped to stabilize the local economies.

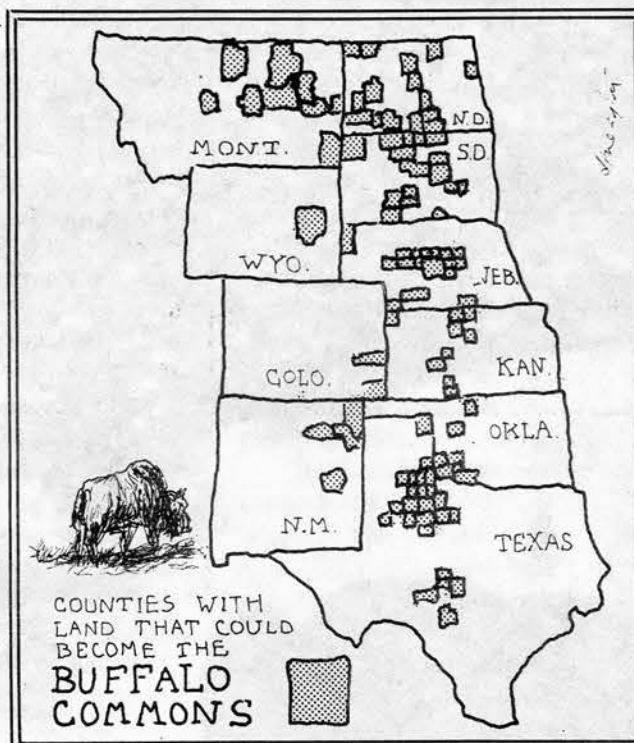
According to the Poppers, "Government must start planning to keep most of the region from turning into a wasteland, an American Empty Quarter. A practical federal deprivatization program, whether it begins tomorrow or a generation from now, should have two thrusts — one for people, the other for land. First, government could negotiate buy-backs from landowners,

most of them immediate fee-simple transfers under distress-sale circumstances. Government should also take responsibility for easing the social transition of people either bought or forced off the plains.

"Second, the federal government should take the newly emptied plains and tear down the fences, replant the shortgrass and restock the animals, including many bison — creating what we would call the Buffalo Commons. The task will be time-consuming. It will take at least 20 to 30 years before the vegetation and wildlife entirely reassert themselves in semi-arid settings."

The "self-contained service centers" of the Great Plains, such as Billings and Lubbock, say the Poppers, will survive, as may some energy and mining towns, and towns along the interstate highway system. But, they say, days are numbered for the small inland communities dependent upon agriculture. The Poppers see a good part of the plains returning to "pre-white conditions," with the land taken out of traditional private status.

When challenged about how area Indian tribes would react to the situation, Deborah Popper answered, "The Indian response has been very positive. They would welcome a white agricultural pull-back. Some consider us a white, academic version of the Ghost Dance."



But area farmers like Lyle Quick see no such messianic thrust to the Popper theory.

Quick raises cattle and grain in eastern Montana's McCone County, a prime site for the Poppers' experiment. He admitted that he is paid \$38,000 a year for putting cropland into grass under the federal Conservation Reserve Program (CRP), and allows how some of their gloomy analysis of the region is accurate, but said their plan would cause a revolution among the locals.

"You stepped right in the middle of my belly," Quick told the Poppers. "I don't believe we need another buffalo waller in eastern Montana."

The farmers and small towns, he said, have been around for years and the people plan to survive the tough times. He also noted that his county last year produced thousands of cattle and 4 million bushels of wheat.

Quick said he didn't like the idea of federal farm subsidies, but that the programs were meant to keep food cheap and plentiful for the consumer, not to build a gravy train for farmers. Quick, a national family-farm activist, blamed defective federal policy and the concentration and centralization of power of corporate grain brokers and food processors for the weak market and resulting failures of small farmers. "There ain't

nothin' the matter with agriculture in the whole U.S. except price," said Quick. "And we'd better get it together," he warned, "or we're gonna have a Buffalo Commons."

The Poppers say it's unlikely that the decline can be stemmed now. They said places like Quick's county may not be ready for the Buffalo Commons for another 20 or 30 years, but that the area will inevitably dry up as a profitable place for people to live. The indicators of decline they are finding in selected Plains counties include short-term and long-term population loss and low population density; an aging population; a poverty rate above 20 percent; and new construction of less than \$50 per capita. The combination of those factors in an area spells trouble, they said.

Deborah Popper said it doesn't look good for the region's greatest assets, its people. "They are adaptable, proven survivors with a good work ethic," she said. "But are they going to continue to accept the ongoing slow leakage of their communities? They are not thinking long-term, with a vision for the plains."

The Buffalo Commons concept, when taken out of the Eastern academic ivory tower and presented to the affected residents of the plains, is a volatile idea, with overtones of remote control and threats to traditional private-property rights. It makes people out here uncomfortable to hear that their rural agricultural patterns may be on the brink of extinction.

But the Poppers stick by their guns, saying "the building blocks for a Buffalo Commons are now in place." They see the land base of foreclosed farms and tracts of CRP acreage possibly becoming part of expanded national grasslands reserves and Nature Conservancy-style projects.

"Over the next 20 to 30 years," said Deborah Popper, "big portions of the plains face mass desertion from economic factors, and as existing economic processes run their course. Then federal and state governments and private agencies could step in to create a Buffalo Commons."

— Patrick Dawson

Patrick Dawson is author of the non-fiction book *Mr. Rodeo* and a free-lance writer in Billings, Montana.

HOTLINE

Mine proposed near Yellowstone

A proposal to mine an area two miles from Yellowstone National Park's northern boundary fails to address impacts on the area's water, wildlife and vegetation, according to a task force studying the proposal. Noranda-Crown Butte Co. recently applied for a hardrock mining permit for a site that overlooks the Absaroka-Beartooth Wilderness near 9,700-foot Daisy Pass, an area frequented by grizzly bears. To operate the mine, Noranda will have to build a 69-mile-long power line, as well as keep the road from Cooke City, Mont., to Cody, Wyo., open year-round, thus increasing winter access to Yellowstone. Not one member of the task force praised Noranda's proposal. "The entire document is grossly inadequate," task force member Richard Parks told the *Great Falls Tribune*. Don Bachman of the Greater Yellowstone Coalition says Noranda's proposal is indicative of "a conflict of value systems." He says the entire area should be protected by withdrawing it from mineral

entry. But Noranda officials say the mine could produce half a billion dollars' worth of gold and bring jobs to the nearby community of Cooke City. Although Noranda must resubmit its application and then do a full Environmental Impact Statement, it wants to begin construction of the mine in mid-1992.

Open range a little less open

A recent ruling by the Arizona Supreme Court may allow some motorists to file injury and damage claims against livestock owners. In the past, ranchers have not been held liable when livestock roaming on open range wandered onto roadways and caused accidents. This court decision will change that under some circumstances. The ruling still puts the burden of proof on the motorist, who must show that the livestock owner was somehow careless. No specific instances of "careless" behavior were cited by the court, according to *The Arizona Republic*; mere failure to erect fences to control the animals, for example, is not sufficient to establish liability. But clearly the court is signaling a turn in the direction of safety, indicating that ranchers and their

wandering herds bear a greater responsibility to motorists on Arizona highways.



Porcupine race is a prickly matter

The World Championship Porcupine Sprint Race has run into the law. The annual event, held in July in Baker City, Ore., has long been a target of animal-rights activists. Porcupines are raced on a 50-foot runway before thousands of spectators at the Miners Jubilee celebration. But this year, activists are pointing to a state law that prohibits harassment of the porcupines, and the state police say they're bound to uphold the law. The Oregon Fish and Wildlife Commission, which could still permit the event, will take up the prickly matter at its April 17 meeting.

Idaho wilderness may charge user fees

Visitors to the lower 48's largest designated wilderness may have to pay admission. Idaho's Frank Church-River of No Return Wilderness badly needs funds to manage and protect its 2.3 million acres. User fees could generate up to \$600,000 per year, but public reactions to the idea have been mixed. Commercial outfitters and their clients already pay large fees to use federal forests and rivers. Ron Watters, director of Idaho State University's outdoor program, argues that the Forest Service subsidizes logging with far more money than it spends on recreation. Most revenues do, in fact, go to general national Forest Service funds — but not necessarily for wilderness. Payette National Forest District Ranger Ruth Monahan explained, "The new fees differ because they have to stay within the Frank." Under the tentative plan, users could designate which area and type of project should receive their fees, and an annual public report would detail where the revenues went.

Bighorn log sales upped to keep Wyoming Sawmills buzzing

SHERIDAN, Wyo. — Pressured by Wyoming's congressional delegation and governor to maintain high levels of logging and keep a sawmill running, managers of the heavily cut Bighorn National Forest have auctioned off decade-old timber sales they admit will violate federal wildlife habitat standards.

While struggling to lower timber quotas, foresters there say they are "looking hard" for trees to cut, because of an inaccurate computer model — also used by other Western forests — that far exaggerated the amount of available timber.

But letters obtained through the federal Freedom of Information Act show that top elected officials have pressed forest officials to sell the maximum 7 million board feet of timber now allowed.

"Without some forest management study to justify the reduced timber harvest level, we find any decisions to harvest less than 7 MMBF in a fiscal year to be wholly unacceptable. What are you doing?" Wyoming Sens. Al Simpson and Malcolm Wallop and Rep. Craig Thomas wrote to Bighorn Supervisor Lloyd Todd last August.

After that letter, forest officials late last year sold two timber harvests totaling about 3.8 million board feet of lumber — even though the 1980 analyses of the two sales' environmental impacts were done under different conditions and standards. While one sale was modified, no current public comments were allowed and the decision was never announced.

Bighorn managers say that while selling decade-old, "shelved" timber-sale plans is uncommon, it is not improper. But many others disagree, alleging that the action is a clear breach of the forest's responsibility to the public.

"They have set up standards, and now they're violating them because someone has decided that timber sales are more important than recreation and wildlife," said Wyoming Game and Fish Department Biological Services Supervisor Harry Harju. "You can't get blood from a turnip. You can't keep cutting when you run out of trees."

In the area of both timber sales, brushy cover available for elk has already fallen below Forest Service standards of 40 percent, according to both Game and Fish and forest biologists, and

logging would push that even lower. Despite complaints, forest officials have continued with the logging plans.

"Some practices do a better job of meeting standards and guidelines than others do," said Bob Mountain, the district ranger in charge of the sales. "Commodity interests are very desirous that we sell the maximum possible amount of timber ... We are looking pretty hard for trees to cut."

Bighorn managers are now trying to adjust their timber harvest levels to comply with Forest Service standards and policies. Until that is done, a court order — the result of a legal challenge by the Sierra Club — has reduced the maximum annual harvest from the 16 million board feet allowed by the forest's management plan to 7 million board feet.

The Bighorn's 1985 forest plan that overestimated the amount of timber was based on a misleading computer model. As early as 1987, foresters realized many areas they had planned to log were in inaccessible terrain, were restricted by wildlife, water-quality and visual standards, or had not grown back after earlier timbering.

Now they say the Bighorn may be

able to sustain cutting of only 2.7 million board feet a year. At public meetings in February, many area residents favored a drop in timbering to conserve natural resources.

But officials of Wyoming Sawmills, which employs more than 200 people in Sheridan and spends about \$10 million locally, have said they need at least 16 million board feet of timber a year from the Bighorn to stay in business. They have put pressure on the forest through elected Wyoming officials to maintain the highest possible levels of timber harvesting.

"The economic impact to the community, the county and the state, should Wyoming Sawmills cease operation due to lack of available timber, is simply not acceptable," Gov. Mike Sullivan wrote to Todd at the request of Wyoming Sawmills. "Therefore, I would urge your agency to identify and offer for sale sufficient timber to keep Wyoming Sawmills in operation."

— Michael Milstein

The writer covers Wyoming for the *Billings Gazette*.

How the feds whet the appetite for federal timber

Champion International officials say typical swings in the housing market forced the timber giant to lay off 1,100 workers in western Montana in mid-February. But the boom that provided the latest bust may well lead to even deeper troubles.

When President Reagan deregulated the savings and loan industry, the resulting building orgy threw the timber industry into a frenzy. As shopping malls, apartment complexes and houses sprang up across the country, private timber companies cut all their trees to feed the boom.

In the early 1980s, Champion embarked on an accelerated harvest, meaning it cut its trees faster than nature could replace them. As the stock of private trees on most corporate lands in the West shriveled, corporations began looking to federal lands for trees.

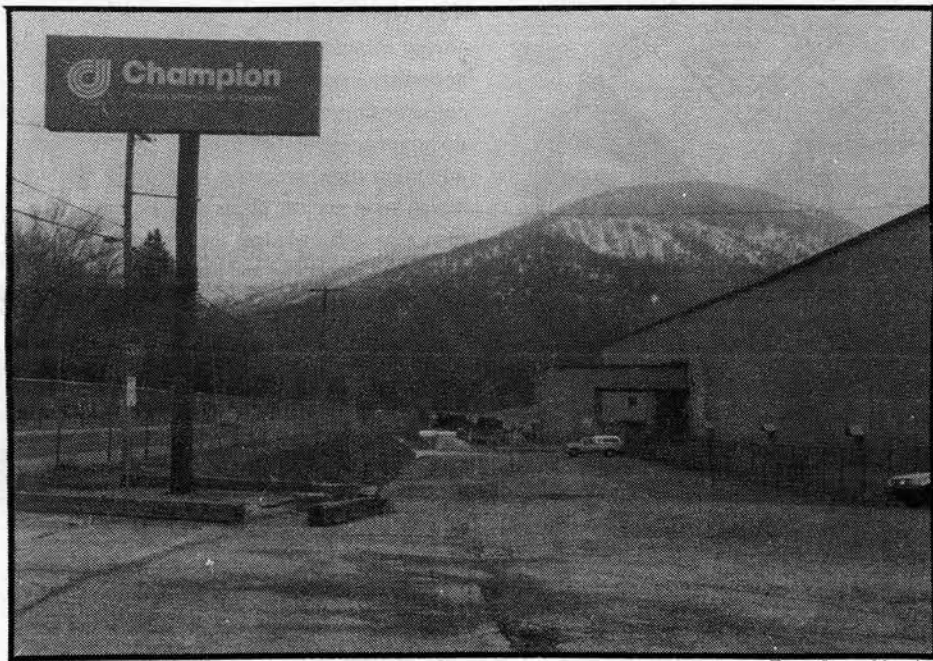
"The mills bid on a limited supply of timber," said John Combes, national appraisal specialist for the U.S. Forest Service. "So over the last year to year and a half, stumpage prices went way up."

Meanwhile, the construction boom spurred by easy savings-and-loan money ceased. "Thousands of white-elephant properties are now for sale [by the government]," *The Wall Street Journal* reported. "Overbuilding ... created a supply-side problem for the industry."

The bust hammered the timber industry nationwide. Last year Champion closed two mills in the Southeast and cut back at mills in Washington and Oregon before it laid off workers in western Montana. Economists are cautious in their predictions, but expect some recovery by the end of this year.

Mac Epley, vice president of the Western Wood Products Association, predicts "a gentle upswing the second half of the year," but others hedge. Economist John Kenneth Galbraith says, "All easy answers to this should be regarded with deeply justified suspicion."

Recession's end may or may not bring the industry out of the woods. In the Pacific Northwest, says Epley, "when demand does come back, we're going to run right into a shortage-of-material problem." Private companies have cut most of their lands and now



A near-empty Champion parking lot

rely on the supply of federal logs, which has been trimmed by such forces as the need to preserve habitat for spotted owls.

In western Montana, Champion too relies heavily on public lands. Although Champion did not blame short supply for the recent layoffs, some millworkers said one part of the problem was the smaller logs that are a direct result of a shrinking supply.

Champion recently retooled its now closed mill in Bonner, Mont., to work on smaller logs. To operate efficiently, the mill needs logs at least eight inches in diameter, says Bryan Erhart, business manager of the millworkers' union. The tight supply, however, has had the mill handling logs as small as seven and a quarter inches.

To keep up production, Erhart says, the mill switched from two to three shifts in September. The mill's volume increased, but so did production costs. The mills are looking to federal lands to provide larger and more profitable logs.

Montana has not enacted wilderness legislation, and many areas are "locked up" for wilderness review until the issue is resolved. After years of failed statewide bills, the Montana Wilderness Association teamed up last year with the millworkers' union to agree on wilderness proposals for two national forests

(HCN, 9/24/90). Those forests — the Lolo and the Kootenai — supply 67 percent of Montana's timber.

The agreements would release 98.2 percent of the suitable timber in the forests' roadless lands, which contain the big trees the mills need. "They would obviously not all be logged at once," Erhart says.

Mike Bader, executive director of the Alliance for the Wild Rockies, disagrees. "Timber in roadless areas would be real short-term," he says. "They're going to cut and run."

Bader says that Champion and most of the timber industry cannot survive in Montana because they did not practice sustained yield when they harvested their own land. "That mill [Bonner] isn't going to make it," he predicts, adding that the crunch will come when public pressure curtails logging on public lands.

Charles Keegan of the University of Montana's Bureau of Business and Economic Research also predicts the industry will shrink. His annual forecast says, "It would by no means be a worst-case scenario to project a 25-30 percent decline from 1989 levels in the size of Montana's processing industry over the next five to 10 years."

But Champion spokesman Tucker Hill says his company can escape the

troubles. "Champion is positioning itself to run fairly strong," he says. "We think the wood is there." Once the wilderness issue is resolved and attitudes change toward appeals, there won't be as big a supply problem, Hill says.

Epley believes the situation is similar in the Pacific Northwest. "Non-industry people — Congress and everybody — are going to have to come to grips with what's happening ... and recognize that things are going to have to change."

Lance Olsen, president of the Great Bear Foundation, says that's the sort of pressure that will undermine environmental regulations.

"There are a number of ways in which Congress and the administration have directly intervened," he says. "For example, [Oregon Sen. Mark] Hatfield has convinced Congress to hold the Forest Service in his state exempt from federal environmental laws. In Montana, [Sen. Max] Baucus promised to do the same thing."

The seeds of the savings-and-loan debacle were sown when the federal government stripped regulators of their ability to regulate. In the bust after the timber industry boom, the call for deregulation echoes.

— Tracy Stone-Manning

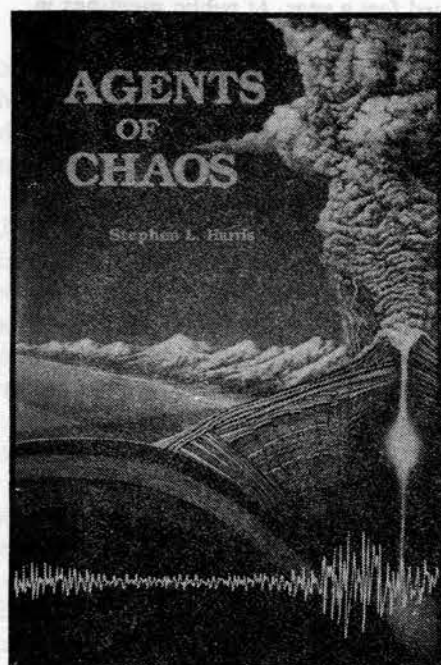
Tracy Stone-Manning is a free-lance writer in Missoula, Montana.

HOTLINE

Cow burps

A team of scientists will be measuring how much methane pasture-fed cattle belch to determine their contribution to global warming. Cows and other ruminants generate as much as 400 liters apiece of the greenhouse gas each day, making the livestock industry accountable for up to 15 percent of the global total. The Washington State University team will fit hundreds of cows with lightweight backpacks containing gas monitors attached to tubes in the cows' mouths, and will measure the bovine emissions for the next three years.

BULLETIN BOARD



EARTHQUAKES, VOLCANOES AND METEORS

The Western United States is a geological hot spot, both literally and figuratively. From Yellowstone National Park to Mount St. Helens, the earth's surface can change suddenly, with sometimes cataclysmic results. *Agents of Chaos*, a new book by Stephen Harris, explores these seismic and volcanic hazards that dot the Western landscape. From the latest scientific research to Native American myths and legends, the book incorporates a wide variety of sources to present a new perspective on the power of chaos and the geologic hazards through which it operates. The author also explains where and why future geologic rearrangements of the landscape might occur. The book uses mostly non-technical terms, but includes an informative glossary.

Mountain Press Publishing Co., P.O. Box 2399, Missoula, MT 59806, 406/728-1900. Paper: \$12.95. 240 pages, illustrated with maps and black-and-white photographs.

A TRASHY VACATION

Lake Powell: Is it a jewel or an eyesore? While the debate goes on, the shores and canyons that surround the lake are getting literally trashed. The National Park Service and ARA Leisure Services, which operates the lake's marinas, are sponsoring a volunteer program to clean up its 1,960-mile coastline. The program, which began last September, will continue at least until this fall. Volunteers must bring their own food and donate 32 hours of work during a five-day houseboat cruise of the lake. There will be plenty of time to enjoy the area's unique geology, wildlife and Indian ruins.

Interested volunteers may contact Karen Whitney at 602/645-2471 or write to P.O. Box 1507, Page, AZ 86040. Volunteers must be at least 18 years old.

ANASAZI HERITAGE CENTER

The Bureau of Land Management has announced that a special exhibit, "Canyon to Canyon, Cave to Cave," will be held over through May 19 at its Anasazi Heritage Center in Dolores, Colo. Members of the Wetherill-Grand Gulch Project have been utilizing a method of "reverse archaeology" to trace Anasazi objects in Chicago and New York museums back to their places of origin, the sandstone canyons of Utah. A BBC film on the life and explorations of Richard Wetherill is shown three times a day. The Anasazi Heritage Center is open 9 a.m. to 5 p.m., Thursday to Monday. Call 303/882-4811 for more information.



NOT IN MY BACKYARD

Whatever happens to the highly radioactive by-products created by the nuclear industry? Very little — and if you're wondering why, Gerald Jacob's *Site Unseen: The Politics of Siting a Nuclear Waste Repository* may be of interest. *Site Unseen* is a thorough documentation of dump siting, examined in the context of our commitment to nuclear energy. As Jacob explains, Congress did not explicitly address the problem of high-level nuclear waste until 40 years after the first nuclear reaction. Although the 1982 Nuclear Waste Policy Act promised solutions, ultimately it changed little, and left much control in the hands of the nuclear establishment. Jacob shows that the surprisingly arbitrary location of the Yucca Mountain site in Nevada is illustrative of a system without adequate rules and structure. This highly informative book dissects the issues, both political and technical, enabling the reader to understand the whys and hows of site location.

University of Pittsburgh Press, Pittsburgh, PA 15260. Cloth: \$29.95. 234 pages.

A PLAN FOR MORE NUKE PLANTS

Citing a more favorable political and social climate and a projected need for new energy sources, representatives of the nuclear industry have set forth a plan to build new nuclear plants by the mid-1990s. Although a nuclear power plant hasn't been authorized since 1978, the Strategic Plan for Building New Nuclear Plants signals "the nuclear energy industry's serious intent to create the necessary conditions for new nuclear plant construction and operation." The 110-page document, supported strongly by the Bush administration, creates a framework within which new nuclear plants may be built. The plan also acknowledges the serious political, regulatory, technical and economic obstacles, outlining strategies to overcome them.

For more information contact the U.S. Council for Energy Awareness, Suite 400, 1776 I St. NW, Washington, DC 20006.



ALL NATIONS HEALING CEREMONY

As nuclear testing continues at the Nevada test site, the Western Shoshone National Council and American Peace Test will coordinate the first official action of the Global Anti-Nuclear Alliance, which was formalized in January.

From April 3-8, participants will be able to camp out in the desert just outside the test site boundaries. Workshops will be held on non-violence, a comprehensive test ban treaty, nuclear weapons disarmament and other related topics.

On April 6 the Western Shoshone National Council calls for all native peoples in their homelands to join with their spiritual leaders in an All Nations Healing Ceremony for Mother Earth.

ENERGY FAIRS

An opportunity to explore the forms of energy indigenous to the Southwest is coming to Bernalillo, N.M., on May 17-19. Workshops, seminars, open forums and exhibits will focus on conservation measures, building materials and technology utilized in the Southwest. For information on attending or becoming an exhibitor or sponsor, contact S.R.E.F., c/o SEMCO, 901 21st St. NW, Albuquerque, NM 87014; 505/247-4522.

The second annual Midwest Renewable Energy Fair will take place June 21-23 in Amherst, Wis. The fair will explore ideas such as solar, wind and microhydropower, energy-efficient houses and machines, and alternative transportation. For more information contact Midwest Renewable Energy Association, P.O. Box 249, Amherst, WI 54406; 715/924-5166.

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Hanford ...

continued from page 1

with some of Hanford's wastes, including unstable liquids stored in tanks and mixed chemical and radioactive wastes buried in trenches.

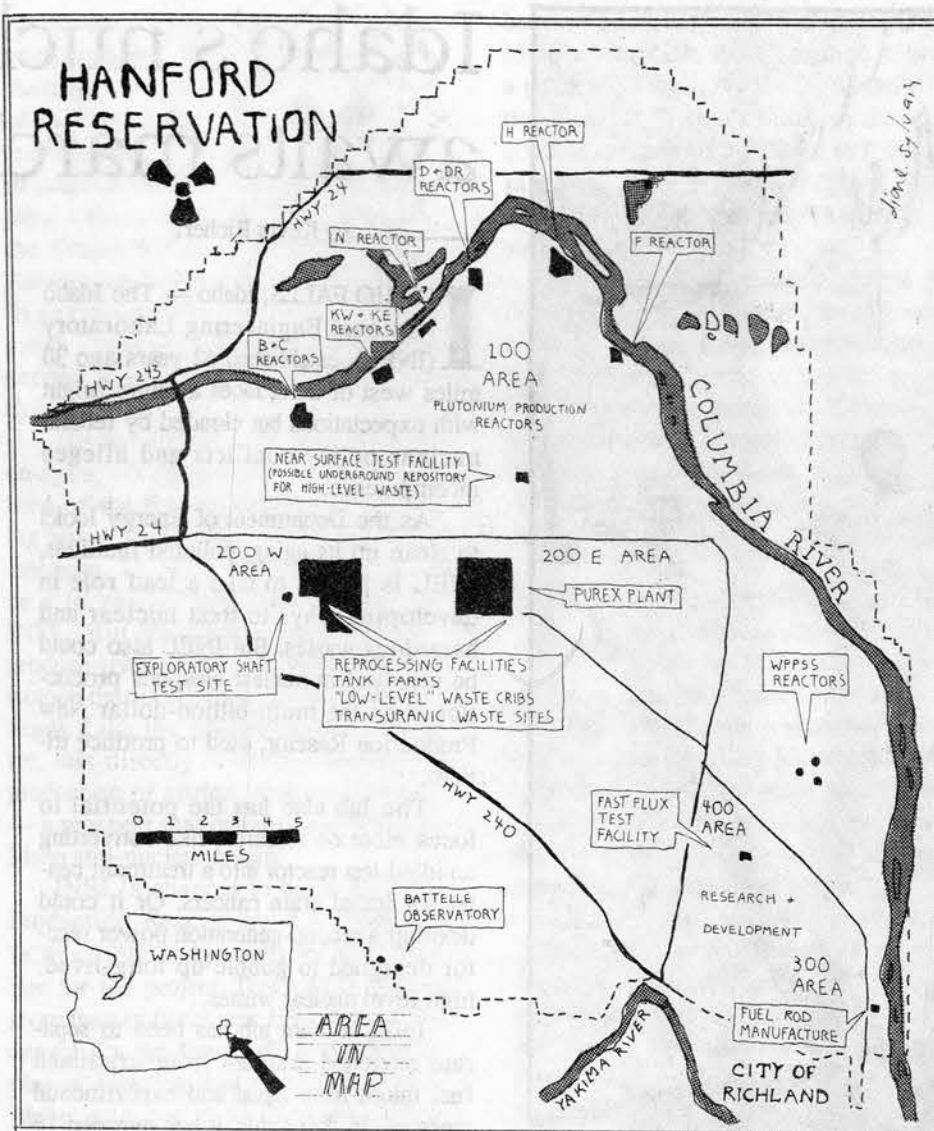
Nowhere is the Hanford contamination threat felt more acutely than in the small farming communities directly east of the nuclear reservation, where crops have been raised for years in the shadow of Hanford's military reactors. At the Country Kitchen Cafe in Mesa, the farmers who are Hanford's nearest neighbors gather early in the morning to discuss the price of wheat and the nuclear risks across the Columbia River.

Last July they learned from a pioneering government study that the old-timers who lived here as children in the 1940s and 1950s were exposed to the largest airborne radiation doses in U.S. history, which have increased their risk of contracting thyroid cancer. In contrast to the 1979 Three Mile Island nuclear accident, where about 15 curies of Iodine-131 were released and nearby residents were evacuated, the rural families of eastern Washington were never warned when releases totaling 530,000 curies of Iodine-131 were discharged from Hanford's plutonium factories during the Cold War weapons buildup. The heaviest releases occurred from 1946 to 1954.

Now they are learning that the airborne releases may be only a small part of the problem. In addition, nuclear wastes from Hanford are migrating toward the lifeblood of agriculture in eastern Washington — the Columbia River. While government risk assessments of the nuclear-waste mess say that the farmers are in no "imminent" danger, the people remain skeptical of such assurances.

"They used to tell us that dangerous amounts of radiation had never escaped from Hanford. We now know that's not true," says Tom Bailie, a 43-year-old farmer who has thyroid disease. "I don't think we have begun to understand the extent of the contamination and the real threat to our livelihood." The Hanford issue has turned Bailie into an activist.

The government is now conducting several studies to estimate doses received by people in the area and thyroid disease rates. Included are eight Native American tribes considered at risk. Says Russell Jim, a Yakima Indian Nation leader: "The Yakima people have lived in this area for 10,000 years and intend to live here forever. As a people they do not accept the pervasive DOE



ethos that Hanford is a perpetual national environmental sacrifice area."

Nuclear waste was a secondary concern in the mid-1940s, when the top-secret Manhattan Project condemned the towns of Hanford and White Bluffs and built a vast industrial complex in the desert of eastern Washington. During the Cold War and through the recent arms buildups of the Carter and Reagan administrations, deadly wastes from the plutonium production and extraction processes were poured into million-gallon steel tanks or dumped into soils and trenches.

Hanford's waste sites, like those at other major weapons facilities, are a monument to failed "interim" nuclear water policies initiated during the 1940s. Most of the disposal practices used at Hanford were forbidden in private industry by the nation's environmental laws, but weapons facilities were allowed exemptions under the protective national security umbrellas of the Atomic Energy acts of 1949 and 1954. It wasn't until the late 1970s, when Congress passed the Resources Conservation and Recovery Act (RCRA), that states obtained some clout to use against federal weapons facilities using outmoded dis-

posal practices for hazardous liquid and solid wastes.

"The Department of Energy and its predecessors have been carrying out their mission to produce nuclear weapons with an attitude of neglect bordering on contempt for environmental protection," said Sen. John Glenn, D-Ohio, who has led the fight in Congress to reform the department's practices.

The inventory of wastes awaiting permanent disposal at Hanford, detailed in government reports, is immense. They include:

- Some 300 acres of plutonium- and uranium-contaminated wastes that were routinely dumped directly into soils and storage cribs. The wastes contain enough plutonium for at least 40 bombs of the size dropped on Nagasaki.
- More than 200 billion gallons of chemical and low-level radioactive liquid wastes discharged into the environment from Hanford reprocessing plants — enough to bury the island of Manhattan 40 feet deep in liquid waste.
- 149 single-shell tanks, each with a capacity of 1 million gallons, which now contain 37 million gallons of high-level radioactive liquid wastes. A total of 66 have been identified as "leakers" or "possible leakers."
- 28 newer, double-shell tanks containing 11.4 million gallons of liquid high-level waste.
- At least 10 "reverse wells" where other wastes, including those containing plutonium, were injected deep into the ground.
- Plutonium-contaminated solid waste from operations before 1970, including wastes stored in cardboard boxes. Eleven waste sites contain 350 kilograms of plutonium.
- Reactor sections, each weighing about 1,000 tons, from six Polaris submarines retired after 25 years of service. The Hanford site could accommodate about 100 reactors, the number the Navy expects to retire over the next 20 to 30 years.

In addition, eight defunct military reactors, lined up along the Columbia River, await decommissioning. They contain about 10,000 curies of radiation, including Carbon-14 and Cobalt-60.

Plutonium reprocessing, a method of recovering plutonium for weapons that generates huge amounts of liquid wastes, has been responsible for some of Hanford's worst environmental problems. According to the Environmental Impact Statement for PUREX (plutonium-uranium extraction), the process that produces one kilogram of plutonium also produces over 340 gallons of liquid high-level radioactive waste mixed with hazardous chemicals; over 55,000 gallons of low- to intermediate-level radioactive waste discharged to cribs; and over 2.5 million gallons of cooling water discharged to ponds. Plutonium production generates a million gallons of high-level radioactive waste each year.

Because the reprocessing wastes are acidic, they were neutralized with lye and water. The water increased the volume of the wastes and the lye created chemical reactions, causing the radioactive elements to precipitate out as sludge. About 90 percent of the sludge concentrated at the bottom of the tanks, where the heat buildup caused cracks.

Hanford documents show that managers were worried about the tanks as early as the 1940s. But the dangers of leaks or explosions from liquid wastes left over from bomb production and stored in "interim" million-gallon tanks were either ignored or downplayed.

After World War II, the tanks were still thought of as a temporary option. But no timetable was established for emptying them or for devising a more permanent disposal method. When the tanks began to leak in the 1950s, Hanford engineers devised a system of "tank farms" with miles of pipe to move the liquids around and allow the radioactivity to decay before moving the liquids back to the original tanks. But this equipment also leaked, sometimes spilling liquids and contaminating workers. In the 1970s, Hanford managers built the double-shell tanks to hold additional wastes.

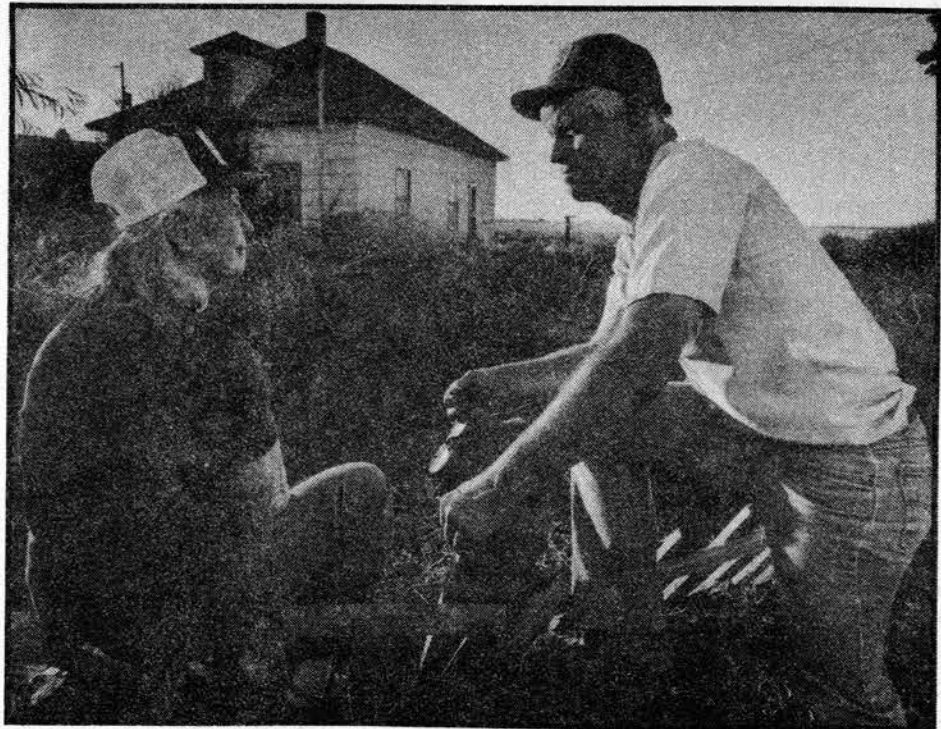
Hanford engineers discharged radioactive wastes directly to the ground at Hanford through the 1960s in the belief that soil particles would trap the most dangerous particles and dilute them to safe levels in a "buffer zone" — the arid ground between the nuclear plants and the site boundary.

The "200 Areas," a plateau in the middle of the site about seven miles from the Columbia River, was chosen for reprocessing and waste-disposal activities because it was the most isolated and contained the deepest groundwater, between 150 and 300 feet below the surface. Over the years, 200 billion gallons of low-level radioactive water was dumped into burial pits, evaporation ponds and seepage basins — enough to raise the water table under the entire 200 Areas.

Original estimates calculated a travel time of 175 to 180 years for contaminated groundwater to reach the Columbia. But the first contamination was detected beyond the reservation boundary in 1956, only 11 years after the first plutonium was produced.

When PUREX was built in 1956, it only took seven years for a radioactive plume of tritium from reprocessing operations to reach the river nine miles away. The plume is now adding about 4,000 curies of tritium to the river annually, according to groundwater monitoring reports by Hanford contractor Battelle Pacific Northwest Laboratory. Along one stretch of the Columbia, the tritium is entering the river at average concentrations at or above the EPA drinking

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Laura Lee Bailie and son Tom by their family's original homestead

Chris Anderson



The Post-Register/Robert Bower

Radiation Hot Shop at Idaho National Engineering Laboratory

Idaho's nuclear lab awaits marching orders

by Kevin Richert

IDAHO FALLS, Idaho — The Idaho National Engineering Laboratory (INEL), established 42 years ago 30 miles west of here, faces a future bright with expectations but clouded by federal nuclear policy conflicts and alleged incompetence.

As the Department of Energy looks to clean up its aging, polluted facilities, INEL is poised to take a lead role in developing ways to treat nuclear and hazardous wastes. But INEL also could be involved in nuclear weapons production with the multi-billion-dollar New Production Reactor, used to produce tritium.

The lab also has the potential to focus more on research, like converting an idled test reactor into a treatment center for lethal brain cancers. Or it could develop a second-generation power reactor designed to gobble up long-lived, high-level nuclear wastes.

INEL's main job has been to separate enriched uranium from irradiated fuel taken from naval and experimental reactors. In doing this, it has dumped 16 billion gallons of radioactive waste water into the Snake River Aquifer, according to the Radioactive Waste Campaign's *Deadly Defense*. This groundwater discharges into the Snake River, which flows into the Columbia River near Hanford, Wash.

INEL has expected cleanup and waste management to be its big gravy train over the next three years. But because DOE may hire thousands of

waste-management professionals during its 30-year campaign to clean up its nuclear weapons complex, INEL could face stiff competition for recruiting qualified workers and landing waste-management projects.

Also, DOE's plans to spend \$28.6 billion through 1995 — some \$9 billion more than originally expected — may never materialize. This is the implication of a study of DOE by the Office of Technology Assessment, Congress's analytical arm. The OTA report, made public last month, concluded that the department still was not competent to clean up the nation's nuclear weapons wastes.

The lab may have brighter work prospects with two nuclear research projects. However, neither carries the economic clout of waste management and cleanup. Also, DOE's support for both up to now has been less than enthusiastic.

The first, called the Boron Neutron Capture Therapy project, has been touted as a cure for glioblastoma, a terminal brain cancer that strikes 5,000 Americans a year. A boron compound is used to soak deep-seated tumors, which are then bombarded by a neutron beam. The technique is supposed to kill tumors without damaging healthy brain cells.

Idaho's Power Burst Facility, a reactor that hasn't been used since 1985, is said to be a neutron source that would be well suited for the project. DOE, however, has never pushed for funding to start research at INEL.

Last year Idaho's congressional delegation got \$10 million authorized for the boron cancer project, with \$7.5 mil-

Putting the gloss on storing radioactive waste

BOISE, Idaho — In a few months, David Leroy will go to state governors and tribal leaders, looking for partners who will accept a share of the nation's high-level nuclear waste.

He says his timing is good. There's the threat of a recession. Federal offices are being shut down or cut back across the nation. When Leroy comes pitching the growth industry of radioactive waste, he expects people to listen.

Is this economic ghoulishness? Is it unflagging — or unfounded — optimism? Perhaps it's the latter. For Leroy, the Bush administration's nuclear waste negotiator, charged with finding a temporary or permanent home for 70,000 metric tons of nuclear waste, optimism is a job requirement.

Sitting in his lakefront office, dressed in a jogging suit for a lunch-hour run, the 43-year-old Leroy exudes hope. Never mind that his job sounds a lot like an uphill marathon. Leroy, Idaho's former attorney general and lieutenant governor, leans forward in his chair and talks enthusiastically.

"I didn't take this job for political purpose or advantage," he said. "I took this job because it created the most exciting opportunity this decade to create a whole new relationship between the federal government and its sovereign states and tribes."

For now, Leroy is selling his search process — even though it hasn't yet begun in earnest. He says it won't be a "forced siting" of a waste dump that stirs up arguments and mistrust between the federal government and states. Instead, he says it will be an open pro-

cess — but also one that allows a governor or tribal leader to negotiate without political fallout, and allows the opportunity to back out at any time.

In the end, he hopes the process will create a friendly rivalry between several sites that want a share of the nuclear industry's most dangerous by-products.

Spent nuclear fuel rods, used by commercial nuclear utilities and now stored at reactor sites, account for about 90 percent of the waste Leroy is trying to find a home for. He has two storage options: a temporary storage site, known as a monitored retrievable storage site, or a permanent storage site.

Since he was confirmed by the Senate last summer, Leroy has talked informally with about three dozen landowners, nuclear consultants and scientists. He won't get in touch with governors and tribal leaders until at least June, when he sends out formal invitations to negotiate.

The invitations will probably be modeled after the federal government's solicitations for bids for the Superconducting Super Collider. There is no small irony here.

The super collider, a benign, multi-billion-dollar physics research project now slated for construction in Texas, drew bids from most of the states, including almost every state west of the Rockies. Leroy knows that nuclear waste is a tougher sell: As one state official has already told him, his proposal will hit a governor's desk with every conceivable political strike against it.

Leroy, a Republican, was nearly

elected Idaho's governor in 1986. He doesn't say how he would have reacted as governor to an invitation to build a federal nuclear waste dump. But in his current position, he just wants to find a governor who will listen. Then the issue can be discussed at public hearings, debated by state legislators, or decided in a referendum.

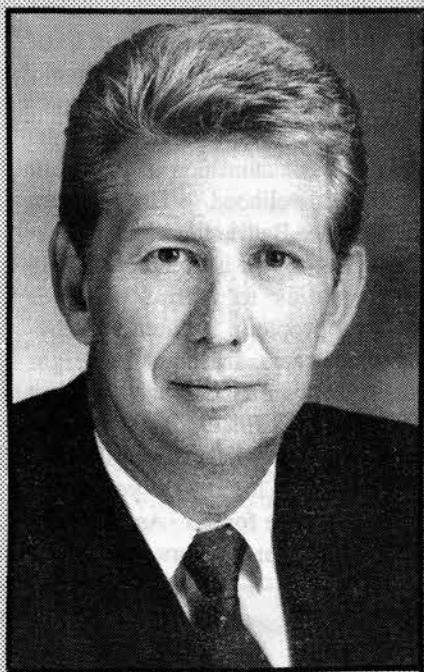
"We don't want a governor to say yes. We want a governor to say maybe," he said.

Leroy's proposal will go to all 50 states. Ever the optimist, Leroy says he isn't ruling any place out. That includes Idaho, where Gov. Cecil Andrus has adamantly opposed more nuclear waste shipments. It also includes Nevada, where state politicians have battled the Department of Energy's plans to build a repository for high-level nuclear waste at Yucca Mountain, northwest of Las Vegas.

In his selling job, Leroy faces a touchy situation. He says he is offering a chance for states to improve their quality of life — a project with ties to government, business and education. But he's been warned not to "overpromise" about the economic benefits of a waste dump, and he's quick to say there is more at stake than economic development.

"We'll talk about safety first, and dollars last," he said.

The nuclear waste negotiator's position was created by Congress in 1987, but Leroy's office is just starting up. For this budget year, he has a staff of about 10 people, working out of Boise and Washington, D.C., and a budget of about \$2.3 million. Leroy is



David H. Leroy

getting paid \$80,000 a year for what he describes as a "full-time part-time" job.

But while the search is just beginning, the process could be over in less than two years. As created by Congress, the office is supposed to be closed down by Jan. 21, 1993.

Where would that leave Leroy, who has been called a rising star in the Idaho Republican Party? Leroy says he isn't sure. He doesn't rule out another run for office, but says he may just return full-time to his Boise law practice.

"People need to realize that all political jobs are temporary," he said. "This perhaps more than most."

—K.R.

lion appropriated to start the on-site work at INEL in the 1991 budget. But Energy Secretary James Watkins froze the appropriation and sought no money for the project in DOE's proposed 1992 budget announced last month.

Watkins may be looking to use the boron project money elsewhere in his agency. A National Academy of Sciences study submitted to DOE last December backed up an earlier department report that recommended against restarting the Power Burst Facility.

Meanwhile, the lab continues to promote its Integral Fast Reactor as an inherently safe, "second-generation" nuclear reactor. Scientists say the reactor is designed both to shut itself down before an accident could occur, and also to destroy its deadly nuclear waste.

Energy Department funding for the fast reactor has been tight, however, and Idaho congressmen have waged a perennial battle to beef up the project budget and allow research to continue. Rep. Richard Stallings, D-Idaho, a member of the House's Science, Space and Technology Committee, maintains that Congress — not the DOE — has kept the reactor project in business.

More defense nuclear production would stir up the biggest battle between INEL's supporters and its critics.

For more than three years, debate over the Special Isotope Separator pro-

ject has divided Idahoans. Supporters point to the project's state-of-the-art laser technology, and its promise of 750 jobs. Critics like the Snake River Alliance, an Idaho disarmament group claiming over 1,000 members, decried it as a pork-barrel relic of the Cold War era.

The New Production Reactor — an on-again, off-again defense project that's been on the Energy Department's drawing board since 1983 — elicits similar emotions. The \$3.6 billion project would be a lucrative, long-term project for INEL. But the project's mission is to produce tritium, a radioactive hydrogen isotope that is necessary for nuclear warheads. Like the Special Isotope Separator, this directly involves Idaho in the production of nuclear weapons materials — a prospect that outrages and frightens Idaho anti-nuclear groups.

INEL's chances to build the New Production Reactor are still uncertain. DOE's 1992 budget calls for \$500 million for the project. That's \$125 million more than in fiscal year 1991, but it's not enough for the department to continue its plan of building dual reactors — one in Idaho, and one at the Savannah River site in South Carolina.



This appears to set up a political duel between South Carolina and Idaho. But Idaho's delegation doesn't seem to relish a political struggle for the New Production Reactor. "I don't think we should couch it in terms of a political turf war," said Sen. Steve Symms, R-Idaho. "It would be a poor way of making a decision this complex, this important."

Also last month, DOE started a three-year, multi-million-dollar process to modernize its aging weapons complex. The agency wants to shut down its Rocky Flats Plant northwest of Denver, and perhaps one or two other weapons sites, to consolidate a production site. INEL is one of five sites under consideration for this work.

This figures to be another hot political topic in Idaho. On the one hand, the Rocky Flats transfer could create an economic boon. Sen. Phil Gramm, R-Texas, has already said that the project could mean 2,000 to 4,000 new jobs for the state that gets it. But Rocky Flats — perhaps the most troubled of DOE's aging defense sites — carries a lot of political baggage.

Critics — who have lambasted modernization as a ploy to create nuclear-weapons "theme parks" — are already skeptical about the new DOE modernization strategy. "We expected to see INEL as a favored site that the DOE wants in the future, and I think that's there," said Snake River Alliance executive director

Kerry Cooke of Boise.

Modernization could dramatically change the site. It could also dramatically change the debate over INEL's future, dividing not only Idahoans, but Idaho politicians.

Idaho's top elected officials have given Special Isotope Separator and New Production Reactor projects their unanimous support. But Stallings, whose congressional district includes INEL, already has said he would have problems with Rocky Flats relocation. He said the idea would create a bitter, divisive controversy in Idaho.

Gov. Cecil Andrus, a Democrat, outlawed shipping Rocky Flats nuclear waste to INEL in 1988, and that ban is still in place. So far, Andrus has made no public remarks about DOE modernization. But Republican Larry Craig, who was elected to the U.S. Senate last fall, may already be in the Energy Department's corner.

Last summer, while a member of Congress, Craig was briefed on "Complex 21," a vague framework of DOE's modernization game plan, and immediately put out a news release saying the plan would ensure INEL's future "well into the 21st century."



Kevin Richert covers energy and the environment for the *Idaho Falls Post Register*.

DOE flounders ...

Continued from page 1

and the Waste Isolation Pilot Project (WIPP) near Carlsbad, N.M.

During his first two years on the job, Watkins has been unsuccessful in most of his pleas to Congress, and he recently annoyed lawmakers by deciding to open the WIPP site to radioactive waste shipments by obtaining an Interior Department administrative order rather than enabling legislation (*HCN*, 2/1/91). Rep. Bill Richardson, D-N.M., has appealed to congressional colleagues to "take swift action" on his bill to preserve the site for research and development only. On March 6 the House Interior Committee passed a resolution that would prohibit DOE from storing nuclear waste at WIPP.

The fates of several DOE sites in the West are interconnected, making the state and federal politics especially complex. Idaho's Gov. Cecil Andrus, for example, has closed his state's borders to waste shipments from Rocky Flats until the WIPP site begins receiving radioactive waste from INEL. In all, 10 states are scheduled to ship their waste to WIPP, so the effect of keeping it closed extends far beyond the Southwest.

How well the Western states can protect themselves in the political and policy battles now shaping up depends on their ability to find allies in Congress, and in the various state legislatures, in order to give local issues a regional and national twist. Recognizing what's at stake, DOE has recently sent lobbyists to Western state capitals to monitor events there, and grass-roots groups are also gearing up for a busy year. But liaison between state and federal legislatures is spotty at best. "The members with national labs or weapons facilities in their districts are fairly provincial, and look after that interest," said Cary Jones, an aide to Rep. Richard Stallings, D-Idaho, whose district includes INEL.

Stallings and other congressmen with DOE facilities have joined the Sub-

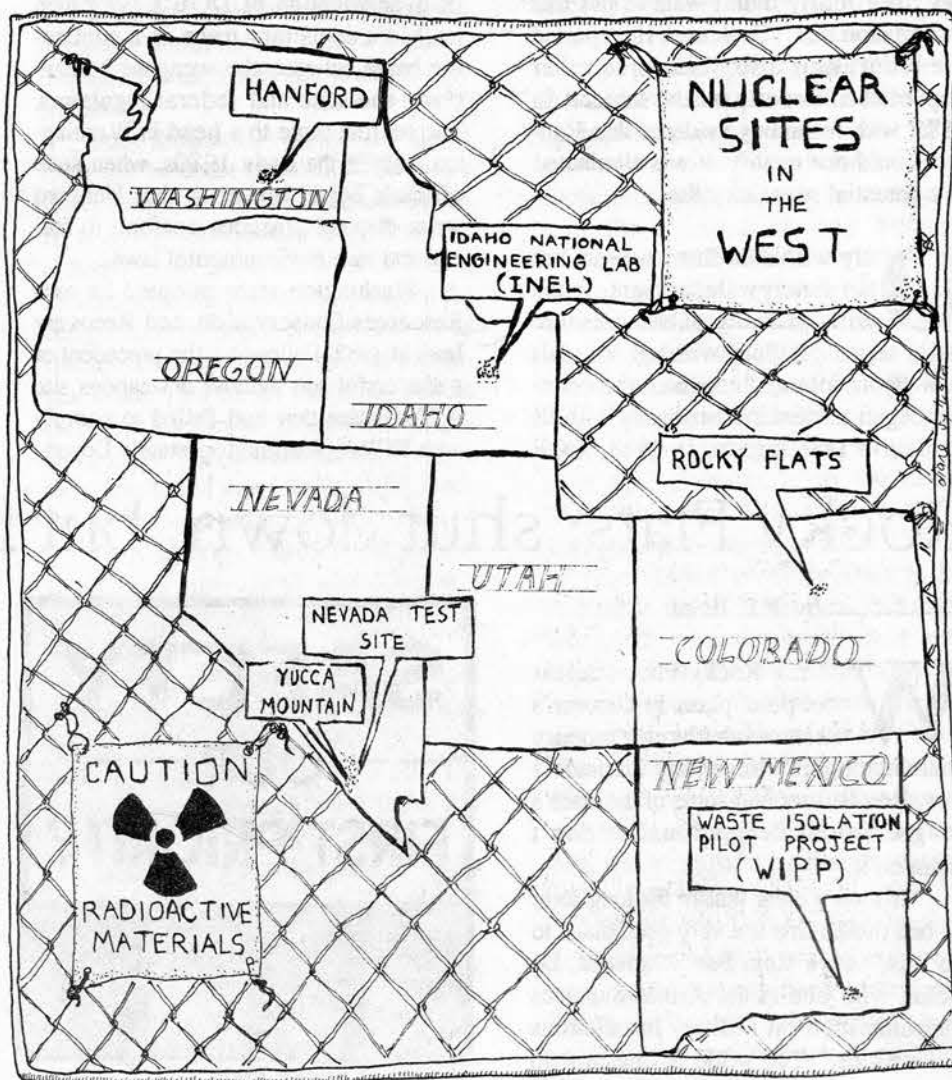
committee on Energy Research and Development in the House Committee on Science, Space and Technology, and have used the panel to pressure the department for funds and favors. Chaired by Rep. Marilyn Lloyd, D-Tenn., whose district includes the Oak Ridge National Laboratory, the subcommittee also includes Rep. Sid Morrison, R-Wash., with Hanford.

Morrison formed his own congressional task force when the weapons-production system became a national scandal two years ago. His group has not been active lately, in part because, like Lloyd's subcommittee, it has no direct control over DOE's funds. That power remains in the four subcommittees that actually authorize and appropriate DOE's budget, and it is there that the battles over Watkins's five-year budget and Complex 21 study will be fiercest.

The weapons-production budget must be authorized by the House Armed Services Committee's Department of Energy Defense Nuclear Facilities Panel, chaired by Rep. John M. Spratt, D-S.C., and by the Senate Armed Services Subcommittee on Strategic Forces and Nuclear Deterrence, chaired by Sen. J. James Exon, D-Neb. Once authorized, money for the DOE facilities must be appropriated by the House Appropriations Subcommittee on Energy and Water Development, chaired by Rep. Tom Bevill, D-Ala., and by the Senate Appropriations Subcommittee on Energy and Water Development, chaired by Sen. J. Bennett Johnston, D-La.

One question that Watkins and Congress must agree on is whether to make more tritium, the gaseous hydrogen isotope used in nuclear warheads. If new tritium-producing reactors are needed, an innovative gas-cooled design might be built at INEL. INEL's supporters are seeking this project, as well as federal medical and energy contracts, but they shun other defense work.

"You may see new states bidding for new weapons-complex facilities," said Fred Lash, an Energy Department spokesman. "Utah, maybe. Or Missouri."



Diane Sylvain

David Culp, legislative director of Plutonium Challenge, a grass-roots group opposing further plutonium and tritium production, sees DOE's Complex 21 study as an "official trial balloon" that Congress, state officials and citizens' groups can expect to influence.

Watkins told President Bush that with little justification for continuing the nuclear arms race on the grand scale pursued during the Cold War, "it is very possible that many more nuclear operations within DOE will be curtailed temporarily or permanently." Only a few years ago, Western communities and politicians would have scrambled to save the jobs their local weapons plants pro-

vided. But today they are just as likely to pressure DOE to close and clean up their local plants as they are to keep them open. Which sites will remain open, which will close, and which will benefit from DOE's proposed multi-billion-dollar cleanup may all depend on decisions made not only at DOE headquarters in Washington, D.C., but also on the pressure the Western states can exert in Congress.



William Lanouette covers Washington, D.C., for the *Bulletin of the Atomic Scientists*.

Hanford ...

Continued from page 9

water standards of 20,000 picocuries per liter.

Tritium and nitrate contamination in Hanford's groundwater have now spread to 122 square miles of the 560-square-mile site.

Additional clues to the movement of radiation beneath the reservation were unearthed by Bob Cook, the former on-site inspector for the Nuclear Regulatory Commission at Hanford when the reservation was a semifinalist for the nation's first commercial nuclear waste repository. Beginning in 1983, Cook began to study whether Hanford could meet a qualifying condition for a repository — that radioactive water would stay within the site boundaries for at least 1,000 years. He began to look at Iodine-129, a byproduct of reprocessing that could be traced.

In 1985, Cook came across a letter to the Atomic Energy Commission's waste management director, written in June 1973 by L.M. Richards, president of Atlantic Richfield Hanford, site contractor from 1967 to 1976. The letter noted that well tests showed a "strong possibility" that well water contaminated with Iodine-129 from Hanford was moving through aquifers across the Columbia to farm wells on the east side of the river. Richards suggested that the discovery be disclosed only to those who had a "need to know."

"This really gave me the clue that, hey, they really didn't want to put this information out," Cook said. He reported the letter, and also discovered other unpublished reports on the subject. In 1986, with mounting evidence that Hanford could not qualify, it was eliminated as a potential repository site.

Only within the last few years has the Energy Department, faced with growing public pressure and a series of shutdowns and scandals at weapons plants throughout the country, begun to deal systematically with its nuclear-waste legacy. In 1983, DOE

submitted a plan to Congress for long-term waste management and cleanup at its major sites. The plan called for:

- Burial of transuranic waste contaminated with plutonium and other heavy elements in the Waste Isolation Pilot Project (WIPP), a repository in Carlsbad, N.M.

- Solidifying high-level tank sludge into glass (vitrification) and burying it with wastes from commercial nuclear plants in a deep repository. Congress later chose Yucca Mountain, Nev., to examine for this repository.

- Mixing cement with low-level radioactive and hazardous liquids that remain in the tanks in a process called "grouting" and pouring it into concrete-lined pits at Hanford and other sites.

These plans, essential for a thorough Hanford cleanup, are already far off schedule and in trouble. WIPP was supposed to open in late 1988, but unexpected groundwater seepage and other problems have caused repeated delays. The delays have led several Western governors to object to continued temporary storage of wastes in their states if there is no permanent disposal solution.

The huge amounts of plutonium-contaminated soil at Hanford — which exceeded the storage capacity of WIPP — also led DOE to loosen its standards for dumping plutonium into the ground through the grouting process. The new standard permits 10 times more plutonium to be discarded in the grout. This means that only 30,000 cubic meters of soil will have to be moved from Hanford to WIPP, instead of some 12 million cubic meters.

The adoption of DOE's 1983 plan marked a temporary truce in a continuing battle between the weapons bureaucracy and state and federal regulators. The conflict came to a head in Washington state in the early 1980s, when state officials began insisting that Hanford waste-disposal practices conform to federal and state environmental laws.

Washington state adopted its own Resources Conservation and Recovery laws in 1982. Following the precedent of a successful suit against a weapons site in Tennessee that had failed to comply with RCRA, Washington state's Depart-

ment of Ecology proceeded to push Hanford for compliance.

In 1984, the ecology department identified 20 violations of state law at Hanford, including use of unpermitted facilities and failure to install groundwater monitoring systems. DOE responded by declaring itself exempt from RCRA for all "mixed" waste sites containing radioactive as well as hazardous chemical wastes. The agency cited the Atomic Energy Act, which gives the Energy Department jurisdiction over its radioactive wastes. After two years of battles in Congress and the courts, DOE agreed with the state's interpretation of RCRA in October 1986.

Negotiations between Washington state and the federal government culminated in a landmark accord called the Tri-Party Agreement. Signed by the state, DOE and EPA in May 1989, the agreement calls for spending \$50 billion over the next 30 years to fix Hanford's worst problems.

The plan asks Congress for about \$3 billion during the first five years to hasten removal of liquids from the single-shell tanks; to study how to remove solid wastes from the bottoms of the tanks; to install new groundwater monitoring wells; to investigate old waste sites; and to begin to treat wastes from the double-shell tanks, mixing low-level wastes with grout and turning high-level wastes to glass. Design work was outlined as well for a high-level waste vitrification plant.

"The agreement means that, at long last, we can begin a massive effort to clean up the 45 years of accumulated chemical and nuclear wastes at Hanford," Washington Gov. Booth Gardner said at a press conference the day the agreement was signed.

Energy Secretary James Watkins, under pressure from Congress for reforms, agreed: "It is of utmost importance that all of the department's facilities be operated in complete compliance with environmental laws and that needed cleanup activities be carried out both promptly and prudently," he said.

But last month the White House proposed budgetary and programmatic delays to the agreement, infuriating Gardner. He charged that the Energy Department was dealing in bad faith. Watkins denied it, saying that technical

factors were behind the delays. Among the most important:

- An old Hanford plant known as B Plant, which is needed to pre-treat liquid wastes, won't meet RCRA standards.

- Construction of the vitrification plant to glassify liquid wastes after they have been pre-treated must be delayed because a prototype at the Savannah River Plant is behind schedule.

- Explosion hazards in Hanford's liquid waste tanks aren't well enough understood to justify trying to empty the tanks.

Although they acknowledged that some delays may be justified, Northwest citizen activists monitoring the Hanford cleanup are skeptical of the DOE's eleventh-hour delays.

"DOE knew about these problems when they negotiated and signed the Hanford cleanup agreement. The tank explosion hazard was known for a dozen years or so," said Jim Thomas, research director of the Hanford Education Action League of Spokane.

"Anybody in the mid-1980s could have figured out that B Plant was not going to meet RCRA rules. It's another classic example of DOE's irresponsibility."

The proposed delays will be discussed in public workshops this month in the Northwest. Thomas said the Hanford league and other groups are likely to urge DOE to go ahead with the vitrification plant construction while it decides on an alternative for B plant.

Some critics of the ambitious Hanford cleanup plan say the word "cleanup" may turn out to be misleading. They contend that it may only be feasible to protect groundwater and the Columbia River from the most dangerous contamination, and then write off Hanford in perpetuity as a "national sacrifice zone." Bob Alvarez, an aide to Sen. Glenn, put it this way:

"It's not enough to say let's clean up the mess we created. We simply don't know how to go about it. It's possible that the cleanup process may be as dangerous as the production of the weapons themselves."



Karen Dorn Steele is a reporter for the *Spokesman-Review* in Spokane, Washington.

Rocky Flats: shut down, but for how long?

by R.E. Baird

Will the Rocky Flats nuclear weapons plant in Denver's western suburbs ever produce plutonium again? Never, say Colorado's Gov. Roy Romer and some of the state's congressional delegation. But don't count on it.

"It's very clear that in the long term no one thinks this is a very good place to do this," says Rep. Pat Schroeder, D-Colo., who chairs the Armed Services Subcommittee on Military Installations & Facilities. "The world is changing so fast that we may not need to do it at all."

For the short term, however, the major reason for keeping the plant closed is its continuing threat to human health. The plant still contains radiation-contaminated waste, although plutonium production was suspended in November 1989. Last spring about 60 pounds of plutonium was discovered in several of the plant's air ducts. Plutonium also has migrated off the site to contaminate two reservoirs that supply drinking water to nearby communities.

Rocky Flats was built to fabricate plutonium triggers for nuclear warheads. It is the only plant in the country capable of producing the amount of plutonium necessary to maintain the government's Cold War requirements for a nuclear deterrent.



A sign at Rocky Flats

Anti-war activists want to close the plant permanently to end the nuclear weapons industry. Environmentalists and some politicians want the functions of the plant moved away from the Denver metropolitan area to reduce its safety and environmental hazards.

Last month the Department of Energy announced that the Rocky Flats weapons-producing capability would be moved to a new location, but not until at least 2004. Energy Secretary James Watkins said the relocation is part of DOE's new policy to streamline its nuclear weapons complex.

Plutonium processing, however, would resume at Rocky Flats later this year and continue through the relocation. This plan also includes almost two

decades of cleanup to remove radioactive and toxic wastes from the site.

The functions of Rocky Flats could be duplicated at other DOE facilities. The Aherne Commission, an independent watchdog group appointed by Watkins to oversee nuclear plant cleanups, said last November that Los Alamos National Laboratory near Santa Fe could be used to fabricate plutonium for nuclear weapons.

DOE had rejected design money for a Los Alamos plutonium facility. But it is ready to test a facility at the Savannah River weapons complex in South Carolina that could handle the same work done at Rocky Flats.

Greenpeace and other environmental groups have challenged the Savannah River plan because an Environmental Impact Statement was not done before construction started in 1983. But even if it is allowed to proceed, the final facility would be smaller than Rocky Flats.

While environmentalists, anti-nuclear activists and government officials debate the advisability of restarting Rocky Flats, its labor force of about 8,000 faces a lay-off of 2,000 jobs if DOE's 1992 budget is cut as proposed. The House restored the cut, but the Senate may not. Watkins wants to maintain the current work force at Rocky Flats in order to clean it up as well as resume warhead production for Trident submarines.

Environmentalists note, however, that only 400 workers at Rocky Flats are involved in its cleanup, which indicates where DOE's priorities lie. But the plant's advocates say it needs to be operational even to decommission the U.S.'s nuclear stockpile if and when there is a nuclear weapons reduction treaty.

In the meantime, Congress's analytical arm, the Office of Technology Assessment, has called DOE "unfit" to clean up its nuclear weapons facilities at Rocky Flats and its other sites. The OTA report said there are not sufficient storage facilities to hold the hazardous and radioactive wastes under the timetable outlined by DOE.

"The OTA report adds independent confirmation that this is a problem of enormous proportions and will require yet-unavailable technology and trained personnel to resolve it," Watkins admitted.

And at Rocky Flats, the uncertainty over how bad the radioactive pollution is still continues. Following the raid by the Environmental Protection Agency and the Federal Bureau of Investigation on June 5, 1989, the federal grand jury considering the evidence against Rocky Flats' management has yet to issue any reports or indictments.



R.E. Baird is a reporter for the *Colorado Daily* in Boulder.

Geological controversy haunts Nevada waste site

—by N.S. Nokkentved

Broken only by an occasional Joshua tree and yucca plant, Yucca Mountain rises 1,500 feet above a barren expanse of Nevada desert known as Jackass Flats, where the Department of Energy once test-fired nuclear-powered rocket engines. This six-mile-long ridge, about 100 miles northwest of Las Vegas, may one day be home to the nation's most deadly garbage — highly radioactive spent reactor fuel rods and other detritus of the nation's 40-year experiment with nuclear power.

Earthquake faults crisscross the sun-scorched earth. Cinder cones stand as testimony to past volcanic activity. Just west of the proposed waste site, American and British nuclear weapons tests have been blowing radioactive holes in the ground of the Nevada Test Site for the past 40 years.

The mountain is the latest stop on the federal government's two-decade-long search for a place to dispose of the deadly waste. But it is by no means certain Yucca Mountain will be the last stop. Like the mules that once accompanied prospectors through this desert, Nevadans have dug in their heels. Most of the state's 1.1 million citizens and all of its elected officials oppose the repository. State officials have refused to grant the necessary state permits that federal scientists need to continue poking in the ground.

"Without permits we can't dig a trench, drill a hole or build a road," DOE's project manager, Carl Gertz, said. "But we intend to comply with all environmental regulations."

The issue is of more than passing interest to states that store varying amounts of high-level waste. Until a permanent waste disposal facility opens, that waste will stay where it is.

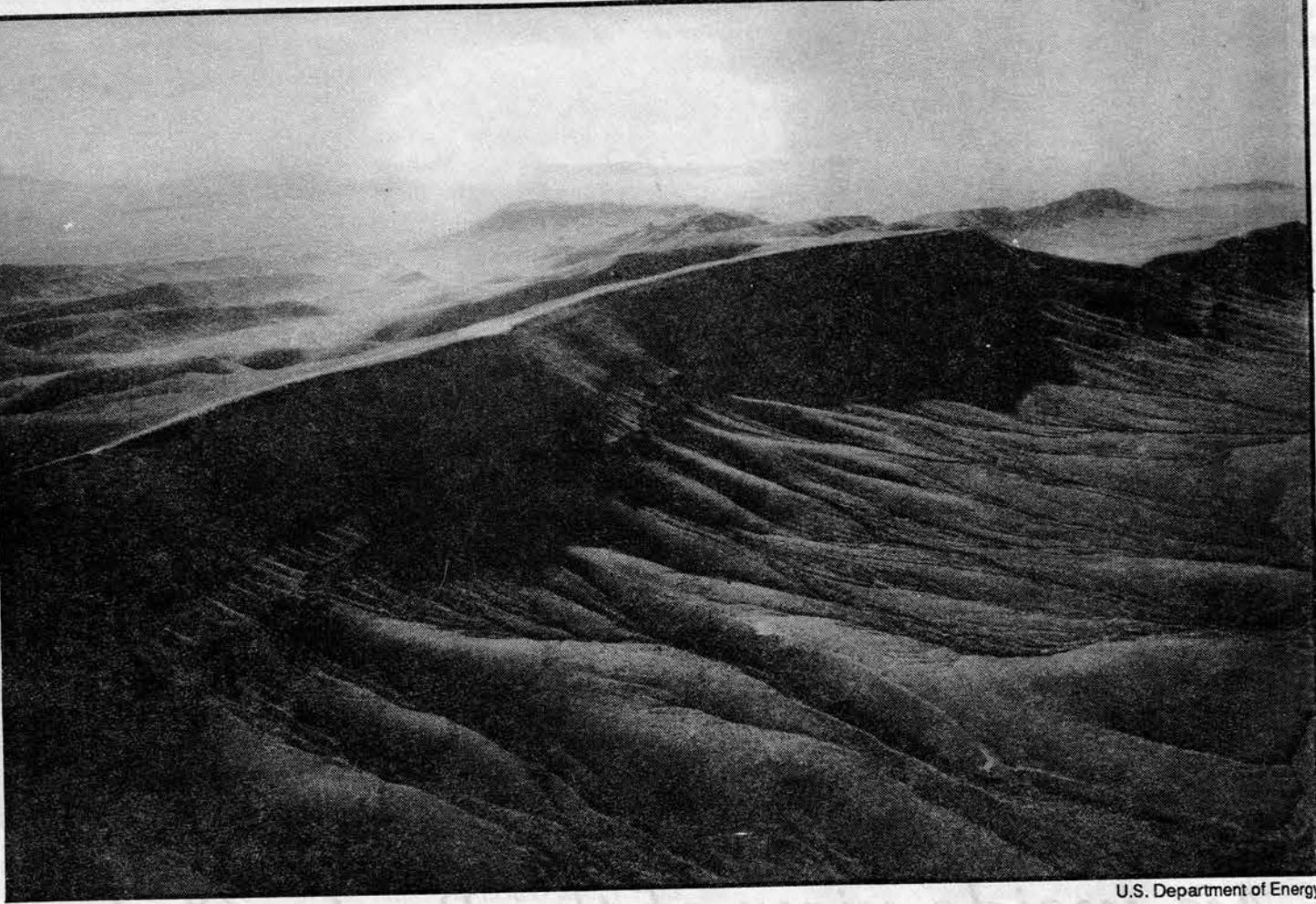
In 1982, the federal Nuclear Waste Policy Act directed DOE to locate and study a number of potential repository sites. Opposition to sites in eastern states was vitriolic — and effective. The list quickly was narrowed to three in the West — the Hanford Nuclear Reservation in Washington, a site in Deaf Smith County, Texas — and Yucca Mountain.

The Nuclear Waste Policy Act Amendments of 1987, dubbed the "screw-Nevada bill," shortened the list to one — Yucca Mountain. The act requires DOE to build a repository for the nation's nearly 77,000 tons of radioactive and thermally hot nuclear waste at a place where the deadly waste can remain isolated for the next 10,000 years. DOE thinks it may have found a likely spot below the surface of Yucca Mountain. The department proposes to dig a maze of underground tunnels where waste sealed in metal canisters would be placed — essentially forever.

Darwin J. Morgan, public affairs officer of the department's Yucca Mountain Project Office, insists that the Hanford and Texas sites were dropped because Congress felt it was too expensive to study all three. Without any scientific testimony, Congress decided to study Yucca first because it was the most promising.

"There was never any data that supports the contention that Yucca Mountain was the most promising site," said Joe Strolin, planning administrator for the state's nuclear projects agency. In fact, borehole data from earlier investigations were unusable, Strolin said; the records were so poor that the data couldn't be matched with the holes they came from.

"They picked [Yucca Mountain]



U.S. Department of Energy

Yucca Mountain, proposed site of the U.S. high-level nuclear waste repository

because Nevada doesn't have any political clout," says Larry Henry, former press secretary to Nevada Gov. Bob Miller. DOE, however, says it picked Yucca Mountain in part because of its lack of substantial rainfall. Another reason is the depth of the water table, which is some 800 feet below the proposed nuclear graveyard.

One of DOE's own top geologists says building the repository in Yucca Mountain would be inviting disaster.

"If you want to kill everything on the planet, go ahead," said Jerry S. Szymanski, a physical scientist with the department. Szymanski theorizes that seismic activity around Yucca Mountain could cause water to rise within the mountain and flood the repository.

Szymanski says whitish deposits on the dark gray rock, exposed by exploration at the site, were left there by water moving up from deep underground. "I'm 100 percent certain where those deposits came from," he said. "I'm 100 percent certain it will happen again."

The department already has spent \$3 to \$4 billion on studies at Yucca Mountain, according to Henry, and "they haven't even turned a shovelful of dirt yet." But the department's plans for an additional \$4 to \$6 billion worth of research may be misdirected.

"It doesn't address the real question," says Szymanski, whose expertise is in geodynamics. He thinks it would make more sense to measure stress in the mountain.

Nevada is located in one of the most seismically active regions in the United States. Along with California and Alaska, it ranks in the top three states subject to the most large earthquakes over the past 150 years.

"That mountain is strained to a very aggravated state," the Polish-born scientist said. "That thing must collapse in the not too distant future, and when that happens, the pressure change could force highly mineralized groundwater in the fractures between rocks to the surface, flooding the repository, corroding waste containers and releasing radioactivity to the surrounding ground and air."

Not everyone agrees with Szymanski.

Two University of Utah scientists, Jay Quade and Thure E. Cerling, theorize that the deposits were formed by rainwater carrying soil minerals into cracks in the rocks. Szymanski's theory, they argue, involves a rise in the regional water table, such as during an ice age. Any future flooding of the repository would require a return to glacial conditions, which they say is an unlikely scenario.

Doug Rumble, a geochemist with the Carnegie Institute of Washington, has a theory similar to that of Cerling and Quade. By analyzing groundwater at Devil's Hole, a desert oasis 30 miles west of Yucca Mountain, Rumble accurately predicted the composition of deposits there, known as calcites. The deposits are calcium carbonate, which also forms limestone, marble and oyster shells. But groundwater composition under Yucca Mountain didn't match the calcite found there. Neither did it match the calcite found in Devil's Hole, he said.

"It is unlikely those calcites precipitated from upwelling groundwater," Rumble explained. "Geochemically, there's no match."

Rumble thinks the Yucca Mountain deposits may have been formed instead by wind-blown limestone dust, dissolved and carried into cracks by rainwater. The calcite was deposited when the water evaporated, "just like boiler scale."

But many questions remain unanswered about the mountain. Nobody has analyzed the limestone dust, or the local rainwater. "You've got to be standing out there with a cup, waiting for it to rain," Rumble said.

Rumble and Szymanski, like many other scientists, aren't opposed to nuclear energy or a deep geological repository to house the waste it generates. But such a site, Szymanski insists, ought to be evaluated using reality as a yardstick, not by trying to explain away evidence that questions the feasibility of the site. And from Rumble: "The only thing that bothers me is bad science."

In spite of Szymanski's report, which DOE has not released, and the doubts of other scientists, the department has told Congress there is no reason to disqualify Yucca Mountain. Yet it is not endorsing the site either. DOE spokesman Morgan said the department

wants to continue its scientific studies.

After defeating a lawsuit by Nevada to block further consideration of Yucca Mountain, DOE resubmitted its permit applications last October, and asked the Federal District Court in Las Vegas to force the state to issue the permits. And in another maneuver, DOE Secretary Watkins is seeking changes in the Nuclear Waste Policy Act to usurp state environmental enforcement authority that is delegated under several federal laws. Watkins's proposal was incorporated into the national Energy Strategy announced last month. Its nuclear power section asks Congress to enact legislation that will ensure "the timely determination of the suitability of the Yucca Mountain candidate repository site."

"They don't like playing by the rules, so they change the rules to deprive us of our legal rights," Gov. Miller said. "And that's one of the reasons why we won't accept the repository."

Jim Mulhall, press secretary to Sen. Richard M. Bryan, D-Nev., said the senator was appalled that an agency whose operations have resulted in a string of environmental disasters would propose to assume enforcement of environmental laws dealing with its own operations. These include the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act, which regulates hazardous wastes as well as solid wastes.

Watkins's proposed changes, according to Mulhall, would remove any meaningful independent oversight of DOE, and would prevent any court injunctions against work at Yucca Mountain.

"They've been given a mission and they're going to find the site safe no matter what the geotechnical data is," said Bob Loux, director of the state's Nuclear Projects Office.

DOE spokeswoman Stephanie Hanna said her agency was not seeking self-compliance, but rather was looking for an alternative agency to process permits if Nevada continues to refuse.



N.S. Nokkentved is an environmental reporter for *The Times-News* in Twin Falls, Idaho.

ESSAY



Steve Hinchman

The attempted encirclement of Rocky Flats, Hiroshima Day, August 6, 1989

An inside view of the Rocky Flats plant

by Carol Jakubauskas

"Rocky Flats," my friend from Tucson said. "What a pretty name. What do they do there?"

An acquaintance: "You work at Rocky Flats? I protest there."

When I went for the interview at Rocky Flats, after the first screening by the temporary agency, it was a bleak, gray, snowy day. The woman at the temporary agency had told me to allow at least 30 minutes to get through the guards at the west gate, "and don't expect them to smile or act human," she added. They didn't. But they were efficient. Six of them in camouflage, packing revolvers, inspected my truck in less than 60 seconds, then waved me through the gate.

Though Rocky Flats is pushed up nearly against the foothills of the Rocky Mountains west of Denver, it is bleak terrain. Buildings are concrete or pre-fab portables, industrial, revealing nothing of what goes on inside of them. Little vegetation relieves the bareness of the zone through which I traveled to my job interview, the outer zone of Rocky Flats where employees with minimum security clearance work. Beyond two more guardhouses and acres of fencing is the heart of Rocky Flats, the zone you can enter only if you have a higher security clearance. Even then you must pass through metal detectors so sensitive a wedding ring can set them off.

The bleakness is oddly comforting. It is what one would expect of a nuclear weapons plant. It says: Here the tools of death are manufactured. Given the innuendoes, the distortions and actual lies that have leaked out of Rocky Flats over the years, along with radiation and hazardous waste, its appearance, at least, doesn't deceive. That's something.

To work at Rocky Flats, to work for EG&G [Edgerton, Germestausen & Grier] in Colorado — whether one actually works on plant site or in office parks in Denver, in plutonium production, in the labs, or in accounting or even the mailroom — involves some degree of rationalization on an individual's part. The high wages may attract workers, but to stay requires some adjustment in thinking. Many people believe that to keep America strong in world politics, Rocky Flats needs to stay open to continue producing nuclear triggers for bombs. Others content themselves by noting that they are not directly involved in production. Some, in fact, are involved in cleaning up Rocky Flats and have nothing to do with resumption of production. I know one person who donates a portion of each paycheck to an environmental group, a sort of guilt payment. Still others feel that if someone must work at Rocky Flats, it might as well be them. And some, it is true, just don't care one way or the other, as long as they can keep food on the table and make their mortgage payments.

My rationalizations followed the "I'm not involved in production so it's okay" line of reasoning; it helped that I had children to support and debts to climb out from under, and that I simply couldn't find a job somewhere else. But there's always a reason — if not those, some other ones.

I was hired to work in the library, under contract to EG&G through a temporary agency. I worked in a suburb of Denver, in an office park behind a shopping mall. It looked like any other office building, except for the sign on the door at the reception area: "Secured area. Badges required." There are offices all around Denver and Boulder where EG&G Rocky Flats employees work.

"No one had gone into the classified document vault that day, but my assistant didn't know it, so when she went to recode the alarm she instead set it off. Next thing I know, eight army guys with machine guns run into the library, grab her badge from around her neck and take mine too. They kept their guns trained on us while they examined our badges."

— Classified documents manager

...security officers are responding to alarms in the low-ready position; that is, with firearms drawn but not pointed at employees. This position is an approved DOE procedure...

— U-p - F-r-o-n-t newsletter, Rocky Flats

Everyone who works at Rocky Flats, on-site or off, wears a thin rectangular badge on a cord around the neck. It's almost the size of a cassette tape. On the front is your picture I.D., on a blue or red background, depending on your level of security clearance, along with other symbols that tell a guard, or anyone who needs to know, where you belong and where you can go unescorted and escorted.

Workers on plant site, or those in the office parks who often visit plant site, wear a dosimeter attached to their badges. This is a clear plastic box containing substances that will indicate the levels of radiation you've been exposed to. For off-site employees like myself, the indicators are unnecessary, but on-site the levels are checked regularly. One woman in the Perimeter Security Zone (near where, until recently, plutonium was reclaimed and triggers were produced) has one of the highest levels of the people in her building, even though she has nothing to do with plutonium, production or cleanup, just because she is often out running errands around plant site.

It took my co-workers and me five weeks to get our red "visitor — escort required" badges; it's supposed to take three to five days. The paperwork was

lost twice along the way as it passed from one supervisor to another to another, to procurement to accounting to access control. Without our badges, we were told, we had no "man number" and hence no way of getting passwords for the unclassified VAX computer system to use the databases, part of our job. Finally, access control called and scheduled us for photographs one morning, at plant site.

While we were waiting for our mug shots, a guard in camouflage walked into the building with a huge German shepherd on heel, no leash. It was one of the "scratch and sniff" dogs used at Rocky Flats to hunt out explosives and drugs. The dog wore a thick gold chain around its neck. Dangling from the chain was a rectangular badge just like the ones the other employees wore, with the dog's photograph on it. The dog had a higher security clearance than any of us did.

It turned out the dog had come in for a new photograph. The previously unsmiling clerk now grinned and crouched on the floor as other office workers gathered to watch and laugh and offer advice. The dog sat on command and stared at the camera. Click. Then he lay down. Click. The clerk handed the guard the instant pictures. "That's his best side," he said, pointing to one.

Soon we received our badges. Now coming on plant site was less of a hassle; we just flashed the badges and were waved on through. We called computer security to get our passwords for the VAX. Transferred several times, we finally got a voice on the other end of the line that told us we didn't need "man numbers" to get passwords for the VAX. Our Social Security numbers would have done as well. We had waited five weeks for nothing, but that is the essence of working at Rocky Flats.

If it's not the incredibly thick layer of bureaucracy that often frustrates, it's the territoriality of the unions. In some cases, union rules are applied to a ridiculous degree.

In one case, plutonium production workers were idled because production was shut down. They still showed up for work, spending their days in the library on plant site, reading and talking. The librarian, who had no janitorial help because of the security clearance required just to be in that building, had had to add vacuuming the library to her list of duties, which already had her coming in early and working late. But the idled production workers couldn't give her a hand even if they wanted to — union regulations prohibited it. When one worker did vacuum the library for her, he made sure no one else was around to report him.

Mission and Values for EG&G Rocky Flats: Mission: To produce nuclear weapons components for the Department of Energy consistent with our values and with the utmost regard for ensuring safety, quality and protection of the environment.

— memo to EG&G employees

On the front cover of the EG&G Rocky Flats job application, below the company logo and the seal of the Department of Energy, a statement reads: "Rocky Flats is primarily a metal production and chemical processing plant with heavy emphasis on production-related research. Production activities include foundries, fabrication shops, chemical recovery and purification processes and associated quality control functions."

Inside it gets meatier. On the "Employment Suitability and Security Questionnaire," it says straight out: "This plant is a major facility in the United States' national defense systems and plays a major role in the development and production of components for nuclear weapons."

Presumably if you have gone so far as to open the application and fill it out, by the time you reach this statement you are entitled to know to just what end this "metal production and chemical processing plant" is dedicated. Will it make a person stop for a moment and think about what they might be getting into? Over 6,000 people work for EG&G Rocky Flats, in one capacity or another. The reality is, most of them intend to keep working there as long as they can.

When Rocky Flats first opened, the Denver newspapers hailed the plant as a valued addition to the local economy and a vital force in preserving American strength overseas. It was the 1950s, and Rocky Flats could do no wrong. But after a fire in 1969 in which doses of radiation were released into the atmosphere, public opinion began to turn against the plant, and opposition to its existence began to be heard.

In 1989 the FBI raided Rocky Flats and found numerous violations of health and safety regulations. Rockwell International, the DOE contractor running the plant at the time, was fired and EG&G took over. Plutonium production shut down at the plant and cleanup operations began. Pounds of plutonium were discovered in the air ducts of several buildings. In another case improper mixing of hazardous waste with concrete had resulted in virtually unstorable radioactive sludge instead of the easy-to-store hardened blocks that should have resulted. Over 100 new workers were hired in occupational safety, pollution control, and hazardous waste control, to bring the plant up to government standards. Depending on who you talk to, resumption of plutonium production and weapons manufacturing could occur within the year, within the decade, or never.

When the managers at Rocky Flats told their departments that production might be transferred to

Savannah River, S.C., employees were stunned. Even someone seemingly far removed from production, a computer trainer at EG&G, expressed worry that his job would be affected.

...Value #2 — We are ethical and honest
and value integrity and open communications.
Be ethical and honest and tell it like it is.

— statement of mission and values
from employee memo

At any time, employees at plant site can be interrupted by a voice coming from loudspeakers posted in every building. One Friday, the voice, generic and male, addressed the issues Rocky Flats plant workers would see over the weekend in the press and on the news, issues having to do with Rocky Flats. In this case, several security guards at the Flats had been arrested for off-duty use of cocaine, and more arrests were expected. Sure enough, that night on the news and the next day, the arrests were prime copy in print and on television.

EG&G works from a public-relations perspective different from that of the sweep-it-under-the-carpet-and-hope-it-doesn't-smell school. The EG&G philosophy: Tell it now before someone else tells on you, but make it palatable, and emphasize your openness and sincerity in having disclosed it yourself.

A bi-monthly newsletter and a monthly slick newspaper keep workers "informed" of activities at Rocky Flats. Both publications are cheerleaders for the new management philosophies and slogans that arise daily from the general manager's office. These slogans, the "mission and values" of EG&G Rocky Flats, are simplistic and gung-ho. They make the task of readying the plant for resumption of plutonium operations sound like merely a case of applying enough elbow grease and willpower, and a dose of wishful thinking.

When we ordered publications for the various departments at Rocky Flats, we could generally tell which department was involved in resumption, however indirectly, and which was not. If the employee's manager had approved a requisition form despite the absence of a price, that department was probably involved in resumption; if they needed something, price was no object. On the other hand, if an employee submitted a requisition form but requested pricing information first, chances were that that department had to watch its budget and had little to do with

resumption activities. The hottest items we ordered were publications from a company called Lab Safety Supply, EPA reports on hazardous waste treatment, and copies of the *Code of Federal Regulations*. Now and then we did order books on nuclear weapons, the bible in the field being *The Nuclear Weapons Databook*, an "everything you always wanted to know about nuclear weapons" type of book.

The oddest things we handled were requests for subliminal tapes. Apparently EG&G had had everyone at the plant and off-site tested by some counseling firm to determine employees' psychological and emotional strengths and deficiencies. People were then given a list of subliminal tapes they should listen to to correct those "deficiencies." The tapes ran the gamut from "Becoming More Patient" to "How to Radiate Warmth and Charisma." Shyness, overeating, procrastination and lack of creativity were also tackled on subliminal tapes, the words masked by "easy listening" music. One man called me soon after he checked out a subliminal tape. "It's not working," he said. I quoted him the words printed on all the tapes — that they had to be used for at least a month for results to occur. "No, no," he insisted. "Something is wrong with the tape. All it plays is music."

Despite the intrusive security measures, it was often quite easy to forget that I was working for a nuclear weapons plant. In time I might have become quite comfortable and reconciled in my mind to working there. But my position was cut in the DOE's budget shuffle, and so the decision to work somewhere else was made for me — luckily, I think now.

Rocky Flats employees are told to keep a low profile in the communities where they live, but before I even heard this, I had already told my kids to say that I worked for "a library" or maybe "EG&G," but not "Rocky Flats." But when my kids asked what EG&G made, I couldn't sterilize the truth as the EG&G job application does and say it is a chemical and metal processing plant. I told them the truth: "EG&G makes parts for bombs."

"Do you make bombs?" they asked.

"No, no," I assured them. "I work in the library. I have nothing to do with that."

But I lied.



Carol Jakubauskas, a free-lance writer and teacher, lives in Boulder, Colorado.

LETTERS

CORRECTION

Dear HCN,

The High Country Citizens' Alliance is concerned that you gave us the credit for leading the grassroots movement to prevent transmountain diversion from the Gunnison River's upper basin (HCN, 2/25/91). While we have played a leadership role in the water court cases, and have put significant effort into grassroots education and organizing, we are not the only group doing these things.

HCCA's president, Gary Sprung, wrote the story about the situation, but did not attribute all leadership to HCCA. When you edited his writing, you created a false impression.

The other parties in the legal and political battle have valid reasons to take issue with the statement. The People Opposing Water Export Raids (POWER), Crystal Creek Homeowners, Upper Gunnison River Water Conservancy District, and others have played major roles in the grassroots efforts to stop the Front Range cities' plans.

The coalition among diverse interests was difficult to create and is one of the best things happening in our county. We hope that your statement will not make it more difficult for HCCA to work with these groups.

Gary Sprung
Laura Anderson
Board of Directors, HCCA
Crested Butte, Colorado

NEVER ON SUNDAY

Dear HCN,

How sad to read of artist Linda Reynolds' troubles in fighting off the advances of the Denver oil company.

The Eagle Nest ranch certainly deserves saving for its historical significance, in that Col. Tim McCoy was one of Wyoming's brightest luminaries. Although he was born in Michigan, no one doubted his authenticity as a cowboy after seeing him star in *War Paint*. It is worth remembering, also, that Tim McCoy served as Wyoming's adjutant general.

Michael Milstein made one minor technical error in his article, however; McCoy was not a "Sunday matinee idol," since little kids didn't go to the shoot-'em-up Westerns on Sundays during the 1920s. *Saturday* afternoon was when we watched Tim McCoy, Ken Maynard, Buck Jones and other stars, along with episodes of various "cliff-hanger" serials at the neighborhood theater.

Robert P. Turner
Denver, Colorado

THE ROCK THAT BURNS

Dear HCN,

Jon Klusmire's report (HCN, 2/25/91) on Lawrence Livermore Labs' latest ploy in the shale game in western Colorado is lapdog journalism of the type seen daily from the White House and Pentagon press corps mutts. When reporters simply regurgitate the press agency of corporations and government as if they, the reporters, had no memory or knowledge of history and had done no homework, they will ask no probing questions and raise no serious issues, challenge no assumptions nor confront any lies.

Klusmire does not write from the insulated pseudo-sophistication of some New York skyscraper. He has lived here and written about shale and energy events for a decade. Accordingly he might have informed readers that the last time the Dr. Strangeloves at Lawrence Livermore got interested in western Colorado, they came bearing atomic bombs. That was the late 1960s, when Edward "Father of the H-bomb" Teller and his Livermore colleagues cooked up their "peaceful atom" projects, including 200 planned underground atomic blasts to "develop" natural gas in deep, tight formations in northwestern Colorado. The now defunct Atomic Energy Commission and its corporate partners issued an endless stream of half-truths, lies and public relations puffery which the press of the time dutifully transmitted, no serious questions asked. Four bombs were exploded at projects Rulison and Rio Blanco before the madness stopped.

Klusmire includes a discussion of Occidental Petroleum and its various ventures and ploys in shale. Yet he gives no indication that this is the very same Occidental notorious for toxic waste dumping at Love Canal, Hicksville, N.Y.; Montague, Mich.; Lathrop, Calif.; Hopewell, Va.; and other sites. The same Occidental is now on trial as the state of New York seeks \$250 million in punitive damages for Oxy's role at Love Canal.

Klusmire's former colleagues at Amory Lovins' Rocky Mountain Institute or the energy experts at the World-watch Institute could have provided cogent assessments of the latest shale ploys. And the Citizens' Committee on Hazardous Waste or the Greenpeace Toxics Campaign could have given data on Occidental. Or is Klusmire's position

that corporate press agents offer golden grains of truth, while citizen activists and organizations are the dread domain of unprofessional advocacy journalism?

Mainstream journalists have no difficulty digging up and reciting the complete criminal record, birth-order rank and job history of any Joe Blow charged with auto theft. But in a corporate-ruled society, they get numb, dumb and mum about the track records of corporations and government agencies. From a daily press beholden to business advertisers, often interlinked in mega-corporations, one expects such obsequious servility. From HCN many of us expect more depth and probity.

Chester McQueary
Parachute, Colorado

Jon Klusmire replies:

Chester, glad to see you're still alive and well and raising hell. Please go through your old stacks of HCN and find my Sept. 10, 1990, shale story. There you will find Amory Lovins' assessment that shale won't make sense at \$40 or \$100 a barrel.

The recent story was intended to show that the government has a long history of dumping our money into oil shale, regardless of results or analysis such as Lovins', and seems to be planning to do so again. Thus, it was what I refer to as a "first alert" story, since everything is pure speculation at this point. The time for citizens' groups and environmental organizations to "hit the barricades" is still far away.

I could write an entire issue on the rock that has burned western Colorado time and again.



HCN Lite

April 1, 1991

A Paper for People who Care about the West, but not very much

Now 99% fact-free

HOTLINE

Extinction's bright side

Interior Secretary Manuel Lujan drew outrage from environmentalists during an informal debate over the controversial Animus River water project in southwestern Colorado. After an activist challenged his support of the project, which scientists warn would prove disastrous to several small water creatures, Lujan accused the environmentalists of "refusing to look on the bright side of extinction." The Secretary said, "Look at it this way. If we didn't have extinction to help us out now and then, we'd be up to our elbows in trilobites. Who wants that?"

Anti-dam activists, however, pointed out that if the dam were built, it would almost certainly spell the end for several very rare species, including both the pallid and flammulated spurge and Williamson's dingy plunkett.

But water developer Samuel Gulp, a dam proponent, responded, "So? I mean, who really cares?"

Animal activist Lori Ann Quattlebaum spoke later about the difficulty of rousing the public to defend animals that were "frankly unattractive in appearance as well as downright slimy." "It makes it much harder," she said with a sigh. "They don't show well on a Sierra Club calendar, and they're not good on T-shirts either."

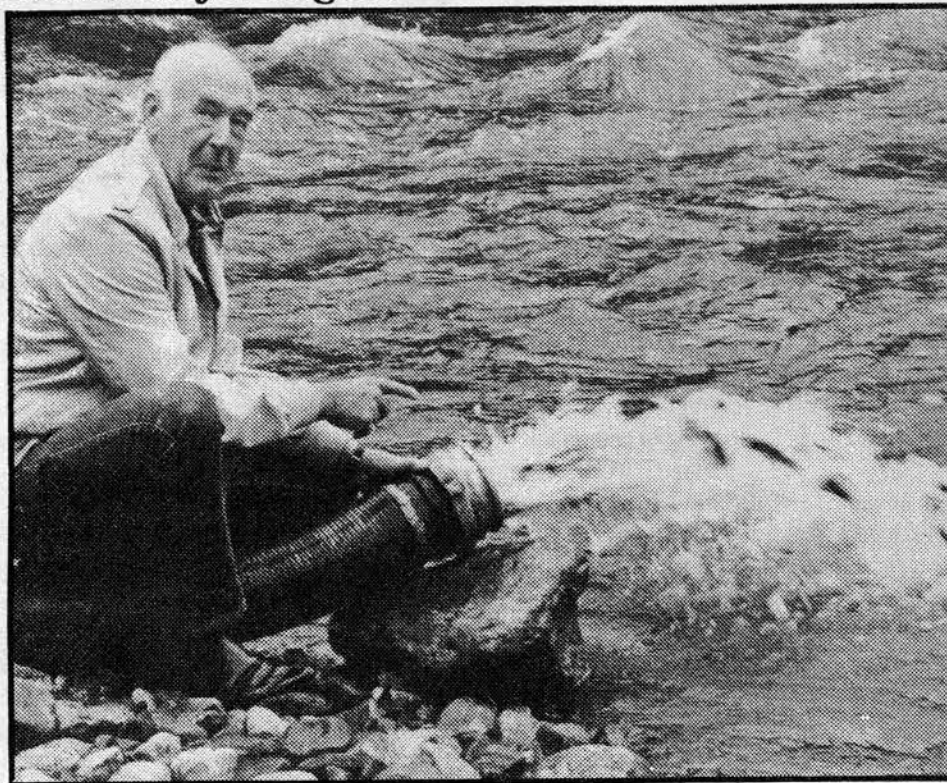
New school at Yellowstone

Bison at Yellowstone National Park are going to school. In an effort to save the bison from being shot for straying outside park boundaries, John Doolittle, a retired special education teacher from Chugwater, Wyo., is trying to train selected animals to read signs. Doolittle claims that about 15 percent of the bison in his classes now are conditioned to run back into the park when they see the word "brucellosis." Doolittle uses the term "bison," rather than "buffalo," in his phonics lessons because it is more correct, although he believes the animals think the word "buffalo" is more fun.

Food swallows campers

The disappearance of two backpackers in Utah's Grand Canyonlands National Park has spurred fears of a new hazard to

Good news for anglers



Idaho Gov. Cecil Undress demonstrates a new, highly efficient fish-extraction method in which multitudes of fish are pulled from the river into the large hose shown here.

the environment. Olivia and Sophy Biles of Weetzel, Mont., were camped in a heavy rainstorm in a steep gully. Water appears to have leached into their food storage bags, causing all the freeze-dried contents to rehydrate at once, explosively. The hikers were buried in a tide of backpacker's chili, beef stroganoff and instant pudding. "Instead of a flash flood, they were buried in flash food," Ranger Biff Trailer explained. "It was a tragic accident, but we're even more concerned about the impact of all those extra calories on the local wildlife." The incident remains under investigation.



Rodents claim right to bear arms

In response to the controversy surrounding last year's world Championship Prairie Dog Shoot in Nucla, Colo., organizers are planning a sequel with one major difference: This time all the prairie dogs will be heavily armed as well. "Fair's fair," said a spokesanimal for the prairie dogs. "This will be a true sporting event for a change." Arms makers are vying over sponsorship of the event, which is expected to result in record ammunition sales.

Shelter-Care

Second-home owners throughout the West have formed a network for providing shelter to homeless or low-income people. Shelter-Care Inc., with offices in Aspen, Colo., and Sun Valley,

Wolves thrive at Stanford

by Harry Puma

PALO ALTO, Calif. — The federal government's plans to establish an experimental population of wolves in Yellowstone National Park has been abandoned because of new successes here at Stanford University. The unexpected progress of Knight Journalism Fellow Ed Marston's efforts to make the campus safer for wolves has turned the wildlife world on its ears.

"There's no reason why wolves can't make it big here again," said Marston. "The habitat is almost perfect for them."

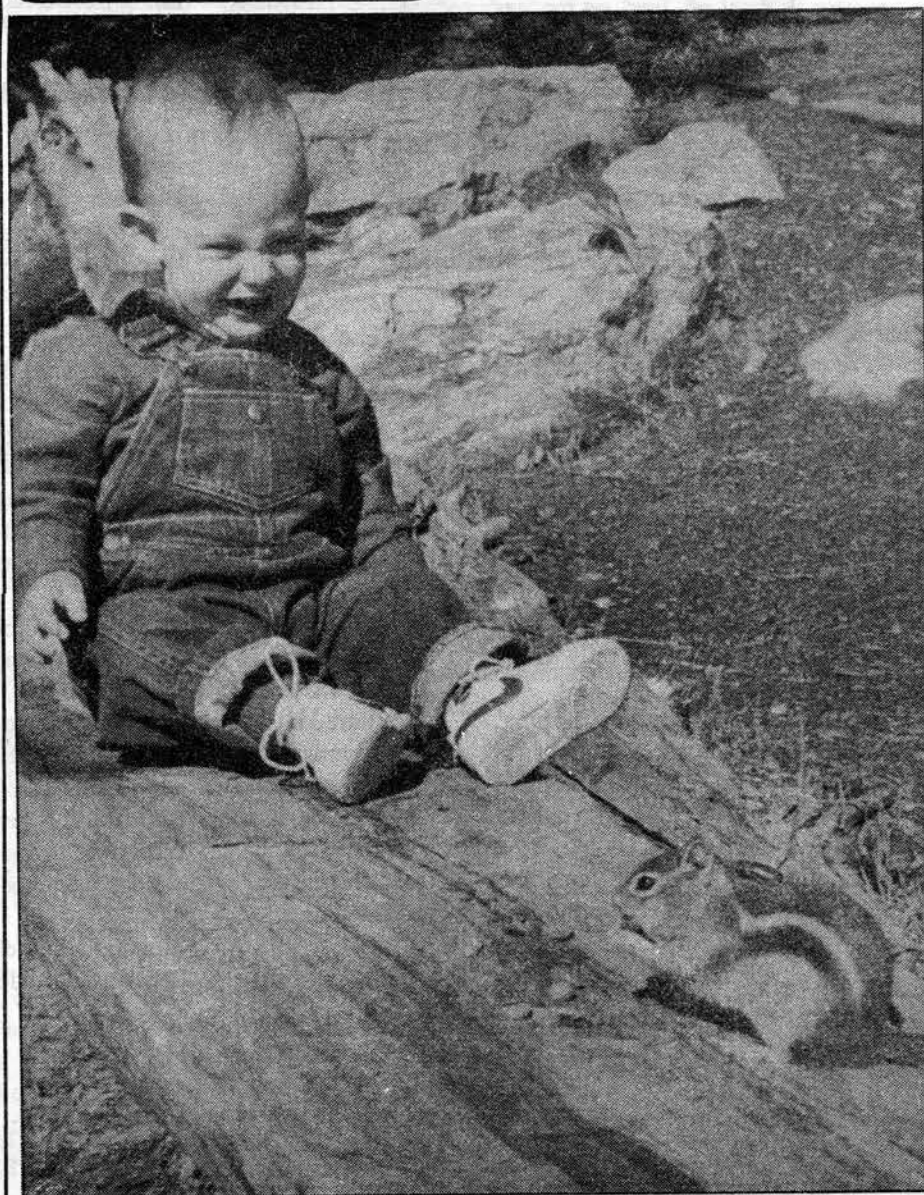
Marston began pushing wolf reintroduction here last September, when he released two wolves he had brought from Paonia, Colo. To his surprise, the two released wolves quickly found a secret pack that had been hiding under the Hoover Library.

On reporting his find to the U.S. Fish and Wildlife Service, Marston quickly applied for a grant to expand Stanford's embryonic wolf pack. Critics in the cattle industry, however, charged that Marston had other goals in mind and alleged that Marston's wolf-reintroduction scheme was a fraud.

Marston would not return telephone calls. But an acquaintance in Paonia said

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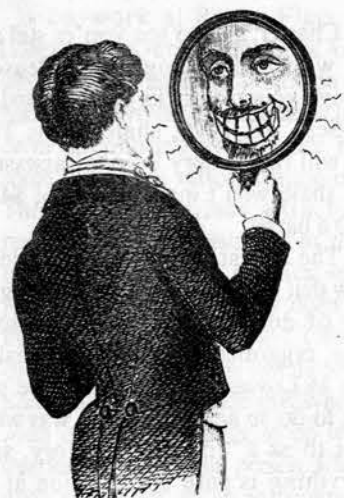
BOOK NOTES



Kent and Donna Dannen

In a revealing autobiography, *Notes of an Un-Natural Man*, former Interior Secretary James Watt describes for the first time events in his childhood that led him to become famous as an adult for anti-environmental activities. As this rare family photo shows, little Jamie was briefly abandoned by his parents in a park, only to be attacked by several aggressive ground squirrels. The beasts forced him to hand over all his peanuts, and then chattered at him when he screamed for his parents. As Watt tells the story in his book, he never forgot the horror of that childhood trauma, and swore that one day he would have his revenge.

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