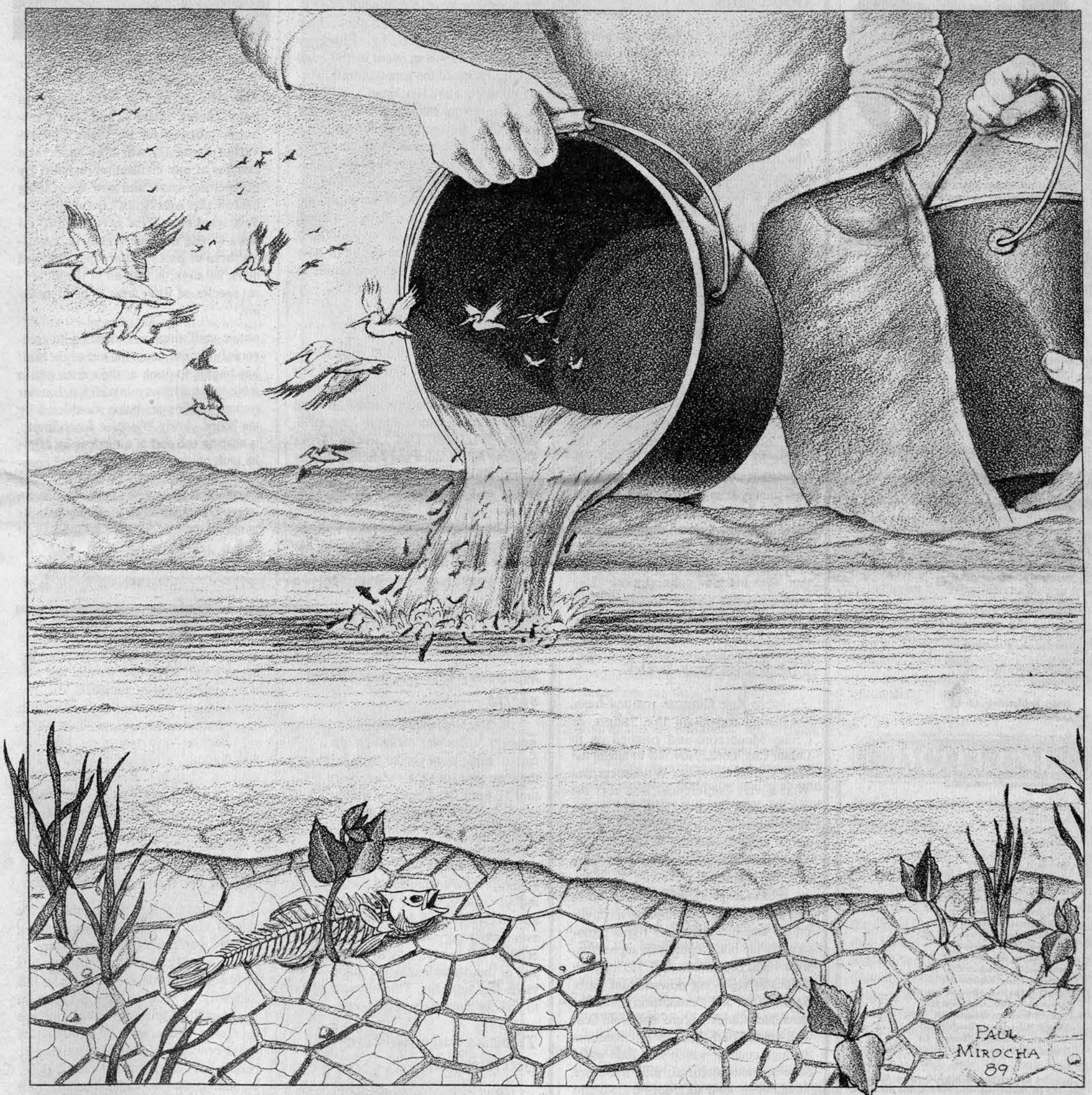
High Country News

December 4, 1989 | Vol. 21 No. 23 | A Paper for People who Care about the West | One dollar

THE WEST'S FOULED WATERS



Part 2: The new reclamation

Dear friends,

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Wanted: good home

Reader Charlie Woodward of Victor, Idaho, says he needs "to thin things out a bit;" that means his collection of *HCN*s, which go back 12 years, is available to a good home: a library, school or individual who needs access to 12 years of Western events. Joe Kipphut of Missoula also has a set of *HCN*s reaching back to 1986 which are available. If you are interested, contact *High Country News* development director Linda Bacigalupi at 303/527-4898.

Good gifts

Mark Harvey of Aspen stopped by recently, but with that exception, reader-visitors have been scarce. But we do receive mail.

Each year, Ruth and Chuck Powell of Fort Collins, Colo., give their nephew and his family a gift subscription to *The New Yorker*. "Recently, when they visited us, they said that if we didn't mind, they would rather receive *HCN*.."

So the Powells have sent them a one-year gift subscription to *HCN*. If you have a nephew, or son or daughter, or friend who would enjoy news about the West from the West, this is the season for a gift subscription. A form is on page 28 of this issue.

Scott Hardt recently sent in a change of address notice along with an explanation. He has moved from Boulder to Denver, where his work is, to both "save his sanity" and reduce his contribution "to the wonderful brown cloud of Denver." Eliminating the commute has helped, he says, but he still wonders, as he watches "the winter snows paint the high country from his 46th floor office ... what drives the human race to create urban sprawl and cover the planet with concrete and asphalt."

L.R. Heberlein of Seattle sent in a note with his new subscription: "I've been depending on a friend for copies, but I realize I want a mainline to the source..."

The focus was wild

Intern Kate Gunness resisted fresh, beckoning snows on the Sangre de Cristo Mountains and pushed on to Canon City, Colo., Nov. 10 to attend the 13th Annual Colorado Wilderness and Wild Rivers Conference. She says the trip was well worth it, with 175 people attending two days of speeches, workshops and discussion. The focus was Sen. Tim Wirth's Colorado wilderness bill.. She writes:

Colorado politicians showed up in full force, giving different perspectives on the controversial water rights provisions in the bill. Republican representatives Hank Brown and Joel Hefley both advocated clarifying downstream water rights; Wirth and Democratic senatorial candidates Carlos Lucero and Buie Seawell emphasized that the bill concerns the high country, which has little water development potential, and therefore shouldn't be used to redefine Colorado water law. Gov. Roy Romer concentrated on the Rocky Flats nuclear weapons plant and the unending challenges he said it poses.

A highlight of the weekend was a slideshow of Wirth's proposed wilderness areas by Colorado photographer John Fielder. The show brought the discussions about politics and water rights down to earth.

For information on wilderness issues, contact the Colorado Environmental Coalition, 777 Grant St., Ste. 606, Denver, Colo. 80203-3518, or call 303/837-8701.

Enough hands

This second special issue on water is an internal landmark for the paper because it represents a broadening of the *High Country News* staff. The two issues were organized and edited by Steve Hinchman, who came to the paper in 1986 as an intern, stayed on as staff writer, and is now special issues editor.

The 28-page issues, almost double the normal size, were laid out on computers by Steve Ryder, who was an intern here last year, and who has put in enormously long and productive hours to get us to this point.

Most of the articles in these issues were written by *HCN*'s network of freelancers, but there are always gaps. Those gaps were plugged by Florence Williams, who was an intern in 1987 and recently rejoined the paper as staff writer, replacing Steve Hinchman.

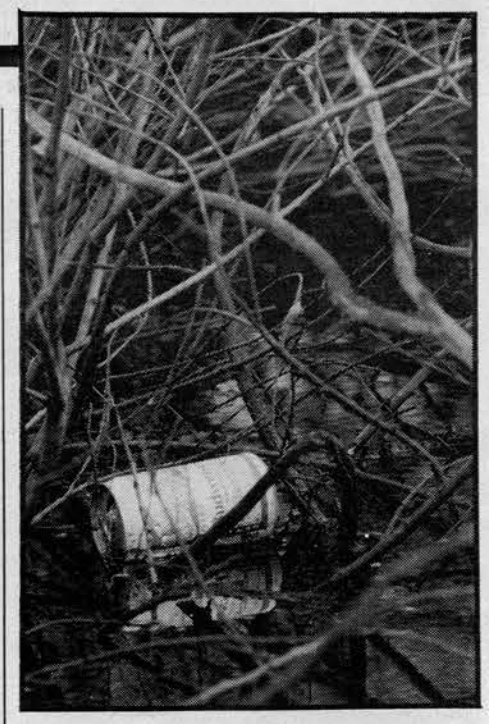
There were casualities over the last few weeks: the press of work resulted in a cancelled outing to southern Utah, and at times the tension has been palpable. But it has also been a joy to watch another generation take hold of the paper and to realize that, so long as there is a need, there will be a *High Country News*. There is also relief. The paper is now adequately staffed, with enough hands to do the work that needs to be done.

Sabbatical planning

A subcommittee of the High Country Foundation board met in Denver just before Thanksgiving to discuss sabbaticals by the publisher and editor, Ed and Betsy Marston, due to start in June 1990. Andy Wiessner, Dan Luecke, Lynn Dickey, Bill Hedden and Michael Ehlers talked about potential one-year replacements and discussed ways of financing the one-year leave.

The proposed sabbatical — all the pieces are yet to fall into place — has created some anxiety, but has also had some healthy results. With the two senior staff members planning to temporarily fly the coop, the rest of the staff has begun to look at their duties in a more expansive way. In addition, heavier responsibilities are being shouldered by the board. Andy Wiessner, for example, is nearing the end of a fundraising effort he undertook to complete *HCN*'s computerization. Andy, who was probably given a real telephone to play with as an infant, has made over 60 telephone calls in search of the $12,000 he intends to raise.

—Ed Marston for the staff



"Water Foul" is what photographer Tim Crawford calls the photo above. Tim tells us he was returning from Boise, Idaho, where he had been a volunteer lobbyist for the Idaho Conservation League, when he saw "the detritus of our civilization revealed by the melting snow and now decorating barrow pits and fields." Returning the next weekend, Tim says he stalked more of the obscene creatures, catching them in pairs and groups. The bad news, he says, is that all of the different species of litter seem to be increasing.

HOTLINE

Mummy left on museum steps

A 1,000-year-old skeleton of an Anasazi Indian was packed inside a TV carton and placed on the back steps of the University of Utah's Museum of Natural History last month. A woman then called the museum to say that her husband had found the skeleton but knew it was illegal to keep it. Anthropologists said the remains, probably those of a 60-year-old female member of the Anasazi Indian culture, were a "very rare find" and among the best preserved they have ever seen, reports *AP*. But since the looter removed the skeleton from its burial site in the desert Southwest, much of its value has been lost. The museum plans to give up the remains for reburial.

Trucks may not use park roads

After months of arguments between the timber industry and environmental groups, Park Service Director James Ridenour decided last month that logging trucks may not go through Yellowstone National Park. The Park Service decision, based on regulations that forbid the use of commercial vehicles in the park, rejected a Forest Service request to allow 36 logging trucks to haul timber from burned areas on nearby national forests on park roads. The trucks would have made daily round trips through the park of 94 miles. Conservation groups opposing the plan, including the Greater Yellowstone Coalition, The Wilderness Society and the Sierra Club, said that the trucks would harm both wildlife and visitors' enjoyment of the park. But the major issue, according to Sierra Club Legal Defense Fund attorney Fern Shepard, was the "integrity of the National Park System." "We are pleased," Shepard said, "that in this case the Park Service did not disregard its guiding principles for the convenience of a commercial operation."

A bill to ban log exports

Although Congress can prohibit the sale of logs abroad, state bans on log exports were ruled unconstitutional in 1984. Now, Peter Defazio, D-Ore., has introduced a bill to give states the authority to restrict log exports from their lands. A growing timber shortage threatens the economic stability of wood-processing plants in the Pacific Northwest, he says, and as a result many are selling logs to Japan to increase their cash flow. But he says that "it doesn't take a degree in economics to figure out that when we export logs, we export jobs." Defazio says his bill would enable states to control their industries and economies more efficiently. He also plans to introduce legislation to close loopholes in the restrictions of log exports from federal lands. Matthew Kimball, Defazio's press secretary, says he is confident both bills will pass because of the growing interest in protecting what's left of the nation's old-growth trees.

WESTERN ROUNDUP

After seven years, radiation victims get some justice

ALBUQUERQUE, N.M. — He was a Veterans Administration bureaucrat; she was a widow of a World War II veteran who served in Hiroshima after the bomb was dropped. The two were talking in a small hotel restaurant.

It was an ordinary scene, but it was also historic: for the first time, the federal government was recognizing and helping radiation survivors.

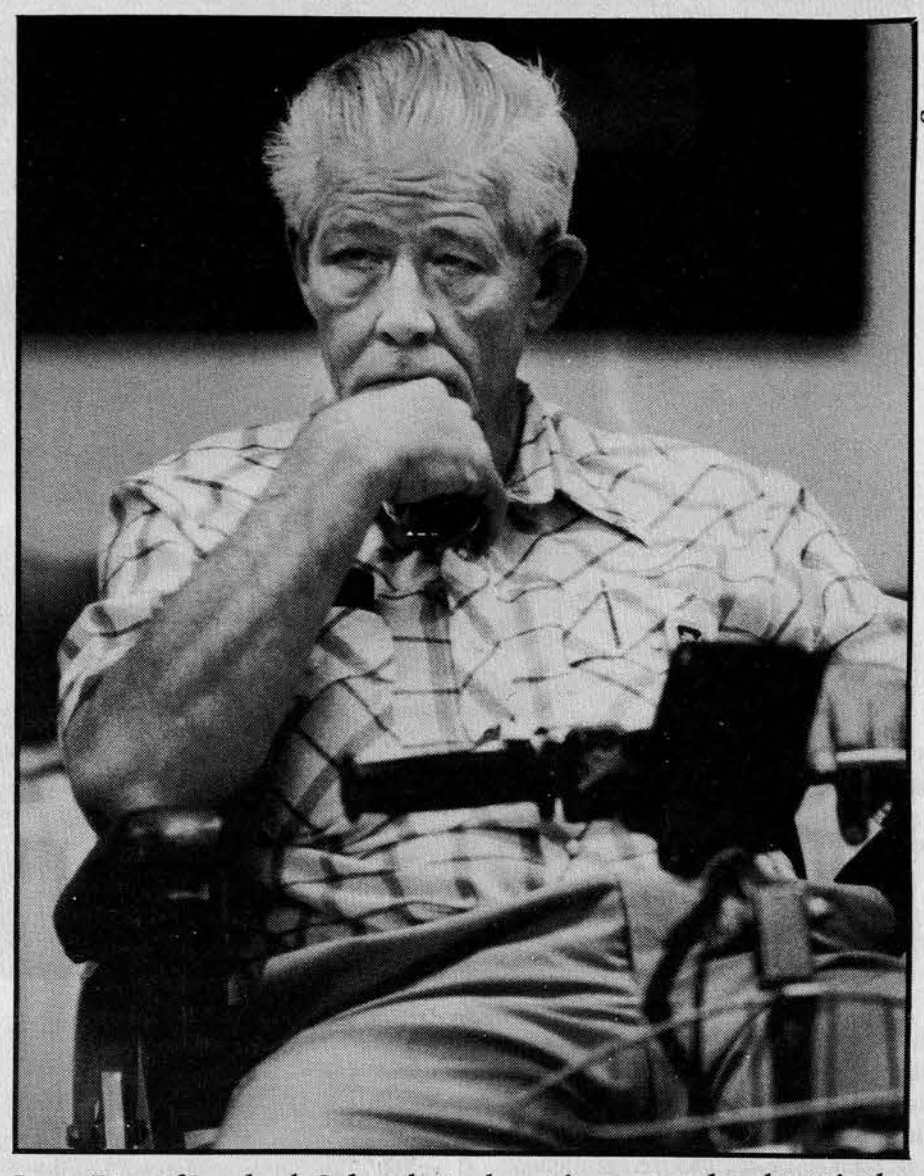
The occasion this fall was the seventh annual conference of the non-profit National Association of Radiation Survivors. It brought some good news for a group that has tried for seven years to secure benefits for thousands of Americans. All claim to be victims of disease from radiation from atomic testing or uranium mining.

In the past year, the group won passage of a new federal law. It allowed those who could prove they were at the scene of atomic tests to win disability benefits if they had one of 13 cancers linked to radiation exposure. No longer will they face the near-impossible task of producing medical evidence that radiation caused the diseases.

New VA regulations will make it easier for federal agencies to show statistical links between radiation exposure and a given disease. Finally, for the first time at any of the group's conventions, speakers came from both the VA and the Department of Defense. Radiation survivors have been at odds for years with both agencies.

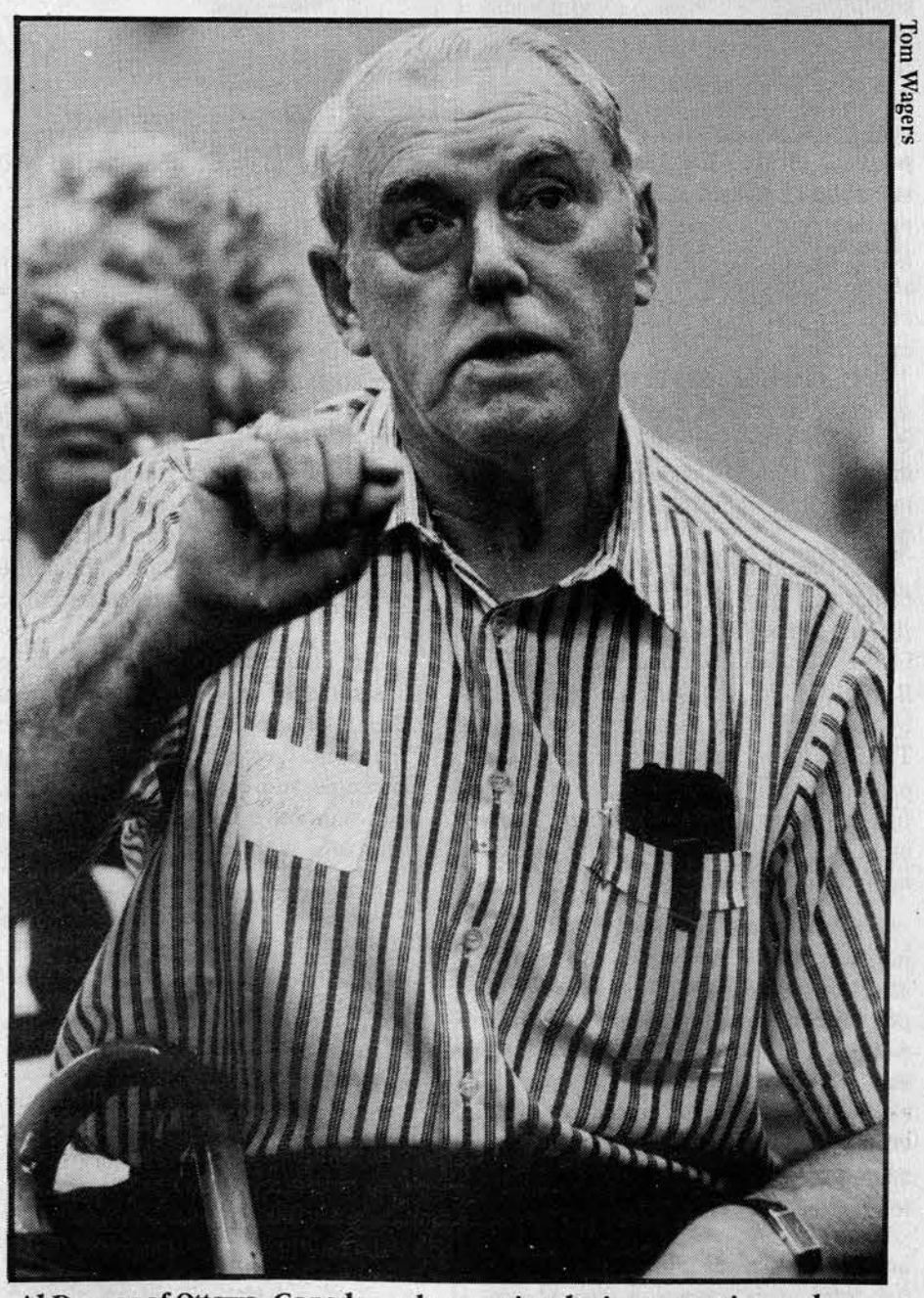
For 220 atomic veterans across the United States, including a handful of the 50 to 60 radiation survivors at the conference, the new law already has borne fruit in the form of benefits.

Until the new law passed, the VA denied 99 percent of all claims brought by atomic veterans and widows.



Tom Wagers

Larry Pray of Loveland, Colorado, took part in an atom bomb test in the Nevada desert in 1952. Pray says his unit was less than 4,000 yards from the blast. Today he is confined to a wheelchair as a result of nerve damage he attributes to radiation.



Tom Wagers

Al Draper of Ottawa, Canada, makes a point during a question-and-answer session with a VA official. Draper worked at the Chalk River nuclear power plant in Canada during the 1950s and attributes his partial paralyzation to radiation exposure.

But widow Rachel Wenger, 64, of Colorado Springs, was carrying a fistful of documents showing how she had been able to convince the VA only two months before, after 15 years of trying, that her husband's 1974 death of throat cancer was linked to his having served in Japan, six miles south of Hiroshima, in 1945. She now gets a $636 monthly check from the VA.

"It's just unbelievable, the tears from all this are still there," said Wenger, who held a picture of her late husband.

"Your husband passes away and everyone says that after one year you should be okay. But each year that I put in for benefits and was denied, it would keep his death in my mind."

Conferees included veterans or widows of veterans who had served in Hiroshima or Nagasaki. Some had served at our above-ground nuclear tests on the Marshall Islands, and in Nevada from the 1940s until 1962. Others were "downwinders" who had lived outside the Nevada Test Site and been exposed to atomic test radiation, and there were uranium miners or sons of miners who had worked on the Navajo reservation in the 1950s, '60s and '70s.

Pat Broudy, the group's legislative director, said she recently started getting $232 a month from the VA in benefits after proving that her husband, who died of lymph cancer, had sat in trenches within 500 yards of Ground Zero in Nevada. He had also walked through a plutonium-contaminated area while serving at the "Plum Bob" series of nuclear tests in Nevada in July 1957.

Her husband woke up in 1976 with a lump under his arm, and was found to already have terminal cancer, Broudy said. He was dead in a year at age 57.

"I can't live on the money," said Broudy, who works in southern California as a legal secretary. "But I had to do this because it was a matter of principle."

For others such as Filiberto Uriegas of San Antonio, Texas, the battle for benefits has barely begun. He served in the Air Force at Kirtland Air Force Base in the late 1940s and early 1950s. He said he thinks he was doing maintenance work for air support crews for several atomic tests at the test site in 1951 and 1952. But he has no records showing he actually went to the test site.

All he has are memories of wearing dark glasses that the Air Force gave him for some of his flights and of going "blind" when he saw a bomb explode.

"They told us we were flying somewhere, but they never told us where," said Uriegas, 65. "It was all confidential, and you never even talked with anybody about it." Retired since 1965, he says he has had prostrate cancer and suffered liver damage.

Uranium miners and "downwinders," meanwhile, were at the conference seeking to stir up interest in a proposed bill in Congress that would establish a $100 million trust fund. It would compensate members of those groups for their illnesses.

Jamie Stewart, of St. George, Utah, said the diabetes she's suffered since age eight (she's now 35) may have been the result of her mother making repeated visits to and from home in Salt Lake City to St. George (150 miles downwind of the Nevada Test Site) during her pregnancy with Jamie in 1953.

Stewart had an October 1984 letter from a Hiroshima private physiciain showing diabetes as one disease for which the Japanese government compensates radiation victims.

"I've been going around for two years trying to get health studies for people in St. George with diabetes," said Stewart. "I've had people choke on their dinners telling me they lost their sons to diabetes. They hear what I have to say and they wonder, 'Why didn't I know about this?' "

— Tony Davis

HOTLINE

What causes the Grand Canyon haze?

EPA and the National Park Service continue to disagree with operators of the Navajo Generating Station about what causes the haze that often shrouds the Grand Canyon in winter. Both sides met before members of the Western State Energy Board this fall. Jerry Shapiro, a consultant for the Salt River Project, which operates the coal-fired Navajo plant near Page, Ariz., said as much as two-thirds of the contribution to visibility problems is "natural," reports the *Arizona Republic*. The Park Service said its study, which placed a chemical tracer in the generator's plume, showed that 60 percent of the haze comes from the Navajo plant. William Malm, staff physicist for the Park Service, says, "In the canyon itself, you can sometimes have the Navajo Generating Station as the sole source of sulfur." EPA estimates the clean-up cost at $330 million, while plant operators put the cost at $1 billion. Plant officials at the October meeting proposed an 18-month, $14 million in-house haze study, but EPA officials said they weren't sure whether to allow the study or demand emissions clean-up immediately.

Rural Coloradoans upset by rush to drill for methane gas

Carl Weston, a retired government administrator, moved to quiet Bondad, in southwestern Colorado, because he liked the mountains and the fertile soil for growing his tomatoes. He did not mind the presence of an abandoned gas well across the road; it was a harmless, even picturesque remnant of a boom gone by.

In 1968, a few months after Weston built his house, he noticed that his drinking water tasted rank. Soon it started smelling pungent. The hot water faucet spit ferociously, knocking glasses out of his hand.

When his lemonade caught fire, he knew he had a problem.

Several months and phone calls later, the Colorado Oil and Gas Conservation Commission sent a worker out to Bondad to pour gobs of cement down the throat of the 40-year-old gas well across Weston's road. At the same time, a commission representative told Weston not to worry; there was probably no connection between the gas exploration of yesteryear and the methane erupting from his kitchen sink.

That is when Weston began research on his own. He learned that the well near his property was one of thousands of abandoned, uncapped mines in La Plata County, many located dangerously close to private drinking wells.

That these leftovers might not be as lifeless as they appeared was a sour pill for the area's landowners. A worse irony was that the nuisance, rooted deep in the West's young history, became serious in the early 1980s.

Thanks to a limited-time-only federal tax cut offered to methane gas producers, peaceful La Plata County once again erupted in gas exploration.

The tax cut, a feature of the Crude Oil Windfall Profit Tax Act of 1980, applies only to developers of "unconventional" fuel. Methane qualifies when it is derived from solid coal seams using experimental hydrologic methods.

Gas companies, entitled to the subsidies for wells drilled by Dec. 31, 1990, are rushing down the home stretch in southwestern Colorado. Amoco Production Co., Ladd Petroleum, Meridian Oil and McKenzie Methane Corp. have drilled more than 450 wells into coal beds in La Plata County, and hope to drill about 600 more.

All successful wells developed by the 1990 deadline will receive the tax credit for an additional 10 years, hence the last-minute frenzy.

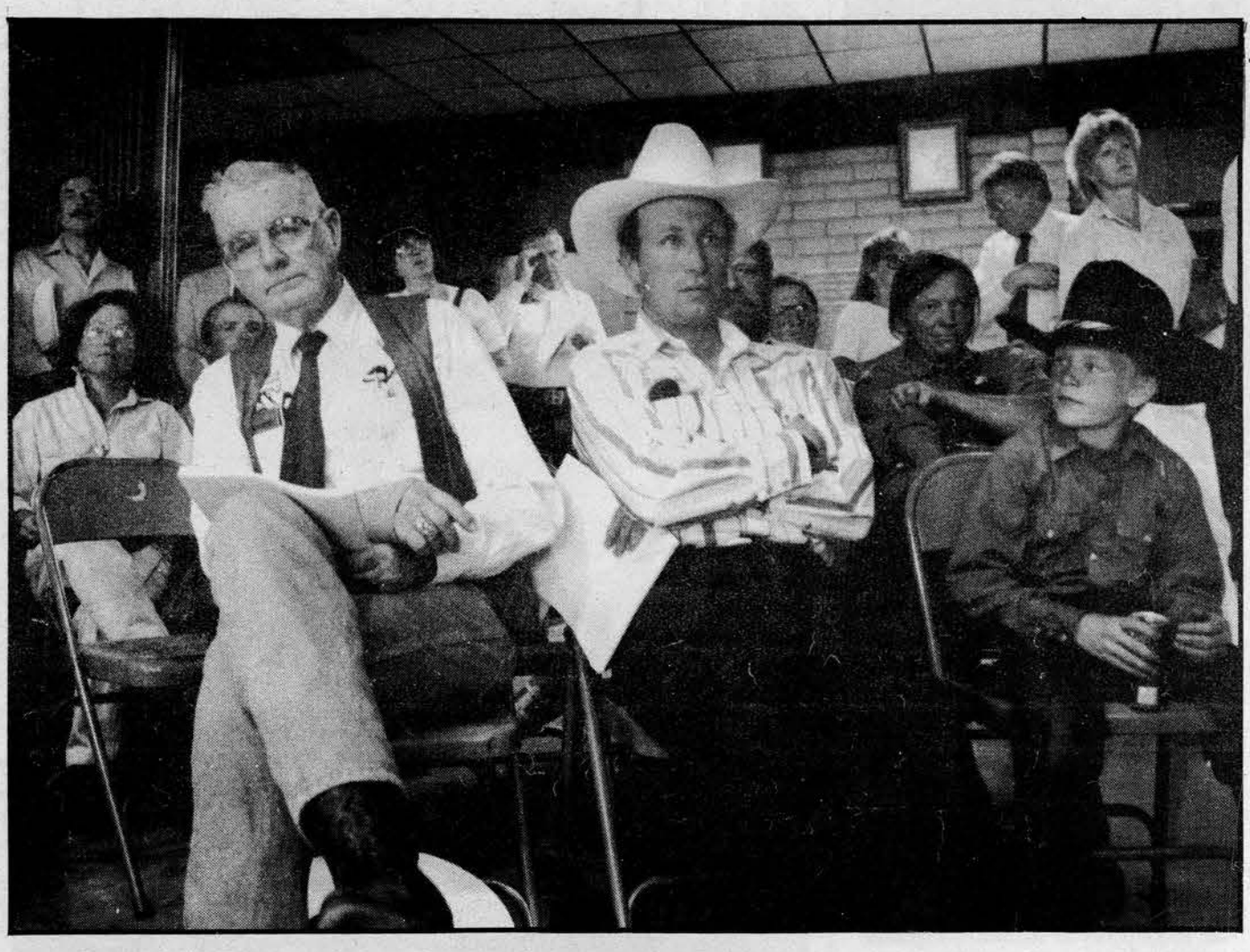
A Bureau of Land Management draft report says the oil and gas companies will net more income from the tax credit alone than from the sale of the gas.

What this means for companies like Amoco is big profits.

What it means for La Plata County landowners like Weston is a raging stream of pumpjacks, pipelines, compressor stations and heavy truck traffic flowing through their backyards. The landscape of the wild San Juan Basin, straddling the Colorado and New Mexico border, lies punctured by recent drill sites and scarred with gravel transport roads.

And there still remains the largely unanswered question of groundwater contamination, this time not just from escaping methane but also from the briny wastewater left over from coal-bed drilling, a process known as degasification.

Searching for methane in coal beds requires initially pumping out large amounts of groundwater in order to release the locked sediments containing the gas. This may eventually lead to the release of methane, but not without first unearthing millions of barrels of salty water that must be hauled away or reinjected into the ground.



Amy Malick

An injection well hearing in Colorado draws a crowd

So far, 38 private water wells close to drilling sites are contaminated with methane and/or brine, according to the Western Colorado Congress, a non-profit advocacy group working with Weston and other citizens in La Plata County. While not enough information exists to correlate the contamination with drilling, WCC believes the gas wells and reinjection sites are directly responsible.

"[The state oil and gas commission] tries to obfuscate the connection between the drill sites and the water wells," says Weston, who has become a leader in the battle for stronger enforcement regulations.

"But my water started spitting again when they started drilling a mile down the road. And the people in New Mexico are really worried because the deep reinjection wells up here go right into a formation that slopes down into their water table."

The Environmental Protection Agency estimates that if methane exploration continues over the next 20 years, one billion barrels of the salty waste water will be forced underground in La Plata County.

The San Juan Basin, which houses some of the richest coal seams in the state, serves as an ideal target for companies experimenting with methane production.

The San Juan coal reserves are estimated to contain 15 percent of the nation's total gas resources. If the venture proves successful, Rio Blanco and Garfield counties in Colorado stand next in line.

No federal agency has yet claimed authority to order a basin-wide environmental impact statement to analyze the effects of the recent drilling surge. Responding to calls from his constituents, Rep. Ben Nighthorse Campbell established a multi-jurisdictional task force in August to address environmental concerns, especially the water contamination.

But residents bemoan the slow progress of the commission which contains representatives from 20 public agencies. A group called the San Juan Greens recently implored Campbell's group: "Get off your duff and pursue your mission diligently."

Says Weston, the only citizen serving on the committee: "So far we've only brought out information the industry already knew and everyone else should have, namely, that there's enormous potential that all these abandoned wells are leaking."

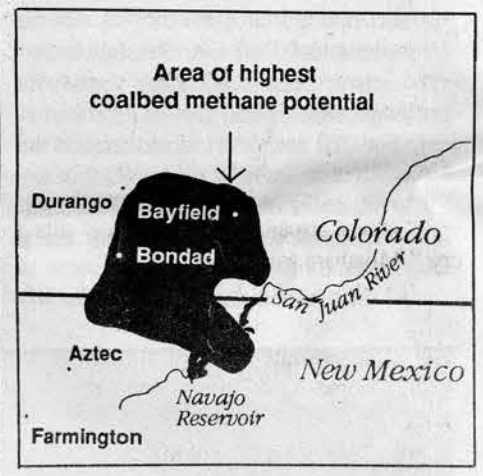
The members of several local citizens' groups, whose letter-writing campaign to officials first brought the contamination problems to light, have urged the task force to come up with a plan of action by spring, when drilling resumes after a winter shut-down. As of yet, however, the task force wields no enforcement power.

The citizens' plea is the latest in a series of sometimes drastic, sometimes expensive efforts to slow gas development and demand a study of the environmental and sociological effects of drilling.

In one victory for environmentalists earlier this year, the U.S. Forest Service shelved Amoco's plans to drill five wells in the San Juan National Forest near Bayfield, Colo., following a protest filed by the Sierra Club Legal Defense Fund. The Forest Service will now examine the proposed wells within the context of a full-scale environmental impact statement, rather than with a smaller assessment as had been planned.

But in a recent defeat, a Durango judge denied a temporary injunction sought by a dozen rural landowners to prevent construction of a $6 million Amoco gas treatment facility in their neighborhood cow pasture. The ranchers claimed the La Plata County commissioners had improperly granted Amoco approval for a commercial facility in a rural, residential area.

Despite the defeat, groups like the San Juan Citizens Alliance plan to continue putting pressure on public officials to monitor the gas companies more closely. Officials who oversee the drilling say they are understaffed and underfunded.



Mark Weems, oil and gas commission inspector in La Plata County, says he must play the odds and inspect only a small percentage of drilling practices.

While no specific cause for the water contamination has yet been identified by Campbell's committee, the EPA in May prohibited the injection of wastewater above the Lewis shales of the San Juan Basin as a precaution.

Meanwhile, La Plata County residents continue to feel bitter about the way the gas companies have treated their land.

Jim Fitzgerald, a Fort Lewis College professor, told industry and government officials at a public hearing last May: "You could have gone out and talked to the people and listened to their stories. You would have learned about problems with roads, with wildlife and with water wells."

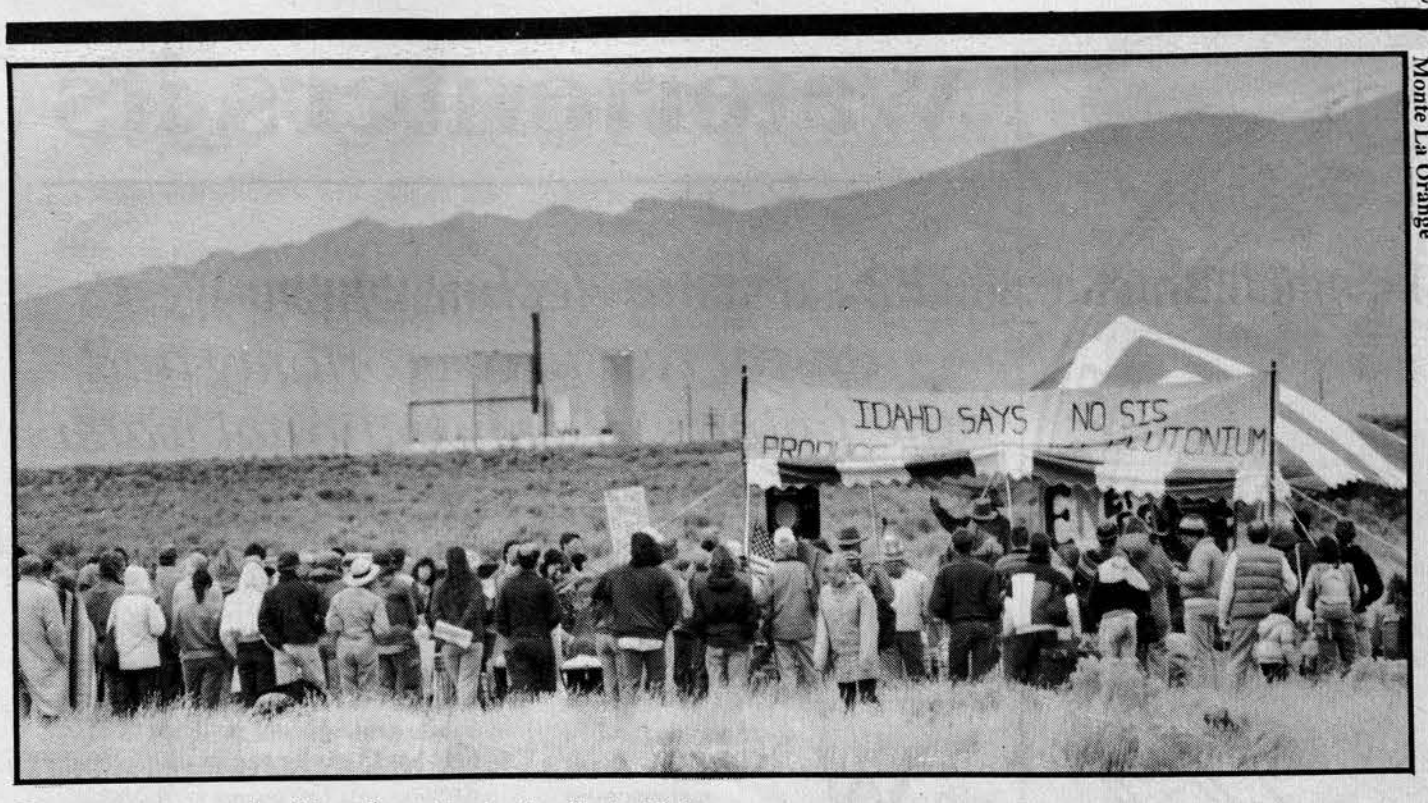
La Plata citizens will keep telling their stories for the rest of the year. Weston says it is unlikely, however, that drilling will subside.

"I wouldn't hold my breath," says Weston.

"Methane exploration is a rich field. I just wish I didn't live so close to where they're going to drill. It's like going to the moon; it's fun, but I wouldn't want to go along for the ride."

— Amy Malick

Amy Malick has been covering this story for the *Durango Herald.*



Monte La Orange

Demonstrators at the "Bread not Bombs " rally in Idaho

400 Idahoans say no to building bombs

Most of the 400 protesters who turned out under cloudy, windy skies were Idahoans who'd never come close to a nuclear explosion.

But a small delegation from Japan, including aging survivors of the 1945 atomic bombing of Hiroshima, came to the Idaho National Engineering Laboratory with chilling first-hand memories of nuclear war.

"All I saw was hell on earth," Hiroshima survivor Fumio Miyahara said through an interpreter. He talked about one girl covered with shards of glass after the explosion. He talked about other victims so badly burned that no one knew if they were male or female.

"It was atrocious — a scene of misery," Miyahara said.

To the Snake River Alliance of Boise, Idaho, the carnage of post-World War II Japan and the desolate, sagebrush-colored Arco Desert aren't that far apart.

On the desert, about 40 miles west of Idaho Falls, the Department of Energy wants to build two large defense projects. Called the Special Isotope Separation and New Production Reactor projects, they are designed to produce plutonium and tritium for nuclear bombs at the 890-square-mile federal lab.

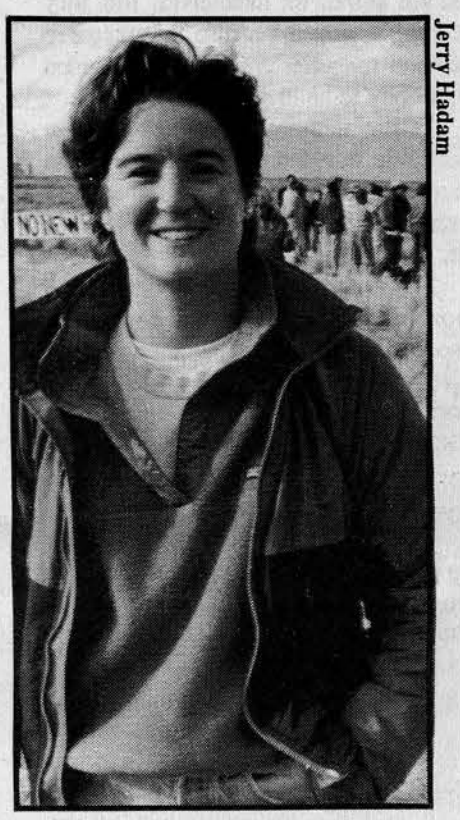
The messages at the Oct. 22 rally were many; not all were directly tied to INEL's defense role. One general theme at the "Bread, not Bombs" gathering was that the federal government should not pour billions of dollars into defense at the expense of social and environmental programs.

"I think it's time that we turn around and start spending money on other things," said alliance member David Hensel of Victor, Idaho.

Tom Allibrandi, a former Boise radio talk show host, said he didn't want to see INEL's 11,000-member workforce cut. Instead, he wants to see the site specialize in managing the nuclear waste buildup at INEL and other Energy Department sites.

"We just want to change your job description," Allibrandi said. "We are poisoning ourselves with our own waste and we don't know what to do about it."

But the prospect of new defense projects at INEL loomed over the rally. Several speakers touched on a new concern: the prospect of the Energy Department moving facilities from its troubled Rocky Flats Plant near Denver to the INEL. According to Energy Department studies, Rocky Flats will someday be phased out, and INEL is one possible site for its plutonium operations.



Jerry Hadam

Liz Paul

"I believe that Rocky Flats is destined for Idaho. No one else wants it," said state Sen. Brian Donesley, D-Boise.

Battling defense projects has been a cornerstone of the Snake River Alliance's work, and along the way the group has grown. The 10-year-old group has 900 members, three full-time staffers and a budget of just over $125,000.

The Idaho demonstration was part of a nationwide weekend of protests at the Energy Department's military sites, from the Fernald nuclear site in Ohio to Rocky Flats to the Hanford Nuclear Reservation near Richland, Wash.

"(It's) one important step in an ongoing process," said Peter Lumsdaine of the National Mobilization for Survival, a New York group that coordinated the rallies. The nationwide rallies grew out of local grass-roots opposition to nuclear projects, Lumsdaine said. Critics, however, question how local the alliance is.

Jim Zane, general manager of EG&G Idaho, the INEL's largest private contractor, speculates that the alliance is driven more by national environmental groups such as Greenpeace and the Natural Resources Defense Council.

Sen. Jim McClure, R-Idaho, a strong supporter of the INEL defense projects, has similar doubts. McClure spokesman H.D. Palmer says Greenpeace members were brought into Idaho to "coach" alliance members for the Energy Department's SIS hearings.

Liz Paul doesn't deny that there's a national campaign as well as a local effort against nuclear weapons. But she finds nothing sinister or inappropriate about it.

"We're not talking about local money," she said. "You have outside dollars and outside money coming to your town."

It's an argument that doesn't go well in Idaho Falls, a town of 45,000 that reaps the most direct benefits from INEL. The two defense projects, for example, are expected to create hundreds of permanent and construction jobs, stabilizing site employment for several years.

If the global weapons debate seems to be on a collision course with a local economic-development debate, a showdown did not occur this time around.

Supporters didn't show up to counter the alliance's rally. The Idaho chapter of the American Nuclear Society, for example, decided not to demonstrate.

INEL made very careful remarks about the alliance rally. From INEL manager Don Ofte on down the line, site officials were quick to defend the rally, from at least a First Amendment standpoint.

"Everybody's got the right to protest," said Chris Powers, DOE's chief of public activities. "(They have) a perfect right to do this sort of thing, and we're trying to accommodate them."

— Kevin Richert

HOTLINE

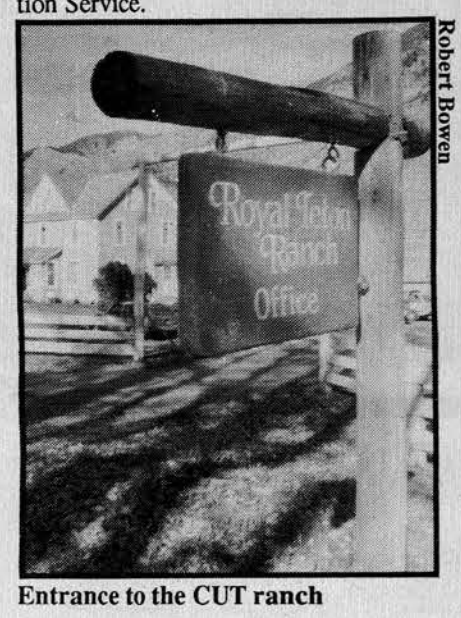
An alternative to wood pulp

A paper company in south Texas plans to build a newsprint mill that processes kenaf, a relative of cotton and okra that matures in just five months. Several newspapers in California, Texas and Florida tested kenaf-based newsprint in 1987, says the U.S. Department of Agriculture. They reported it was brighter, stronger, used less ink than usual wood pulp-based print and required less energy to turn into newsprint. Plans for the $35 million mill, which the Kenaf Paper Co. hopes to complete by 1991, follow a four-year cooperative effort by the U.S. Department of Agriculture and private researchers.

HOTLINE

Cason nomination dead

In a major victory for environmentalists, the nomination of James Cason to oversee the national forests ended with a whimper. Saying he could see "the handwriting on the wall," Senate Minority Leader Robert Dole, R-Kan., sent the nomination back to the White House without a vote. Senate Agriculture Committee Chairman Patrick Leahy, D-Vt., estimated that the Senate vote would have been at least 60-40 opposed to the nomination, reports the *Casper Star-Tribune*. Though approved by Leahy's committee 12-7, the nomination faltered when influential Sens. Bennet Johnston, D-La., and Ernest Hollings, D-S.C., announced their opposition. Conservation groups also strongly opposed Cason, saying that his four years in the Reagan administration showed a bias for private development over environmental protection (*HCN*, 10/23/89). "The Senate recognizes," said Sen. Leahy, "that James Cason is the wrong man for the wrong job at the wrong time." Cason had been nominated to the post of assistant agriculture secretary for natural resources, which also oversees the Soil Conservation Service.



Robert Bowen

Entrance to the CUT ranch

CUT staffer not charged

A Church Universal and Triumphant staff member who illegally purchased two assault rifles will not be charged with a crime. But the weapons — worth $5,000 each — will not be returned. Frank Black, who works in the church's video production department near Yellowstone National Park in Montana, gave his true name, age and other information when he purchased the guns, but listed a Bozeman, Mont., mail delivery service rather than his home as an address. Assistant U.S. Attorney Tony Hall said that Black's offense was a "technical violation" of federal law and that forfeiture of the weapons was considered a significant penalty. Black said his decision to buy the guns was a personal one and that the church did not pay for them. "I purchased these particular guns for the sole purpose of defending my family, my household and my community in the event of a nuclear war," he said. "Contrary to public opinion, the church does not control all staff members' finances and does not require them to give all their money to the church." Black was stopped by the Bureau of Alcohol, Tobacco and Firearms on Oct. 13, less than eight hours after CUT vice president Ed Francis pleaded guilty to conspiring with another CUT staff member, Vernon Hamilton, to buy identical weapons using a false identification. The U.S. attorney in Spokane, Wash., has recommended a four-month jail sentence and a $5,000 fine for Francis, and a one-month jail sentence and $1,000 fine for Hamilton. Both men face sentencing Dec. 15.

Water enters its

The drastic decline of the West's natural resource economy and the failings of conventional water development have created a climate for change

by Ed Marston

Water is at the center of the West's long-term strategy for economic development. The mining of coal and uranium and drilling for oil and gas were and are prized for themselves. But they were also prized because they created the need for water projects and provided the money to build them.

In the traditional view of Western economic development, water projects were seen as providing a stable and sustainable economic base and way of life.

For a century, the West viewed the boom and bust of mining and other resource development as a phase the region must pass through to achieve a more mature economy — an economy sustained by developed water.

This strategy culminated in the late 1970s and early 1980s, when demand for energy and minerals created an enormous boom. The region hoped the boom would last long enough to stimulate and finance the building of more dams and the growth of a much larger population and economy.

By the time the inevitable bust occurred, it was hoped that a more diverse and stable economy would be in place, and thereby greatly reduce the region's dependence on the erratic natural resource economy.

That expectation was smashed by the depth of the early 1980s bust. The bust has been so deep that many parts of the region still haven't recovered.

Especially hard hit were states such as Montana and Wyoming, which lack both metropolitan areas and "sunbelt" communities supported by retirement, tourism and other activities independent of a working rural hinterland.

The collapse of energy and mineral development has sent the West back to its economic drawing board. And because water in an arid region is at the base of all economic development, it has inevitably turned the region's attention toward water.

If the West wishes to wait for the next boom to inch its economy forward, then a re-examination of basic assumptions is not necessary. But if it is to go on the economic offensive, then it must begin by taking a fresh look at water.

In addition to this external pressure on water policy, there is pressure from the problems created by past water development, explored in the first of these two special issues.

That issue, titled "Billions for quantity, but not a penny for quality," looked at irrigation projects that poison wildlife refuges, nonpoint source pollution, water practices that result in destruction of trout fisheries, the near-extinction of the Colorado River's native fishes, groundwater pollution and the tight hold salinity has on the Colorado River.

The pressure from a drifting regional economy and the mess created by conventional water development is probably irresistible. Although the water establishment — grassroots water conservancy districts, federal bureaus such as Reclamation and the Army Corps of Engineers, and extensive political and economic links — has great power and influence, it will have to give way. The only question is: what form will the change take?

A broadened reform movement

Until recently, those who would "reform" Western water thought in terms of stopping proposed projects. But this second special issue shows that the movement for reform goes beyond stopping dams.

It includes changing the ways in which water in existing reservoirs is used, demands for changes in how water institutions conduct themselves, and changes in the laws and practices underlying water development and use.

The discussion of reform began with two articles in the first water issue: Steve Hinchman's articles on the near extinction of the Colorado River's native fish and on the vise-grip salinity has on the same river.

The theme of reform is now picked up in this issue, which opens on the ground, with an account of a ski area developer's effort to turn a four-mile-long gravel quarry back into a living stream. It is followed by another nuts and bolts article, describing grazing practices intended to restore trout to a stream.

A striking change in the West's approach to water is visible in the Dakotas, where proposed vast irrigation systems have been "traded in" for pipelines that supply farms and ranches with drinking and livestock water.

The article here describes South Dakota's WEB pipeline, a replacement for the scuttled Oahe irrigation project. WEB will bring high-quality drinking water to high plains farmers and ranchers for their personal use and for their livestock.

Economic and ecological pressures on Western water set the stage for reform, but it is political and legal pressure that ultimately make the reform happen. Two articles here look at political pressure. The first describes the Clark Fork Coalition, which has been organized to clean up that major Northwest river. The other describes Idaho's pioneering effort to deal with nonpoint source pollution, and the

THE WEST'S FOULED WATERS
Part 2:
The new reclamation

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WRITERS AND ARTISTS

Joseph Bauman covers environmental issues for the *Deseret News* in Salt Lake City.
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THANK YOU

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age of reform

crucial role citizens will play in that effort.

The final four articles in this issue home in on the policy questions that surround water. The most dramatic river segment in the West is the section of the Colorado River that flows through the Grand Canyon. There are no dams in the canyon.

Nevertheless, the Colorado's flow through the canyon is controlled by Glen Canyon Dam, located upstream of the Grand Canyon. In the first of these four policy articles, writer Dennis Brownridge describes the current fight for control of Glen Canyon. At present, the dam is operated for the benefit of electric power users. Environmentalists are attempting to modify the dam's operation for natural and recreation uses.

Florence Williams then describes the pressures affecting the water conservancy districts that once ruled rural water development, and writer Dyan Zaslowsky reports on the intertwined fate of the Denver Water Department and the doctrine of prior appropriation. The final article in this issue is an essay by Peter Kirsch, which describes shifts in how some regulators and courts look at water development.

Basic assumptions

Underlying these two special issues of *High Country News* are two assumptions.

First, it is assumed that the West has built more dams and reservoirs than it needs. The surplus of stored water can be returned to streams to protect fisheries or switched to uses that provide greater economic benefits than alfalfa, cotton and penny a kilowatt-hour electricity. This assumption is optimistic. It assumes a fair amount of physical give in the system.

On the pessimistic side, it is clear that there is no easy political or legal path to the future. Water developers preached that they were building for the future. But the system they built and protect is not very flexible.

If "building for the future" is interpreted as making room for future uses and values, then water developers were actually hostile to the future, saddling it with enormous costs. The money will be paid out both in the cleanup of existing messes and in so-called transaction costs — the heavy political and economic expenses attendant on making changes.

For example, the federal government, through the Bureau of Reclamation, built hundreds of expensive irrigation projects. But the Bureau did not take legal steps to provide that, at some future time, the water the public paid to develop could be shifted to other uses.

Instead, the Bureau and the Congress created a legal and procedural morass. Each Bureau irrigation project is governed by its own set of contracts, solicitor opinions and enabling legislation.

The transfer of federally financed water from uneconomic or even damaging agricultural uses, as at Kesterson and Stillwater, will be very difficult. Bills will have to be pushed through Congress, water will have to be bought from farmers and irrigation districts who got that water initially at very low cost, and numerous court battles will have to be fought. If water developers were indeed building for the future, they have not yet revealed what kind of future they had in mind, or how it could be reached. At present, every effort to change or reform uses of water involves much time, work and money.

By elevating the doctrine of prior appropriation — "The right to divert shall never be denied," and "First in time, first in right" — to a supreme legal position, the water development community appears to have built hostility toward future uses and users into the system.

This is a seniority system, which locks out the future rather than includes it. The doctrine appears to have the same kind of hold on the West as primogeniture — the right of the eldest son to a family's property — had on an earlier age.

Conservative reformers

In the scheme of things, the West's approach to water is probably more important than, let us say, the fate of the region's old-growth forests. But there is no Earth First! to erect a radical critique and activist offense against Western water. The subject is too complex, with much of the damage already done. Water does not lend itself to the kind of populist fight that now surrounds the remnant ancient forests of the Northwest.

In fact, the environmental community has taken a relatively conservative reformist stance on water. The environmental movement is diverse, but in so far as its position can be characterized, it does not see the doctrine of prior appropriation as evil. Most critics say they simply wish to broaden the present system, and make it work for more than just dam builders.

In one case, the appropriation doctrine is actually the key to an environmental strategy. The Nature Conservancy views the strong property rights in water established by the doctrine as a way to protect biological values.

The organization intends to protect streams by buying water rights and then leaving the water in the streams. It is one of several environmental strategies that involve the creation of in-stream or minimum stream flows to protect the life of streams.

Robert Dawson

Arkansas River near Climax, Colorado

Post-plundered period

It is a given that, when it comes to dams, all the good sites have been built on. But the same can be said of forests, grazing lands, mining districts, scenic valleys and even reservoirs of clean air. All of these resources have seen their productivity or beauty drastically reduced or destroyed.

This issue's discussion of water and its prospects for reform could as well have taken as its subject forestry, mining, grazing or tourism. To take one example, resort developers are continually looking for unspoiled places — in the Caribbean, in the Rockies, on remote Mexican beaches — to spoil. The scarcity of such land is an analogue, for the "lifestyle" industry, of the lack of good sites for new dams.

To take another example, the fierceness of the fight over the old-growth forests is a sign that they are just about gone. There is no room left — which means no forests left — to accommodate both preservation and logging.

No one can predict whether the West will be able to reform itself. Certainly there is not a lot of reason for hope. The 19th century pioneers came into a land that lacked infrastructure but was intact.

Their 21st century descendants confront a land that has been both plundered of its resources and also salted, with its productivity either permanently destroyed or in great need of rehabilitation.

Despite those handicaps, the West still has great appeal, both as community and as a natural place. It is among the most livable of American regions, with thousands of settlements that are accustomed to tough times and tough work.

Predictions about the possibility of reforming water or other natural resource practices, therefore, mean very little. The best one can say is that there is a race between ecological and economic collapse and thorough-going reform, with no oddsmakers in sight.

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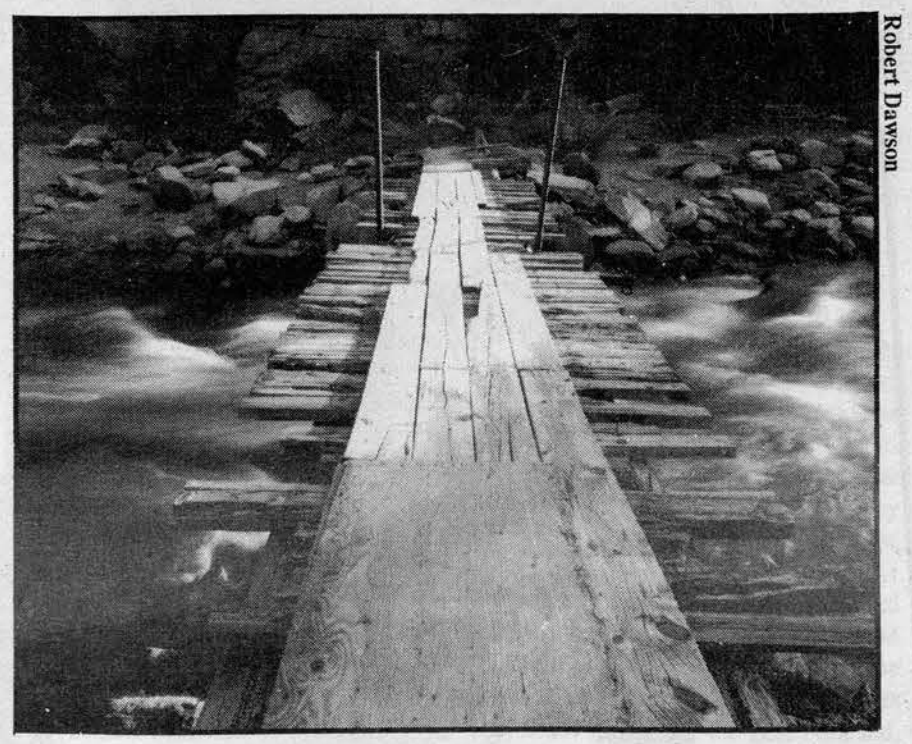


Robert Dawson

Clear Creek, near Idaho Springs, Colorado

Recalled to life

A maverick engineer hopes to use expertise and bulldozers to restore a four-mile-long gravel quarry to a living stream

by Susie Waddoups Jones
and Steve Hinchman

The East Fork of the San Juan is mostly a dead river.

Set in a pristine valley of Colorado's lofty San Juan Mountains, and surrounded by lush forests thick with wildlife, the East Fork should be a classic meandering stream teeming with trout, birds and beaver, and bordered by willows and cottonwoods — the center of a mountainous Eden.

Instead, it resembles a four-mile-long gravel quarry bulldozed straight down the center of the valley floor. Today the river is 800 feet wide and barely half a foot deep: a vast wash composed of many tiny streamlets running over coarse gravel and cobbles.

It is a sterile quarry. Most of the trees and vegetation have been scoured away, leaving no place for fish or waterfowl. The grassy floodplains are long gone.

The upper reach of the East Fork is typical of scores of Western rivers and creeks that have suffered the interfering hand of man. On the East Fork, the damage started in the early 1930s, after its landowner — in order to open more of the valley to grazing — burned and plowed the impenetrable willow thickets that held the river to its 60-foot-wide channel.

The willows were poor forage for cows, but they held the river in check. During the next spring and for over half a century, the East Fork ran wild, changing from a deep river into a shallow, braided channel. Even today, after each year's snowmelt, the floods carve new channels, ripping away the banks and sending tons of sediment downstream to clog the channel, bury fish and insect habitat and fill reservoirs.

The erosion has laid bare the river's soul — exposing its wide, shallow aquifer to the sun and wind. Because of the resulting lack of water storage and recharge, the East Fork is reduced in dry season to a trickle.

Reversing the damage

A recent experiment has begun to reverse the destruction. A few years ago the first mile of the East Fork was returned to its historic balance by a man who says rivers are as alive and predictable as any biological creature.

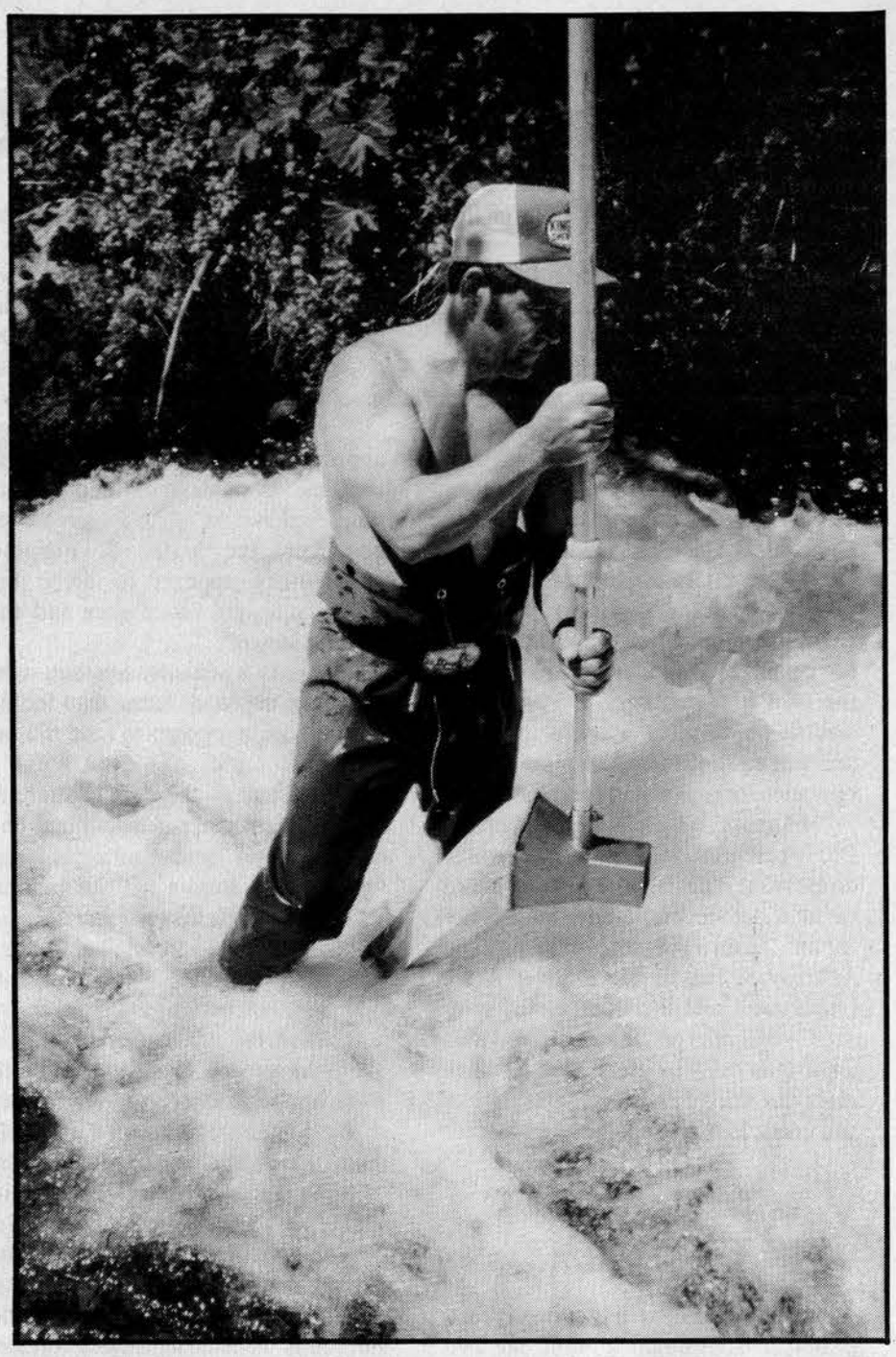
Dave Rosgen is a maverick, a cowboy-turned-hydrologist from Fort Collins, Colo. Working with the Forest Service and as a private consultant, Rosgen has spent the last 25 years studying rivers across the United States.

Rosgen, however, is a different breed of river expert. He doesn't rebuild rivers out of concrete and steel, like so many old-school engineers who have arrested bank erosion at the expense of natural beauty and wildlife habitat.

Instead he uses reams of data collected during long days in the field. Then he turns to natural materials located on site — rocks, trees and willows — and mimics nature, rebuilding the river's historic curves and floodplains, rediscovering its natural rythms.

His experiment on the East Fork of the San Juan returned its first mile to a meandering channel. Its newly created riparian floodplain has so far withstood several spring floods and now supports a rejuvenated trout population. Without a chunk of concrete in sight, this job turns traditional river-engineering on its head.

Ironically, Rosgen was hired to return the East Fork to its natural state so the valley landowner could develop it into a four-season resort. Dan McCarthy, proponent of the controversial East Fork Ski Area, realized he needed to first fix the river because the bottom lands had



Dave Rosgen

"the best potential for development," says Bob Perletz, a Boulder, Colo., consultant hired by McCarthy.

The first company contracted came up with a plan that looked like "a drainage-way through a subdivision," Perletz says. Rosgen was chosen to do the work because his results fit the natural image McCarthy wanted.

"Natural" takes study

Rosgen says his goal is always river stability, but by using natural processes and not brute, mechanical force. He defines stability as a river's ability to transport the full amount of water and sediment supplied by its watershed while maintaining its natural patterns and dimensions.

The key, he says, is "understanding the natural tendencies of the river." That is not simple. Rosgen classifies rivers based on six major variables: slope, width-depth ratio, sinuosity (a measure of meanders), bed and bank material size, bank soils, and confinement. These variables are integrated into a stream classification system he developed which is now being used throughout the United States.

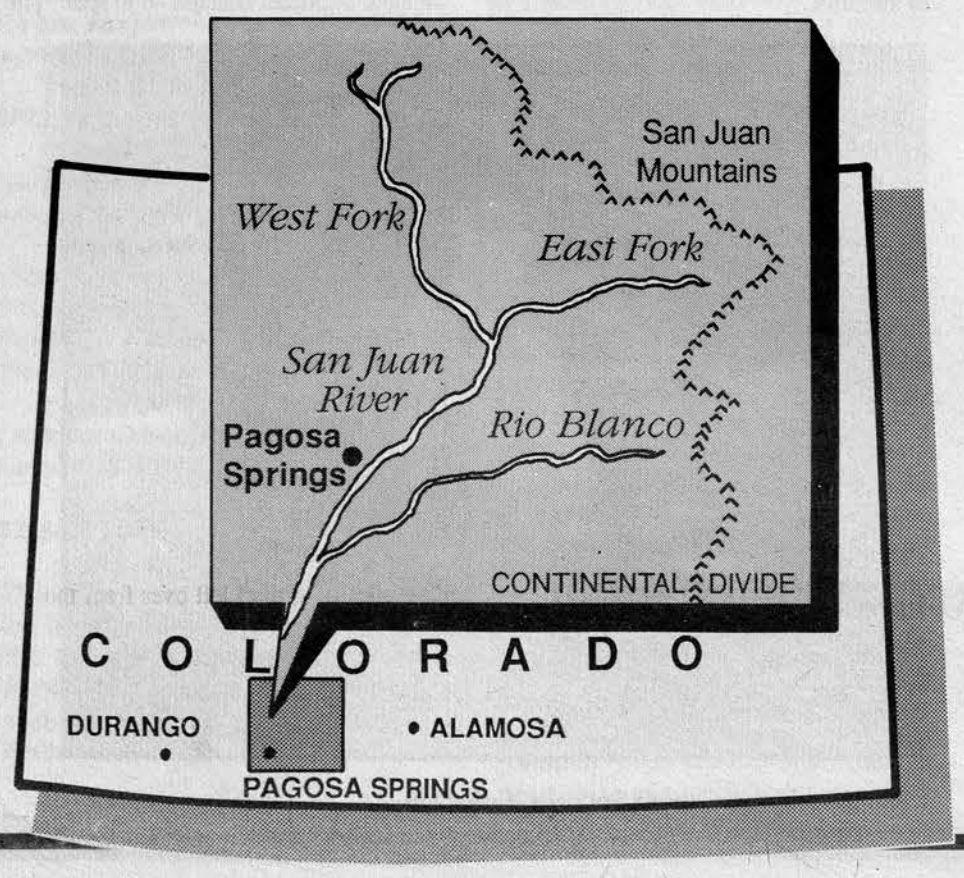
Rosgen developed his East Fork strategy by plugging its characteristics into his classification system. He also dug into the river's history, studying ancient floodplains that now stand as high terraces, and interviewing old-timers who remember the original river. Last, he compared aerial photos of the damaged four-mile reach with healthier sections downstream.

From this, he predicted the East Fork's behavior and drew up a blueprint for reconstructing its course. That blueprint, which reached the Army Corps of Engineers in the form of a 404 Dredge and Fill permit application, was radically different from just about anything they'd ever seen, recalls Grady McNure, head of the Corps' project office in Grand Junction, Colo.

What Rosgen proposed was plowing the river up and starting from scratch. Traditional techniques, such as building a series of check dams, were not part or Rosgen's plan. His intent was to restore the river's natural, stable form.

The permit application was accompanied by a series of calculations and measurements that laid out every dimension of the new river channel. Something of this sort had never been permitted before, and Corps officials called on Dr. Luna Leopold, professor emeritus at the University of California, Berkeley, for advice.

Leopold, the only hydrologist on the National Academy of Science and one-time head of all the U.S. Geologic



Survey's hydrologic studies, was familiar with Rosgen's calculations. In fact, much of Rosgen's work is based on theories Leopold developed, although Rosgen is the first to apply them on the ground. Leopold gave his plan high marks.

The river dictates

Leopold, who visited the site, gives a simplified view of Rosgen's method:

A river's slope or steepness, according to Leopold, is determined by the volume of water and should not be changed. But slope is not uniform down the river: it varies between flat areas, or pools, and steeper grades, called riffles. The spacing of the pools and riffles, he says, "is a function of width."

The sweep of a river's curves, however, is related to its bank-full discharge, or the amount of water, usually during spring runoff, that fills a river from bank to bank. Leopold says this "is the flow you want to design for."

The floodplain, a necessity for all rivers, is designed by nature to take care of flows greater than bank-full, and must be covered in grass and willows to prevent erosion.

The last variable is sediment load. Leopold says slope, width, depth and the river's curves are related not just to the water volume, but also to the size, weight and consistency of the sediment that water carries downstream.

The combination of these variables produces a unique profile that can be laid out in precise geometry.

Leopold says, "A river does not want to be straight. If a river is of a certain size it has to have bends of a certain size with a certain radii of curvature and a certain distance between one bend and another."

Leopold was optimistic about the result. In a letter to Corps officials, he concluded: "If this design is actually installed on the ground I forecast it will be cited as a landmark case and will soon be known throughout the world."

"I don't channelize rivers"

Based on Leopold's evaluation, the Corps gave Rosgen a permit for a demonstration project, allowing him to reconstruct the first mile of the planned 3.5 miles if he set up a three-year monitoring and evaluation project.

Rosgen had one more obstacle. Some residents of nearby Pagosa Springs opposed McCarthy's East Fork Ski Area plans, and consequently questioned the river renovation project. At a public meeting an angry ranch owner, Betty Feazel, approached Rosgen.

As Rosgen tells it, she said, "So you're the SOB who's gonna channelize the East Fork."

Rosgen says he replied, "Ma'am, don't ever use that word — channelization. You can call me an SOB if you want to, but I don't channelize rivers."

Rosgen won a reprieve, but local residents were still skeptical when Rosgen's crew moved into the valley. Now it did look like a gravel quarry. The crew included 15 people and 12 pieces of heavy machinery: front-end loaders, bulldozers, scrapers, trucks, earth movers, excavators with thumbs and even a skidder to haul logs out of the nearby forest.

Rosgen required his handpicked crew, all local, to go around the few cottonwood trees remaining by the river and cause as little damage as possible to the valley, challenging them to "walk the quietest on the land with the biggest of equipment."

Nonetheless, they overwhelmed the river. Dozers pushed the braided river channel aside while earth-movers, excavators and trucks rebuilt a meandering channel.

The outside of curves where the river applies the most force were lined with interwoven root fans from pushed-over cottonwoods and spruce. Staggered and facing upstream, the 12- to 15-foot-diameter roots were anchored into the bank and secured by interlocking logs and boulders. The high, jagged bank

Wildland Hydrology Consultants

AFTER: Once again, the river flows in a broad channel

catches and absorbs the river's power, much as the rough walls of a recording studio absorb sound. It also creates deep eddy pools and cover that make excellent trout habitat.

The insides of curves were transformed into low-lying floodplains that were planted in grasses and willows to withstand seasonal floods.

In between was a relatively narrow channel, about 60 feet across and three feet deep at bank-full discharge.

In all, the mile of work used close to 3,000 trees, several hundred boulders and over 430,000 cubic yards of fill material. Rosgen estimates the project cost about $60 a foot, or almost $300,000. The work took three months.

It acts like a river

The results have been excellent. The meandering pattern has held through three spring floods, and the channels are staying clear of sediment. Rosgen says that proves that once the right patterns are established, natural processes will take over.

Fringe benefits include better fish habitat, lower water temperatures, good year-round water levels, a rejuvenated floodplain aquifer, and a new grass and willow riparian ecosystem. Rosgen estimates nearly 60 acres of land were recovered over the one mile of restoration.

While the official three-year monitoring and evaluation program continues, Army Corps officials have already approved Rosgen's work.

"It is a technique that is permittable," says McNure. "We have issued permits and will continue to do so."

The locals didn't wait. Betty Feazel observed the project from start to finish and carefully monitored its results. The next spring she hired Rosgen to do similar work on her ranch on the West Fork of the San Juan, which she paid for by selling piles of gravel left over from the project.

Rancher Bob Lindner then had Rosgen repair 1.5 miles of the Weminuche River and 2.4 miles on the nearby Rio Blanco. The two projects cost about half what the East Fork did, and Rosgen says that with refined techniques, he can now repair most rivers at 10 cents on the dollar, compared to standard methods.

Following a September flood in 1988 on the Rio Blanco, Bureau of Reclamation officials noticed greatly reduced sediment deposition levels downstream on the San Juan. Attributing the change to Rosgen's bank stabilization work upstream, Bureau officials are now considering supporting further work on the San Juan's tributaries.

Today, it's pretty difficult to catch Rosgen with any spare time. He has completed a successful project on the Eel River in California's Humboldt Redwoods State Park; state officials have contracted Rosgen to repair the entire Bull Creek watershed, a tributary to the Eel that was devastated by logging in the 1950s; and the California State Parks Department has issued a proclamation requiring its engineers to use the geomorphic approach rather than the standard riprap and gabion wall techniques.

Other projects are completed or under way in California, Colorado, Vermont and Maryland. The final three-and-a-half miles of work on the East Fork, however, will not be permitted unless McCarthy wins approval for the entire ski area proposal

Between projects, Rosgen tours with his slide projector, giving short courses. He is also writing a book with Dr. Luna Leopold. Eventually, Rosgen hopes to move his family to Pagosa Springs, build a wooden lodge and teach on the nearby rivers, which he says include just about every river-type there is.

Rosgen says he wants more time with his family and horses, but he is often out in the field, accumulating data.

"I spent 24 years as a professional hydrologist, making a concentrated effort to bring the data together and find the variables that keep showing up ... I'll always balance projects and field work to keep getting new data, to keep my designs fresh and updated with what the rivers are telling me."

■

Wildland Hydrology Consultants

BEFORE: The river has split off into dozens of small channels

Bringing back the range

In Oregon, ranchers, academics and environmentalists are managing watersheds of small creeks with chainsaws, fire and cattle to bring those creeks back to life and save an endangered trout

by Jim Stiak

It is late August in central Oregon. A sparkling brook runs along the bottom of a canyon in the dry, juniper-dotted hills. Tiny rainbow trout swim in the clear water. Sedges, grasses and young willows hug the stream banks, their bright green contrasting sharply with the brown slopes rising above.

In a Bureau of Land Management cap, sunglasses and an aw-shucks grin, Earl McKinney is standing alongside Bear Creek explaining what sounds like a minor miracle. With chainsaws, torches and cattle, he's saying, this stream has been transformed from one that used to trickle dry every summer. Now it flows year-round.

"The BLM watershed program," says McKinney, "is to cut junipers, wait three years and burn, (then) have a good cattle grazing program lined up."

McKinney is a range conservationist with the BLM in Prineville, Ore. In the early 1970s, his district began cutting trees, burning fields and allowing selective grazing to rehabilite watersheds long overgrazed.

Thinning the junipers, McKinney explains, lets the grass trap more of the meager water that falls in this country. Fires keep junipers from resprouting and stimulate grass to grow, and the cattle, if grazed at the right time of year, also help the grass along.

McKinney and a medley of people roam along the stream, poking in the soil, snapping pictures, swapping stories. It's the quarterly get-together and tour of the Oregon Watershed Improvement Coalition, an ad hoc group of 17 people from academia, the cattle and timber industries, federal and state agencies, and wildlife and environmental groups. The coalition was formed in early 1986 to improve not only damaged lands, but also relations.

"The environmentalists said grazing on public lands should be eliminated," recalls one member, but "the ranchers said the environmental community should be eliminated."

Bill Kreuger, a professor of rangeland resources at Oregon State University is coalition chairman. He arranged the first meeting, seeing it as a test of whether quarreling factions could stay in the same room for a couple hours. They did, and the group has been meeting ever since.

Friction over a fish

Part of the friction among the different parties centered around an obscure fish, the Lahontan cutthroat trout, that was rare and getting rarer. The Lahontan, also known as the black spotted trout, dates back to the day when the Great Basin was one big lake and the fish was the largest trout in North American waters. In the 1930s, for example, a 41-pounder was caught in Pyramid Lake, Nev.

But with commercial overharvesting, irrigation dams and interbreeding with introduced species, the pure strain was decimated until it survived in just a few small streams. Then came years of drought, and on three streams in central Oregon, the Lahontan population plunged. On Big White Horse Creek, its population dropped 87 percent in four years.

Although the U.S. Fish and Wildlife Service currently considers it only a "sensitive" species, pressure could mount to list the trout as endangered. Like the spotted owl, the spotted trout could be the center of a political mess

The coalition hopes to avoid that by repairing both trout habitat and community relations. In an effort to save the Lahontan, cattle have been fenced out of Big White Horse Creek for the first time ever.

"Once the riparian habitat gets back in shape, we expect the stream will deepen and the fish population increase," explains coalition member Cal Cole. He is the executive director of Oregon Trout, a group that he calls a voice for the fish rather than the fishermen.

But preventing grazing on public lands is not the answer, Cole adds. That will just put pressure on private lands, and much of the best land — the bottom, riparian lands — are private. The answer, Cole and other coalition members hope, is education about enlightened ranching practices.

The coalition has only one on-the-ground project of its own, at Bridge Creek, but members respond to calls for help or advice from all around Oregon's rangelands. Every few months, the group takes a tour to see the work being done, not only streamside, but also high above in the upper watersheds.

On-the-ground reality

Today, the tour is on Doc and Connie Hatfield's "High Desert Ranch" outside Brothers, Ore. Doc Hatfield leads the group through a series of windswept fields, and at the first stop, he tosses his grey Stetson onto a patch of earth surrounded by scattered tufts of Idaho fescue.

"Notice how much bare ground there is here," he says. "This field hasn't been grazed for 25 years." He reaches down and tugs on one of the clumps, which comes out easily. "Not much root vigor," he says

He comes to a fence. On the left, where bushy grasses reach high, there's heavy animal use, he says. On the right, with few grasses, there's no animal use. He says grazing helps vegetation by recycling nutrients — held in the cowpies — and by stomping down dead vegetation and pushing seeds into the soil

"The big animal influence," adds McKinney, "is the critical driving force in the grassland ecosystem."

Doc Hatfield leads the group to a field where the juniper trees were burned off several years ago. When a storm came, he says, the water ran off quickly, but clean. The sediment was trapped by thick grasses that grew in place of the junipers.

Bill Kreuger holds a quick class in erosion. He says there was a study that compared rates of erosion under different vegetation covers. The most erosion was under big juniper. Less occurred under sagebrush but the least — something like 100 times less than under juniper — was under grass

Junipers also steal water. When the trees are cut in the hills the water table rises in the lower lands. Willow and Bear creeks, which used to be intermittent, are now year-round, Kreuger reports.

Kreuger points to a 20-foot high juniper. "According to data," he says, "on a warm, saturated spring day, that tree'll pump up about 50 gallons of water a day."

"Like any evergreen," adds McKinney, "juniper transpires all year. So in the spring, the grass is already wilted from lack of water."

The tour heads up a pair of dirt tracks, past a hand-painted sign reading "Connie's Point" to a rocky knoll with a stand of twisted junipers and a 360 degree view. The country is gorgeous, the air scented with sage. This, says Doc, is the upper watershed of Camp Creek.

He points to a nearby slope with fewer junipers than the other hills. We've cut the trees, Doc says, leaving enough shade for cows and cover for deer, but mostly grasses for our watershed. He turns to Dave Lumens of the Izaak Walton League for approval. Lumens slowly looks around and nods. "This looks good," he says. "Wildlife needs diversity, which this has."

Doc heads down the hill, pointing out the fluffy tufts of grass. The slope is grazed twice a year, but only for a short time, which Doc Hatfield says is timed to encourage its growth. "You can imagine water rolling off this when it's frozen ground," he says, "It'd have a heck of a time building up any speed with all these cracks and crevices and clumps."

"Now you gotta hurry up," he says, playing tour guide. "This is real excit-

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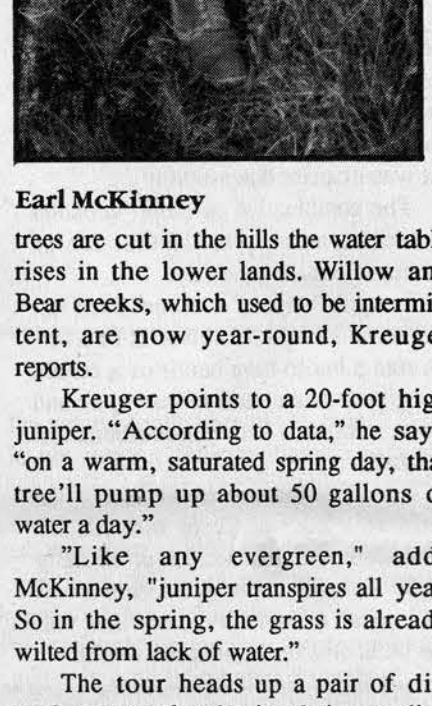
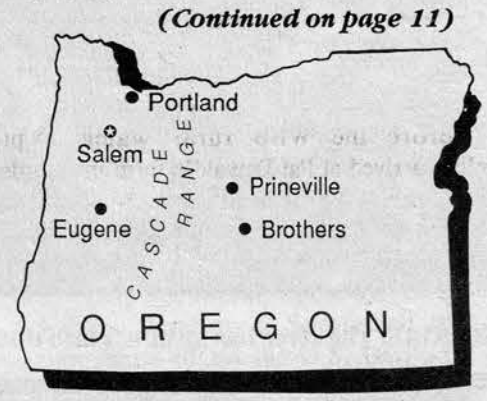


Jim Stiak

Earl McKinney

Jim Stiak

Left of center is managed land



Oregon range . . .

(Continued from page 10)

ing." He stops at a gully with a trickle of a creek and a large willow. "This willow is 50 years old," he says, "but this flow wasn't here except for a couple months in the spring — until we cut the junipers."

"We've come a long way in three years, after 120 years of misuse," someone comments.

Maybe the Oregon Watershed Improvement Coalition can change the world, says Doc Hatfield. "Like this, where ranchers and environmentalists are talking together, realizing there is common ground."

There's work being done all over the state, says another coalition member. A rancher in southeast Oregon is working on improving 35 to 40 miles of Trout Creek. He wants to meet with people to talk about it, but not with environmentalists, another member points out.

"It takes time," says Doc, "for these things to happen."

The tour winds back down the road toward Bear Creek. Earl McKinney takes over, and points to downed junipers lying along the stream banks. The BLM started cutting junipers in the early 1970s, he says. The trees dangle in the water, but not so thick that they block the sun from the riparian vegetation. The tree is pointed so the butt sits on the ground and doesn't easily shift in floods. Back eddies form behind the junipers, depositing silt.

"The junipers are the symptoms of 125 years of man and his livestock," says McKinney. "The real damage to some of these creeks was in the first 20 years cattle and sheep grazed on them. They've never had a chance to recover."

Besides cutting junipers, the coalition has also protected riparian vegetation. "Any vegetation along the creekbank slows water," says McKinney. "Grass is great, willow is wonderful. Willow slows more water, makes for less erosion and more bank building. Beavers keep them thinned — many small trees are better at slowing water than a few big ones. This is just my viewpoint, that the beavers' function is to keep trees young. But they've been trapped out."

He stops at a wide, flat area where tall bunch grasses sway in the breeze. It is the floodplain of Bear Creek.

"This area was grazed in the spring for a month," McKinney says. "It gets some heavy stomping. Where grazing is allowed, perennial grasses are establishing. Where grazing isn't allowed, it's annuals, and they were washed away by last year's flood."

"The water table is rising," he continues, gesturing over the field of grass. "Eventually this should be meadow. And the floods aren't as big as they used to be. That's the payoff for the upper watershed work."

He moves along the creek, to a spot where the floodplain narrows, and holds up a faded photo from 1976. The area in the photo is bare and rocky. He points over his shoulder to the same area now, lush with young willow. Tiny rainbow trout fry gather in the shade of the overhanging banks. Two coalition members swap fish stories about the 14-inch rainbow caught last year.

Grazing at the right time

This time of year is when we kill our creeks around here, says McKinney. "The cattle graze the riparian zone, which is green and attractive, but not rich enough to put any weight on them. The creeks get ruined and the cattle don't thrive. Nobody wins."

"Down in the riparian zone," he continues, "the idea is to graze after the runoff, after the vegetation has grabbed the mud flowing down the creek. This area was grazed three times heavier than before, but is in much better condition. It's all a matter of timing."

"There aren't any two systems where you can use the same prescription," adds Oregon Trout's Cal Cole. "Some systems, such as narrow canyons, just can't be grazed."

There are places where keeping the cattle off entirely works. On Willow Creek, one of the many Willow Creeks here, rainbow trout have returned to healthy levels. The fate of the Lahontan cutthroat trout is still in doubt, but, Cole insists, the coalition's work will make a difference.

"Fish are at the end of the line," he says. "First you've got to have good water quality, which is a product of good land management. You've got to get the management together first." That management, says McKinney, is coming around. Every BLM district in Oregon is working on watersheds, as are private landowners throughout the state.

"It's their working together that's making a difference. On nearby Salt Creek," he says, "the BLM began the watershed rehabilitation work there, but it wasn't until a private rancher also did some that the water began to flow yearround."

"After all," he says, "streams don't care if they're on public or private land."

■

Peter Carrels

Center pivot irrigation in northeastern South Dakota

Piping in a better life

The Dakotas forgo their dreams of vast irrigation projects in favor of systems that deliver high-quality drinking water to thousands of farms and ranches

by Peter Carrels

Before the WEB rural water pipeline arrived at Pat Dewald's farm in north central South Dakota, things looked bleak for the young farmer. His wells pumped only two gallons per minute. Especially vulnerable were Dewald's 300 head of cattle.

"It seemed like every other morning I'd walk out to check the well, to see if the water tanks were empty," recalls Dewald. If the tanks were empty Dewald would pull the well casing and clean the pipes of built up mineral and salt deposits. "That," he says, "was getting very old."

Dewald's options were limited. "If WEB hadn't come along, I would have had to dig a deep artesian well," to look for cleaner and more abundant water, he explains.

Drilling a new well would have cost more than $20,000. Instead, Dewald's minimum payment to WEB is $35 per month for 6,000 gallons of water. In the winter months he uses as much as 60,000 gallons each month. His monthly bill has never exceeded $100, even during those peak-use months.

Dewald is one of thousands of South Dakota farmers who eke out a living with some of the most heavily mineralized groundwater in the country. Plentiful and high quality water has always been hard to find in the Dakotas. The people who settled here could barely drink what little water their wells could suck from the earth. People today buy chemicals by the truckload to try and soften their well water.

WEB — named for Walworth, Edmund and Brown, the three counties in the pipeline's original service area — will end that. When finished, WEB will supply purified Missouri River water to up to 25,000 people and hundreds of thousands of cattle. The pipeline, which covers the central part of the state, is part of a growing network of spiderweb-like rural water systems that carry vast amounts of domestic water throughout South Dakota's thousands of square miles.

But WEB is also important because it replaces a massive federal irrigation project that would have dumped that water, and much more, onto the land for irrigated agriculture.

WEB water was originally part of the massive Pick-Sloan water project. Authorized in 1944 and built in the 1950s and 1960s, Pick-Sloan was designed to harness the unruly Missouri River: protect the large downstream cities from floods, produce cheap hydroelectric power, and provide plentiful and inexpensive water for irrigation of millions of acres of the arid Dakota and eastern Montana plains.

But its most obvious result was to drown millions of acres of fertile Missouri River bottomlands and displace thousands of people and whole Indian tribes. Kansas City now enjoys the pro-

(Continued on page 12)

Rural pipeline . . .

(Continued from page 11)

ject's electricity and is protected from the Big Muddy's annual floods, but the project's irrigation units were boondoggles, most of which never got built (*HCN*, 10/27/86).

WEB was built on the ashes of one of those units, the Oahe Irrigation Project in South Dakota, and it may mark the final abandonment of the dream of irrigated agriculture in South Dakota

WEB-for-Oahe

For more than 30 years, until it was officially halted in 1982, the Oahe Project held the attention of the state's water development establishment. The billion-dollar irrigation scheme was viewed as compensation owed South Dakota by the federal government for flooding over a half-million acres of Missouri River bottomland by Pick-Sloan.

Unrelenting pressure from organized farm opposition, however, derailed Oahe. The farmers feared the expensive project would drive them out of business, and they were joined by local and national environmental groups, which claimed the project would damage wetlands, wildlife and water quality.

In the end only a pump house and several miles of canal were completed. Cleverly, Oahe opponents did not simply call for the end of Oahe. They asked the federal government to fund construction of a rural water system that would serve both the proposed Oahe irrigation district and other areas desperate for drinking water.

Just as the fight over Oahe was intensifying during the late 1970s, President Carter's staff at the Interior Department was searching for local support to back Carter's plan to cut federal water projects. His staff found allies in Oahe's grass-roots opponents.

The notion of trading a federal promise to build a controversial irrigation project for a less expensive drinking water system appealed to Carter's staff. Oahe was killed and north-central South Dakota got WEB.

Although the WEB-for-Oahe trade brought greater attention to rural water systems in South Dakota, rural water supporters had been making quiet progress during the heated Oahe debate.

Between 1974 and 1984, more than $250 million was spent in the state building rural pipelines. Twenty-five systems were either operational or under construction.

But WEB is unique and immense. In fact, it is the largest project of its kind in the country. When completed, WEB will serve 5,245 square miles, an area larger than Connecticut.

"WEB is truly innovative because of its vast size," says Sam Wade, a spokesman for the National Rural Water Association.

WEB also made it politically reasonable to replace plans for large, controversial irrigation development with domestic water pipelines. For example, when support for the CENDAK (Central Dakota) Irrigation Project sputtered, it was enthusiastically replaced by plans for the Mid-Dakota rural water pipeline.

Because large irrigation projects have never materialized in South Dakota, the state's leaders are now asking that cheap Missouri River hydropower formerly reserved for irrigation development be transferred to domestic water delivery systems.

Last summer, in a pact described by Gov. George Mickelson as a "major step forward," Midwest Electric Consumers Association agreed to allow the planned Mid-Dakota system to use discounted electricity previously held for irrigation. The reduced power costs will save Mid-Dakota $100,000 each year. Electric officials had traditionally protected cheap power for irrigation projects.

The shift in water policy and projects makes economic and environmental sense, but it may mean an even greater improvement in the quality of life in South Dakota.

The state has always had one strike against it when it comes to groundwater. The use of agricultural chemicals, which seep into the groundwater, has aggravated the initial problem. That is especially true in southeastern South Dakota, where agriculture is most intense.

But even without agriculture, South Dakota has problems. "Generally speaking," says Mark Steichen of the state's Department of Water and Natural Resources, "South Dakota may have the most mineralized water in the nation."

Heavy mineralization translates into foul-tasting water, corrosion of plumbing and appliances, stunted livestock, and higher calf mortality. Dairy herd production can also be diminished.

In times of drought, stock dams and other water sources dry up, forcing livestock producers to ship their herds elsewhere. While providing water to people is important, state officials say that livestock watering is perhaps the greatest contribution of rural water systems. WEB alone will furnish water to over 600,000 cattle.

Of the 32 rural water systems now operating in South Dakota, 30 received their share of federal funding through the Farmers Home Administration (FmHA).

But WEB and a system not yet under way, the Mni Wiconi Pipeline, are being financed through the Bureau of Reclamation. FmHA spokesman, John Guthmiller, says his agency has no complaints with the Bureau's involvement in rural water.

"WEB and Mni Wiconi are big systems," explains Guthmiller, "and we're not used to working with systems that expansive." Mni Wiconi — which means "water for life" in Lakota — will serve 20,000 people in the southwestern part of the state, including 12,000 on the Pine Ridge reservation.

Building rural water systems is a new but not unwelcome challenge to the Bureau, whose role in water development has greatly changed in recent years. WEB was the first drinking water pipeline administered by the agency.

According to Rod Ottenbreit of the Bureau's Billings, Mont., regional office, "We have to look at what the contemporary needs of the country are. If the need isn't for more irrigation systems, then we must find out what the need is for. Apparently, rural water systems are needed."

The federal contribution to rural water systems is significant. The FmHA's Guthmiller says from 40 to 100 percent of a project's financing comes from federal money. WEB has received over $90 million from federal sources toward a total cost of approximately $105 million. State and local money are used to prove interest and commitment and to attract federal dollars. Usually federal funds make up about 90 percent of a project's costs.

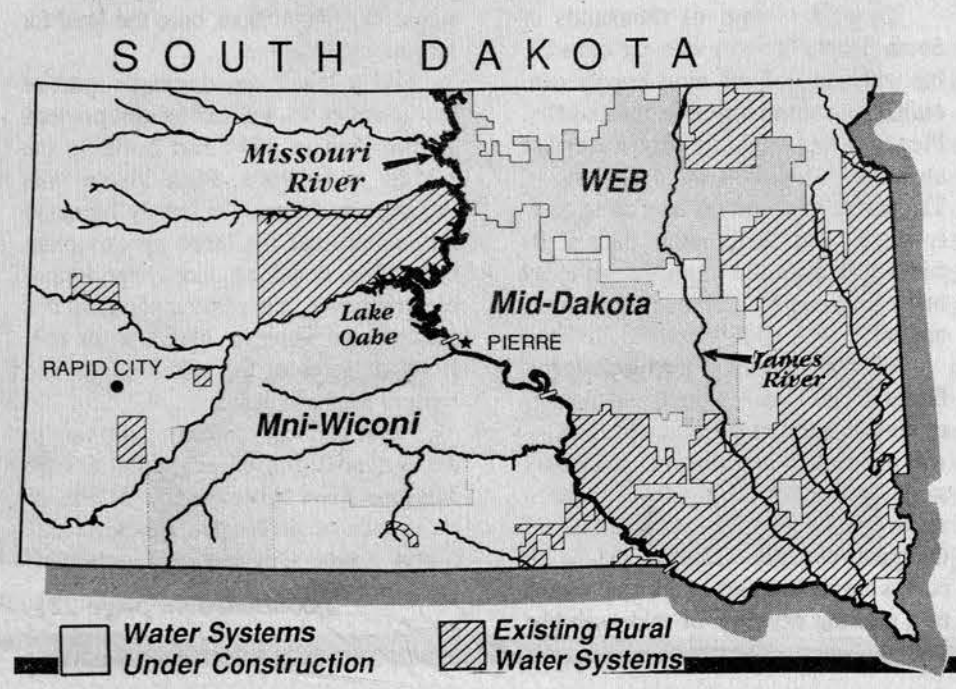
Although there is an exodus in South Dakota of farmers and ranchers to cities and towns, rural water systems have not reflected that trend.

"Not a single rural water system in the state has gotten smaller," says Dennis Davis. "They have all grown." Davis explains that abandoned farmsteads don't necessarily mean cancelled rural water taps. He says the supply to vacant homes is often maintained to continue watering livestock.

And despite economic woes, farmers loyally pay their rural water bills. "There is only a 1 percent delinquency rate on rural water bills in South Dakota," says Davis. "It proves how much people value their rural water systems."

The news of that value has spread. Davis says nearly two-thirds of the state's land mass will be part of the rural water pipeline grid when current projects are completed. "We anticipate rural water systems will deliver water to about 210,000 people, nearly one-third of South Dakota's population."

■



The last big project

With a single large exception, the past two decades have seen retreat from the original Pick-Sloan vision of irrigating the northern plains of the Dakotas. The exception is the Garrison Project of North Dakota.

But even here, there has been give. The original Garrison Project, authorized in 1944, was to use Missouri River water to irrigate over one million acres of land. Today's Garrison, now under construction, is designed to irrigate 131,000 acres and supply water to municipal and industrial pipelines.

The changes in the Garrison Project, part of a compromise worked out in 1985, have not ended all concerns. The compromise removed from the project land draining northward into Canada. This reduced Canadian concerns about non-native fish moving from the Missouri River into Hudson Bay. But the same compromise added land that drains southward, into the James River. Project opponents fear that the surges of irrigation wastewater off this added land could damage the James River channel and its ecological balance.

The James River begins in central North Dakota and lazily meanders over 700 miles before joining the Missouri River near Yankton, S.D. In a land of few rivers, the James and its refuges provide an irreplaceable ribbon of near-wilderness and wildlife habitat amidst plowed prairie.

The river's meanders and streambed depth have been shaped by the land and the volume of water the land produces. But once the Garrison Project is completed, the natural flows will be augmented by water running off the 131,000 acres irrigated by the Garrison Project.

Wildlife interests are concerned that the increased flows will damage three wildlife refuges that straddle the James River. The regional chapter of the American Fisheries Society, commenting on the 1985 revised plan for Garrison, declared, "There is no charitable way to say it, the James River was sacrificed..."

The "sacrifice" is partly a result of the need to modify the river to accommodate the increased flows the James will receive. At dozens of sites along the James, river banks will be riprapped and stream segments straightened or deepened to allow the channel to handle increased volumes.

In addition, the return flows could disrupt wildlfe refuges by creating rapidly fluctuating water levels and by polluting the river. Even before Garrison goes into operation, selenium levels at one large James River marsh, south of Sand Lake, in northern South Dakota, are at "the upper levels of acceptability," according to the U.S. Fish and Wildife Service.

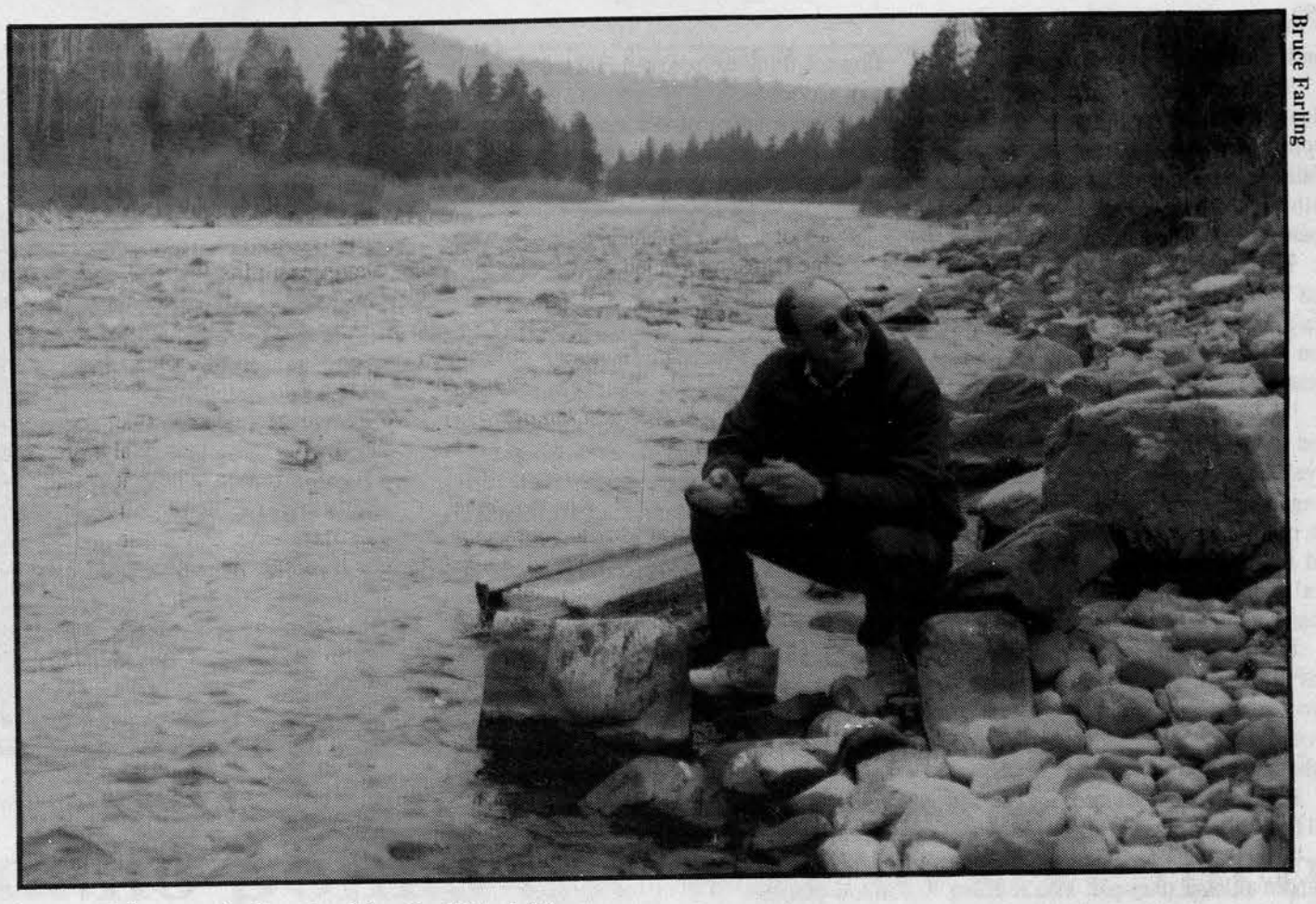
Selenium and other toxic elements leached out of the soil by irrigation projects in the West have already caused serious damage at several wildlife refuges (*HCN*, 11/20/89). Should Garrison create the same problems, the project could damage or destroy the James River's very rich migratory bird habitat. Last spring, for example, more than 700,000 geese converged at the 21,000-acre Sand Lake refuge.

Of the three James River refuges, only Sand Lake has thus far escaped serious damage. An early Garrison feature, the Jamestown Dam, built on the James River in 1953, partially inundated Arrowwood Refuge. And the third, Dakota Lake Refuge, is disurbed by irrigation tests now underway at the Oakes Area.

The threat that return flows represent to the river and the refuges continues Garrison's legacy of divisive conflicts and potential degradation of natural values.

But project supporters can breathe easy for at least a year. Congress has approved $30 million for Garrison's 1990 budget, ignoring an Office of Management and Budget recommendation of less than $9 million, the equivalent of mothballing the project.

—Peter Carrels



Bruce Farling

Peter Nielsen on the bank of the Clark Fork River

Making a difference on the Clark Fork

The Clark Fork Coalition has combined individuals and groups from Idaho, Montana and Washington in pursuit of one goal: cleaning up the Clark Fork River Basin

by Dean Miller

SANDPOINT, Idaho — If water quality is to the new West what water quantity was to the old West, chances are this generation of Westerners can give the region's rivers and lakes back to their kids in better shape than they got them.

Settlers were drawn here and to other parts of the West by promises of cheap land, cheap water and cheap power.

The latest wave of settlers is drawn here by promises of wild surroundings, clean water, and a quiet lifestyle.

This is Wallace Stegner's "native home of hope," and the new West's hopes are for an amorphous, drawling good feeling, usually called "quality of life."

At least that's how it looks from the shores of Idaho's Lake Pend Oreille.

This monster lake — the 16th largest and fourth deepest in the United States, other than the Great Lakes — gets more than 90 percent of its annual flow from the Clark Fork, one of the most polluted rivers in the West.

In recent years, Lake Pend Oreille has begun to show the effects of storing water drained from a number of sewage plants, a paper mill and the largest EPA Superfund site in the country.

In the early 1980s, boat owners began to complain of scum on their hulls and lakeshore residents were dismayed by algae clinging to shoreline rocks.

Fishery biologists fretted over the disappearance of Kokanee salmon from once healthy, near-shore spawning areas. And the water's crystalline blue hue had gone green in some areas.

Just across the border, along the Clark Fork River, Montana residents were also growing restless. Beautiful stretches of fish habitat produced too few trout, and the increasing numbers of recreational rafters commented on the odd smell of the river and foam on its surface.

In 1983, some Montanans got militant when the Champion International papermill at Frenchtown, Mont., applied for a permit that would have doubled the amount of suspended solids and oxygen-using waste pouring into the already-sick Clark Fork.

Organized resistance to the papermill's plans sprung into life on both sides of the border, but especially around Lake Pend Oreille. Several busloads of people from Sandpoint trekked 200 miles to Missoula for a hearing on the permit.

That was not really a surprise. In 1943, Sandpoint folks risked being labeled unpatriotic to defend their lake against a U.S. Army Corps of Engineers plan.

The agency wanted to drastically raise the level of the lake to store water for electrical generation in Washington, where aluminum was being smelted for war planes.

That time more than 600 people turned out for a hearing on the proposal, cheering and shouting as successive speakers criticized the plan, demanding the protection of the lake's existing shoreline. The Corps backed down.

Champion spawned a coalition

Fifty-three years later, in 1984, opponents to Champion's dumping plans were both well organized and determined. Various groups had mobilized technical expertise, diplomatic skill and public support to negotiate an agreement that took the papermill from being the top point-source of nutrient pollution, discharging 325 pounds of phosphorous into the Clark Fork per day, to the fourth worst. Recent tests show the plant now releases 150 pounds of phosphorous per day.

At the same time, the permit opponents organized the Clark Fork

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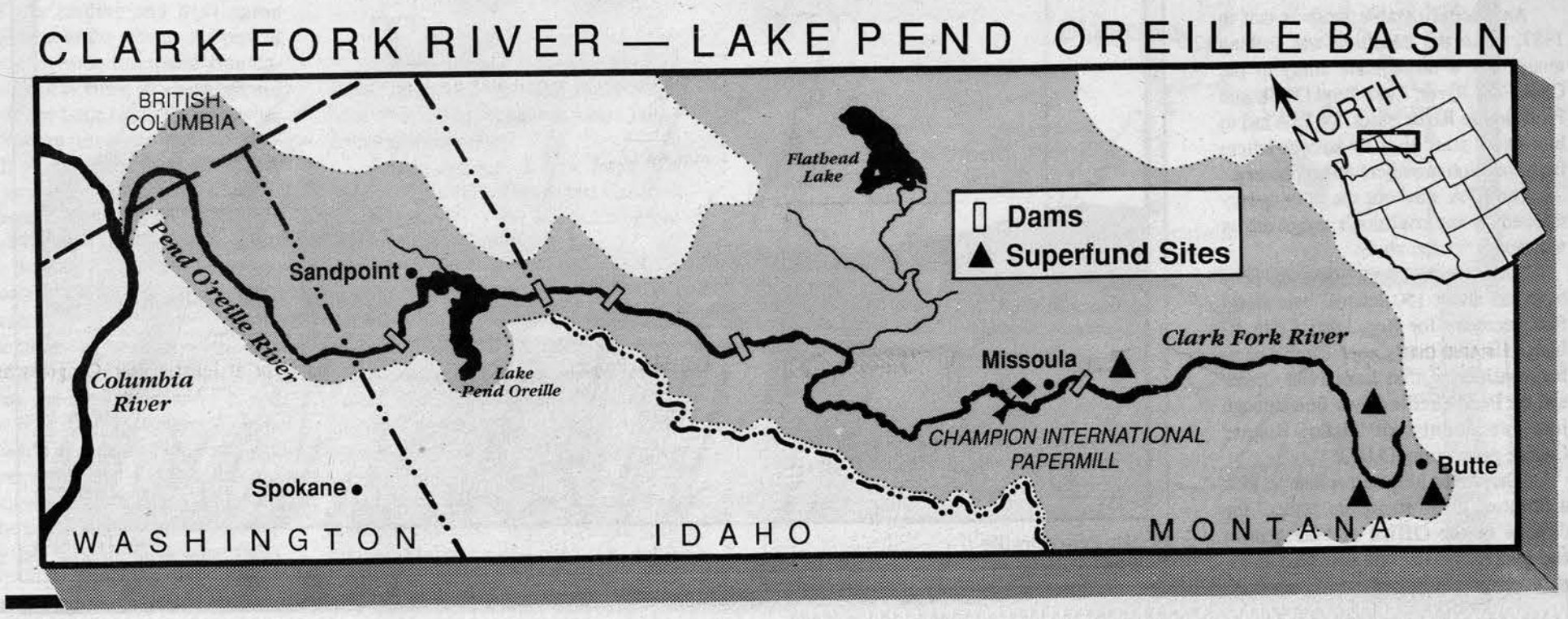


Clark Fork . . .

(Continued from page 13)

Coalition, which consisted of a board of directors, volunteer director Peter Nielsen, and about 14 members.

Today, the Clark Fork Coalition has close to 1,000 individual members and 100 organization and business members, ranging from the 450-member Lake Pend Oreille Idaho Club of anglers to Stone Container, the current owner of the paper mill at Frenchtown.

"What's amazing to me is not that a citizens' group springs up. What's amazing to me is that it has staying power," said Phillip Wallin of River Network, in Portland.

Wallin left the Trust for Public Lands after 16 years on the staff to form River Network, a three-person operation that organizes and trains citizen groups to protect their backyard rivers.

Wallin contends the strength of the Clark Fork Coalition is not only that it crosses arbitrary political boundaries to deal with a three-state river basin, but that it is also a repository of knowledge on the river's ills.

"Peter Nielsen knows more about the scene than the people he's watching, and that makes the coalition a strong player," Wallin said.

Speaking at a water quality conference during the coalition's push for a federal study of the river system, Ken Lustig, an officer with the north Idaho Panhandle Health District, put it simplest: "There is nothing that scares bureaucrats more than an informed public."

People like Wallin say they are impressed by the coalition's ability to attract members and supporters from beyond the first wave of letter-writing activists.

"We're really the only organization that defines itself by the boundaries that exist here. Everybody else is defined by some arbitrary lines drawn on a map," Nielsen said.

Of all the federal agencies with jurisdiction over the river and its banks, only the Forest Service has a headquarters office in river basin.

A major three-year, three-state, federal- and state-funded study of nutrient pollution and other problems draws on the EPA's regional offices in Denver and Seattle; the environmental protection agencies of Montana, Idaho and Washington; parks departments and fish and game departments from all three states; and staff from the Helena and Boise offices of the U.S. Geologic Survey.

"That's why we exist, we have to bind all these agencies together," said Nielsen.

An unconfirmable story is that in 1987, when the coalition was seeking money for a three-state study of the Clark Fork River, Lake Pend Oreille and Pend Oreille River basin, the EPA had to hire extra staff just to answer letters from coalition members and supporters.

The EPA was not the only agency targeted by the coalition's campaigns to win money for the study.

"Over the last two years, we must have had about 150 letters," said David Fish, secretary for Rep. Larry Craig, R-Idaho. He said that's a remarkable number, considering that Lake Pend Oreille and the Pend Oreille River flow through just one county of Idaho: Bonner County, population 25,000.

"They were helpful because he took a fistful of them up to Jim Miller," the director of the Office of Management and Budget, who at one time held up the funds for the study, says Fish.

In the end, Sen. Max Baucus, D-Mont., and Sen. Steve Symms, R-Idaho, sponsored an amendment to the Clean Water Act of 1987 that specifically authorized funding for a basin-wide water quality study.

By 1988, all three states' governors, plus Rep. Pat Williams, D-Mont.; Rep. Craig; and Sen. Brock Adams, D-Wash., won the release in May of 1988 of the initial $300,000 for the study.

"It became kind of a real apple pie kind of issue," Nielsen says. "When you have a lot of people calling for the same thing, a lot of politicians will respond. We got Steve Symms and Larry Craig and Jim McClure lined up, signing letters and claiming credit for it ... it became a real safe environmental issue."

But the impetus came from the citizens' coalition, said Mike Beckwith, a limnologist with the Idaho Division of Environment, who is coordinating much of the research on Lake Pend Oreille.

Beckwith thinks its success can and will be emulated elsewhere.

"I think the Clark Fork Coalition has been a classic example. You're going to see more of that, on the Payette and in the Lower Snake River Canyons, where they're looking for minimum stream flows. I think the potential is there along any waterway."

The funding of the study isn't the coalition's only success story. In 1988, the coalition convinced the city of Missoula to adopt a phosphate detergent ban.

Sandpoint and the other smaller cities around Lake Pend Oreille followed suit early this year, alarming southern Idaho's phosphate mining industry.

This summer, the coalition trained citizens at Paradise, Mont., to negotiate a monitoring plan for hazardous waste treatment with Burlington Northern.

On the upper 120 miles of the Clark Fork River, the coalition has helped citizens make sure EPA Superfund administrators respond to community concerns. Coalition staff members are also keeping an eye on silver mining plans near the Idaho border and new gold mining in the headwaters.

Boiled down, the lessons the Clark Fork Coalition has taught are: if you're going to protect the purity of rivers and lakes, you're going to have to start small, think big and win lots of friends in low places.

The best low places are downstream lakeshores and riverbanks populated by retirees, anglers and tourist trappers.

Nielsen has found, for instance, that more than half the coalition's members are retired and that their age and conservative approach give the coalition more credibility with industry and the federal and state bureaucracies.

Having succeeded thus far, the coalition now faces its most difficult task: winning support and acceptance for environmental controls that will inevitably be proposed based on the results of the study.

"Some of these old-timers might not take too kindly to people coming in and telling them what to do," Nielsen says. "It's always tougher when you start to directly affect people's lifestyles or livelihoods."

■

Clark Fork drains a damaged land

The Clark Fork-Pend Oreille watershed drains approximately 60,000 square miles of western Montana, northern Idaho and northeastern Washington.

In all, the Clark Fork Basin crosses the boundaries of two countries, four states and provinces, parts of 15 counties, nine national forests, two Indian reservations, nine wilderness areas, four national wildlife refuges and one national park.

A century of largely unregulated mining and smelting have left the upper Clark Fork "severely polluted" with toxic metals and other chemicals, according to the Environmental Protection Agency.

The river's upper 120 miles now flow through the largest EPA Superfund site in the country. After heavy summer rains, heavy metals leach from riverside tailings and smelter dust piles, killing thousands of fish in the river.

In addition, the Clark Fork drains effluent from nine municipal sewage treatment plants and the paper mill at Frenchtown, Mont.

By the time it reaches the Idaho border, its three reservoirs have slowed it down, but the Clark Fork is still Montana's biggest river. It also shows significant growth of attached algae and suffers from high levels of suspended sediments and dissolved oxygen deficiencies.

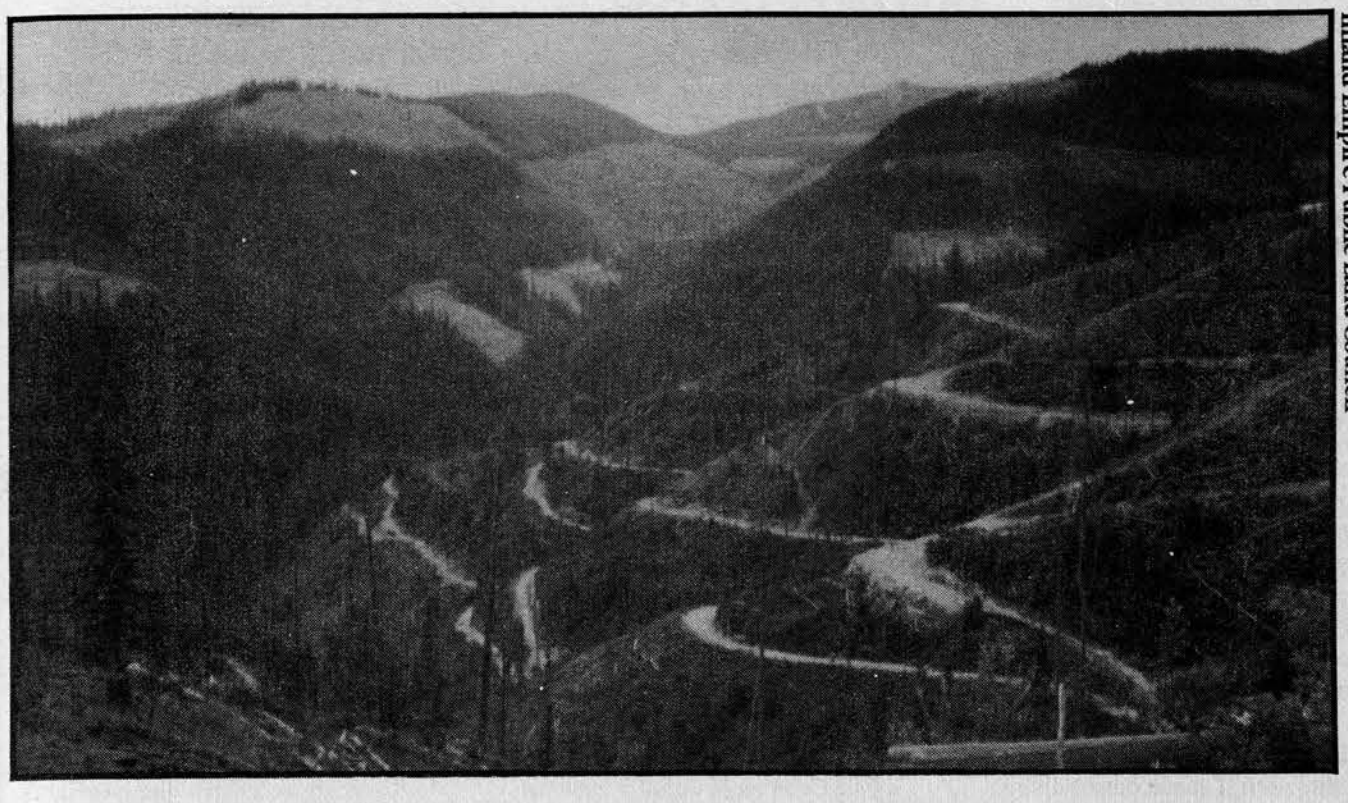
Lake Pend Oreille once supported a significant commercial fishery and a thriving sport fishery. The commercial fishery vanished and sport fishing has declined dramatically in the last 35 years.

Although water quality in the open lake is very high, the shallower bays and inlets have suffered gradual degradation from nutrient loading from the Clark Fork or from shoreline development.

The lake's outflow, the Pend Oreille River, is dammed at the U.S. Army Corps of Engineers' Albeni Falls Dam near the Idaho-Washington border. Below the dam, the river is plagued by major infestations of Eurasian milfoil, an aquatic weed that spreads rapidly unless controlled. The milfoil is marching upstream and water managers are troubled by the potential for its spread into the main lake.

— Dean Miller

Lake Pend Oreille — Mike Beckwith



Inland Empire Public Land Council

Clearcuts in Idaho

Idaho points the way to stream quality

Usually, Idaho leads only in potato production. But for a variety of reasons, Idaho is the first Western state to seriously attempt to control nonpoint source water pollution

by Pat Ford

John Osborn, Idaho's hardest working conservation volunteer, had just returned from the Little North Fork of the Clearwater River.

"It's grim," he told me on the phone. "There's a lot of new road in just the last month, and sediment is pouring off the Burlington Northern land."

The Little North Fork of the Clearwater lies where Idaho's narrow Panhandle begins its long bulge south. This is steep, remote, forested country, with north Idaho's best backcountry elk hunting and, until recently, fine west slope cutthroat trout fishing. Until recently it had few roads — a measure, here in Idaho's historic timber country, of how remote it is.

Today it's changing fast, as the two landowners build roads and cut timber. The Clearwater National Forest does most of the roading and Burlington Northern most of the cutting. As part of its Northwest-wide forestland liquidation, BN is clearcutting its checkerboard sections in the Little North Fork, making the map pattern real on the ground.

Each time Osborn has visited over the last two years, there are new roads, newly shorn slopes, and more mud in the streams. "The upper watershed is gone," he says. Sediment levels in streambottom gravels of the logged creeks are up to 90 percent.

"The bigger tributaries in the middle reach, the ones we're proposing for wilderness, are what's left. And BN and the forest both are going in there as soon as they can."

About 350 miles southeast as the crow flies — twice that as the car drives — lies the upper Blackfoot River.

"My dad ran sheep there when I was a kid," says Jim Gabettas, who runs a tackle shop in nearby Idaho Falls. "It was an outstanding cutthroat stream in the '40s and '50s." Then came overgrazing and riparian alteration.

"Today it's just fair," he says. "There aren't many around who know what it used to be like."

The Blackfoot's headwaters are on public land near the Wyoming border, but most of it winds through pasture and meadow on ranches in the high, dry valley above Blackfoot Reservoir.

"The meadows were tall grass and willows, with grass over the riverbanks," Gabettas remembers. "Then over time the owners killed the willows to get more open ground. Grazing beat down the banks. Now the shade and cover are gone, and sagebrush is taking over the meadows. You've got a lot fewer and a lot smaller fish."

River defenders speak up

Two Idaho rivers with different times, paces and agents of change. But both still have fish, thus users, thus lovers and defenders.

And, perhaps, a new hope for defense. This July, Osborn and Gabettas joined some 800 other Idahoans at eight crowded public meetings around the state, held to "solicit public input on water quality." Osborn went to meetings in Coeur d'Alene; Gabettas traveled 500 miles southeast to Idaho Falls.

At those meetings and by mail, 4,300 one-page forms nominating streams for special water quality protections were submitted to the Idaho Water Quality Bureau.

Gabettas handed in six, for the upper Blackfoot River and its major tributaries. Osborn nominated the upper reaches and tributaries of the Little North Fork of the Clearwater River.

What they were doing depends on your perspective. They were helping launch one of the nation's first coherent efforts to implement the Clean Water Act's most difficult and oft-ignored sections — nonpoint pollution control and anti-degradation.

They were also starting the action phase of a landmark negotiated settlement among Idaho water users and polluters.

But to their own thinking, they were just continuing, intently and without illusions, personal efforts to stop or slow the decline of waters they care about.

This latest stage started on Sept. 7, 1988, when a crowd filled the office of Idaho Gov. Cecil Andrus.

"This is a great day for our state," he told the battery of cameras, tape recorders and reporters. "We've proven that Idahoans can sit down and reason together without constant resort to adversarial approaches. It's a model for future cooperation."

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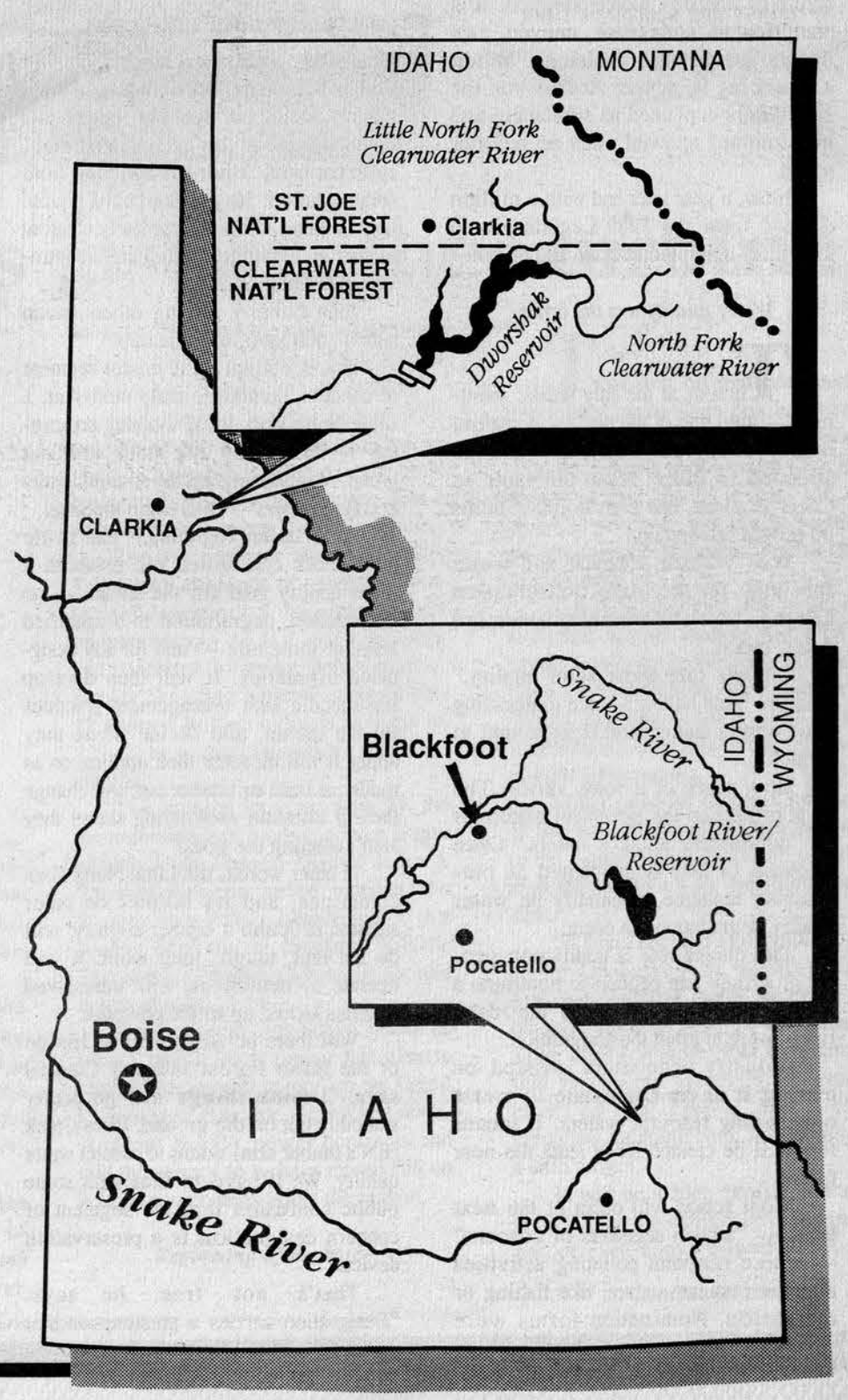

Idaho . . .

(Continued from page 15)

Seven men and one woman stood, not altogether comfortably, behind him — leaders of the Idaho Mining Association, Idaho Farm Bureau, Idaho Forest Industry Council, Wilderness Society, Idaho Conservation League, Idaho Sportsmen's Coalition, and Nezperce Tribe.

Under Andrus' insistent aegis, they had pieced together over five months a 13-page agreement framing how nonpoint pollution from logging, mining and agriculture would be regulated in Idaho.

Those five months followed a six-year treadmill, featuring several previous negotiations ending in bitter collapse, two gubernatorial vetoes of industry-written legislation, typical start-stop-switch-stall ballots by the Reagan-era Environmental Protection Agency and Idaho's Water Quality Bureau, and, finally, an October 1987 federal lawsuit by Idaho conservation groups to force action.

Recounting it in detail would only stir bad memories for those involved and be utter Greek to all the others. It's a standard tale of Rocky Mountain politics and muddle in the 1980s.

Andrus' achievement, once the lawsuit forced him to move, was to get something done. He put the regulators on the sidelines and hired a professional mediator. He told both sides that the first group to walk out or sabotage the talks would find Cecil Andrus on the other side from then on. And he wrote himself into the agreement as referee of future disputes.

The agreement itself reflects both the political landscape of Idaho and the nature of nonpoint source pollution. It is complicated, ambiguous, uneven, and defers most tough decisions. When announcing it, neither Andrus nor the negotiators explained its substance, and both seemed relieved when no reporter asked.

Now, a year later and with a million dollars from the 1989 Legislature to kick-start it, implementation has begun.

Water quality was the issue

Turnout at the July public meetings — step one of the pact — surprised nearly everyone. Some 175 people attended in Boise, about the same in Coeur d'Alene, and even in tiny Challis 30 people showed up.

Will Whelan, lobbyist and water specialist for the Idaho Conservation League, says the turnout mirrors the public mood.

"People care about water quality," he says. "And having a voice in deciding what waters matter most is important to them."

How much of a voice varies. The most protection the agreement affords is for "outstanding resource waters." Once a stream or lake is designated an outstanding resource, essentially no water quality degradation can occur.

The citizen role is traditional: people or groups can petition to nominate a stream, and must then lobby the Idaho Legislature to grant the designation.

Industry negotiators insisted on leaving it to the Legislature to create outstanding resource waters. It means few will be created for at least the near future.

Most action will occur at the next level — "stream segments of concern" — where nonpoint polluting activities threaten instream values, like fishing or recreation. Nomination forms were passed out at the public meetings, and 4,300 were returned by the deadline a month later.

Some played by the rules: Jim Gabettas submitted six detailed forms, one for each specified segment of the upper Blackfoot and its tributaries. Others simply nominated, for instance, the whole Snake River Basin on one form.

"Now the seven negotiators, four federal and four state agencies, are sitting down with those forms," says Whelan. "We have to decide, by consensus, which nominations to accept and which not. Where we can't agree, we turn the stream over to Gov. Andrus, and he decides."

The industries and their agency allies will seek to minimize segments of concern, conservationists and their allies to maximize. No one is predicting how many are chosen or bucked to Andrus. The goal is to finish by December 1989.

For streams not made outstanding resources or segments of concern, the formal process and public role are put on hold for two years, when the public meetings recur, and people can promote their streams again.

On paper, the waters of unchosen streams must still be protected for existing uses. But realistically, the monitoring required to make such judgments will barely cover chosen streams.

"Any non-point control scheme, much more than point source control, rides on choices," says an EPA staffer. "Idaho is choosing where to focus very limited time and money." And people may not yet realize where not to focus.

Attention will be paid

The Little North Fork Clearwater will probably get some of that attention. Its roadless portion drains the proposed Mallard-Larkins Wilderness, Idaho's biggest flashpoint between loggers and conservationists. Its classic west slope cutthroat trout fishery is suffering from sedimentation. Its checkerboard private land is being almost completely clearcut as part of Burlington Northern's controversial liquidation.

John Osborn, among others, made sure it got a lot of nominations.

If it is chosen as a stream segment of concern, sometime early next year, a Little North Fork local working committee — named by the state working group, representing all the stream's users and landowners — will begin meeting.

As Whelan explains, "The Little North Fork committee will establish a water quality goal for the stream — no degradation, degradation to a specified level, or some mix — and for any designated tributaries. It will then develop site-specific best management practices for the stream, and decide where they apply. It will monitor their application as roads are built or timber cut, and change them if instream monitoring shows they aren't meeting the goal."

In other words, the Little North Fork committee, and its fellows on other streams in Idaho's timber country, will do the real, tough, long work. It will operate by consensus, with unresolved disputes kicked up to the governor.

Will there be disputes? Joe Hinson of the Idaho Forest Industry Council says, "I think things will go pretty smoothly out on the ground. Plum Creek (BN's timber arm) wants to protect water quality. We'll have to deal with some public confusion that the segment of concern designation is a preservation device."

That's not true, he says. "Designation carries a presumption that timber activities will occur."

John Osborn says, "If I'm on that committee, my mind will be on halting logging on those damaged checkerboard ownerships. The feeder streams are loaded with sediment. Our only hope is logging and road reductions. The committee must be prepared to protect what's left — if any is by the time they start meeting."

The Little North Fork does have one thing many segments of concern will not: established instream monitoring. B-N's clearcutting led Idaho's Water Quality Bureau to begin measuring both logged and pristine feeder streams two years ago. That data will give the river's working committee a big jump on the many others responsible for unmonitored streams.

Upper Blackfoot needs help

Jim Gabettas has a different creature on the Upper Blackfoot River. The river needs restoration, not just protection. It flows largely through private land. There is no dramatic controversy, just slow decline. Its friends are few. If the Blackfoot makes it as a stream segment of concern, it will do so just barely.

Gabettas has a modest goal: "My hope, if we get the designation, is to set up good monitoring, and nail down the status and problems. Moving from there to do something about it — well, that will be hard."

It will be hard because, for streams affected by agriculture, the agreement resembles the Cheshire Cat. The only requirement for an ag-impacted segment of concern is that the local Soil Conservation District assess its water quality.

Projects to do something can be developed, but landowner participation is voluntary. The agency and industry presumption is that local working committees will not form on streams affected by agriculture.

Agriculture's soft duty reflects Idaho's politics — farming and ranching is industry number one — as well as the

How Idaho became a water quality pioneer

The long story of Idaho's reluctant progress to the leading edge of nonpoint pollution regulation begins with two small acts of bureaucratic honesty, in 1980 and 1982.

The 1972 Clean Water Act required regulation of both point and nonpoint water pollution. But to date, point sources have absorbed nearly all available agency time, money and public attention. Another of the act's provisions — that existing high quality waters not be needlessly degraded, especially without public participation — went nearly unnoticed.

As states entered the complex world of Clean Water Act compliance, they were content to satisfy this "anti-degradation" requirement with boilerplate policy language that was largely ignored on the ground. The Environmental Protection Agency, completely absorbed by the battle over point sources, was content to let them.

Idaho's early water-quality regulations had the usual boilerplate policy. But in 1980 the state, with a literalism its polluters and regulators would come to regret, deleted nearly all of its anti-degradation language. Why have anti-degradation on the books when it was ignored on the ground? At the time, the deletion went nearly unnoticed.

In 1982, another literal-minded employee of Idaho's Water Quality Bureau wrote, and had an unwary superior sign, a letter challenging a proposed timber sale on a pristine drainage on the Nez-perce National Forest. He invoked a little-known section of Idaho's nonpoint source regulations which at the time said that no injury shall result to protected uses, like fishing.

No injury, the letter said, means no injury.

Howls of outrage from the timber industry and Forest Service led to petitions, counter-petitions, five public hearings, and a predictable result: "no injury" was changed to "no serious injury," and reductions in water quality were allowed if "socially and economically justifiable."

The state submitted this new language to EPA for approval, and then spent two years (with EPA waiting for the outcome) trying to define what "serious injury" meant.

The Reagan EPA was patient with failtures to comply with the law. But after two years and much prodding by conservationists, even it reached a limit.

In May 1985, EPA notified Idaho that both its new but never-defined nonpoint language, and its old but newly noticed deletion of anti-degradation policy, violated the Clean Water Act. The state was given a year to correct the violations, or have EPA do it for them.

Idaho's timber industry tried a shortcut. The industry wrote, and the 1986 Idaho Legislature passed, a bill stating that if an operator used Best Management Practices (Idaho's approved BMPs were weak and very general), no serious injury to water quality could result.

What actually happened in the stream was not relevant — only whether Best Management Practices were used.

This time, conservationists and fishermen howled. In response, Gov. John Evans vetoed the bill and formed a Nonpoint Source Interagency team to find a way out of the muddle.

The team spent two years getting not very far. The talks were interminable and poorly run; state agencies couldn't agree among themselves — much less mediate among the private interests — and politics were ever-present.

The timber industry walked out three times, and each time the Water Quality Bureau scuttled tough language to draw them back in.

EPA kept sending mixed messages, and extended its compliance deadline four times. Everyone involved would just as soon forget the experience.

After the industry's last walk-out, in October 1987, 11 Idaho groups sued in federal court to force EPA to write an anti-degradation standard for Idaho. There followed passage of another industry-written bill, another veto — this time by Cecil Andrus — and, finally, the five months of Andrus-led talks that produced an agreement.

— Pat Ford

conservation community's deliberate decision in the negotiations to use their chits on timber.

Agriculture is Idaho's major nonpoint polluter by far, but that very scale, and the thousands of operators involved, discourage any reform efforts at all.

Another problem is that few people recall when the streams and rivers of the Snake River Plain were anything but degraded. The agreement treats mining about the same as agriculture, due in part to the relatively better shape of Idaho's dredge and surface mining laws after a grassroots campaign in the mid-1980s.

On the Blackfoot and similar streams, fishermen are considering forming their own, unofficial working committees, as a way to foster publicity and public awareness.

"I don't have a lot of hope this process can turn ag degradation around," Gabettas concludes. "But if it can increase people's attention to the river, that's a step."

Idaho takes the lead

It seems odd that this halting, imperfect agreement puts Idaho on the leading edge of nonpoint pollution regulation in the West. But that is what an EPA staffer says has happened.

"Apple pie policy but not much on the ground is the tradition in nonpoint," says one. "Idaho is leading not so much in what it's doing, but the fact that it's doing something."

For this federal regulator, Idaho's imperfect progress seems a big step. After decades of no nonpoint regulation, Western states moved first to best management practices — usually general, weak, ill-enforced prescriptive guidelines applied to each industry.

Only lately have conservationists and fishermen, armed with the Clean Water Act, begun insisting that specific instream criteria, such as sediment, and comprehensive monitoring, drive nonpoint regulation.

They are also insisting that high-quality waters remain undegraded, and that degraded waters get cleaned up.

How is the practical question, and Idaho will be among the first states to try to define numerical yardsticks for health and harm on not just one stream, but for an entire state. Nor can choices be evaded. All streams can't be monitored, all pristine waters preserved, all degraded waters cleaned up or all polluting uses treated the same.

A relative handful of Idaho conservationists made a big choice right out of the box — that timber streams would get the real attention and most of the money from this agreement. Now a larger but still modest number will make the next tier of choices. At each tier, losers — streams and users — will outnumber winners.

No wonder Gabettas and Osborn are wary about results.

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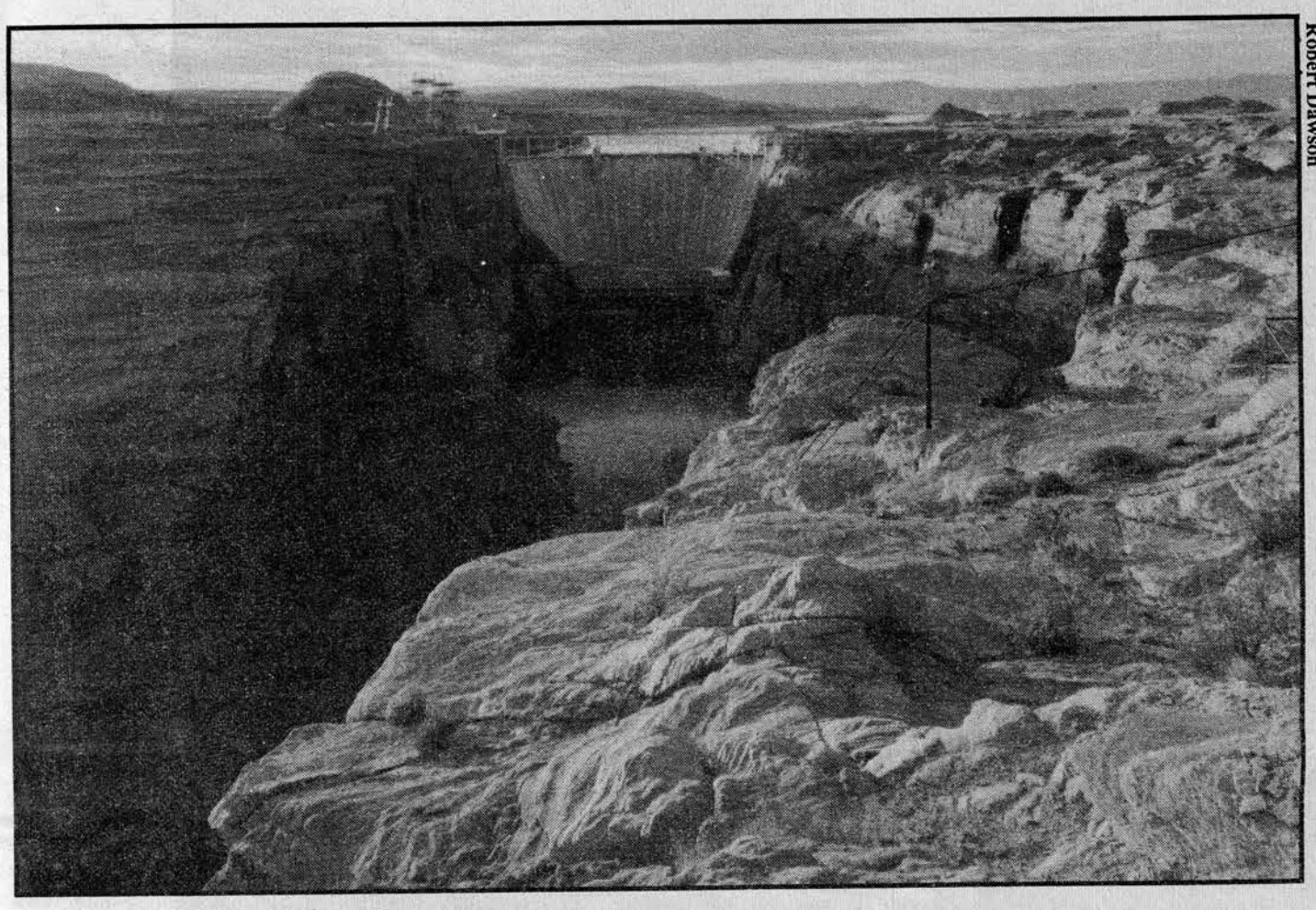

Robert Dawson

Glen Canyon bridge and dam, Page, Arizona

The Grand Canyon is just another turbine

The Colorado River through the Grand Canyon rises and falls in lockstep with the West's demand for electric power. Now environmentalists are asking federal power authorities to let the river off its very short leash

by Dennis Brownridge
and Steve Hinchman

Few structures heat up environmental emotions as much as Arizona's Glen Canyon Dam, a wound in the flesh of conservationists since it was completed in 1963.

Most of their ire has focused on the dam's upstream impacts — the drowning of Glen Canyon's haunting redrock walls under Lake Powell. But over the years, the focus has shifted to the dam's ongoing downstream impacts — the scouring of the Colorado River through Grand Canyon National Park.

For the last 15 years, river runners, environmentalists and lovers of the Grand Canyon have vainly sought an environmental impact study on the dam's operation.

They charge that daily tides created by the dam are wreaking havoc on the park below: eroding beaches and banks, stranding boaters, cutting endangered fish off from spawning zones and forever altering the canyon's riparian ecosystem.

For 15 years, the federal agencies that manage the dam — the Bureau of Reclamation (Department of Interior) and the Western Area Power Administration (Department of Energy) — have refused to deal with those impacts, arguing that their job is to produce kilowatt-hours, not save beaches.

Supported by a consortium of utilities that use the dam's power, the federal agencies have blocked every move environmentalists and others made to gain a voice in Glen Canyon Dam's operation.

But last summer the feds broke. Faced with evidence of severe environmental degradation, mounting public pressure both in the U.S. and worldwide, and concerted lobbying from Congress, Interior Secretary Manuel Lujan on July 17 ordered BuRec officials to begin an EIS on how dam operations affect the canyon.

Two months later, on Sept. 29, the environmentalists scored an even bigger victory. Utah Federal District Judge J. Thomas Greene ruled against the Western Area Power Administration in a lawsuit filed by the National Wildlife Federation, Grand Canyon Trust and rafting groups.

Greene found that WAPA's sales of Glen Canyon dam power had clearly caused "irreparable injury" to the Grand Canyon river corridor. He revoked several recent WAPA power contracts and told the agency to write a second EIS on how its power sales affect the canyon.

Beginning of the battle

These first official recognitions that Glen Canyon Dam has and continues to harm the Grand Canyon environment add up to a major victory for environmentalists. But it is just the first round in what may turn out to be one of the biggest environmental battles of the next decade.

"The Glen Canyon EIS is the most important EIS the Bureau has ever prepared," says Rep. George Miller, D-Calif., who oversees both BuRec and WAPA as chair of the House Interior Committee's Subcommittee on Energy and the Environment.

Miller calls the Grand Canyon one of the most treasured natural landmarks in the United States, if not the world. He says the studies are an important precedent.

"It is not the first hydroelectric dam to be challenged on environmental grounds," Miller says. "Action was taken to restore salmon on the Columbia River after it became clear that dams on that river were having a devastating effect on fish survival. But it sets a precedent for going back and re-thinking a dam project."

It will be a high profile investigation. Putting the canyon environment on par or even above power production

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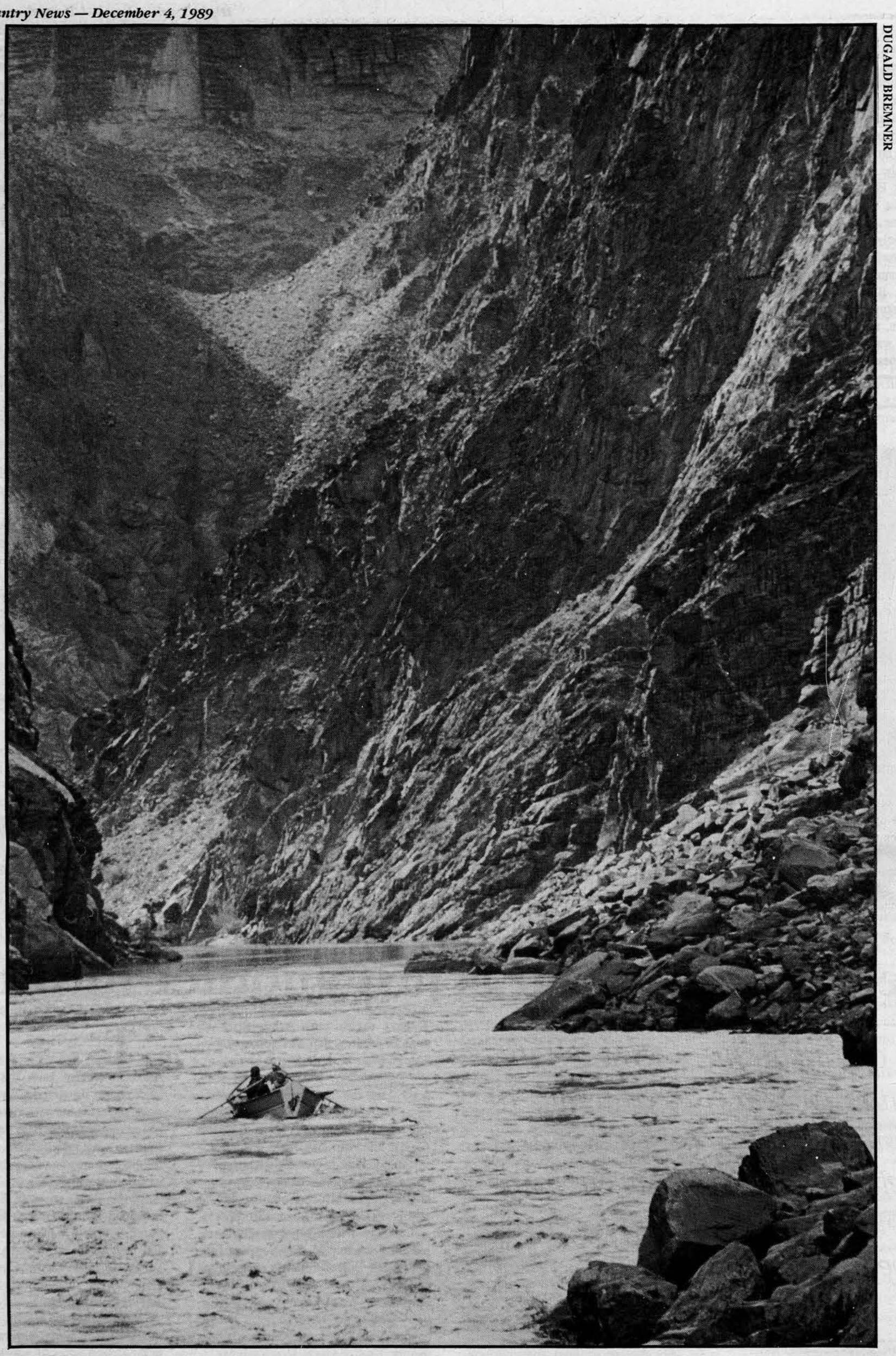


DUGALD BREMNER

A dory in the inner gorge of the Grand Canyon

Grand Canyon . . .

(Continued from page 17)

would mean a fundamental change in the way rivers are managed in the West.

Every major environmental organization has targeted the Glen Canyon Dam as a key issue. The National Park Service, U.S. Fish and Wildlife Service, the National Academy of Sciences and four congressional subcommittees are also watching.

It is not a simple issue. Glen Canyon is the key dam in the Colorado River Storage Project: a series of water storage and hydroelectric projects in the Colorado River Basin, which include Flaming Gorge Dam on the Green River in Utah and the three dams of the Curecanti unit on the Gunnison River in Colorado.

The project's primary purpose as mandated by Congress in 1956 is to store Colorado River water for allocation among all the basin states. But Congress also told the Bureau of Reclamation to "produce the greatest amount of power and energy that can be sold at firm power and energy rates."

BuRec has done that. Glen Canyon's eight turbines have a combined capacity of 1,300 megawatts, which make up more than 10 percent of WAPA's power supply.

BuRec built and runs the Colorado River dams. WAPA serves as the power broker for the 50 federal hydroelectric projects in the West and tells BuRec when to turn the dams on and off, based on regional power needs.

However, most of the revenue from Glen Canyon's turbines does not accrue to the federal treasury. Instead it is passed on to public utilities in the form of power rates that, at 1 cent per kilowatt hour, are among the cheapest in the nation.

Those utilities, known as the Colorado River Electric Distributors Association, or CREDA, serve an estimated one million retail customers in six states: Colorado, Wyoming, New

Mexico, Arizona, Utah and parts of Nevada. David Conrad, a water specialist with the National Wildlife Federation, says cities and counties with CREDA power pay about one-fourth of market prices.

CREDA depends heavily on that subsidy, and WAPA and the utilities have found ways to increase its dollar value. For the first decade or so of production WAPA marketed the power as baseload supply — around-the-clock electric generation — and the river flowed relatively smoothly.

But over the last 15 years, WAPA has increasingly used the dam for peaking power — generation when electricity is at its highest demand and highest cost — which sends the river downstream in pulses that chew up the environment but save the utilities tens of thousands of dollars.

Despite environmental concerns, BuRec, WAPA and CREDA continue to increase the economic value of the 25-year-old dam's hydropower operations.

In the early 1980s, BuRec rewrapped Glen Canyon's turbines, increasing its peaking power capacity by 16 percent; and over the last few years WAPA has begun to blend its power with other federal hydroelectric dams and non-federal power plants to increase the peaking power available to CREDA customers (see accompanying story).

River pays the price

The gradual integration of Glen Canyon Dam into the West's energy machine has sparked a growing movement to save the river corridor downstream. Balanced against the view of the dam as a power station and cash register is the overpowering experience of the Grand Canyon.

The Grand Canyon is regarded as one of the world's premier whitewater runs. It winds 240 miles through the longest de facto wilderness in the contiguous states.

Recreational river running was born there, half a century ago. But the Colorado in the canyon today is very different from the virgin stream. The dam replaced the great spring floods and low summer flows with daily tides that ebb and flood as the generators follow hourly demands for electricity.

In narrow stretches, the river can rise and fall as much as 13 feet in a day.

"The river's being operated like a flush toilet," says Dan Dagget, conservation chair of the Sierra Club's northern Arizona group.

Rafters say the unnatural fluctuations are damaging the canyon environment and degrading visitor's experience.

"At some rapids, when the flow is low, boatmen have to stop and wait until higher flows come along," says Rob Elliott, vice president of Western River Guides Association, who has been running the river since 1965.

The old Colorado was the nation's muddiest river: "Too thin to plow and too thick to drink," as the saying went. Let a cupful stand and you might get a third of a cup of mud. The reddish silt and clay gave the river its name — El Rio Colorado, the red-colored river. Sixty million tons of it were carried down the river each year, replenishing the beaches scoured away by annual floods.

Now that sediment settles behind the dam. Veteran river runners say beaches have shrunk noticeably, especially in narrow stretches like Marble Gorge and Granite Gorge, where they were always scarce.

"Our primary concern is the erosion of the beaches, because it's irreversible," says Elliott. "It's getting so there aren't enough quality campsites to go around."

Despite several years of study, sediment transport through the canyon remains poorly understood. But some hydrologists think the beaches would eventually stabilize if it weren't for the large daily fluctuations. They are particularly concerned about the rapid ramping rate, the speed at which the river is raised and lowered.

The dam's effects on the river's sediment load and water quality are so thorough — filtering out sediments, suspended solids and nutrients — that 300 miles downstream Nevada has had to begin fertilizing Lake Mead to keep its trophy sport fishery alive.

The dam has also had enormous impacts on vegetation and wildlife. Spared the annual floods, new vegetation has taken hold on the river banks. Some species, like the introduced tamarisk, now dominate, and are pushing out the native plants.

While some regard the "tammies" as buggy pests, they have also attracted five times more birds than used to live in the canyon.

The dam's clear, cold waters have spawned a fabulous rainbow trout fishery, but simultaneously extirpated half of the eight fish species native to the canyon and reduced the rest to endangered or threatened status. The rapid fluctuations have also been known to cut off the remaining native fish from

(Continued on page 20)

A peaking problem

At the heart of the battle over Glen Canyon Dam is the way hydropower is used and marketed today.

When the first big dams were built decades ago, the West was awash in hydropower. But dam construction could not keep up with a burgeoning population and its thirst for electricity. The best sites have long since been dammed and hydropower now produces a dwindling share of our juice.

At peak capacity, all 50 federal dams in 15 Western states put out 10,000 megawatts — only two and a half times the power of the Palo Verde nuclear plant near Phoenix. The coal-fired Navajo powerplant, next door to Glen Canyon dam, generates twice as much energy as the dam itself.

As a result, hydropower is increasingly used to supply "peaking power" while thermal plants — usually coal or nuclear — supply the base load.

Dam generators kick in to satisfy the daytime peak in electrical demand. Water releases during the day are therefore much higher than late at night, when people use less electricity.

Hydropower is well suited for peaking power because it reacts almost instantly to load changes and works efficiently at various power levels.

Coal-fired plants, by contrast, have a longer lag time and work best when going full-bore. Power interests say that using dams for peaking power slows the need for more thermal plants, saves nonrenewable fuels and helps reduce air pollution.

You can't get more energy (watt-hours) out of a river unless you build more dams. But you can get more power (watts) from a dam by simply increasing generator capacity. However, you won't be able to use this capacity all the time because there isn't enough water in the river.

But if you are using the dam for peaking power that does not matter — you shut down the river's flow at night and save the water for the next day's peak.

Many dams in the West are being "uprated" this way because daytime energy is more valuable than nighttime energy. Of course, uprating increases fluctuations downstream.

A technical solution exists, but it is expensive and drowns more river: You can build a small re-regulating dam just below the power dam to smooth out the daily flow.

— Dennis Brownridge

Grand Canyon . . .

(Continued from page 19)

spawning areas in warm side canyons.

"The river is so artificial now, I don't think we can ever really restore the native fish," laments Daggett.

The impacts to recreation, however, are a mixed bag. In summer, the natural river was warm enough to swim or paddle across on an air mattress. Now the water comes out of the depths of the reservoir at a frigid 45 degrees. Boaters who fall in are as likely to die of hypothermia as from drowning, and several do each year.

Cross-canyon foot travel has been effectively banned (except at Phantom Ranch, where there is a bridge). Nevertheless, most summer rafters say they like the cold water, which "air conditions" the hot canyon floor and lets them chill their drinks.

"We've improved the recreationist's opportunity," contends Lloyd Greiner, WAPA's area manager. "Prior to 1963, only a thousand people had gone down than canyon. Now 15,000 to 20,000 go down every year. They would not be going down there without that dam."

He says the clear, cold water has made the river more attractive, and the dam has lengthened the rafting season by eliminating dangerous spring floods and providing higher summer flows.

"That's baloney," responds Elliott. "In the late 1960s river running was exploding all over the West. We could have run trips [on the virgin river] all year. We'd just use different equipment, a different style in different seasons. We'd use big motor boats in the spring and small oar-powered boats in the late season."

Living with the dam

Environmentalists concede that many of the dam's impacts can't be changed and that some may be perceived as desirable. But they want to minimize the negative effects.

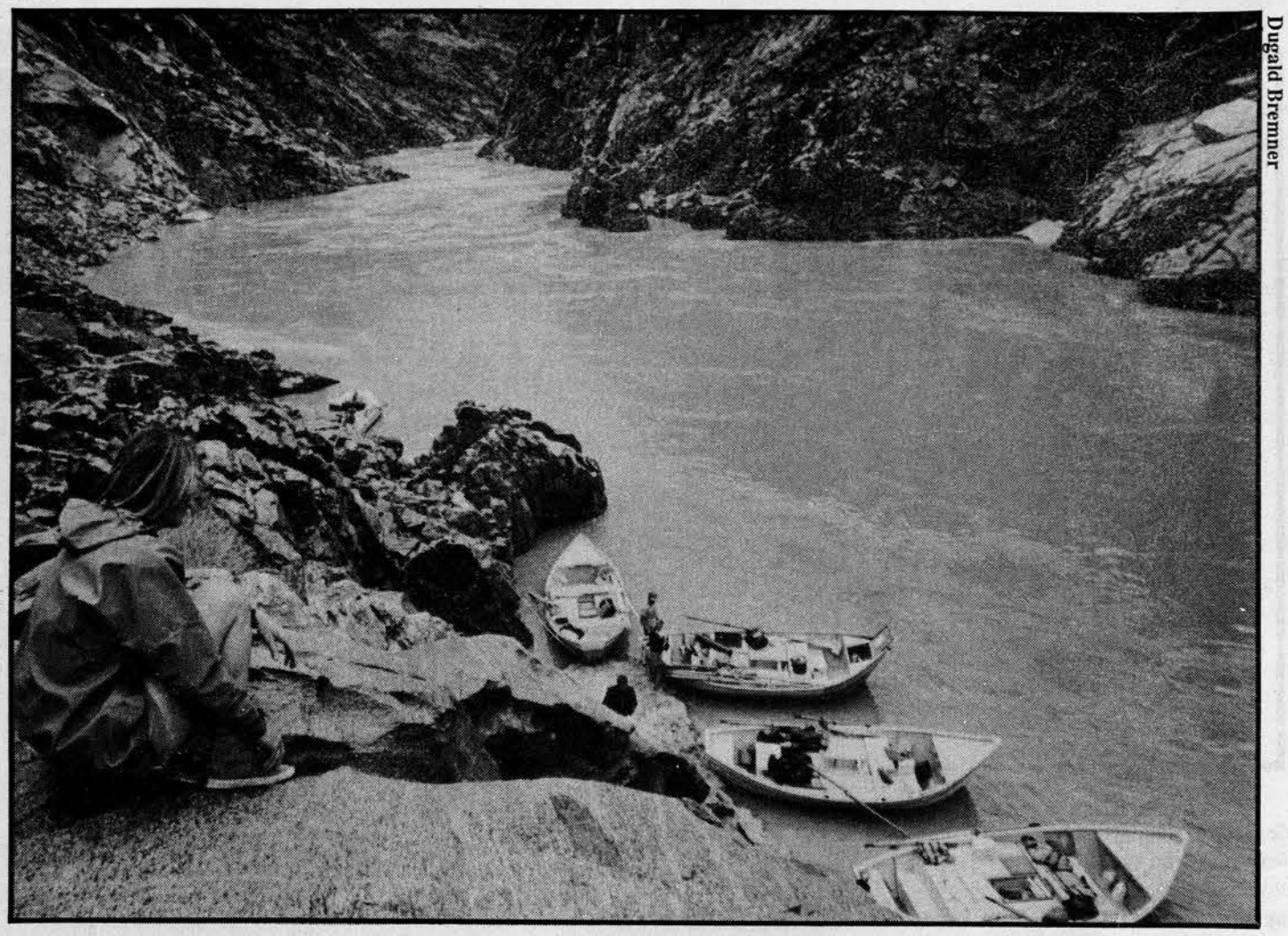
"Nobody's talking about removing the dam," says Liz Birnbaum, a lawer with the National Wildlife Federation. "The issue is, should we operate it solely for a relatively small group of people who use the power, or for the international resource which is the Grand Canyon?"

Ed Norton, president of the Grand Canyon Trust, a regional conservation organization, adds, "The 1968 Colorado River Basin Act makes it very clear that other priorities — recreation, fish and wildlife — are at least equal to hydropower."

The groups want to see higher minimum flows, with the flow regimen smoothed out to let the river regain its balance. While the environmental impact studies are being prepared, the National Park Service has called for interim minimum flows of at least 5,000 cubic feet of water per second.

Environmentalists would prefer an 8,000 cfs minimum and rafting concessionaires say they would like to see steady daily flows, which in most months would be even higher. Current minimum flows are 3,000 cfs in the summer and 1,000 cfs in the winter.

Recently, Bureau of Reclamation officials have kept quiet on the minimum flow and fluctuation issue, instead letting WAPA fight the battle. WAPA contends, categorically, that power production comes first and resists changing operations.



Dugald Bremner

Fluctuations in Colorado River flows make camping unpredictable

Lloyd Greiner says, "We don't think it has been substantiated that daily fluctuations are having an adverse effect on the canyon."

WAPA estimates that power revenues from the dam total about $80 million and officials say increasing minimum flows to 5,000 cfs would cost their customers $5 million a year. The park's 20 commercial river companies gross about $15 million.

Environmentalists contest WAPA's figures and say the impact on individual customers would be small in any case.

"Nobody really knows the value of the dam's power, since it's usually mixed with other sources," says Birnbaum. "But there are other values — intangibles — you've got to consider in the equation. After all, this is the Grand Canyon."

A destructive, outdated mission

The dam's critics note that the Bureau of Reclamation, WAPA and the Colorado River dams were authorized by Congress to attract settlers to the West by supplying plentiful irrigation water and, later, cheap electricity.

Now, they say, that mission is outdated and continued federal subsidies are fueling the destruction of the region's scarce resources.

"Reclamation encourages the profligate waste of both water and power," says Bob Witzeman, conservation chair of the Maricopa Audubon Society in Phoenix.

In addition to consuming some 85 percent of the West's water, farmers use prodigious quantities of electricity to pump that water onto their fields (although agriculture accounts for only a small fraction of total electricity use in the region).

Witzeman adds that 68 percent of western farmlands are used to grow surplus crops heavily subsidized by taxpayers. He cites the case of Arizona, where the dominant crop is cotton.

"The 2,000 farmers in Arizona have an average net income of $205,000 a

Enviros get to court barely on time

The environmentalists' court victory over the Western Area Power Administration throws a monkey wrench into the federal power works. But it is a court victory that almost did not happen.

In October 1986, Utah Power & Light Co. sued WAPA over the way it allocates power from federal dams, including Glen Canyon and Flaming Gorge. The power company listed environmental concerns, although they were made secondary to the question of access to cheap federal hydropower.

In late January, Utah Power & Light, WAPA and other parties in the suit settled their differences. U.S. District Judge J. Thomas Greene was on the verge of approving the agreement when the conservationists — who had not been asked to review the settlement — waltzed in with a new lawsuit.

They asked Greene to impose an injunction to prevent signing of new long-term power contracts until an environmental impact statement was prepared on the effects of power marketing.

"You came in not at the 11th hour, not at the 12th hour, but a minute after the 12th hour," Greene scolded Wayne G. Petty, lawyer for the National Wildlife Federation, Grand Canyon Trust, American Rivers Inc. and Western River Guides Association.

But on Sept. 20, just before the trial was to start, WAPA capitulated, announcing it would write the demanded environmental impact statement. Until then, the agency contended that an obviously flawed environmental assessment was enough.

Not satisfied with that, as strong a victory as it was, conservationists pressed for an injunction to prevent the new contracts from going into effect Oct. 1 as planned.

"If they had complied with NEPA (the National Environmental Policy Act) six years ago they would not be here now," said Ty Cobb, a lawyer for the conservationists.

After a week-long hearing during which Utah State University professor David S. Bowles demolished a hydrology study that was the basis for the assessment, Greene ruled in favor of the environmentalists. He issued an injunction that guarantees present power supplies from WAPA although it stops new contracts from going into effect before the EIS is finished.

Greene instructed WAPA to formally request in writing that the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service and the National Park Service participate in writing the EIS.

To make certain that this time the study is adequate, he is keeping jurisdiction of the case.

It was a win that apparently damages nobody. The power-users are not miserable, because they still have firm power commitments under the court order.

"If the judge had not given us the hope that we would have our firm post-'89 contracts, we would have suffered," said Carolyn S. McNeil, general manager of the Intermountain Consumer Power Association, in Utah.

"But now that we know we are going to get the power, we're much more comfortable. The small amount that will be taken away from us under this adjustment will not have a major long-term impact."

Although it doesn't hurt the consumers, it definitely helps the environment.

WAPA should examine the serious consequences to river habitat that can occur when dams are operated to provide peaking power, said Liz Birnbaum, a Washington lawyer for the National Wildlife Federation.

"Fluctuating flows for power generation destroy downstream habitat for aquatic species and recreation, and in some cases for terrestrial habitat as well," Birnbaum said. "It has huge effects on habitats in the Grand Canyon, which has fragile ecosystems, and in the Green River there are several endangered fish species at risk."

As Ed Norton, president of the Grand Canyon Trust, said, "This is a significant victory."

— Joseph Bauman

A version of this story appeared in the Deseret News.

year," he says. "It's welfare for the rich."

Cotton farmers respond that without access to cheap water and power they might be forced out of business.

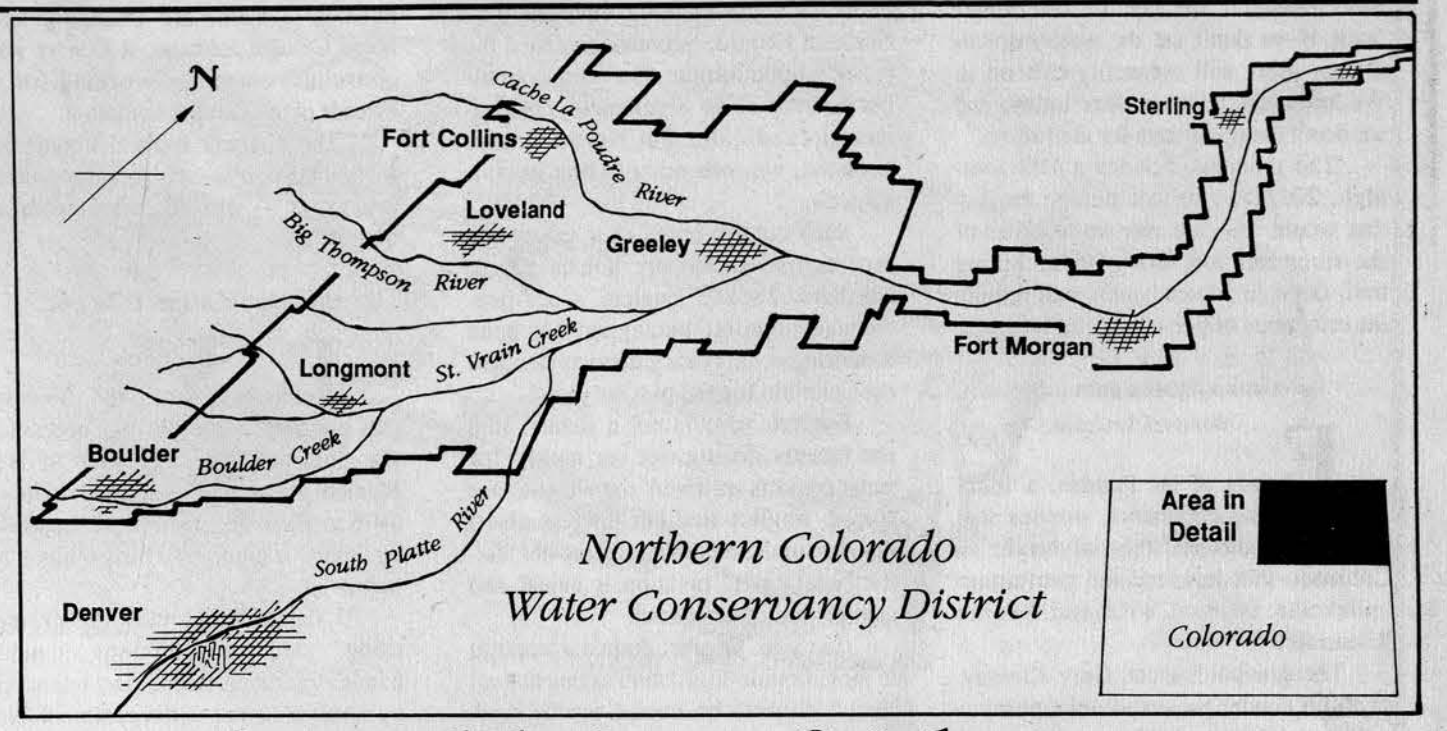
The next stage in the battle over Glen Canyon Dam is the two environmental impact statements. The two documents will be coordinated but written separately, and most likely will be highly complex and hundreds of pages thick. Most observers expect the process to take at least five years.

BuRec, however, is only allotting two years for its EIS. Steve Robinson, who is BuRec's project director, says Interior Secretary Lujan asked the agency to complete the EIS as quickly as legally possible. Robinson says he will hold scoping meetings next January and hopes to have a draft statement ready by 1991.

"That's an ambitious schedule," says Robinson, but he notes BuRec already has seven years of data accumulated from the Glen Canyon Environmental Studies — the $7 million study project that led to Lujan's decision to write an EIS.

The WAPA EIS will be directed by Ken Maxey, deputy area manager in the agency's Salt Lake City office, and will be wider in scope, looking at all Colorado River Storage Project dams and the effect power sales from those dams have on endangered fish and the environment.

Scoping sessions are planned to start next February, but Maxey says he doubts he will be able to keep pace with BuRec. ■



Trying to keep that old-time faith

The Northern Colorado Water Conservancy District has already built two major water projects. Now it wants to build a third

by Florence Williams

In 1871, settlers on Colorado's semi-arid plains violated the ancient laws of water allotment practiced in the East: They dug a canal diverting water from the Cache la Poudre River near Greeley to irrigate land not contiguous to the stream.

Two years later, settlers in Fort Collins, 25 miles upriver, did the same. There was enough water for everyone until the dry year of 1875. Out of the fierce battle that ensued was born a new, Western law, based loosely on early California mining rights. It was called the doctrine of prior appropriation.

Fifty years later, farmers in the Cache la Poudre basin made history again by forming the state's first water conservancy district.

Created in the wake of the Dust Bowl and in an era of New Deal largesse, the district brought local farmers together to plan a major water project called the Colorado-Big Thompson.

In close partnership with the U.S. Bureau of Reclamation, the Northern Colorado Water Conservancy District, known simply as "Northern," collected taxes on 1.5 million acres of property and built the colossal transmountain diversion project. The district became a model for hundreds of rural water-developing entities all over the West.

Although once steeped in New Deal and Jeffersonian principles, Northern and other water districts like it now cater mostly to large-farm interests.

Keeping the rhetoric of the past alive, the districts still propose huge projects, they still act mostly on behalf of agriculture, and they still dewater streams with little concern for fish and wildlife.

But somewhere between the Dust Bowl and the Reagan era, the federal largesse faded, as did the dominance of irrigated farming in the West's economy.

As a result, the West's conservancy districts face an assault from two fronts. Urban dwellers, outdoor enthusiasts and environmentalists attack what they perceive to be archaic values controlling the water of the rural West.

On the state level, the self-governing districts are losing some of their credibility among legislators, auditors and constitutional lawyers. The very states that created the districts have begun to question their relevance in a changing West.

But as outsiders cast a critical glance, the districts march on, unwavering. Northern has returned to the lifespring of its origins, the Cache la Poudre River, to propose a controversial storage project.

Other large districts, such as the Salt Lake Conservancy District in Utah and the Central Arizonal Conservancy District, wield enormous power by controlling vast amounts of land and public funds.

The West's smaller, more numerous districts, operating largely in the shadows of the rural landscape, function mostly as water development lobbyists, kept alive year after year with the income from the property taxes they levy.

Opponents to districts throughout the West find themselves battling an institutional fortress.

Districts have immense powers

The 1937 state act that created Northern and its offspring gave them immense powers: for the delivery of water, they may tax all the property within their boundaries; condemn or purchase any property, possession or water right; acquire, construct and control any facility; fix water rates; enter into contracts with the federal government and assume bonded indebtedness.

A conservancy district (there are 49 in Colorado alone) begins life like any other "special" district.

A group of citizens who want something — a cemetery, golf course or mosquito control — sends around a petition, obtains a few signatures, and with approval from a county judge, starts collecting taxes. The group's board of directors is normally subject to a popular election.

But in Colorado and several other Western states, a water conservancy district, unlike any other special district, does not have elected trustees; rather, a local judge appoints a board, usually made up of irrigating farmers whom he or she believes possess singular knowledge of the complexities of water.

Depending on your point of view, the result of this system has been a closed, entrenched regime, or one that is stable and experienced. For example, although they need reappointment every four years, Northern's current trustees have served the board an average of 17.8 years. Their agenda has changed little since 1937.

That agenda is the construction of one large project followed by the construction of another. After building the Colorado-Big Thompson diversion, Northern's board members created a municipal subdivision in 1973 to build the Windy Gap project supplying water to the cities of the north Front Range.

The rural district saw the urban project as a way to defend the irrigation water in the Colorado-Big Thompson system. Conceived when the Front Range was rapidly growing, Windy Gap was intended to prevent cities in the district from buying up irrigation water.

But the explosive urban growth that Northern predicted failed to appear. Six years prior to construction of the Windy Gap project in 1981, three of the six cities in the district started to pull out.

Fort Collins sold its entire allotment, and Loveland and Estes Park half of theirs; the buyer was the Platte River Power Authority. In the last two years, Estes Park has sold most of its remaining allotment to a Denver real estate developer.

Two months ago, Greeley also threw in the towel, selling almost a quarter of its Windy Gap water to a Denver suburb, Broomfield.

Monte Vavra, a finance officer for the city of Estes Park, said the unused water was too expensive to keep. Although Estes Park agreed in the 1970s to buy 4,000 acre-feet from the project, the city now finds it needs only about 300 acre-feet of Windy Gap water, said Vavra.

Fortunately for the cities of the district, the impending veto of the Two Forks dam is already creating a small market among Denver suburbs for the unused Windy Gap water.

The district originally planned to deliver 48,000 acre-feet of water annually to the cities. Today Windy Gap delivers only 5,000 acre-feet, less than one-eighth of its potential. Northern's municipal subdistrict now faces a debt exceeding $112 million.

Yet another mega-project

So when Northern proposed yet another mega-project to secure water for its farmers, this time on the Cache La Poudre River, it raised some eyebrows.

"The Poudre project is a joke," said Dan Luecke, a senior scientist with the Environmental Defense Fund in Boulder, Colo. "It's so expensive, and it's not necessary."

But Northern's public information officer, Brian Werner, said that even with extra Windy Gap water, the farmers will

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Keeping faith . . .

(Continued from page 21)

come up short in a major, 1-in-25 year drought.

Besides, Northern would like to get to the Poudre ahead of the Denver Water Board, especially with the likely demise of Two Forks.

Said Northern's project engineer Karl Dreher: "Because of our water laws, if we don't use the water, downstream users will eventually call on it. We know the water is there today, and we don't know it's there for the future."

The proposal includes a 400 foot-high, 200,000 acre-foot storage facility that would inundate over seven miles of the river and part of a popular hiking trail, flood 33 private homes, and require the relocation of part of a highway.

Group fights a dam

Friends of the Poudre, a local group fighting the district, worries that the dam would mar the only river in Colorado that has received protection under the national Wild and Scenic Rivers Act.

The group's founder, Gary Kimsey, says the Poudre project would destroy a wild trout area and, like the proposed Two Forks dam, affect whooping crane habitat on the Platte in Nebraska.

Because conservancy districts operate with so little involvement from the public, said Kimsey, environmental concerns such as these are rarely a management priority.

So far, Friends of the Poudre is fighting a lonely battle. The national environmental groups that opposed Two Forks find it hard to take Northern's proposal seriously because of its expense.

Estimated at over $6,000 an acre-foot, Poudre water would cost even more than water from Two Forks. Northern's own officials doubt that they will be able to fund the project without substantial help from a local city. Not surprisingly, no cities have come forward.

The district might have to turn to its arch competitor, Denver, for help. "We're realists," said Werner. "We don't want to supply Denver, but Denver has a lot of money."

Northern may prefer to give its water to Denver rather than face the prospect of a decade without a project, speculated Len Loomans, president of Friends of the Poudre. "They really want to build," said Loomans. "It justifies their existence."

Loomans would like to see Northern's inbred management infused with some new blood. Because his organization's views were not represented on Northern's board, Loomans protested the recent reappointment of a trustee member in favor of an experienced, environmental candidate. But Northern, said Loomans, was not ready to hear its constituents.

Such controversies over values and fair representation are not unique to Northern. Jeanne Englert, a self-proclaimed populist haranguer, has been contesting conservancy districts throughout Colorado for the past six years.

Englert, who is not a farmer, said she resents doling out tax money for water projects on rivers she wants to see spared. Englert and her lawyers assert that because she cannot elect her district's officials, taxation is unjust and possibly unconstitutional.

Last year, Englert drafted a proposal to the Colorado legislature asking that all special districts be treated equally, with elected rather than appointed officials. Elections, she said, would challenge the power of an irrigating elite making decisions for the non-farming majority. Said Englert: "The real people have no voice."

Colorado legislators, however, voted the proposal down. They may hope to avoid what happened in South Dakota in 1976, when farmers and other citizens who opposed the Oahe Irrigation Project managed to elect a majority of the Oahe Conservancy Subdistrict (*HCN*, 9/26/88).

The new board promptly held seven public meetings on the Oahe project, accumulated a mass of testimony against it, and asked the Carter administration and Congress to suspend funding.

Colorado's district board members especially fear democracy when it arrives in the shape of environmentalism.

Said alfalfa farmer Don Schwindt, trustee of the Animas-La Plata Conservancy District: "I can respect people who say the election process is the way to go, but I don't think it's a good idea. It would be possible for the environmental community to stack some boards with anti-water development people, and that could hinder the workings of development."

What Schwindt considers a hindrance, others call fair dialogue. "The politics of water are changing fast," noted Carolyn Johnson, a Denver water consultant currently working for the Friends of the Earth Foundation.

"The districts have different constituencies now — we're talking urbanized cities — with different needs and desires."

How should districts be run?

Johnson emphasized, however, that elections alone are not necessarily the answer. For example, in New Mexico, a state that modified its law in 1976 to allow the election of conservancy board members, things have not improved.

"I thought this was the greatest thing," said Tim DeYoung, a public administration professor and water policy analyst at the University of New Mexico. "But ever since 1976 the conservancy districts have gone to hell. They're rife with controversy, bribery, lawsuits, corruption. Democracy is the worst thing that ever happened to the districts here," he said. "Before it was inequitable, but at least they did their work."

DeYoung said New Mexico's Department of Finance and Management is now cracking down on the districts by auditing their budgets.

Corruption plagues many districts, whether managers are elected or not. In Utah, state legislators received so many complaints last year about the Salt Lake Water Conservancy District that they ordered an investigation of finances and hiring practices.

What they found was a list of abuses so long that they passed a bill terminating all districts' autonomy, reverting their management to state and city authorities.

"We found massive misuse of public funds," said a source working on the investigation who wished to remain unidentified. He cited instances of bribery, favoritism, overstuffed salaries and facilities and violations of affirmative action.

"The chief issue was unaccountability," said the legislative source. "Conservancy districts are a layer of government virtually unknown. They have the same powers as cities, but they're not even listed in the blue pages."

Utah is holding off on the termination bill until the task force looks into other options, he said, noting that the districts will be "very hard to dismantle." Utah's districts will probably be reorganized in such a way that they will have to answer to more constituents, maybe through being absorbed into a more traditional form of government, he said.

Similar investigations are under way in Colorado. The state auditor general has made a report of outstanding debt accrued by special districts. Further scrutiny will probably follow, said state accountant Holly Bostick.

Inevitably, Western water conservancy districts may be dismantled altogether, said Luecke of the Environmental Defense Fund. "They have run out of good projects, good will and federal money," he observed. "They're in trouble."

Will this century's Cache La Poudre battle unearth a whole new water doctrine? Probably not. But the pioneers of 1875 stand newly challenged. Agriculture, once the dominant economy in the West, now trails behind services, manufacturing and tourism in Colorado's gross product.

Water users and the tax payers supporting them no longer live in purely agricultural communities, and the bodies set up to govern the water may no longer serve the best interests of the public. Western water conservancy districts, long sheltered from public debate, have finally entered the fray.

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This article includes reporting by Carol Jones.

Denver Water Board

An early plea for water conservation in Denver

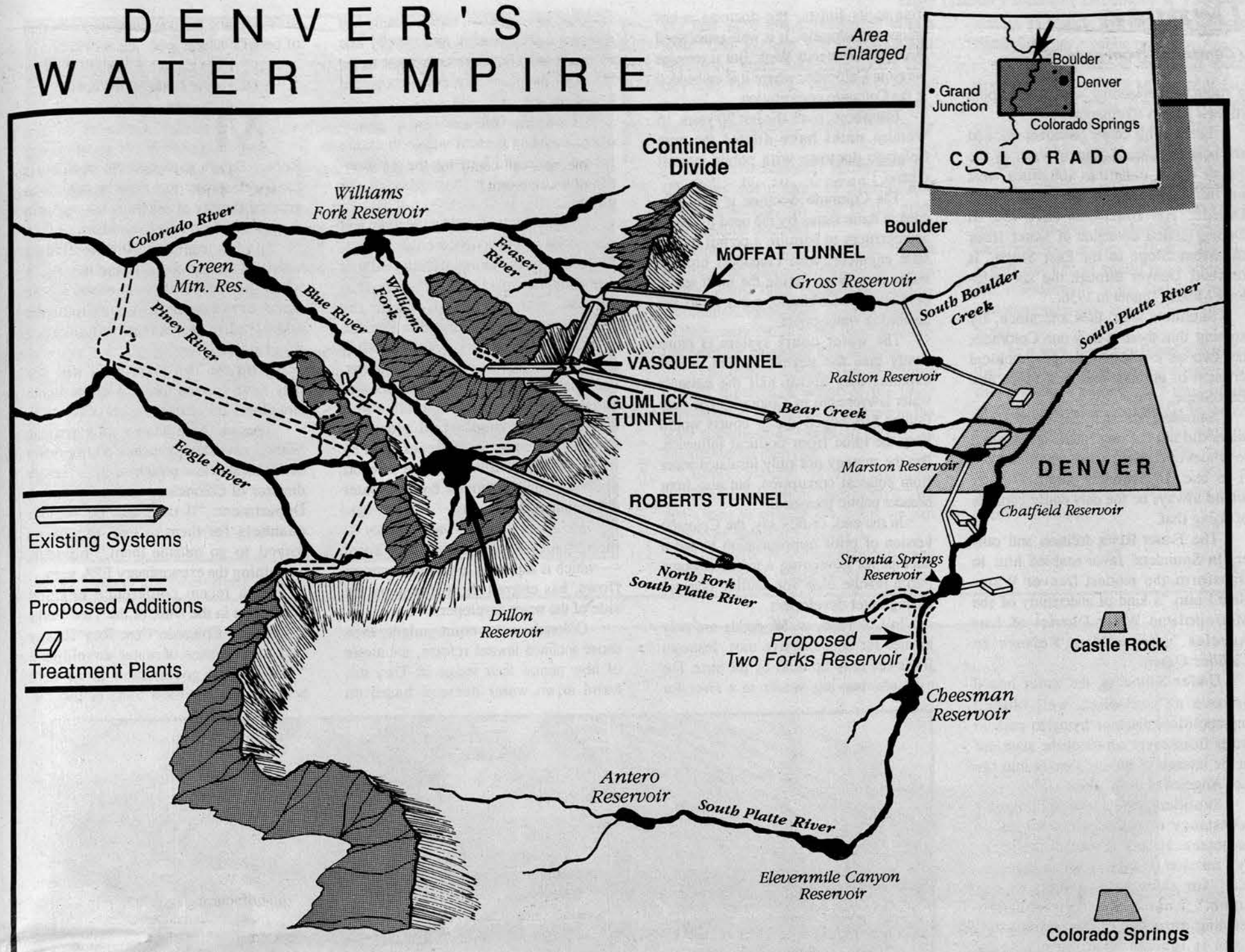
Water development turns a corner

The doctrine of prior appropriation remains a cornerstone of Western water law, but it is no longer the only cornerstone

by Dyan Zaslowsky

When the fountain in the lobby of the Denver Water Department is operating, people must talk above the sound of falling water. Sheets of water spill over the sides of a square platform and land with a loud slap in a shallow pool below. The water is pumped, unseen, back up the platform to drop again into the pool.

Mechanically impressive, undeviating, and capable of drowning the words of those nearby, this handsome monument to the marvels of engineered water



illustrates some institutional traits of the 1,100-employee Denver Water Department and the five-member Board of Water Commissioners that directs it.

Together, they have won both praise and condemnation for their determination to make water flow where it would not naturally go.

Two Forks Dam is the latest, largest expression of that determination. One of the most controversial projects ever proposed in the state, Two Forks would capture water flowing down Colorado's Western Slope and pipe it under the Continental Divide to be stored in a giant one million acre-foot reservoir on the South Platte River just upstream of Denver.

To satisfy federal requirements the board spent eight years and $40 million studying the dam's feasibility and environmental impacts. But the board always expressed the conviction, despite growing public opposition, that Two Forks would be built.

This is the way Colorado water projects had always worked, and none had made them work this way as successfully as the Denver Water Board had.

Then, in spring 1989, the head of the U.S. Environmental Protection Agency, William K. Reilly, did the unthinkable. He set in motion the process to veto the proposed $1 billion, 600-foot-high dam.

In the wake of the resulting storm, Reilly appointed Lee A. DeHihns to study Two Forks. On Aug. 29, DeHihns reached the same conclusion, and announced that he was recommending that EPA veto the dam because of unacceptable environmental impacts.

More at stake than a dam

Now, months later, it has become clear that Reilly and DeHihns did more than doom a dam. They also undermined the Denver Water Board and other water authorities by using federal environmental laws to supersede the prior appropriation doctrine.

The prior appropriation doctrine is the region's unique water law (see accompanying story), which, until now, has been the single most powerful determinant of the order and pace of western development. It has also been the water board's most powerful legal tool in its endless drive to acquire water for Denver.

Malcolm M. Murray, first vice-president of the Denver Water Board, bemoaned the failure of the prior appropriation doctrine at the Gunnison Water Conference in Colorado last summer. Board members, he said, "no longer have a reasonable atmosphere in which to plan for future water supplies."

Denver Water Board President Hubert A. Farbes Jr. concurs. "What we have here is a conflict between two systems, one based on a federal mandate, the other on a vested property right under the prior appropriation doctrine. The prior appropriation doctrine is truly in jeopardy. Our own system is destabilized."

Implicit in the board members' claims is the threat that if the prior appropriation doctrine is no longer working for Denver, then it is also in jeopardy throughout the West. It is a call to arms reminiscent of Western water developers' outrage at President Jimmy Carter's 1977 dam hit list.

That time the West responded in unison and rescued most of the dams. But this time it seems no one is listening. It may be that the Denver Water Board and water development community's monopoly on the prior appropriation doctrine is in trouble, and not the doctrine itself.

A board with clout

The Denver Water Department was created by Denver voters in 1918. The vote turned a private water company into a public agency and gave it a charter to acquire water for the city's future as cheaply as possible.

To insulate it from the politics of the day, the charter authorized the department to keep its own accounts and gave the board great autonomy in setting metropolitan water policy. Unlike other public utilities and all other major metropolitan water authorities in the West, the Denver Water Board is not subject to a regulatory agency, nor must it seek approval from the mayor or city council for its decisions.

The water board's charter, together with its shrewd deployment of the prior appropriation doctrine, has created an uncommon and formidable agency.

By executing only a fraction of some 250 water rights the board holds or claims, the agency's ambitious plumbing system draws water from both sides of the Continental Divide — from the South Platte on the east and the Colorado River on the west.

In 1988, the Denver Water Department delivered more than 78 billion gallons of treated water to about one million customers, almost half of whom live or run businesses outside Denver city limits.

Including the area annexed for the new Denver airport, the water department serves 450 square miles. With the construction of projects such as Two Forks, various master plans have projected that the department could deliver water to about five times the metropolitan area's current population.

The Denver water system grew not only by supplying water for drinking and washing, but by making the resource available year-round for lawns and gardens. Early settlers brought their passion for the color green with them to the semi-desert.

Back in 1942, the water department boasted that "the fact that Denver meters only where necessary and permits sprinkling on flat rate affords the double advantage of civic attractiveness and economy."

Such was the state of conservation when Glenn Saunders was growing up in Denver. Saunders, now 85, is the daunting water lawyer who, at the behest of his friend Mayor Ben Stapleton, directed the board's efforts to secure its earliest water rights and forge new ones.

Saunders worked as the water board's top attorney for 50 years, instilling the agency with his conviction that the Denver area had an absolute need for and right to West Slope water.

"People forget that this is a raw, harsh environment we live in, and that the elements imposed on us were not designed to help human life but to impair it," Saunders told me, when I visited him in his warm living room last summer. This sort of rhetoric still brings

(Continued on page 24)

Denver. . .

(Continued from page 23)

a room of applauding water developers to their feet in affirmation.

Early in his career Saunders rescued the board's faltered claim to water in the Fraser River, more than 100 miles west on the other side of the Continental Divide. His courtroom-save led to Denver's first diversion of water from the West Slope to the East Slope. It reached Denver through the six-mile-long Moffat Tunnel in 1936.

Saunders won, then and since, by arguing that there is only one Colorado, not two as implied by the geographical division of the state into West Slope and East Slope.

Saunders asserted that West Slope water did not "belong" there, it belonged to whoever claimed it first and could put it to use. In Saunders' mind, Denver would always be the only entity capable of doing that.

The Fraser River decision and others in Saunders' favor enabled him to transform the modest Denver Water Board into "a kind of understudy of the Metropolitan Water District of Los Angeles," wrote Marc Reisner in *Cadillac Desert*.

Under Saunders, the water board became a "well-oiled, well-funded suprapolitical machine trying to purloin water from every corner of the state, all in the interest of turning Denver into the Los Angeles of the Rockies ..."

Saunders says the water board's "constancy of purpose" has forged its successes. He maintains that the agency's mission is still to build a water system "for thousands of years in the future." I asked Saunders about the seeming arrogance of this undertaking, since it ignores what those outside Denver may want or need.

"Arrogance?" he shot back. Rail-thin and mentally acute, Saunders is composed of edges.

"Arrogance you say? Why, it's the kind of arrogance that runs the nation's space program, and that builds great water systems, that separates the human mind from the mind of a rabbit."

A long history

If Two Forks marks the end of an era, it will not be due to internal rot. Saunders' vision and arrogance still guide the Denver Water Board, with Two Forks serving as a perfect example of meticulous foresight under the prior appropriation doctrine.

The Two Forks filing for 132,415 acre-feet of water from the South Platte River dates to 1905, and was the largest single filing in the state up to that point.

The claim was made for the city of Denver, then served by the private Denver Union Water Company, forerunner to the Denver Water Department. The filing was transferred to the water board in the 1920s, and has been inching toward perfection ever since.

Confidence in the stability of the appropriation doctrine and the board's Two Forks claim was voiced only a few years ago, when Denver Water Board president Monte Pascoe told the audience at a conference on water planning that Colorado already had a water plan, and that it was called the prior appropriation doctrine.

By logical extension the planning accorded by the doctrine was in the hands of the Denver Water Board, which knew best what was needed.

Although the Denver Water Board has pushed the prior appropriation doctrine to its limits, the doctrine is not unique to Colorado. It is well-established throughout the arid West. But it remains purest in Colorado, where it is embedded in the Colorado constitution.

Elsewhere, over the last 20 years, 16 Western states have diluted the pure Colorado doctrine with public interest criteria.

The Colorado doctrine is also softened in some states by the need for water appropriators to acquire a permit from a state engineer, who considers broader issues than those facing the most senior developer. In Colorado, water rights are decided in water court.

The water court system is more costly than the permit system, which explains why about half the nation's water lawyers are in Colorado. The state fathers had hoped water courts would keep the issue from political influence. But the strategy not only insulated water from political corruption, but also from broader public pressure.

In the end, critics say, the Colorado version of prior appropriation turned a doctrine for governing a public resource into a private club for settling disputes among water developers.

In Colorado, water rights are only granted for consumptive uses. Instream flows can only be held by the state. For example, leaving water in a river for fish, native vegetation, scenic beauty and recreation is to waste it, and thereby lose the right to it. But diverting water to the lawns of the plains is a duly recognized beneficial use.

It is a plain "use it or lose it" philosophy, enabling present waste to assure future waste and barring the environmental community from playing the game.

"If you don't own a water right, and none of us in the environmental community do, you are automatically without standing in water court," says Dan Luecke, a senior scientist with the Environmental Defense Fund in Boulder.

Luecke — who is also a founding member of the Environmental Caucus, the coalition of environmentalists that fought the Two Forks proposal — says attempts by environmental groups to obtain water rights for instream flows by using the public trust doctrine in court are rigorously opposed by the water development community.

Moreover, the state water agency — the Colorado Water Conservation Board — which is supposed to protect instream flows, has entered those cases on the side of the water developers.

Colorado water court judges, even those inclined toward reform, are aware of how narrow their venue is. They still hand down water decrees based on seniority and the conventional definition of beneficial use.

Day of reckoning is at hand

Montrose Water Court Judge Robert Brown expressed the need for a change last year in a case in which he granted the city of Aurora water rights in the pristine Upper Gunnison Basin.

In his opinion, Judge Brown warned: "A day of reckoning is coming when the 'public interests' raised by the opposers herein will have to be addressed in proceedings adjudicating water rights."

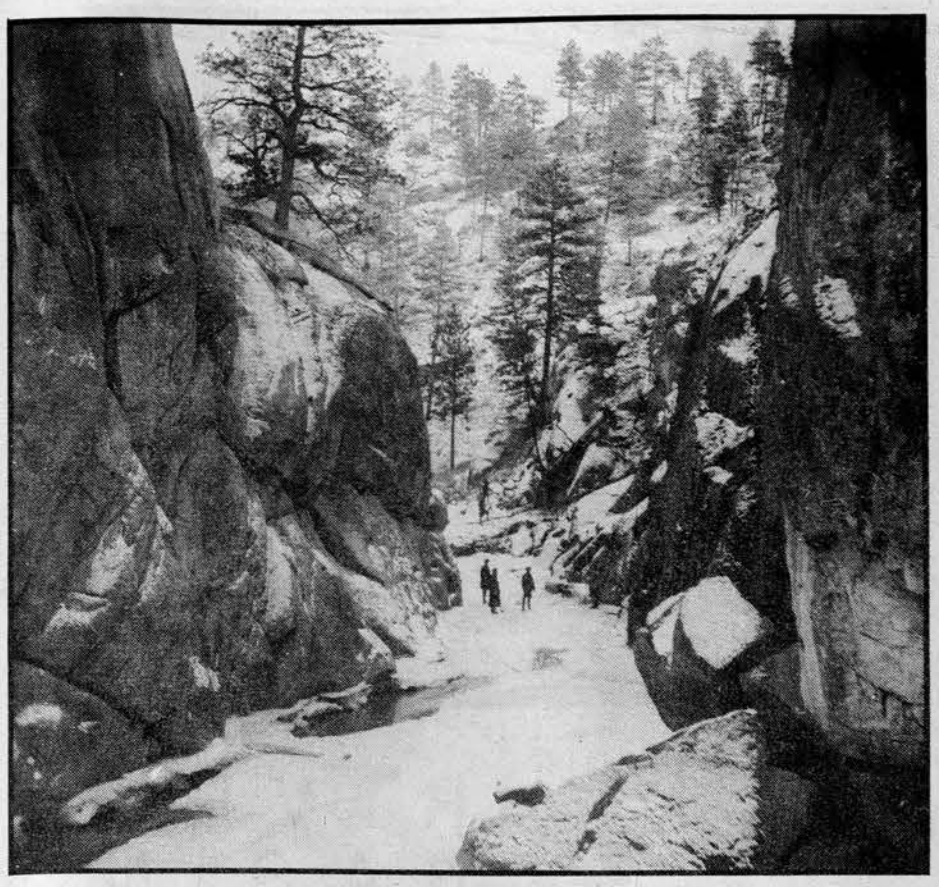
With the Two Forks veto, that day may have dawned for the Denver Water Board and the other members of its club.

"People have shown they will be heard," says David Getches, a University of Colorado law professor and former director of Colorado's Natural Resources Department. "If there are no regular channels for them to use, they'll be forced to go outside them," he says, explaining the extraordinary EPA veto.

At a recent conference entitled "Colorado in the Wake of the Two Forks Decision," Colorado Gov. Roy Romer told an audience of water developers, "The federal government is in here because they represent some of the val-

Denver Water Board

Lining the Moffat Tunnel in the 1930s



Denver Water Board

Survey party at Cheeseman dam site, 1897

ues that were not represented in this state. Our system for planning and developing water was developed a century ago. The public values in Colorado have changed dramatically since the system was established," reports the Denver *Post*.

But environmental spokesmen say this does not mean, as Murray and Farbes asserted, an end to the prior appropriation doctrine.

Indeed, few environmental leaders say they find fault with the doctrine in its current form. They believe the existing constitutional language already addresses their concerns; it is the court administration of the language that does not.

"The federal decision on Two Forks doesn't threaten a word of the prior appropriation statute as it appears in the state constitution," says Jo Evans, an environmental lobbyist.

Chris Meyer of the National Wildlife Federation in Denver says: "We don't want to change the game, we just want to be permitted to play it."

They refer to the opening paragraph of the Colorado constitution's irrigation statute. It declares that the water of every natural stream is public property.

"This language is so broad that it does not take magic or any leap of faith to maintain that the protection of the public interest is what was intended all along," says Larry MacDonnell, a University of Colorado law professor.

According to MacDonnell, "addressing environmental concerns is not at odds with the prior appropriation doctrine, but in line with it." He also points out that all vested property rights are restrained in some fashion by the concommitant duty to protect the general good.

In a way, the water board's warning that an era is ending may be correct. But the era that's ending isn't that of the prior appropriation doctrine; it is the era under which the doctrine was the sole property of water developers. In the coming era, it may be that the doctrine will accommodate a much broader spectrum of interests.

■

Kent and Donna Dannen

Sandhill cranes mass on the Platte River near Grand Island, Nebraska

Birds and fishes gain some legal standing

Administrators and courts begin to include ecological values when making their water decisions

by Peter J. Kirsch

Since the first days of Western water law and the birth of the prior appropriation doctrine, water allocation in the western United States has been based on the time-worn principle of use-it-or-lose-it.

Environmental protection historically has been stymied by courts and legislatures that refuse to recognize the long-term ecological value of naturally flowing rivers. But the situation is changing.

Three recent cases involving the much-abused Platte River system show how much the rules are shifting. The three decisions, all within the past year, lay the groundwork for protecting the natural water flow in the Platte River system.

The Platte River system is one of the most varied and important river basins in the intermountain West and Great Plains. The Platte, South Platte and North Platte rivers and their tributaries are important in diverse and often conflicting ways.

The South Platte River supplies the water Denver drinks. Without the South Platte, neither Denver nor its Front Range neighbors could survive. As it flows down from the Rocky Mountains, it also provides some of Colorado's best recreation and fishing opportunities.

The North Platte is just as important to Wyoming. It and its tributaries supply water for arid land irrigation, and the North Platte's string of federal and private dams provide much of the power to Wyoming and Nebraska, as well as other Plains states. Until the energy bust, the North Platte River was to be a cornerstone of Wyoming's planned mining and alternative fuels industry.

In Nebraska, the central Platte has often been called the state's lifeline, providing most of the water for homes, industry and farming. As with the dams on the North Platte in Wyoming, Nebraska dams along the Platte provide power throughout that state.

Against this background stands the ecological importance of the Platte River system. The Platte River valley provides one of the finest migratory bird habitats in the country and is the roosting place for more than 230 different bird species. The Platte River provides habitat for numerous endangered and threatened migratory birds, including the whooping crane, piping plover, Eskimo curlew, least tern and bald eagle.

Each year the Platte River valley plays host to two-thirds of all sandhill cranes in the world in their early spring south-north migration. The U.S. Fish and Wildlife Service has concluded that a 53-mile segment of the Platte River in central Nebraska must be protected because it is critical to the survival of the few remaining whooping cranes in the world.

The Platte River valley is a crucial stopping point in their annual migration from the Texas Gulf Coast to Alberta, Canada. The Platte also provides some of the last wetlands in the Great Plains, land which is essential for diverse bird and aquatic life.

The Platte River valley is unique. In the legendary description of an early pioneer, "It is an inch deep and a mile wide." The historically slow-moving, shallow, braided river channel provides wetland habitat, areas which are rapidly being destroyed throughout the United States.

Three recent decisions have focused national attention on the ecology of this fragile river system. In March, EPA administrator William Reilly began the process of pulling the plug on the proposed Two Forks Dam on the South Platte above Denver. Construction of Two Forks would have enabled Denver and its Front Range neighbors to squeeze even more water out of the South Platte River channel. Two Forks would have guaranteed the destruction of fertile fishery habitat and popular whitewater rafting areas upstream of Denver.

While the environmental community focused attention primarily on how the project would dry up canyons and fisheries of the South Platte in Colorado, the effects of Two Forks would have been felt in both the South Platte and Platte River valleys, hundreds of miles downstream.

Every additional drop of water impounded behind Two Forks would have been another drop of water not

(Continued on page 26)

Platte River . . .

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flowing downstream through the fishery and bird habitats of the South Platte and Platte River valleys. Administrator Reilly's decision was a classic — if unusual — triumph of environmental protection over urban growth.

A special master appointed by the U.S. Supreme Court ruled in a second important decision in a dispute among Colorado, Wyoming and Nebraska over which state can use the waters of the North Platte River and its tributaries. In contrast to the fanfare following the decision to kill Two Forks, the master's decision went almost unnoticed.

On and off for more than 50 years, Colorado, Wyoming and Nebraska have been fighting over the water in the Platte River system. The states have disputed which has a greater need for water for irrigation, industry and residential uses.

Because of how water is allocated among states, the state with the greatest historical need generally is allowed to divert the most water from a river.

Until recently, the only question in interstate water allocation cases has been how much water each state is entitled to for these consumptive water uses. Non-consumptive uses — recreation and environmental protection — have not been considered.

The disputes have resulted in decrees by the U.S. Supreme Court specifying the rights of each of the states to use water in one or another part of the Platte River system.

The arguments were renewed in 1986, when Nebraska asked the Supreme Court to reopen its dispute with Wyoming and Colorado over the North Platte system.

Nebraska argued that Wyoming's ambitious plans to develop industry and to provide more water to Casper would violate the apportionment made by the Supreme Court in the 1940s. This time, however, there was another player on the scene: the environmental community.

Several environmental groups, including the National Audubon Society and Platte River Whooping Crane Trust of Grand Island, Neb., realized that allocation of the North Platte River waters could have a tremendous effect on the environment of the entire Platte River system.

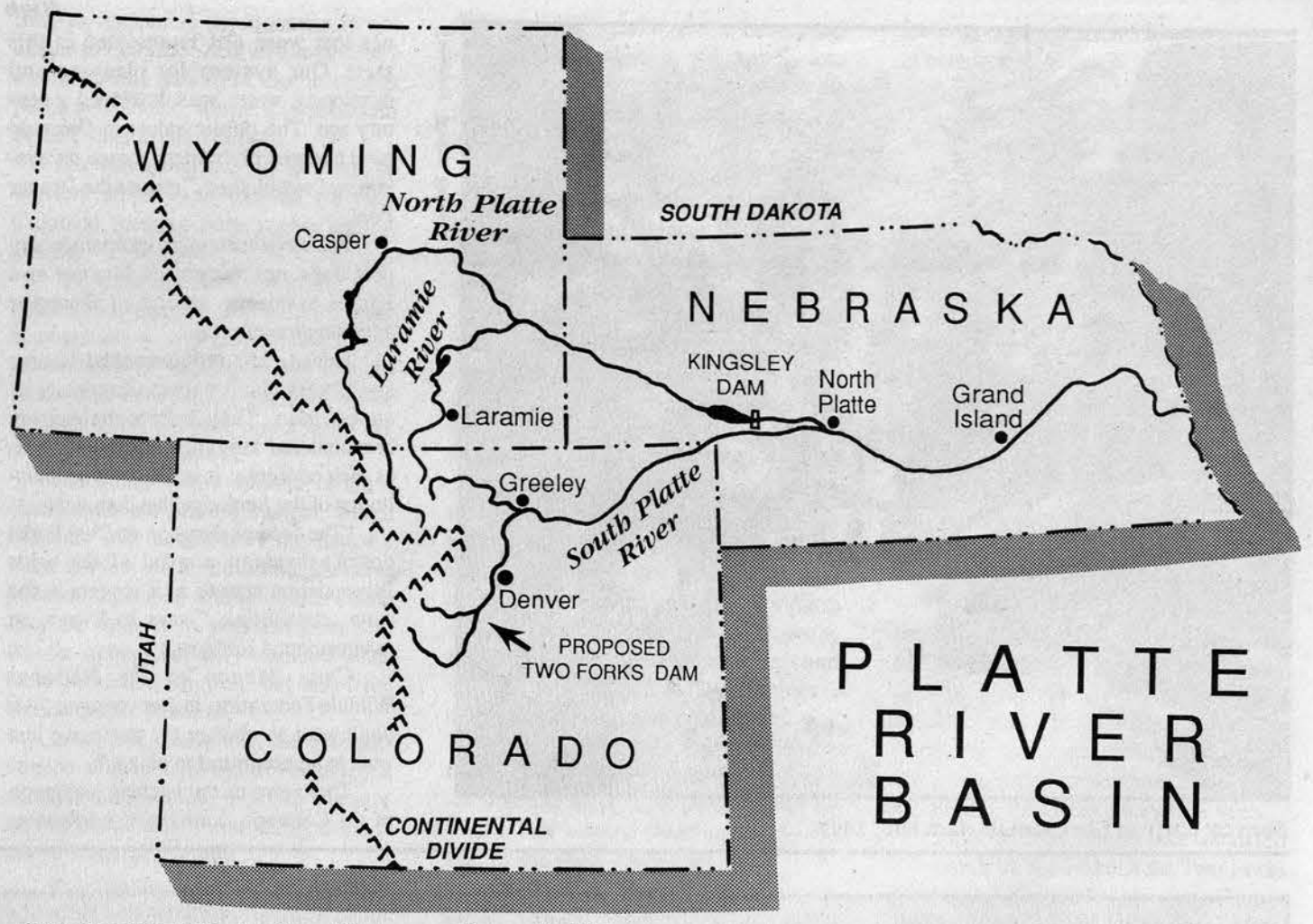
The environmentalists argued that the Supreme Court should consider all uses of water in deciding how much water each state was entitled to receive. Unlike the states, the environmental groups did not argue that they were entitled to a piece of the pie.

In a break from the tradition of water allocations, they argued that a piece should be left in the dish for future generations.

Leaving pie in the dish raises complex problems which Western water law historically has not been able to solve. It is fairly easy to figure how much water a farmer needs for irrigation, a family needs for its home, or a city needs for its schools. But how does a water master calculate how much water a whooping crane needs to roost, a striped bass to swim, or an endangered flower to grow?

When water is allocated to a farmer, a homeowner, or a city, the law already says who owns the water, but what about the water left in the streambed for the whooping crane, bass or flower?

The law in most Western states is only beginning to find an answer to this question. The complexity of these questions demands use of sophisticated computer models, first-rate ecological studies and a deep understanding of how a river fits into the ecology of its region.



These problems were not far from the minds of water users in all three states, as well as two of the region's largest power consortiums. Predictably, they protested against protecting some of the Platte River water for plants, fish and wildlife. They argued that environmental interests had no place in the dispute. They said environmental interests should wait until the court had divided the North Platte River among the states.

Then, if water was left, the state legislatures could adequately protect wildlife habitat and recreation needs if they so chose. They also complained that environmental claims to water would disturb more than 50 years of water allocations, upsetting the economy of the three states.

In a March 1989 decision, Supreme Court special master Owen Olpin decided that environmental interests would be considered. He concluded that times had changed.

Although environmental protection was not considered a valid use of water in the first half of this century, he decided the North Platte River could not be equitably divided among the three states without considering the environmental effects of that allocation. His decision lays the groundwork for long-term protection of Nebraska's wetlands and other ecologically valuable land in the North Platte system.

A third critical decision involved a lawsuit by the Platte River Trust over the licensing of the huge Kingsley Dam in western Nebraska. Kingsley Dam provides much of the power and irrigation water used in western and central Nebraska.

For more than 10 years, members of the environmental community have been asking the Federal Energy Regulatory Commission (FERC) to consider the effects of the dam on wetlands in central Nebraska and on the habitat of the several endangered and threatened species which call the Platte River home. The Sierra Club, American Rivers, Nebraska Wildlife Federation, National Audubon Society and the Platte River Trust asked FERC to place emergency conditions on the operation of the Kingsley project so enough water is always left in the riverbed for essential wildlife habitat.

FERC repeatedly delayed, insisting that it would look at environmental issues in 1987, when the dam came up for its 50-year relicensing.

But in 1987, when it came time to relicense the dam, FERC stalled again and gave the operators an extension on the license they had had for 50 years. FERC said that it would begin to look at environmental problems in 1990. The Platte River Trust took FERC to court, asking for action.

In a decision in late May, the U.S. Court of Appeals for the District of Columbia Circuit agreed. The court ordered FERC to hold a hearing to examine the dam's environmental effects and to consider what could be done to reduce any problems in the short term.

At this hearing, the environmental community will be given a chance to present evidence of environmental damage to wildlife habitat downstream of Kingsley Dam. The U.S. Fish and Wildlife Service has already concluded that the dam has a disastrous impact on downstream wildlife habitat.

If the evidence shows what the Fish and Wildlife Service and the environmental groups claim, the dam operators will have to make immediate changes in the way Kingsley Dam is operated to protect wildlife habitat.

Water will be even more complex

It is still too early to tell whether these three cases spell a fundamental change in the way courts look at water allocation. But at the very least, the cases suggest that controversial water allocations will be more complicated in the future.

First, these cases are emblematic of a fundamental shift in the way courts will look at water allocation in the coming decades. Use-it-or-lose-it may not yet be history, but the courts are helping to erode the doctrine.

Second, these cases show the courts' new awareness that they must look not only at the cold economic facts of water allocations but also at the complex environmental effects of these decisions. Always anxious to shy away from such complex issues, courts now have been dragged into weighing economics against the environment. These problems promise to entangle the courts in a political briar patch.

Finally, the cases reflect a growing understanding that water use decisions in any one state inevitably will have not only economic but also environmental impacts downstream, often in another state. Courts will insist that states cooperate with their downstream neighbors to allocate water not only efficiently but also sensibly.

Although the Platte River cases spell a more complicated future, they also spell a more environmentally conscious one. ■

Kent and Donna Dannen

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Bob Miles, Arizona Game and Fish Department

Grey fox

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LETTERS

NO COMMON GROUND

Dear *HCN*,

It's very interesting! Dick Carter asking the question, "What is so difficult about seeking consensus?" (*HCN*, 9/11/89). Apparently it is much easier for the Utah Wilderness Association to seek common ground with its wilderness opponents than with the conservation community. What Mr. Carter fails to mention is that the vast majority of conservationists formed the Utah Wilderness Coalition. We are proposing 5.1 million acres of BLM wilderness, which is very close to Congressman Owen's bill. Those trying to understand UWA's 3.8 million-acre bill should ask: When was the last time a major state conservation group supported over a million acres of wilderness *less* than a member of its own congressional delegation?

We may not have learned from a disastrous 1984 Utah Forest Service bill. This was a bill that failed to protect one mountain range in southern Utah. It was also a bill that continues to threaten the headwaters of the Escalante River with CO_2 development in Death Hollow as well as the entire Ponderosa forest on Boulder Mountain. In fact, not one acre of potential timber sale land in southern Utah was even affected by the bill. UWA, by continuing to seek "brownie points" from Jake Garn, Orrin Hatch and Jim Hansen in order to feed their own egos; continues to support chaining of potential wilderness in the Henry Mountains and continues to look the other way as developers turn the Burr Trail into a major highway project. The common ground that UWA has found is with a reactionary Republican Utah congressional delegation. This relationship is the single biggest obstacle to protection of the Colorado Plateau.

Robert Weed
Calf Creek, Utah

UNNATURAL IN MONTANA

Dear *HCN*,

Kristi Niemeyer is mistaken to say that the primitive side of nature still exists in Montana and requires that bison be hunted and animals starve (*HCN*, 8/28/89). The drastic loss of habitat in the West over the last 100 years has brought about the annual bison hunt and starvation of large numbers of bison and elk. The crowding that has become such a problem in Yellowstone National Park is caused by the "war zone" that exists outside the boundaries of the park, as well as the disappearance of all predators in the area.

As long as ranching is judged to be the most important activity in the area — to the exclusion of all other human and animal activities — the bison will be hunted to prevent the so-called brucellosis infection of cattle by bison. Ranchers have bitterly fought the reintroduction of a predator species — the wolf — into the Yellowstone area to control populations of prey species.

Hunting bison to prevent infection of cattle and allowing animals to starve because they have no other natural population controls may be primitive, but they are not acts required by nature. They are acts required by a few ranchers and their sympathizers. Ms. Niemeyer is right to say "Respect our landscape, appreciate its wildness." But she needs to say it to the residents of Montana as well as its tourists.

Kathy Spitler
Lolo, Montana

FREELOADERS

Dear *HCN*,

There is something which really bothers me about all the arguments regarding repopulation of natural predators and compensating for their kill.

This is that no one alludes to the fact that the majority of these situations involve ranchers and hunters using our public land, and as usual taking the all too familiar posture that it is their private domain. It is unfortunate that we do not pick up on a pretty strong argument that these freeloaders logically have no position of "rights" at all in these matters. A grazing permit and plumbing a few wells does not constitute ownership nor any property rights, although plenty of ranchers do their best to carry out the bluff.

Considering the pittance they pay for grazing privileges, they should expect to contribute a few weak livestock (or prize livestock, for that matter) to sustain our predators as part of the price.

Tom O'Connor
Grand Junction, Colorado

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