

High Country News

April 23, 1990

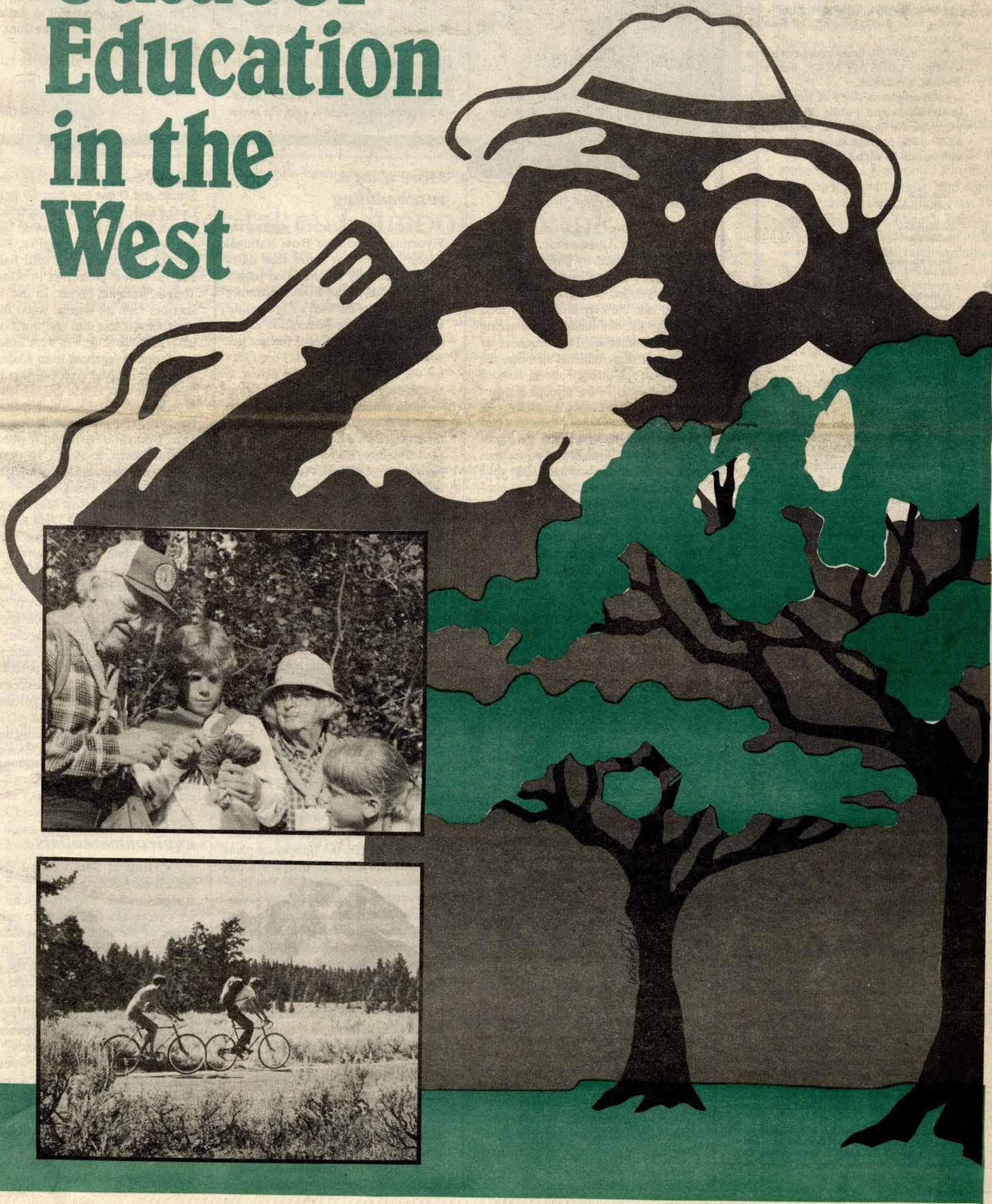
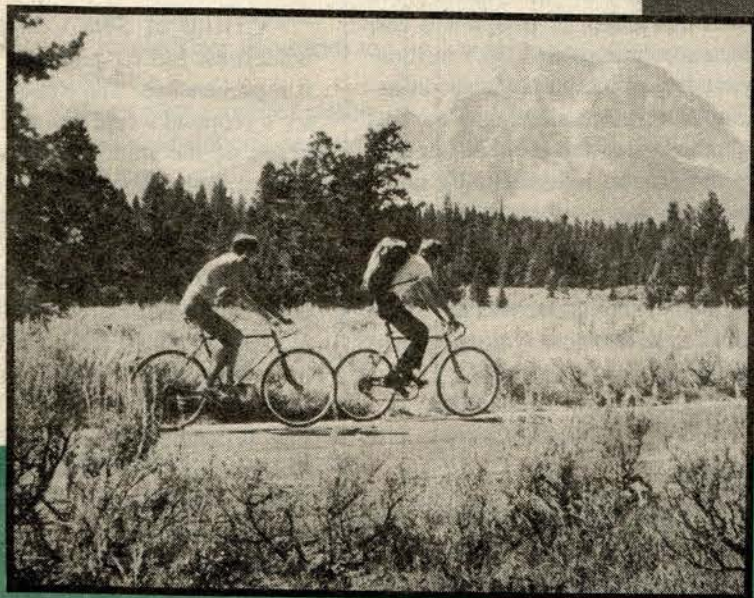
Vol. 22 No. 8

A Paper for People who Care about the West

One dollar

HCN's ANNUAL GUIDE TO:

Outdoor Education in the West



Dear friends,



HIGH COUNTRY NEWS

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Congratulations, Sierra

Congratulations to *Sierra* and its staff in San Francisco on the magazine's nomination for a prestigious National Magazine Award. The nomination came for its September/October 1989 special issue on the public lands, which printed articles by Wallace Stegner, Gary Snyder, *HCN* poetry editor C.L. Rawlins and former *HCN* editor Bruce Hamilton. Joan Nice Hamilton, who edited this paper for much of the 1970s, is now an editor of *Sierra*. The winner of the Best Single Topic Issue will be announced at an April 26 awards luncheon in New York City. Other nominees are *National Geographic*, *Business Week* and *Scientific American*.

Finding P.E.A.C.E.

A recent Bulletin Board on the group P.E.A.C.E. contained a no-longer-

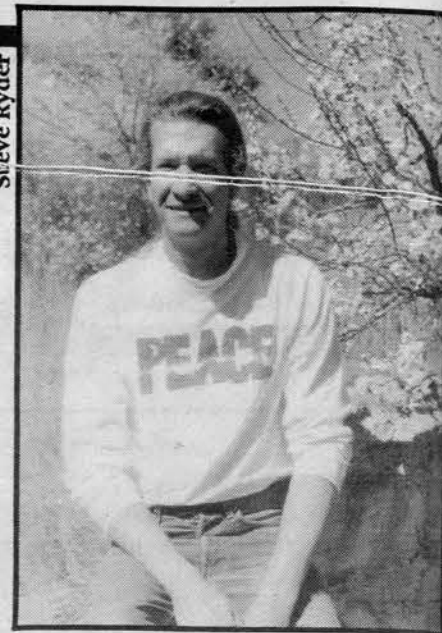
current address and telephone number. To reach the group, write to Kimberly Mitchell, 19930 Leo Hansen Rd., Florence MT 59833 or call 406/273-2944.

New intern

The latest addition to our intern ranks is Jim Le Fevre, who was born and raised in Skokie, Ill., and who then worked in a local lumberyard for four years before moving on to the University of Wisconsin at River Falls. There he received a degree in conservation.

He got a taste of wildlife rehabilitation through an internship at Carpenter St. Croix Valley Nature Center in Hastings, Minn., while still in college. After graduation, he travelled to Pueblo, Colo., to intern at the Raptor Center of Pueblo.

There, he worked with 35 to 70 hawks, owls, falcons and eagles and also found time to write essays and poetry for the center's newsletters. But Jim said that a year of fitting 48-hour days into 24 hours finally led him to shuck his falconer's gloves and pick up a pen. He hopes



For the birds: Jim Le Fevre

HCN will help him learn about the issues confronting the West, and to write in a way that balances his emotions with facts and analysis.

—Ed Marston for the staff

HOTLINE

Bear has nine lives

The saga of the black bear that wandered into Albuquerque, N.M., and was badly burned by power lines last August may have a happy ending. The bear, her cub and several other bears had strayed into the city in search of food following a severe drought in the nearby Sandia Mountains. In a sequence of events that drew national attention, the mama bear ran through streets, climbed atop roofs and swam through a swimming pool before climbing a utility pole. State wildlife officials then shot her with a tranquilizer, sending her plummeting 30 feet through live power lines that burned the animal with 7,200 volts of electricity. The bear underwent plastic surgery for damage to her Achilles tendon, and spent the winter recuperating with her cub at the Rio Grande Zoo. Game and Fish spokesman Scott Brown says the bears, who have eaten well all winter, are finally ready to head back to the mountains. Brown predicts "they'll be in better shape than any other bear that's up there."

Showdown at Cathedral Rock

In Arizona, the Forest Service has run into opposition over its plans to develop land near Cathedral Rock, a towering rock formation that some nearby residents consider sacred. The controversy centers on Forest Service plans to develop a 160-acre ranch it bought in 1980. The ranch is adjacent to the only facilities now available at Cathedral Rock: a parking lot, picnic tables and a toilet. Since 600 people often visit the area at one time, the agency says more amenities are needed. Sedona District Ranger Bob Gillies says one plan would add a 120-unit campground capable of accommodating up to 650 people. But at a Forest Service meeting on the proposal, opponents, who have gathered 500 names on petitions, protested any change. "If the Forest Service is coming down here to pave our paradise, we don't want them," said Ramona Coyote of the Concerned Citizens for Sedona. She added that in addition to Cathedral Rock, three other geologic "vortexes" possessing paranormal powers are found in the area. Forest Service officials say they have begun work on an environmental assessment that will dictate the future of the ranch.

More than a rescheduling

Three environmental groups say Wyoming's Medicine Bow National Forest changed far more than dates when it recently rescheduled timber sales. Friends of the Bow, the Snowy Range Group of the Sierra Club and the Wyoming Wildlife Federation say in their appeal to the regional forester that when the forest amended its Forest Plan for the 1985-1995 planning period, it significantly changed a number of sales — some dramatically. Yet the forest failed to describe or analyze impacts of the changes on the environment, says Mark Squillace, who is representing the environmental groups. As an example, Squillace says a rescheduling of the Robinson Jones Whiskey sale of timber in the Sierra Madre Range southwest of Laramie, Wyo., increases the original cut of 8.5 million board-feet to 18.67 million board-feet — 120 percent more than the original estimate.

Airspace anarchy leads to lawsuit

Two insurance companies responsible for claims stemming from a 1986 Grand Canyon air collision want the government to bear some of the financial burden. The Fireman's Fund Insurance Co. and Associated Aviation Underwriters have sued the Federal Aviation Administration and National Park Service on the ground both were negligent in their management of the canyon's airspace, reports *The Arizona Republic*. So far, the helicopter-plane collision that killed 25 people has cost the insurance companies \$8.5 million. They say they expect to pay an additional \$5 million before all claims are settled. At the time of the accident, air traffic in the canyon was virtually unrestricted and pilots used the "see and be seen" method to avoid each other. The situation, which had led to near-crashes before the fatal collision, was described by critics as an accident waiting to happen (*HCN*, 7/7/86).

No allowance for Congress

A congressional report card is in and the news is not good for people who care about environmental issues. The 1989 League of Conservation Voters' environmental scorecard gives Congress

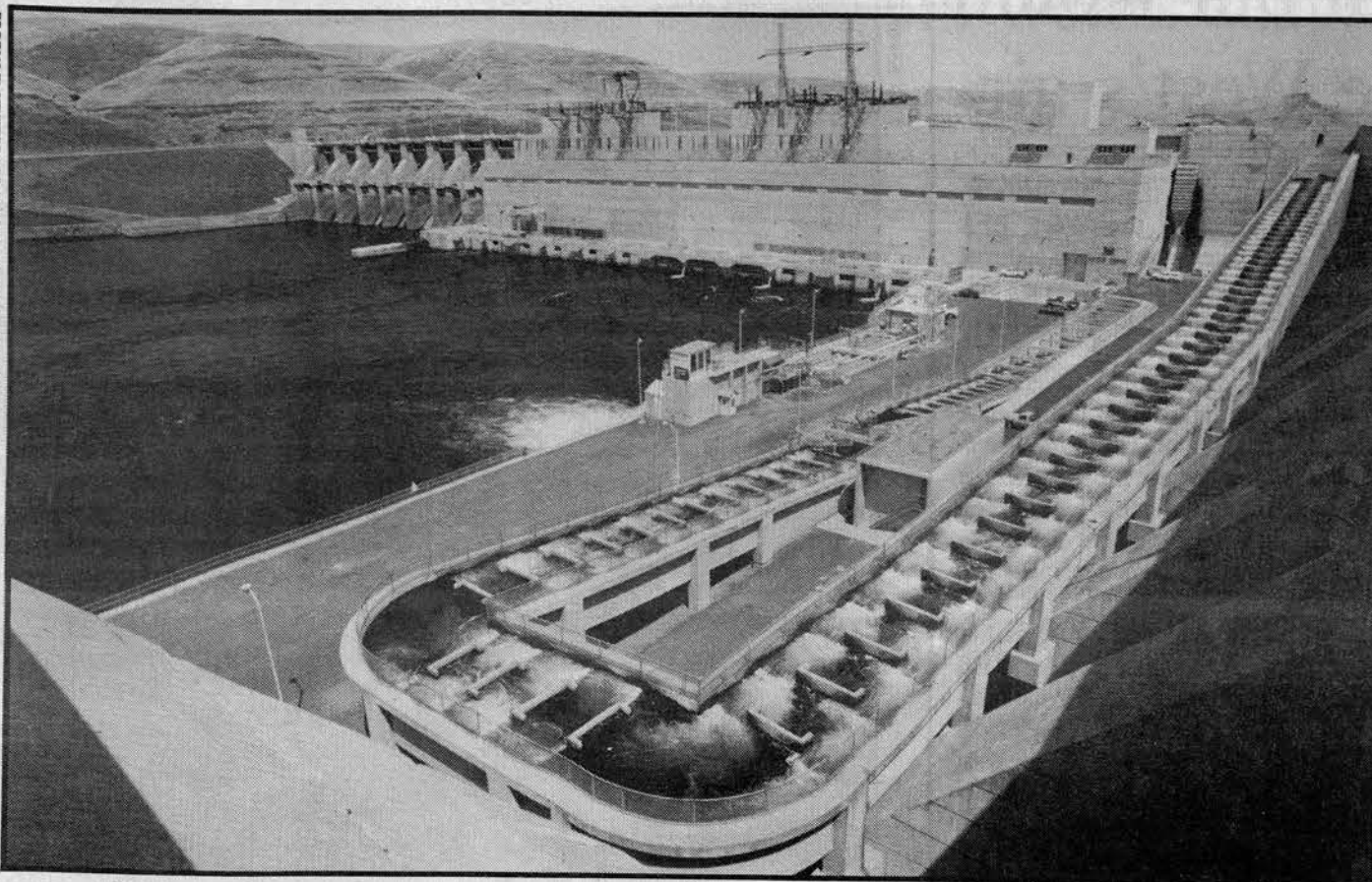
a failing grade, with the average for the Senate and House less than 60 percent. Congressmen were graded on their voting records on a range of issues including wilderness water rights, Forest Service roadbuilding, oil spill liability and rainforest protection in Alaska's Tongas National Forest. In the West, senators from the interior voted for the environment less than one-third of the time, and representatives were little better. Senate delegations from Idaho and Wyoming received grades of 0 percent, and the lowest House grades went to Wyoming, Arizona and Nevada. Notably poor scorers included Sens. Pete Domenici, R-N.M., 0 percent; Conrad Burns, R-Mont., 10 percent; William Armstrong, R-Colo., 10 percent; and Reps. Howard Nielsen, R-Utah, 0 percent; Ron Marlenee, R-Mont., 10 percent; and Larry Craig, R-Idaho, 10 percent. But 34 members of Congress had 100 percent voting records and 14 western politicians, excluding California, scored 80 percent or better. Among these were Sens. Brock Adams, D-Wash., 100 percent; Tim Wirth, D-Colo., 90 percent; Dick Bryan, D-Nev., 90 percent; and Reps. Ronald Wyden, D-Ore., 100 percent; Pat Schroeder, D-Colo., 90 percent and Wayne Owens, D-Utah, 90 percent. To find out how your elected officials voted, contact The League of Conservation Voters, 1150 Connecticut Ave. NW, Washington, DC 20036 (202/785-8683).

Burns bill burns environmentalists

Critics of Sen. Conrad Burns' wilderness bill for Montana are calling it reprehensible. The Republican senator's proposal would designate only 628 acres of the state as wilderness and release 2.8 million acres to oil, gas and timber industries. But causing the greatest ire is a provision that would effectively prohibit public participation in the designation process. "The bill denies recourse to appeal and court review that have been a part of our legacy," says Stewart Brandborg, former director of The Wilderness Society and a resident of Montana. "We will not be denied the right to play a role in the decisions made by the Forest Service." Brandborg and others throughout the state plan to fight the bill, which is awaiting assignment to a committee in the Senate.

WESTERN ROUNDUP

Bonneville Power Administration



Money talks, fish walk?: Dams such as Little Goose in eastern Washington are holding back flows fish need

Water politics takes Chinook to brink

BOISE, Idaho — The Pacific Northwest may be facing a new endangered species fight as serious as that over the spotted owl. This struggle will concern the fate of the Chinook salmon, which some believe is on the verge of extinction.

Saving the Chinook may require more water for fish and less for electricity, and that raise fears of the same kind of bitter controversy that now surrounds the spotted owl and old growth timber.

"If the fish become the spotted owl of Idaho, we'll all be in trouble," says Ron Beitelspacher, a state senator from Grangeville.

Federal listing is now under study by the National Marine Fisheries Service. According to Mitch Sanchotena, spokesman for Idaho Steelhead and Salmon Unlimited, listing "could virtually shut down the power systems in the lower Snake and Columbia rivers during the spring migration ... and it could have serious effects on industry." Despite those consequences, Sanchotena says his organization is fighting for the salmon's survival.

The issue surfaced after the Idaho Fish and Game Department released a study of the once-legendary spring and summer Chinook salmon runs. The state found that the salmon could be doomed to extinction in the next decade. The Chinook is in peril because of dams along its journey of more than 500 miles from Salmon River tributaries and the 350 mile journey other Chinooks take from Grande Ronde River tributaries to the Pacific Ocean.

The findings were unveiled during the Legislature's deliberations on a proposal to build a large earthfill dam on the Weiser River, a Snake River tributary. The dam would gather water to be used to flush juvenile Chinook past eight towering dams on the lower Snake and Columbia rivers. The Legislature's budget committee, however, killed \$263,200 in study funds for the project.

Fish advocates now are calling on power and water brokers to rescue the Chinook runs. Counts in 1989 showed the runs are declining fast, despite a brief surge in the high water years of the early 1980s.

The most recent adult summer Chi-

nook run in Idaho was the third lowest on record with 3,500 returning fish. The spring Chinook counts were the seventh lowest in history, with 13,000 fish. In eastern Oregon, Chinook counts in the Grande Ronde River numbered 400.

A multi-million-dollar hatchery and stocking program has failed to help appreciably. About 10 million hatchery Chinook juvenile smolts are dumped into Idaho streams each year, but only a fraction of 1 percent survive the three-year trip to the ocean and back.

The key problem, fish advocates agree, is the lack of spring river flows to flush the Chinook downstream. Since 1985, the Northwest Power Planning Council has attempted to negotiate the release of Snake and Columbia river flows with the U.S. Army Corps of Engineers, Bonneville Power Administration and Idaho Power Co.

The council's idea was to approximate a natural spring runoff by releasing huge amounts of water — 85,000 cubic feet per second at a minimum — from eight Snake and Columbia dams, and create a cascading effect that would push the fish downstream.

That was the plan; the reality has been different. Although the Northwest Power Planning Council has been charged since 1980 with putting salmon runs on an equal footing with hydropow-

er generation, the corps and BPA have refused to forego power revenues for the sake of the fish. A string of drought years in the second half of the 1980s has compounded the problem.

Mitch Sanchotena says he is tired of hearing excuses. "We still think there's time for the council and the Army corps to pull their heads out of the sand," he says. "You don't have to be a rocket scientist to know what it's going to take, and that's higher flows."

Without the flows, juvenile Chinook get lost in the large reservoirs and are preyed upon by other fish. They also get shredded in dam turbines as they try to swim downstream. The Army Corps has been slow to install fish-protection screens and safe passage devices, but Congress is now forcing it to do so.

Ed Chaney, an Eagle, Idaho, expert on ocean-going fish, says he has watched the fish runs dwindle for about 20 years. He urges citizens to flex political muscle on the issue. Otherwise, he says, the nation stands to lose a genetically complex creature that manages to return to its birthplace to spawn after swimming clear to Alaska and Japan.

"It's getting grim, and it's time for people to get excited about this," says Chaney.

— Steve Stuebner

HOTLINE

Verdict was a surprise

Two Washington state men were acquitted of all charges of conspiring to illegally export Forest Service logs to Japan. John Tortorelli was accused of buying logs cut from national forests in Montana, Idaho and Washington, and then selling them to Japanese exporters. Winston Bentley was charged with inspecting and handling the logs. The acquittal came as a surprise to Forest Service investigator Jack Davis, who had gathered evidence that Tortorelli was aware he was buying federal logs and had signed documents saying they would be processed in the United States. According to a *Great Falls Tribune* report, the logs in question were exported to Japan. Davis says that the jury's ruling in favor of the defense is "indicative of the complexity of investigations of that type." Preparation for the case took two years.

Navy loses, finds rockets

The Navy waited eight days before announcing that four solid fuel rockets fell from a jet onto public land during training exercises near Fallon, Nev. The rockets apparently fell March 7 during a 140-mile training flight. After an unsuccessful search of two bombing ranges the jet flew over, Fallon Naval Air Station spokesman Olin Briggs told the *Reno Gazette-Journal*, "We don't know where they are, but we do know definitely they aren't on the bombing range. Sen Harry Reid, D-Nev., was not happy with the Navy's procedures. He said the public should have been notified immediately of the rockets' loss since a memorandum of agreement signed in December calls for an instant alert. A Navy spokesman announced March 20 that a helicopter search for the rockets was ending. But as he spoke, the Navy continued to walk the desert in hopes of spotting the rockets. Two hours after the news conference, the Navy found its weapons on the Fallon-area bombing range where they were first thought to have landed.

BARBS

'Corporate ethics' may not be an oxymoron, after all.

Two corporations that refuse to sell the Pentagon a chemical needed to produce nerve gas may be sued by the Department of Defense. Occidental Chemical Corp. and Mobay Corp. say their company policies prohibit sales that contribute to the proliferation of chemical weapons.

Idaho kids hook one at the Legislature

Thanks to a fourth grade class from the little town of Kuna, the 1990 Idaho Legislature designated the westslope cutthroat trout as Idaho's state fish.

Teacher Jim Killett got the idea eight years ago on a Montana vacation. "I saw on a map that Montana had a state fish, and it dawned on me that here was an educational adventure for my class." Killett teaches at Indian Creek Elementary in Kuna, a town near Boise in slow transit from a farm community to a bedroom community.

The class' first try was for rainbow trout. "We did field trips, did a short video, and wrote letters to our legislators," Killett says. "I wove it into the curriculum very seriously. They learned

how to write letters, address envelopes; they learned about trout and streams; they learned about government." But the legislature didn't respond.

The next class tried it with cutthroat trout. The next one tried it with sturgeon, the prodigious bottom-feeding fish now reduced to rarity in a few free-flowing stretches of the Snake River. "My wife made some baked sturgeon that year, and we took it down to the legislature and fed it to legislators in the hearing room." But again no action.

This year, some Idaho members of the American Fisheries Society offered to help, and proposed the westslope cutthroat trout, a beautiful but sensitive fish still found only in Idaho's most

pristine streams. Sen. Mary Lou Reed of Coeur d'Alene, a popular and able legislator, agreed to sponsor the bill.

Killett's fourth grade did their research and letter-writing. They also wrote a little skit, and performed it at the capitol for the Senate Resources Committee, leaving each member a handmade souvenir at the end.

"It was just charming," says Sen. Reed. "But contrary to some of the media, it was not fluffy. There was very professional and real education going on there. Those kids know what an indicator species is better than many of us."

— Pat Ford

Senate's new air bill would further dirty the West's air

When President Bush announced his Clean Air Act proposal last June, he spoke from a lush, mountain-enclosed meadow in Grand Teton National Park. The president vowed to make America's air "as clean as morning in the Rockies."

Critics of the administration-Senate compromise bill look back on that June day with a bitter taste in their mouths. They say Senate Bill 1630 would allow significant, even dangerous, increases in pollution, particularly in the air over wilderness areas in the West.

Western proponents of cleaner air had looked forward to this year's reauthorization of the Clean Air Act as an opportunity to strengthen the regulatory power of the Environmental Protection Agency and to put a ceiling on noxious emissions.

But with a Senate bill passed last week and a similar House bill pending, those hopes appear dashed. The 1990 Senate bill would increase pollution 23 percent throughout the West. It would also weaken the power of the federal government to protect the air over pristine areas.

In 1977, Congress passed amendments to the 1970 Clean Air Act stating that the protection of spectacular vistas in national parks and wilderness areas would be a national goal. The amendments designated all national parks over 6,000 acres and all wilderness areas over 5,000 acres as "Class I," to be protected from further visibility impairment.

Eleven years later, a report by the National Park Service states that air quality has not improved. The report said that 90 percent of the time, visibility in the parks is affected by industrial pollution.

That study also found that sulfates from power plants are responsible for 40-70 percent of the haze above the Colorado Plateau, a region that includes such popular parks as Arches, Bryce, Zion and Canyonlands.

Coal-burning facilities in the West use coal that is five to ten times cleaner (lower in sulfur) than their counterparts in the East. Western plants have thus not been required to install emission controls. Ironically, the sheer volume of coal burned in parts of the West sends as much or more sulfur dioxide into the air as in the East.

A Park Service study published in 1989 attributed between 40 and 70 percent of visible wintertime pollution in the Grand Canyon to one coal-burning power plant located near the south rim. The plant, Navajo Generating Station, has no controls on its sulfur dioxide emissions.

And this winter, the Forest Service discovered that the Mt. Zirkel Wilderness Area in northern Colorado suffered from the worst sulfate pollution in the West. Thirty miles from it stands a power plant owned by the Colorado-Ute Electric Association and Arizona's Salt River Project. It also fails to control its sulfur dioxide emissions.

Most power plants in the West burn coal to generate electricity. A by-product of the operation is sulfur dioxide, a gas. When the gas reacts with oxygen in the air, it forms solid particles of sulfate, which contribute to haze. Sulfur emissions and nitrogen oxide, also emitted by utilities, form acid rain.

While acid rain has long been associated by many scientists with environ-

mental damage in the East, it is an emerging issue in the West. EPA research has determined that 6,500-foot high elevation lakes in the West are vulnerable to acid rain due to the fragility of alpine ecosystems.

Dr. John Harte, of the University of California, has linked acid precipitation in the Rocky Mountains to the decline in salamander populations. Salamanders, he believes, are an indicator species that may foretell wider biological damage. In the East, he notes, salamanders were the first to go.

In spite of evidence linking sulfur emissions with visibility problems and acid rain pollution, regulating the utilities has never been easy. Many of the coal-burning power plants in the West began operating before the 1977 amendments, and thus are exempt from laws requiring emission controls.

But Congress understood this would happen. It inserted a clause allowing the EPA to retrofit older plants with cleaner technology. Agencies such as the Park Service, however, had to "reasonably attribute" pollution to a source.

Then why did visibility continue to decline?

When Democratic Rep. Mike Synar of Oklahoma asked the General Accounting Office that question, it came up with some disturbing answers. In a report issued last February, the GAO concluded that the EPA failed to use its power, and that the National Park Service, Forest Service and Fish and Wildlife Service lacked needed funding and resources to study pollution.

The GAO also found that 90 percent of all pollution affecting parks and wilderness comes from sources either exempt from the law or considered too minor to warrant regulation.

In addition, states had failed to protect any new areas with Class I status. The GAO attributed the states' inertia to fear that the designation might hinder economic development. In effect, the 1977 amendments were useless.

In the 12 years since the amendments passed, the EPA has asked only the Grand Canyon's Navajo Generating Station to retrofit its stacks, and that developed only under pressure from a lawsuit by the Environmental Defense Fund. EPA's request is awaiting approval by the Office of Management and Budget.

"Nothing happened under the Clean Air Act except as a result of citizen suits," says EDF senior attorney Robert Yuhnke in Boulder, Colo.

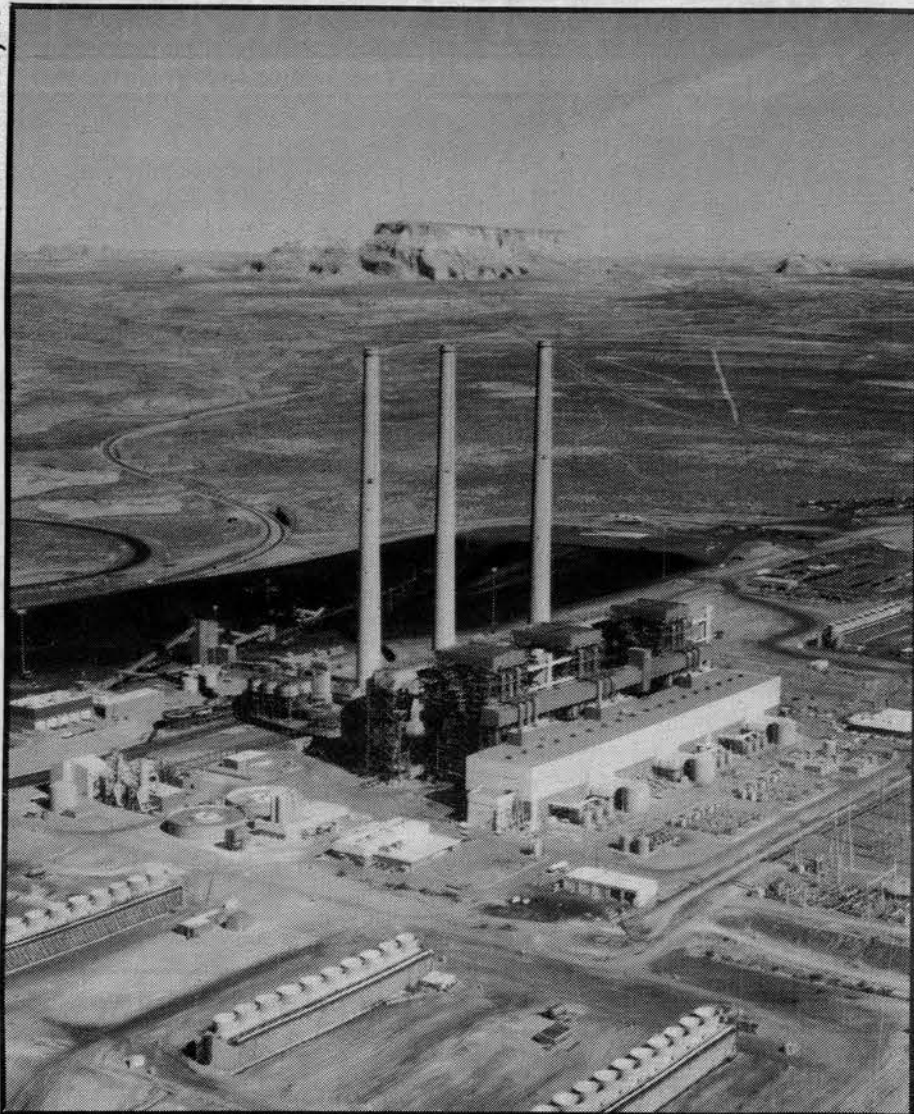
Yuhnke is critical of the Senate's 1990 Clean Air bill. Rather than strengthen EPA's regulatory power, the bill effectively removes it, he says. In a provision that weakens the 1970 act, the EPA would have discretionary, rather than mandatory, power to impose cleaner technology. This means the EPA would no longer have a legal obligation to order clean-ups based on studies by the land management agencies.

The provision effectively removes the public's ability to sue the agency to get things moving, notes Yuhnke.

"If (EPA) doesn't feel like it, and that was their attitude through the Reagan years, they don't have to act," says Yuhnke.

In an effort to offset EPA's weakened powers, Sen. Brock Adams, D-Wash., offered an amendment authoriz-

Salt River Project



Under the new Senate Clean Air bill, plants like the Navajo Power Generating Station near the Grand Canyon can increase noxious emissions 20 percent.

ing EPA to study pollution sources affecting wilderness areas. The amendment also sets up state commissions to explore which areas need help. Although the amendment passed by a wide margin, it was watered down considerably, says Yuhnke.

"It's just a skeleton," he said. "It won't make anything happen. Studies are useless unless they actually do something." The original amendment required the EPA to adopt regulations within three years of receiving evidence attributing pollution. That provision was struck down on the Senate floor.

Says a discouraged Yuhnke: "We've lost in the Senate. We're trying to prevent the '77 bill from being repealed altogether."

Individuals within the Park Service are also disappointed with the Senate compromise. The agency estimates that under the bill, visibility in certain areas could deteriorate between 200 and 300 percent over the next 20 years.

Prospects are worse in states such as California, Nevada and Montana, where coal-fired electricity production is expected to increase three- to five-fold, according to Chris Shaver of the agency's air quality division in Denver.

Under normal weather conditions, Nevada now provides a "clean air corridor" for numerous parks throughout Utah and Arizona, including the Grand Canyon, says Shaver.

"We're very concerned about growth in the Great Basin, particularly the (proposed) Thousand Springs Power Plant." That plant, slated for construction in Elko County in 1991, would burn 7.4 million tons of coal per year.

The Senate bill allows such Western plants to increase overall emissions by 20 percent before control regulations kick in. Until that level is reached, the bill offers "free" allowances to utilities burning low-sulfur coal. But even beyond that limit, some plants may still be exempt from reducing emissions, says EDF's Yuhnke. Such provisions might encourage planned expansions at all existing plants and the construction of several new ones.

Assuming the current growth rate in

electricity demand continues, noxious emissions in the West will double in 20 years, even as pollution in the East decreases up to 50 percent, explains Yuhnke. That could spew an additional 120,000 tons of sulfur dioxide into Western air annually.

The bill's acid rain provisions are also inadequate, according to Larry Mehlhaff of the Northern Plains office of the Sierra Club. Although nitrous oxide emissions would be cut by 2.7 million tons, most of those reductions are for the East and Midwest, says Mehlhaff. "The bill presents a threat to wilderness areas because of what it leaves out. It just doesn't deal with acid rain or visibility protection in natural areas."

Disappointed environmentalists are now banking their hopes on the House's version of the 1990 Clean Air Act, slated for a vote in early May.

Ron Wyden, D-Ore., and Bill Richardson, D-N.M., disturbed at the bill's eastern orientation, are working together to pass an act that better meets the West's needs. "The White House sees the need for an urban, eastern bill but almost entirely ignores Western parks and wilderness," notes Rep. Ron Wyden's aide Ken Rosenbaum.

Wyden has introduced a separate bill restoring EPA's obligation to regulate wilderness areas. It sets up state commissions with the power to insist on clean-up. Wyden's bill would also require states to decide within three years which areas should receive Class I status. More Class I areas means tighter regulation of pollution, says aide Rosenbaum.

An amendment offered by Richardson would require that utilities near national parks use "tracer" experiments to determine how much they contribute to an area's pollution.

In spite of such efforts, the compromise bill will be tough to beat. For environmentalists pushing cleaner legislation, the battle has been grueling. Says the Sierra Club's Maggie Fox: "It's been discouraging. You almost can't think about it, or you want to go home, take a hike and quit."

— Florence Williams



CAPITOL HILL

The Senate's clean air bill wears chaps and a Stetson

by Andrew Melnykovich

WASHINGTON, D.C. — Although efforts to improve the nation's air are focused on major urban and industrial areas, lawmakers from the largely rural West played pivotal roles in the Senate's work on a renewed Clean Air Act.

Those roles ranged from outright opposition and obstruction to leading the environmental forces in efforts to strengthen the bill. Perhaps most significantly, Westerners led the successful effort to hold together a tenuous compromise between the Bush administration and the Senate leadership.

Ultimately, senators from three Rocky Mountain states cast four of the 11 votes against final passage of the Clean Air Act. But the significant battles had come long before, with someone from the West playing a key role in nearly every one.

By virtue of his chairmanship of the Senate environmental protection subcommittee, Sen. Max Baucus, D-Mont., was the most visible of the Westerners. He had the primary responsibility for shepherding the legislation through four weeks of floor action.

Baucus served in large measure as a surrogate for Senate Majority Leader George Mitchell, D-Maine, whom Baucus had succeeded as subcommittee chairman. Mitchell's predecessor as majority leader, Sen. Robert Byrd, D-W.Va., always had blocked efforts to bring clean air legislation to the Senate floor. Mitchell made its passage his top priority as leader.

In addition to his public work as floor manager of the bill, Baucus played a more important role behind the scenes. He was a key member of the group of 15 or so senators who negotiated a compromise with the Bush administration. The talks began when it became clear that the bill produced by Baucus' subcommittee could not muster the 60 votes needed to cut off debate in the Senate.

Another key negotiator on behalf of Western interests was Republican Sen. Al Simpson of Wyoming, the assistant GOP leader. Simpson, a member of Baucus' subcommittee, was determined to insure that any steps taken to reduce acid rain would allow low-sulfur coal mined in the West to compete on even terms with high-sulfur coal mined in Appalachia and the lower Midwest.

Demand for low-sulfur coal is expected to increase because of the bill's requirement that emissions of sulfur dioxide (SO₂) be cut by more than half. SO₂ is a gas which is produced when coal is burned and which combines with water in the atmosphere to form acid rain. Emissions can be reduced by burning coal with little sulfur or by installing expensive "scrubbers" that remove SO₂ from smokestack gases.

Simpson was joined in his efforts to protect low-sulfur coal by Sen. Pete Domenici, R-N.M. Domenici focused on the system of allowances — essentially saleable permits to pollute — that were designed to provide some economic subsidies to Midwestern polluters while allowing for industrial expansion in the West.

The allowance system was as far as the Senate was prepared to depart from a "polluter pays" approach to reducing emissions of SO₂. Under the bill, each coal-fired powerplant in the country is granted allowances equal to the amount of SO₂ that it is allowed to emit, with

the sum total of all allowances is capped at 10 million tons a year below current levels.

Plants that can reduce emissions below the required levels could sell the surplus pollution allowances to companies seeking to build new powerplants or avoid installing pollution control equipment at existing facilities. Most of the surplus allowances will be generated in the Midwest, where about 100 plants that produce nearly half the nation's SO₂ pollution face expensive cleanups.

Despite the effort to balance regional interests, the acid rain provisions of the legislation nearly proved its undoing. The bill nearly foundered on an amendment offered by Byrd to provide generous benefits to as many as 5,000 miners of high-sulfur coal who might lose their jobs as the result of the legislation. Byrd's amendment was termed a "deal buster" by Mitchell and prompted a veto threat from President Bush.

Nevertheless, Byrd, by virtue of his position as chairman of the Senate Appropriations Committee, held the advantage of holding the pursestrings. Going into the vote, Byrd believed he had commitments from at least 50 senators. He might have prevailed had it not been for Simpson and Sen. Steve Symms, R-Idaho.

Simpson was instrumental in convincing Sen. Joe Biden, D-Del., to renege on his commitment to Byrd and vote against the amendment. Symms switched from "Aye" to "Nay" at the last minute, turning an apparent Byrd victory into a 49-50 defeat.

Symms' switch was stunning, considering that he had led efforts to derail the clean air legislation. He was the only member of the Senate environment committee to vote against sending the bill to the full Senate.

The reason for Symms' last-second turnaround are unclear. Simpson and other GOP leaders exerted heavy pressure on Symms to change his vote, saying that the Byrd amendment would prompt a presidential veto. But Symms said he voted against the amendment because the White House told him it would not lead to a veto. Symms said he did not want to make a bad bill worse by adding the Byrd amendment.

Symms had launched his assault by using a parliamentary maneuver that would make it harder for the deal's backers to fend off amendments. Symms also offered a succession of "killer" amendments to the bill, none of which attracted more than token support.

But the actions Symms initiated proved less of a threat than those he joined. On several occasions, Symms and other conservative, anti-environment Republicans backed pro-environment amendments that were opposed as deal busters by the Senate leadership and the Bush administration. Several of those amendments nearly passed.

The most vivid example of the topsy-turvy voting patterns came on an amendment offered by Colorado Democrat Tim Wirth and California Republican Pete Wilson. They were seeking to impose much stricter standards on automobile emissions, those major polluters in Los Angeles and Denver.

In addition to Symms, conservative Western Republicans voting for Wirth-Wilson included Jim McClure of Idaho, Malcolm Wallop of Wyoming, Jake Garn and Orrin Hatch of Utah, and Bill Armstrong of Colorado, although the lat-

ter three senators represent car-polluted urban areas. Of the 22 senators from the states stretching from the Rockies to the Pacific, only Simpson, Domenici, and Baucus voted to kill Wirth-Wilson. It died, 52-46.

Symms, McClure, Wallop, and Garn would go on to vote against final passage of the legislation, while the other 18 Westerners all voted for the measure.

Wirth was not the only Western senator to try to strengthen environmental protections in the measure. Sen. Brock Adams, D-Wash., wanted to give added protection to national parks and wilderness areas subject to pollution from upwind sources such as powerplants. But Simpson, Baucus, and others objected, saying the Adams proposal would target specific industrial facilities for emission reductions not otherwise required by the bill.

Faced with likely defeat, Adams agreed to revise his amendment, limiting it to a study of the problem of decreased visibility in national parks caused by upwind pollution. Only seven senators voted against the watered-down amendment, including McClure, Symms, Wallop, Conrad Burns, R-Mont., and Kent Conrad, D-N.D.

While fending off and diluting efforts by environmentalists to strengthen the bill, guardians of the compromise also battled assaults from those who sought to weaken it. Simpson was particularly outspoken in his opposition to the Byrd amendment and to an amendment by Sen. Arlen Specter, R-Pa., to grant substantial tax credits to powerplants that install scrubbers to reduce SO₂ emissions. Specter lost, 71-26.

But the keepers of the deal did not always agree on what constituted acceptable changes to the measure.

Baucus led opposition to amendments by Sen. John McCain, R-Ariz., to encourage the use of solar and renewable energy, and by Sen. Tom Daschle, D-S.D., to expand the use of clean-burning gasoline. Both amendments won by wide margins, with Simpson among their backers.

Daschle had broad support in the West, with only Armstrong, Baucus, Domenici, Garn, Hatch, Wallop, and Republican Slade Gorton of Washington opposing his amendment. Support for McCain was less consistent, with Wirth and McClure among the opponents, while Symms and Wilson backed the provision.

Although Baucus, Simpson, and Domenici concentrated on preserving the clean air bill, while Symms was doing his utmost to destroy it, they all found time to tend to their own interests.

Simpson managed to salvage a victory on the issue of which federal agency should regulate radioactive air pollutants known as radionuclides. During committee action on the bill, Simpson had inserted a provision returning all authority over nuclear powerplants, uranium mills, and medical facilities to the Nuclear Regulatory Commission, which since 1977 had shared the duties with the Environmental Protection Agency. The Simpson provision also would have barred states and local governments from setting radionuclide standards tougher than those imposed by the NRC.

Early during floor action on the bill, Sen. John Glenn, D-Ohio, moved to strike the Simpson provisions. Glenn argued that EPA sets tougher standards than the NRC, and that status should be able to grant their citizens a higher degree of protection than that offered by federal standards. Glenn won, 61-36.

Simpson waited until just before the final vote on the bill to launch his counterattack. Taking advantage of an agreement that limited debate on last-gasp amendments to 10 minutes, Simpson again proposed to grant primary authority over radionuclides to the NRC, but to retain the right of states and localities to set their own standards. This time, Simpson won, 67-33.

Other Simpson amendments were less controversial, and passed by voice vote. They included research funding for the University of Wyoming on a variety of air pollution topics, an easing of regulations on dust produced by open-pit coal mines, and, as a reminder of Simpson's lingering anger over the 1988 Yellowstone fires, an order to federal agencies to study the effects of forest fire smoke on health and visibility.

Domenici also legislated about dust, calling for a study on air quality regulation in areas with unpaved roads. Baucus won approval of several amendments easing regulation of ammonia, a poisonous substance used in agricultural fertilizer.

Pork-barrel research funding went to Colorado, with Wirth and Armstrong winning approval for centers to study auto pollution at high altitudes. One center is to be at Colorado State University.

And, in an example of "if you can't lick 'em, join 'em" politics, Symms pushed through an amendment to study whether rapeseed oil can be used as an alternative fuel. The money is to go to either the University of Idaho or North Dakota State University. ■

Andrew Melnykovich is Washington D.C., correspondent for Wyoming's *Casper Star-Tribune*.

HOTLINE

Keep commenting

The Bureau of Reclamation set May 4 as the new deadline for taking written comments affecting the Glen Canyon Dam Environmental Impact Statement. At issue is the effect of the dam's electric-generation on the ecology of Grand Canyon National Park downstream. At meetings in Salt Lake City, Denver, Phoenix and Flagstaff, many people testifying urged more time for public involvement. For more information, write Glen Canyon EIS, Bureau of Reclamation, P.O. Box 11568, Salt Lake City, UT 84147.

BARBS

And Jack the Ripper would have been known as a wonderful family man if he had not gotten caught up in the terrible habit of murdering people.

Clark Clifford, a Washington, D.C., lawyer and a Secretary of Defense under President Lyndon Johnson, said recently of Johnson: "I think he would have been one of our more illustrious presidents if he had not gotten caught in the terrible crunch of Vietnam."

Land of Enchantment acts to slow the flood of garbage

SANTA FE, N.M. — As state legislators were preparing to adjourn, environmentalist lawyer Doug Meiklejohn and garbage industry lobbyist Ed Mahr both were smiling, and — for a change — for the same reason.

In the last hours of the session's last day, legislators had done what many observers had once thought impossible: approved a compromise bill to protect the state's groundwater from poorly run landfills.

In March, Gov. Garrey Carruthers signed the bill. His signature came almost a year after he vetoed a similar measure and touched off a protest that could be heard from Santa Fe southwest to Lordsburg, where residents were fighting Maryland's Driggs Corp.'s plan to build the nation's biggest landfill.

But this year, Carruthers' signature was anticlimactic. He had said all along he wanted a bill passed. The real obstacle was the state legislature, which has never been overly friendly to environmental causes.

It has in the past, for instance, forbidden state regulators from imposing on industry any air pollution or hazardous waste regulations stricter than federal rules. In 1987, the Legislature even exempted the Waste Isolation Pilot Plant repository from all hazardous waste rules. The Legislature later rescinded the exemption after it threatened to cause massive legal problems for both the state and federal governments.

This year, the street talk at the beginning of the legislative session in January was that the landfill bill had little chance. It was long — 90 pages — and complex, and the session was to be only 30 days. Lobbyists were fighting various portions of the bill, led by representatives of the United States' two

biggest garbage companies, Waste Management Inc. and Browning-Ferris Inc.

But after enduring countless hearings, close to 100 hours of committee work and numerous weakening amendments supported by industry lobbyists, the bill passed both houses by comfortable margins.

Environmental groups and the bill's sponsor, Santa Fe Democrat Sen. Roman Maes, said public opinion was their biggest ally. Following Carruthers' 1989 veto, testimony at public hearings and opinion poll results had shown virtually no support for allowing New Mexico to be a dumping ground for out-of-state trash.

The bill's most powerful weapon is a provision authorizing the state to slap fees on garbage hauled across state lines and across borders of regional solid-waste districts. The bill also gives the state stronger legal authority to set regulations on landfills. Historically, the state's landfill rules have been among the weakest in the country.

"I think this bill will discourage those from out-of-state who saw outrageous profits with absolutely no control," said Donna Smith, director of the New Mexico Association of Counties. "We don't look like the wide-open wonderland of profit anymore."

Yet New Mexico's pro-dump forces still offered plenty of potential economic goodies in a state that traditionally has hungered for jobs.

Late in this year's legislative session, for instance, news broke that an Albuquerque businesswoman, Carol Bailey, had attracted investors from New York City, Washington, D.C., and other cities to a proposal to transform a rural landfill. Forty miles southwest of Albuquerque, the landfill was slated to

become a \$150-million-a-year incinerator and recycling center, taking garbage both from inside and outside the state.

Currently, Albuquerque ex-Mayor Harry Kinney is running for governor as a Republican on a platform of bringing 25 percent of the nation's garbage to New Mexico. By law, Republican Carruthers cannot succeed himself when his four-year term ends next January.

Kinney's "Bold Plan for the Economic Development of New Mexico" projects out-of-state garbage could bring \$400 million per year in revenues and 1,400 new jobs. His vision is of trash going to four landfills in rural areas of the state.

The idea of using New Mexico's rural areas for dumps also found a sympathetic voice in the Carruthers administration. Economic Development and Tourism Secretary John Dendahl urged the state to study the idea of bringing in out-of-state garbage as an economic development tool. Other Carruthers aides, however, were not receptive.

"With proper studies, proper controls and the proper identification of landfill sites, there may be a real opportunity here," said Dendahl. "On a lot of this land, they don't even grow enough grass to feed one unit of cattle on 50 acres."

Another member of the pro-dump parade was state Senate Conservation Committee chairman John Morrow, a northeast New Mexico rancher. Morrow, whose committee approved several weakening amendments to the landfill bill, has applied in the past for a state permit to run a landfill on his land and said he may do so again.

"Cattle don't make any money anymore. Garbage is something that would

come every day," said Morrow, a Democrat. "It's my land and as long as I obey the rules, I should be able to do what I want with it."

A key provision weakened by Morrow's committee required the state to investigate landfill applicants' backgrounds. The push for diluting the requirement came from lobbyists for Waste Management and Browning Ferris. Between them, the two had since 1987 paid \$3.1 million in fines for antitrust law violations in other states.

But Waste Management lobbyist Ed Mahr called the bill's investigative proposal "onerous and punitive" and warned it would discourage businesses from operating in New Mexico. The bill's final version gives the state discretion to decide whether to investigate landfill operators.

Environmental groups actually were more critical of the final product than were industry groups, in part because the bill has no formal groundwater protection requirements for landfill liners or piping systems to collect and drain water out of landfills. It also exempts operators of certain kinds of trash-burning facilities from having to pay the fees.

But with all its weaknesses, said Albuquerque environmentalist Paul Robinson of the Southwest Research and Information Center, the landfill bill was still the best environmental bill ever to pass the Legislature. Kevin Bean, an activist with the New Mexico branch of the Ralph Nader-founded Public Interest Research Group, said, "We managed to turn a setback into a victory, but we had no idea we could do that a year ago."

—Tony Davis

Wolves need human allies to make restoration successful

More than 350 people packed a meeting hall in Tempe, Ariz., last month to attend the first Arizona Wolf Symposium. The gathering, put on by Preserve Arizona's Wolves and co-sponsored by the Arizona Chapter of the Wildlife Society, was held to educate the public on the status of America's most controversial predator — wolves. Speakers included biologists, ranchers, Earth Firsters, Animal Damage Control agents, wildlife agency personnel and people just interested in wolves.

Surprisingly, everyone was on his or her good behavior. No bitter arguments ensued, and only a few feelings were ruffled.

Speakers talked about recent

HOTLINE

Wrecking the bureau

The National Wildlife Federation says it's time to terminate the Bureau of Reclamation. Delegates at the federation's recent 54th annual meeting in Denver adopted a resolution to that effect, saying that the agency is doing more damage than good for natural resources in the West. "It has outlived its usefulness," said Edward R. Osann, director of the federation's water resources division. The resolution notes that in 1987, BuRec said that with the accomplishment of its original purpose of bringing water to the arid West, a new mission was needed: to clean up toxic wastes and better manage water resources.

releases of red wolves in South Carolina and the status of gray wolves in Minnesota, Washington, Montana, southern Europe and Mexico. A highlight of the program was a slide talk on Arctic wolves on Ellesmere Island by Dr. L. David Mech, America's foremost wolf authority.

The main emphasis, however, was on the fate of the endangered Mexican wolf, a race of gray wolf that is almost extinct in the wild and exists in the United States only in captivity.

Roy T. McBride, one of the few people who has handled Mexican wolves in the wild, was not optimistic. Although he said a few wolves might still be present in Chihuahua and Durango, Mexico, he doubted whether a breeding population still existed.

A talk by Arizona Game and Fish Department biologist Barry Spicer also attracted more than usual interest. He presented the results of a questionnaire that showed more than two-thirds of Arizonans wanted wild wolves in their state. Although cattle-growers refused to be sampled as a group, the percentage of rural residents in favor of wolves was almost as high as that of people living in metropolitan areas. Hunters and wildlife biologists favored wolf restoration by a ratio of more than two to one.

That reintroductions can succeed was indicated in a paper by Warren Parker, who described the U.S. Fish and Wildlife Service's recent red wolf releases on Alligator River National Wildlife Refuge in North Carolina.

Like the Mexican wolf, trans-



plantable wild populations of red wolves no longer exist, and only captive animals are available for release. The keys to success appear to be a large area suitable for reintroduction, a well-coordinated public relations program to obtain local support for an introduction, and the classification of released animals as "experimental" rather than "endangered." Previous red wolf restoration efforts had been stymied by local residents who did not want potentially troublesome animals protected by the heavy fines mandated in the Endangered Species Act.

The only sad note at the gathering

was that few politicians and wildlife administrators were in attendance. Beth Woodin, the newly appointed Arizona Game and Fish Commissioner, was an exception.

Wolf advocates agreed that federal bureaucrats would benefit from observing the dynamics of a changing wildlife constituency. It was also agreed that a better-educated public was desirable.

Proceedings of the conference are available from Bobbie Holiday, 1413 E. Dobbins Road, Phoenix, AZ 85283 for \$15.

—David E. Brown

BULLETIN BOARD



Mountainfilm '90 poster

CLIMB EVERY MOUNTAIN

Mountainfilm '90, the 12th annual festival of mountain-related movies, comes back to Telluride, Colo., May 25-28. Besides showing a wide selection of award-winning films from Europe and Canada on mountaineering and whitewater sports, the festival will also honor Leo Dickinson. He is the producer of over 50 adventure films, including *Filming the Impossible*, *Into the Blue* and *Black Holes*, and *Flight of the Windhorse*. Films you can expect to see include Catherine Destiville climbing in *Seo*, Robert Redford narrating *Yosemite: The Fate of Heaven*, and John Armstrong's kayak/raft trip in *Bashkaus: Hard Labor in Siberia*. A free seminar on the difficulties of climbing and filmmaking is also planned. For more details write to Mountainfilm '90, P.O. Box 1088, Telluride, CO 81435 (303/728-4123).

DON'T COAST PAST THESE HEARINGS

If you want to help decide the fate of the Oregon and Washington coastline, be in Seattle on May 11 or Portland on May 12. On these dates a House subcommittee will hold hearings on issues such as a proposed seven-year moratorium on coastal drilling, a ban on drilling on the outer continental shelf, and defining the role of coastal citizens in selecting drilling sites. Rep. Peter Defazio, D-Ore., says the hearings will "lead to legislation that puts our fisheries and our coastlines first, and the oil interests last." The hearings are open to the general public, but if you want to testify you must call in advance, 202/225-6042. Specific sites will be announced shortly. For information contact Bob Hennessey at 202/225-6416, or Jeff Stier at 503/465-6732.

REVERSE ARCHAEOLOGY

For generations amateurs looted Anasazi Indian sites in Utah's Grand Gulch, collecting or selling the artifacts to museums and collectors around the world. Now a contemporary group, the Wetherill-Grand Gulch Research Project, is trying to track down the Anasazi baskets and tools to bring them back to Utah. To discuss the results of their work and the Basketmaker Anasazi of A.D. 0-700, the group is sponsoring the "Anasazi Basketmaker Symposium" from May 26-28 in Blanding. For more information about the event, which features lectures, slide shows and field trips, call Julia Johnson at 303/499-8424.



OF ROSY APPLES...

Beware of shiny, bright and perfect fruits and vegetables, warns Americans for Safe Food. The Washington, D.C.-based nonprofit organization recently published a simple, easy to read guide that sells for \$3: *The Wax Cover-Up: What Consumers Aren't Told About Coatings and Pesticides on Fresh Produce*. It gives the definitive scoop on waxed produce, including health hazards, regulatory laws for supermarket labeling and an outline for community action. For more information contact Americans for Safe Food, Center for Science in the Public Interest, 1501 16th St. NW, Washington, DC 20036.

COMPETENT DO-GOODERS

Business Week is not on most environmental groups' reading list, but the March 26, 1990, issue deserves a look. The cover story is titled "Surprise! Some of America's best-run organizations are nonprofits. Here's what corporate America can learn from them." The article gives an overview of the forces that have changed non-profits' scorn of management expertise and bottom lines into admiration. But most of the article consists of profiles of successful nonprofit managers, led by Frances Hesselbein, former executive director of the Girl Scouts of America. She faced a problem many environmental groups face: a lack of minority appeal and members. During her tenure, she expanded the Scouts and tripled the percentage of enrolled minorities. But perhaps the most interesting aspect of the article is what it chose to leave out. The missing perspective can be found in an article by management expert Peter Drucker in the July-August 1989 *Harvard Business Review* titled, "What Business Can Learn from Nonprofits." Drucker is quoted by *Business Week* and in places the two articles run along the same tracks. But *Business Week* leaves out Drucker's criticisms of for-profit corporations. In fact, Drucker ends his article by saying that non-profits are showing America how to manage the knowledge worker for productivity. "It requires a clear mission, careful placement and continuous learning and teaching..." Many people who work in the business world, Drucker says at the end of the article, work as volunteers for non-profits. When he asks business people why, "far too many give the same answer: Because in my job there isn't much challenge, not enough achievement, not enough responsibility; and there is no mission, there is only expediency." Unlike Drucker, *Business Week* also sticks to conventional non-profits: the Scouts, hospitals, foundations. There is no mention of environmental groups, civil rights groups, et al.

CRY OF THE CRANE

A dance performance inspired by the plight of the whooping crane, an endangered species, will be part of the Boulder Creek Festival May 27 in the Boulder Art Center. "Cry of the Crane" will be performed by the dance group, Dance for Diversity, founded by principal dancer Melinda Harrison. For details call 303/442-3026.



Aerial view of Jackson, Wyoming

CAN JACKSON AVOID ASPENIZATION?

The weekly *Jackson Hole Guide* recently featured a five-part series on the growth and future of the popular resort town of Jackson, Wyo. Its premise was that planning now could help Jackson, whose workers can't afford to live in town. The *Guide* reported that land prices in Teton County more than doubled during the past year, from \$100,000 to \$260,000 per acre. Although the average cost for a single-family home in the town of Jackson is \$197,000, Aspen's average home sells for a stratospheric \$1.1 million. The series also discussed the effects of growth on the town's infrastructure, strategies to direct growth and the way a comprehensive growth plan is put together. For more information about the series, write *Jackson Hole Guide*, P.O. Box 648, Jackson, WY 83001, or call 307/733-2430.

A LITTLE HELP FROM HIS FRIENDS

The Forest Service has its critics, but few write to 200 friends and community leaders to build support for change. That is what John Haines did after a summer in the mountains of Wyoming's Medicine Bow National Forest, and a winter of research in Forest Service offices. In a three-page letter he told friends what he learned: In 1988, the agency spent nearly \$2.3 million on timber harvesting but only \$1.1 million for wildlife, fish and recreation combined; of 24 roadless areas released by the 1984 Wyoming Wilderness Act, 19 have been scheduled for logging; undeveloped forest land decreased from 420,439 acres in 1984 to 335,374 acres by 1990. He also found that tourism accounts for 3 percent of the jobs in the counties around the Medicine Bow while logging and sawmills employ only .4 percent of the workforce. With the fifth-year evaluation of the Medicine Bow's 10-year management plan approaching, Haines says it's time to stop shortsighted and destructive policies. Haines urges anyone who shares his concerns to write Regional Forester Gary Cargill, Medicine Bow Forest Supervisor Gerald Heath, Wyoming Gov. Mike Sullivan, and members of the state's congressional delegation. For more information and a copy of the letter, contact John W. Haines, c/o 1924 Sheridan, Laramie, WY 82070.

ACCESS

GARDENING WITH NATURE — workshops will be held April 28-29, May 5-6, and a one-day greenhouse workshop on June 9. Taught by Jerome Osentowski in Basalt, Colo. \$50 per day or \$100 for the weekend. Oct. 20-Nov. 1, 1990, there will be a 12-day intensive Permaculture Design Course. A \$50 advance deposit is required for weekend workshops. Call 303/927-4158 or write P O Box 631, Basalt, CO 81621. (1x8B)

RAISE ENDANGERED ANIMALS for profit. Save habitats for profit. Investment into our green company also possible with high rate of return. Free details or ASAP \$2, Ellen Malmquist, 6977 Marshall Dr., Boulder, CO 80303 (303/499-9212). (1x8p)

HIGH COUNTRY NEWS classified ads cost 30 cents per word, pre-paid, \$5 minimum prepaid. Display ads are \$10/column inch if camera-ready; \$15 per column inch if we make up. Send your ad with payment to: HCN, Box 1090, Paonia, CO 81428 or call 303/527-4898 for more information.

474 ACRES NEAR CORTEZ overlooking Hovenweep Canyon complete with an ancient Anasazi tower with significant petroglyphs. A beautiful place to own and an important archaeological site to preserve. \$192,000. Treece Land, 303/243-4170. (3x5B)

EXECUTIVE DIRECTOR: The Environmental Support Center (ESC) is a new organization designed to increase the effectiveness of state and local environmental organizations through help with fundraising, especially workplace giving campaigns, media and organizational development. Seeks an executive director with vision and leadership abilities to build the organization. Duties include: fundraising; program planning and administration; selection of staff and consultants; developing and maintaining positive relations with local, state and national organizations and promoting public awareness of ESC. Qualifications: experience in starting and building new organizations; 3-5 years experience with environmental issues (preferably national and local); demonstrated fundraising abilities; excellent writing, speaking and analytical skills; commitment to extensive, national travel. Position to start summer, 1990. Salary DOE. Office location to be determined; cities being considered include Washington, D.C., New York and San Francisco. Send cover letter, resume and three references by June 1 to ESC Search Committee, 1905 Queen Anne Ave. N., Suite 126, Seattle, WA 98109. Minorities and women encouraged to apply. (2x8 B)

CARETAKER WANTED for remote property in northern California. Free rent and small monthly stipend in exchange for work. References required. Inquire c/o Fuller, 2139 Yale, Palo Alto, CA 94306. (3x6p)

WASTE COMPANY COURTS TRIBE

Waste-Tech Services of Golden, Colo., a subsidiary of Amoco Oil, wants to build the West's largest hazardous-waste incinerator on the Kaibab-Paiute Indian Reservation in northern Arizona. The reservation lies in the heart of what has been called the "Grand Circle" of national parks, including Grand Canyon and Bryce Canyon. The incinerator would bury 20,000 tons of toxic ash in a landfill after burning 80,000 tons each year. Two proposed sites are three and four miles outside of Pipe Spring National Monument. Waste-Tech says the \$80 million incinerator would create 75-100 jobs for the Kaibabs, whose population numbers just 250, and allow them to live and work on the reservation. But before trucks carrying hazardous waste can dump their cargo, Waste-Tech must win Kaibab's tribal approval. There is still a "long way to negotiate and we are trying to get community input," says Alberta Fuller, tribal chairman for the Kaibab-Paiutes. Meanwhile, the proposal has some critics. Alan Miller, a community research specialist with the Utah Environment Center, is concerned that state oversight will not apply since reservations are under the jurisdiction of "sovereign nations." For information about the proposed hazardous-waste incinerator, call Paiute chairman Alberta Fuller, 602/643-7245, or Alan Miller at the Utah Environment Center, 801/322-0220.

SMALL WESTERN SLOPE HIGH MOUNTAIN RANCH. 630 acres aspen, spruce, meadows, good deer/elk, trout river runs through, fish lake, cabin, 2 story lodge, \$370,000. Treece Land, 303/243-4170. (2x8B)

THE WOLF IN YELLOWSTONE. Join our three-day llama trek to learn about the wolf's reintroduction and role in the Greater Yellowstone ecosystem, July 8-10. Led by a wolf specialist with the National Wildlife Federation plus our experienced mountain guides. Our seventh summer of leading gourmet llama treks in the Northern Rockies. For color brochure and information packet write Yellowstone Llamas, Box 5042-H, Bozeman, MT 59717. Phone (406) 586-6872. Fax 406/586-9612. (3x6p)

ENVIRONMENTAL ACTION coordinator needed for rapidly growing national organization. Responsibilities include compiling timely action alerts and legislative reviews, conducting membership mailings, and networking with national groups. Must be knowledgeable in U.S. congressional politics and the national environmental community; be highly organized, have excellent written and verbal communication skills, computer experience, and the desire to work as part of a busy team. The ideal candidate will have a college degree, be self-directed and professional, and have experience working/volunteering in the environmental field. Full time, permanent. Position available immediately. Salary beginning at \$18,000 - \$20,000 DOE. To apply: submit resume, cover letter, one-page writing sample, three references to: Global Action Network, P O Box 819, Ketchum, ID 83340. (2x8B)

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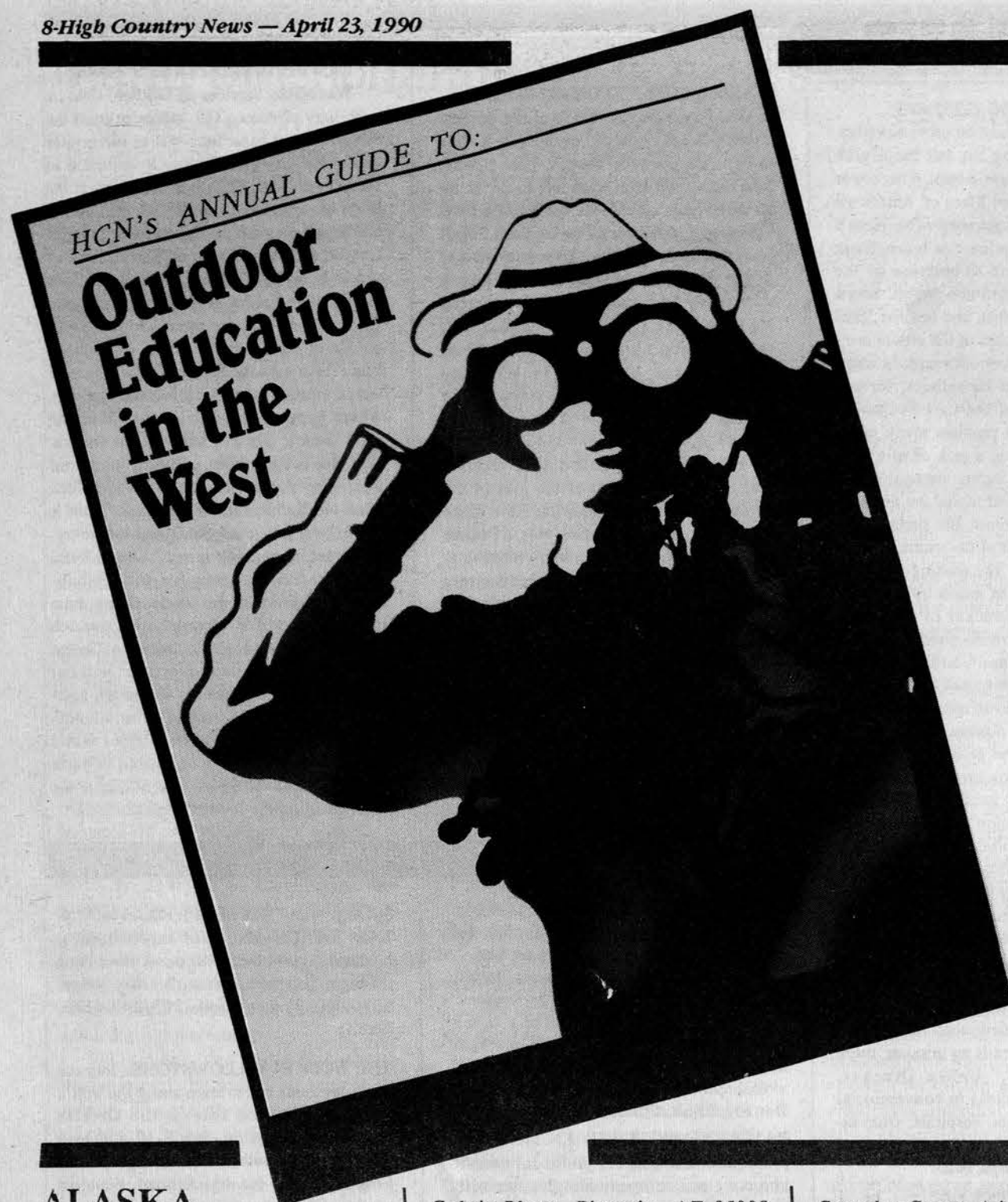
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ABOUT THIS ISSUE: It's bigger, at 20 pages, than usual, but its focus is the same as earlier directories. We want you to know about the many opportunities there are to get to know the West's wildlife, spectacular lands and the people who bring it all to meaning.

With this issue we also focus on Project Wild, the program that teaches children — by first teaching their teachers — about the needs of wildlife for a livable habitat. Writer Osborn Segerberg writes about the need for an environmental ethic and two books are reviewed that revolve around environmental issues or personalities.

Staff has always thought of this as our Earth Day publication, but then, for this newspaper, Earth Day comes every other week! To any nonprofit, outdoor education groups we might have missed we apologize. Write to us and we'll be happy to include you next year.

—Betsy Marston

ALASKA

ALASKA CHILKAT BALD EAGLE—NATURE PHOTOGRAPHY WORKSHOP

is offered by the National Audubon Society. This workshop is timed to witness spectacular concentrations of bald eagles on a late salmon run along the Chilkat River. Professional photographer Perry Conway will highlight creative and technical aspects of photography, and eagle biologist Erv Boker will discuss the ecology and management of this important preserve. November 3-10, 1990. National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272).

ARIZONA

THE DESERT BOTANICAL GARDEN

is much more than a garden! People of all ages participate in our workshops, field trips, classes and demonstrations which are designed to foster an appreciation of the desert environment. Special activities include ongoing ecology demonstrations, an interactive exhibit, "Plants and People of the Sonoran Desert," outreach puppet shows featuring desert ecology themes, two environmental workshops for school groups, and teacher training workshops. 1201 N.

Galvin Pkwy., Phoenix, AZ 85008 (602/941-1225).

INSTITUTE OF DESERT ECOLOGY

is held each spring by the Tucson Audubon Society. In its 20th year, the institute is four days of field studies in Sonoran Desert ecology under the tutelage of six Arizona natural history experts. Sessions focus on relationships between plants, wildlife and the desert environment. Participants camp in a shaded mesquite bosque adjacent to undisturbed desert washes, canyons, hill-sides and rich riparian areas. Meals are catered on-site and all camp services except sleeping equipment are provided. The 1990 cost is \$245, with university credit available for an additional fee. For more information contact the director, Nora Mays, at 300 E. University Blvd., #120, Tucson, AZ 85705, or call her at 602/629-0757.



THE MUSEUM OF NORTHERN ARIZONA

is a nonprofit educational and research institution which interprets the natural and cultural history of the Colorado Plateau. We offer river trips, backpacking expeditions and seminars in the back country of the Plateau. Rt. 4, Box 720, Flagstaff, AZ 86001 (602/774-5211).

THE RESOURCE CENTER FOR ENVIRONMENTAL EDUCATION

is a nonprofit organization serving six school districts and one private school in

Coconino County, Ariz. at the K-12 levels. Our services include in-class programs, teacher training, curriculum development, field trips, and more. Our goal is to foster an ethic of wise resource management. Call or write PO Box 3243, Flagstaff, AZ 86003 (602/779-1745).

SOUTHEAST ARIZONA ECOLOGY WORKSHOP

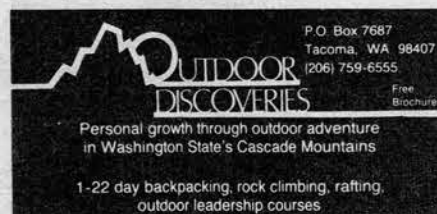
is offered by the National Audubon Society. This one-week adult workshop centers on the topic of biodiversity, using the Chiricahua and Huachuca mountain ranges of Arizona as our field classroom. Hikes, classes and discussions and field trips by van stress local natural history, geology and conservation issues. May 13-20, 1990. National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272).

CALIFORNIA



ARTA RIVER TRIPS

offers up whitewater adventures with a special twist, including candlelight gourmet, music, geology, low-cholesterol and storytelling trips, and many more. Trips from 1 to 16 days in California, Oregon, Idaho and Utah. Free brochure. Star Route 73, Groveland, CA 95321 (800/323-ARTA).



COLORADO

It's Time to go Wild!

AMERICAN WILDERNESS ADVENTURES

is the wild country trip program of the American Wildlands, a national nonprofit wildlands conservation education and outdoor recreation organization offering over 175 domestic and international trips, from whitewater rafting the Grand Canyon to watching the mountain gorillas in Africa. 7500 E. Arapahoe Rd., Ste. 355, Englewood, CO 80112 (303/771-0380).



ASPEN CENTER FOR ENVIRONMENTAL STUDIES

offers the opportunity to explore the var-



Canyonlands Field Institute

- Natural & Cultural History Trips and Seminars
- Landscape Photography Workshops
- Student Field Studies
- River Rescue & Safety

Graduate Credit Available

P.O. Box 68 / Moab, UT 84532
(801) 259-7750

ied ecosystems of the Roaring Fork Valley through summer workshops ranging from ornithology to creative writing. Visiting professors lead courses; emphasis is on field trips, from semi-arid desert to icy tundra. ACES, Box 8777, Aspen, CO 81612 (303/925-5756).

el paso county parks

BEAR CREEK NATURE CENTER of the El Paso County Parks Department offers foothills hiking trails and a display room which features live Colorado animals and slide shows. Interpreters present a variety of natural and cultural history programs year-round for children and adults. Bear Creek Nature Center, 245 Bear Creek Road, Colorado Springs, CO 80906 (719/520-6387).

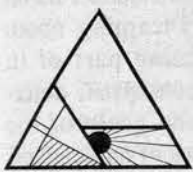
BOULDER NATURAL SCIENCE SCHOOL

has successfully motivated children to develop a keen interest in the outdoors for over 30 years. Programs are geared to encourage their curiosity about the natural world and extend it to include scientific observation. The instructors are talented and experienced naturalists whose enthusiasm and dedication to teaching create memorable experiences for hundreds of children each year. For more information about the school please contact Debbie Long at Thorne Ecological Institute, 5398 Manhattan Circle, Boulder, CO 80303 (303/499-3647).



CLOUD RIDGE NATURALISTS

is a nonprofit, educational organization offering field seminars in the natural sciences. Instructors include some of the West's most distinguished scientists. Sessions range from weekend to week-long in length. Fine lodges, pretty campsites, and gourmet picnics. Write Overland Star Rt., Ward, CO 80481.



THE BRECKENRIDGE OUTDOOR EDUCATION CENTER

offers adventure-based wilderness programs for people with disabilities. Summer programs include ropes courses, camping, fishing, rock climbing. Winter activities can include sit and mono skiing, cross-country skiing, and winter camping. For information contact Breckenridge Outdoor Education Center, Box 697, Breckenridge, CO 80424 (303/453-6422).



THE COLORADO OUTDOOR EDUCATION CENTER

includes Sanborn Western Camps, a summer camp program for children and teenagers; **High Trails Outdoor Education Center**, a residential outdoor education program for fifth and sixth graders

in the spring and fall; **The Nature Place**, a nature and conference center for adults, and **The Pikes Peak Ranch**, a new family camp facility which emphasizes learning and outdoor adventure. All of the operations are located on 6,000 acres of private land, bordered by Pikes Peak National Forest and the Florissant Fossil Beds National Monument. The center was designated a National Environmental Education Center by the Department of Interior, and facilities include an interpretive building which houses a herbarium, seismograph, planetarium and interpretive historical displays and games, as well as nine distinct learning centers, including a working cattle ranch, restored homestead, Indian village, and several crystal and fossil formations. COEC, Florissant, CO 80816 (719/748-3341).



THE COLORADO OUTWARD BOUND SCHOOL

offers the ultimate in outdoor adventure. Established in 1961, the school is recognized as the nation's premiere outdoor, experiential education program. Over 300 courses are offered annually throughout the Rocky Mountain West and abroad to anyone age 14 and up, which emphasize self-discovery and skills enhancement while encouraging appreciation of the environment. Activities include whitewater rafting, mountaineering, canyonland exploration and horsetrailing. Special courses are also available for corporate executives and for those with health concerns. Tuition assistance is available. Write or call for a free catalog and schedule. Colorado Outward Bound School, Dept. OE-90, 945 Pennsylvania St., Denver, CO 80203 (303/837-0880).

COLORADO STATE UNIVERSITY



COOPERATIVE EXTENSION and Jefferson County Public Schools cosponsor the award-winning outdoor discovery summer programs, Owl's Roost and Eagle's Nest, for students entering fourth and fifth grades. Each week-long program daily visits outdoor sites along Colorado's Front Range from June 25 to August 5. For more information, contact: CSU Extension, 15200 W. Sixth Ave., Golden, CO 80401 (303/277-8980).



CROW CANYON ARCHAEOLOGICAL CENTER

conducts programs for students and adults who assist archaeologists and archaeobotanists in the field and in the

ANASAZI BASKETMAKER SYMPOSIUM

Anasazi Basketmaker is the subject of a three-day symposium of archaeologists, teachers, government representatives and canyon enthusiasts May 26-28 in Blanding, UT. Public lectures, slide shows and field trips will focus on the preservation of Indian culture of the Grand Gulch Primitive Area. For reservations and information, call Fred Blackburn at 303/565-4747.



laboratory. Long-term research is aimed at understanding the Anasazi culture that once flourished in the Four Corners area. Crow Canyon, 23390 County Road K, Cortez, CO 81321 (800/422-8975).



DEER HILL SUMMER EXPEDITIONS

is an adventure program for young men and women, 14-17. Groups of 15 participate in whitewater rafting, kayaking, backpacking, mountaineering and rock climbing in the Southwest. Base camp facility offers home-cooked meals, hot showers. Individual instruction in photography/darkroom technique. Pace is adventuresome, but noncompetitive. Douglas and Beverly Capelin, Box 180, Mancos, CO 81328 (303/533-7492).

ESTES PARK CENTER/YMCA OF THE ROCKIES



offers outdoor education utilizing an interdisciplinary approach. Educational opportunities include initiative activities, informative programs and experiential environmental encounters designed to stimulate curiosity and continued learning. Estes Park Center/YMCA of the Rockies, Estes Park, CO 80511-2550 (303/586-3341).



THE INSTITUTE OF RIVER ECOLOGY

in Bailey, Colo., will hold its program (continued on page 10)

Museum of Western Colorado Discovery Expeditions

- Emphasizing history, natural history, environmental ethics -

Wildlife Photography in the Chiricahua Mountains

May 10-14 \$490

Bicycle the Uncompahgre Plateau

June 15-18 \$275

Anasazi Spirits & Navajo Lives: Hiking in Canon del Muerto

August 13-17 \$395

In the Tracks of John Wesley Powell: Rafting Lodore Canyon

September 12-15 \$475

For more information, call (303) 242-0971 or write P.O. Box 20,000-5020, Grand Junction, CO 81502

Discover the Ultimate

Colorado Outward Bound School offers you the ultimate adventure with courses in:

- whitewater river rafting
- mountaineering
- canyonlands explorations
- horsetrailing
- winter mountaineering/ cross country skiing
- and several other specialty course offerings

Send for your FREE course catalog today from the nation's oldest outdoor education school. For ages 14 and over. Financial assistance available.

Colorado Outward Bound School
945 Pennsylvania Street, Dept. —
Denver, Colorado 80203
(303) 837-0880
1-800-477-COBS

Directory...

(Continued from page 9)

from June 24-29, 1990. It is sponsored by Denver Audubon Society in cooperation with Colorado Division of Wildlife and Thorne Ecological Institute. Participants explore the ecological diversity and resource management concerns related to the Upper South Platte River basin. Experts on all sides of the issues address water quality, reservoirs and water diversions, wetland and riparian values, stream biology and fish habitat enhancement, and many more topics. University credit is available. For more information about this enjoyable and informative program contact Thorne Ecological Institute, 5398 Manhattan Circle, Boulder, CO 80303 (303/499-3647).

WILDERNESS AND CIVILIZATION 1990-91



Using as a classroom over five million acres of wilderness in the Wild Rockies, the University of Montana is now offering the 16th Annual Wilderness and Civilization Program.

The program, which focuses on understanding wilderness and wildlands and their relationship to contemporary American society, begins in September with a two-week backpacking trip in a western Montana wilderness area. During this time students and faculty share a common wilderness experience and learn first-hand of major wilderness management problems and issues. Upon returning to campus, students begin two quarters of intensive readings, writings, discussion and project work. This program is interdisciplinary, bringing together courses from the humanities, sciences and social sciences. The program culminates in March with another two-week wilderness trip in the southwest.

Wilderness and Civilization is a thorough and consuming learning experience which leaves a lasting impression on all involved. Application deadline is June 15.

For more information contact:

**Wilderness Institute
School of Forestry
University of Montana**

Missoula, MT 59812 (406) 243-5361



THE KEYSTONE SCIENCE SCHOOL

was established in 1976 and provides quality residential field science programs to approximately 3,000 students from across the nation each year. We are a center for learning for students of all ages with emphasis on sound scientific understanding of nature and our relationship to the environment. Our curriculum includes ecology of montane, subalpine and alpine environments; animal tracks and signs; snow physics; and avalanche awareness. Keystone Science School, Box 606, Keystone, CO 80435 (303/468-5824); Denver/Boulder (303/534-7395).



MALACHITE SCHOOL & SMALL FARM

offers year-round educational programs for people of all ages. We work together to share a vision of vital, sustaining lifestyles centered on our love for natural living. Day-long field trips, hostel work exchanges, farmstays, internships, retreats, summer youth camp and extended residence opportunities. Write or call MS&SF, ASR Box 21, Gardner, CO 81040 (719/746-2412).



THE MUSEUM OF WESTERN COLORADO

collects, preserves and interprets materi-

Washington State Parks

Are you looking for a place to hold a retreat?

Hoping to find clear desert air, explore saltwater tidepools or enjoy the mountains? Discover Washington State Park Environmental Learning Centers. Ten ELCs are located throughout Washington with facilities designed for groups — schools, churches, families or any other gathering. For more information on our ELCs, contact Environmental Learning Center Coordinator, Washington State Parks and Recreation Commission, 7150 Cleanwater Lane, KY-11, Olympia, WA 98504 206/586-6022.

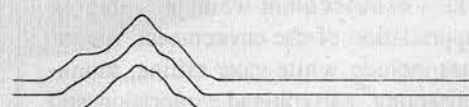


als related to the social and natural history of western Colorado. A nonprofit organization, it includes a history museum in downtown Grand Junction, Cross Orchards Living History Farm, Dinosaur Valley Museum, Rabbit Valley Research Natural Area, Riggs Hill and Dinosaur Hill. Paleontological and travel expeditions offered. P.O. Box 20000-5020, Grand Junction, CO 81502-5020 (303/242-0971).



OUTDOOR SEMESTER IN THE ROCKIES

of Colorado Mountain College is a four-month-long field course that integrates an experiential curriculum of academics: ecology, archaeology, wilderness philosophy, and skills: backpacking, desert travel, mountaineering, rock and ice climbing, avalanche studies, winter camping and backcountry skiing, for 18 hours of transferable college credit. The course takes place throughout the four-corners states and into Mexico, both spring and fall semesters. Course fee is \$1,860 + tuition. Financial aid available. CMC, 901 S. Highway 24, Leadville, CO 80461 (719/486-2015).



ROCKY MOUNTAIN BIOLOGICAL LABORATORY

is a year-round, nonprofit, educational and research organization located at 9,500 feet in Colorado's Elk Mountains. In the summer the lab offers eight-week college field courses in mammology, botany, ecology and environmental problems, as well as seminars and field tours for the public. Rocky Mountain Biological Laboratory, Box 519, Crested Butte, CO 81224 (303/349-7231).

THE ROCKY MOUNTAIN NATURE ASSOCIATION

offers one-day, weekend and week-long summer seminars in Rocky Mountain National Park. Courses include geology, ecology, painting, photography and others. Contact Rocky Mountain Seminars, Rocky Mountain National Park, Estes Park, CO 80517 (303/586-2371, ext. 294).



SNOW MOUNTAIN RANCH/YMCA OF THE ROCKIES

offers residential "Outdoor Adventure Education" programs to elementary, junior high and high school students. 85 miles northwest of Denver, with a 4,600-acre classroom at 9,000-foot elevation, interdisciplinary curriculum, and hands-on emphasis, we offer extensive pre-trip planning with teachers. Contact Bob De Jong, Snow Mountain Ranch/YMCA of the Rockies, PO Box 169, Winter Park, CO 80482 (303/887-2152, ext. 4174).



THE STEWARDSHIP COMMUNITY

is an association of men and women dedicated to the principles of earth stewardship in alignment with the natural

laws of the living planet. Its "Touch the Earth" workshops promote reconnecting with the earth. For information call 303/679-4274, or write 5569 N. County Rd. 29, Loveland, CO 80538.



THORNE ECOLOGICAL INSTITUTE

was founded in 1954 to encourage the wise use of the Earth's resources by promoting the knowledge of ecological facts and principles through education. Programs address a wide variety of environmental concerns. They include Natural Science Schools in Boulder and Denver for children ages 6-14, a biennial "Symposium on Issues and Techniques in the Management of Wildlife," and conferences and lectures on ecology and timely environmental topics for the lay and professional public. Each summer, Thorne co-sponsors with Denver Audubon Society and the Colorado Division of Wildlife the Institute of River Ecology. More information is available by writing 5398 Manhattan Circle, Boulder, CO 80303 (303/499-3647).



THE VAIL NATURE CENTER

is an outdoor education facility located in Ford Park which offers to the public a six-acre nature park, an interpretive center and nature programming for all ages. The center is open 9-5 M-F, 10-5 S-S from June 1 through Sept. 30. For information and program sign-ups call or write the Vail Nature Center, 292 W. Meadow Drive, Vail, CO 81657 (303/479-2291).

CONNECTICUT



THE NATIONAL AUDUBON SOCIETY EXPEDITION INSTITUTE

offers high school, undergraduate and graduate experiential environmental education programs in which students travel throughout the country learning about the environment by being part of it. Groups of 24 live by consensus, determining the structure and goals of the group within the confines of an academic community. National Audubon Society Expedition Institute, Northeast Audubon Center, Sharon, CT 06069 (203/364-0522).

IDAHO

THE COOPERATIVE WILDERNESS HANDICAPPED OUTDOOR GROUP

provides opportunities for the physically disabled to enjoy the outdoors and become more independent. Affiliated with Idaho State University's physical education department, C.W. HOG pairs able-bodied volunteers with disabled people of all ages in activities such as kayaking, rock climbing and alpine skiing. C.W. HOG, Idaho State University, PO Box 8118, Pocatello, ID 83209.



Idaho Conservation League

POSITION OPENING

EXECUTIVE DIRECTOR

IDAHO CONSERVATION LEAGUE, Boise, Idaho

Responsibilities: administer and build Idaho's leading citizen conservation group; supervise staff of five; help plan, develop, and implement policies and issue strategies; oversee legislative lobbying; responsible to board of directors for fiscal planning and management of \$250,000 a year (and growing) budget.

Qualifications: experience in organizational development, with demonstrated personnel management and fundraising success. Ideal candidate will be environmentally minded, with experience in grassroots activism. ICL's Executive Director must understand political and government agency processes, have excellent communication skills, enthusiastic leadership qualities, and proven grant writing and major donor fundraising abilities.

Salary:

\$25,000+, depending on experience. Excellent benefit package.

Starting date:

September 1, 1990. Apply by May 30, 1990.

Obtain complete job description and application from:

Trish Klahr, Personnel Chair

Idaho Conservation League, P.O. Box 844, Boise, Idaho 83701

The Idaho Conservation League influences public policy on Idaho natural resource issues through lobbying, agency monitoring, education and grassroots activism. Headquartered in the state capitol, with a field office in Ketchum, ICL has 1,800 members in 12 local chapters throughout the state. Since its founding in 1973 as a "nonpartisan voice of conservation", ICL has had a full-time lobbyist at each session of the Idaho Legislature.



THE OUTDOOR PROGRAM AT IDAHO STATE UNIVERSITY

offers mountaineering, kayaking, rafting and cross-country ski trips to anyone college-age or older. Trips are "common adventures," where each participant has equal say, responsibility and costs. The university hosts seminars in first aid and map and compass use, and offers ice climbing and avalanche workshops. Idaho State University Student Union Outdoor Program, Box 8118, Idaho State University, Pocatello, ID 83209.

ILLINOIS



THE INSTITUTE FOR EARTH EDUCATION

helps people live more harmoniously and joyously with the natural world. I•E•E develops and disseminates focused educational programs that will help people build an understanding of, appreciation for, and harmony with the earth and its life. The institute conducts workshops, provides a seasonal members journal, hosts international and regional conferences, supports local branches, and publishes books and program materials. Write for a free copy of the institute's Sourcebook. The Institute for Earth Education, Box 288, Warrenville, IL 60555 (708/393-3096 or 509/395-2299).

MONTANA



THE GLACIER INSTITUTE

in the spectacular scenery of Glacier National Park offers classes, workshops and one-day explorations. Now managing two facilities. Outdoor educational experiences may be enjoyed by persons of all ages. The Glacier Institute, P.O. Box 1457, Dept. HCN, Kalispell, MT 59903 (406/752-5222).



GUNDERSON/ FLOOD WILDERNESS PARTNERSHIP

promotes and instructs environmental education programs emphasizing an environmental ethic through creative, personalized educational programs for students at all levels (preschool through adult education). We also offer teacher workshops. Gunderson/Flood Wilderness Partnership, Star Rt. Box 590, Condon, MT 59826 (406/754-2543).



UNIVERSITY OF MONTANA FLATHEAD LAKE BIOLOGICAL STATION

provides students and scientists with a field site for ecological studies emphasizing water-related research. An annual summer academic program offers courses in a variety of field sciences. State-of-the-art freshwater research laboratory is operated year-round. Write to Dr. J.A. Stanford, Flathead Lake Biological Station, University of Montana, 311 Bio Station Lane, Polson, MT 59860.



THE WILDERNESS INSTITUTE OF THE SCHOOL OF FORESTRY UNIVERSITY OF MONTANA

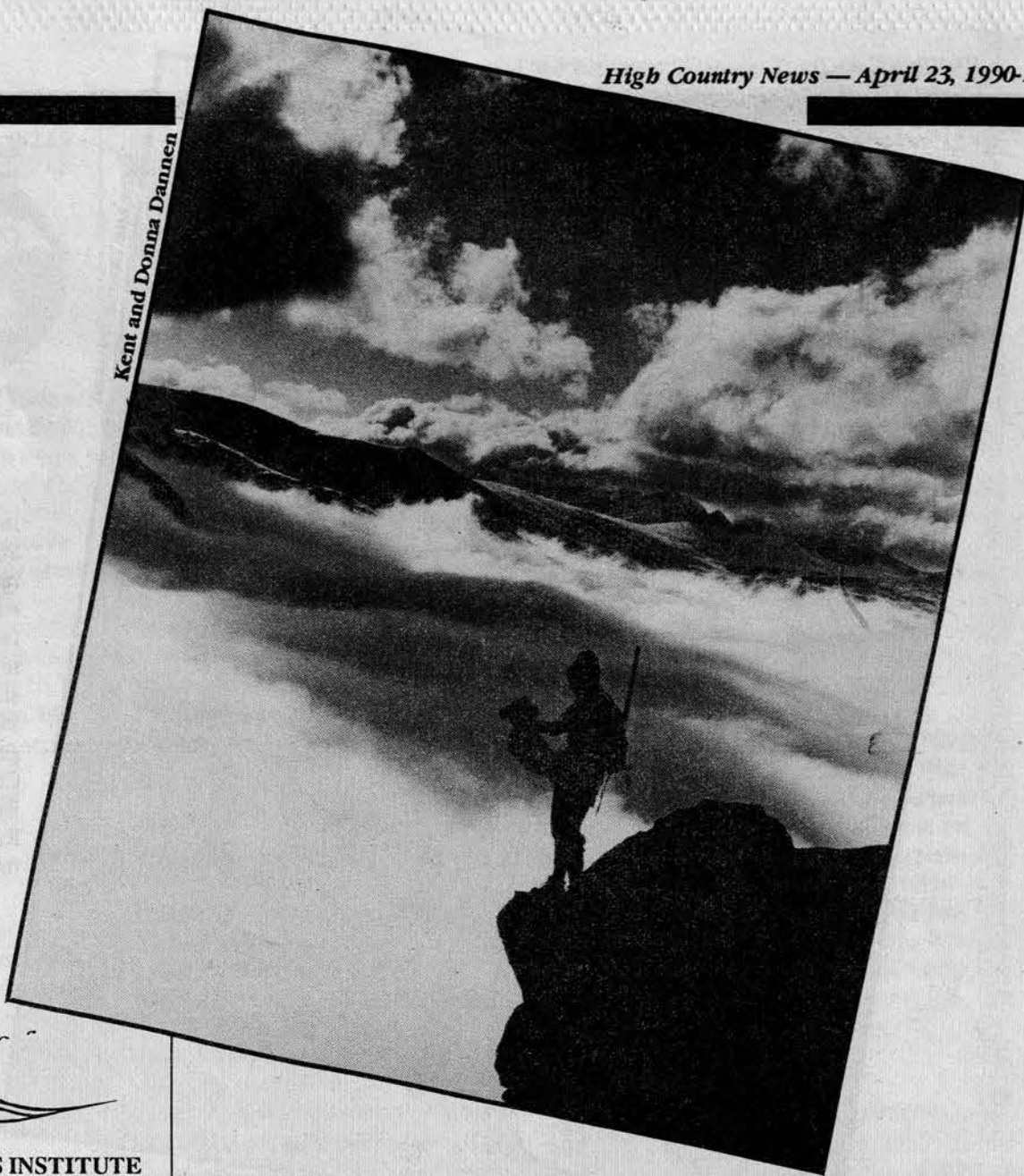
offers a Wilderness and Civilization interdisciplinary program that explores the relationship between wilderness and contemporary society. Courses are diverse: from literature to ecology, economics to Native American studies. The two-quarter program begins and ends with a two-week backpack trip. Contact the Wilderness Institute, School of Forestry, University of Montana, Missoula, MT 59812 (406/243-5361).



WILDERNESS TREATMENT CENTER

provides an experiential approach to recovering from chemical dependency in a healthy, outdoor setting, for adolescent males, ages 14-24, on an in-patient basis in a 60-day continuum. Our two facilities are located on working cattle ranches in the Northern Rockies, near Glacier and Yellowstone national parks. They incorporate a 16-21 day wilderness expedition as an integral part of each patient's recovery experience, including backpacking in the summer and ski mountaineering in the winter. Contact: Wilderness Treatment Center, 200 Hubbard Dam Road, Marion, MT 59925 (406/854-2832).

(Continued on page 12)



Kent and Donna Dannen

Aspen Center for Environmental Studies NATURALIST FIELD SCHOOL

JUNE 25 - AUGUST 15, 1990

LONG COURSES

Rocky Mountain Ecology	June 25-29
Mammals	July 2-6
Ornithology	July 9-13
Geology	July 16-20
Tundra Ecology	July 23-27

SHORT COURSES

Wildflower Walk	July 21
Tundra Walk	July 26
Life in Streams and Ponds	July 29-30
Second Nature (Writing Workshop)	August 1-3
Art in Nature	August 5-7
Environmental Storytelling	August 8-10
Photographic Explorations	August 8-11
Mushroom Hunt	August 11
Rocky Mountain Mushrooms	August 13-15

Cost varies from \$35 to \$150 per course (does not include food or housing). We will help you find housing.

Graduate credit available for some courses

For further information, call (303) 925-5756 or write:



ACES

P.O. Box 8777

Aspen, Colorado 81612

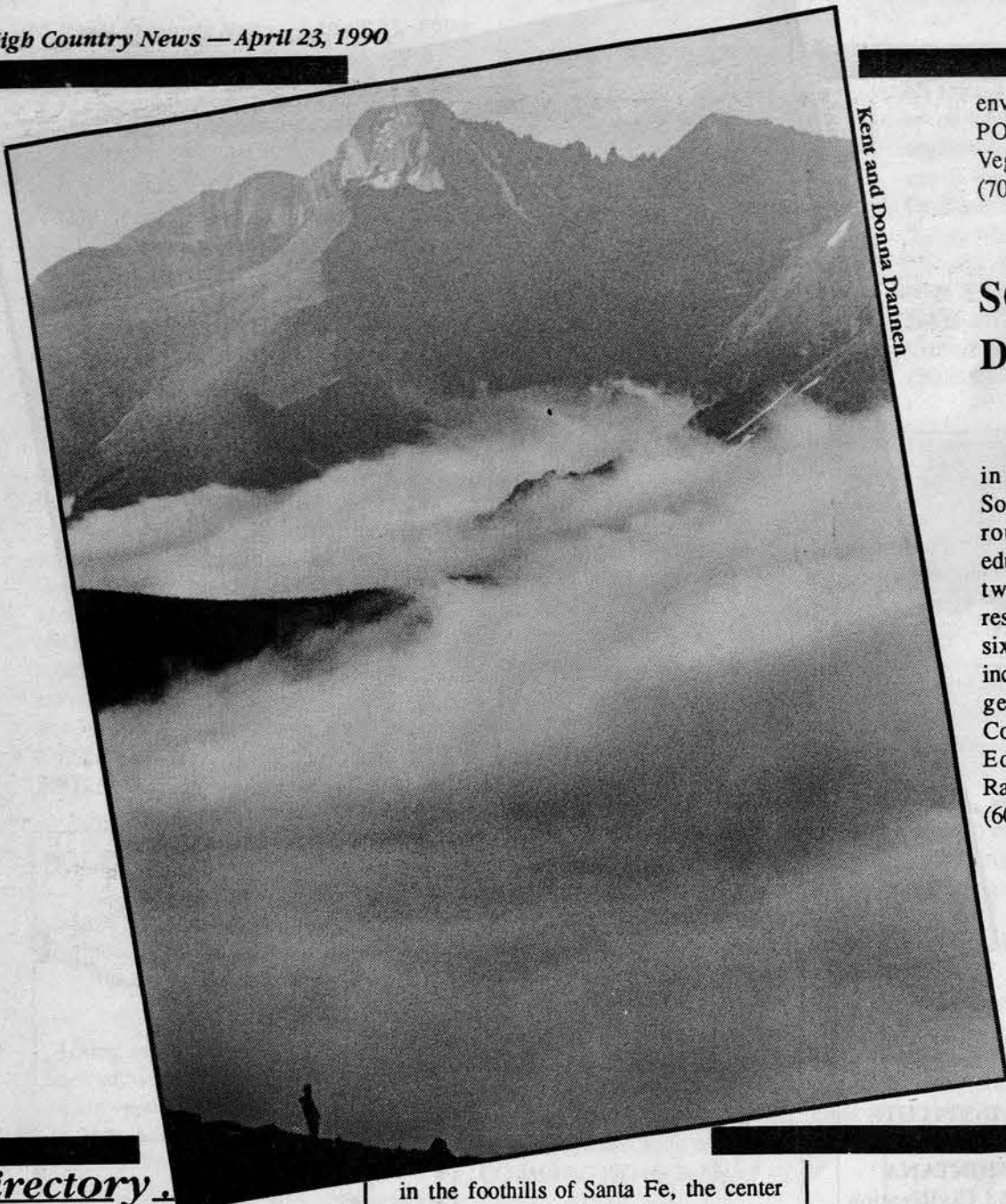
This summer, rediscover simple things

- ★ The cool clean air of dawn
- ★ The fresh smell of pine
- ★ The joy of the mountain top
- ★ The laughter of friends
- ★ The high bark of coyotes
- ★ The sounds of singing around the campfire
- ★ The glow of the moon

Bring your friends and family, and enjoy life in the great outdoors. Nap in a field of wildflowers, explore a rocky bluff, swim in a stream, and begin to understand the simple joys of living.

For \$60 a day, (less for kids) enjoy home-cooked meals, and explore the Colorado mountainside on foot, horseback, bicycle, raft and canoe. Accommodations are at our recently completed Pikes Peak Ranch, a particularly beautiful parcel of our 6,000 acre private property.

Come for a weekend or a week. For more details, contact Colorado Outdoor Education Center, Florissant, Colorado, 80816; 719-748-3341.



Kent and Donna Dancer

Directory

(Continued from page 11)

NEW MEXICO

THE GHOST RANCH LIVING MUSEUM

is an outreach center for the New Mexico Museum of Natural History. It is the only one of its kind in this part of the world. Come and see the native plants and animals in natural habitats. Located on Highway 84 between Espanola and Chama. Call or write PO Box 488, Canjilon, NM 87515 (505/685-4312).

THE RANDALL DAVEY AUDUBON CENTER

is a state office and education center for the National Audubon Society. Located



in the foothills of Santa Fe, the center offers unique education/travel programs. Our "Southwest Birding Adventures" include both river and overland trips: Rio Chama, Salt River, Gila Country and others. Write us at PO Box 9314, Santa Fe, NM 87504 (505/983-4609).

NEVADA



THE NEVADA NATURAL RESOURCES EDUCATION COUNCIL

works to promote and develop natural resource education in Nevada by seeking implementation of our state's environmental education law, by sponsoring workshops for teachers and resource agency professionals, and by supporting community projects and groups fostering

environmental education. PO Box 28272, Las Vegas, NV 89126-2272 (702/849-2180).

SOUTH DAKOTA

OUTLAW RANCH

in the Black Hills of South Dakota is a year-round environmental education center offering two- and three-day residential programs for sixth graders. Activities include horseback riding, geology and ecology. Contact: Environmental Ed. Director, Outlaw Ranch, Custer, SD 57730 (605/673-4040).



WIND CAVE NATIONAL PARK

in southwest South Dakota interprets the underground wilderness of Wind Cave and its interactions with the prairie and forest above. The "Connections Program" offers field trips for school children in South Dakota, Nebraska and Wyoming. Wind Cave National Park, Hot Springs, SD 57747 (605/745-4600).

TEXAS

TEXAS ECOLOGY WORKSHOP BIG BEND NATIONAL PARK

Offered by the National Audubon Society, this week-long adult workshop will highlight the incredible diversity of remote and pristine Big Bend National Park. Field-oriented classes and field trips highlight geology, natural history and conservation issues of the area. Audubon's international conservation efforts here in the borderlands country will be featured as well. Sept. 22-30, 1990. National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272)



UTAH



CANYONLANDS FIELD INSTITUTE

based in Moab, Utah, explores the natural and cultural heritage of the Colorado Plateau through seminars and trips for students and adults. Desert Writer's and Landscape Photography workshops also offered. Write for brochures: PO Box 68, Moab, UT 84532 (801/259-7750).



FOUR CORNERS SCHOOL OF OUTDOOR EDUCATION

offers exciting outdoor educational adventures using one of the most spectacular outdoor classrooms this planet offers — the wild canyons and mesas of the Colorado Plateau. An out-of-the-ordinary opportunity to know these lands. Write East Route, Monticello, UT 84535 (801/587-2859 or 800/525-4456).



THE NORWEGIAN SCHOOL OF NATURE LIFE

in Park City, Utah (originally from Hemsedal, Norway), offers a variety of outdoor/nature oriented programs, year-round: hiking, backpacking, canoeing, nordic skiing, mountain biking, etc., de-emphasizing stress and competition. Write Norwegian School, 544 Park Ave., Park City, UT 84060 (801/649-5322).



S'PLORE

(Special Populations Learning Outdoor Recreation and Education) provides outdoor recreational opportunities for individuals with disabilities and special needs. Programs include: river rafting, cross-country skiing and sledding, rock climbing, canoeing, adaptive rowing, and flyfishing. For more information about programs, contact S'PLORE, 699 E. South Temple #120, Salt Lake City, UT 84102 (801/363-7130).

MONTANA



NATURAL HISTORY WORKSHOPS AND TOURS

MONTANA GRIZZLY BEARS	May 13-19 & September 16-22
NATURE PHOTOGRAPHY	May 20-26 & June 10-16
THOMPSON BIRDING TOURS	May 27-June 2 & June 3-9
DINOSAUR DIG	September 9-15
MAMMAL TRACKING	September 23-29

Top-notch instructors and a Conservancy naturalist will team up to lead adventurous week-long sessions in some of America's most scenic, unspoiled terrain. Participants stay at Pine Butte Guest Ranch, nestled in a valley of the spectacular Rocky Mountain Front. Enjoy hands-on learning while experiencing first-hand the splendors of wild Montana.

Cost for each session is \$900 per person. For details or reservations contact Ralph Walcott, HC58 - Box 27A, Choteau, MT 59422. Phone (406) 466-2621.

The Nature Conservancy
Pine Butte Guest Ranch

USEUM OF NORTHERN ARIZONA VENTURES

Rivertrips • Seminars Backpacking Expeditions

In the backcountry of the Colorado Plateau

602-774-5211

Rt. 4, Box 720, Flagstaff, Arizona 86001

THE UTAH MUSEUM OF NATURAL HISTORY



offers extended field trips for adults throughout the Four Corners area and in the Teton Wilderness Area. It also offers teacher workshops, adult classes in natural history and archaeology, and classes for youth from four to 18 years old. The museum's Summer Field Science Academy provides field programs for second through twelfth graders that involve trekking to and studying Utah's varied habitats and environments. Museum Education Office, Utah Museum of Natural History, University of Utah, Salt Lake City, UT 84112 (801/581-4887).

THE UTAH NATIVE PLANT SOCIETY

is a nonprofit organization of people with a keen appreciation for native plants. We promote the protection and conservation of native plants and natural ecosystems, teach plant identification skills, and encourage the use of native species in landscaping. We sponsor monthly lecture meetings, field trips and educational programs. PO Box 520041, Salt Lake City, UT 84152-0041 (801/581-3744). Call the Wildflower Hotline (801/581-4969) to find what's blooming where, updated weekly, April 1 to October 31.



WHITE MESA INSTITUTE

offers research and educational field trips specializing in archaeology, art, history and Native American culture in the Four Corners area. Acknowledged experts accompany every trip. Personal documentation of cultural and natural resources is encouraged, to enhance the outdoor educational experience. White Mesa Institute, 639 W. 1st South, Blanding, UT 84511 (801/678-2201).



THE ZION NATURAL HISTORY ASSOCIATION

a nonprofit corporation working in cooperation with the National Park Service, is supported by the sale of publications and interpretive items to visitors of Zion National Park. The park's summer Junior Ranger Program, an environmental ed program for children 6-12, runs from Memorial Day to Labor Day. The association also awards scholarships and funds interpretive projects and scientific research. Write the association at the park in Springdale, UT 84767 (801/722-3256).

WASHINGTON



HUXLEY COLLEGE

is a division of Western Washington University that offers curricula in environmental studies. Undergraduate majors are in environmental science, environmental policy, environmental education and environmental journalism. The B.A. links environmental affairs and the humanities. An M.S. is offered in environmental science, and an M.Ed. in Science Ed/Environmental Education.

WWU, Bellingham, WA 98225 (206/676-3520).



NORTH CASCADES INSTITUTE

is an innovative, nonprofit organization devoted to wilderness and environmental education. The institute offers a year-round program of field seminars, workshops, teacher trainings, curriculum development and school programs focusing on the wildlands of the Cascades Mountains. Our goal is to help people learn about, appreciate and ultimately care for these magnificent wildlands. For information on our programs, write NCI, 2105 Highway 20, Sedro Woolley, WA 98284 (206/856-5700).



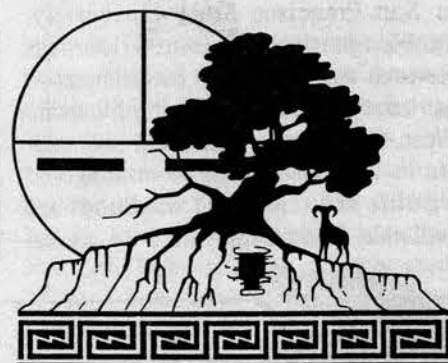
OLYMPIC PENINSULA ECOLOGY WORKSHOP

is offered by the National Audubon Society. Preserving ancient forests is a high priority campaign of the society. This week-long adult workshop provides an in-depth understanding of the ecology and issues involved with forest management in the Pacific Northwest. Field trips throughout the peninsula, conference-style in-depth sessions with invited speakers, and training sessions for the "Adopt a Forest" mapping program comprise the curriculum. August 18-25, 1990. National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272).



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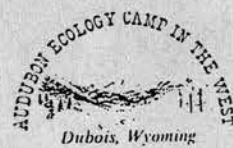
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Offered by the National Audubon Society, Audubon Camp in the West has run adult ecology-oriented programs for 28 years in the Wind River mountains of Wyoming. One- and two-week sessions stress natural history, geology and conservation issues — both local and global in scale. The program is run in cooperation with the Wyoming Game and Fish Department, and wildlife conservation and research techniques are an important part of the curriculum. Audubon adventures, Project Wild and other teacher-oriented opportunities exist. June 15-August 12 (6 sessions). National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272).



THE CONSERVATION CONNECTION

Wyoming's statewide conservation education program is sponsored by the University of Wyoming's Center for Teaching and Learning. The program publishes a statewide outdoor education newsletter, puts on workshops for teachers and youth leaders, and provides curricula for grades K-6. Workshops feature hands-on natural science activities focusing on soil, water, plants, wildlife and trees. The Conservation Connection, University of Wyoming, Center for Teaching and Learning, University Station Box 3992, Laramie, WY 82071 (307/766-6381).



EXPEDITION YELLOWSTONE!

offers a set of curriculum materials aimed at grades 4-6. Materials can be used in conjunction with an "Expedition" to the park. Expedition Yellowstone, National Park Service, PO Box 168, Yellowstone National Park, WY 82190 (307/344-7381, ext. 2255).



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(Continued on page 14)

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Directory . . .

(Continued from page 13)

RED TOP MEADOWS

 is a residential treatment center for adolescent boys with behavioral and emotional handicaps, and includes wilderness experiences as an essential part of its program. Experiences range from a 23-day summer trip to five days of winter camping. Skills developed include group cooperation and communication, conflict resolution and problem solving. Write Box 290, Wilson, WY 83014.

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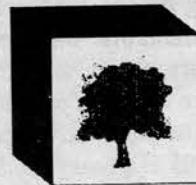
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SOUTHWEST CANYONLANDS ECOLOGY WORKSHOP

 Offered by the National Audubon Society, this week-long adult workshop in Bryce, Zion and Grand Canyon national parks highlights the geology, natural history and conservation issues of this dynamic region. Public lands management and water issues will be featured. October 6-13, 1990. National Audubon Society, 613 Riversville Rd., Greenwich, CT 06831 (203/869-5272).

**WILDLANDS STUDIES PROGRAMS**

at San Francisco State University, enables participants join wilderness research teams to search for answers to environmental problems in the Mountain West, Canada and Alaska. On-site studies in the conservation of endangered wildlife and threatened wildlands are available. Students can earn 3-14 univer-

sity units. Wildlands Studies, 3 Mosswood Circle, Cazadero, CA 95421 (707/632-5665).

NETWORKS**THE ASSOCIATION FOR EXPERIENTIAL EDUCATION (AEE)**

is a group of 1,500 individual and organizational members involved in education, recreation for the disabled, corrections, youth services, environmental education, management training and outdoor education. AEE sponsors regional and national conferences and publishes a Journal, 10 books, a newsletter, membership directories, and a jobs bulletin. The association is a leader in the field of outdoor safety. The Association for Experiential Education, University of Colorado, Box 249, Boulder, CO 80309 (303/492-1547).

THE NORTH AMERICAN ASSOCIATION FOR ENVIRONMENTAL EDUCATION

is a nonprofit organization of teachers, college and university faculty and students, and government, media and nonprofit personnel involved in developing and using environmental education materials and programs. 1990 conference in San Antonio, Nov. 2-7. NAAEE, PO Box 400, Troy, OH 45373 (513/339-6835).

**STUDENT CONSERVATION ASSOCIATION**

founded in 1957, is a nonprofit membership organization working in cooperation with federal, state and private resource management agencies to provide volunteer opportunities, primarily in backcountry settings. SCA has programs for people age 16 and over. National headquarters: Box 550, Charlestown, NH 03603 (603/826-5206).

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The sun sinks slowly
below the horizon
bringing the first signs
of twilight to the land.
Crickets chirp
their melancholy songs
and a bullfrog
grumbles quietly to himself
while he rests
in the marsh.
Birds fly away quickly
into the trees,
trying not to have
to greet the cold night.
Deer move out
into the clearing
and near the pond
for a cool drink.
The night has finally fallen,
and darkness closes in
on the once silver-blue pond.

Lauri Freeman

The river sounds so nice,
Moving so rapidly.
A big brown bear
Is catching a fish
In the rapid water.
The bear catches one
As water drizzles down his neck.

Darrell Casteel



A little minnow
swims about.
He watches carefully
for his enemy, the trout!

Jason Tolman

These poems were written in Margaret Pettis' seventh grade class in Hyrum, Utah, for a Project WILD activity called "Animal Poetry."

Connecting the parts to make a whole

by Becky Rumsey

It's a winter Saturday. In an otherwise empty fifth-grade classroom I wait with about 15 other adults, most of them teachers, for a workshop to begin. The desks, with their slanted formica tops and wooden seats mounted on metal legs, feel small. A green chalk board lines one cinderblock wall. On another, the luminous face of a clock reigns with giant black numbers, the kind I remember watching in anticipation of the bell. Schools haven't changed much in 20 years, it seems. Or have they?

The workshop facilitator introduces himself as Bill Haggerty of Colorado's Division of Wildlife. He has us move back the desks to make more room. Then he tells us to number-off by fours and sends each group to stand in separate corners.

"O.K.," says Haggerty, "The ones are food, the twos water, the threes shelter and the fours space. Everybody got that?"

"Those are all the things an animal needs from the environment to survive. Together they make up its habitat. An animal's habitat is its home." O.K., so why are we standing in corners?

"We're going to build a circle out of those four basic units of habitat," says Haggerty. Soon the group is standing in one circle shoulder to shoulder: food, water, shelter, space, food, water, shelter,

space and so on. "Now, everybody turn to the right and take one step in," he says making sure that each of us is facing counter-clockwise.

We are now standing very close, staring at the backs of each other's heads. Some nervous giggles escape from the "habitat," and Haggerty says, "Next, I want each of you to put your hands on the waist of the person in front of you and sit down on the knees of the person behind you."

Despite exclamations of doubt and laughter our circle works and is amazingly stable, even comfortable. "A good habitat contains food, water, shelter and space in a particular arrangement," he says. "If any one of those components is affected it will impact the animal who depends on that habitat."

He lets us digest that concept for a while. "Now, suppose it's a drought year and there is less water? Or suppose someone builds condominiums in a forest reducing the amount of open space?" Hmmmmmm. We consider the implications.

"O.K. All the spaces in the circle stand up!" Our circle collapses, of course, but so has our tendency to remain separate and passive in a learning situation. In its place is a new or heightened awareness that people and wildlife are interconnected.

Activities like the "Habitat-Lap-Sit" often begin Project WILD workshops. Project WILD is an environmental and conservation education program for

grades K-12. It offers interdisciplinary materials free of charge to teachers and others who work with children, plus training in the form of workshops. WILD sprang from an alliance of wildlife professionals and educators in 13 Western states and is officially sponsored by and available in 47 states, as well as Canada and Sweden.

"It's the most widely used environmental education program in the U.S.," says Cheryl Charles, the project's national director.

More than 250,000 teachers have taken Project WILD workshops since they began in 1983. That means that Wild has reached an estimated 15 million students in seven years, says Charles.

"One of the reasons Project WILD has been so well received is that it is a partnership between education and environmental expertise," she says. That partnership is evident in both the program materials and the organization of Project WILD.

WILD supplies guidebooks with its workshops, which offer more than 80 supplementary activities a teacher, scout leader or outdoor educator can try. Activities range in topic from biological principles such as adaptation, food chains, migration and predation, to society's perceptions of and ways of valuing wildlife. But by far the most important concept permeating Project WILD is habitat.

"The biggest threat to wildlife in the

present day is loss of suitable habitat," says Judy Dawson, who assists Charles in writing and revising WILD. "A lot of times kids don't understand that animals need space, or territories, in order to survive."

WILD is designed for non-experts. A teacher interested in exposing students to ecological principles doesn't have to have scientific training to use WILD. Each activity in a guidebook includes its own background information section. WILD also encourages teachers to team up with wildlife professionals and others in their community.

Teachers can adapt WILD activities to their own needs. One Texas teacher recently modified "How Many Bears Can Live in this Forest?" for students who were visually impaired and/or wheelchair-bound.

The activity involves scattering differently colored paper squares representing black bear foods (berries, nuts, insects, meat and plants) in a room or outside area. Students then "compete," as if they were bears, for limited resources. Since bears aren't all alike, one student becomes a young male crippled in a fight with a mature male bear. Another is a mother with two cubs to feed, and another is blind from a run-in with a porcupine.

At the end of their food gathering students figure out who got enough to eat and who didn't, using data from

(Continued on page 16)

Kent and Donna Dannen



Biologist Jim Malkowski introduces a great horned owl to young students

How the outdoors got into the West's schools

"To paraphrase Mark Twain's famous observation on the weather, everyone talks about interdisciplinary environmental education programs which involve a wide community of interests, but hardly anyone ever produces them ..."

—Rudolph J.H. Schafer,
in the introduction to
Project Learning Tree

In 1970, when Earth Day was born, Rudy Schafer was working for the California Department of Education. He managed the state's environmental education program but wasn't content to leave it at that. Schafer, it should be noted, has been called the "ultimate eco-hustler."

He was interested in coordinating environmental education programs regionally, so he approached the U.S. Department of Education for funding. He proposed forming a consortium of 13 Western states to share ideas and work on environmental education projects. He got the funding and today, 20 years later, the Western Regional Environmental Education Council, WREEC, is the main force for bringing environmental education into public schools.

WREEC is a nonprofit organization and the primary parent of both Project Learning Tree and Project WILD. The first is a supplementary educational program focusing on forests while the latter emphasizes wildlife.

WREEC's members include Arizona, Alaska, California, Colorado, Idaho, New Mexico, Montana, Nevada, Oregon, Washington, Utah and Wyoming; the group originally included Hawaii as well. Each state has two voting members: a representative from a state resource-management agency and a

representative from the state department of education.

"When I put WREEC together, environmental education was a great concern among resource management people. But to this very day it's not a major priority in the educational establishment," Schafer concedes. Where it is a concern is with land and wildlife management professionals.

"Agencies really carried the ball," says Schafer. "They were saying, 'Hey, we need an informed citizenry and we need something going on in the schools.'"

Three years after WREEC began, the American Forest Institute, a coalition of forest industry and lobbying groups, now called the American Forest Council, offered funding to develop an educational program. The two groups entered into a contract to co-sponsor Project Learning Tree.

From the start, Schafer saw to it that Learning Tree was different from other educational programs. "Usually you hire writers, put it in 15 colors, send it out to teachers and hope they use it." Schafer says he received many programs like that when he taught in Los Angeles, but never had time to analyze them. He was determined to involve teachers in writing WREEC's educational programs.

Carol Bylsma, Colorado's Project WILD coordinator, was one of the early users of Learning Tree. As a teacher, she liked it because its activities "were creative and innovative in encouraging kids to explore their environment."

Bylsma first used "Adopt a Tree," a program that asks kids to observe a tree over a long period of time, noting, and describing in words or pictures its seasonal changes, signs of life and the various values it might have.

"There had been a lot of tree vandalism on the playground," says Bylsma. But after adopting their trees her stu-

to expand its logging operations and a developer proposes a subdivision in a forest that is home to a trout stream and 53 species of birds.

Using personal data cards as springboards, students take on the perspectives of a farmer, a county commissioner, an Audubon representative, a Chamber of Commerce member, a land owner and a logging mill operator; sometimes discussions get heated.

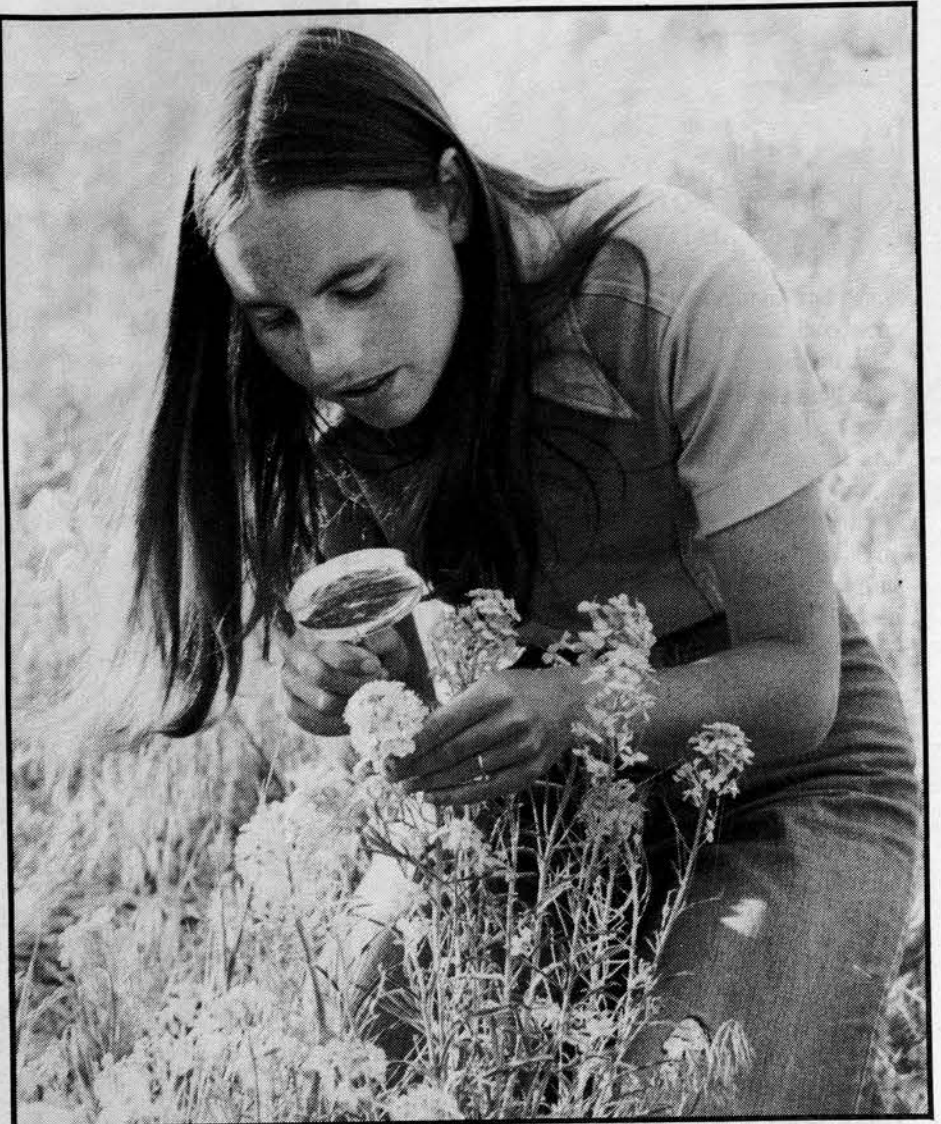
WILD has had its critics. A small percentage of workshop participants say that it focuses too much on the concept of carrying capacity, says Bylsma. "We try to be neutral," she says. "The important thing is to get out there and understand the big picture."

Rudy Schafer, director of the Western Regional Environmental Education Council, which helped create the program, says that WILD "took a lot of heat early on" from animal rights groups who said it condoned hunting. "We said that hunting is up to the individual if it's legal in the state."

"Project WILD teaches you how to think; not what to think," says Caroline McLean, a Colorado WILD facilitator. Bylsma says in "The Hunter" project students research varying positions on hunting held by groups such as the National Rifle Association, Defenders of Wildlife and the Humane Society.

"Our bottom line is that we're interested in seeing kids make responsible decisions, not in telling them what to do," says Schafer.

Kent and Donna Dannen



Some flowering plants are best studied on hands and knees

dents visited them in blizzards, looked for insects on them, bought them fertilizer and wrapped their trunks.

Learning Tree and WILD are the only widespread environmental education programs that are open to the public free of charge. Both programs have state coordinators and a network of volunteer workshop facilitators. Teachers don't just receive the two WREEC programs in the mail. They only get the materials after participating in a workshop that is at least six hours long.

"In the workshop, part of the time they're the students and part of the time they're the instructors," says Schafer, who continues as WREEC's executive director.

"When people leave they're familiar with the content of the program, they've had a good time, they're more likely to use it ... I've had teachers say to me, 'Look, I don't teach this way. If I had just seen this on paper I never would've tried it, but now I've had so much fun I can't wait to get back to the classroom.'"

Project Learning Tree is available in 49 states as well as five Canadian provinces, Sweden and Finland. It has touched an estimated 10 million students through 200,000 educators, says Carolyn Dixon, Learning Tree assistant director.

If Schafer was the inspiration behind WREEC, Bob Hernbrode was "the father of Project WILD," says Arizona WILD coordinator Kerry Baldwin. Hernbrode was in charge of the Arizona Game and Fish Department's education program in the 1970s. He was a member of WREEC and on Project Learning Tree's advisory council. A self-taught biologist and teacher, Hernbrode had written a book on wildlife education and was giving workshops on wildlife to nearly 1,000 teachers a year.

"Bob is one of the most charismatic teachers around," says Baldwin. "He's a voracious reader and has a tremendous ability to synthesize ideas (about wildlife) and integrate them into lessons

eachers can use in the classroom."

Hernbrode knew that "we were never going to be able to teach a class in just 'wildlife' or 'the environment,'" says Baldwin, the teachers' curriculum was too full. So he invented ways teachers could use wildlife to teach math, language skills and social studies.

In 1980 the Western Association of Fish and Wildlife Agencies, a group of directors of the 13 western state wildlife agencies, resolved to create a program modeled on Hernbrode's workshops. WREEC wanted to design a program similar to Project Learning Tree that focused on wildlife. They joined forces and produced Project WILD.

Unlike Learning Tree, whose industry sponsor provided all funding and retained the copyright, wildlife agencies came up with \$10,500 per state as a one-time purchase of Project WILD, although WREEC remained its legal custodian. After three years of writing and field-testing they offered the first Project WILD workshops.

The National Wildlife Federation kicked in another \$10,500 and also became an official Project WILD sponsor. Since then the program has accumulated six other organizational sponsors, including the Canadian Wildlife Federation, Defenders of Wildlife, U.S. Fish and Wildlife Service, Wildlife Society, American Fisheries Society and the U.S. Environmental Protection Agency.

Each sponsoring organization pays a one-time fee of \$10,500, which enables it to offer workshops and materials. States outside the West have become official sponsors for a reduced fee of \$7,000. The sponsoring fees pay for two people to teach the first leadership workshop in each state. After that, most workshops are conducted by volunteer facilitators. Sponsor fees also supply funds for the continuing development of Project WILD, which is revised every two to three years, the annual printing

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Project WILD...

(Continued from page 15)

actual research. In the process they learn that bears are omnivores, and they become familiar with the concept of an area's carrying capacity.

"The greatest value of Project WILD is getting teachers to understand a balanced view of an ecosystem," says Carol Bylsma, Colorado's Project WILD coordinator. "Teachers tell me they love it because it gets them outside."

New Mexico Project WILD coordinator Don McCarter says that "Owl Pellets" is a favorite among his teachers.

In that activity students collect and dissect owl pellets, then reconstruct rodent skeletons and food chains from their findings and observations. Many WILD activities can be conducted in a classroom, but most have at least an outdoor component. Some, such as "Ants on a Twig," are simple exercises in observation and description. Others such as "Litter We Know" and "Keeping Score" require kids to consider how human actions affect wildlife.

The wildlife managers and teachers who wrote Project WILD incorporated a variety of teaching methods including simulation, discussion, role-playing and computation.

In "To Zone or Not to Zone," students role-play a county commission meeting in a mountain logging and ranching community. A company wants

(Continued from page 16)

and shipping of guidebooks, a national conference and a coordinator's newsletter.

The 13 wildlife agencies provide technical expertise. WREEC is responsible for the materials and program development. Each of the 47 states now sponsoring WILD has a state coordinator whose salary is typically paid by the wildlife agency.

State education departments usually participate by correlating the materials with state guidelines. Most states have newsletters and awards and grants programs as well.

"Pretty soon you have a statewide support system. People take the workshops over and over because they had such a good time," says Schafer.

WREEC's innovative way of sponsoring and disseminating WILD through a financially committed state agency in addition to a network of volunteers may have had something to do with its ability to reach more people faster. WILD has come close to achieving in seven years what took Learning Tree 17 years. Another factor could be that "Wildlife is

incredibly appealing to people" says Cheryl Charles, WILD's national director.

In the past two years Learning Tree has begun to follow WILD's approach and several states as well as the U.S. Forest Service now sponsor it. Today more environmental ed programs are available. *Nature Scope* and National Wildlife Federation materials are examples. But WREEC's programs are "unique for their ability to bring together state natural resource agencies, conservation organizations and the educational community," says Baldwin.

That both programs are so widespread is a credit to WREEC's flair for organization and follow-through. Schafer was the "wheeler dealer who managed to put funds and talent together, a difficult thing to do in the early 1970s," says Bylsma. "He's good at timing."

If agency sponsorship is one key to WILD's success, it also has drawbacks. "The problem with agency sponsorship," says Schafer, is that "they want to emphasize their own area of expertise. With environmental education you've

got to put it all together: water, forests, wildlife, agriculture, air. (The idea) is to give kids a holistic perspective on the environment."

Some states have tried to mandate environmental education. Wisconsin is a "shining example," Schafer says; its curriculum is spelled out by grade. Other states such as California and Nevada vaguely state that environmental/conservation education "shall be taught." But little funding or structure exists to back them up, he points out.

"Mandating it in the states is not the solution," says Kurt Cunningham, Montana WILD coordinator. "It happens at the individual (teacher) level."

Cunningham also believes it would be a mistake to separate environmental education out from other subjects. "It must be infused into everyday life."

"If environmental education were a priority in the education system," agrees Schafer, "we would be teaching by example and reducing waste in the schools. We would have education programs K-12 stressing an environmental ethic in all subjects."

"In homemaking," Schafer contin-

ues, "we would be talking about how to operate a home that is environmentally sound. We'd be talking to kids in shop classes about running cars less and leaving smog-control devices on . . . it could permeate the entire educational system."

Charles says that in June WREEC and the group of state agencies will co-sponsor a conference for policy-makers in education and wildlife management. Its theme is "Partners for a Healthy Future," and national associations of school boards, commissioners and superintendents are invited.

Because more and more people are living in urban areas, says Schafer, understanding is lost about the needs of non-human species in our environment. The result? "They think that deer are cute and snakes are icky. People don't understand that the ecosystem isn't Disney."

For information on Project WILD contact your state wildlife agency or call the national office in Boulder, Colo., 303/443-2390. Project Learning Tree can be reached at 202/463-2468

—Becky Runsey

Where children, deer and habitat roam

by Pat Ford

On a March morning at Lake Hazel Elementary School on the outskirts of Boise, Kathy Zager has her 18 kindergarteners outside playing "Oh Deer." Five of them are deer, 13 are habitat.

The deer choose red, white or blue poker chips to show whether they are seeking food, water or shelter. The habitat choose chips to show whether they are food, water or shelter. At Zager's word, the five deer run to the habitat, claim a matching chip, and return with their match to their own row. Now there are 10 deer, and eight habitat.

Again. All but one of the habitat are quickly matched and taken back. Three deer can't match. "So Lindsay came looking for water, Scotty and Casey for shelter. They couldn't find it, and what happens?" A chorus: "They die." "That's right, they die and become part of the habitat."

Now there are 14 deer and four habitat. "How many of you deer are going to die in the next round?" "Four are going to die." "No" — another child — "four are going to live." "Why will the rest die?" "Because there's not enough food, water, shelter." "What made that happen?" A chorus: "Too many deer."

Now a mad rush of 14 deer upon four habitat. "What happened to you guys?" Zager asks the 10 stranded deer. "We died." "How come the four that found their match got to live?" "They found their stuff." "Why them and not you — how come Jesse got Lindsay's blue chip and you didn't?" "He got to her first." "Would one deer save his food and give it to any of you?" "No." "Why not?" "They're different from people."

Now there are eight deer and 10 habitat. Again. All the deer find a matching chip, except Jesse. "Jesse was looking for water, but he couldn't find it. There was shelter left, and food left, but no water. Deer need to have all three things to live."

"Okay, let's sit down," and for five minutes, before restlessness gets the upper hand, she and the kids talk about

deer and the game they played.

Though the Project WILD Elementary Activity Guide suggests "Oh Deer" for grades 4-12, Kathy Zager has just used it with great success with five-year-olds. It's clear from the game and discussion that a good half of her kids have made a solid start toward apprehending the importance, essential components and limits of habitat, and the changing constancy of a natural system. How does a child learn about natural cycles? By being a natural cycle.

Kathy Zager is not an isolated example in Idaho. "We have the best Project WILD program in the nation," state coordinator John Gahl says, and then reels off his proof. Forty-seven percent of Idaho's K-12 teachers have gone through the project's training workshop since it began in 1984.

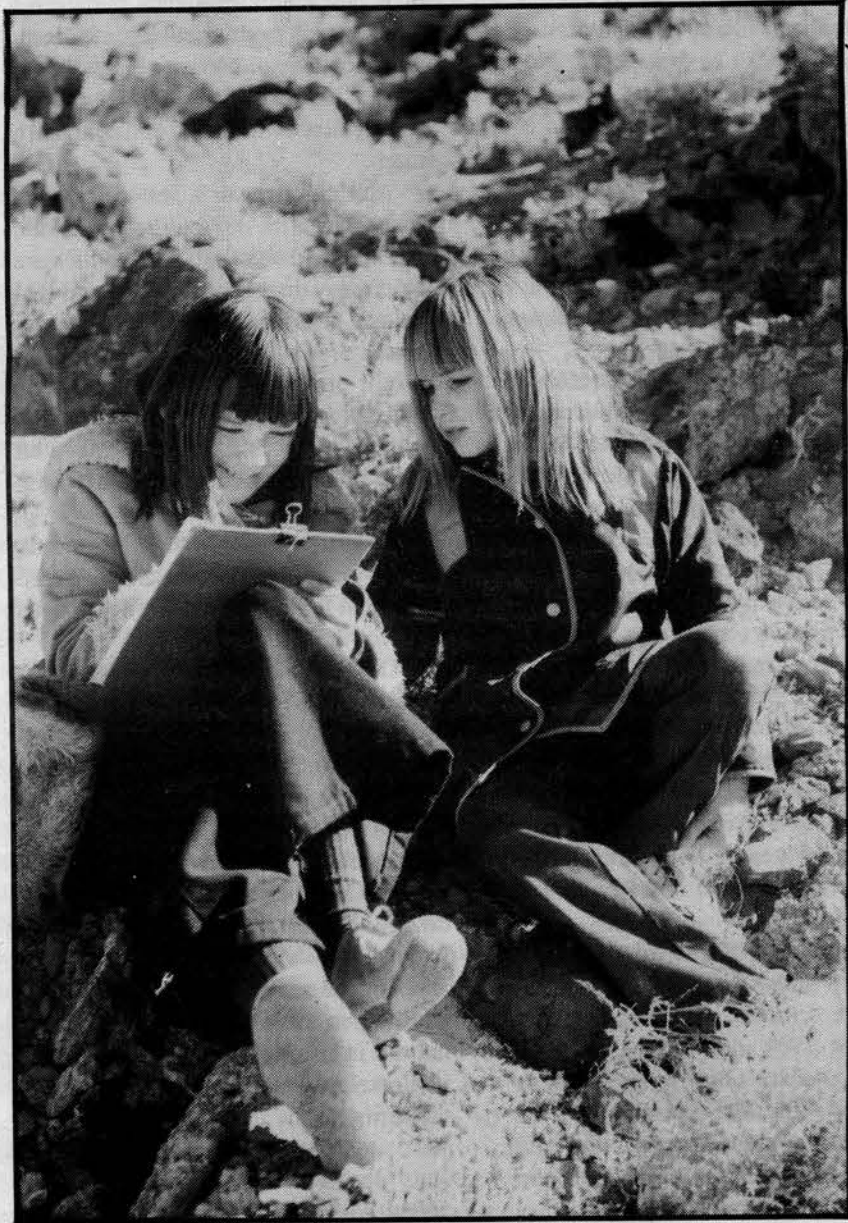
Forty workshops are offered each year, with 25-30 teachers in each. Nationally, 70 percent of teachers taking the workshop use the materials in class, averaging two project activities per year; in Idaho, the same numbers are 93 percent and six.

Idaho has a Project WILD hotline and newsletter for teachers, a newsletter for elementary students, and soon a high school newsletter.

Gahl, who works for the Idaho Fish and Game Department, has something to do with all this, but he says the primary cause is Idaho's Project WILD workshop.

"Other states teach Project WILD to teachers in a six-hour workshop," he says. "Our workshop is 15 hours long, an intensive weekend. Each workshop is team-taught, by an experienced classroom teacher and a fish and wildlife professional. And to complete the workshop — to get any credit for it — each teacher has to go back and do a Project WILD activity with their class, and send us back a response form. That makes them get into the book."

"It takes 15 hours to really get Project WILD across," agrees Dick Kay, science consultant for Idaho's Department of Education. "We're able to teach the teachers in the same way they'll be teaching the kids." Kay says Project WILD is the most widely used curriculum project, of any kind, ever developed



Project WILD

Project WILD students work on a field journal

"because it's unbiased. It's a gateway project for teachers into that hands-on way of learning. They see real learning taking place, so they keep using it."

Idaho conservationist Sheila Robertson, who sits on the state parks and recreation board, is also a science teacher rotating among several Boise elementary schools. "The program works because whole body activities and games really imprint. Paper and pencil work bores or intimidates a lot of kids, but Project WILD involves all students, whatever their level. Kids really understand it when they are the deer, or the habitat."

"Science was always something I threw out of the curriculum," says Kathy Zager. "I took the Project WILD workshop just to get the credit. But it changed my whole attitude. The activities work. Everybody's part of them; even reluctant students like animals." Today Zager uses Project WILD in her classroom at least once a week, and is a regular teacher of workshops.

Lily Brown is principal of Perrine Elementary School in Twin Falls: K-6, 660 students. All 30 teachers, and Brown herself, have taken the Project WILD

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workshop. "It fits into any curriculum," she says.

Perrine School also shows how the program tends to ripple out. "Thanks to Project WILD, we're creating a science center here on campus. We'll plant a nursery, with seedlings and mature trees of different leaf types, different shrub and bush types, different rock types. We're creating a sandpit for archaeological digs. Materials are being donated, and the kids are raising operating money. It won't cost the district anything."

Most other elementary schools in Perrine's district are now near 100 percent teacher coverage as well.

All these teachers stress its adaptability. Kathy Zager's poker chips are her idea. Gahl cites a class that came up

with the perfect way to model what hydroelectric dam turbines do to Idaho salmon: multiple twirling ropes through which the kids — fish — try to swim without hitting the ropes.

The major problem in this success story so far is that fewer junior high and high school teachers have taken the workshop than elementary teachers.

To meet this problem, and to respond to demands from elementary teachers for more advanced materials, Gahl is creating a series of species-specific, Idaho-specific packages.

"The first is just about done — 40 activities on bears. The workshops will have the teachers in the field, observing, perhaps handling, bears," he says.

"We'll test the activities in classes this fall and start the workshops in '91.

Then we'll create packages for sage grouse, caribou, and so on." In higher grades, actual Idaho dilemmas, such as the effects of a new paved highway on big game migration, will engage students in the real world of wildlife tradeoffs and choices.

Gahl's other immediate goal is that all prospective teachers coming out of Idaho colleges take the Project Wild workshop. Boise State University education majors are "almost required" to take it now, and Idaho State University, says Gahl, is his next target.

because he's mad at him?" "No — he's hungry."

"Do deer like people?" "No." "Why do they come so close to towns?" "To look for food." "What was on the land here before the school and houses were built?" "Dinosaurs!" "Aliens!" "Deer." "What happened to them?" "They died or went away."

Zager leaves the kids to recess with one of her few declarative sentences: "We need to be careful when we move to bigger houses that animals don't have to move to smaller houses."

Pat Ford is the Northwest regional editor for *High Country News*.

BOOKS

At war with his time

For Earth's Sake: The Life and Times of David Brower

David Brower. Layton, Utah: Gibbs Smith, Publisher, Peregrine Smith Books, 1990. 527 pages. \$24.95, cloth.

—Review by Florence Williams

Whenever David Brower lectures at universities, he likes to wind down his evenings surrounded by a small group of students and a few beers. When the septuagenarian visited Yale last year, he spent a full day and evening delivering rousing speeches, ending the last with the invitation, "Now let's go close down a bar!"

Brower's autobiography, released by Gibbs Smith on the 20th anniversary of Earth Day, shares its author's indefatigability. The 527-page memoir is exhaustive. And that's just volume one.

For Earth's Sake: The Life and Times of David Brower recounts every major influence that shaped the career of the most revered, certainly the most publicized, environmentalist since John Muir. Twice nominated for a Nobel Peace Prize, Brower led mammoth campaigns to rescue the Grand Canyon and Dinosaur National Monuments from dams, served as director of the Sierra Club for 19 years, and founded the activist groups Friends of the Earth and Earth Island Institute.

Brower's efforts also led to the creation of six national parks and seashores, and to the national wilderness system, enacted in 1964. *Life* magazine called Brower "America's number one environmentalist." John McPhee called him an "archdruid," a grand old man who told Americans that progress meant the destruction of natural wonders.

Brower's life has never been dull. His campaigns to preserve public lands

first met with indifference, then hostility, from Congress and the Department of Interior. To woo public sentiment, Brower launched high-profile publishing projects and controversial full-page ads in national newspapers. Brower made the public notice environmental threats, but also drove his organizations into financial chaos. Deep, bitter schisms in the Sierra Club and later Friends of the Earth caused his ouster from both groups.

Although Brower's ideological puritanism made him difficult to work with, it makes good reading. His politics are unyielding, uncompromising and disarmingly genuine. In his autobiography, Brower draws from past writings and current projects to issue manifestos against progress, government and war. If anything the years have made him a bit more eccentric, and certainly less patient, than ever.

Of progress, he writes: "President, industry and nation must be weaned soon from their recent dependence upon the Growth Ethic."

Of the contemporary Sierra Club: "The club is so eager to appear reasonable that it goes soft, undercuts the strong grassroots efforts of chapters, groups and other organizations."

Of government: "The Forest Service should be transferred from Agriculture to Commerce, and a new agency created to save the national forests from logging."

But the reader learns most when Brower puts aside politicking and places himself in historical context: growing up in Berkeley, Calif., in the '20s, mountaineering in the '30s and later training with the Tenth Mountain Division in Italy during World War II. Brower's career within the Sierra Club parallels the rise of the American conservation movement of the '50s and '60s. He

knew well and was inspired by Ansel Adams, Rachel Carson, Loren Eiseley and William O. Douglas.

Although Brower has been an editor for much of his life, the book sprawls. As he acknowledges in his introduction, he was a better writer before his "other obligations became easier, more interesting, and more glamorous than writing." Fortunately, much of the book is made up of earlier writings, and many of them, especially the mountaineering accounts, are colorful and engaging.

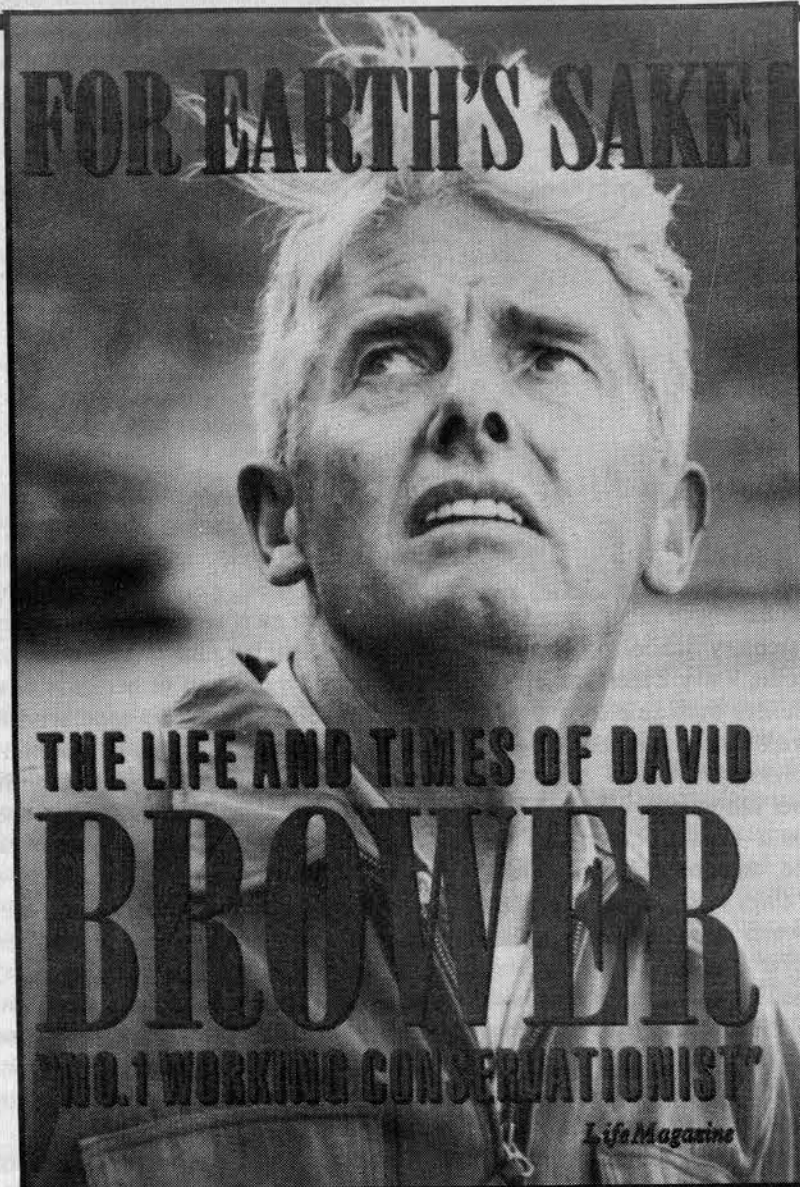
Publisher Gibbs Smith says Volume II, otherwise known as the "companion volume," will appear in the spring of

1991. It will contain the rest of his writings, as well as a blueprint for the future of the environmental movement. "Brower wouldn't leave anything out," explains publicist Steve Chapman.

Throughout all his battles and exploits, David Brower has never slowed down, as this book testifies. To what does he attribute his legendary endurance?

Strawberry pancakes.

Florence Williams is a staff reporter at *High Country News*.



BOOKS

Can we be America-the-beautiful and America-the-rowdy?

More Like Us: Making America Great Again

James Fallows. Houghton Mifflin, 1990. 245 pages. \$8.95, paper.

—Review by Ed Marston

Although there is not a word about the environment in James Fallows'

book, *More Like Us*, it should top everyone's Earth Day reading list.

The book subtitled, "Putting America's native strengths and traditional values to work to overcome the Asian challenge," argues that the Japanese system — rigid educational tracking, racial homogeneity, and high degrees of social conformity and coercion — cannot be imported to the United States.

Our strengths, Fallows writes, are economic mobility, cultural and racial heterogeneity, second and third chances for late bloomers and troublemakers, an openness to immigrants, and a destroy-and-rebuild approach to cities, economies and ways of life.

If we as a nation are now going downhill, Fallows suggests, it is not because we are different from the

Japanese, but because we are becoming like them. We are dead-ending youngsters who have low IQ test scores, and we are using credentials such as Ivy League diplomas and law and medical degrees to economically and socially enthrone certain sectors of the economy.

This formalization is putting a formerly robust, creative and chaotic soci-

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GUEST ESSAY

A call to revolution

by Osborn Segerberg, Jr.

"The Copernican Revolution," writes Thomas Kuhn, an historian of science, "was a revolution in ideas, a transformation in man's conception of the universe and of his own relation to it."

In the 16th century Nicholas Copernicus inherited a universe conceived by Aristotle in the fourth century B.C., refined astronomically by Ptolemy 500 years later, and entrenched in the minds of contemporaries by those centuries of belief and tradition. It was a two-sphere finite universe. Earth stood, unmoving, at the center. Surrounding it was the celestial shell, the immutable, divine firmament with the stars embedded in it. The whole shebang revolved around us.

This representation of reality was so good navigators and surveyors use it today. But the model was embraced for more than its utility. For one thing, it agreed with what our senses told us. For another, it supported Christian belief. Psychologically, it was comforting to know we were at the center of the universe.

But the Ptolemy model had a glitch. The orbits of the five known planets — Mercury, Venus, Mars, Jupiter and Saturn — were irregular, sometimes appearing to travel backwards. Ptolemy had explained the strange movements of the planets with an ingenious scheme of epicycles imposed onto the orbits. But this solution was not precise and astronomers fiddled with Ptolemy's epicycles. They did not question the overall model; they simply wanted to iron out this last small detail.

Copernicus had the audacity to question the model. He didn't challenge the philosophical-theological paradigm, but in order to fit the observations to theory he made one adjustment. He made the sun the stationary center.

This change explained the peculiar planetary orbits. But it also changed how we think about the world around us. Copernicus' change meant that Earth was just another planet, and not the central foundation of the belief-structure of the Christian world. Because it was buried in mathematics, ecclesiastical and other authorities were slow to grasp the significance of Copernicus' innovation. When authorities finally cracked down, it was too late.

Enough astronomical evidence had been supplied by Brahe, Kepler and Galileo to make the Copernican change irrefutable and the revolution it unleashed unstoppable.

The new view made it possible to break through the solid enclosure to discover an infinite cosmos. It enabled Newton to fashion a mechanical universe that, in turn, was refined by Einstein's relativity and by quantum physics. The universe hadn't changed an iota. The revolution had taken place in the minds of human beings.

The revolution of our time

Today, a new and profound revolution is again brewing. And like the Copernican Revolution, it is originating in a science that initially had little to do with human affairs.

Ecology is the study of relationships among living organisms, populations and species, and with their environments. The key words are relationships and environments. With the substitution of a single word, the Ecological-Environmental Revolution fits Thomas Kuhn's description of the Copernican Revolution: "a revolution in ideas, a transformation in man's conception of the Earth and of his own relation to it."

Today, everyone is aware of the events forcing this revolution. They bombard us: the Santa Barbara and Prince William Sound oil spills, Three Mile Island, smog over Los Angeles, acidic decimation of the eastern deciduous forests, the accelerating loss of animal and plant species.

Not only is the pristine vanishing, but every day there are more of us. When I was born, there were fewer than two billion human beings. Today there are more than five billion and we are adding about one billion more human beings every decade. If our activities already are causing damage on a global scale, what will be the impact tomorrow?

These are the outward trappings of the revolution. They signify that something is wrong with the present

paradigm, our model for perceiving reality.

The arena for this revolution is the same as that for the Copernican Revolution: the human mind. We seem unable to function without a comprehensive conceptual scheme. The closer the mental model fits reality, the more effective our performance and the more successful our lives.

History is a record of the reshaping and honing of paradigms of reality. But the expression "learning the hard way" indicates there always is resistance to mental changes. Max Planck, the physicist who introduced the quantum revolution, said new theories become accepted only when the old theories' supporters die.

The environmental and ecological degradation we see tells us the prevailing paradigm is flawed, and that a healthy Earth is essential for human survival and prosperity. But we are not behaving as if that were so. Instead we act as willful rulers — as if the Earth were our vassal, with everything on it here solely to serve our needs, our pleasures, our whims. This model is as egocentric as the paradigm of the universe displaced by the Copernican Revolution. How did our vision become so skewed from reality?

The skewing began with the Copernican Revolution, which demoted the Earth to just another planet circling just another star. Before the scientific revolution in thinking, it was Mother Earth, a living organism. Metals and minerals, for example, were thought to be conceived and to grow in the womb of earth. But after Descartes and Newton, the Earth and all other entities in nature were regarded as objects like the machines and other mechanisms human beings had begun constructing.

Earth as a warehouse

Transformation of the Earth from sacred to secular turned it into one big candy store waiting to be exploited. Henceforth, it was to provide wealth for nations, for monarchs, for entrepreneurs and capitalists, for anyone and everyone. The Earth was transformed from cathedral to warehouse.

"One of the least attractive aspects of technological civilization," Rene Dubos wrote, "is a progressive loss in this (earlier) concern for the beauty of the earth. Scientists ... tend to be less charmed by the uniqueness of the planet than by the fact that it moves through space according to the same physical laws that govern other planets."

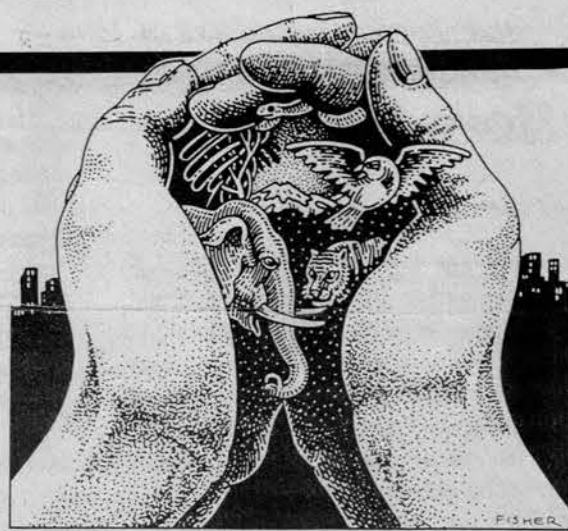
In the latest reduction of Earth's significance, some scientists have erased even its uniqueness. The infinity of stars has led some scientific soothsayers to prophesy that those stars have planets and that those planets have life like ours.

They make this prophecy even though the origin of life here remains a mystery. The likelihood is that life resulted from a singular set of circumstances, unusual even for the infinitude of the cosmos. And the contingency — effects of random happenings — inherent in the particular evolutionary life process on our particular planet makes duplication virtually impossible. Rene Dubos says life is such a peculiar phenomenon that he believes it was restricted to our Earth.

"The Earth is literally our mother," Dubos says, "not only because we depend on her for nurture and shelter but even more because the human species has been shaped by her in the womb of evolution ... If men were to colonize the moon or Mars — even with abundant supplies of oxygen, water and food, as well as adequate protection against heat, cold and radiation — they would not long retain their humanness, because they would be deprived of those stimuli which only earth can provide."

Whether to yield or withhold precedence to the health of the Earth is not an option. We are a part, just one part, of our ecosystem. We live in a closed system, the biosphere.

The elements circulate through this system, at times residing in living organisms. Human bodies require about 40 different elements to sustain life. Our waste and, when we die, our bodies become nourishment for cellular organisms that break the materials down to their constituent chemical elements. These elements then wait in the geological realm until once again they are employed in the construction of a new



life form. There is no waste in nature.

Nobel physicist and chemist Ilya Prigogine has described living beings as unstable open systems. To maintain their organization, form and identity, these structures must constantly take in energy and materials and get rid of entropy, in our case, waste products. A living system needs interaction with the environment. The end of the interactive process is death.

When the reality is presented in this way, it does not stretch anyone's imagination to grasp the central catechism of the Environmental-Ecological Revolution: Organisms are united to their environments and ultimately the environment is determining. There is no escape.

People are increasingly aware of one aspect of this interaction: "Pollute your environment and it will poison you." Examples are legion, from asbestos and disease to pesticides and contaminated groundwater. Sir Macfarlane Burnet, who won a Nobel Prize for his work with the immune system, said:

"There is virtually only one thing in common among all the ways in which cancer can be experimentally provoked in animals or clearly demonstrated to result from environmental factors in man. None of the substances concerned would ever have been encountered except in some fantastically unlikely circumstances during the whole course of pre-human evolution. The first chemical carcinogens came only with the use of fire for domestic purposes. Since then we have first slowly and in the 20th century at precipitous speed built a civilization on unbiological materials, i.e., materials that the mammalian body has not been adapted by evolution to deal with."

The need to deal with the new reality created by a polluted environment has not escaped us. The National Environmental Policy Act, passed in 1969, and the host of laws that followed, are evidence of the ongoing revolution in our thinking, as are the more recent challenges to the use of animals in scientific research meant to benefit mankind.

These are the first stirrings of a change that Aldo Leopold heralded more than 40 years ago. He said the result of the Environmental-Ecological Revolution would be to create a land ethic that changes the human role from conqueror of the land-community to a member who respects the totality.

"There is as yet no ethic dealing with man's relation to land and to the animals and plants which grow upon it ... The land-relation is still strictly economic, entailing privileges but not obligations."

And Rene Dubos wrote in *A God Within*: "To strive for environmental quality might be considered an 11th commandment, concerned of course with the external world, but also encompassing the quality of life. An ethical attitude in the scientific study of nature readily leads to a theology of the earth."

And so we appear to be coming full cycle, returning to a reverence for the Earth that human beings felt before the scientific revolution. Renewed appreciation presages a change in human behavior. Up to this point we human beings have been behaving perfectly naturally, exploiting the environment in order to grow. Human success in commandeering resources and adding to our numbers is breathtaking. The spiral appears without end. But we know this cannot be true. We have gained the knowledge to see that the termination of an uncurbed spiral will not be pleasant for humans.

What is required of us is nothing less than behaving unnaturally. The Environmental-Ecological paradigm both reduces us and exalts us. It insists on human forbearance, but offers a challenge that of all the species that ever existed only ours can fulfill. Cultivate our garden for all life. ■

Osborn Segerberg is a journalist who has written a book about the science of ecology and who recently co-edited a collection of the writings of Rene Dubos, soon to be published by Henry Holt.

More Like Us...

(Continued from page 18)

ety into a straightjacket. But despite our best, or worst, efforts, Fallows says, we will never achieve Japanese-like economic success through conformity and consensus. We are too diverse and obstreperous to make these traits work for us. All we will do is handicap ourselves by hobbling our strengths.

He buttresses his theory with exam-

ples, including an experiment in which five laypeople, only one of whom was a college graduate, were given less than 100 hours of training in therapy. They were then put in charge of patients "who had been hospitalized, on average, for more than 13 years without significant improvement. Under their 'amateur' treatment, more than half of the patients got better."

Everywhere he finds evidence that America's growing thirst for credentials is hampering the nation and, much worse, its citizens. He cites nurses who

are denied a training path that would let them advance in skills and responsibility, and thus make health care better and cheaper and the nurses' lives more challenging and rewarding; plumbers who must pass written certification tests that have nothing to do with plumbing; and executives who have been certified, literally, as "morons" by intelligence tests but who function very well in business.

Fallows' analysis is gripping, but the most engaging parts of the book are the anecdotes, which include accounts of immigrants to the U.S. from Asia and to Texas from the Rust Belt. He also tells of his family's roots in a small Western town, and the life-long sense of freedom and exhilaration it gave his father, who had grown up in the settled East.

Although Fallows and his publisher promote this book as a way to compete with the Japanese, it could as easily have been sold as a way to understand causes which underlie environmental problems. If the 1990s are to be the Decade of the Environment, then Fallows' book should be at the center of our efforts to deal with the many obstacles to a clean, sustainable future.

Before reading *More Like Us*, I had thought, without really thinking, that a steady, long-term, sustainable approach to the physical world required a steady, long-term, sustainable approach to economics and societies. That perspective is best presented by the Kentucky farmer-writer Wendell Berry, who sees environmental problems as growing out of a rootless and materialistic society.

Berry's analysis has great intellectual appeal, and it has come to implicitly underlie much environmentalist thinking. But it is also an approach that many Americans instinctively shrink from.

Americans want to protect the environment, but if Fallows is right, they also want to protect our still mobile, slam-bang, non-Mandarin economy. When environmentalists try to protect the environment by controlling the economic and social arenas, we are trying not just to clean up the air, but to make Americans "less like us." The "Command and Control" approaches to pollution and treks back to Kentucky farms may be adopted, but America will no longer be America.

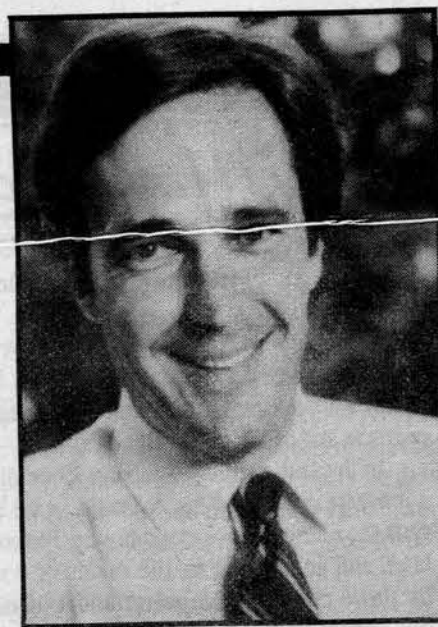
Levelling America's cowboy economy and culture may seem the only way to protect the environment because so many environmentalists have the credentialed background Fallows warns against. This has led us, among other failings, to overlook evidence that a slam-bang approach can help the environment.

For example, we often take it for granted that ghost towns found in the West's mountains and deserts are signs of pathology in the West. But perhaps we should be grateful that the thousands of people who once lived in those places were not kept in place by price supports for silver or gold.

We might also give thanks that the recent oil shale and uranium and coal busts forced hundreds of Western towns, and a few cities like Butte, Mont., and Denver, to rethink their approaches to making a living.

And if the logging and ranching towns of the West survive, it should be not because the West's senators are excellent organizers of pork politics, but because those communities learn to live in balance with the forests and rangeland around them. Otherwise, they have outlived their purpose and should die.

This is not a plea to listen to the free marketeers and lift all environmental controls. For the moment, in many situations, all we can do is impose controls. But if Fallows is correct, controls run



James Fallows

counter to America's strengths, and will therefore be both resisted and ultimately fail to work. Our goal should be to achieve a clean environment within the context of maximum economic and social freedom.

Such a search is not yet explicitly a part of environmentalism and that may be why there has been so little progress in the 20 years since the first Earth Day.

How do we go about creating a strategy that enhances the environment and this nation's native strengths? Coincidentally, a first, impressive step toward formulating such an approach was on display in a November 1989 *Atlantic Monthly* article titled "Back to Eden" by Evan Eisenberg. On the surface, this long piece is a vivid portrait of a vivid man — agricultural researcher-philosopher Wes Jackson, who heads the Land Institute in Salina, Kansas. But accompanying the discussion of prairies and sustainability is an exploration of the issues Fallows raises.

Jackson sees present agricultural practices as a threat to civilization because of erosion, runoff, soil disturbance, chemical pollution and profligate energy use. His goal is to eliminate till and chemical agriculture by developing a diversified prairie that can feed us.

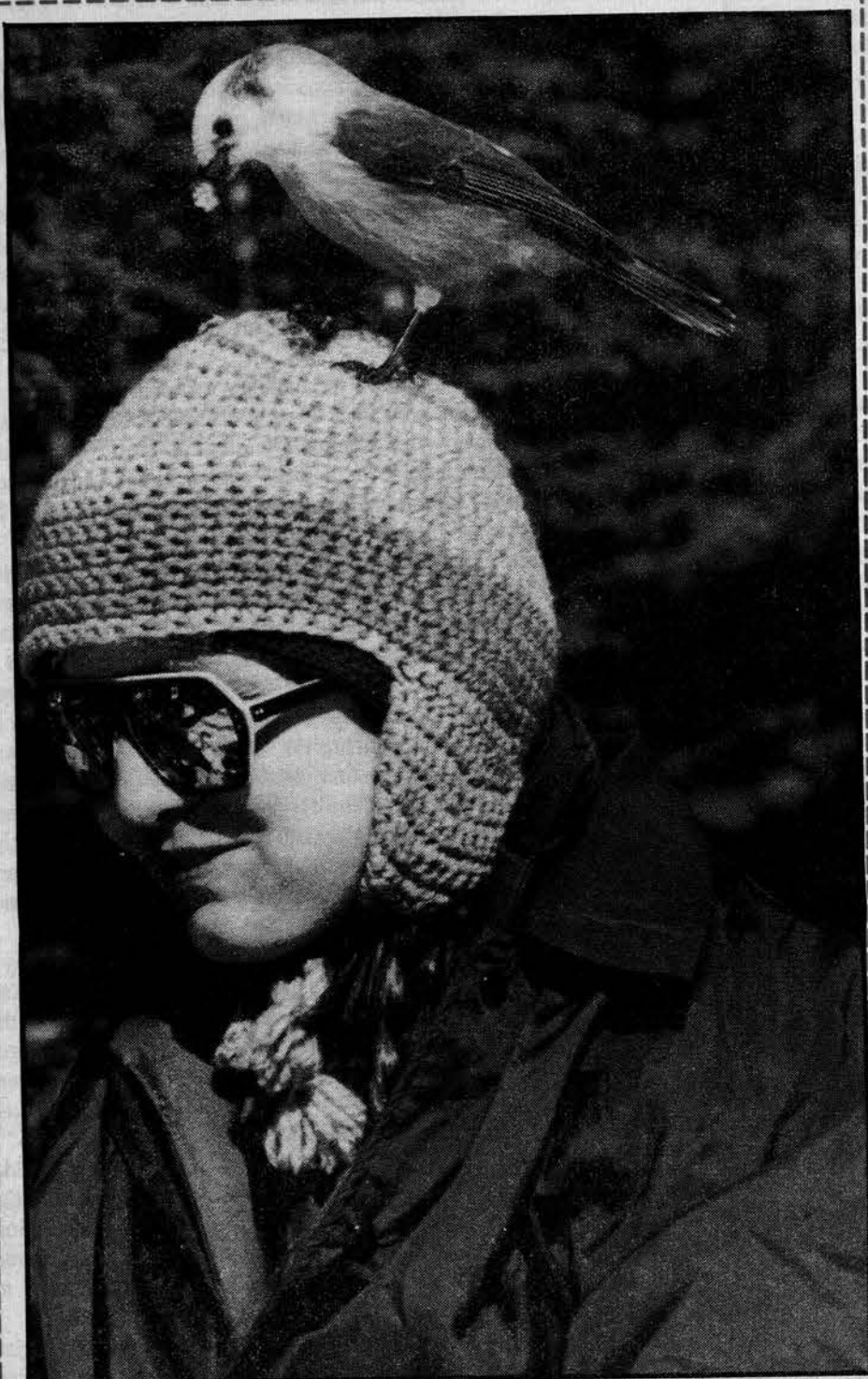
In pursuit of Jackson's ideas, Eisenberg has created a discussion — actually, a muted, respectful debate — between Wendell Berry, the tiller of the soil, and Wes Jackson, the restless prairie ranger.

Berry, as his many readers know, also sees modern agriculture as a threat. But while he is intent on reforming some agricultural practices, he is more intent on reforming man and his society. He despises much of modern culture and modern temperament, and would have men and women restore themselves and their society by returning to and restoring the land, as he restored an exhausted Kentucky farm.

Berry, says Eisenberg, would send us back to our recent agricultural roots, to again become the man with the hoe and plow digging in the soil. Jackson, Eisenberg writes, would send us back to our Paleolithic, hunter-gatherer origins by creating a more productive, but still wild and diverse, prairie, and a free and diverse society to go with it.

Fifteen years of observing, close up, the culture of a settled agricultural area makes me root for the vision that Eisenberg, an unabashed city person, attributes to Jackson. But regardless of whom we might root for, we need the debate. Environmentalism must come to stand for more than environmental impact statements and once-a-decade revisions of the Clean Air Act.

Ed Marston is publisher of *High Country News*.



Gray jay lunches with a friend

Kent and Donna Dannen

*For a bird's-eye view of
the West, read
High Country News*