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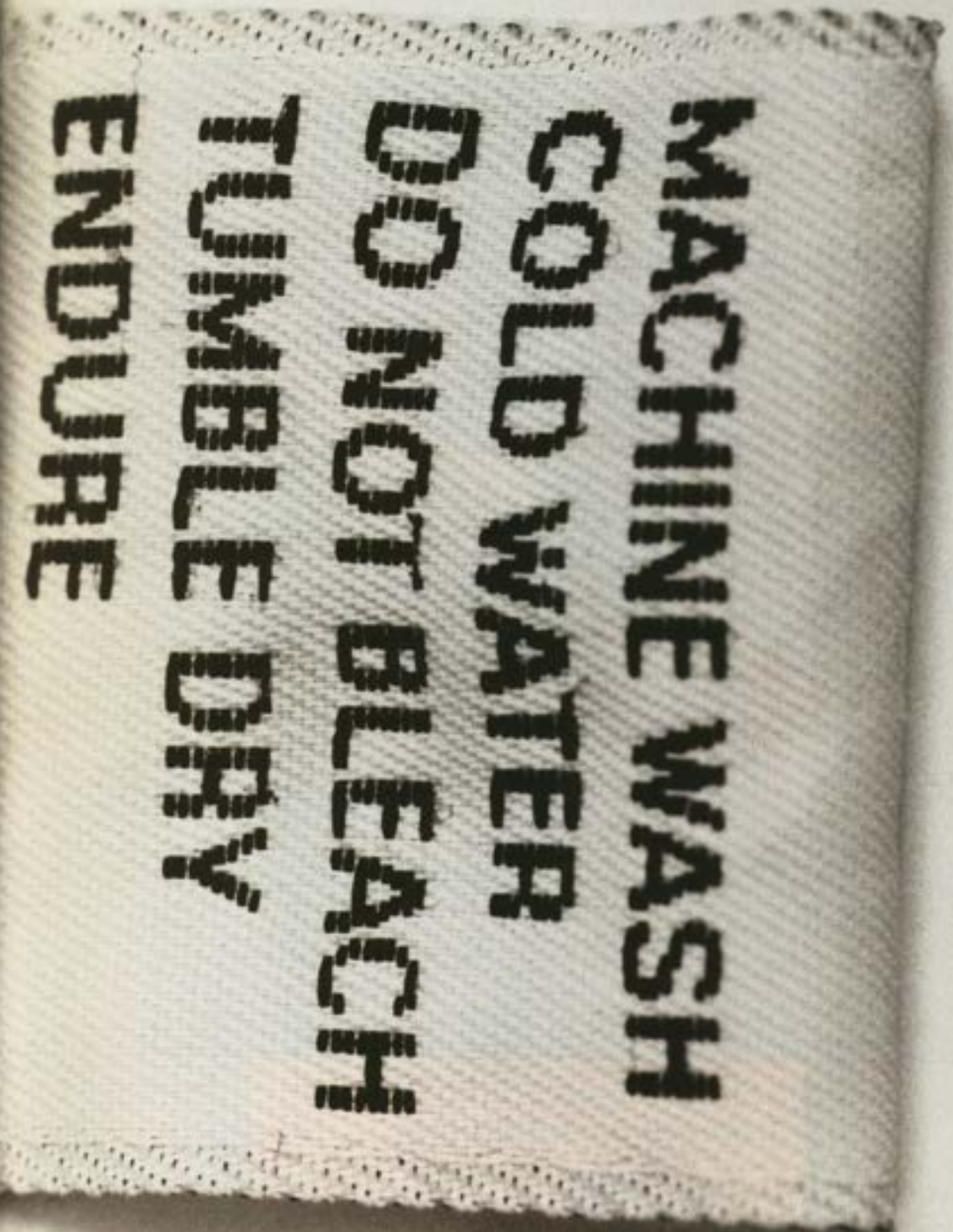

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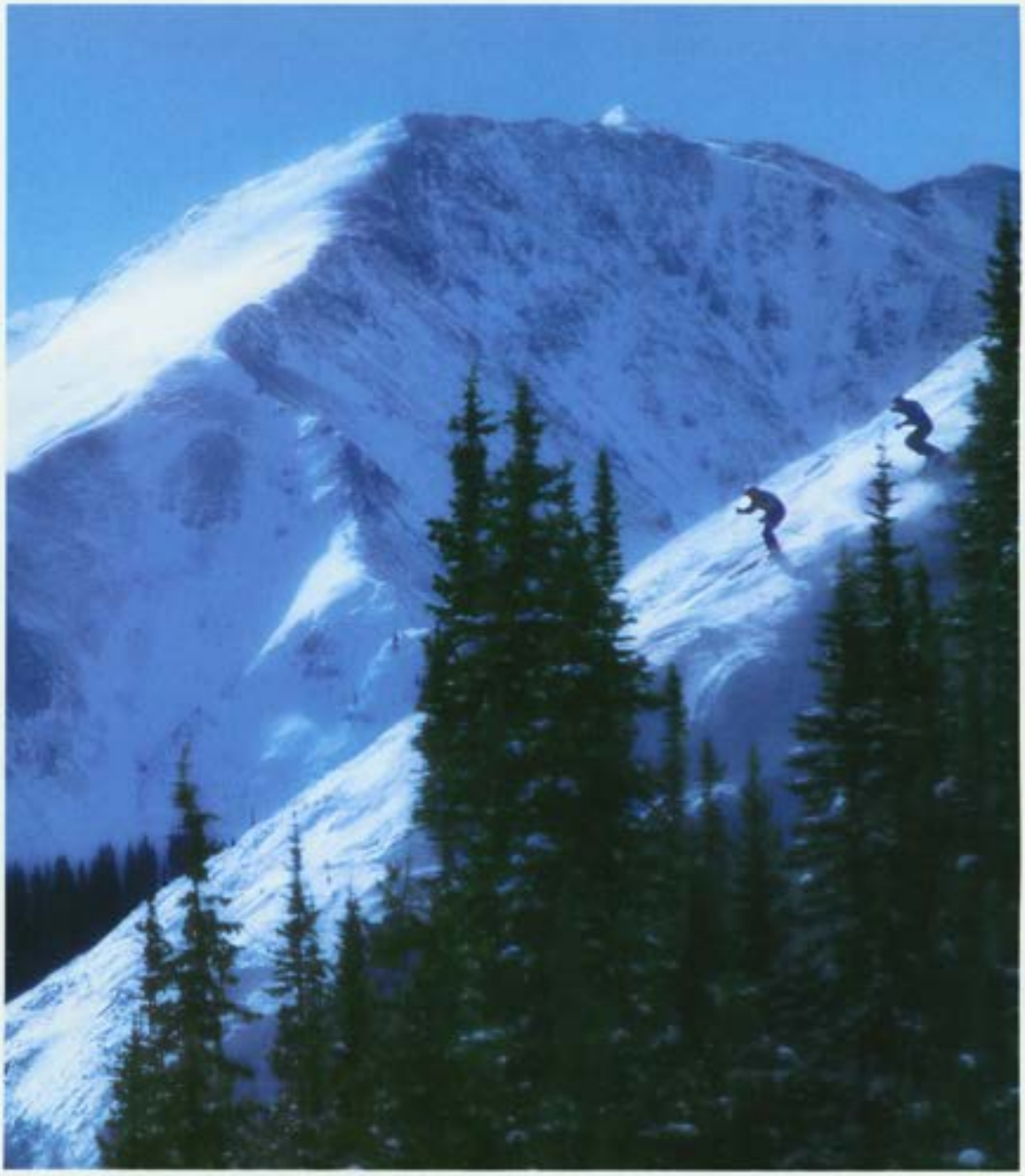

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SIERRA

THE MAGAZINE OF THE SIERRA CLUB

FEATURES

SEPTEMBER/OCTOBER 1992 • VOL. 77 / NO. 5

CARR CLIFTON

CONTINUED

SIERRA

AFIELD

DEPARTMENTS

COVER
An autumn afternoon in Utah's Zion National Park, an island of protected public land in a West that's up for grabs.
See page 32.
Photo by Jeff Gnass

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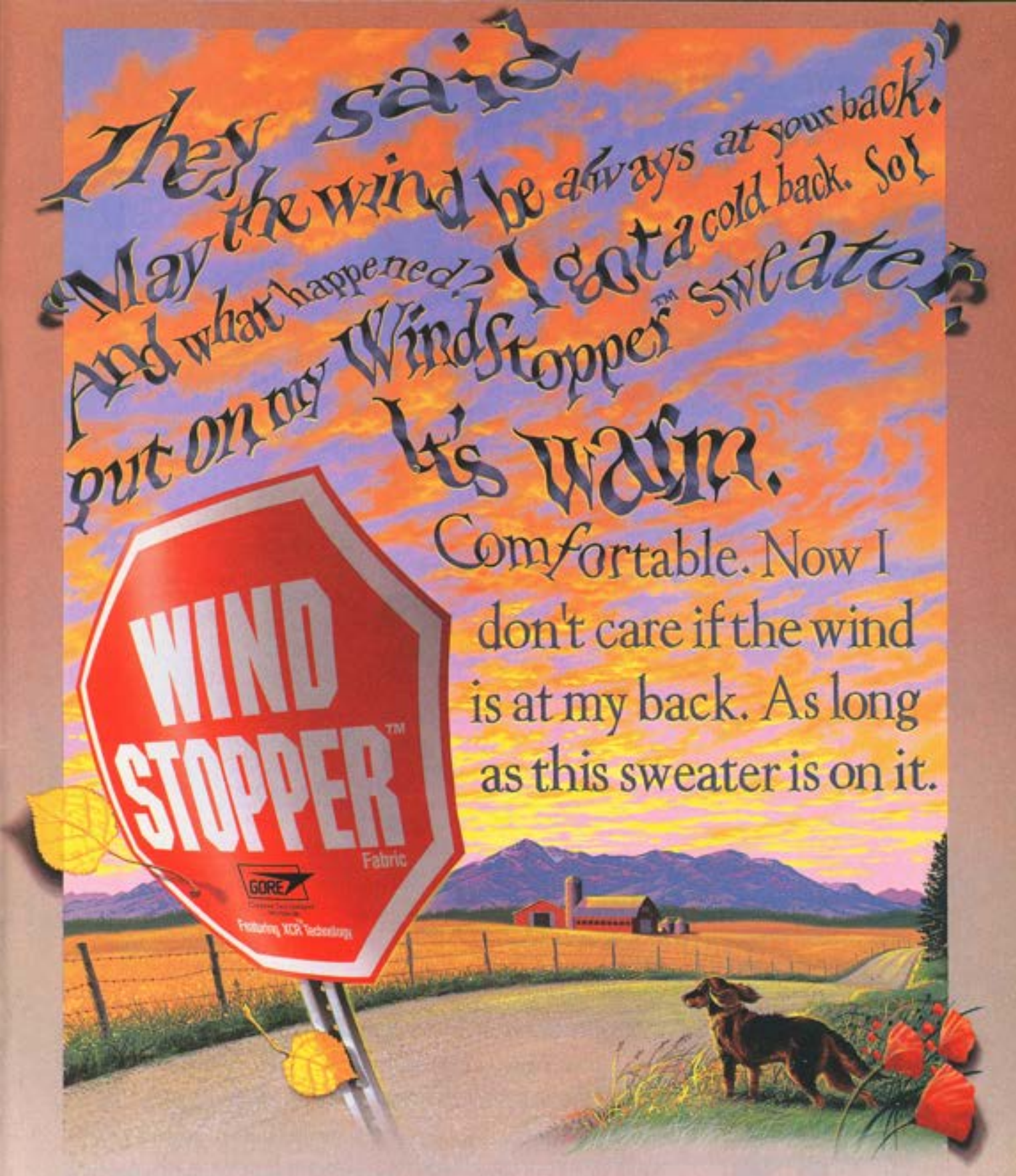

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To Save America's Wilds

Not since the heyday of James Watt have environmentalists been faced with such daunting challenges. As our problems multiply, those in a position to help seem increasingly unwilling or unable to do so. In need of bold action, our country is hamstrung by a politicized Supreme Court, an ineffectual Congress, and a president waging war on environmental protection.

Riding herd on all three branches of government is the self-styled Wise Use coalition, a diverse assemblage of developers, miners, loggers, ranchers, and farmers. Though these folks like to portray themselves as victims of an environmentalist conspiracy, they in fact represent the most powerful economic forces in this country.

As the Users see it, nature was meant to be consumed. The coalition wants to open wilderness and parks to mining, to exclude "non-adaptive" species from protection under the Endangered Species Act, to log the Pacific Northwest's remaining old-growth forests, and to pump oil in the Arctic National Wildlife Refuge.

The Users' most galvanizing theme has been property rights, an all-American concept they redefine to suit their economic interests. Landowners, they maintain, should be reimbursed by government for any economic burden imposed on them by environmental regulations. A mall magnate barred from paving a wetland should be paid for profits forgone. Farmers asked to keep toxic runoff out of rivers should get back the money polluting would have saved them.

In light of widespread public support for environmental protection, such proposals might ordinarily be laughed off, but lately the Bush bunch and their sympathizers have been lending an all-too-ready ear. Congress is considering User-instigated "property rights" legislation, as are nine state legislatures. (Arizona, Washington, and Delaware have already passed similar laws.) Three "property rights" lawsuits rose to the Supreme Court this year, and many more clog the lower courts. Even some of the environmental movement's most steadfast allies in the House and Senate seem daunted by the Users' letters piling up on their desks.

So the chuckling has stopped, and the hard work has begun. "We are going to the courts, to Congress, to the public, and to the media to explain the threats of the Land Abuse Coalition," says Sierra Club Associate Executive Director Carl Pope. At the same time, he says, the Club is launching the most ambitious conservation initiative in its 100-year history: the Campaign to Save America's Wilds, which combines critically needed defensive actions with the aggressive pursuit of new policy.

Our conservation crusade against a phony brand of "wisdom."

The Club is beating back four User-inspired bills in Congress, while pushing nine separate pieces of its own legislation, including the California Desert Protection Act and strong wilderness bills for Utah, Colorado, and Montana. It is producing television spots decrying Bush's User-friendly record; gathering signatures in Arizona to submit that state's new "property rights" law to a referendum; designing new ways to protect land (with ancient-forest preserves first on the list); and constructing visionary plans in defense of 19 ecoregions around the country.

The Sierra Club hopes to turn its opponents' momentum to its own advantage, martial-arts fashion, letting the Users help remind the public of environmentalists' overarching goal: preserving the health of the whole planet, rather than the freedom of a few individuals to plunder. "The Sierra Club's traditional conservation agenda is more vital than ever," Pope maintains. We must protect and expand our wetlands acreage and our wilderness and parks systems, he says; strengthen the Endangered Species Act; toughen regulations governing logging and grazing on public lands; and drop the dangerous 1872 Mining Law down a deep, dark shaft.

For all its shortsightedness, the Wise Use movement *has* highlighted some important issues, the most critical of which center on the economy. Preservation of a healthy environment is indisputably the best guarantee of a healthy economy in the future. The political and business leaders in this country need to hear that message from a movement—ours—that combines concern for the nation's economic condition with an unselfish love of the environment. Likewise, our movement must help devise ways to ease the transition for workers caught in unsustainable jobs, as the Sierra Club is doing in the Pacific Northwest through our support of provisions for community and worker assistance in the ancient-forest legislation now moving through Congress.

If all goes well, we may ultimately feel grateful to the strident Users. "They were badly misguided and often deceptive," we might find ourselves musing on some distant, brighter day. "But their barbs helped spur us on."

—Joan Hamilton

LETTERS

COSMIC CONTACT WITH THE GREATS

The illustrated Sierra Club history ("A Centennial Celebration") in your May/June issue should appeal to all old-time members. In my case, it certainly brought back many wonderful memories.

My contacts with the Sierra Club's greats have always had a tremendous influence on my life. I hope that your display of their accomplishments, in word and picture, will have a beneficial effect on today's far-flung members, with their vastly different backgrounds from those of us whose Sierra Club always had—and still has—its true heart in the Range of Light. A cosmic strength flows from the granite of the Sierra into those who have spent any significant portion of their lives amongst those wonderful peaks and lakes and meadows.

Allen Jamieson
Sacramento, California

PLAYING BY OLD RULES?

In "Now, If *I* Ruled the World..." (May/June), in which 13 people responded to your invitation to describe how they would solve the environmental crisis if given unlimited powers to do so, I counted only two women—and one addressed the theme in conjunction with her husband. Are there so few women whom you consider qualified to "rule the world"? I was irritated by the minimal representation of women, and suggest the editors explore the obvious sexism this absence implies. It also leads me to wonder further how many other "isms" were used to select the participants.

Debra Moore
Pacifica, California

Had I sufficient financial resources, I would have the "If *I* Ruled..." essays separately and artistically bound and sent to every representative and senator, every director of a federal department or regulatory agency, and every corporate president and chairman of the board.

Jeanne Lippay
San Francisco, California

Cleveland Amory, founder of the ironically named Fund for Animals, demonstrates no understanding of life's interconnectedness, nor any appreciation for wilderness. Instead he offers a future in which drugged mountain lions gaze from behind chain-link fences at a herd of neutered deer grazing in what amounts to a city park. Walt Disney and James Watt together could not come up with a more anti-nature approach.

Chas. S. Clifton
Florence, Colorado

It seems to me that Amory's concerns have less to do with preserving ecosystems than with name-dropping—telling which of the movie stars he's met share his inability to bear the thought that animals die—and allowing pets to ride in airliner passenger cabins.

Don McMillan
Modesto, California

NO OUTSIDERS, WE

I am a new member of the Sierra Club, and my first issue of *Sierra* (the Centennial issue) was not what I expected. I was at once impressed by its aura of elitism and—I am sorry to say—hypocrisy. *Sierra*'s artful presentation and its advertisements for luxurious cars, computers, and clothing are in stark opposition to the themes expressed in your feature article "Together in Time." Although I agree wholly with the essay's premise—that the pace of environmental degradation is far exceeding our response to it—I am discomfited by your unmitigated attacks against other members of our society.

You complain of CFCs used in the electronics industry (and elsewhere), yet plainly rely upon powerful computers to generate *Sierra*. You lash out at timber companies and tree farmers, yet *Sierra* itself is printed upon paper that is nonrecyclable in most places (because it is coated with strip-mined clay, which gives it its glossy appearance). The paradoxes continue: You fear CO_2-induced global warming, but promote the sale of automobiles to fund your publication. Finally, you warn against centralization of power and lack of diversity, yet the Sierra Club is well known for its history of white-male-dominated boardroom clashes. The point is that you are part of a society that must recognize its ills, not the inculpable outsider portrayed in your article.

I have no plans to cancel my membership, but please assume a greater sense of shared responsibility for the problems of the day.

Neil Dulohery
Athens, Georgia

While we surely have our faults, we do our humble best: The paper we print on is not only substantially recycled but recyclable in an increasing number of locations. The advertising we accept to help offset our publication expenses makes several million dollars of Sierra Club funds available each year for conservation programs—while compelling no one to purchase the products you decry. And if a dozen desktop PCs constitute a phalanx of "powerful computers," then we're the Rockettes.

Finally, the Club's Board of Directors is numerically dominated by women, several of whom, admittedly, are white.

A BEE IN HIS UPLINK

The Centennial issue of *Sierra* may well be the best issue of the magazine that I have seen. It was a delight to read. However, I do have one small quibble.

In your story on the environmental threats to the Sierra Nevada and the responses to those threats ("Visions of the Range of Light"), you quite properly praised the Pulitzer Prize–winning work of my friend Tom Knudson of the Sacramento *Bee*, which dramati-

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PowerBars help prevent the energy lags that can occur after a couple of hours of backpacking.

Photos: Greg Epperson

It's 10:30 a.m. on a typically busy day. You congratulate yourself on all the phone calls you've already returned, but now you're going into a big meeting and there's a gnawing emptiness in the pit of your stomach.

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The chart below compares the nutrition in PowerBars with other popular snacks.

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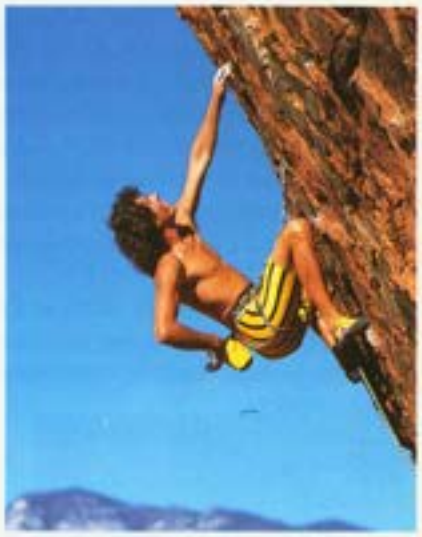

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Mixed Nuts (1/3 C.)	332	71%	12%	17%	0	14%	6%	65%	8%	4%	0
Bran Muffin (Large)	180	40%	53%	7%	0	6%	8%	15%	9%	8%	*
Banana (Med.)	100	2%	93%	5%	20%	5%	5%	5%	5%	2%	0
Apple (Med. Delicious)	96	9%	89%	2%	11%	4%	2%	2%	3%	2%	0
Potato Chips (2 oz. bag)	300	60%	36%	4%	20%	2%	6%	4%	0%	2%	*
Snickers[#1] (reg. size)	280	42%	51%	7%	0	2%	4%	8%	6%	2%	*
Carnation Breakfast Bar[#2] (Chocolate Chip)	200	50%	40%	10%	45%	20%	2%	25%	2%	25%	14

* Information not available

1 Snickers is a registered trademark of Mars Inc. 2 Carnation Breakfast Bar is a registered trademark of Nestle USA Food Co. Source: U.S.D.A., *Nutritive Value of American Foods*, 1985

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cally described the problems assaulting that marvelous mountain range. But to snidely suggest that all other coverage was simply "tag along" misstates the facts. Cable News Network's week-long series of live broadcasts from throughout the Sierra, plus the accompanying taped reports, served to further inform an international public about the problems there. I think the folks at the *Bee* would agree that their coverage and ours, to a degree, supplemented each other.

I hope this helps to serve as a reminder that television also takes some serious looks at issues of importance to *Sierra* readers.

Dan Blackburn, Correspondent
CNN America, Inc.
Los Angeles, California

I enjoyed reading of Martin Litton's howls against clearcutting in Sequoia National Forest. That his efforts were successful is a great relief.

A book that further exposes the astonishing long-term destruction caused by this form of "forest management" is Ned Fritz's *Clearcutting: A Crime Against Nature*, published by Eakin Press. It is available for $14.95 from Save America's Forests, 4 Library Court, S.E., Washington, DC 20003.

David Dilworth
Carmel, California

PEAK PREMIUMS

My admiration for David Brower turned into anger over his opinion that the Sierra Club should have paid $500,000 in insurance premiums so that 4,000 of its half-million members could continue their technical-climbing activities ("A Return to the Peaks," May/June).

First of all, one willingly climbs with full knowledge of the risks involved. If a climber "falls" victim to one of these risks, suddenly it becomes someone else's fault. Mountain climbing is a dangerous sport: We have not "cut our climbers loose," just made them responsible for their own actions. This character-building approach to life is something most of the attorneys in this country are banking on us forgetting.

Secondly, Brower said the Club should have put the $500,000 in its budget and "then fought like hell to straighten out the insurance business." If Brower has any solutions to the soaring costs of medical care, or a way to reduce the endless stream of lawsuits, the insurance business would love to hear from him.

Kathie Bantz
Santa Ana, California

David Brower responds: *I am sorry to have upset Kathie Bantz, but I refuse to retreat. The insurance industry is begging for reform as it renders the Good Samaritan obsolete, inhibits outdoor education, and continues its huge investment in the stagnant pool of conventional wisdom instead of going to the springs of fresh thought. Insurers, more than any other segment of American business, need to help lawyers, doctors, corporate executives, themselves, and their too-often-abused customers prepare for a world that can no longer afford an ever-growing, ever-grosser Gross National Product.*

Let the Sierra Club continue to teach mountaineers how to lead. Some of them could lead the insurers and the insured to pursue a more useful route—perhaps even to overcome the addiction to the pursuit of endless litigation.

Congratulations, by the way, on Sierra*'s superb Centennial issue—far more spectacular and comprehensive than this old editor dreamed possible, in spite of any disturbing quality in my own contribution.*

I wholeheartedly agree with David Brower's advocacy of climbing as part of the Sierra Club's mission. Every time I renew my membership I weigh my strong disagreement with the Directors' abandonment of climbing against the desire to support the Club's wilderness advocacy.

To Brower's comments I would add my own concern that the Board of Directors is moving the Club—increasingly an environmental PAC—away from its roots. I fear that if involvement with climbing becomes too attenuated, the Sierra Club will lose its unique connection to the mountains. Our advocacy of preservation derives legitimacy from our firsthand knowledge of them.

Gurdon Miller
Sierra Madre, California

NO LONGER WITH THE COMPANY

May/June's "Clubways," in quoting a letter from me to Sierra Club President Phil Berry in which I referred to Rachel Carson's *Silent Spring* as "a major intellectual calamity," suggests that I was at that time an employee of American Cyanamid. Berry was elected in 1969, six years after I had left American Cyanamid.

My objection to *Silent Spring* was its omission of facts rather than its "oversimplified handling" of the topic of DDT, which, according to S. W. Simmons of the U.S. Public Health Service, saved more lives and prevented more illness than any chemical in history, except perhaps for the antibiotics.

Thomas H. Jukes
Berkeley, California

WE KNEW THAT . . .

I should like to think that the identification of "Colton Boit Brown" ("Readings," May/June) resulted from a typographical transposition, not a lapse of editorial memory. Bolton Coit Brown (1864–1936), for whom a 13,527-foot peak in the Sierra Nevada has been named, was a gifted artist, a member of the Stanford University faculty, and a mountaineer whose solo climb of Mt. King has been described as "the finest Sierra climb of the nineteenth century." Later, Brown would become one of the founders of the art colony in Woodstock, New York, and a central figure in the history of American lithography.

Clinton Adams, Professor Emeritus
University of New Mexico
Albuquerque, New Mexico

✍ Sierra *welcomes letters from readers in response to recently published articles. Letters may be edited due to limitations of space or in the interests of clarity. Write to us at 730 Polk Street, San Francisco, CA 94109.*

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WAYS & MEANS

TIM CARROLL

Conventional Wisdom

CARL POPE

In the early days of the 1992 presidential race, there were Four Things Everyone Knew:

The environment won't be an issue this year. ♦ George Bush killed this myth himself. In a desperate attempt to appeal to the old James Watt crowd—an effort made more frenzied by the appearance of Ross Perot on his flank—Bush abandoned his own brand of environmental moderation. In the weeks leading up to the Earth Summit in Rio, the president tried to revive Reaganism without the grin. To the detriment of his plans, Bush found that he lacked the Great Communicator's capacity to, say, recast clearcutting as a modern version of holding off the Apaches at Fort Defiance, whining instead that he was "the only guy worrying about jobs." Then he showed up at a photo-op among the giant sequoias of California to reclaim his mantle as the "environmental president."

George Bush singlehandedly created the environmental issue of 1992: It's George Bush.

The only important task for vice-presidents is to help win elections. ♦ Jimmy Carter actually wrung the neck of this canard. Walter Mondale may have been brought on board to help Carter carry Minnesota, but once he was made Deputy President, the traditionally useless office became a genuine center of power. Reagan followed Carter's precedent; Bush, in turn (even with the limited material available), has given Dan Quayle notable power.

If Bill Clinton is elected, he would do well to let his vice-president contribute significantly to the formulation of national policy. Al Gore's expertise in environmental issues would go far toward undoing the mischief of the Quayle Council on Competitiveness.

The American people want government to be run like a business. ♦ Ross Perot's entire campaign was based on this premise. But even before he pulled out, his declining poll numbers suggested that, while people do want government to pay attention to efficiency and the bottom line, they *don't* want a president who treats the earth the way most businesses do.

Perot's comments about favoring factories over rivers because he could clean up the rivers later could perhaps be justified as hard-headed emphasis on the economy. His dynamiting a coral reef in Bermuda to improve yacht access to his dock, however, was a clear reflection of the arrogance that was beginning to undermine his appeal even before he jumped ship.

Of course, his withdrawal was itself in the best tradition of American robber barons: To avoid a loss to the owner, the enterprise was sold without consulting the employees.

The voters are, as always, apathetic. ♦ Perot's army showed the shallowness of this view—as do the thousands of Sierra Club volunteers who turn out to work in every election. Perot's disillusioned supporters are now confronting a difficulty familiar to Club activists—how to focus their enthusiasm for a more perfect society on an imperfect political system.

If this campaign has taught us anything, it's that conventional wisdom has the predictive power of yesterday's box scores. We won't defy the fates by issuing our own prediction for November—but we will warn our fellow pundits not to confuse their own beliefs with the Things Everyone Knows. ■

Transitory truisms and other quadrennial quandaries

Lovers of Otters

NANCY LORD

Alaska's Kachemak Bay was a sullen gray, lumpy with whitecaps. I walked the beach, collar turned up, arms folded. Just offshore a gang of seagulls screeched and dove, following a driftlog. When the log rose on the next swell I saw it was not a log at all but a sea otter. Floating high on his back, using his chest as a table, he was leisurely pulling apart and eating something, a small crab perhaps. The gulls, flying at him with legs outstretched, were not attempting to land, but to snatch whatever bits of shell and scrap fell into the water.

The otter turned his furry, round, whiskered, button-eyed face toward me. Too cute, I thought. Don't fall for it. Cuteness is no measure of worth.

It's not that I dislike sea otters, but seeing one this drab day brought to mind the *Exxon Valdez* oil spill. Though Bligh Reef is some 400 miles off, oil from the disastrous grounding eventually washed into this bay in tarry pancakes. Three and a half years later I was still angry, and still uncomfortable with the otter's singled-out role as victim, as poster child of the spill. Less endearing animals and plants never gripped the public's heartstrings: Who ever shed a tear for a clam or a jellyfish, for a herring or a piece of eelgrass, for eagle eggs that went unlaid?

I watched the otter and wondered

The spill could connect us with what we do not know

who was still paying attention, even to otters. The nation's televisions long ago tuned to new disasters. The scientific reports, dubbed "litigation sensitive" by lawyers, disappeared into secrecy. The long-term damage was hard to see in the oil industry's all-is-well photos.

But it was there—in fewer of a plant species on one shore, smaller plants on another, rocks bare of barnacles and mussels, empty bird nests, missing whales, carcasses of prime-age sea otters showing up on beaches. The official word from the government about otters is that "the observed changes in the age distributions of dying sea otters, continued declines in abundance, higher juvenile mortality, and higher mortality and lower pupping rates suggest a prolonged, spill-related effect on the western Prince William Sound sea otter population." That's death, death, death, and death—still.

And now fall, a time of stress when plants and animals that hadn't thrived during the short burst of summer were likely to die. Throughout Prince

MICHAEL WOOD

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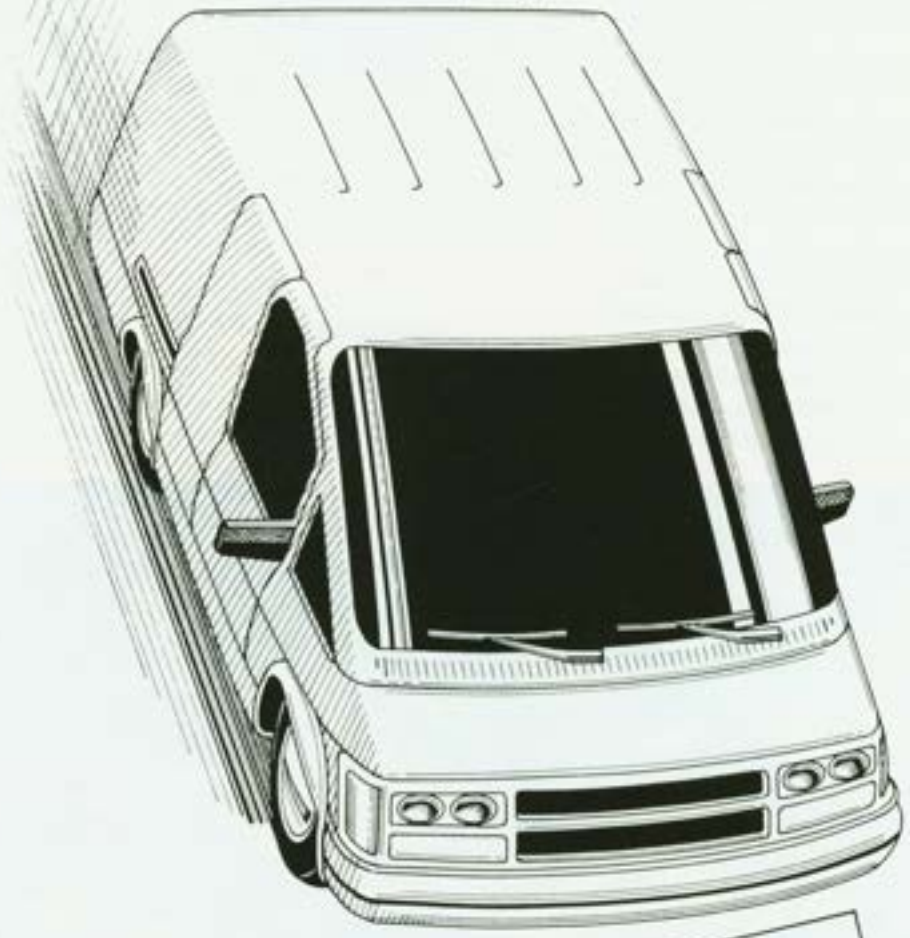

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Q

1. Urban smog is caused by:
A. Carbon monoxide B. Ozone depletion
C. Ground-level ozone D. Particulates, a.k.a. "soot"

2. A car, bus, or truck that runs on natural gas emits less carbon monoxide than one that runs on gasoline. About how much less?
A. 23% B. 45% C. 68% D. 90%

3. In the United States, nearly 30,000 vehicles currently run on natural gas. Worldwide, the number is:
A. 80,000 B. 150,000 C. 300,000 D. 700,000

A

1. Answer: C. Ground-level ozone, which is created primarily by nitrogen oxides reacting with sunlight in the presence of reactive hydrocarbons. Motor vehicles in the U.S. currently contribute about 40% of the smog-producing nitrogen oxides in our air. Vehicles are also responsible for 60% of the atmospheric carbon monoxide and 20% of the soot, which also can be toxic.

2. Answer: D. According to an Environmental Protection Agency report in April 1990, natural gas vehicles, compared to gasoline-powered vehicles, emit 90% less carbon monoxide, 80% to 93% fewer smog-producing hydrocarbons, and 90% fewer toxic air emissions. Also, natural gas vehicles emit virtually no soot.

3. Answer: D. Italy, alone, has 300,000. The Commonwealth of Independent States (formerly the U.S.S.R.): 200,000. New Zealand: 110,000. But the U.S. may soon surpass all these countries. The immediate source of growth is likely to be fleet vehicles, which can be centrally refueled. Municipal vehicles, school buses, package delivery trucks, and airport service vehicles are just a few examples of the thousands of fleet vehicles in the U.S. that have already switched to using natural gas. In an age of environmental, economic, and energy dilemmas, running our vehicles on clean, domestically produced natural gas seems like an increasingly natural solution.

There are no simple answers ...but there are smart choices.

William Sound and the Gulf of Alaska, many species were still coping with the spilled oil, adjusting to changes in available food and habitat, using their limited energy to metabolize hydrocarbons.

The otter dove, then reappeared, riding high on his back. He rubbed his paws through his fur, over his sides, his chest, his face and head, in a vigorous washing motion. The fluffing, I knew, filled his thick coat with the air that provides insulation and keeps water, in normal conditions, from ever reaching his skin. He rolled sideways now, spinning, fluffing, grooming his coat to perfection.

Despite my resistance, I found myself warming to the otter's behavior and, yes, to his cuteness. Like anyone else, I respond to individual animals, to what I can see. It's harder to feel for them as a species, harder still to muster compassion and enthusiasm for every rockweed plant, sea star, and diatom. Ultimately we can only connect with and care about what we have come to love.

Sculling with his tail, still trailed by harassing gulls, the otter backpaddled off along the beach. Cuteness is not such a problem, I decided. The problem is in making the connections: cute otter to clean-and-fed otter, clean-and-fed otter to unpolluted ocean, unpolluted ocean to personal responsibility for the very survival of our planet. We could do worse than be lovers of otters.

When I looked again, the otter was gone. Waves broke along the shore, pushing and pulling tangled ropes of burgundy-colored kelp, washing over the long, whitened backbone of a large fish. I breathed the smells of cool bone, damp wood, moldering seaweed: a bay still rich with life, another fall. ■

NANCY LORD *fishes and writes in Homer, Alaska.*

JAMIE BENNETT

Across the Great Divide

■

SETH ZUCKERMAN

The organically grown vegetables heaped up in your local market gleam with good health. They may cost more than conventionally cultivated produce, but you can stuff them in your string bag knowing you're supporting a form of agriculture that is as good for the earth as it is for you.

Or can you? What makes produce organic is not as simple as it may seem. To have their produce certified as organic, growers' farming methods must meet certain requirements, and the rules for certification in most states still erect a "Great Wall" between naturally occurring and synthetic materials. That is, if it's made by a plant or mined from the earth, it's good; if it's made in a laboratory, it's bad.

As a result, powdered pyrethrum flowers may be dusted onto crops, even though this strong natural pesticide kills beneficial insects along with the intended quarry. Organic growers may not use synthetic vitamin D to kill rodents; they may, however, set out strychnine, extracted from a tropical tree. Strychnine—unlike vitamin D—is poisonous to raccoons, skunks, and other scavengers.

Certified-organic methods can affect more than farmland. The quest for bat guano, a potent plant nutrient, has driven bats from some of the Jamaican caves where they roost. (As a result, an organization calling itself the Bat Guano Liberation Front lodged a protest when the California Certified

■

For exquisitely

P.C. zukes and cukes,

leave the bats alone

Organic Farmers ran an ad for the fertilizer in its newsletter.) Mining for naturally occurring fertilizers and fungicides such as sodium nitrite, phosphorous, and sulfur has scarred landscapes from the Everglades to Australia, from Chile to Idaho.

People involved in sustainable farming have long been aware of these contradictions, and "the wall is slowly crumbling," says Lynn Cody, agricultural-policy director of Oregon Tilth, a statewide organization of organic farmers. A few potent natural insecticides, such as nicotine and its derivatives, have been banned from organic use in some states. At the same time, some synthetics are being permitted. Pheromones—natural attractants used to lure insects to their deaths in sticky traps—may now be synthesized for use on organic farms.

In place of a rigid separation between natural and synthetic materials, some organic growers are introducing the idea of agronomic responsibility. "If it doesn't harm human health or the environment, it's OK," Cody translates. She is helping the Department of Agriculture's National Organic Standards Board to devise a more rational system for evaluating the ingredients permissible in organic farming.

Organic criteria must start from the recognition that good farming is a process, not a shopping list. There's no point in using "natural" products that unbalance ecosystems—in the field or elsewhere. Sustainable agriculture can't be built on the extraction of cheap raw materials (such as sulfur and bat dung) from one region to enrich another.

The National Organic Standards Board is expected to release its new definition of what's allowably organic in October 1993. With luck the Great Wall will become as obsolete as its Chinese eponym. ■

SETH ZUCKERMAN *writes and teaches high school in Northern California.*

HAND & EYE

Sudden Knowing

■

HANNAH HINCHMAN

The other evening I glimpsed a bird-shape moving in the distance at the edge of the woods. My first impression was "woodpecker," which narrowed to "sapsucker or downy," then resolved into "sapsucker." Somehow, with just a moment's glimpse at dusk, I was able to recognize the bird. I knew it by a slight weakness in flight, a certain way of dipping up to the tree, by a complex of gestures and characteristics that add up to a particular species.

My ability to recognize birds in that manner is limited, and I want to cultivate it. I think it might be a good example of an old, intuitive kind of knowledge that we often use but don't have a name for—a subtle knowledge based on a perception of wholeness. Maybe it's a hunter-gatherer skill: Quick discrimination would have been useful to nomadic people, especially if accompanied by a clear mental map.

I'm heartened when I become aware

■

Bumbling toward inclusion in the forgiving natural world

HANNAH HINCHMAN

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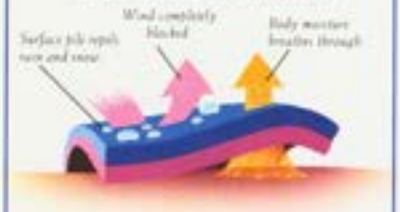

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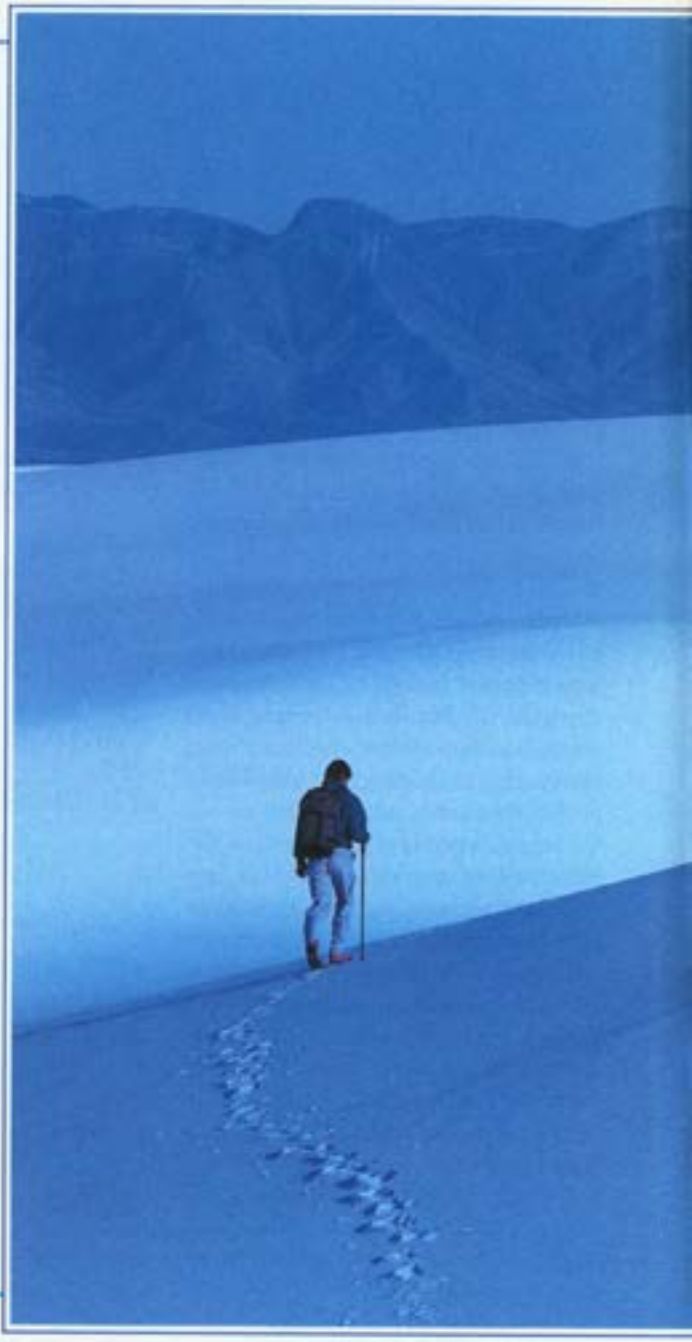

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of a skill of that kind—it balances the sensation that we are an affliction on the natural world. These days, we blunder when we go out among other species. It's the fumbling of ingrained arrogance; there's no reason for us to watch our movements, to blend in. The sounds we make—too many of them, too loud—are also a by-product of arrogance, and they serve to isolate us and further dim our perceptions. Even an exclamation of delight or a sweep of the arm toward a view makes a deer freeze in alarm.

On the other hand, the voices of a band of campfire storytellers, punctuated by laughter, or the shouts of kids running down a hill—why should we assume those sounds weren't part of the ancient sonic fabric? That the nuthatch hears them with distress? (In fact, one animal behaviorist suggests that the nuthatch would probably *like* to be asked a question by someone with a lilting voice.) Humans can elicit curiosity as well as fear. But most of the time now we carry with us, almost unacknowledged, the conviction that we are outsiders. Is it another level of arrogance to imagine ourselves fitting into a landscape, even adding to it?

I feel most acceptable in a wild place when I sit quietly, drawing. To a passing creature I look absorbed, predictably still, as though I were bedded down or grazing. Others of us might venture to say we are in accord with wildness while hunting, climbing, arranging a careful camp, picking berries, finding routes, reading weather. We can do these things in a way that animals might even admire.

Maybe other creatures are aware of our sadness and isolation. Maybe they've always known, from the lonely songs of the flute player and the intent look of the woman shaping the pot to fit her yearning. They've heard us tell our long stories and watched us cry for our lost ones. They know us by our ways, they know us from a distance. ■

BODY POLITICS

RICHARD SPARTHO

What Dunnit?

■

MICHAEL CASTLEMAN

I once asked an epidemiologist about the alarming number of cancer cases occurring near a San Francisco Bay Area nuclear facility. Many environmentalists, including yours truly, suspected radioactive leaks were to blame. But the epidemiologist's study was inconclusive, he said; the cluster was a mystery, quite possibly a fluke.

As I rose to leave his office, I noticed that my watch had stopped. The wall clock said 3 p.m., so I began to set my watch. "Wait," he cautioned. "Just because my clock says it's three o'clock doesn't mean it really is. The clock could be wrong."

■

The neighbors are sick, too? With something really rare? Great!

The epidemiologist also had a clock on his desk. It said three. "That still doesn't prove anything. Both clocks are electric. If the power failed, they'd both show the same error."

The epidemiologist also wore a watch. It said three. "An interesting association, but it still doesn't prove anything."

As I left, I walked past the epidemiologist's longtime secretary. She looked at me and rolled her eyes. "Honey," she said, "it's three o'clock."

While epidemiologists spend lots of energy denying the significance of clusters, their discipline owes its existence to those discovered by the field's founder, British physician John Snow, when cholera swept London in 1854. At the time, doctors believed that the disease spread through the air. If so, Snow reasoned, it should strike all London neighborhoods equally, yet cases seemed to be grouped in certain

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areas. Snow plotted the addresses on a map: The disease did indeed occur more frequently in some districts. What connected them? The affected areas all received their water from the same source. On the strength of this association, Snow proved that cholera was water-borne.

The causes of infectious diseases like cholera are relatively easy to trace, but it's much harder to locate the cause of clusters of such noncontagious conditions as birth defects, cancer, and miscarriages. In these instances, four variables enter the equation: the cluster's size, its specificity (who's affected in each case), the "background rate" of the condition (who's affected in the general population), and the politics of the researcher.

The larger and more specific the cluster, the easier it is to assign blame. Lung cancer is common, but when a huge number of cases turned up among World War II shipbuilders who'd all worked with asbestos, the size of the cluster and the fact that the men had had similar occupational asbestos exposures allowed epidemiologists to pinpoint the fibrous mineral as the cause.

Even tiny clusters can have major epidemiological ramifications if the naturally occurring background rate of the condition is low enough. In 1971, a certain vaginal cancer turned up in a half-dozen young women. The cluster was small, but this cancer had been reported only once or twice before in the entire medical literature—a minute background rate. In a remarkable bit of detective work, researchers found that the mothers of all the afflicted women had taken the drug diethystilbestrol (DES) while pregnant. In spite of the low number of cases, the cancer's background rate was so infinitesimal that DES was determined to be the culprit.

RICHARD STUTTING

Recently, some people have become concerned over the number of miscarriages among women who work at video-display terminals. Many women now ask employers to excuse them from VDT duties while pregnant, and a few unions have requested contract provisions to this effect. Studies are in progress, but results to date have been inconclusive. Most epidemiologists roll their eyes at VDT fears because the miscarriage background rate is so high—about 15 percent of all pregnancies. If a company had 1,000 pregnant VDT workers and as many as 150 of them miscarried, it would still be within the background rate.

In March 1991, five infants in Brownsville, Texas, were born without brains (a condition known as anencephaly), three to four times the expected rate. Is this cluster epidemiologically significant? Maybe. It's specific—the same fatal birth defect—but small. The background rate—four to five per 10,000 live births—is low, but not that low. The five 1991 cases brought the rate around Brownsville to 15 per 10,000—certainly high, but not necessarily anything more than a statistical blip.

Which brings us to politics. Chances are you're wondering what heinous polluter is discharging poisons near Brownsville. In fact, there are several. All of the birth defects turned up across the Rio Grande from U.S.-owned factories that located in Mexico because of its environmental laxity. The factories pollute the Rio Grande. Brownsville gets its water from the river. Bingo.

But wait: If Brownsville's birth defects are caused by pollution of the Rio Grande, then one would expect the cluster to reflect the city's population. It doesn't. All the mothers so far have been poor Hispanics whose diets seem deficient in folic acid, a suspected risk factor for anencephaly. The Bush administration is pushing the diet argument, which would let expatriate industries off the hook just as Bush is negotiating a free-trade pact with Mexico.

But there is another connection. The stricken mothers are not just poor, Hispanic, and possibly deficient in folic acid; they all live close to the Rio Grande. Possibly the extra assault of *inhaling* pollutants from across the river played a role. Or perhaps the combination of pollutants and nutrient deficiency is to blame. Studies are in progress, and they may find a smoking gun—or smokestack. But, like the studies of the cluster that led me to the epidemiologist who wouldn't give me the time of day, these may be inconclusive.

(Personally, I think pollution is probably behind the Brownsville situation. But maybe it isn't. In any case, the Rio Grande should be cleaned up.)

So before jumping to the easy conclusion about any cluster, consider its size, specificity, background rate, and your own political assumptions. Environmentalists compromise their credibility when they automatically blame pollution for a cluster that might be caused by something else—or that quite possibly is just a fluke. ■

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GOOD GOING

The Way Back

SALLY-JO BOWMAN

The conch sounds at 5 a.m. By starlight I slide from my warm sleeping bag. At the beach the silhouetted *mo'o Lono* silently offers a sip of consecrated water. I step beyond this Hawaiian priest into the dark waters of Kaho'olawe, a tiny, uninhabited island in the rainshadow of Maui's Haleakala.

The houses and temples of Kaho'olawe are ruined, the once-verdant slopes denuded by goats, the soil swirled away by relentless wind and torrential rain, the hardpan surface cratered by 50 years of U.S. Navy live-fire practice bombs. But like Hawaii's aboriginal people, who have endured the cultural battering of two centuries of Western influence, Kaho'olawe clings to life.

I am here as a guest of Protect Kaho'olawe 'Ohana, a group that has spent two decades healing the island. Though they were branded "radical natives" when they landed on Kaho'olawe against Navy regulations, five years later their work resulted in the island being added to the National Register of Historic Places. In 1990 the bombing was stopped. As stewards of the island, members of the 'Ohana—which means "extended family"—have inventoried archaeological sites, built water-catchment systems, and started revegetation projects. Now, in this windy January, the 'Ohana is bringing the ancient annual thanksgiving celebration to a close.

Gaining a clearer view of the long channel home

G. BRAD LEWIS

I am a Hawaiian—but, like Kaho'olawe, tenuously connected to my past. My native grandmother died when my father was a baby, and I grew up knowing little of my culture. Now, submerged in Kaho'olawe's waters, I follow instructions for the first ceremony: Until the sun rises and the conch sounds again, silently praise Lono, the sustainer of life. Pray for misty rain to nurture Kaho'olawe with green.

For years I have gone to the sea to meditate at sunrise. I'm suddenly sure that I received the practice from unnamed ancestors who also sought in ritual some sense and order to life. Just then the conch blower, floating far off in the Pacific, lifts his shell horn against the rosy sky.

All morning, people wrap offerings to Lono in *ti* leaves: banana and sweet potato; taro, redfish, and black coconut. At noon a dozen couples line up along the beach wearing white *malo* and *kikepa*, the loincloth and sarong. Chanting slowly, they bear their bundles to the *imu*, the hot and earthy-smelling cooking pit.

At day's end, two more processions wind to the ruins of the women's and men's temples. In bare feet the Hawaiians feel their way over the lava path, white raiment and Lono banners fluttering. This time the offerings are laid on raised platforms.

The next day we hike the full length of the island, 11 miles under a parching sun. The Navy has cautioned us against picking up anything; the island is still scattered with unexploded bombs. At

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mid-island those in the ceremony change into white again and pad barefoot a half-mile off the trail to a promontory; here ancient priest-navigators once schooled postulants to read the stars and the currents to sail 2,500 miles back to Tahiti, where the Hawaiians came from a millennium ago. From here I have a clear view of the channel Ke-ala-i-kahiki: the-way-to-Tahiti. The ritual begins; in the gusts we hear only snatches of the chants. Then the final conch blows.

By late afternoon we're blistered, sunburned, and dehydrated, but we must reach the western tip of the island before sundown. An hour later we arrive at our destination.

As the celebrants prepare for the final ritual, a regal and massive gray-haired Hawaiian I have not seen before appears. On the sand a hundred feet behind him a four-foot-long scale-model *koa* canoe sits balanced on her outrigger, her *kapa* cloth sail a white triangle in the waning light. For the last time, pairs of Hawaiians make their offerings to the *mo'o Lono*. Carefully the priests pack the canoe.

At the ocean's edge the chief strikes the waves with a broom of *ti* leaves. When the surf calms, four of the strongest swimmers guide the canoe toward the channel. The sky fades, and from the shore we can see only the tiny sail, still upright. At last light the canoe catches the current of Ke-ala-i-kahiki, the connection to our ancient homeland.

In the starry night, cold winds blow from both the sea and the land. My skin crinkles with salt. My sleeping bag is damp, but I crawl in and lay my head on a hump of sand. Around me lie other Hawaiians; under me Kaho'olawe feels alive. I can see the campfire, its flames the shape of the canoe sail, the color of the sunset sky. ■

SALLY-JO BOWMAN *is a writer living in Springfield, Oregon.*

WHEREABOUTS

The One Hour

■

DONALD HALL

Good places raise up their own time. For me, living in this New Hampshire house and landscape, morning is the best time. November through February, I wake in the wrapped hive of blackness and read the paper drinking black coffee, then settle down to the desk as daylight suffuses gradually into frozen air. We live at the western foot of a hill, so the sky grays long before the sun arrives. Against that southern sky Mt. Kearsarge rises first as a black outline. In late autumn it turns pink and lavender as the sun ascends; in

winter the mountain looms bright white; then it greens slowly through spring into emerald summer. By June the birds wake before I do, making it impossible to stay in bed as they fill the ghost light with their early singing.

On a trip to India last fall I talked with a Bombay CEO who is also a novelist. He told me that he had recently addressed 400 Indian businessmen on the subject of management, and in the question period a young man had asked him: "What is contentment?" He took two minutes to think, he told me, and then said that contentment was "absorbedness."

Engaged in the true present's story, bound by a real past

The hour of bliss is the lost hour. Love, physical love, absorbs the whole self like nothing else, but after a certain age it no longer engages the entire day. In this house on this land I lose the hour—inhabiting contentment—in my lucky double absorption with work and with land. At the desk, writing and trying to write, I do not know who I am; I do not even know that I will die. The whole of me enters the hand that holds the pen that digs at word-weeds, trying to set the garden straight.

Before I lived on this old family farm, I taught school in Michigan and evaded absorbedness by wanting to be somewhere else: New York or Wessex or Calcutta or New Hampshire. My clock ran by Standard American Time—the relentless thin suburban present, disconnected from the past, looking toward an illusory compensatory future. Where I live now permits me the contentment of stasis, of being where and what I want to be, of cathexis in the day's continuous moment.

My grandparents and great-grandparents lived here, worked hard with the absorbedness my Indian acquaintance spoke of. They dug real weeds, salted sheep, darned socks, harvested eggs, fenced pasture, canned Kentucky Wonders, hayed fields, and milked cows. They concentrated on what they did, like the old blacksmith at his forge or like the cousin who today tunes my car and pumps my gas. My neighbors who drive nails don't understand how I can sit still all day; but I couldn't shingle roofs all day, or dig wells, with competence or pleasure. (The neighbors and I agree: It takes all kinds . . .)

When I was a boy farming with my grandfather, I adored his loving and narrative company—but my farming days ended when a heart attack ended his. In my first years here I thought I should farm more than I did. I daydreamed immense vegetable gardens, made small ones and neglected them; canning and freezing vegetables, I longed for the desk. Now, I renounce guilt as I accept another assignment: to preserve in words—as much as I may—this house, this land, and this culture.

In 1975 I thought I had returned to a house of the beloved dead, but the moment I lived under the hill I understood that elms and boulders seized me as much as white clapboard did, or an old farmer's ghost. Then I discovered that my neighbors and cousins—people of stories and notions, people of speech cherished and passed along—split my grandfather into a million atoms and distributed him over hill-farms and villages through a hundred faces into a thousand laconic phrases.

By this time, the elms are as gone as the old-man farmers. Stone walls endure, tumbling apart as slowly as a mountain wears itself down. Where the settlers after the Revolution scrubbed out small farms, setting fieldstones into wavery rectangles, today mixed forests rise again amid glacial detritus. As the young people of the countryside grow old, they tell the story again—of one life in one locale, absorbed in its tender boundary.

Of course this place, and its consequent time, live under threat of assault from suburban armies. Ortega y Gasset predicted the vertical invasion of the barbarians; he did not predict that they would crash through the wall driving Buicks. Good places are under continual threat, and the one hour is always precarious. ■

DONALD HALL's *most recent book is* Here at Eagle Pond *(Ticknor & Fields, 1990).*

A Wild November?

CHRIS SCHMIDT

To read the papers, you'd think the 1992 election is simply a race between insiders and outsiders, men and women, or the corrupt and the pure. But it's also turning out to be a showdown between conservationists and exploiters—especially that highly vocal constituency out to make a buck at the expense of the clean air, water, and wide-open spaces of the American West.

The outcome of wilderness bills pending in several states, for instance, turns on electing western environmentalists to Congress. At issue, too, is how (and even whether) the United States should protect its coasts, endangered species, and ancient forests, or reform its antiquated mining, grazing, and water laws.

Why should these controversies turn on who gets elected in the West? Public lands, after all, belong to everybody, and in theory a representative from Tucson should have no greater say about them than one from Trenton. Yet politicians from the 12 states with the grandest sweeps of public domain—Colorado, Montana, Wyoming, Arizona, New Mexico, California, Washington, Oregon, Nevada, Utah, Idaho, and Alaska—unquestionably do have more clout on these issues. They snap up assignments on the congressional committees that deal with the wilds: Ten of the 15 members of the Senate Public Lands Subcommittee are from these states, as is half of the House Interior Committee.

Another factor that gives western delegations added heft is their lopsided representation in the Senate. In any given tally in the House, Wyoming gets one vote to New York's 34. But in the Senate, Wyoming and New York are on an equal footing with two votes each, even though the former has one-fortieth the population of the latter.

Senate traditions also leave the job of designating parks and wilderness areas largely up to western senators. If you don't have both senators behind a piece of protective legislation that affects land within their state's borders, pushing for passage is a Sisyphean task. A case in point is retiring Democratic Senator Alan Cranston's expansive Desert Protection Act, which has been blocked for six years

The frontier comes alive as political opposites square off over the West.

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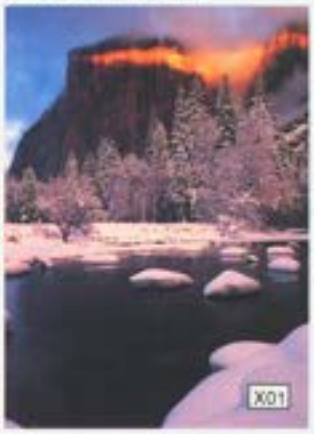

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by the other half of California's Senate delegation: first by Pete Wilson, who is now the state's governor, and lately by John Seymour, opposed this year by Desert Act supporter and former San Francisco mayor Dianne Feinstein.

At best western politicians bring to Congress an intimate knowledge of public lands. At worst they bring a tradition of viewing these lands as political pork, imagining a lucrative development scheme behind every unsullied hillside of prickly pear or pine. Luckily, two of the latter sort, senators Jake Garn of Utah and Steve Symms of Idaho, are retiring in 1992. On the other hand, three of their more enlightened colleagues are also leaving: Alan Cranston, Brock Adams of Washington, and Tim Wirth of Colorado. These three have led the way in Congress on desert protection, ancient forests, and global warming and energy policy, respectively. In the House, wilderness-and-wolf champion Wayne Owens of Utah is relinquishing a safe seat to try for a much less certain spot in the Senate.

In California, where three or four hotly contested House seats are the norm, some 20 are up for grabs. As many as 150 House seats may change overall. "It's exciting and terrifying at the same time," Sierra Club Political Director Reid Wilson says. "If the right people win, we can protect these lands. But if the wrong people win, we're in big trouble."

The election could literally alter the landscape of the West. If retiring Senator Adams is replaced by someone less sensitive to environmentalists' concerns, legislation to destroy ancient forests could advance. And if Alan Cranston is replaced by someone who sees trees solely as a cash crop, it will be difficult to include protection for the Sierra Nevada in any ancient-forest bill.

Of course, a new forest champion could emerge. Washingtonian Patty Murray, a first-term Democratic state senator running for Adams' seat, is considered a likely prospect. And any candidate able to dislodge Oregon

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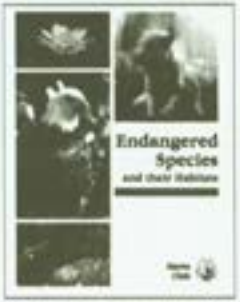

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Senator Bob Packwood, who has grown increasingly hostile to environmentalists, could brighten the future of forest preservation.

In California, the race for the Cranston seat offers environmentalists what is perhaps the clearest Senate choice in the nation. On one side is Representative Barbara Boxer (D), an energetic environmentalist who opposes offshore oil-drilling and weakening of the Endangered Species Act. She's a lead sponsor of fuel-efficiency legislation, a co-sponsor of the California Desert Protection Act, and a supporter of wetlands protection.

Boxer's opponent, ultraconservative television commentator Bruce Herschensohn, says that environmentalism is socialism—and that he hates both. He wants to abolish the EPA (as well as the Energy and Education departments), and takes direct aim at the Endangered Species Act. "Congress gives more importance to rats and fish than to your jobs," he griped in a recent TV spot.

The Montana House race offers a contrast almost as stark. Representatives Ron Marlenee (R) and Pat Williams (D), who have spent most of the past 14 years cancelling out each other's votes, are vying for the redistricted state's single congressional seat. Marlenee identifies the banes of his state as "wolves, welfare, and wilderness." He has fought the Clean Air and Clean Water acts, defended the outmoded Mining Law of 1872, authored an amendment that would allow hunting in a national monument, and demanded increased timber output from the already heavily logged national forests.

In contrast, Williams has been a consistent supporter of Montana wilderness legislation and most other environmental initiatives. While Marlenee brands Williams a "hot-tub liberal," Williams dubs Marlenee a "naysayer" who is opposed to all forms of government intervention except those that "line the pockets of the rich at the expense of the middle class."

The political winds in the West are now blowing against Marlenee and his kind, as an increasingly urbanized population seeks to protect its favorite places from the chainsaws and bulldozers. An indication of this change can be seen in Marlenee's own TV ads, which test the credulity of Montanans by claiming that he, too, is an environmentalist. He may be a hypocrite, but he's not stupid: Natural-resource issues are central to the future of the West.

—Joan Hamilton

►For more information, see "Resources," p. 110.

Political Science

What happens to government researchers who reach the "wrong" conclusions?

"Science should never be adjusted to fit policy" was the prim credo of the eminent Expert Panel on the Role of Science, convened last year by EPA Administrator William Reilly to assess the scientific integrity of his agency. The bad news, the Experts agreed, was that "a perception exists that EPA lacks adequate safeguards to prevent this from occurring."

This carefully worded critique (judiciously unsupported by examples) could just as well be applied to most other government agencies. As science plays an ever-larger part in the formation of public policy, so has politics increasingly perverted the ideal of impartial, dispassionate research. The most spectacular example is the "Star Wars" X-ray laser-weapons program, abandoned this year nearly a decade—and billions of dollars—after DOE scientists warned that it was infeasible. More prosaic revelations come in dramatically increasing numbers from whistleblowers in the environmental sciences, emerging from bureaucratic gulags to tell tales of doctored data, rewritten reports, and politically required results.

"No study or report can be assumed to be trustworthy," warns Lorraine Mintzmyer, former director of the National Park Service's Rocky Mountain Region, "because it is impossible to know whether the base-level data were

tinkered with, in what way, and how much." Any Forest Service study produced in the last four years, she says, "must be suspected of being scientifically or professionally unreliable."

Mintzmyer speaks from empirical knowledge. Her tenure as the highest-ranking woman in the National Park Service came to an end after she endorsed a study proposing greater protection for public lands around Yellowstone National Park. While scientifically valid, the proposal was politically unpopular with the logging, mining, and geothermal industries and their friends in government. The report was rewritten, and Mintzmyer was abruptly reassigned to Philadelphia. (See "The August Coup," January/February.) Rather than bear this "punishment and humiliation" after 32 years of service, she resigned.

Beleaguered government scientists often end up coming to the Government Accountability Project (GAP) for protection when their agency retaliates. "Typically, their stories involve suppression of scientific findings because of their regulatory implications," says GAP legislative counsel Jeff Ruck. A few examples, from a variety of fields:

■ Al Isaacson is a former Forest Service hydrologist who worked on an innovative watershed program for Panhandle National Forest in Idaho. "When we told the Forest Service they shouldn't have a [logging] project because it was going to harm the water resource, they told us that they wouldn't believe us without monitoring data. So, we went out and began monitoring. Their next step was to cut off the money for monitoring so we wouldn't have the data." The result was extensive logging along the Coeur d'Alene River.

■ Howard Wilshire of the U.S. Geological Survey takes issue with how his agency assesses the value of undiscovered mineral resources in wilderness study areas. The USGS assembles a panel of geologists, "which may exclude those most familiar with either the geology or potential ore deposits in the region under consideration," and has it guess how much ore there might be. "Consensus is reached by round-table discussion of information that ranges all the way from mining and assay data to sidewalk psychology, rumor, and assessment of stock market trends." This questionable scientific method can produce wildly inflated estimates: In California's East Mojave National Scenic Area, for example, the USGS prophesied reserves of the mineral niobium worth $1.9 billion, even though existing mines in the area have never marketed any. The Survey's seers also forecast $161 million worth of molybdenum on a four-square-mile island in Alaska's Tongass National Forest that has never been prospected.

"In-house calls for critical review of this procedure went unheeded for three years," says Wilshire. The worst effect, he says, has been on young USGS scientists "who feel prostituted

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by these proceedings, but who remain largely voiceless out of justified fears for their careers."

■ William Sipple, chief ecologist for the EPA's wetlands office, was a member of the scientific committee formed to revise the agency's wetlands manual. When the Bush administration tried to redefine many U.S. wetlands out of existence, Sipple resigned. "The committee was being instructed to modify the science to fit the policy mandate," Sipple testified to the House Civil Service Subcommittee. "I'm not naive; I've been around government too long. I felt that, as a scientist, if I did what my agency was asking me to do it would constitute unethical technical behavior."

The mainstream professional scientific societies have been slow to take up the issue of political distortion; the National Academy of Sciences' recently released study of scientific misconduct, *Responsible Science*, for example, is mum on the question. The Union of Concerned Scientists, however, has been publicizing instances of the abuse of scientific advice for many years. Henry Kendall, UCS chair and professor of physics at MIT, suggests that the problem is certainly not limited to public science: "Look what happened with asbestos, silicon breast implants, DDT, thalidomide; look at what happens with tobacco." But, he admits, "it does appear" that political influence on government science is increasing. "Although," he adds circumspectly, "I haven't done a quantitative study."

A variety of proposals have been made to depoliticize government science. Kurt Gottfried, a UCS board member, calls for the re-establishment of the President's Scientific Advisory Committee, a body abolished in 1973 when one of its members spoke out against the supersonic transport, a pet project of President Nixon. Others support the creation of a National Institutes for the Environment, an environmental-study center on the model of the National Institutes of Health.

Taking a different tack, the Govern-

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ment Accountability Project believes that the best way to prevent political interference is to protect scientific dissidents. At present, whistleblowers must take their cases before the presidentially appointed Merit System Protection Board. Jeff Ruck proposes instead that whistleblowers be allowed jury trials and punitive damages. "Not only would it give them a fair shot at winning," he says, "it would be a healthy deterrent against messing with them."

Finally, scientists who currently expend great effort keeping their research free from extraneous physical contaminants must also realize the danger of political adulteration. If science allows politics to steal its good name, it will be poor indeed. —***Paul Rauber***

▸*For more information, see "Resources," p. 110.*

PACs Americana

It's not so much the checks they bounce—it's the checks they cash.

This year the U.S. has discovered a new hazard in need of immediate cleanup: "that mess in Congress." Polls show that fully half the population believes Congress to be corrupt, and Washington insiders grimly joke that no smear these days is more effective than branding your opponent an incumbent.

The 101st Congress is punch-drunk after a seemingly endless stream of scandals: the savings-and-loan debacle, an ill-timed pay raise, the Clarence Thomas hearings, bounced checks in the House bank. Disgusted voters, vowing revenge, have already disposed of several previously unassailable officeholders. Members aren't very happy either, and are quitting even faster than the voters can kick them out. At last count, 13 have been defeated in primaries and 53 have chosen voluntary retirement. The next Congress is expected to include as many as 150 new members in the House and 15 in the Senate. (Only four years ago, 98 percent of Congress was reelected.)

"I just don't have the stomach for it," said Senator Warren Rudman (R-N.H.) when he announced his retirement this spring. "The people can't hold anybody accountable. The president blames the Congress. The Congress blames the president. It goes around in circles. The people are bewildered and they are angry, and they have a right to be angry." According to Pamela Gilbert of Public Citizen's Congress Watch program, voters this year are neither anti-Democrat nor anti-Republican, but anti-corruption. "The only thing that the public has as leverage," she says, "is to vote them out of office."

But in focusing on those corrupted rather than the cause of the corruption, voter anger could well miss the point. Without significant reform of how Congress does business, the new members are fated to repeat the sins of their predecessors.

"The most important reform," says Gene Karpinski of the U.S. Public Interest Research Group, "is to get special-interest money out of elections." After studying clusters of industries and tracking their donations, U.S. PIRG has come to the inescapable (if unsurprising) conclusion that "time and time again, those who receive more money from particular industries tend more frequently to vote their way. Money equals access equals votes."

This common-sense cause-and-effect was neatly demonstrated last fall by the Johnston-Wallop energy bill, which would have allowed oil drilling in the Arctic National Wildlife Refuge, scorned energy efficiency, and provided easy licensing of nuclear-power plants. According to a U.S. PIRG study of the bill, all five senators who received more than $100,000 from oil-industry political-action committees (PACs) voted to allow drilling in the Arctic Refuge, and ten of eleven who received more than $100,000 from nuclear-industry PACs supported an amendment to limit public-safety

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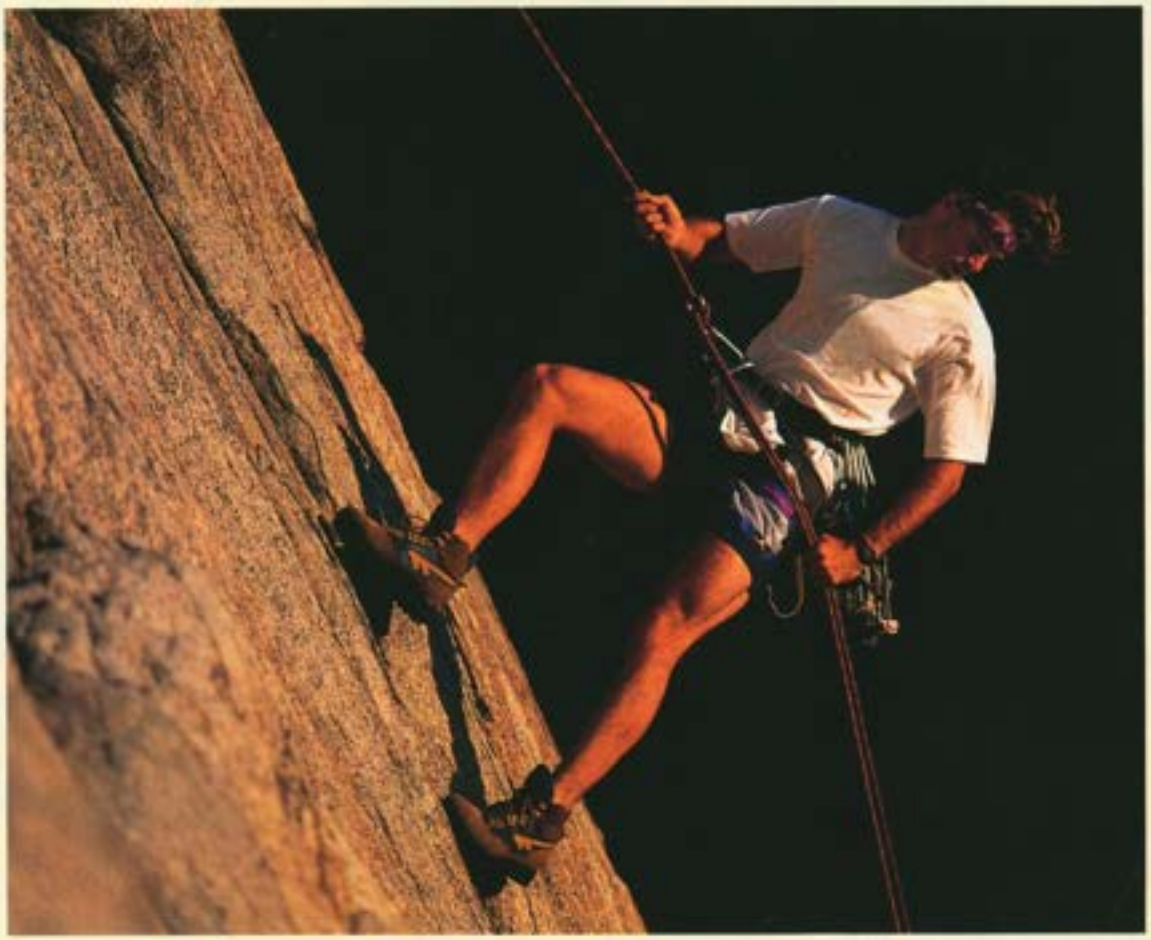

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hearings on new reactors. Similarly, Congress' consideration of recycling legislation opened up the spigots of the beverage-container PACs: Members of the Senate Environment and Public Works Committee who opposed a national beverage-container deposit program received, on average, 250 times more from the can and bottle industry than those who supported it ($125,000 to $500).

The magisterial power of the industry PACs is often demonstrated in the negative—in the motion that doesn't receive a second, or the proposal that never makes it out of committee. Recognizing that it is far easier to block legislation than to pass it (only 3 percent of the bills introduced in Congress are ever enacted), PACs funnel their money to the chairs of key committees, who have broad power over which bills come to the floor. As chair of the House Energy and Commerce Committee, for example, John Dingell (D-Mich.) prevented automobile fuel-efficiency legislation from coming up for several years. Auto-industry PACs, coincidentally or not, showered Dingell with more than $58,000 from 1985 to 1991.

"Congress is afraid to go with the special interests because it's an election year, afraid to go with the public because of the special interests," says Congress Watch's Gilbert. What's a timid legislator to do? Many choose stasis as the path of least resistance—further embittering an electorate looking for solutions.

The stalemate purchased with PAC money is deeply frustrating to many legislators as well. Senator Tim Wirth (D-Colo.) opted to retire this year, like Rudman not because of any scandal or ailment, but out of disappointment with lack of congressional action, particularly on the environment.

"Even the expanding hole in the ozone layer has not awakened many in the Congress or the administration to the urgency of an array of global threats," Wirth said when he announced his retirement. "The White

House condones a know-nothing indifference. On Capitol Hill, political fears of offending entrenched interests become roadblocks to serious, concerted action."

Wirth said he was also daunted by the prospect of another campaign dominated above all by the eternal money chase. "It is not just time-consuming and energy-wasting, but ultimately demeaning," he said. "Without comprehensive campaign-finance reform, we are leaving the system of representative democracy open to the charge and to the reality that political outcomes are for sale."

Like a junkie desperately wanting to go straight, Congress actually passed a bill this spring that would have limited the influence of PAC money and provided partial public financing of congressional campaigns. The bill, however, wound up in George Bush's wastebasket, victim of the perception that campaign reform would make it harder for Republicans to win a congressional majority. Since no presidential veto in the last four years has been overridden, "that mess in Congress" will remain until we elect a new president, a new Congress, or both.

—Paul Rauber

►For more information, see "Resources," p. 110.

Ambushed From Within

The White House tries to smother the Clean Air Act

When George Bush signed the 1990 amendments to the Clean Air Act nearly two years ago, it was a rare opportunity for environmentalists and the Republican administration to stand side by side. Clean-air activists made numerous compromises to get the bill and the president in the same room together, but the bill's passage ended a decade of haggling over what to do with outdated legislation last revised in 1977. The 1990 act addressed acid rain for the

first time, and included new ways of dealing with airborne toxics and smog.

The president's support was instrumental in maneuvering the bill through Congress, and Bush has gotten plenty of mileage out of the Clean Air Act since, often citing it as his major domestic-policy achievement. But along with catchy phrases like "no new taxes" and "no net loss of wetlands," the act is joining the administration's ballooning "that-was-then, this-is-now" file. Because of his conviction that regulations are the scourge of a healthy economy, George Bush has eviscerated the centerpiece of his claim to an environmental presidency.

The obvious difficulty facing the Clean Air Act is that it aims to force industry to accept some of the cost of cleaning up the air pollution it creates. This sets it up as a ready-made target for the White House's pro-business crusaders—the Office of Management and Budget and the Council on Competitiveness, the latter headed by Vice-President Dan Quayle. While the veep's cabal has no statutory authority, it has something better: the ear of the president. Making matters worse, the Environmental Protection Agency, charged with the unenviable task of writing regulations for a chief executive who's dug in his anti-regulatory heels, has repeatedly failed to put the Clean Air Act into effect.

The White House's most stunning repudiation of the act occurred this year when it moved to shut the public out of the law's crucial permit process. The states are in charge of issuing permits to some 35,000 factories, power plants, and other major pollution sources, but the EPA sets the minimum standards. Because industry howled when it heard that the EPA intended to allow the public to comment on minor changes in emissions, the Bush administration decided to allow a company to increase its emissions by what, in a worst-case scenario, could add up to 245 tons per year without prior approval or scrutiny. (EPA Administrator William Reilly's idea of a "minor per-

mit adjustment" was *five* tons per year.) The new proviso also allows the companies to go ahead with their pollution increases during the 45 days the EPA and the 90 days the states have to object. If there is no objection by then, the requests are automatically approved. When Reilly balked at issuing a rule that EPA lawyers said was patently illegal, Bush simply bypassed the agency.

Representative Henry Waxman (D-Calif.), one of the principal authors of the Clean Air Act, immediately charged that the White House's pollute-without-penalty move "carves the heart out" of the law. The new rule may not be significant for an oil refinery or chemical plant, which may emit several million tons of pollutants every year; but for a smaller manufacturer, it's miasma from heaven. If several firms in a single industrialized area take advantage of the waiver at once, the effect could be an increase of a thousand or more extra tons of pollutants in the air every year. For citizens, public notice occurs when they start coughing.

It's really no surprise that the White House would attack the Clean Air Act, despite the president's claimed pride of authorship. The administration had already fought and lost two battles to eliminate public review during Senate debates on the bill. And the Competitiveness Council has pecked at the act ever since its passage, handing out exemptions like candy to powerplant operators, automobile manufacturers, and newspaper publishers, among others.

The EPA has also done its part to cripple the Clean Air Act. The agency has failed to meet more than 50 important regulatory deadlines, effectively leaving the states (which face a loss of federal funds if they miss *their* deadlines) up in the air. Minimum permit standards, for example, were issued months late and only after nine states, the Sierra Club, and the Natural Resources Defense Council filed suit. When the missed deadlines piled high, Waxman went to court under the Clean Air Act's citizen-suit provisions. (He is likely to be joined by the Sierra Club.)

The EPA says it wants to comply; it's just that the 788-page 1990 law is so much bulkier than the 68-page 1970 one. Critics, however, cite congressional testimony in 1991 in which agency officials confidently stated that they had the resources to meet the act's timetable.

The crux of the matter isn't a weighty law, though, but political interference from above. "The EPA has actually done a fairly good job of drafting clean-air regulations," says Sierra Club Washington representative Blake Early. "What's causing delays is wrangling between the EPA and White House officials. The administration wants to snatch back the control it lost in legislative debate." Unless that impasse is resolved, a sweeping pollution law will continue to be swept under the White House rug.

—Reed McManus

►For more information, see "Resources," p. 110.

Four Men & A Planet

THE SIERRA CLUB does not make a habit of endorsing presidential candidates; in our 100-year history, we have done it only once before. ★ The second such commitment is made here: The Sierra Club enthusiastically supports the election of Governor Bill Clinton and Senator Albert Gore as president and vice-president in 1992. We take this step deliberately, in sober response to the urgent necessity of putting a stop to the ongoing environmental disaster that George Bush's administration not only represents but, in a very real sense, has itself become. ★ Bill Clinton offers the prospect of vastly improved environmental stewardship by the United States. That the Arkansan is abundantly supplied with good, green intentions is clear from his selection of Al Gore—perhaps the Senate's staunchest environmentalist—as his running mate. In addition, the Clinton campaign has put together a solid program on a wide range of critical issues, from energy policy and lands protection to pollution prevention and recycling. ★ Does a Clinton presidency thereby promise the millennium? We are not so naive: There is a limit to what any president can accomplish merely by dint of good intentions. The forces undergirding the United States' appalling environmental posture will not simply disappear on Inauguration Day 1993. Nor has the Democratic Party been somehow immunized against the influence of industrial PACs and other agents of stasis. President Clinton will find himself ringed on all sides by voices urging him to make few substantial changes in the status quo: for reasons of short-term economic recovery, or simply out of fear of change itself. ★ Thus, even as we lend them our support, we respectfully remind both candidates that more will be required of them than avowals and promises. At a time of almost overwhelming global crisis, we need not just honest effort but measurable success. In pursuit of this success, Clinton will confront a set of challenges that will make this already grueling election campaign seem like a fish fry in retrospect. ★ Because, unlike the imposter currently resident in the White House, a *real* environmental president must turn a deaf ear to the apostles of greed; must work with a Congress equally vulnerable to the blandishments of those interests; must overcome the antipathy and inertia of the federal agencies charged with protecting our land, water, wildlife, and air; must, in short, oversee a revolution in attitudes and policies that is not merely overdue but, after more than a decade of Reagan/Bush neglect, nearly chimerical. ★ We are encouraged by the stand Bill Clinton has taken on the environment so far in the '92 campaign. We are heartened by Senator Gore's nomination, and recommend his book *Earth in the Balance* to all who think a politician must be by definition incapable of serious reflection on environmental affairs. We believe that both men will work diligently to address the issues most important to us (see below), and on the strength of that belief will ourselves work hard for their election—as if the quality of our lives, our health, and the health of the planet depended on it.—***the editors***

ILLUSTRATION BY VICTOR JUHASZ

HOW DO THE PRESIDENTIAL CANDIDATES STACK UP ON THE CRITICAL ENVIRONMENTAL ISSUES OF THE DAY?

ENERGY AND GLOBAL WARMING

RENEWABLE ENERGY AND CONSERVATION ★ **George Bush**'s energy plan adopts the oil industry's agenda for accelerated oil production, failing to include substantive incentives or requirements for renewables or energy-efficiency measures. While Bush enacted a ten-year moratorium on oil drilling off the Florida Keys, Massachusetts, and parts of California, the administration still calls for drilling in sensitive areas elsewhere. ★ **Bill Clinton** wants to ban new offshore drilling, expand the use of natural gas, create tax incentives for renewable energy sources, redirect federal weapons funding to renewables and light rail, and mandate percentages of recycled materials required for specific products.

STABILIZING CARBON-DIOXIDE EMISSIONS AT 1990 LEVELS ★ At every international conference for the last three years, the United States has resisted efforts to limit annual emissions of worldwide greenhouse gases at 1990 levels by the year 2000. At the Earth Summit in Rio this year, **Bush** blocked an international climate treaty until it was purged of specific targets and timetables, a move that rendered the agreement meaningless. The U.S. was the only developed nation to oppose precise goals. ★ **Clinton** says he supports the Rio treaty's original goal. In addition, he would "give serious consideration" to a 20- to 30-percent reduction in CO_2 emissions by 2005 and "would consider supporting" a carbon tax to discourage emissions, as long as its revenues were used to offset existing taxes. Clinton's running mate, Senator Al Gore, led a congressional delegation to the Summit, and is a strong proponent of U.S. participation in a cooperative global effort to protect the planet.

FUEL ECONOMY ★ **The Bush administration** opposes raising the corporate average fuel-economy rating of new automobiles from 27.5 miles per gallon to 45, the single-biggest step the United States could take to reduce emissions of gases that cause global climate

change. ★ **Clinton** supports the higher standard, and would institute "revenue-neutral" measures such as rebates for purchasers of fuel-efficient cars, to be paid for by a tax on gas-guzzlers.

NUCLEAR ENERGY ★ **George Bush**'s National Energy Strategy calls for dramatically increasing the number of U.S. nuclear power plants, and Congress has approved his proposal to limit public input during the licensing process. ★ **Bill Clinton** promises to "avoid increased reliance" on nuclear energy.

INTERNATIONAL ISSUES

POPULATION POLICY ★ Anti-abortion candidate **George Bush** continues the Reagan policy of denying that uncontrolled population growth is an environmental problem. He halted support for the United Nations Population Fund and maintained the so-called Mexico City policy, under which any private organization receiving U.S. funds for family planning cannot use the money to provide abortion services or related information. ★ Pro-choice candidate **Bill Clinton** supports funding the U.N.'s population program and reversing the Mexico City policy.

INTERNATIONAL TRADE ★ **George Bush** backs both the General Agreement on Tariffs and Trade and the North American Free Trade Agreement, which would remove trade barriers between nations but might also induce companies to open factories in countries that have less-stringent environmental laws. ★ **Bill Clinton** has said that he would support free-trade agreements only if they guarantee adequate environmental and health safeguards.

INTERNATIONAL FOREST PROTECTION ★ Just before the Rio conference, **George Bush** announced plans to increase funding for world forests by $150 million. However, the United States refused to support a strong forest agreement at the Summit, and has been widely criticized for failing to protect its domestic forests. ★ **Bill Clinton** has called on banks and multilateral institutions such as the International Monetary Fund and the World Bank to negotiate debt-for-nature swaps, which allow developing nations to reduce debt burdens without plundering rainforests and other resources.

ENVIRONMENTAL QUALITY

CLEAN AIR ★ Laurels for **George Bush**'s support of the 1990 Clean Air Act wilted under the continuing attempts by the White House's Council on Competitiveness to cripple the law's implementation (see "Ambushed From Within," page 43). To his credit, Bush resisted efforts to water down the law's acid-rain-control provisions, and doubled the EPA's enforcement budget. ★ While the environment has long taken a back seat to economic issues in Arkansas, in 1991 **Bill Clinton** won approval of tougher anti-pollution laws, the first big package of environmental measures that he had pushed since his first term as governor in the late 1970s. He has pledged support for the Clean Air Act; his state is one of only four that meet all federal air-quality standards.

WETLANDS AND CLEAN WATER ★ **President Bush**'s "no net loss of wetlands" campaign pledge was rendered meaningless by his administration's proposal that such areas simply be redefined, effectively eliminating protection for half the country's wetlands. Up for reauthorization this year, the Clean Water Act (which encompasses wetlands protection) is bound to be stymied by the heavy hand of the Competitiveness Council. ★ **Bill Clinton** has condemned the administration's attempt to rewrite wetlands laws. His own clean-water record (dealing primarily with rivers in his home state) is mixed: He has long courted the powerful Arkansas poultry industry, which has severely polluted rivers in the northwestern portion of the state. By most accounts, the state's attempts to tackle the problem have been weak. But Clinton's administration did develop new water-quality regulations in 1988, and even critics say he's been tougher on the state's chicken barons than any previous governor.

SOLID WASTE AND RECYCLING ★ In 1990 **the Bush administration** forced the EPA to drop a proposed requirement that municipalities recycle 25 percent of the solid waste in areas served by incinerators; its National Energy Strategy proposed a seven-fold increase in incineration. ★ While **Bill Clinton** supports his state's plan to incinerate dioxin-contaminated waste from an abandoned herbicide factory, the Clinton platform on waste is otherwise solid: he proposes a moratorium on the construction of new garbage and hazardous-waste incinerators; economic incentives for recycling and source reduction; mandatory diversion of recyclable material from landfills and incinerators; a national bottle bill; and tax incentives for manufacturers that use recycled material. Arkansas has established a goal of recycling 25 percent of its waste by 1995 and 40 percent by 2000.

AMERICA'S WILDS

ARCTIC WILDERNESS ★ **George Bush** supports oil drilling in the Arctic National Wildlife Refuge, even though its output could only meet the country's needs for 200 days at best. ★ **Bill Clinton** supports wilderness designation for the refuge.

U.S. FORESTS ★ **George Bush** continues Ronald Reagan's policy of recommending timber cuts at unsustainable levels in U.S. forests; only litigation or its own scientific reports have forced the White House to scale back its plans. ★ **Bill Clinton** supports "the basic outline" of Sierra Club–supported bills now in Congress, which would provide nearly total protection for ancient forests while also protecting workers. Though old-growth forests are not an issue in Arkansas, Clinton has shown a lack of leadership concerning clearcutting in his home state. In 1986 he took no position on a Forest Service plan to allow clearcutting on virtually all marketable timber in Ouachita National Forest.

ENDANGERED SPECIES ACT ★ **The Bush administration** overrode the Endangered Species Act this year to permit logging on 1,700 acres of federal land in Oregon that are home to the threatened northern spotted owl. Simultaneously, Secretary of the Interior Manuel Lujan announced a "preservation plan" for parts of the Pacific Northwest that would protect only about half the acreage mandated by the act and the courts. ★ **Bill Clinton** supports the Endangered Species Act and says that—unlike President Bush—he would have signed the international biodiversity treaty at the Earth Summit, protecting plant and animal species worldwide. ■

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GAMBLING WIT

BY WILLIAM POOLE

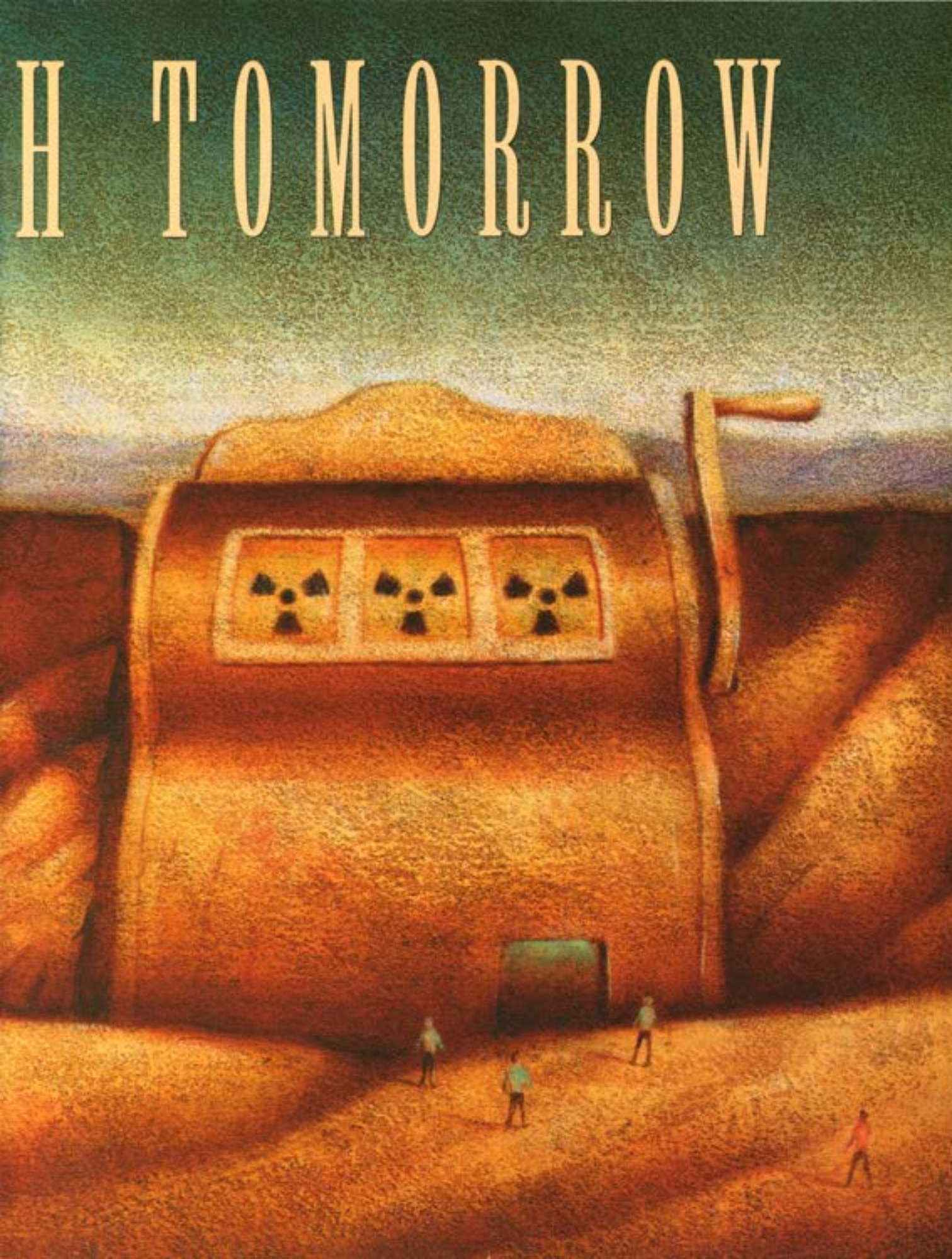
CAN LETHAL WASTE BURIED TODAY REMAIN ISOLATED FOR 10,000 YEARS? POLITICAL EXPEDIENCY IS FORCING THE PEOPLE OF NEVADA TO PLAY THE HIGHEST-STAKES GAME OF ALL.

•

BY NEVADA MEASURE, Yucca Mountain is scarcely a mountain at all. One hundred miles northwest of Las Vegas, scattered with creosote and ankle-high scrub, its undistinguished ridge trends north to south about 1,000 feet above the bordering valleys. Views are open and spare: to the east the Nevada Test Site, to the west abrupt Solitario Canyon, and to the southwest Crater Flat, a broad expanse of desert punctured by the dark, inverted funnels of several small volcanoes. • But during the last decade Yucca Mountain has become the most studied—and disputed—landform in the history of the Silver State. That record may have formerly been held by Mt. Davidson, from which, beginning in 1859, the state's founders removed $400 million in silver and gold. At Yucca Mountain, however, it is not a withdrawal that is being contemplated, but a deposit: 70,000 metric tons of the nation's highest-level nuclear waste. • The U.S. Department of Energy (DOE) hopes

Illustrations by Rob Day

H TOMORROW



that before long the "characterization," or formal study, of Yucca Mountain's suitability as a nuclear-waste repository will be fully under way. If all winds favor the DOE, the dump is expected to open by the year 2010. But that's a big "if." Local hostility to the project has been building since 1987, when Congress elected Nevada odd-state-out after a dithering, decades-long search for a politically acceptable site. The Nevada legislature has passed one law and two resolutions against the dump, and the state has attempted to slow the study through lawsuits and by denying key environmental permits—efforts eventually thwarted by the federal government.

Under the law that sentenced Nevada, the state was given money—$45 million so far—to monitor the Yucca Mountain study. Officials have put some of the funds to work to inflame the public revolt, greatly peeving the nuclear-power industry, which is paying the bill for the state's vigilance, as well as for the characterization. The last thing the industry wants is a protracted dispute: More than 20,000 metric tons of irradiated fuel assemblies sit in cooling ponds and aboveground storage at U.S. nuclear reactors, and seven states have banned new nuclear facilities until waste disposal can be secured.

With no other sites under consideration, Nevada's biggest fear is that the dump will be licensed regardless of any drawbacks the ten-year, $6-billion investigation might uncover. "The industry is providing pressure across the board," says Bob Loux, director of Nevada's Agency for Nuclear Projects. "There's just too much political and economic incentive for the DOE to approve this site no matter what the actual conditions might be." While the state does have veto power should Yucca Mountain be sanctioned, Congress can override that veto—a move that few Nevada residents doubt would occur.

FORTY DRIVING MILES from Yucca Mountain, Beatty, Nevada, is the nearest town to the potential dumpsite with anything approaching a residential identity. (A few years back, after a big gold mine opened down the road, the population doubled to 1,800.) It is the kind of vest-pocket desert community where retired couples from Michigan park their RVs for the night, or for the winter. Beatty, which bills itself as The Gateway to Death Valley, is on average one of the drier hamlets on the continent, but I visited on a soggy, blowing, cloud-covered day.

I stopped at the DOE's local public-information office, where I pocketed a couple of free Yucca Mountain Project keyrings and some imprinted pens ("I'm Smart About Nuclear Energy"). I also picked up ten pounds of official DOE newsletters, briefing papers, backgrounders, flow charts, and overview documents, and surveyed the 6,300-page *Yucca Mountain Site Characterization Plan*.

Beyond the Stagecoach Hotel and Casino, beyond the Burro Inn and Casino, beyond the Exchange Club Casino, I stopped at a Chevron station, one of the very few Beatty businesses without a slot machine. The man who pumped my gas was contemptuous when I asked about Yucca Mountain. Didn't I understand that the dump would border the Nevada Test Site, where scientists have been exploding atomic bombs for four decades? "Just 18 miles over that hill, you stick your head in the ground, you're dead in ten seconds. What difference does it make? It's already 53-million-years polluted."

"THEY THINK IF YOU'RE GOING TO PUT THE DUMPSITE NEXT TO A CITY, YOU MIGHT AS WELL PUT IT NEXT TO A CITY LIKE LAS VEGAS, WHERE EVERYBODY LIVES IN CASINOS AND NOBODY GOES TO SCHOOL."

However hyperbolic, this mix of resignation and macho recklessness did not surprise me. Around Beatty and Amargosa Valley, a one-saloon settlement down the road ("Home of Yucca Mountain, Champagne Air, and Million-Dollar Sunsets"), there is some sentiment toward accepting the dump and mining the brief prosperity it might provide. But most Nevadans—75 percent at last count—are repulsed by the idea. A more characteristic response was the one I got from a secretary in the governor's press office when I called to set up an interview. "Can I tell him what this is about?" she asked. And then, on hearing my answer: "Yucca Mountain? Oh, *yuck!*"

Governor Bob Miller is one of several Nevada politicians who've been washed into high office by a rising river of anti-dump populism. He is a lean, high-rise Democrat who wears cowboy boots to work and occasionally plays celebrity basketball. "There's a national misconception that this entire state is a wasteland and good for nothing but dumping," he told me in his quarter-acre office in the silver-domed statehouse. To date Miller has enjoyed plenty of peer support for this position: Not one statewide politician has come out for the project. Who would dare, with so many voters against it?

Last fall, in an attempt to blunt the opposition, the American Nuclear Energy Council (ANEC), an industry trade association, launched the Nevada Initiative, a $9-million campaign to convince Nevadans that the dump would prove an innocuous neighbor. Early TV spots

lectured on radiation science: In one, a pitchman displayed a simulated fuel pellet to the camera and explained that nuclear fuel was a solid, not a liquid, and so "could not leak." In another, nuclear-waste transportation casks on speeding trucks and trains survived seemingly devastating crashes.

But the ads, if styled to be reassuring, were widely greeted with ridicule —especially after the industry's campaign plan was leaked to the media. Bristling with militaristic jargon, the initiative proposed establishing a "political beachhead" and providing "air cover" for politicians who wished to switch to a pro-repository position. It told of industry PR flacks training DOE researchers to act as a "scientific truth response team" to refute opposition criticism.

To Nevadans, who like to suppose themselves sophisticated about matters of chance, perhaps the biggest insult in the industry scheme was the implication that they could be suckered. The initiative spoke of creating a "sense of inevitability" about Yucca Mountain, which to many Nevadans meant that the industry intended to talk them into the dump whether they liked it or not.

John Ralston, a political columnist for the Las Vegas *Review-Journal*, the state's largest newspaper, calls the release of the Nevada Initiative memo "the most devastating thing to happen to ANEC since they came to the state. No longer could they claim to be benevolent truth-disseminators. Their campaign was revealed to be a calculated plan to make people think that the dump is coming in order to speed the process along."

Soon ANEC's commercials were being broadly lampooned by Ken Johnson and Jim Tofte, disk jockeys on Las Vegas radio station KKLZ. Every new pro-dump ad provoked a Johnson and Tofte satire. In one send-up an industry spokesman explained that "nuclear waste couldn't possibly hurt

WASTED IN AMERICA

IF AND WHEN the dump at Yucca Mountain opens, it will house spent fuel assemblies from civilian nuclear-power reactors. This high-level radioactive waste represents only one percent of the nation's waste by volume, but it accounts for 95 percent of that waste's radioactivity. Irradiated fuel is currently stored in cooling ponds adjacent to nuclear reactors; at some plants, it is later shifted to shielded dry casks on site.

As progress toward a permanent high-level repository falters, the Department of Energy (DOE) is pushing for one or more monitored retrievable storage (MRS) facilities—aboveground, temporary storage bunkers. Congress has authorized a special nuclear-waste negotiator to tempt states and Native American reservations into hosting such dumps; $100,000 grants are being offered simply to study the possibility, and "benefits" as high as $10 million have been mentioned. Many environmentalists oppose MRS facilities, fearing that they will inevitably become permanent.

Somewhat deceptively named, low-level radioactive waste is defined as neither high-level (e.g., from fuel rods), nor mill tailings from uranium mining, nor transuranic waste (which contains radioactive elements with a higher atomic number than uranium) above a certain concentration. Nuclear-power plants are the major nondefense source of low-level waste, with smaller fractions coming from industrial and medical sources. Most low-level waste takes the form of contaminated clothing, tools, laboratory animals and the like. Under current law, individual states are responsible for the disposal of their own low-level waste, and are charged with establishing state or regional dumps. In many parts of the country, the siting of low-level dumps is proving as contentious as the struggle at Yucca Mountain.

But all levels of nuclear waste are generated by the defense industry and the DOE in the production of nuclear weapons. Some high-level defense waste may eventually end up at Yucca Mountain. The DOE hopes to start burying transuranic defense waste in underground salt caverns at its Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. For years the DOE insisted that WIPP was an experimental facility and therefore exempt from environmental oversight. More recently, the project has been opposed by many New Mexicans concerned about the site's safety and about the transportation of waste over the state's roads.

To date the House Interior Committee has blocked the opening of WIPP by refusing to transfer the land from the Bureau of Land Management to the DOE until more rigid environmental safeguards are in place. In the meantime, defense waste is stored at DOE laboratories and bomb factories throughout the nation.—***W.P.***

you, even if you sprinkled it on your cereal." ("I like their ads better than ours," industry executive Rodney Smith said at a recent nuclear-power conference. "In terms of public opinion, I think they touch the right political buttons.")

In a series of TV ads for a local auto dealership, Johnson and Tofte dressed as a two-headed Yucca Mountain miner in a single voluminous pair of overalls. In this guise they urged viewers to "double your automotive value" at Fletcher Jones Mazda/Mitsubishi. Of the miner's two heads (the deformity, they noted, was due to Yucca Mountain water), one preferred Mazdas and the other Mitsubishis. Worth noting is that the auto dealership is owned by the family of Jan Laverty Jones, the mayor of Las Vegas.

Whatever the real danger from a nuclear dump, Mayor Jones told me in her glass-walled office ten stories above the carnival neon of the downtown casino district, even the perception of risk might divert Las Vegas' much-courted tourists to less worrisome locales. "All it would take," she says, "is one incident."

Las Vegas (population 799,000) is among the fastest-growing cities in the country, with a rapidly diversifying economy. Even the resort business is adding wholesome, Disneyesque entertainments to its rolling dice and shimmying dancers. But Jones believes that most Americans, especially easterners, do not understand that Vegas is neither Sodom nor Gomorrah. "There's a perception that we deserve this nuclear waste dump," she says. "They think if you're going to put it next to a city, you might as well put it next to a city like Las Vegas, where everybody lives in casinos and nobody goes to school."

THE YUCCA MOUNTAIN Project Office occupies an airy storefront across the street from one of Las Vegas' trendier malls. A couple of workspaces are tucked into the back with a conference room and a small library, but the bulk of the office is dedicated to snazzy public persuasion. Centrally displayed are three nearly life-size cardboard cutouts of happy workers with hard-hats or clipboards, along with a label bragging of the employment created by Yucca Mountain —"an important resource for Nevada." Other exhibits include a scale-model waste repository, an interactive nuke-knowledge computer quiz, a facsimile nuclear-fuel assembly (columnar complexes of slender metal tubes containing uranium-oxide pellets), technicolor charts and maps, and a full-size mock-up of a subterranean repository chamber, complete with recorded narration and an in-one-side-and-out-the-other elevator that traps the visitor momentarily and shakes and rumbles in imitation of descent.

I depart from this office-cum-museum-cum-amusement park one overcast morning for Yucca Mountain in a DOE van accompanied by no fewer than three officials. I have been assigned a press escort, of course—a reserved, broad-shouldered man named Darwin Morgan—as well as Tom Bjerstedt, a Ph.D. geologist wearing a blue Yucca Mountain baseball cap, and an enthusiastic young environmental scientist named Greg Fasano, who carries a sheaf of notes on things I need to know.

NO AMOUNT OF REASSURANCE ON SPECIFIC SCIENTIFIC QUESTIONS RELIEVES THE STATE'S LARGER SUSPICION THAT THE RESEARCH HAS BEEN DESIGNED NOT TO STUDY THE SITE, BUT TO CONFIRM IT.

We slice north across creosote-brush flats, up the four-lane highway that shrinks to two lanes precisely at Mercury, entry village and *de facto* capital of the Nevada Test Site. From here on the roads we will take do not appear on over-the-counter maps.

Some miles beyond the test site's guarded entry gate, past Skull Mountain and across scrub-scabbed Jackass Flat, we arrive at a cluster of buildings, the largest of which looks like the headquarters of a small computer firm or other suburban business. In these formerly abandoned buildings, where in the 1960s and '70s government scientists tinkered with nuclear-powered rockets, the DOE is assembling its on-site Yucca Mountain team. The mountain itself lies several miles beyond, and comes at us like a wall until the road finds a climbable grade and we ascend to the summit.

To the north, the landscape gradually accumulates into higher country. Here, between 8 and 16 million years ago, magma rising through Earth's crust exploded into hot glass shards and crystals. Some of this outflow migrated south and was compressed into a type of rock known as "welded tuff." From atop the Yucca Crest, the formation of tuff into which the DOE hopes to quarry its dump lies 1,000 feet down—more beneath the mountain than within it.

We zip our jackets against the breeze and watch laggard clouds smother the higher hills. Tom Bjerstedt has brought along an aerial photo, and he holds it up now for a lecture, doubling the surrounding landscape against his knees. It is Bjerstedt's job to convince me that the violence evident around us—the cinder cones on Crater Flat, the fault that formed Solitario Canyon, the black volcanic Swiss-cheese rock beneath our feet—is but distant and

Continued on page 89

MARKING DEEP TIME

THE IMMINENT ARRIVAL of subterranean nuclear-waste dumps has raised questions about exactly what such a dump should look like on the surface. How should we mark the site? In what languages should we warn future peoples of a 10,000-year danger? What can we assume about the rise and fall of cultures and knowledge? Will our far-off descendants even know what radioactivity is? Will the symbols that mean sickness and death to us mean sickness and death to those who inhabit Earth in the year 9992?

Weighty questions, to be sure. But not too weighty for the Department of Energy, which recently commissioned two studies in pursuit of some answers. For the first study, Sandia National Laboratory assembled four groups consisting of sociologists, physicists, geographers, environmental lawyers, and futurists (all with reputations as "far-out thinkers," as one Sandia official put it), and asked them to predict what society might be like millennia hence. The predictions of these "futures panels" were then passed to two "markers panels"—linguists, astronomers, anthropologists, architects, materials scientists, and communications experts. They were asked how warnings might be displayed at the Waste Isolation Pilot Plant, near Carlsbad, New Mexico.

The reports are in, and it seems that some panelists had as much fun as one can have doing government work. The futures panels came up with an exorbitant array of scenarios, stopping just short of a Klingon invasion. (Intentional intrusions into the dump by Earthlings or extraterrestrials were specifically outside the panels' purview.) One possibility was that in the year 2091 a feminist mining company might ignore the warning signs as "another example of inadequate, inferior, and muddled masculine thinking"; another was that in the year 11991 a disorienting virus might attack computerized construction workers, causing them to burst into the vault.

What to do, given that language is ephemeral? A symbol such as a skull and crossbones might not survive a profound cultural break—or orthopedic mutations. Monuments crumble, and inscriptions weather to unreadability within a few thousand years. Graphic warnings might be interpreted as art, and carted off to museums for display.

Redundancy is the answer, the marker experts suggest: multiple warnings in multiple languages at multiple levels of complexity, in multiple locations on and under the surface. Cartoon-like pictographs might hold their meaning longest, and could show people getting sick after digging in the dump. Cartoons might also tell the story of how the dump was filled, using diagrams of evolving astronomical constellations to establish a timeline for future generations. Maps and icons could be used to locate the waste site in relation to other repositories around the world.

A few of the proposed markers might send Christo hustling for a DOE commission. How about a landscape of towering thorns, or a forest of protruding spikes? One plan, called "Menacing Earthworks," would erect a stupendous perimeter of earthen monuments shaped like lightning bolts. Another, "Black Hole," would cover the site with a spreading pavement of ebony granite.

Some panelists scoff at such excess. "If you put any of those out there, people will flock to the place like they do to Stonehenge," says Martin Pasqualetti, an Arizona State University geographer and futures panelist. Pasqualetti admits that any marking system will be based largely on guesswork. "Humans have gotten pretty good at looking into deep space," he says, "but we are really no good at looking into deep time. We couldn't predict the fall of the Berlin Wall two months in advance, and I can't predict what my own daughter's going to do from one minute to the next. Who the hell knows what's going to happen?"—*W.P.*

A GRIZZLY'S PLACE

by Geoffrey O'Gara

It is early spring in Wyoming's Absaroka Mountains. Broken Toe has been up and around for a few weeks now. He ambles down from his rocky den into the mixed forest at the foot of Ramshorn Peak, following his memory map to whitebark-pinecone caches and his nose to the coyote-ripped carcass of an elk buried under snow sometime last December.

The warm sun, having melted all but a few snowbanks, glints on his cinnamon fur, which slides over his big haunches and rippling fat. Some grizzly bears emerge in spring thin and lustreless, but Broken Toe is a hefty, healthy 600 pounds, and his movements grow quicker and more impatient as his great passion—food—takes hold.

JEFF VANUGA

Broken Toe's stomping grounds, beneath Ramshorn Peak in the Du Noir Valley.

He is assaulted by smells carried on a breeze that riffles the tree limbs and grasses in the foothills above the Du Noir Valley. During Broken Toe's 20 years of life, his range has extended from the meadows and trout-rich streams of Yellowstone National Park's high backcountry to these slopes on adjacent national-forest lands below the crooked peaks of the Absarokas. Now he emerges from a forest thick with deadfall to search an open, south-facing slope for a clump of biscuit-root.

With the cliffs of Coffin Butte on one side and the roads and fences that mark the bounds of civilization on the other, Broken Toe ambles through a band of forested foothills at the upper end of the Du Noir, a narrow corridor for migratory wildlife such as grizzlies and elk.

At twilight, Broken Toe wanders out of the trees into a grassy draw, keeping his profile below the exposed flanks of the valley. He rises on his hind legs and sniffs hopefully for fondly remembered odors—coffee grounds and grease and rotting vegetables. The smell this year is

The Forest Service is heralding a bear boomlet. But the agency, in its obsession with counting grizzlies, may have forgotten to defend their homes.

ERWIN & PEGGY BAUER

Although grizzlies now make their living amid granite peaks and along tree-lined streams, their fate may depend on what happens around long conference tables beneath fluorescent lights.

different, though equally enticing: a dead horse, north of where the garbage used to be. The Diamond G—the outermost ranch in the valley—has closed its dump, but someone who understands grizzlies knew Broken Toe would be coming back. The bear finds a young sow grizzly already on the carcass, but when she hears him whoofing she runs, trotting sideways and dropping her head and shoulder in clumsy servility. (More and more often, Broken Toe is running into other, younger grizzlies in his range.)

His ruff standing, Broken Toe takes a few halfhearted steps after the fleeing sow, then stops to sniff. She is only three years old, not yet in estrus. He ventures toward the old dump, within view of the ranch, hearing the plaintive lowing of the cattle and seeing a light-colored shirt moving among the buildings below. This is familiar—for the last two years humans have been at the Diamond G in March, and they have left him alone. Griz that he is, he remembers and adjusts. He follows the tantalizing odor of decaying horseflesh, finds the carcass, paws and probes, and starts his meal.

Jon Robinette, the foreman of the Diamond G, sees Broken Toe at twilight. He knows the bear: During the past two years, grizzly tracks have sometimes appeared in the mud between the barn and the cabin where Robinette lives. He stood by last year as biologists from the Wyoming Game and Fish Department trapped and drugged Broken Toe and pulled one of his teeth; Robinette's kids admired the softness of the tuft of fur that he brought back to their cabin.

Robinette is trying to get used to Broken Toe's official designation: Bear 34. The bear has a number for a name because he's been trapped by the Interagency Grizzly Bear Study Team, a brigade of federal and state bear biologists that has been radio-collaring and studying grizzlies in Yellowstone since 1975. His relatively low number indicates that Broken Toe was caught early in the program—back in 1978 near Brooks Lake, about ten miles west of the Diamond G.

Robinette, stubble-bearded and sunburned during the calving season, says bears visit the ranch often in the spring, but he has yet to lose a calf. Strategically placed carrion lowers bears' interest in livestock, and Robinette—who keeps a spotting scope by the kitchen table trained on the northern pasture—goes out at night to shoo off uninvited visitors. In May, ranch life gets a little easier: There's less midnight midwifery, and the grizzlies move to the west along Wolf Creek, where the elk are calving.

The Diamond G's owner, Steve Gordon, is a recent New York refugee, and surprisingly tolerant of the grizzlies in his new neighborhood, abjuring the tradition of "shoot, shovel, and shut up" that some ranchers follow when they feel their livestock is threatened. Gordon, who wasn't told of the grizzlies when he bought the Diamond G, admits that bears scare him, but he's trying to put up with them. "If you live at the end of the road, you have sympathy for the bears," he says. "From the other direction, this is *their* end of the road."

His foreman knows by sight or track about 20 other grizzlies that have shown up in the last few years. The

Bear Country

Seven places in the Lower 48 where biologists say Ursus arctos horribilis may still have a chance.

North Cascades Region: An estimated 10 to 15 grizzlies have about 6 million acres of habitat available west of the Columbia River along the Canadian border, including North Cascades National Park. (Another 6 million acres of contiguous habitat lie north of the border.) As many as 400 grizzlies could be sustained here, according to a report recently completed for the Interagency Grizzly Bear Committee.

Selkirk Mountains: About 35 bears inhabit a 1.3-million-acre recovery area at the southern end of the Selkirks.

Cabinet Mountains-Yaak Valley: Some 20 bears have survived on 1.6 million acres in northwest Montana and Idaho, ranging from the Cabinet Mountains and the Yaak Valley up to the Canadian border.

Northern Divide Region: Between 400 and 600 bears occupy 6.2 million acres of this recovery zone, which encompasses the Bob Marshall Wilderness and Glacier National Park.

Selway-Bitterroot Region: There is no confirmed bear population in this 3.4-million-acre potential recovery area, which includes the Selway-Bitterroot Wilderness. A recent study estimates 200 to 400 grizzlies could be supported here.

Yellowstone Region: A minimum of 228 grizzlies roam 6.1 million acres within the official recovery area, which includes Yellowstone and Grand Teton national parks and areas within six national forests.

San Juan Mountains: In 1979, an old grizzly sow was found (and killed) here in southwestern Colorado. Though no study has been undertaken, the San Juans are now included as a potential recovery area. There are no confirmed grizzlies, but some evidence of their presence exists.

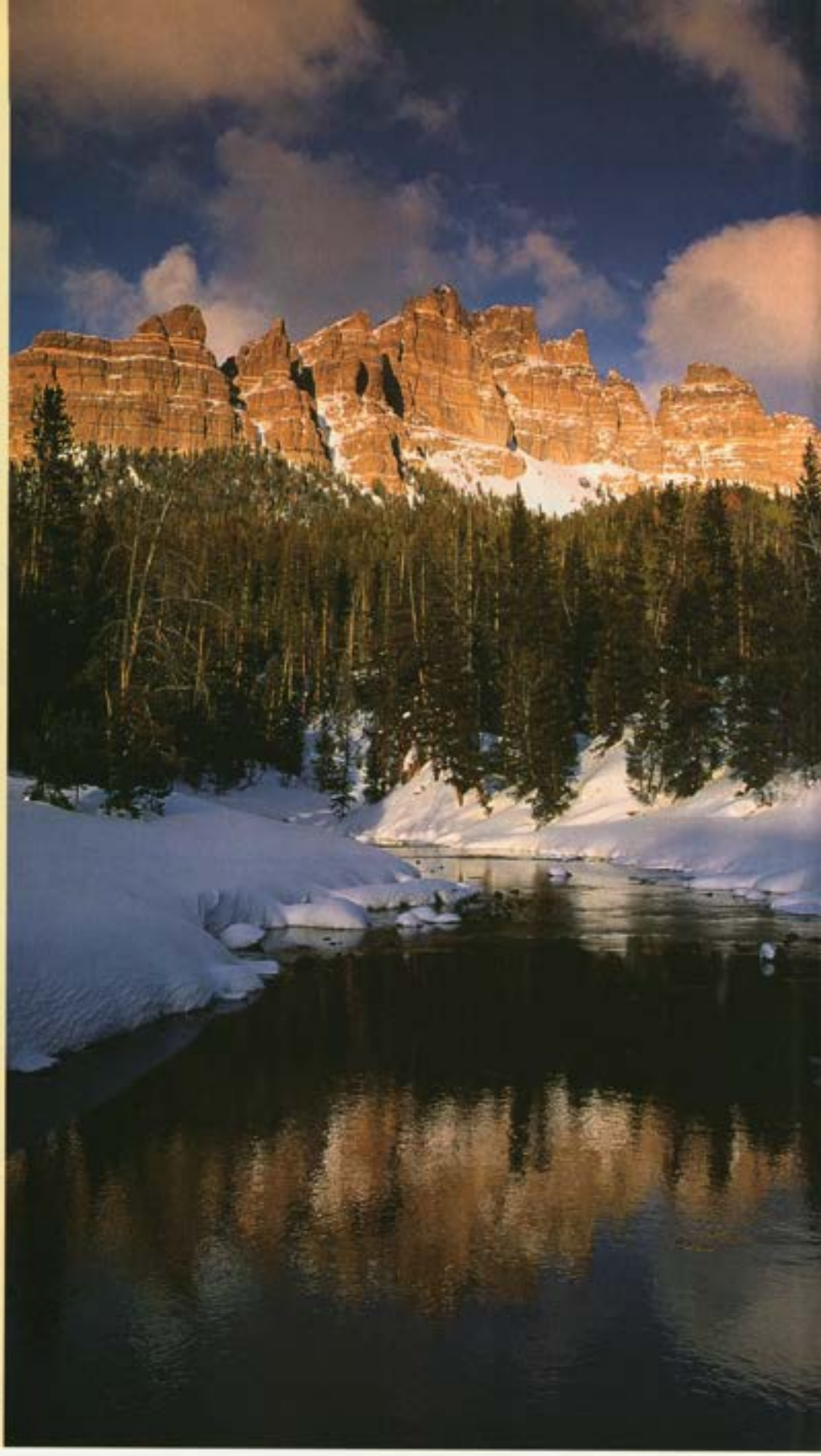
MAP BY WARD SCHUMAKER

Brooks Lake Creek and the Pinnacles

Peaceful as this Wyoming scene may appear, it lies in the path of a gathering storm. The Brooks Lake area provides important habitat for grizzly bears, yet the Bush administration wants to lease much of it for oil and gas development.

The Sierra Club has challenged the decision in an administrative appeal, as have the nearby city of Dubois, several Native American tribes, local businessmen, and other conservation groups. Locals have scorned the plan, which a recent Forest Service study reveals would sacrifice $1.3 million in tourist income while adding only $105,000 to federal coffers. Conservationists consider oil and gas leasing yet another form of bear torment.

Shoshone National Forest officials have tried to quell the storm by saying leasing won't occur until an environmental-impact statement is complete. Preliminary drafts of that document indicate, however, that the agency intends to stick to its drill rigs.



JEFF VANUGA

IN SPITE OF

THE FACT IT'S

SMALLER,

IT'S ACTUALLY

BIGGER.

INTRODUCIN

We've been wondering...If minivans are so big on the outside, then why are they so small on the inside? Wouldn't it be nice if you could have things the other way around? We thought so. That's why the new mid-sized Volkswagen EuroVan is the best of both worlds. A spacious 201 cubic foot interior that's bigger than any minivan on the market today–even the extended ones; yet EuroVan is only two inches longer than the Honda Accord so it's easy to drive. Inside, there's 54 inches from floor to ceiling.

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Take your motorcycle to the mountains. Or your mountain bikes to the bike path. And if you're afraid to drive a van, fear not. The front-wheel drive EuroVan is easy to drive. There are big windows and mirrors so it's easy to see. And a narrow turning circle so it's easy to park. Still not convinced? Check

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out a Porsche 911. Both have front torsion-bars and four-wheel independent suspension. (Of course, EuroVan is no sportscar, but it does have Fahrvergnügen.™)

And since most families have more than one car, we made more than one EuroVan. (Optimism?) There's the CL, the GL (pictured below), and the unique MV. (See next page.) So why not bring your family to see ours? The first time you step into our little EuroVan, you'll be amazed

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at how big it is. Promise. For an entertaining (and free) video brochure, call 1-800-444-8987. Save money and see Europe. Ask about overseas delivery.

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What about the kids? EuroVan MV with the optional Weekender package has a "pop-top" that sleeps two more happy campers. There's also a tidy fridge to keep things cool. And sliding windows and screens to keep the weekend breezy and bug-free. *EuroVan MV. The next best thing to longer weekends.*

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concentration of bears in the valley is one of many signs that the Yellowstone grizzly population—placed on the "threatened" list under the Endangered Species Act in 1975—is making a comeback. Its numbers are up from a low of fewer than 200 grizzlies in the 1970s to more than 228 today. Human-caused mortalities—at least the ones we know about—were down from nine in 1990 to zero in 1991.

So after decades of hand-wringing about the dwindling numbers of Yellowstone grizzlies, cautious optimism is in vogue. There has even been talk about allowing limited hunting, or taking the bears off the threatened list. "They're back!" trumpeted then-regional Forest Service chief Gary Cargill at a meeting in Denver last winter.

But biologists who have spent their careers in the field studying the bears, and whose monitoring forms the basis for those recent upbeat pronouncements, are not so optimistic. They note that a succession of good food years has buoyed the bear population, but a relentless assault on habitat continues. "Optimism for the Yellowstone bear is not warranted," says Dave Mattson, one of the region's premier bear biologists. "Nothing in the past years has changed that. Nothing at all." He cites a 1989 study produced by Montana State University that concludes: "The Yellowstone grizzly population is doomed to extinction."

So much for optimism.

DAVE MATTSON IS THINKING BEYOND this beautiful little valley, thinking long-term and large-scale. He has studied habitat in the Du Noir Valley, where Bear 34 and his ursine compatriots may soon have to find their way around new timber cuts and exploratory oil rigs. He also follows bears on the west side of Yellowstone, where intensive clearcutting, geothermal development, and a ski resort have been proposed over the years; and to the north, where large mining ventures for gold and platinum threaten to bring both roads and people. Mattson puts it simply: "Access and human activity always equal harm to the grizzly bear."

LEONARD LEE RUE III / FPG INTERNATIONAL

"The monstrous beast" in a small and vulnerable stage, just ten days after birth.

The balance between human activity and grizzly survival has been tilting away from the latter since members of the Lewis and Clark expedition first began shooting "the monstrous beast" in 1805. The aggressiveness of the North American bear—possibly an adaptation to the unprotected openness of the plains—has been its undoing. The grizzly population in the contiguous 48 states has dropped from an estimated 50,000 when Lewis and Clark trekked west to fewer than 1,000 today. Some 30,000 bears persist in Alaska, and more than 15,000 in Canada, but in the Lower 48 the once-widespread griz has been confined to a few small pockets of habitat centered around parks and wilderness areas in the northern Rockies.

Although grizzlies now make their living amid granite peaks and along tree-lined streams, their fate may depend on what happens around long conference tables beneath fluorescent lights. After nearly 200 years of grizzly decline, federal and state bear biologists are now well into a large-scale effort to study and rebuild viable populations of the bears. In the 1970s, researchers Frank and John Craighead

Continued on page 80

"If you live at the end of the road, you have sympathy for the bears," Gordon says. "From the other direction, this is *their* end of the road."

Nikon
We take the world's greatest pictures.

There was something odd happening the other day on Hollywood Boulevard. This will not come as news to many of you.

In addition to fourteen robed cultists selling roses and a tour bus from Tupelo, Mississippi (all carrying maps to the stars' homes), a gentleman was seen traveling at 15 mph wearing half a pair of pants and holding a curious electronic device.

It was Gary Hush, on skates, carrying the Nikon N6006, participating in what many call just another day in Southern California.

How, well, *normal* it all must have seemed.

Mr. Hush is a photo student and crack roller skater from the Art Center College of Design in Pasadena.

He was using the Nikon N6006 because it is a very sophisticated SLR that also happens to be easy to use. Mr. Hush, you see, is averse to slamming into parked cars or robed fanatics while fiddling with *f*-stops and shutter speeds.

Neither forgive. Unlike the N6006.

The N6006: autofocusing, built-in fill-flash, interchangeable Nikkor lenses. Fun like a toy, but not one. Call 1-800-NIKON-35 for a free booklet.

Because, you see, if you ever feel you are doing something wrong, you simply push two buttons and the camera will revert to totally automatic.

It autofocuses quickly and accurately in light as dim as a single candle, using a focusing sensor similar to the one in the professional Nikon F4S.

You control the N6006 with a multi-button keypad and a command dial next to your thumb.

It has Spot Metering, Center-Weighted Metering, and Nikon's exclusive Matrix Metering, which can react instantly to rapidly changing light or fast action.

1/15 of a second of fame

—*by*—

Gary Hush, student

Look out! Man with a cane ahead!

Got him.

There's even a built-in flash with 28mm coverage, and a guide number of 43 at ISO 100. Mr. Hush brightened his lovely legs (and aren't we *all* glad he did) by powering up the flash one stop. He also adjusted exposure compensation on the camera minus 1.3 stops to retain sidewalk detail.

To create the sense of motion, he invoked a feature called Rear Curtain Synchronization, which, well, basically creates a blur behind a moving subject by firing the flash just before the shutter closes.

See the N6006 at authorized dealers where you see this symbol. For more information on the exclusive Nikon MasterCard, call 1-800-NIKON-35.

Gary Hush. Full-time student. Part-time skater. Immortalized on Hollywood Blvd. by the Nikon N6006.

The N6006 also has the legendary mounting system we invented thirty years ago, so you can use nearly every Nikkor lens made since 1977, including more than twenty autofocus Nikkors. A Nikkor lens is a very exacting instrument made with our own glass and our own coatings.

They are the same lenses carried by nearly seven out of ten professional photographers who use 35mm. You will find them, and Nikon cameras, on the scene of elections, coups, riots, and all sorts of events that pop up on the front pages of newspapers and magazines all over the country.

The N6006, however, is the Nikon we highly recommend when your mind is on photography and your body is on something else.

Like vacation. Or safari. Or skates.

Look out! TV mom at one o'clock!

Got her.

See?

VIEWP

THE WINNERS OF SIERRA'S 1992 PHOTO CONTEST

It happens every spring. Shortly after the call for entries is sounded, the packages start to arrive at our office, first in ones and twos, then by the dozens. We log in thousands of photographs; a screening judge spends weeks culling potential prizewinners. Then, in early June, the judges pass a long day squinting at the semifinalists, agreeing on the winners as evening draws nigh. There remains the presentation to you of the fruits of this labor—the final step in a long sequence of events that began far from here when 14 photographers each saw something memorable through a viewfinder, and responded perfectly. ❖ Thanks go to our judges: William Neill, Geoffrey Hiller, Christine Alicino, and Robert Dawson. To our sponsors: Nikon, Bausch & Lomb, and Buck Knives. To Tracy Baxter and Ann Neet, for coordinating our 13th annual contest. And to the 2,000 *Sierra* readers who made it happen—this spring, as always.

OINTS

SECOND PLACE
Bodies of Water
[Color]
MIKE McCALLUM
Freedom, California

❖

Shoreline
Mono Lake, California
(LEFT)

GRAND PRIZE
BRUCE JACKSON
Bend, Oregon

❖

Sea Anemones at Low Tide
Bandon Beach, Oregon
(ABOVE)

FIRST PLACE
Foothills to Mountaintops
[Color]
EDGAR CALLAERT
Mill Valley, California

❖

Falls, Mt. Tamalpais
California
(LEFT)

SECOND PLACE
Foothills to Mountaintops
[Color]
RICHARD SLACK
Ventura, California

❖

Tehachapi Mountains
California
(BELOW)

SECOND PLACE
Abstracts and Patterns
[Color]
JERRY L. WHALEY
Sevierville, Tennessee

❖

Turk's Cap Lily
Great Smoky Mountains National Park

FIRST PLACE
Abstracts and Patterns
[Color]
DAN B. MONAKIL
Los Angeles, California

❖

Peacock
(ABOVE)

FIRST PLACE
Bodies of Water
[Color]
BOB YOUNG
Gillette, Wyoming

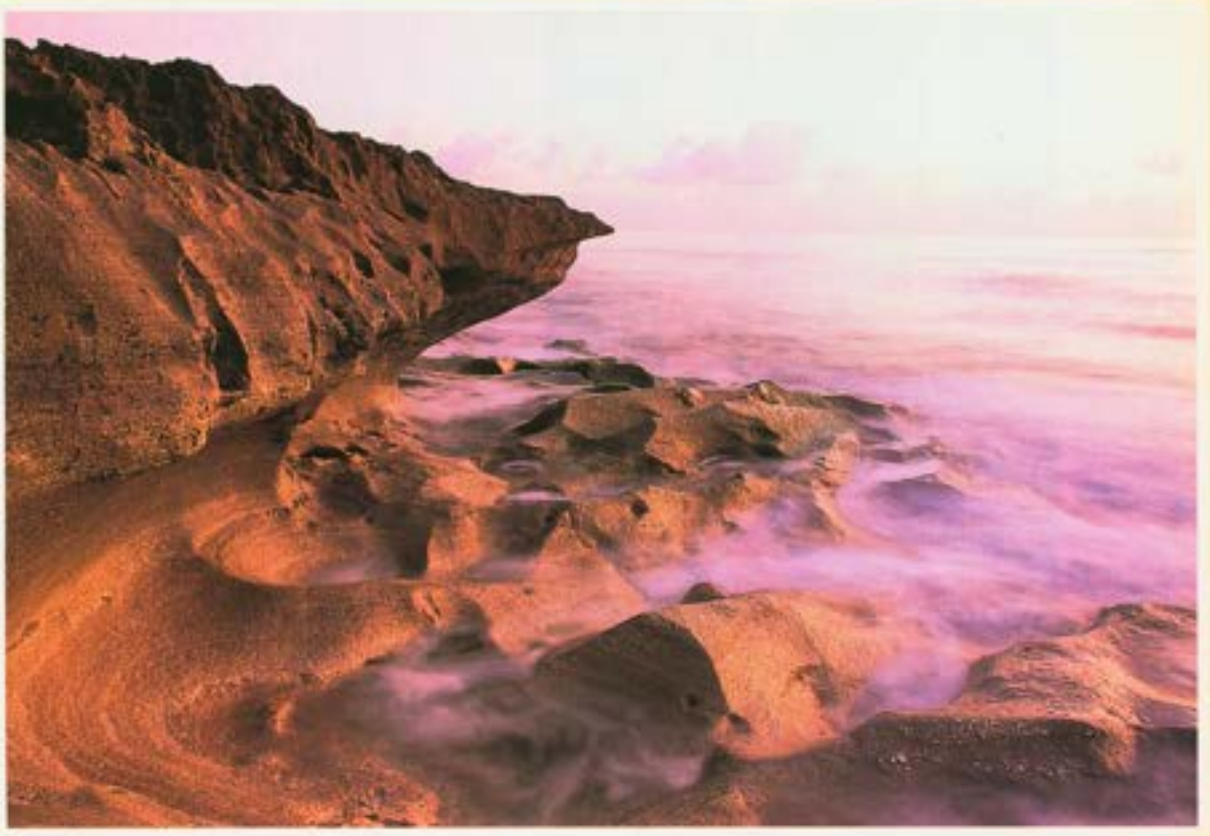
❖

Anastasia Limestone Formation
Blowing Rocks, Florida
(TOP, RIGHT)

HONORABLE MENTION
LEE F. BARNES
Seattle, Washington

❖

King Penguin Colony
Falkland Islands
(BOTTOM, RIGHT)



SECOND PLACE
Foothills to Mountaintops
[Black and White]
JOHN HENNESSY
Shingle Springs, California

❖

Aspens
Eastern Sierra Nevada
(LEFT)

FIRST PLACE
Foothills to Mountaintops
[Black and White]
SARAH MAYHEW
Davis, California

❖

Beech Trees
Martha's Vineyard, Massachusetts
(BELOW)

FIRST PLACE
Bodies of Water
[Black and White]
JOANN SEASTROM
Chicago, Illinois

❖

Seagulls on a Frozen Lagoon
Chicago, Illinois
(ABOVE)

FIRST PLACE
Abstracts and Patterns
[Black and White]
MARK W. ATWOOD
Herndon, Virginia

❖

Elephant's Ears and Ferns
Monteverde Cloud Forest,
Costa Rica
(RIGHT)

SECOND PLACE
Desert, Plain, and Prairie
[Color]
LORI KICELUK
Thunder Bay, Ontario

❖

Namibian Desert
Southwest Africa

FIRST PLACE
Desert, Plain, and Prairie
[Color]
DAVE SCHIEFELBEIN
Seattle, Washington

❖

Painted Hills
John Day Fossil Beds National
Monument, Oregon


EPA

IN NAME ONLY

Want to help protect the environment? At the ENVIRONMENTAL PROTECTION AGENCY, where polluters write the rules, that's considered a bad career move.

by WILLIAM SANJOUR

Illustration by Gene Greif

FOR THE PAST 20 YEARS I have worked for the Environmental Protection Agency. There I have had to choose between being a "good soldier" and obeying orders or being a "good citizen" and obeying the law. I have not, I'm afraid, been a very good soldier. When I came to the then-new agency, I hoped to do something useful and constructive. In 1974 I was made a branch chief of the Hazardous Waste Management Division. The studies I supervised there played an important part in the passage of the Resource Conservation and Recovery Act (RCRA) of 1976, the first federal law regulating toxic waste. I was also in charge of drafting rules for the treatment, storage, and disposal of hazardous materials. In its preoccupation with inflation, however, the Carter administration in 1978 took steps to protect industry by removing the teeth from those regulations. At first I fought from the inside to preserve the true spirit of the legislation. As a result, in 1979 I was transferred to another position, with no duties and no staff. I became an outspoken EPA critic—a whistleblower—and have been one ever since. In that role I spend much of my spare time meeting with grassroots environmental groups. Their members frequently ask me why the Environmental Protection Agency does not seem particularly interested in protecting the environment. The question usually comes from people who are dealing directly with the EPA for the first time, ordinary citizens with ordinary political views and lifestyles who suddenly find themselves living close to a hazardous-waste facility, incinerator, or nuclear-waste dump. These are people who started out with a strong faith in their country and its institutions, who had always thought of the EPA as the guys in white hats who put the bad polluters in jail. "If there were anything wrong

with it," they say, "the government wouldn't let them do it."

To their surprise, these folks find that the EPA officials, rather than being their allies, are at best indifferent and often antagonistic. They find that the EPA views *them*, and not the polluters, as the enemy. Citizens who thought that the resources of the government would be at their disposal find instead that they have to hire their own experts to gather data on the health and environmental impacts of proposed facilities, while the government sits on the same information—collected at public expense. And if these folks want to go to court, they have to run bake sales to hire attorneys to go up against government lawyers whose salaries are paid by the taxpayer.

TO UNDERSTAND WHY the Environmental Protection Agency is the way it is, you have to start at the top, and since the EPA is part of the executive branch, that means the White House. The president (any president, regardless of party) and his immediate staff have an agenda of about a half-dozen issues with which they are most concerned. These are usually national security, foreign affairs, the economy, the budget, and maybe one or two others: Call them Class-A priorities. All others—housing, education, transportation, the environment—are in Class B.

The president expects performance in Class A. He will expect the military to be able to deploy forces anywhere in the world when an emergency arises—and if it isn't, he will bang heads until it is. If Congress doesn't support his budget, he will call the budget director into his office and pound his fist on the table. But can you picture the president bringing the secretary of transportation into the Oval Office and yelling because of poor bus service in Sheboygan? Or summoning the administrator of the Environmental Protection Agency in and chewing him out for pollution in the Cuyahoga River? I can't. The president expects performance in Class A; in Class B he expects only peace and quiet.

But regulatory agencies, by their very nature, can do little that doesn't adversely affect business, especially big and influential business, and this disturbs the president's repose. The EPA, for instance, cannot write regulations governing the petroleum industry without the oil companies going to the White House screaming "energy crisis!" If it tries to control dioxin emissions, *The New York Times* (whose paper mill in Canada has been sued for dumping dioxin into the Kapuskasing, Mattagami, and Moose rivers) writes nasty editorials. If it tries to enforce the Clean Air Act, polluters run to Vice-President Quayle's Council on Competitiveness for "regulatory relief." Agency employees soon learn that drafting and implementing rules for environmental protection means making enemies of powerful and influential people. They learn to be "team players," an ethic that permeates the entire agency without ever being transmitted through written or even oral instructions. People who like to get things done, who need to see concrete results for their efforts, don't last long. They don't necessarily get fired, but they don't advance either; their responsibilities are transferred to others, and they often leave the agency in disgust. The people who get ahead are those clever ones with a talent for procrastination, obfuscation, and coming up with superficially plausible reasons for accomplishing nothing.

No one in the EPA is ever sent to jail, or loses his job, or suffers any career setback for failing to do what the law requires.

For example, the EPA used to grant billions of dollars for the construction of local sewage-treatment plants. These plants generated a sludge that the EPA recommended for use as a fertilizer. In 1974 I pointed out to my managers that there was considerable evidence from Department of Agriculture studies that some municipal sewer sludge contained poisons that could be transmitted to people when it was used as fertilizer. I proposed regulations to control the problem. This notion was very unpopular with the burgeoning sewage-plant-construction industry and its promoters within the EPA. The responsibility for this issue was taken out of my hands and transferred to a committee, which studied sludge regulation for a year and did nothing other than recommend further study. For this they all received medals and cash bonuses as "outstanding performers."

In the past 18 years this story has been repeated many times. Hundreds of people in the EPA have advanced their careers—and spent tens of millions of dollars—by busily drawing up work plans, attending meetings, making proposals, writing reports, giving briefings, conducting studies, and accomplishing nothing. Today the problem of how to regulate sewage sludge has still not been resolved.

At this point you may protest that the EPA *has* written many regulations, that it has in fact reduced pollution in many areas, cleaned up Superfund sites, and collected millions of dollars in fines from polluters, some of whom have even been sent to jail. Yet in most cases the agency had to be coerced into meaningful action. More often than not, the EPA actually *opposes* the passage of tough environmental laws, and organizations like the Sierra Club have to sue in federal court just to make the agency do what it is funded for and is legally required to accomplish. For ex-

Continued on page 95

EPA's Revolving Door

A partial list of federal officials who found subsequent employment in the waste-management industry.

NAME / GOVERNMENT POSITION	INDUSTRY POSITION
WILLIAM RUCKELSHAUS / EPA Administrator 1971–73	Director of Weyerhaeuser, Monsanto, and other companies with severe environmental problems
DOUGLAS COSTLE / EPA Administrator 1977–81	Chairman of Metcalf & Eddy, hazardous-waste consultants and Superfund contractor
WALTER BARBER / Acting EPA Administrator 1981	Vice-president of Chemical Waste Management, the country's largest hazardous-waste-management company—and a subsidiary of Waste Management, Inc.
WILLIAM RUCKELSHAUS / EPA Administrator 1983–85	CEO of Browning-Ferris, Inc., the country's second-largest nonhazardous-waste-management company
LEE THOMAS / EPA Administrator 1985–89	CEO of Law Environmental, hazardous-waste consultants and Superfund contractor
ALVIN ALM / Deputy EPA Administrator	Senior vice-president of SAIC, Superfund contractor and major EPA contractor
JOAN Z. BERNSTEIN / EPA General Counsel	Vice-president of Chemical Waste Management
CHRISTOPHER BECK / EPA Assistant Administrator for Hazardous Waste	Chairman and CEO of Air & Water Technologies, hazardous-waste consultants and Superfund contractor
FRANK MOORE / Chief legislative liaison for President Carter	Vice-president of Waste Management, Inc.
RITA LAVELLE / EPA Assistant Administrator for Solid Waste and Emergency Response (sent to prison for perjury)	Consultant to hazardous-waste-management industry
JACK RAVAN / EPA Regional Administrator in Atlanta	President of Rollins Environmental Services, the country's second-largest hazardous-waste-management company
JACK SCHRAMM / EPA Regional Administrator in Philadelphia	Director of government affairs in Waste Management, Inc.'s Washington office
ANGUS MACBETH / Deputy Assistant Attorney General for Environmental Affairs in the Justice Department	Attorney representing Chemical Waste Management
JAMES RANGE / On staff of Senate Environment and Public Works Committee; helped write hazardous-waste laws	Vice-president of Waste Management, Inc.
MARCIA WILLIAMS / Director, EPA Office of Solid Waste	Washington representative for Browning-Ferris, Inc.
JAMES SANDERSON / Advisor to EPA Administrator Anne Gorsuch	Attorney representing Chemical Waste Management (held both positions simultaneously)
GARY DIETRICH / Director, EPA Office of Solid Waste	Vice-president of consulting firm that writes permit applications and does other consulting work for Waste Management, Inc.
BRIAN MOLLOY / EPA enforcement attorney who helped write hazardous-waste-management regulations	Attorney representing Chemical Waste Management
SUSAN VOGT / EPA Deputy Assistant Administrator for Pesticides and Toxic Substances	Washington representative for Law Environmental
RICHARD FORTUNA / Congressional legislative aide, helped write hazardous-waste laws	Director and lobbyist for the Hazardous Waste Treatment Council, which represents most large hazardous-waste-management firms
JEFF MILLER / Head of EPA hazardous-waste enforcement task force	Attorney representing Chemical Waste Management

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A Grizzly's Place

Continued from page 55

attacked bear-management policies in Yellowstone, sounding an alarm that local grizzlies numbered fewer than 200 and would soon disappear. The media have played the numbers game ever since, headlining biologists' estimates of bear populations like a nurse monitoring blood pressure.

Former regional forest chief Cargill feels that he and the other federal and state officials who have worked on the Interagency Grizzly Bear Committee have succeeded in revitalizing the griz in the Yellowstone area. But the biologist in charge of writing a government "recovery plan" for the bear is wary: "I'm concerned about losing the wind behind the sails," says Chris Servheen of the U.S. Fish and Wildlife Service. "People think, 'Well, it's not a crisis anymore, we'll go on to something else.'"

Louisa Willcox of the Greater Yellowstone Coalition suspects that some members of the Interagency Committee are looking over their shoulders at Washington. With the always controversial Endangered Species Act up for renewal, she thinks there's a tendency to puff up successes while downplaying the seriousness of habitat losses. "The grizzly program is *not* a success story," says Willcox. "We've gotten some problems under control, like garbage and public education, but that's the easy stuff. The hard stuff is meaningful habitat protection."

Forming a kind of shadow government to the Interagency Committee are the conservation groups: the Sierra Club and The Wilderness Society, as well as the Greater Yellowstone Coalition and other local organizations. These groups produce their own scientific analyses, watchdog land managers, and show up at meetings for bureaucratic wrangling. Other interests, including the energy, mining, and logging industries and their boosters in such groups as the Mountain States Legal Foundation, hammer at the more commodity-oriented missions

of agencies like the Forest Service.

From this pressure cooker has come the latest draft "recovery plan," designed to secure stable, genetically diverse populations of grizzlies in the Lower 48. The first plan was published in 1982; the new one was written by Servheen, under the guidance of the Interagency Committee. Offered for public comment in July, the latest plan is a mutty mix of science and politics. It identifies the habitat supposedly most necessary for the grizzly's recovery, calling it Situation 1, identifies less vital areas as Situation 2, and so on down the scale to Situation 5. In Situation 1, the bear's needs come first; in Situation 5, where grizzlies "do not occur, or occur only rarely," decisions can be made without worrying about the bears. The problem is "the lines were drawn primarily on a political basis," according to Colin Gillin, Wyoming's chief grizzly biologist. Bear 34 is no politician, and he rather likes the Situation 5 country in the Du Noir Valley.

On the west side of Bear 34's stomping grounds, Shoshone National Forest officials want to let oil companies explore in the area north of Brooks Lake, a pinnacle-rimmed opal west of the Du Noir, where Bear 34 first wandered into a trap. The possibility of a maze of roads and oil rigs in this hunting and fishing lode near the historic Brooks Lake Lodge outrages many locals in nearby Dubois, where the economy shifted to tourism after dwindling timber supplies closed a Louisiana-Pacific sawmill in 1987.

In the middle of Bear 34's range in the Brent Creek area of the Du Noir Valley, the Forest Service has proposed several timber sales in a 31,000-acre area penetrated by a road upgraded in the late 1980s. At the time, officials said the primary reason for the upgrade was recreation.

The land to be logged was not a grizzly hot spot—or so officials thought in 1982, when the first recovery document was concocted. But the grizzlies didn't read the plan. In the last four years, 12 different grizzlies have been trapped in the proposed timber sales, and many more have been seen. Biologists say it's excellent habitat, with denning sites and plenty of bears.

"We recognize that there are a lot of bears out there," says Forest Service silviculturist Dave Pieper, who believes that proper precautions have been taken despite the area's lack of official recognition. These include closing peripheral roads, spacing the sales chronologically, cutting selectively, and restricting hunting. But past experiences make conservationists wary. West of the Diamond G, the ridge by Wolf Creek is bare except for a few burnt trunks—sloppy slash left after the last timber sale in the valley caught fire in an elk calving area.

Bob Hitchcock, a Forest Service biologist whose job was to balance the needs of timber and wildlife in the Shoshone, quit last winter because he didn't feel his bosses were meeting the bears' needs. "They've logged this forest so hard, the only places left are those that for good reason were not touched. They need to take a breather—30 to 40 years of no cutting."

Take a breather? The political reality is that forest plans include ambitious timber targets. The huge Yellowstone fires in 1988 cut deep into the timber base on the northern end of the Shoshone. And the southern district has chronically fallen short of its own timber goals.

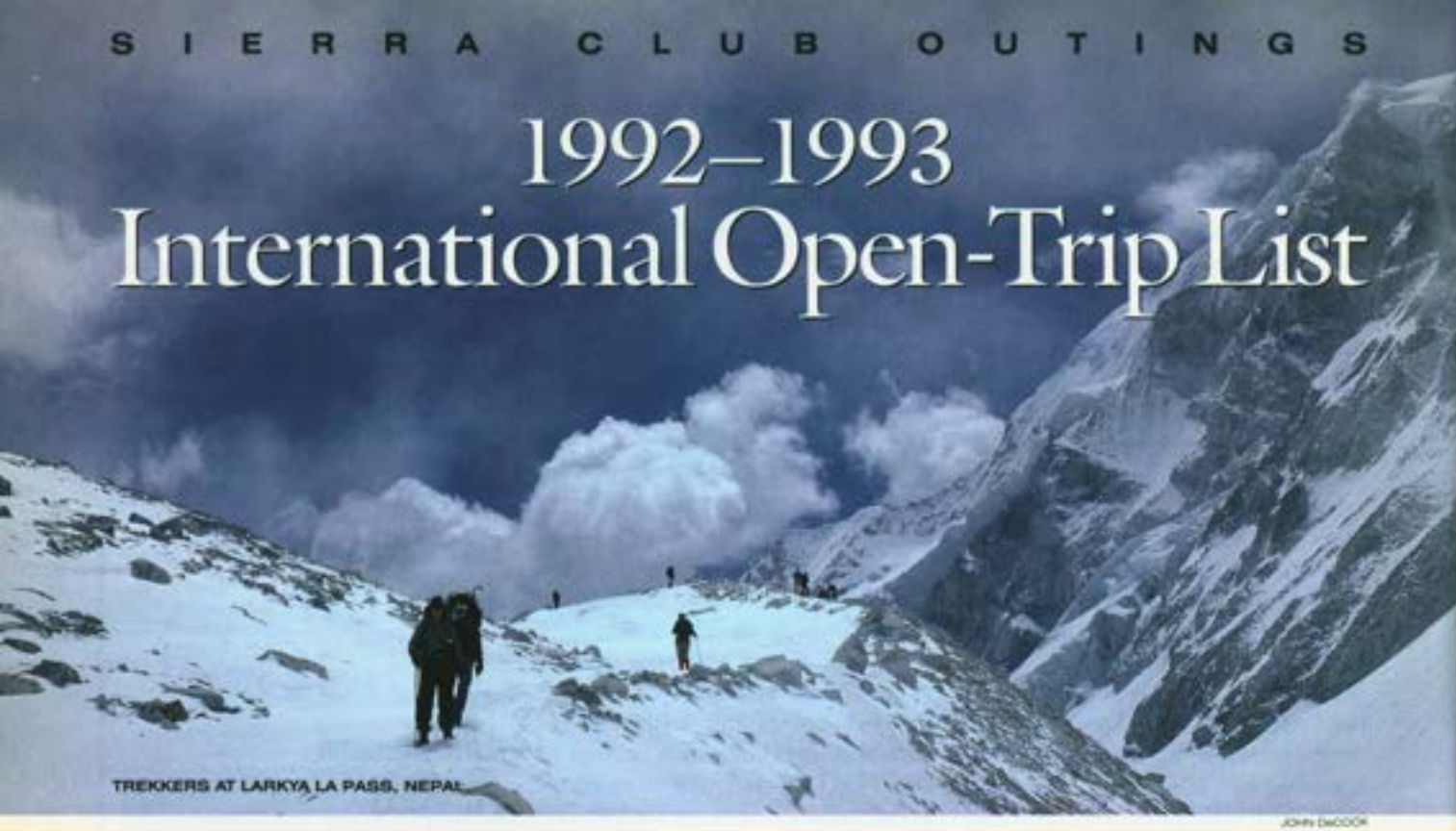
Shoshone Forest supervisor Barry Davis insists there is no pressure to cut in the Du Noir: "I don't have to log there. In my career I've never been pressured to do a sale."

Bob Hitchcock remains distrustful: "The timber system is archaic, and it's so complicated that no one can understand it. There's a reason for that: So they can meet their commodity needs without anybody being able to understand how. Then they claim they have good science—which is crap."

When agency officials *do* have good science, they often don't heed its warnings. They know that logging removes the habitat where squirrels cache whitebark-pine nuts, a key element in the Yellowstone grizzly's diet in recent

Continued on page 84

1992–1993 International Open-Trip List



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92665	Southern Dolpo: Pokhara to Jumla, Nepal	Oct. 5–Nov. 7	2855/3130	200	Cheryl Parkins
92675	Annapurna Sanctuary and Royal Chitwan Park Jungle Safari, Nepal	Nov. 11–Dec. 3	2170/2420	200	Laurie-Ann Barbour
93700	Lamjung Holiday Trek, Nepal	Dec. 21, 1992–Jan. 3, 1993	1490/1680	200	Peter Owens
93703	Xishuangbanna and Hong Kong Too, China	Dec. 22, 1992–Jan. 3, 1993	2060/2305	200	Phil Gowing & Ruth Dyche
LATIN AMERICA					
92678	Holidays in Belize, Central America	Dec. 20–28	1855/2095	200	Mary O'Connor
92680	A Holiday Adventure: Rio de Janeiro and the Rainforests of Brazil	Dec. 20–31	2850/3125	200	Gail Solomon

1993 OUTINGS

AFRICA					
93770	Tanzania Wildlife Safari	June 19–July 3	3880/4155	200	Ruth Dyche
93805	Victoria Falls, Okavango Delta, and Wildlife Parks of Zimbabwe and Botswana	July 24–Aug. 7	4550/4825	200	Mary O'Connor
ASIA					
93720	Gorkha Chitwan Trek, Nepal	Feb. 22–Mar. 12	1860/2085	200	Peter Owens
93740	Tilicho Lake-Annapurna Circuit Trek, Nepal	May 3–30	2430/2675	200	Frances Colgan

Trip Number		Dates	Trip Fee (including deposit)	Deposit Per Person	Leader
93765	A Hiking and Bus Tour of Central Asia, China and Russia	June 18–July 7	2235/2480	200	Jerry Clegg
93780	Mustang: The Forbidden Kingdom, Nepal	June 20–July 16	3075/3350	200	David Horsley
93830	Throne Room of the Thunder Dragon, Bhutan	Oct. 3–26	5090/5370	200	John & Jane Edginton
93845	Rolwaling Himal, Nepal	Nov. 22–Dec. 14	2110/2335	200	Peter Owens
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93705	Winter in Austria: Cross-Country Skiing	Jan. 23–Feb. 6	2575/2850	200	Carol Dienger
93745	A Leisurely Tour of Picturesque Portugal	May 9–23	2795/3075	200	Ray Simpson
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93760	Walking the Dingle Peninsula, Ireland	June 13–19	1465/1685	200	Lou Wilkinson
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years, yet logging continues.

Biologist Dave Mattson warns that the succession of good nut crops since the 1988 fires is highly unusual; one or two good crops every six years is more typical. The lesson, repeated by biologists all through the region, is not to mistake short-term success for long-term recovery. One bad food year and the bear population could be on the brink again.

"We don't maintain a culture which allows us to live with another clever and predatory species," writes Doug Peacock in his book *The Grizzly Years*.

Despite the Rube Goldberg nature of government management programs, they represent the urge of elements within our culture to correct the intolerance. Whether that urge is stronger than competing appetites in the grizzly's last redoubts remains to be seen.

Jon Robinette looks out the big window of his cabin at a panoramic view of the Absaroka Mountains. He points toward one of Bear 34's favorite routes, through a row of cottonwoods to a stream where elk calves often drown and Broken Toe "cleans them up for us." Also in view is about half a million dollars' worth of Steve Gordon's livestock. For the last couple of years, cattle, humans, and grizzlies seem to have found a delicate balance.

"When you live up here," Gordon says, "you have to adjust." Barry Davis would argue that loggers are adjusting, too. But cutting timber and drilling for oil will subtract habitat and add people —a losing equation for Bear 34.

"You can say maybe that one timber sale isn't detrimental because it's only a small cut," says Robinette. "But it's like starting with a big lawn and mowing one thin strip around the outside every year. Just a small strip.

"Eventually, no lawn." ■

Geoffrey O'Gara *is working on a book about Wyoming's Wind River Valley for Knopf. He co-produces* Main Street, Wyoming *for public television.*

►***For more information, see "Resources," p. 110.***

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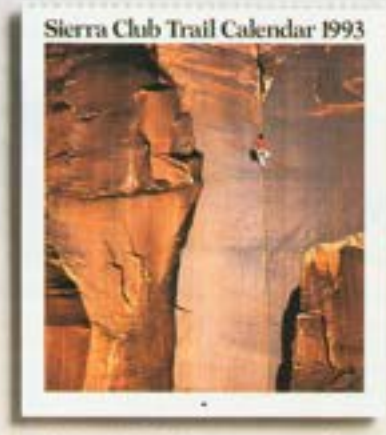

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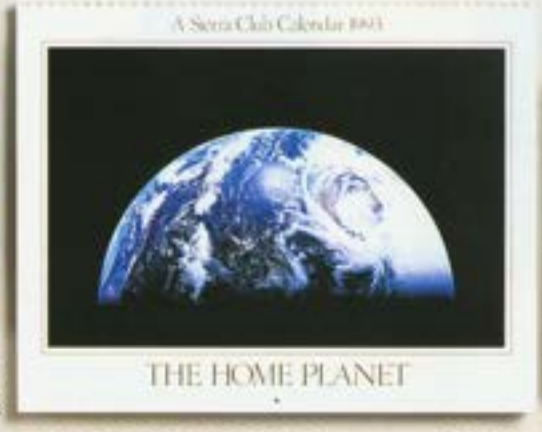

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YUCCA MOUNTAIN

Continued from page 54

untroublesome history. The state has demanded that the Yucca Mountain site be disqualified because of its volcanic and unstable heritage. Last June an earthquake registering 5.6 on the Richter scale caused a reported $1 million damage to the DOE field operations buildings. Could not tension gradually accumulate along any of the area's 32 earthquake faults, leading to some disastrous future slip?

According to Bjerstedt, these worries betray a misunderstanding of geologic history and process. Most of the earthquake faults haven't moved in hundreds of thousands of years, he says, and even though a nearby volcanic cone may be only 20,000 years old, a new eruption probably wouldn't disturb the waste vault. "All the volcanoes are out in the valleys," he notes, "not on the mountaintops."

Even a solid shaking wouldn't hurt anything, Bjerstedt insists, since the rock around the repository would probably remain intact. Surface buildings, where waste would be prepared for burial, would be built to withstand the largest earthquake that might be expected. He is full of reassurances. "We have to educate people in geology," he says. "We have to help them understand geologic processes and the enormity of geologic time."

According to DOE guidelines, the radioactivity would have to be isolated from the environment for 10,000 years —about twice the length of recorded human history. The waste-fuel assemblies would be locked into metal canisters and deposited in the rock, one canister per hole, like the larvae of some outsize high-tech insect. The canisters might last 500 or 1,000 years —the numbers are only guesses. It is the rock itself, 1,100 feet thick, that would be expected to contain the demon's brew: strontium 90, cesium 137, and, far less abundantly, plutonium, which remains toxic for hundreds of thousands of years.

The most likely way for radioactive poisons to escape to the environment would be through water. One of the reasons Yucca Mountain attracted DOE investigators as far back as the late 1970s was the extraordinary depth of the water table—about 1,000 feet below the potential repository. Subsequent soil measurements have shown that little of the region's six inches of annual rain percolates to dump level.

But climates change, critics point out. Who can guarantee that the desert will not be sprouting forests in 10,000 years? To that question, and to most scientific objections, the DOE gives its standard reply: "We want to study that."

In fact, many of Yucca Mountain's 1,100 scientists and technicians are preoccupied with water, as I learn when we leave the mountain and I am taken to meet Lorraine Flint in the project's hydrology lab. Flint, a friendly soil physicist in her 30s, has been with the project for six years and is one of 200 scientists on site. She is the only one in this lab today. "Where's everyone else?" I ask her, surveying the deserted room. "It's been raining," she says. "Everybody's out in the field."

Flint shows off meteorological charts and punches up bright graphs on her computers. Groundwater movement, historical weather cycles, and infiltration (how deep the water goes after how much rain) are all included in the hydrology research. Scientists are also studying how the waste's considerable heat will affect the hydrology and chemistry of the surrounding rock. Flint presents samples of tuff, fine-grained and a lovely reddish brown where they have been polished smooth by the lab's rock-cutting saws.

In 1987, DOE geologist Jerry Szymanski launched what has become the project's most virulent scientific controversy—and not surprisingly, it also centered on water. Szymanski suggested that the dump might swamp from *below* if earthquakes compressed flooded fissures in underlying rock. Radioactivity might then flow southwest to springs in Death Valley Na-

tional Monument. In the worst case, water might surge into the superheated vault, flash into steam and decapitate the mountain in a Chernobyl-like disaster, a scenario Tom Bjerstedt calls "absurd."

Szymanski's theory is one of the most puzzled-over geologic scenarios of the last few years. In December 1991 a panel of five scientists delivered a split decision; two panelists chosen by Szymanski found for his theories, three others found against. Then, last April, a 17-member panel selected by the National Research Council unanimously dismissed Szymanski's concerns in a 240-page report.

But no amount of reassurance on specific scientific questions relieves the state's larger suspicion that the research at Yucca Mountain is fixed, that the project's characterization plan has been designed not to study the site, but to confirm it. "They selectively interpret the data and they construct the program so that the data they collect prove their point," says Bob Loux.

"If the state would recommend what tests they'd like us to do, we'd probably do them," responds Carl Gertz, the DOE's Yucca Mountain project manager. "If at any time we find conditions that would make the site unsafe, we're out of here."

The DOE's credibility, however, is subverted by its four-decade history of obfuscation over clandestine pollution at the nation's nuclear labs and weapons factories. And because the DOE is also a nuclear cheerleader, promoting and developing new technologies, critics suspect that it is illicitly allied with the industry—a suspicion sharpened by the Nevada Initiative revelation that industry PR flacks were coaching Yucca Mountain scientists.

Public uneasiness with the DOE's record is one reason Congress built so much oversight into the Yucca Mountain study. The Nuclear Regulatory Commission, which has to license the repository, regularly reviews the DOE's progress, as does the National Academy of Sciences and a Nuclear Waste Technical Review Board appointed by the president. "One of my biggest challenges," Gertz says, "is when people say, 'You messed up before. How can we trust you?' My answer is, 'Don't trust me. Trust the oversight.'"

Gertz admits there is no 100-percent guarantee when predicting events 10,000 years into the future. The enabling legislation, he notes, calls only for "reasonable assurance" by "scientific consensus" that radiation will not escape into the environment over ten millennia. "What's reasonable assurance to you may not be reasonable assurance to me," Gertz says. "And what exactly is scientific consensus? Is it 51–49? Is it 80–20? Is it 99–1?"

If the characterization proceeds, the meaning of "reasonable" and "consensus" may ultimately be up to NRC licensers, and may be tested further in court. Scientists at Yucca Mountain document every step of every experiment for future review. Every specimen must be logged as to origin and handling—this in the wake of an embarrassing lapse a few years back in which drill-core samples were so loosely documented as to be useless in certifying the work.

But if shifting forces eventually disrupt the Yucca Mountain project, they are more likely to be political than scientific. Tensions have been accumulating along the nation's nuclear-waste fault for more than 40 years.

IT WAS NOT SUPPOSED to be this way. Nuclear technology was to have redeemed its horrific birth through peaceful electrical generation. Nuclear power "too cheap to meter" was to have spurred boundless development and human progress. In those optimistic early decades it was easy to ignore the paradox that nuclear fuel grows progressively more radioactive—even as its usable energy is consumed.

At one time or another scientists have proposed blasting radioactive waste into space, or burying it in Antarctic ice or the deep-sea floor. In the United States and most other nuclear nations, deep geologic burial evolved into the solution of choice for high-level radioactive waste. But while U.S.

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legislators approved the notion in principle, their usually dependable enthusiasm for federal projects decayed dramatically when the project in question was a nuclear dump—despite broad hints of benefits Congress might tender.

In 1982, after years of not-in-my-backyard political wrangling, Congress passed the Nuclear Waste Policy Act, a delicately balanced compromise that almost immediately began to teeter. Under the act, multiple sites would be studied and two would be selected for characterization, one in the East and another in the West. Many eastern study sites were to be in granite formations, similar to those under scrutiny in some European countries. Unfortunately for Nevada, the distribution of granite in the United States parallels the distribution of people—and of political power.

When the eastern search was finally abandoned in 1986, Nevadans began to quip that you didn't have to be a nuclear physicist to predict what would happen next. One of the remaining sites, at Hanford, Washington, was all but on the banks of the Columbia River. The second, in Texas, was beneath the Oglala Aquifer, the nation's largest, and in the home state of both the then-vice-president and the speaker of the House of Representatives.

Finally, in 1987 Congress passed what is known locally as the Screw Nevada Bill, terminating all investigations except the one at Yucca Mountain. Despite the site's manifest uncertainties—its history of geologic turbulence; its potential, as a world-class mineral district, for being quarried by unsuspecting future miners; its unlikely location, thousands of miles from 90 percent of the nation's 110 nuclear-power plants—Congress was persuaded by one simple fact: With fewer than a million people and but four legislative representatives, Nevada was the weakest kid on the block. "It was the shabbiest, sleaziest political maneuver I've ever seen," says former governor Grant Sawyer, now chairman of the state's Commission of Nuclear Projects.

But five years later, the same polls that trace Nevadans' opposition to Yucca Mountain reveal a creeping sense of inevitability. "If they want to build it, they're going to build it," the man behind the desk in a Carson City motel told me. This wearing down of the popular resistance, according to the Nevada Initiative, is one of the nuclear industry's goals.

At the same time, the DOE is working to crash through Nevada's objections and propel the characterization forward. In that effort the agency has allies in Congress, which recently passed legislation that strips Nevada of its authority to oversee environmental permits. With Szymanski's theory discarded and the state's objections overruled, the site study proceeds apace.

Though their legal challenges have been exhausted, the state of Nevada and many environmentalists are now calling for an extended time-out at Yucca Mountain. According to the General Accounting Office, the industry could store its wastes for at least another century in pools or above-ground casks at nuclear reactors. In that time, the industry might regain the trust of the people, laying the groundwork for a siting program based more on geology and less on political oomph. Waste-disposal technologies more predictable than deep geologic burial might be developed. One political step would be to strip the process from the DOE and establish a truly independent agency, as both the U.S. Office of Technology Assessment and the National Research Council's Board of Radioactive Waste Management have suggested.

Fifty years into the nuclear age, no country has begun permanent geologic disposal of its high-level radioactive waste. Still, nuclear advocates have proposed doubling the number of U.S. nuclear plants over the next 40 years—a vision supported by Congress, which recently "streamlined" nuclear-power-plant licensing by removing opportunities for public review after a facility has been constructed. With 200 plants, the nation would need to site a Yucca Mountain–size dump every decade, would have to persuade a new populace that the repository is safe, that science had ruled in its selection, and that humans could reasonably predict nature tens of thousands of years into the future.

SOUTHEAST OF Yucca Mountain now, as we dash back over Jackass Flat toward the guarded gate at Mercury, the DOE's Greg Fasano launches into a soliloquy on the intricate environmental safeguards built into this characterization program: air-quality monitoring stations and water-sampling wells and dust-suppression and animal-survey grids; Fasano shuffles through his list. We all understand, myself and my DOE minders, that he has been sent along specifically for this performance, and we listen quietly until he's done.

Then there is silence again until Fasano asks me if I have reached any conclusions from my day. Do I understand how hard they're trying? Can I see that science does rule this process, whatever has gone on before? "What I seize on as a geologist," Tom Bjerstedt contributes, "is that however we got here, a lot of us believe this site is worth further study."

I sit with this for a while. Then I tell them that it may not matter—that the project's political foundation has been so corrupted, the public mood so hostile, that it may not be able to survive. Alternately, the momentum of the DOE and the nuclear industry may be too great for Nevadans to reverse. In either case, the decision will be informed as much by politics as by science.

"But we're only doing what Congress asked us to do," Darwin Morgan shoots back, and I can hear in this the fraying edge of his public-relations composure.

"All I'm saying is that it may not matter," I reply. "The science may no longer matter at all." ■

WILLIAM POOLE *is a freelance writer in San Francisco.*

►*For more information, see "Resources," p. 110.*

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Continued from page 76

ample, when I was writing guidelines for the government's procurement of recycled materials, I was told that a proposed regulation would not even be considered for the administrator's signature unless there was a court-ordered deadline. With my encouragement, several organizations sued the EPA in order to get the regulations out.

On another occasion I was in charge of writing regulations for the management of hazardous-waste landfills, which RCRA required to be issued in 1977. When Gary Dietrich, my boss, gave orders delaying the process, I warned him that we would miss the legal deadline. He laughed. "Nobody ever got thrown into jail for missing a deadline," he said.

He was right. I was taken off the job. Again I contacted an environmental organization, which sued the EPA. The court imposed another deadline. The EPA missed that one, and the judge set another. They missed that one too, and many, many more, but nobody was sent to jail for defying the court's orders or for not implementing the law. On the contrary, many were well rewarded. Meanwhile, the public was exposed to poisons leaking out of countless unregulated hazardous-waste dumps. Dietrich later left the agency to be a consultant for Waste Management, Inc.

(This leads us to what I call Dietrich's Law: "No one in the EPA is ever sent to jail, or loses his job, or suffers any career setback for failing to do what the law requires." And the corollary: "Many people ruin their careers in the EPA by trying to do what the law demands.")

The landfill regulations were finally issued in 1982, five years after they were due. They were riddled with loopholes, such as the final say given to politically appointed regional administrators in setting safety levels of toxic materials. Even so, the press hailed the EPA's heroic achievement—although the bloom quickly faded. After hearing testimony from me and many others, Congress was convinced that the regulations were too weak, and passed a new law in 1984 requiring tougher standards. This time it added a "hammer" provision: If the EPA missed the deadline, then all the wastes from a long list of chemicals would be banned from landfills. For the first time I can recall for regulations of this magnitude, the EPA met its deadlines. Why? Because in this case, hazardous-waste firms would have been hurt if the rules weren't issued. The EPA is simply more concerned with protecting the industries it is supposed to regulate than in protecting the public interest.

DOES THIS MEAN that the EPA has cynically abandoned the environment for the sake of the powerful hazardous-waste lobby? Actually, most people in the agency sincerely equate the waste-management industry with protection of the environment, and see the indus-

try's opponents as anti-environmental NIMBYs. They forget, however, that commercial hazardous-waste management is primarily a business, and as such it aims to maximize income and minimize costs. Income is produced by taking in wastes through the gate; waste is money, and the more the better. Costs are incurred by treating the waste so that it won't poison people and the environment. Obviously, these goals are diametrically opposed to what should be those of the EPA: to reduce the production of hazardous wastes and to maximize protection of human health and the environment.

The EPA's confusion on this matter is well illustrated in the case of the world's largest hazardous-waste incinerator, now under construction in East Liverpool, Ohio, an already heavily polluted area surrounded by homes and schools and subject to frequent thermal inversions. (Behind the project is a consortium of investors put together by Arkansas billionaire Jackson Stephens, a golfing partner of Dan Quayle and contributor of hundreds of thousands of dollars to George Bush's presidential campaigns.) Local citizens found that the permit originally issued by the EPA was full of irregularities and outright violations of the law. Thus, when the incinerator operator asked for a permit modification to install a spray dryer (a device many technical experts felt was unsafe), the permit would ordinarily have had to be issued again, not just modified.

However, given the public mood, this was likely to result in long delays, if not revocation of the permit. The incinerator operator told the Ohio EPA that he couldn't "risk any appeals." The Ohio EPA agreed, saying that "if there is a way to authorize this change without a formal permit change, we should try to do so." William Muno, acting director of the EPA's waste-management division in Chicago, followed his instincts: At a meeting with congressional staffers on November 12, 1991, he said that he would not order a permit change because the EPA "had to treat our constituents [i.e., the incinerator operators] in a fair and

equitable manner."

(Influence peddling in this arena does not stop with the EPA. The executives and lobbyists of the waste-management companies are in constant touch with the White House, members of Congress, state legislators, state environmental-protection agencies, the press, and national environmental organizations. The Audubon Society, the National Wildlife Federation, and the Conservation Foundation all have top executives of the waste-management industry on their boards.)

WASTE MANAGEMENT is the growth industry of the late 20th century. It has become very rich through its ability to control the regulators who are supposed to control it—and it shares this wealth with its benefactors. Government bureaucrats soon learn that, while crossing the industry can get them into a lot of trouble, cooperating with it has many rewards—high among these the hope of lucrative future employment. Indeed, rather than the environmental enthusiasts who flocked to the EPA in its early years, the agency is now full of careerists who view their jobs as stepping-stones to bigger and better things. Scores of federal and state employees have gone on to careers in the hazardous-waste industry (see "EPA's Revolving Door," page 77), including three out of the five EPA administrators. (Of the other two, one left the agency in disgrace and one was a millionaire already.)

No one is more closely associated with the revolving door at the EPA than William Ruckelshaus, appointed the agency's first administrator when it was created in 1970. When he left the EPA in 1973, Ruckelshaus became senior vice-president and director of Weyerhaeuser, the huge timber and paper company and target of many environmental groups. He served as EPA administrator a second time from 1983 to 1985. Between and after his two terms he was a director of several companies concerned with EPA regulations, including Monsanto, Cummins Engine Company (a diesel-engine manufacturer), Pacific Gas Transmission, and the American Paper Institute.

After his second stint at the agency, he formed a consulting firm called William D. Ruckelshaus Associates, which was then hired by the Coalition on Superfund, an organization seeking to weaken the Superfund law by absolving polluters of strict legal liability for their actions. The coalition included such Superfund polluters and their insurers as Monsanto, Occidental Petroleum, Alcoa, Dow Chemical, AT&T, du Pont, Union Carbide, Aetna Insurance, and Travelers Insurance. Assisting Ruckelshaus were Lee Thomas, his hand-picked successor as EPA administrator, and William Reilly, then head of the Conservation Foundation. (Ruckelshaus and Thomas helped fund Reilly's organization to produce studies in support of the coalition's position.)

Ruckelshaus went on to become CEO of Browning-Ferris, the second-largest waste-management company

in the United States, for a guaranteed minimum annual salary of $1 million. Browning-Ferris had a dreadful environmental record and had been hit with millions of dollars in fines. Ruckelshaus was supposed to clean up the company's reputation, but the appointment did more to tarnish his.

When George Bush ran for president in 1988, Ruckelshaus was his environmental advisor, and was able to install his protégé Reilly as EPA administrator, and former Ruckelshaus Associates vice-president Henry Habicht as deputy administrator. Thus the two top executives of the EPA were placed by the head of a company that is a major polluter, heavily regulated by the agency, responsible for many Superfund sites, and a contractor for EPA-funded Superfund cleanups.

People outside the agency often assume that the national environmental groups have a stronger influence within the EPA than does industry. The revolving door explains why this is not the case: Industry can offer EPA employees things that environmentalists cannot, especially high-paying jobs. It also offers generous contributions, over or under the table, to almost anybody who will take its money.

(Waste Management, Inc. has one of the largest political-action committees in the country; between 1987 and 1988 it contributed $430,000 to congressional candidates. Other examples of WMI's largess include flying a politician in a corporate jet to visit a WMI facility and giving him a cash gift of $10,000; giving a congressional staffer a $2,000 "honorarium" to visit a WMI facility; and paying an outright $3,000 bribe to a local commissioner in Florida.)

Environmental groups tend to regard the EPA as an institution, dealing with it through congressional committees, the courts, and top agency executives. Industry does the same, of course, but it also interacts with individual EPA employees at every level, working directly with the field inspectors and permit writers responsible for making particular decisions. When I was in charge of writing regulations I was the object of this courtship, showered with flattery, meals, trips, and hints of future employment. People who cooperate with industry also find that its lobbyists will work for their advancement with upper management. Those who don't cooperate find the lobbyists lobbying for their heads.

WHAT CAN BE DONE, then, to make the EPA serve the public interest? Appointing an energetic administrator and giving him or her a lot of money and authority will not work. If, as is usually the case, the president demands only peace and quiet, more funding and power will only make that easier to deliver. The head of the EPA will not be effective unless the president wants effectiveness. In my 20 years with the agency, that happy situation existed only under Richard Nixon during William Ruckelshaus' first term as administrator. Presidents Ford and Carter were too concerned with the economy, and paid only lip service to EPA regulations. Ronald

Reagan didn't even bother with lip service, appointing hooligans to run the agency. When Anne Gorsuch was finally forced to resign in March 1983 over her political manipulation of the Superfund program, Ruckelshaus was brought back as Mr. Clean; but his second administration was a flop. The man who had been so effective under Nixon was a dud under Reagan, which shows that the president is key to making the EPA work. Under George Bush, we have reverted to the days of lip service, with no real support. This is, I'm afraid, what scientists would call the EPA's "equilibrium state."

To achieve genuine reform, realism must replace idealism. We have to deal with what the EPA really is and what we know about it, rather than what we would like it to be. This will require narrowing the agency's discretionary power and transferring as much authority as possible into the hands of the public. Following are some suggestions to those ends:

Hammer Provisions. As we saw above, the secret of these blunt legislative instruments is their tacit recognition that the EPA works more diligently to protect the industries it regulates than to protect the public. Hammer provisions can also be used to enforce goals, which at present are meaningless, since nothing happens if they aren't met. But suppose the EPA administrator and other top political appointees were hired with the proviso that unless specific targets were met—a 10-percent reduction in hazardous-waste generation within a year, say—they would lose their jobs. Perhaps then the administrator would spend more time in achieving goals than in making speeches about them.

Liability. Civil-liability provisions are another great, unbureaucratic instrument for reform. Such provisions in Superfund actually did more to change the way industry handles its hazardous waste than any other act of Congress—and this came about almost by accident. Congress, as is often the case, was vague and ambiguous when it defined the liability of polluters for the damage and cleanup costs

of old dump sites. In interpreting that fuzzy language, however, the courts determined that liability is "strict." This means that no showing of fault is necessary to establish responsibility, little proof of the relationship between cause and effect is required, and each liable party is potentially responsible for the entire cleanup.

These provisions are so effective that industry and its insurance companies have spent millions trying to get rid of them. They would prefer that the funds for cleanup be pooled and paid out on a "no fault" basis. (There's nothing like strict liability to convert capitalists to socialism.) The fear of liability is a far greater incentive to industry to do the right thing than is fear of the EPA.

Regulations. The EPA is a wimpish regulator. Take the case of hazardous-waste incinerators. It makes no difference what you as a private citizen may see, feel, or smell coming out of the smokestack. Emissions could melt the paint off your house or force you to wear a gas mask, but that would have no bearing on the EPA's enforcement, which relies instead on data supplied by the incinerator operators. Ironically, agency officials often don't know how to interpret this data themselves, and have to depend on the company being investigated to do it for them.

Since little attention is paid to the content of the waste being burned, every now and then an incinerator explodes, as happened recently to a Chemical Waste Management incinerator in Chicago. In Kentucky, Don Harker, former head of the state's waste-management division, was fired because he tried to revoke the permit of the Liquid Waste Disposal (LWD) incinerator at Calvert City. "I don't know what LWD has burned," he said. "I don't think LWD knows what it has burned. I don't think anyone does."

Even if an inspector finds a violation, this only triggers a lengthy, complex process with many levels of warning, review, appeal, negotiation, and adjudication before any action is taken (or, more often, avoided). Compare this with what happens when you park under a "No Parking" sign. A policeman writes a ticket, and you can either pay the fine or tell it to the judge. If the EPA wrote the rules for parking violations, the policeman would first have to determine if there were sufficient legal parking available at a reasonable cost and at a reasonable distance, and would then have to stand by the car and wait until the owner showed up so that he could negotiate a settlement agreement. This is what comes of Congress giving the EPA administrator broad discretionary power to write and enforce rules. We would be better off if he were more like a cop.

Bad-Boy Laws. Several states have laws that bar them from doing business with chronic offenders. Unfortunately, these laws are usually discretionary and are rarely invoked in hazardous-waste cases. If they were, all of the big commercial hazardous-waste firms would be out of business in those states—which is why the laws are not used. I would like to see a mandatory federal bad-boy law applied to the licensing of hazardous-waste sites and to the awarding of Superfund contracts.

Of course, EPA officials always argue that if we close down the big commercial operators, there will be no one left to run the hazardous-waste business. That's like saying that we have to let racketeers run gambling casinos because no one else knows how. The hazardous-waste business is extremely profitable, and there are plenty of honest businesspeople who would love to get a foot in the door. There's no reason to tolerate crooks.

The Revolving Door. It should be perfectly clear that a person in a regulatory agency who views the agency as a stepping-stone to a better-paying job cannot serve the public faithfully. Yet Congress has never passed a law restricting persons in regulatory agencies from going to work for the companies their agency regulates. I would propose a law forbidding political appointees and senior government employees from accepting any form of direct or indirect compensation from any person regulated by their agency for a period of five years after

Wild Should Wild Remain.

"Man always kills the thing he loves, and so we the pioneers have killed our wilderness. Some say we had to. Be that as it may, I am glad I shall never be young without wild country to be young in."

ALDO LEOPOLD

"We need wilderness preserved—as much of it as is still left, and as many kinds . . . It is important to us . . . simply because it is there—important, that is, simply as an idea."

WALLACE STEGNER

"The love of wilderness is more than a hunger for what is always beyond reach. It is also an expression of loyalty to the earth, (the earth which bore us and sustains us), the only home we shall ever know, the only paradise we ever need—if we had the eyes to see."

EDWARD ABBEY

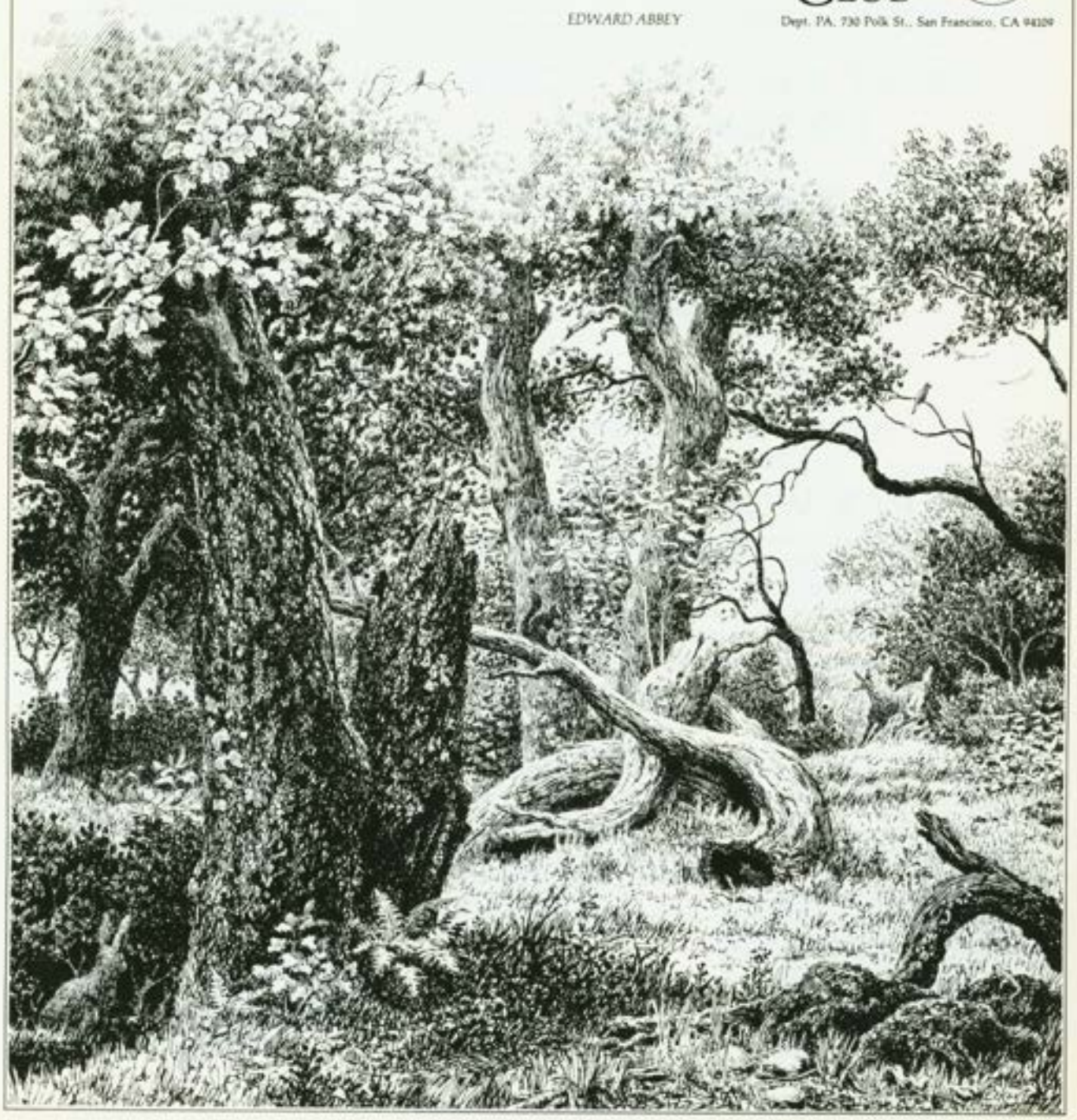
"The clearest way into the Universe is through a forest wilderness."

JOHN MUIR

SIERRA CLUB

SIERRA CLUB CENTENNIAL 1892 · 1992

Dept. PA, 730 Polk St., San Francisco, CA 94109



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they leave government service. The number of years could be reduced for lower-ranking civil servants. This law should, of course, include lawyers.

The common argument that this would keep good people from entering government is nonsense. Good people do not use government service as a means of getting rich quick. A revolving-door rule would keep out the ambitious careerists who now permeate the federal bureaucracy, and let in men and women with a real desire to serve their country.

Conflict of Interest. The revolving door is an individual conflict of interest, but there is a closely related institutional conflict in the EPA and some other regulatory agencies. The Nuclear Regulatory Commission, for example, has responsibility for regulating nuclear-power plants, but it also promotes the use of nuclear power. Similarly, the EPA has the responsibility for regulating hazardous-waste facilities, but also promotes the siting of these facilities. When the EPA assures the safety of a proposed hazardous-waste installation, citizens living nearby never know which hat it is wearing, regulator or promoter.

An easy solution is for Congress to pass a one-sentence law: "No regulatory agency may spend appropriated funds to promote the use of the products or services that it regulates."

The Carrot and the Stick. Every time the EPA falls short of expectations, it complains that it doesn't have enough money, people, authority, or time, so Congress and the courts give it more of everything. What kind of incentive is that? When I was a manager, if a subordinate failed to do an assigned task and gave me the excuse that he didn't have enough resources or time, I would ask him if he had requested the resources and time, and if he had warned me that the task could not be completed unless he got them. If the answer was no, he was in trouble. Congress should adopt the same standards for the EPA.

One guaranteed quick fix would be to reward whistleblowers. At present, a person who calls attention to waste,

fraud, or abuse at high levels of the EPA can only look forward to harassment and isolation, with no hope of promotion or even a responsible position. Congress ought not only to protect whistleblowers, but to reward them when their charges prove correct. This would greatly increase the number of whistleblowers and decrease the amount of waste, fraud, and abuse. If you think rewarding public servants for doing their duty is excessive, consider the cost of failing to do so.

Consent Agreements. One of the most egregious abuses of discretionary authority by the EPA is the use of consent agreements to settle regulatory violations. A consent agreement is like a plea bargain, a contract wherein a defendant agrees to stop an illegal activity without admitting guilt. Consent agreements by the EPA usually result in the defendant paying a fine and promising to sin no more.

A big problem with consent agreements is that they are drawn up in secret, with no public review. While they usually concern cleanup of dumps or hazardous-waste spills, the injured community does not participate. This secrecy is an open invitation to corruption and abuse. Polluters with good connections and good lawyers are able to get consent agreements that grant them all sorts of privileges to which they are not entitled, in exchange for paltry fines. A good example is what happened when Chemical Waste Management was denied a permit to store carcinogenic polychlorinated biphenyls (PCBs) at its hazardous-waste dump at Emelle, Alabama. They stored them there anyway, and got caught. An eventual consent agreement fined ChemWaste far less than it made by its illegal action, and threw in a PCB-storage permit. The agreement also exempted the firm from punishment for any other past violations, even those that had not yet come to light. In short, for a $450,000 fine, ChemWaste received waivers worth more than $100 million. Congress should limit the scope of consent agreements, require that they be made public, and require the court to hear from any past or potential injured party before signing.

INSTITUTIONS ARE made up of people. Behind the great and powerful Oz is a fragile little man pulling the levers. Because it must be implemented by weak and fallible individuals, the liberal dream of powerful institutions protecting and perfecting our lives can easily become a nightmare of corruption and abuse.

The Founding Fathers knew this. They didn't trust institutions. They didn't think a nation could remain free unless its citizens stayed on top of things themselves; that's why they set up such an elaborate balance of competing interests, of checks and balances. I believe the right approach is to reduce the power of institutions, and increase the power of the people, who have the most at stake. ■

▸For more information, see "Resources," p. 110.

SIERRA CLUB FINANCIAL REPORT

Pursuant to provisions of sections 6321 and 6322 of the California Corporations Code, the following information is furnished as an annual report:

The Club's complete financial statements for the fiscal years ended December 31, 1991 and September 30, 1990, together with the report of KPMG Peat Marwick, independent auditors, are available on request from Sierra Club headquarters at 730 Polk Street, San Francisco, California 94109;

The membership list of the Sierra Club is on file at the Club's headquarters at 730 Polk Street, San Francisco, California 94109;

There are no transactions to disclose that constitute a conflict of interest involving directors or officers; no member has voting power of 10% or more;

The books of account and minutes of meetings of the Board of Directors are available for inspection by members on written request at the Club's headquarters at 730 Polk Street, San Francisco, California 94109.

Independent Auditors' Report

The Board of Directors
Sierra Club

We have audited the accompanying balance sheets of Sierra Club as of December 31, 1991 and September 30, 1990, and the related statements of revenue, expenses and changes in fund balances and changes in cash for the fifteen-month period ended December 31, 1991, and the year ended September 30, 1990. These financial statements are the responsibility of the Club's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Sierra Club as of December 31, 1991 and September 30, 1990, and the results of its operations and its changes in cash for the fifteen-month period ended December 31, 1991, and the year ended September 30, 1990, in conformity with generally accepted accounting principles.

KPMG Peat Marwick

April 24, 1992

To the Members of the Sierra Club:

The Sierra Club returned to a calendar fiscal year in 1991; this report covers the 15-month period from October 1, 1990 through December 31, 1991.

Fiscal year 1991 was a year of change and challenge for the Sierra Club, as it was for our members and supporters. The Club also felt the effects of the Persian Gulf War and the recession that continues to this day. We were faced with difficult choices.

Buoyed by 1990, the Club adopted an aggressive agenda for 1991. Program expenditures increased 27% for the 15-month period versus 12 months of 1990; however, neither membership nor revenue growth kept pace with our plans. Membership was down almost 5%, to 600,000. Still, we welcomed a new chapter (Delaware) and 6 new groups during 1991. Long- and short-term solutions to managing expenses are in place.

Though unable to accomplish all that we had hoped for, we had reasons to celebrate:

- defeat of the Johnston-Wallop energy bill, which would have opened the Arctic National Wildlife Refuge to oil development;
- celebration of the Sierra Club's centennial year with special events, outings, presentations, and press conferences;
- House and Senate passage of bills requiring the government to clean up toxic wastes at federal facilities;
- full implementation of our coordinated State and Provincial Government Program, designed to empower local activists;
- major redesign of *Sierra* magazine, and
- development of three exciting Centennial Campaign Initiatives: the Critical Eco-region Program, the Grassroots Empowerment Initiative, and the Center for Environmental Innovation.

Through these difficult times we are operating as a leaner organization—though despoilers of the environment will find us no less mean! We look forward to better days ahead; meanwhile, your support of our efforts at nearly historic levels is heartening.

Ann Pogue
Treasurer

Sierra Club Balance Sheets 12/31/91 and 9/30/90

Assets

	1991	1990
Cash and cash equivalents (note 1)	$ 437,800	2,533,100
Receivables:		
Trade accounts, less allowance for returns of $350,000 in 1991 and $227,000 in 1990	8,800	1,167,900
Advertising and newsstand, less allowance for doubtful accounts of $134,200 in 1991 and $44,000 in 1990	292,900	266,100
Grants (note 8)	846,300	784,000
Other, less allowance for doubtful accounts of $70,000 in 1991 and $-0- in 1990 (note 9)	420,400	727,700
Inventories	825,700	1,355,500
Prepaid expenses	1,199,600	529,100
Advances, less allowance of $102,000 in 1991 and $39,000 in 1990	436,200	443,000
Investments – endowment fund (notes 2 and 4)	7,739,100	5,567,600
Property and equipment, net (notes 3 and 4)	3,348,700	3,438,300
Total assets	$15,151,300	16,812,300

Liabilities and Fund Balances

	1991	1990
Accounts payable (note 8)	$ 2,216,100	3,301,800
Accrued expenses	2,757,800	2,058,300
Deferred revenue:		
Unrestricted	535,000	425,600
Restricted	245,600	235,300
Long-term debt (note 4)	1,577,400	1,604,200
	7,331,900	7,625,200
Fund balances:		
Unrestricted (deficit)	(1,806,600)	1,171,600
Net investment in property and equipment	1,758,500	1,790,100
Endowment:		
Quasi-endowment:		
Life memberships	6,588,900	5,286,400
Other	1,256,000	996,200
Endowment-income restricted	32,800	32,800
Term endowment	10,000	10,000
	7,839,600	9,187,100
Commitments and contingencies (note 10)		
Total liabilities and fund balances	$15,151,300	16,812,300

See accompanying notes to financial statements.

Sierra Club Statements of Revenue, Expenses and Changes in Fund Balances

Fifteen-month period ended 12/31/91 and year ended 9/30/90

	1991				1990			
	Unrestricted	Endowment	Restricted	Total	Unrestricted	Endowment	Restricted	Total
REVENUE								
Member dues:								
Annual dues	$18,024,600	–0–	–0–	18,024,600	15,144,600	–0–	–0–	15,144,600
Life memberships	–0–	1,402,500	–0–	1,402,500	–0–	1,115,000	–0–	1,115,000
Contributions and grants (notes 8 and 9)	11,233,500	–0–	4,950,400	16,183,900	9,006,900	–0–	3,757,100	12,764,000
Outings and lodge reservations and fees	2,703,700	–0–	–0–	2,703,700	2,643,300	–0–	–0–	2,643,300
Book sales	4,667,700	–0–	–0–	4,667,700	3,806,800	–0–	–0–	3,806,800
Royalties	1,781,700	–0–	–0–	1,781,700	1,588,800	–0–	–0–	1,588,800
Advertising, investment and other income (note 2)	4,159,100	–0–	3,100	4,162,200	2,925,800	–0–	12,600	2,938,400
Reimbursement (note 8)								
Capital Campaign	1,585,200	–0–	–0–	1,585,200	614,900	–0–	–0–	614,900
Other	64,200	–0–	–0–	64,200	43,300	–0–	–0–	43,300
Total revenue	44,219,700	1,402,500	4,953,500	50,575,700	35,774,400	1,115,000	3,769,700	40,659,100
EXPENSES								
Program services:								
Studying and influencing public policy	10,589,400	–0–	2,797,800	12,987,200	8,691,600	–0–	2,092,900	10,784,500
Information and education	9,616,700	–0–	1,887,800	11,504,500	7,367,500	–0–	851,100	8,218,600
Outdoor activities	2,822,700	–0–	263,200	3,085,900	2,331,900	–0–	257,100	2,589,000
Chapter allocations	3,440,700	–0–	–0–	3,440,700	2,797,500	–0–	–0–	2,797,500
	26,069,500	–0–	4,948,800	31,018,300	21,208,500	–0–	3,201,100	24,409,600
Support services:								
General and administrative	7,299,400	–0–	4,700	7,304,100	4,429,600	168,400	564,600	5,162,600
Membership	8,057,400	–0–	–0–	8,057,400	6,106,600	–0–	4,000	6,110,600
Fundraising:								
Sierra Club	3,507,100	–0–	–0–	3,507,100	1,957,000	–0–	–0–	1,957,000
Affiliates	2,296,100	–0–	–0–	2,296,100	2,066,000	–0–	–0–	2,066,000
	21,160,000	–0–	4,700	21,164,700	14,559,200	168,400	568,600	15,296,200
Total Expenses	47,229,500	–0–	4,953,500	52,183,000	35,767,700	168,400	3,769,700	39,705,800
Excess (deficit) of revenue over expenses	(3,009,800)	1,402,500	–0–	(1,607,300)	6,700	946,600	–0–	953,300
Capital additions:								
Other quasi-endowments	–0–	259,800	–0–	259,800	–0–	126,100	–0–	126,100
Endowment-income restricted	–0–	–0–	–0–	–0–	–0–	100	–0–	100
Excess (deficit) of revenues over expenses after capital additions	(3,009,800)	1,662,300	–0–	(1,347,500)	6,700	1,072,800	–0–	1,079,500
Fund balances at beginning of year	2,961,700	6,225,400	–0–	9,187,100	2,955,000	5,152,600	–0–	8,107,600
Fund balances at end of year	$ (48,100)	7,887,700	–0–	7,839,600	2,961,700	6,225,400	–0–	9,187,100

See accompanying notes to financial statements.

Sierra Club Statements of Changes in Cash Fifteen-month period ended 12/31/91 and year ended 9/30/90

	1991	1990
Sources of cash:		
Excess (deficit) of revenue over expenses	$(1,607,300)	953,300
Add (deduct) non-cash items:		
Depreciation and amortization	431,200	337,300
Amortization of discount on investments	(485,300)	(287,700)
Total cash provided by (used in) operations	(1,661,400)	1,002,900
Decrease in trade accounts receivable	1,159,100	656,500
Decrease in grants receivable	337,700	–0–
Decrease in other receivables	307,300	–0–
Decrease in inventories	553,800	–0–
Decrease in prepaid expenses	–0–	397,800
Decrease in advances	6,800	13,800
Proceeds from maturity of investments	1,119,100	665,700
Increase in accounts payable	–0–	537,500
Increase in accrued expenses	679,500	340,700
Increase in deferred revenue – unrestricted	109,400	–0–
Increase in deferred revenue – restricted	10,300	–0–
Increase in other quasi-endowment and endowment-income restricted funds	259,800	126,200
Total sources of cash	2,861,400	3,681,100

	1991	1990
Uses of cash:		
Increase in advertising receivables	26,800	37,500
Increase in grants receivable	–0–	398,700
Increase in other receivables	–0–	57,200
Increase in inventories	–0–	407,000
Increase in prepaid expenses	670,500	–0–
Purchases of investments	2,905,300	1,118,000
Acquisition of property and equipment	341,600	880,300
Decrease in accounts payable	1,085,700	–0–
Decrease in deferred revenue — unrestricted	–0–	43,000
Decrease in deferred revenue — restricted	–0–	41,500
Reductions of long-term debt	26,800	7,800
Total uses of cash	4,956,700	2,991,000
(Decrease) increase in cash and cash equivalents	(2,095,300)	690,100
Cash and cash equivalents at beginning of year	2,533,100	1,843,000
Cash and cash equivalents at end of year	$ 437,800	2,533,100

See accompanying notes to financial statements.

Sierra Club Notes to Financial Statements 12/31/91 and 9/30/90

NOTE 1 — ***Summary of Significant Accounting Policies***

(a) **Organization**

The Sierra Club (the Club) is a nonprofit voluntary membership organization established to explore, enjoy and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. The Club operates many environmentally conscious programs which benefit the public interest. The studying and influencing public policy program consists of staff and volunteers engaged in legislative and nonlegislative activities, including research, education, lobbying, legal and policy development. Information and education includes the literary programs of Sierra Club books and *Sierra*, the Club's magazine. Outdoor activities include national and international outing programs, consisting of approximately 361 trips during the fifteen-month period ended December 31, 1991. The membership program serves approximately 600,000 members and includes support and funding of 58 volunteer chapters and over 388 groups, and the development of a broad-based volunteer membership.

(b) **Basis of Presentation**

The financial statements include the accounts of the Club and its wholly-owned subsidiary, Sierra Club Property Management, Inc. All material intercompany transactions have been eliminated. The financial statements do not include the financial activities of the Club's various self-directed chapter and group organizations.

(continued next page)

The Sierra Club Foundation (the Foundation) and Sierra Club Legal Defense Fund (the Legal Defense Fund) are separate legal entities and, thus, are not included in the Club's financial statements.

To ensure observance of limitations and restrictions placed on the use of resources available to the Club, the accounts of the Club are maintained in accordance with the principles of fund accounting. This is the procedure by which resources for various purposes are classified for accounting and reporting purposes into funds established according to their nature and purposes. Separate accounts are maintained for each fund; however, in the accompanying financial statements, funds that have similar characteristics have been combined into fund groups. Accordingly, all financial transactions have been recorded and reported by fund group.

The assets, liabilities and fund balances of the Club are reported in three self-balancing fund groups as follows:

Unrestricted funds represent the portions of expendable funds that are available for support of the Club's operations, including the Club's investment in property and equipment pursuant to approved board policy.

Endowment funds include funds the Club has received for which the donors have specified that the principal be maintained in perpetuity, with the income earned to be used for certain specified activities. The income from endowments is recognized as restricted revenue at the time any donor restriction is met. Otherwise, this revenue is recognized in the unrestricted fund. The Club's bylaws provide that all life memberships and such other funds as designated by the Board for permanent investment shall be held as a quasi-endowment fund. The income from the quasi-endowment fund is unrestricted.

Restricted funds represent contributions and grants which by donor specification are restricted in use and are recorded as deferred revenue in the period received. Such deferred funds are not considered earned until they have been expended in accordance with their restriction.

(c) ***Donated Services***

Many members of the Club have donated significant amounts of time to both the Club and its chapters, groups and committees in furthering the Club's programs and objectives. No amounts have been included in the financial statements for donated member or volunteer services since no objective basis is available to measure the value of such services.

(d) ***Cash and Cash Equivalents***

For purposes of reporting changes in cash, cash and cash equivalents include cash on hand, demand deposits with financial institutions and money market accounts.

The Club's policy is to invest cash in excess of operating requirements in accounts which yield the highest return. Investments in money market accounts amounted to $111,200 and $1,623,200 at December 31, 1991 and September 30, 1990, respectively.

At December 31, 1991 and September 30, 1990, cash and cash equivalents included $348,600 and $657,800, respectively, of endowment fund money market accounts that are restricted as to their use.

(e) ***Trade Accounts Receivable***

The Club sells the books it publishes to retailers and grants credit to retailers deemed eligible. The allowance for publication returns is determined using historical return rates.

(f) ***Inventories***

Inventories consist primarily of books and are stated at the lower of cost or market on the first-in, first-out basis. Unit costs for new books are based on paper, printing and binding charges only. Production costs, which include nonrecurring development costs such as plates, typesetting and artwork supplied by the publisher, are accumulated in inventory during the development stages and are expensed at the time of publication.

(g) ***Advances***

Royalties are advanced to authors of the Club's publications. An allowance is provided against such advances for estimated losses resulting from unearned royalties using historical rates.

(h) ***Property and Equipment***

Property and equipment is stated at cost at the date of acquisition or fair value at the date of gift or bequest. Donated paintings, photographs and books are not reflected in the accompanying financial statements (note 9). Depreciation and amortization expense is provided on a straight-line basis over the estimated useful lives of the related assets, generally 2 to 32 years, or the related lease term, whichever is shorter. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation or amortization are removed from the accounts, and any resulting gain or loss is recognized in income for the period. The cost of maintenance and repairs is charged to expense as incurred; significant renewals and betterments are capitalized.

(i) ***Deferred Revenue***

The Club defers revenue from outings, grants and other donor restricted activities until the period the trip is completed or the donor restrictions are met.

(j) ***Member Dues***

Membership dues are recognized as revenue when received.

(k) ***Contributions***

All contributions are considered available for unrestricted use unless specifically restricted by the donor. Restricted contributions are recognized as revenue as the restrictions are met.

Donated legal services performed on behalf of the Club by the Legal Defense Fund are recorded as contributions with equivalent amounts charged to expense (note 8).

(l) ***Allocation of Expenses***

The Club's expenses are presented on a functional basis, showing basic program activities and support services. The Club allocates expenses to program and support services based on the organizational cost centers (functional units) in which expenses are incurred. In certain instances, expenses are allocated between support functions and program services based upon a defined allocation methodology.

The Club's activities of fundraising and membership services in many cases include purposes or contents related to a program service. AICPA Statement of Position 87-2 states that joint costs of informational materials or activities should be allocated between fundraising and the appropriate program or general function if it can be demonstrated that a program or general function has been performed in conjunction with the appeal for funds. Although the Club has the ability to give evidence for such combined activities, it does not allocate those portions from its fundraising and membership activities to program services.

(m) ***Reclassifications***

Certain 1990 balances have been reclassified to conform with the 1991 presentation.

(n) ***Change in Fiscal Year***

Effective October 1, 1990, the Club changed its fiscal year-end from September 30 to December 31. Unless otherwise noted, all 1991 references in the notes to the financial statements are for the fifteen-month period ended December 31, 1991, and all 1990 references are for the twelve-month period ended September 30, 1990.

NOTE 2—*Investments–Endowment Fund*

Investments of the endowment fund are stated at amortized cost. It is the Club's intention to hold investments to maturity. The amortized cost and market values at December 31, 1991 and September 30, 1990 were as follows:

	1991		1990	
	Amortized cost	Market value	Amortized cost	Market value
U.S. government and Federal agency bonds	$7,739,100	8,266,500	5,567,600	5,663,500

Investment income amounted to $797,800 in 1991 and $510,800 in 1990, and is included in advertising, investment and other income in the statement of revenue, expenses and changes in fund balances.

NOTE 3—*Property and Equipment*

A summary of property and equipment as of December 31, 1991 and September 30, 1990 follows:

	1991	1990
Land	$ 563,300	563,300
Buildings and leasehold improvements	2,450,900	2,364,300
Furniture and equipment	3,122,100	2,546,700
Leased equipment (note 5)	43,300	363,900
	6,179,600	5,838,200
Less accumulated depreciation and amortization	(2,830,900)	(2,399,900)
	$3,348,700	3,438,300

Depreciation and amortization expense was $431,200 and $357,300 for the fifteen-month period ended December 31, 1991 and the year ended September 30, 1990, respectively. Accumulated depreciation for leased equipment was $32,000 and $334,600 as of December 31, 1991 and September 30, 1990, respectively.

NOTE 4—*Long-term Debt and Credit Agreement*

In August 1988, the Club entered into a loan agreement for $1,620,000 with a bank to provide financing for the purchase of an office building in Washington, D.C. to accommodate the Club's local operations. The debt was secured by a deed of trust on the office building. In 1991, the Club executed a revised loan agreement with the bank that required the Club to pledge as additional collateral a portion of the quasi-endowment fund investments with a minimum specified market value of $1,500,000. In addition, the bank agreed to reduce the interest rate on the loan to its prime rate plus .5%.

The revised agreement allows the bank to call the loan at the end of each five year period commencing August 9, 1996, and expires at the end of 15 years. At the end of the 15-year period the remaining balance is due in the form of a balloon payment. The revised agreement also states that in the event the Club meets certain minimum fund balances and cash flow coverage ratios, the bank will release the quasi-endowment fund investments pledged as collateral.

The current monthly principal payments are $4,945 plus interest payments at a floating rate of prime plus .5%. Scheduled principal payments of long-term debt outstanding on December 31 are as follows:

Year Ended 12/31	
1992	$ 59,300
1993	59,300
1994	59,300
1995	59,300
1996	59,300
Thereafter	1,280,900
Total long-term debt	$1,577,400

The Club has available, until May 31, 1993, a revolving line of credit with a bank which permits borrowings of up to $3,000,000 at the bank's prime interest rate. The line is secured by a portion of quasi-endowment fund investments with a minimum specified market value of $3,450,000. No amounts were outstanding at December 31, 1991 and September 30, 1990.

NOTE 5—*Leases*

Leases are for office facilities (note 8), computer equipment, system software and other equipment. Certain leases provide for extensions and additional rental payments based on expenses. Future minimum payments under all noncancelable operating leases with terms greater than one year at December 31, 1991 are as follows:

Year Ended 12/31	
1992	$1,456,500
1993	1,398,900
1994	1,376,100
1995	1,118,200
1996	22,100
Thereafter	12,500
Total lease payments	$5,384,300

Minimum future rentals receivable under noncancelable operating subleases at December 31, 1991 are as follows:

Year Ended 12/31	
1992	$121,400
1993	102,100
1994	102,100
1995	86,800
Total rentals receivable	$412,400

Rent expense for operating leases was $1,892,100 in 1991 and $1,380,200 in 1990. Rental income on subleases was $167,600 in 1991 and $126,800 in 1990.

NOTE 6—*Income Tax Status*

The Club's principal activities are exempt from Federal income and California franchise taxes. The Club is the petitioner in a proceeding in the U.S. Tax Court, in which it is appealing an Internal Revenue Service audit determination that income derived from mailing list rentals and affinity card royalties are subject to unrelated business income tax. These revenues may ultimately be determined to be subject to unrelated business income tax.

The Club recorded a tax provision of $494,000 in 1991 and $253,000 in 1990 which is included in unrestricted general and administrative expenses. The balance in the related accrued tax liability account was $1,239,000 and $745,000 as of December 31, 1991 and September 30, 1990, respectively.

Contributions to the Club are not deductible by the donor as a charitable contribution for tax purposes.

NOTE 7—*Pension Plan*

The Club has a defined benefit pension plan covering substantially all of its employees. The benefits are based on years of service and the employee's compensation history.

The following schedule sets forth the Plan's status as of September 30, 1991 and 1990:

	1991	1990
Actuarial present value of benefit obligations:		
Accumulated benefit obligation all of which is vested	$2,625,700	1,966,800
Projected benefit obligation for service rendered to date	3,513,400	2,930,200
Plan assets at fair value, which consist of a pooled investment account	3,635,900	2,856,300
Plan assets in excess of (less than) projected benefit obligations	122,500	(73,900)
Unrecognized prior service costs	145,400	158,600
Unrecognized net gain	(195,200)	(2,000)
Unrecognized net asset at October 1, 1987 being amortized over 15 years	(103,200)	(112,600)
Prepaid pension liability recognized on the balance sheet	$ (30,500)	(29,900)

Net pension cost for 1991 and 1990 included the following components:

	1991	1990
Service cost	$ 455,100	368,400
Interest cost	254,200	212,900
Actual return on plan assets	(264,900)	(150,500)
Net amortization and deferral	3,800	3,800
Deferred asset loss	—0—	(77,400)
Net periodic pension costs	$ 448,200	357,200

As the Plan reassessment date preceded the Club's balance sheet date due to the change in fiscal year, the Club recorded an additional provision of $300,000 based upon historical contributions amounts. Accordingly, the Club recognized total Plan expense of $555,300 for the fifteen-month period ended December 31, 1991.

The weighted average discount rate and rate of increase in future compensation levels used in determining the actuarial present value of the projected benefit obligation were 9% and 6.5%, respectively. The expected long-term rate of return on assets was 9%. Contributions to the plan were $447,500 in 1991 and $161,200 in 1990.

NOTE 8—*Transactions with Affiliates*

The Club provides fundraising services for the Foundation. Reimbursed costs related to fundraising and the Capital Campaign totaled $1,385,200 in 1991 and $614,900 in 1990. The Club receives contributions from the Foundation which represent direct grants to the Club in support of various programs that totaled $4,440,300 in 1991 and $3,363,000 in 1990. Of the preceding amounts, $446,300 and $784,000 were included in grants receivable at December 31, 1991 and September 30, 1990, respectively.

The Legal Defense Fund performs legal services on behalf of the Club. The value of these services totalled $4,939,100 and $4,846,000 1991 and 1990, respectively. In addition, the Club received contributions on behalf of the Legal Defense Fund. At September 30, 1990, $39,300 was payable by the Club to the Legal Defense Fund and was included in accounts payable.

The Club's wholly owned subsidiary, Sierra Club Property Management, Inc., is the general partner of National Headquarters Associates (a limited partnership). The limited partnership was formed to raise capital for purposes of acquiring and rehabilitating an office building for lease by the Club. The building was completed and occupied in November 1985. This operating lease has a ten-year term and requires monthly payments of $99,000, subject to adjustment in certain circumstances for changes in the limited partnership's debt service requirements. In addition, the Club is responsible for taxes on the property, repairs and maintenance, and shares insurance, utility and security costs with the limited partnership.

NOTE 9—*Paintings, Photographs and Books*

Since its inception, the Club has been the recipient of various donated paintings, photographs and rare books. During 1987, the Club had certain paintings and photographs appraised for insurance purposes. The appraised market value of these paintings and photographs totaled $850,000 at that time. The books have not been appraised for several years; however, the last appraisal indicated a market value of $50,000. There is no value assigned to these items in the accompanying financial statements.

NOTE 10—*Commitments and Contingencies*

The Club is involved in a number of lawsuits resulting from the operations of its Outings program. The Club is covered by insurance for this program. Management, in consultation with legal counsel, does not believe such lawsuits will have a material, adverse effect on the financial position of the Club.

Environmentalists in Japan are increasing in number and effectiveness as they organize against destructive corporate practices. Many in the movement would like to forge links with their American counterparts. To assist them, Honnoki USA, a nonprofit environmental group, has published a directory of more than 700 Japanese organizations involved in everything from organic-food production to anti-nuclear activism. For a copy of *Japanese Working for a Better World: Grassroots Voices and Access Guide to Citizens' Groups in Japan,* send $15 to Honnoki USA, 300 Broadway, Suite 39, San Francisco, CA 94133; phone (415) 392-3151.

A group of poets and writers will begin crisscrossing the country in October as part of the Forgotten Language Tour, a series of readings that takes its name from the words of poet W. S. Merwin: "I want to tell what the forests / were like. / I will have to speak / in a forgotten language." The tour, which will bring authors to various towns and cities throughout the United States, is being organized by the Orion Society in conjunction with Peregrine Smith Books, the Aspen Writers' Foundation, the Poetry Society of America, and several other organizations. The participants include Merwin, N. Scott Momaday, Linda Hogan, Pattiann Rogers, Terry Tempest Williams, Gary Paul Nabhan, Frederick Turner, Margaret Gibson, Jorie Graham, and Carol Frost.

Support is being sought from individuals and foundations. To contribute, or for information about venues and dates, contact the Forgotten Language Tour, c/o the Orion Society, 136 E. 64th St., New York, NY 10021; phone (212) 758-6475.

Wetlands Preserve is no swamp. In fact, it's an always-funky, sometimes-zany center in New York City where live music mixes with radical eco-politics. Seven nights a week, many of the Big Apple's environmentally minded residents, along with their neighbors from the 'burbs, gather at Wetlands. Early on many evenings, activists speak about defending rainforests, stopping incinerators, promoting hemp as a replacement for trees in paper-making, and other such matters. Later, everyone grooves to funk, soul, reggae, psychedelic or heavy-metal rock, "hippie Celtic dancing," or eclectic combinations thereof.

For a monthly calendar of events, contact Wetlands Preserve at 161 Hudson St., New York, NY 10013; phone (212) 966-4225. For those who want to drop in, Wetlands is located three blocks south of Canal Street, just on the Manhattan side of the Holland Tunnel. Its doors are open Sunday through Friday after 5 p.m., and Saturday after 9 p.m. Cover charges for the musical performances range from $5 to $15.

Canyoneering: The San Rafael Swell, a unique trail guide praised in last issue's "Briefly Noted" column, is being sold by the Southern Utah Wilderness Association for its list price of $15, autographed by author Steve Allen, with all proceeds benefiting SUWA's redrock-wilderness campaign. For a copy, write to them at 1471 S. 1100 E., Salt Lake City, UT 84105.

The *Sierra* staff learned with sorrow of the death of Hans Hollitscher in San Francisco on July 1, after a long illness. Hans worked closely with us for several years as a volunteer proofreader; his precise attention to the nuances of language was remarkable, all the more so since English was not his native tongue. When his suggested emendations were accepted, he was unsurprised; when they were not, he shook his head briefly at the clear decline in standards of usage indicated by the decision, and resumed reading. We will miss him. ■

Christopher Camuto

Fish to Match My Mountains

It's always surprised me that more backpackers aren't anglers. Look closely at the blue lines on those high-mountain topo maps and you're likely to find plenty of trout habitat; get your face close to the water and you'll see the insect life that captures a trout's attention. You might consider knocking a few miles off your next walk to spend some time in the stream you were planning to hike along.

If your image of fishing is of mind-numbing hours sitting in a rowboat, you may be justifiably turned off. But fly-fishing is a skill that depends on thorough preparation, stealth, and keen observation. A fly-fisher must understand the complex workings of a stream, and has to know how to make bits of fur and thread mimic the actions and life stages of the insects that make up a trout's meal. A good trout angler, particularly one who wades into a stream with fly-fishing gear, acts more like a graceful heron than a bored vacationer.

Some anglers carry a piece of equipment for every possible situation. But if you keep things simple, you'll add no more than three pounds to your gear, spend about $200, and still have a solid chance of catching fish.

A basic outfit includes an inexpensive ($10) reel and an eight-foot-long graphite rod designed for a 4- or 5-weight line (strong enough to catch mountain trout, which weigh less than one pound). The rod should break down into four 24-inch sections that you can slip into a backpack. To connect the reel and the fish, you need *backing* (a line that fills up the reel and functions as a reserve); a double-taper *fly line* designed to match your rod; a few monofilament *leaders;* and a *tippet,* a very fine piece of line that you tie to the fly. Thousands of fly patterns are available, ranging in size from tiny, nearly invisible ones to feathered harpoons that look as if they'd frighten a walrus. Start off by buying about a dozen, of two basic types: dry flies, which float on the surface and imitate the most common stream and land insects; and nymphs, which imitate the insects' larval forms.

You need only two of fly fishing's innumerable gadgets to round out your gear: *hemostats,* for mashing down a hook's barbs (enabling you to remove a hook from a trout's mouth without injuring the fish); and *nippers,* for trimming knots. To negotiate slippery stream bottoms, glue felt soles to an old pair of sneakers. Wade in your quickest-drying

The graceful art of sneaking up on mountain trout.

▲ ▲ ▲

nylon hiking pants or shorts, or invest in a pair of lightweight nylon hip waders.

Casting is an art best learned from another angler, but you can start by practicing short distances on dry land. Lay out 15 feet of line in front of you, then raise the rod sharply back to the one o'clock position, just over your shoulder. Wait while the fly line loops behind you. Just as it straightens out and flexes the rod, bring the rod forward to the ten o'clock position without snapping your wrist. If you haven't lost momentum or let your elbow wander, the line will loop forward and lay out straight before you. A good cast is a slow, almost stately motion that places the fly gently on the water's surface, allowing it to drift naturally downstream.

On the water, the game is simple—in theory, at least. You wade upstream so carefully that the trout don't know you're there. "Read" the stream for the sheltered spots where trout can eat without expending energy. Watch especially for feeding lanes, the tongues of current between fast and slow water that funnel floating insects to waiting fish. Look for circles on the surface created by rising trout, or white flashes as the fish dart after nymphs.

Use the flies that most resemble the real insects in or coming off of the river. Because trout watch up-current, cast your line above the spot where you see or hope to find fish, and contrive to let your fly drift downstream without dragging.

When you land a wild trout these days, your response should not be to flip it into a fry pan, but to return it carefully to the stream. While wild trout are wily and therefore a true challenge to catch, they're also declining in numbers. Save your dreams of dinner for trips when you're fishing a stream or lake stocked with hatchery-raised trout. It's a challenge to learn fly-fishing, and it's equally important to respect the game. ■

CHRISTOPHER CAMUTO *is author of* A Fly Fisherman's Blue Ridge *(Henry Holt, 1992).*

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Join Sierra Club activists working on issues that concern you. Contact the Campaign Desk, Sierra Club, 730 Polk St., San Francisco, CA 94109; phone (415) 776-2211.

To receive semimonthly updates on the Sierra Club's regional, national, and international conservation campaigns, subscribe to the *National News Report*. Request a free sample issue and subscription information from the Campaign Desk at the above address.

DEPARTMENTS

CLUBWAYS

Campaign to Save America's Wilds, page 11

To volunteer for ecoregion work or state-level lobbying, contact your local Sierra Club field office (see addresses on page 8), or write to the Campaign Desk at the address listed above.

The Sierra Club Public Lands Committee publishes a newsletter covering issues related to the Campaign to Save America's Wilds. For a subscription (free to any Club member), contact John Hopkins, the committee chair and newsletter editor, 409 Jardin Pl., Davis, CA 95616; phone (916) 756-6455.

PRIORITIES

Battle for the West, page 32

To help support western environmentalists running for Congress, contact the Sierra Club Political Committee, 730 Polk St., San Francisco, CA 94109, or your local Sierra Club chapter.

Political Science, page 35

A new Sierra Club publication exposes the Bush administration's game of scientific fraud, using dozens of case studies to critique the politicization of science. For a copy, send $3 plus $1.75 for shipping to "Science Report," Sierra Club, 730 Polk St., San Francisco, CA 94109.

Forest Service scientists who believe their research is being misused communicate via *Inner Voice*, the bimonthly newsletter of the Association of Forest Service Employees for Environmental Ethics ($20 a year from AFSEEE, P.O. Box 11615, Eugene, OR 97440).

PACs and Congress, page 40

U.S. Public Interest Research Group studies comparing special-interest money and congressional votes on energy, clean air, the bottle bill, and toxics legislation are available for $2 each from U.S. PIRG, 215 Pennsylvania Ave., S.E., Washington, DC 20003.

The Best Congress Money Can Buy, by Phillip Stern (Pantheon, 1988), is an excellent book on Congress and PACs. An updated version, *Still the Best Congress Money Can Buy*, is forthcoming from Regnery Gateway Inc.

Clean Air Ambush, page 43

For more information about the Bush administration's efforts to obstruct the Clean Air Act, contact Blake Early at the Sierra Club, 408 C St., N.E., Washington, DC 20002; phone (202) 547-1141.

Graphically display your concern about the need to enforce Clean Air Act provisions with the Sierra Club poster *Clean Air: Bring It Back Again*. For ordering information, request a free copy of the *Sierra Club Sourcebook* from Sierra Club, Dept. SA, P.O. Box 7959, San Francisco, CA 94120.

FEATURES

Yucca Mountain, page 50

To stay current on Nevada's oversight of the dumpsite study, contact the Nevada Agency for Nuclear Projects, Nuclear Waste Project Office, Capitol Complex, Carson City, NV 89710; phone (702) 687-3744. The office publishes a monthly newsletter bearing the tagline: "There is no right way to do a wrong thing."

Activists who want to help keep the Department of Energy honest should contact Citizen Alert, P.O. Box 5391, Reno, NV 89513; phone (702) 648-8982.

A Grizzly's Place, page 56

The federal grizzly-bear recovery plan maps out goals and mitigation steps for grizzlies in the Lower 48. For a copy, write to Dr. Chris Servheen, U.S. Fish and Wildlife Service, University of Montana, Missoula, MT 59812. In your letter, mention that you support strict protection for all grizzly-bear habitat.

In the Yellowstone ecosystem, Shoshone and Custer national-forest officials are proposing oil and gas leasing in key grizzly-bear habitat. To voice opposition, write Shoshone National Forest, P.O. Box 2140, Cody, WY 82414, and Custer National Forest, P.O. Box 2556, Billings, MT 59103.

A report on oil and gas leasing in Yellowstone-ecosystem forests is available from the Sierra Club, 23 N. Scott, Sheridan, WY 82801. Copies are $3 each.

For more information on grizzly issues, contact the American Grizzly Bear Project, P.O. Box 1874, Bozeman, MT 59715. The project was set up by the Sierra Club, The Wilderness Society, and the Greater Yellowstone Coalition to help defend the griz.

Grizzly Bears, by Candace Savage (Sierra Club Books, 1990), is a richly illustrated book depicting grizzlies worldwide ($31.50 each for Sierra Club members, $35 for nonmembers). *Tracks of the Grizzly*, by Frank C. Craighead, Jr. (Sierra Club Books, 1979), details the bears' natural history ($14.40 for Club members, $16 for nonmembers). Both books may be ordered from Sierra Club Store, 730 Polk St., San Francisco, CA 94109.

EPA Exposé, page 74

William Sanjour has written a lengthier and more detailed critique of the EPA, available for $15 from the Environmental Research Foundation (ERF), P.O. Box 73700, Washington, DC 20056-3700. Also available from ERF is a lively weekly newsletter, *Rachel's Hazardous Waste News*. Subscription rates are $15 for students, $400 for businesses, and $40 for all others.

Waste Management Inc.: An Encyclopedia of Environmental Crimes and Misdeeds ($20), and the same study in abstract form, *Trash Into Cash* ($5), are available from Greenpeace USA, 1436 U St., N.W., Washington, DC 20009. ■

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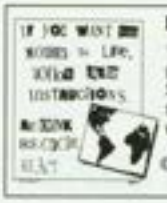

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SHOULD WE TRY TO SAVE ALL ENDANGERED SPECIES REGARDLESS OF COST?

If we were in the business of saving and protecting habitats, we would not find ourselves having to prioritize the species to be saved based on funding available. The value of other species transcends economics, and cannot be quantified. Expressing it in economic terms is overly simplistic and inaccurate. We have an ethical and moral responsibility to care for the earth and all its inhabitants. Our survival depends on it.
Anna Walker
Fenton, Michigan

Saving an individual species without saving its native habitat is an act of zookeeping. The deeper issue of habitat or ecosystem destruction must be addressed. Rampant development and blatant environmental disregard are no longer defensible positions.
Douglas E. Carlson
Tionesta, Pennsylvania

It would be easy enough, rationally, to answer both yes and no. Yes, because many people (myself included) believe that all species have inherent worth, merely because they exist. No, because there will never be sufficient funding for state and federal endangered-species programs to attempt to save all species.

To say yes *and* no, however, is not a real answer to your thought-provoking question. The bottom line is that the Endangered Species Act is the major policy tool we have to save species. Perhaps the question could be rephrased to read: "Should we try to save the Endangered Species Act regardless of cost?" The answer to this is emphatically yes! We must do whatever we can to support this legislation during its upcoming reauthorization process. We must seek increased funding for it, and fight, at all costs, the interest groups that would see it weakened or gutted.
Richard L. Wallace
Washington, D.C.

I reject the fallacy that every species must be saved no matter what, for fear that the source of some future cure for dental caries might be driven to extinction by unwitting human error. In fact, species go extinct on a regular basis quite of their own accord (or the accord of Gaia), either because they have reached an evolutionary dead end or because of an external cause (such as geologic catastrophe). The universe has no mind, and therefore no ultimate end in mind; whether one species dies this year or 100,000 years from now, life itself will continue to thrive and to evolve on Earth.
Melanie Barge
Jacksonville, Florida

Right idea, wrong question. We need to know if we *can* save species before we decide if we *should*. At present, we clearly could not if we wanted to, since we don't even know that some species are endangered until they become terminal. We must develop the ability to save species through redefined economics, persuasion, education, and, when appropriate and possible, through force, before we can explore the "regardless of cost" portion of your question.
Ned Ford
Cincinnati, Ohio

The question as stated is a loaded revolver pointed at the heads of us environmentalists; there is no good answer. Was it Alan Watts who said, "If there's no answer, there's no question"?
Tom Turner
San Francisco, California

Every species has a right to exist. Humans, at the top of the pyramid of life, should have the compassion to preserve the products of evolution.
Diana Cheng
Clayton, California

I agree that we should try to save as many species as we can, but for practical reasons we have to make difficult choices. Combat medics use triage to decide which wounded soldiers are still strong enough to save, and which must be left to die. Biologists have to do the same thing with species. There are just too many sick and wounded species to try saving them all.
Robert Hirsch
Madison, Wisconsin

After endangered species go, guess who's next?
Catherine J. Hudson
Pescadero, California

The human species is probably the one species we should spend no money trying to save. We'll probably survive in some fashion in spite of our suicidal behavior. But more to the point: No one knows the cost of losing species, so how can anyone do a cost/benefit analysis? The true costs of environmental damage are never factored into "rape and ruin" decisions. People out to make profits never voluntarily pay costs they can foist on someone or something else. The environment pays the price. Either we destroy everything or we wake up and assign costs where they rightly belong: to the exploiters.
Steven W. Brennan
Alexandria, Virginia

Yes! (Pithy, huh?)
Ted Burton
Weiser, Idaho

God created all creatures and called them "Good," and before the Flood told Noah to save a pair of every species so that they could repopulate the Earth. Even Jesus said that God loves the lilies of the field and the birds of the air. If there are any costs involved, they are only debts we have been accruing since we, in our arrogance, began to think we could technologically create a more perfect world. Who are we to start undoing the awesome tapestry of life our Creator has woven?
Kenneth Liu
McLean, Virginia

Extinction is nothing new. It happened to the dinosaurs, and only God knows how many species vanished before them. There's no use wringing our hands over (or spending all our money on) something that's not in our power to prevent.
Janine Wright
Phoenix, Arizona

Save everything but mankind.
Bud Staples
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FOR NEXT TIME...

WHICH ENVIRONMENTAL ISSUE SHOULD THE NEXT PRESIDENT TACKLE FIRST?

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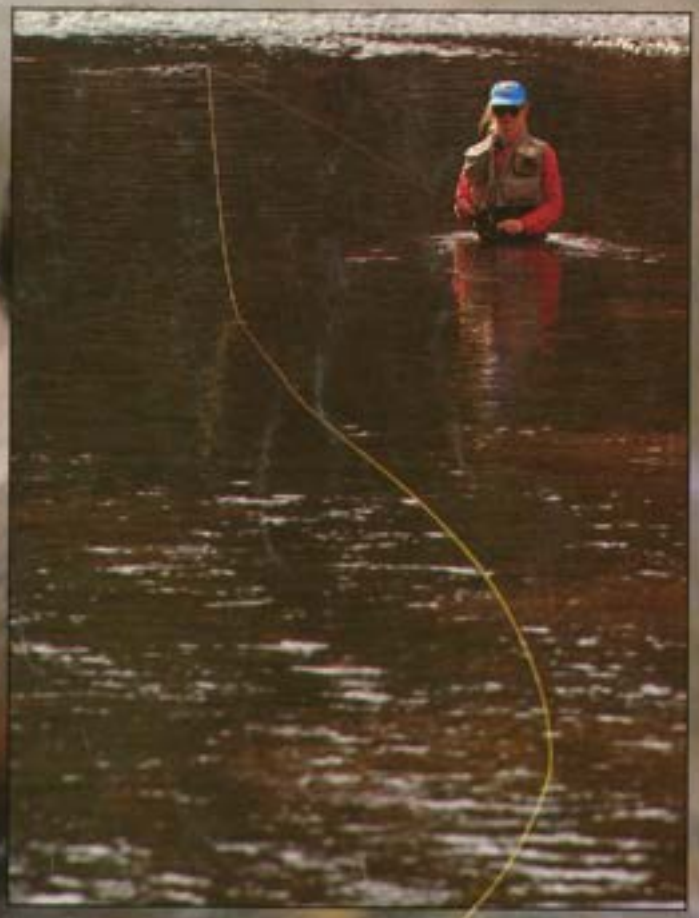

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