

SIERRA

THE MAGAZINE OF THE SIERRA CLUB • NOVEMBER/DECEMBER 1991 • \$2.95

Faces of Amazonia

TASMANIAN WHITEWATER

ARE BIG CARS SAFER CARS?

WINTER WISDOM

- Clean-burning woodstoves
- Beating the low-light blues

Utah's Redrock Capital







*Fergie, normal dog.
Ann Crump, regular
person. They took a
walk with the N6006
and some beef chewies.
Art happened.*

The Nikon N6006 is a serious SLR that almost anyone, anywhere can pick up anytime and have fun with.

Case in point, one Ann Crump. She lives in Belvedere, California, across the bay from San Francisco, and usually makes art with watercolors and oils.

She's not a professional photographer.

Yet, as you can see to the left, she used the N6006 to create nothing short of a masterpiece.

Or at least one killer dog picture.

The model is Ann's three-year-old pug, Fergie, photographed in all her glory on a sunset walk using the N6006 and a 28mm Autofocus Nikkor lens.

To put it in technical terms, Ann used Auto Balanced Fill-Flash, autofocus, and Matrix Metering.

In normal talk, she picked up the camera and did what anybody would do.

She said cheese. Then shot.

In a world where telephones and coffee pots have become complicated, taking terrific pictures has actually become easier.

The N6006 is why. It will focus automatically in light as dim as a single candle, or you can focus manually. It will automatically select

the proper exposure, or let you do it.

You can choose from three light meters: a Spot Meter, a Center-Weighted Meter, or Nikon's Matrix Meter, an exclusive system that reacts instantly when the action is moving fast or the light changes unexpectedly.

Or, when you want to think about the picture instead of the exposure.

Or, in the case of *Fergie on a Rock*, when your subject needs a little glow shed upon it. Pop up the flash, and the N6006 will light the foreground subject while letting the sun shine through in the background.

Fergie on a rock

—by—

Ann Crump, painter

Maybe you never tried a picture like that because you thought it was too difficult.

Well, Ann Crump did it with one hand, while holding a dog biscuit overhead.

Quite a picture in itself.

Almost all the functions on the N6006 are controlled by a convenient dial next to your thumb, and a simple multi-button keypad.

An LCD readout clearly shows you what you're doing. If you ever think you're doing something wrong, just press any two buttons on the keypad and the camera reverts to totally automatic. It forgives you, instantly.

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



Using a feature called Focus Tracking, the N6006 can even keep moving subjects, such as cars or bikes, in focus.

It has a built-in motor that advances the film fast and rewinds automatically. It even selects the correct film speed.

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In other words, the N6006 is not a toy.

It's the Nikon designed for people who are serious about pictures but hate spending time on buttons and gizmos.

Maybe that's you. Somebody with dogs to walk. Kids to chase. A job to go to. And in between, pictures to make.

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With the N6006, it's not any harder to take the pictures you've dreamed of instead of just plain old pictures.

After all, the face on your left is the work of an ordinary person using an extraordinary camera.

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they'd be in no great hurry to overcharge themselves. So prices would be more Saab-like. (See the box on the left.)

In short, in this highly improbable scenario, all cars would be complete cars, compromising no one virtue for the sake of another.

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SIERRA

THE MAGAZINE OF THE SIERRA CLUB

FEATURES

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**THE ONES WHO REMAIN:
AN AMAZONIAN PORTRAIT
GALLERY**

With boldness of spirit and camera in hand, Loren McIntyre explored the innermost reaches of Amazonia. There he learned a few lessons about humility, courage, despair, and humanity. Our focus is on the latter in this selection of photographs from McIntyre's forthcoming Sierra Club Book.

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Whale, ice, bird, weed: The bittersweet inspirations for the winners of our fourth annual nature-writing contest.

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CHASM OF PEACE

Few things bring greater sorrow to a river rat than a reservoir; few things bring more joy than a dam defeated. A journey down Tasmania's Franklin River, a whitewater gem snatched from the brink of destruction.

By Richard Bangs

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Sierra (USPS 495-920) (ISSN 0161-7362), published bimonthly, is the official magazine of the Sierra Club, 730 Polk St., San Francisco, CA 94109. Annual dues are \$35. Members of the Sierra Club subscribe to Sierra (\$7.50) through their dues. Nonmember subscriptions: one year \$15; two years \$26; foreign \$20; single copy \$4.00 (includes postage). Second-class postage paid at San Francisco, CA, and additional mailing offices. Copyright © 1991 by the Sierra Club. Reprints of selected articles are available from Sierra Club Information Services. POSTMASTER: Send address changes to Sierra Club Member Services, 730 Polk St., Dept. A, San Francisco, CA 94109. READERS: Send old and new addresses and a Sierra address label. Telephone (415) 923-5653 (voice); (415) 398-5384 (TDD).



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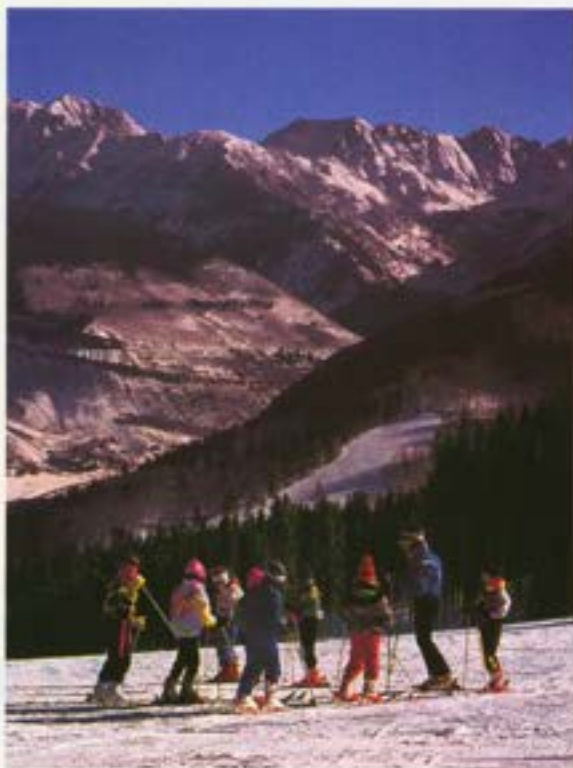
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Lacey Tuttle

Art and Production Manager

Charlene Charles • Designer

Cynthia Sumner • Production

Michelle Susoev • Production Intern

Barbara Besser

Circulation/Business Manager

Maggie Hudson • Eastern Sales Manager

Jennifer Miller • Western Sales Manager

Stasia Tompkins • Account Executive

Lorraine Vallejo

Marketing/Promotion Manager

Jackie Briggs • Advertising Coordinator

Jackie Acampora • Advertising Assistant

Alex Woodruff • Publishing Assistant

Editorial, Advertising, and Business Offices: 730 Polk St., San Francisco, CA 94109, (415) 776-2211. East Coast Advertising: 1501 Broadway, Suite 900, New York, NY 10036, (212) 730-0270. West Coast Advertising: Mary Taylor, Ed Winchell Co., 22700 S. Crenshaw Blvd., #215, Torrance, CA 90505, (213) 530-8693. Midwest Advertising: Raymond A. Peterson, Share of Market, The Coach House, 110 E. Pottawatomie, Chesterton, IN 46304, (219) 926-9665. Michigan Advertising: Donald L. Rowe, 29551 Greenfield Rd., Suite 112, Southfield, MI 48076, (313) 423-7898. Unsolicited submissions must include a self-addressed, stamped envelope. Photo submissions should be insured or registered. Sierra is not responsible for material lost or damaged in the mail.

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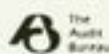
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Fair Dinkum^{*} Australia.



**fair dinkum/* – *Colloq.* – *adj.* 1: true, genuine, dinkum (are you fair dinkum?) – *interj.* 2: assertion of truth or genuineness (it's true, mate, fair dinkum) 3: Come have a fair dinkum great time in Australia.

QANTAS
THE SPIRIT OF AUSTRALIA

Australia
Come and say G'day.

Canoes, Okay; Tall Ships, No Way

The Sierra Club, founded on May 28, 1892, is celebrating its centennial on both the national and local levels. As befits an organization whose cardinal virtues include decentralization and individual initiative, it's the homegrown activities that, by and large, are engaging Club members' energies and enthusiasm.

Which is not to say that the national organization is altogether ignoring its 100th birthday—a milestone that marks the Club as younger than the British Parliament or the Cincinnati Reds, but more venerable than such 20th-century institutions as Walt Disney Productions or Underwriters Laboratory. Still, a cynic might think that the folks at headquarters don't really have a handle on the modern-day approach to self-celebration, given their preference for planning such low-key projects as long-distance hikes and university symposia instead of Tall Ship spectaculars and gala evenings with Steve and Eydie. It's almost as though they feel there are better things to do with the Club's time and money than to spend those precious resources on holographic magazine ads and attractive compensation schemes for P.R. consultants.

That leaves the happy-birthday-to-us field wide open for local chapters and groups to romp through, and they're clearly rising to the occasion. Most of the dozens of Centennial Celebration activities that have already been conducted—as well as the many still in the planning stages—have been (or soon will be) conceived, executed, and enjoyed by the Club's grassroots activists. Many of these energetic volunteers are taking advantage of the centennial "hook" to focus local media attention on environmental issues affecting their communities.

A sampling of group and chapter

centennial events would have to include the San Geronimo (California) Chapter's ambitious schedule of "centennial hikes" throughout 1991 and '92 as well as a series of Ozark Chapter outings to areas it's helped to protect, such as a canoe trip to the Mingo Wildlife Refuge (the boundaries of which enclose a wilderness area the chapter lobbied for 20 years ago). It would also embrace the Cumberland Chapter's efforts to chronicle its conservation history, as Cumberlandians celebrate their own 25th anniversary; the New York City Group's linkage of the Club's centennial to the Columbus

*How to throw yourself
a continent-wide birthday
party that lasts all year*

■

quincentenary by means of a photo exhibit of natural areas unchanged for half a millennium; the work being done by the Lone Star Chapter's Austin Group to reconstruct an overgrown interpretive trail in Bastrop State Park, and the similar effort being made by the chapter's Golden Triangle Group (based in Beaumont) to complete the Lake-to-Lake Trail in Angelina National Forest; and the Kansas Chapter's Tallgrass Prairie Celebration in the beautiful Flint Hills, planned for the key centennial month of May 1992. And so on and so forth, unto dozens of other local events, large and small, that will be held between now and the end of the official Centennial Celebration in December 1992.

National activities include:

- A John Muir Trail through-hike, in six segments averaging seven days each during July and August 1992. Par-

ticipants can sign up for as many or as few of the segments as they wish.

- A six-month-long Appalachian Trail through-hike, for which a special team of seven seasoned hikers has already been selected. Festivities along the route will focus on such central Sierra Club concerns as energy, national parks, and ethnic outreach.

- A re-creation of John Muir's 1,000-mile walk to the Gulf of Mexico . . . on bicycles. Four trip segments will take participants from Louisville, Kentucky, to Cedar Key, Florida, during the fall of 1992.

- Another historical re-creation—with a much larger group—will bring 75 participants to Yosemite Valley and Tuolumne Meadows in June 1992 to commemorate the first national Sierra Club outing, in 1901.

- A variety of 1992 outings focusing on conservation challenges in threatened areas around the continent.

Also planned are a new edition of the classic Sierra Club Book *This Is the American Earth*, by Ansel Adams and Nancy Newhall; a special-edition Sierra Club wall calendar (already on sale), with 14 images celebrating places the Club has worked to save; a keepsake edition of *Sierra*; a major symposium on environmental security co-sponsored by the Club, Stanford University, and the University of California; a fundraising campaign to increase financial support for Sierra Club conservation programs; and more.

We'll have lots to say about these national-level events as the Centennial Celebration progresses. But for now let's refocus the spotlight on the dozens of local chapters and groups who are celebrating the Club's—their Club's—centennial with an assortment of activities and projects that, though individually modest, are collectively inspiring. —the editors

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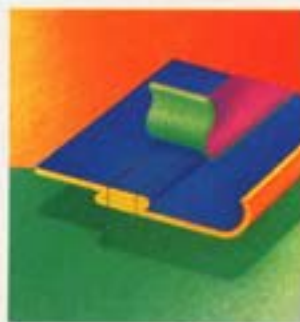
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KUDOS AND CANCELLATIONS

I've just finished reading the September/October issue of *Sierra* for the third time. From the breathtaking front-cover photo to "Last Words," this issue is a powerhouse of useful information.

Anyone who gives a damn about our world and its inhabitants should paste Kinuko Y. Craft's illustration for "Launching the Natural Ark" to their chest—to show everyone *else* what will happen if we don't make a more concerted effort to save what we have.

I won't waste time looking for "the best word" to describe my feelings; I'll only say keep up the great work.

John Derych, Jr.
Commack, N.Y.

You now propose to "sharpen" your editorial policy and shuck any further pretense of "impartiality" and "balance." Fine. Cancel my subscription.

Your articles have never been paragons of sober reason, but with your new policy you cross a fine line from environmental advocacy to environmental bigotry. More important, the information these articles present is so one-sided as to be uninformative. After reading them I find myself so ignorant of the other side's viewpoint that I cannot effectively debate the issue in other than the company of militant environmentalists.

Your magazine reads increasingly like the propaganda of totalitarianism. I would like to retain my membership in the Sierra Club, to whose goals I remain deeply dedicated, but I can no longer devote my precious evenings to reading strident rhetoric and selective exposition of complicated issues.

Marc Levy
Stanford, California

I'm glad to see a more advocacy-oriented tone in the magazine. Bland does not belong in *Sierra*, and I'm afraid it was present too many times in

past issues. I'm sure I'm not alone when I say I would much rather read an article passionately advancing some idea I disagree with than a boring exposition of some thoughts I may share. To put it another way, it's important that we see in *Sierra* ideas different from our own—both new treatment of old, accepted environmental doctrine, and some (possibly radical) theories that may be new altogether. Any other course will lead to stagnation, and to the time when we will have to accept as truth some of the charges of complacency and self-satisfaction currently leveled at us.

Duncan Stewart
Goodlands, Manitoba

The writer is a director of the Sierra Club.

I spent more time with the September/October issue than with any issue in 20-plus years as a Sierra Club member. Well done!

Dennis Martinek
Fallbrook, California

IN A REAL STATE

Thank you for Rebecca Solnit's personal account of nonviolent civil disobedience at the Nuclear Test Site ("In the State of Nevada," September/October). The test site is on land that the Shoshone people claim has been stolen from them, as you mention. For more information, write to the Western Shoshone Nation Newsletter, P.O. Box 140068, Duckwater, NV 89314-0068.

Evan Sandler
Santa Cruz, California

Why do we need another discovery by a West Coast urban intellectual of the hallucinatory landscape of southern Nevada? Please: Nevada is a real place, the home of real people and other living beings. Can't we cut the post-punk travelogues and get some *depth* here?

Anne Macquarie
Carson City, Nevada

"In the State of Nevada" is merely a record of several groups of law-breakers. Developing nuclear power and solving the nuclear-waste problem are probably the only ways we can get ourselves out of the fossil-fuel/carbon-cycle dilemma.

I am tired of reading (and supporting) people like Ms. Solnit. You will not find me renewing my membership next year.

John Severyn
Livermore, California

Solnit's piece caused me to recollect September 1985, the end of a three-day backpack into the Nuclear Test Site. The pack was heavy and my knees hurt, but there we were, standing on "ground zero." After the Nye County sheriff had had his way with me, I saw the inside of a jail for the first time in my 41 years.

The good folks of American Peace Test bailed me out around midnight, and I started for home in the early hours. It was the sun, shining on a range of mountains as it rose over my left shoulder, that taught me how to cry again. My tears were for this beautiful desert and for all the people who live in poverty, ignorance, and disease because of a worldwide arms race, driven by our country, with its roots deep in the NTS.

And for 41 years I sat on my butt and did nothing about it. *No more!*

Hal Brady
San Diego, California

HIGH AND LOW

Greg Breiming's "High in Jamaica" (September/October) brought back many memories of days and nights at Whitfield Hall and on Blue Mountain Peak, and long walks through the villages near there. They were some of the best parts of my three years in the Peace Corps. It is good to know that farsighted Jamaicans like Peter Bentley are working to preserve these treasures for future generations.

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However, one jarring note: Slavery was abolished in Jamaica not in 1866, as the article indicated, but in 1833; the slave trade had been banned earlier, in 1807.

*George Parlow,
Douglas, Alaska*

NO NATIVE WISDOM

Your July/August cover photograph of a tropical forest in Hawaii shows a landscape greatly altered by human activity. The two obvious living components of the scene are the African tulip tree (*Spathodea campanulata*) and the Alexandra palm of Australia (*Archontophoenix alexandra*). Both species are exotic plants introduced to Hawaii. The waterfall is the only obvious natural feature in the photograph.

*Charles E. Hubbuch
Curator of Palms and Cycads
Fairchild Tropical Garden
Miami, Florida*

I drive past the pictured gulch frequently; there are few better examples

of a decimated native ecosystem in Hawaii.

*Andret Beck
Hilo, Hawaii*

The editors have applied for lengthy Hawaiian sabbaticals to ensure that this error is not repeated.

GOOD WOOD

Thank you for including articles on the world's disappearing rainforests in the past two issues: Joseph Wallace's feature on medicinal plants ("Rainforest Rx," July/August) and Paul Rauber's discussion with Peoples of the Forest ("Priorities," September/October).

Ending tropical deforestation is a priority campaign of the Sierra Club. Club staff and a volunteer network of activists across the country are working, with successes, to halt exploitive development-bank lending practices, to end shortsighted U.S. foreign-aid practices, and to encourage Congress to pass a law requiring that all imported foreign woods be labeled with

their country of origin and species. The Tropical Forest Consumer Information and Protection Act of 1991, S. 1159/H.R. 2854, introduced by Senator Albert Gore (D-Tenn.) and Representative Peter Kostmayer (D-Pa.), would give U.S. consumers the information they need to make informed decisions about the tropical woods they buy.

*Stephen L. Mills, Jr.
Conservation Assistant
Sierra Club International Program
Washington, D.C.*

FROM THE GRASS ROOTS

You responded to a reader's question in July/August's "Questions & Answers" column by pointing out that hemp provides an excellent alternative to trees as a fiber source for paper production, but then dismissed hemp because its cultivation is presently illegal in the United States. That illegality is due to a number of misconceptions, one of which you perpetuate by saying "commercial hemp contains insignificant

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amounts of narcotic resin. . . ." In fact, hemp contains no "narcotic" compounds at all; it does, however, produce a number of beneficial medicinal compounds known as cannabinoids.

Chuck Hart

Santa Clara, California

FOUR ADJECTIVES OF THE APOCALYPSE

I write in response to Sally Haskover's July/August letter regarding the "efficient, cheap, limitless, and safe" nuclear-energy alternative.

It isn't public hysteria or ignorance that keeps nuclear power a "mistrusted and grossly underrated utility." Quite the contrary; the public is well informed about the industry, thanks to organizations like the Sierra Club, the Union of Concerned Scientists, and Greenpeace, to name a few. And we've learned enough to know that nuclear energy deserves none of the adjectives Haskover applies to it: It's inefficient, expensive, and limited by the finite amount of uranium in the world. Finally, the mining, transporting, and processing of uranium—not to mention the long-term storage of its deadly wastes—hardly suggest safety to the informed citizen.

Nuclear power would fail without enormous government subsidies and blatant corruption. Let's strip nuclear power of its longstanding government support and see how it fares against alternative fuel sources.

Jordon Bluestein

Walnut Creek, California

SCIENCE MARCHES ON?

In "Better Nature Through Chemistry" (July/August) Paul Rauber paints a picture of a greedy "evil empire" of agricultural-chemical companies out to enslave naive growers with chemically dependent crops. Come on, Paul—you know that the majority of researchers disagree with this assessment. In February, Iowa State University released the results of an October 1990 national conference on herbicide-tolerant crops. The report represented the consensus views of 52 leading researchers, environmen-

talists, regulators, and industry scientists. They concluded that herbicide-tolerant crops (HTCs) will likely lead to displacement of current herbicides by others that may be more favorable for the environment.

The simple truth is that HTCs will allow growers more flexibility in combating weeds. Because of costs, environmental concerns, and the possibility of resistance, most growers are turning to an integrated approach to weed control. This includes crop rotation, cultivation, and minimal use of herbicides. The availability of post-emergence herbicides that can be used only after weeds appear is critical to an integrated approach. It isn't HTCs that will cause the problems. It's the lack of trained consultants, reduced funding for research, and an appalling lack of alternative tactics accompanied by suitable instructions for growers to use.

Dr. A. Ann Sorensen

American Farm Bureau Federation

Park Ridge, Illinois

Paul Rauber replies: *As Dr. Sorensen must know, it's easy to find consensus if you consult only your friends. Of the 52 participants in the Iowa State University conference, just two were environmentalists, and both took exception to the report's conclusions. (The report, in fact, explicitly disclaims unanimity of opinion.) In particular, both objected to its counter-intuitive suggestion that the use of herbicide-tolerant crops will reduce the use of herbicides.*

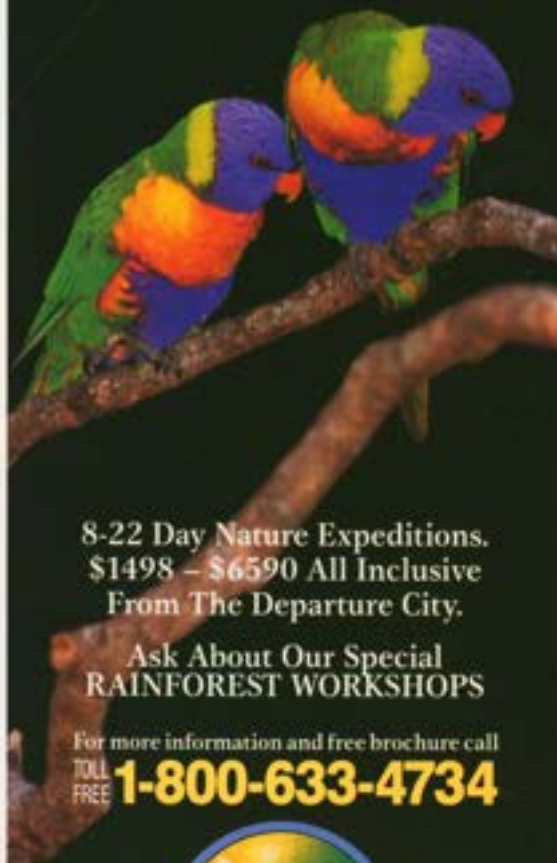
Should these crops actually result in increased herbicide use, Dr. Sorensen argues, it will be due to the "appalling lack of alternative tactics" available. I agree. Where we disagree is in our analysis of how this state of affairs came about: Sorensen sees it as a result of the natural forward march of scientific inquiry, while I suggest it may have more to do with the interest of the major chemical manufacturers in promoting further use of their products.

CORRECTION

In July/August's review of postwar environmental literature, "Visionaries and Cassandras," the title of Fairfield Osborn's 1948 book was misprinted. Its correct title is Our Plundered Planet.

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HEARTH & HOME

Friendly Fire

MARC LECARD

In the mid-1970s, the new airtight steel and cast-iron woodstoves seemed like the perfect answer to the oil crisis. Homes in the Northern California redwoods, cabins in the Rockies, and A-frames in Vermont sprouted stovepipes; by the end of the 1980s, more than 12 million American homes were being heated by wood.

Meanwhile, the peaceful blue haze over woodburning communities was growing too thick for comfort. Small country towns began experiencing smog and visual pollution, big-city style, and health professionals pointed out that woodburning releases carbon monoxide, hydrocarbons, and car-

cinogenic polycyclic organic matter (POM) into the air. Staying home by the fire didn't help—prolonged indoor exposure to woodsmoke was found to cause respiratory problems and to aggravate allergies.

Fed up with dirty skies and health hazards, some states and municipalities began to regulate woodburning. In 1987 the EPA got into the act:

Snuggle up to the woodstove
—it won't give off
much more than heat

The agency now requires all woodstoves made or sold in this country to meet strict particulate-emissions standards. (Wood cookstoves, coal heaters, and open fireplaces are not covered by the regulations.)

Catalytic combustors have helped to rehabilitate the reputation of woodstoves by reducing the amount of smoke they emit. Smoke is the unburned portion of wood, fuel energy going uselessly and pollutingly up the chimney; catalytics lower smoke's combustion temperature, allowing it to ignite and burn at lower temperatures—between 500 and 600 degrees Fahrenheit, instead of the 1,100 to 1,200° F ordinarily required. In addition to reducing particulates (sometimes by as much as 90 percent), stoves equipped with catalytics wring more heat out of fuel, achieving a combustion efficiency of 65 to 80 percent, compared to around 50 percent for the older airtights. Typically, you'll need one-fourth to one-third less wood in a catalytic-equipped stove.

All this is not inexpensive—catalytic combustors add between \$200 and \$300 to the cost of a stove, and need to be replaced every two to six years. They can be installed in stoves built without them, though you may not see the same increase in efficiency or reduction of emissions.

Secondary combustion chambers, or afterburners, can also give a clean burn. Woodstoves using this technology usually work with some combination of a small firebox for intense, hi-temp fires and an extra burn chamber with a concentrated supply of oxygen to flame off exhaust gases. While most stoves equipped with after-



DEBBIE DRECHSLER

burners can meet EPA standards, they are, in general, less efficient and more polluting than catalytic stoves.

How and what you feed the fire makes a difference in what comes out of it. Properly equipped and operated, a good woodstove should produce almost no smoke at all. A small, hot, quick-burning fire using the largest pieces of wood practical will consume itself most efficiently, sending the least exhaust up the flue. You should use only well-seasoned wood, neither too wet nor too dry. Avoid any painted or chemically treated woods, since these, along with clay-coated magazine stock and newsprint with colored inks, can gum up catalytics and release heavy metals and other pollutants.

Apart from the classic freestanding stove, there are other wood heaters that won't fill the skies with POM. Fireplace inserts—legless woodstoves that fit snugly into existing fireplaces—also come equipped with catalytics or afterburners; most have large glass doors for satisfactory flame-viewing. (Open-hearth fireplaces, aside from being nearly useless as home heaters, are tremendously inefficient and polluting.) Wood-pellet stoves, less aesthetically pleasing with their microflames but extremely low in emissions (they can be vented through an uninsulated hole in the wall), are growing in popularity, though the fuel pellets can be hard to find in some areas.

Woodstoves demand a commitment of time and effort not everyone is willing to make, but there are compensations. As you shove a log into the glowing maw of a carefully selected home biomass conversion system, you can pride yourself on helping to lessen this country's loony dependence on petroleum and on reducing your heating bill, all without adding to atmospheric degradation—cozy thoughts on a chill winter's night. ■

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



Desert Waves

SUSAN J. TWEIT

One morning during our first winter in the desert we walked outside and were enveloped in a dripping mist that smelled of crabs, of tiderows of algae drying in the sun. "It's like Puget Sound," exclaimed my stepdaughter, drawing in deep breaths of soft, pungent air, her words exhaling silvery wisps.

She was right: The air tasted salty, like that of our old home near the Pacific Ocean. This air, though, hovered above the parched Chihuahuan Desert in southern New Mexico, 500 miles from the nearest sea.

Winter comes here gradually, unmomentously. At first, unaccustomed to the subtle signals of the desert, we didn't notice winter's approach: Each brilliantly sunny day was simply shorter, the clear nights colder. Orion

and Sirius rose in the southern night sky. Fewer wildflowers bloomed, a few shrubs dropped their leaves. We waited for *real* winter. Then the rain came.

Rain is rare in the Chihuahuan; our part of the desert, a dry grassland punctuated by creosote bushes and other shrubs, boasts an annual average precipitation of ten inches. More than half of the year's moisture falls from July through September (a time that local desert-dwellers call the monsoon season), in violent, arroyo-flooding thunderstorms. For a few glorious

We're never far from
the mist, the ocean
that once held us all

hours the Rio Grande, normally shrunken by irrigation and groundwater withdrawals, reveals the reason for its name. Then, from November through March, comes winter, bearing its gentle message from the far-away, salty Gulf of California.

The winter rains have a distinct rhythm, a predictable pattern of cloud formation that, over several days, briefly softens the sere desert air. The first day high, featureless cirrus, the most diaphanous of clouds, approach from the west. The next day the cloud layer is thicker and lower, and the air is perceptibly damp.

We wake that night, too hot. Outside the clouds blanket the sky and insulate the desert. Before dawn we hear soft whispering sounds on the roof—slowly falling raindrops. Throughout the day the rain continues, though it totals no more than one- or two-tenths of an inch. Once both soil and vegetation are wet, the smells of the distant Gulf are overwhelmed by a perfume exuded by the desert plants.

The gold-and-turquoise morning sky is cloudless, and the warm afternoon sun vaporizes any remaining moisture; we are in the pore-puckering desert again.

On winter hikes up bone-dry arroyos we find fossils exposed in rocks washed down from the nearby mountains. The imprints of corals, clams, snails, and extinct saltwater-dwelling creatures testify to the ancient seas that periodically inundated what today is desert. Those waters last washed this landscape about 70 million years ago. But each winter the ocean comes back, bathing the desert in a gentle, fragrant mist. ■

SUSAN J. TWEIT, the author of *Pieces of Light: A Year on Colorado's Front Range* (Roberts Rinehart, 1990), is writing a book on the natural history of the Southwest.



That Question of Balance

CARL POPE

My position on wetlands is straightforward. All existing wetlands, no matter how small, should be protected."

That oft-repeated oath was the boldest single element in George Bush's 1988 campaign promise to be "the environmental president." The administration's recent evisceration of existing wetlands policies demonstrates—more conclusively than any previous actions in this arena—the abandonment of that pledge.

One of President Bush's first official acts was to entrust wetlands preservation to EPA Administrator William Reilly, who showed his commitment to the president's promise by vetoing the proposed Two Forks Dam, which

would (among other impacts) have flooded large tracts of pristine Colorado wetlands. Always looking over Reilly's shoulder, though, was Bush's Chief of Staff, John Sununu, one of whose frustrations as governor of New Hampshire had been that the New England EPA repeatedly blocked developers from converting the region's swamps and marshes to shopping centers and highways.

Any doubt that final authority over wetlands had passed to Sununu was erased on August 9 of this year, when the administration issued a new policy that simply wrote off one-third of the United States' remaining waterfowl nesting areas, floodplains, vernal pools, and prairie potholes. Up to 30



ENVISION ARTS

The tension proves too great for the man who would be green

bulk of George Bush's environmental credibility.

Prior to that decision, Bush had tried to serve as something of an honest broker between industry and the increasingly environmentally aware American public. He appeared to believe that a middle course between development and preservation could be struck. On such thorny issues as clean air, global warming, energy efficiency (other than automotive), and forestry, Bush tried to distance himself—albeit slowly and cautiously—from the alternately hostile and foot-dragging environmental agendas of the two Reagan administrations.

The new wetlands policy, however, signals that Bush has abandoned his role as broker. Like moderate reformers throughout history (Mikhail Gorbachev most recently), he has apparently found his balancing act too difficult to sustain. The wetlands decision pushed Bush, for the first time, clearly to the right side of the political spectrum on an environmental issue largely unrelated to his known blind spot for the oil industry. It broke his most specific campaign pledge; it overrode Bill Reilly on an issue the EPA chief had staked his reputation on; and it offended the traditional "hook and bullet" conservationists who had previously been Bush's core environmental constituency.

Like his predecessor, Bush has now cast his lot with the most retrograde sectors of American business. Unlike his predecessor, he knows better. Eighty percent of the citizenry identify themselves as environmentalists. This change in public mood, and the urgency of the crises that face us, demand a

revolutionary change in industrial and environmental priorities. Yet the more the administration finds itself confronting irrefutable evidence to that effect, the more it retreats from the implications of that evidence. For example, the administration agreed to a scientific study of the spotted owl, but found to its dismay that the result was not a call for slight modifications in logging practices but predictions that, unless the Pacific Northwest timber cut is reduced by more than 50 percent, not only will the spotted owl become extinct but the entire old-growth ecosystem will collapse.

In that case, as with wetlands and so many other pressing environmental concerns, the Bush team saw its desire to move forward with all deliberate slowness frustrated by the logic of the very science it depended upon to minimize the urgency of those issues. Rather than act on that logic, Bush has opted for reaction. The President's notion of moderate progress toward "reasonable" balance on environmental issues has become a clearly unsustainable one.

For economic interests still exercise enormous influence in our government, and political behavior remains determined by campaign contributions, greed, corporate fears, short-term thinking, and technological hubris. George Bush's anxieties over the speed of needed environmental change—and the inevitable confrontations it would bring—have led to his giving his chief of staff and his budget director the upper hand within the administration, and have robbed the EPA of whatever influence it once had.

George Bush has convincingly portrayed himself as a man of good will on environmental matters, but his actions reveal a leader of profoundly unrevolutionary temperament. When faced with the compelling need to move forward, he has chosen—inexcusably—to stand still. ■

million acres, an area the size of Florida, were removed from federal protection on the grounds that they were too small, or not sufficiently wet for sufficiently long, to qualify as "wetlands." In making the announcement, White House spokesman Marlin Fitzwater unconsciously mocked Bush's "no matter how small" promise: "If you're from the school that says every mud puddle is a wetland, I don't think that makes good sense."

The program Bush rejected had been developed by the government's leading experts in wetland ecology; the one he put in its place drew kudos from such experts as Dan Quayle (who offered as a definition of wetlands, "How about if we say that when it's wet, it's wet?"). By changing the criteria from those offered by its own scientists, and by substituting ones devised by developers, timber companies, and highway departments, the administration dried up not only a significant share of the nation's remaining wetlands, but the

Brighten Up, Lighten Up

MICHAEL CASTLEMAN

Everyone recognizes "spring fever," the lift in our spirits as the short, dark days of winter give way to the longer, sunnier days of spring. Within the last decade, mental-health professionals have discovered spring fever's evil twin, the "winter blues," which annually strikes up to half the Northern Hemisphere's population—and causes serious depression every year in an estimated 5 million Americans.

Severe winter depression is medically known as "seasonal affective disorder," or SAD. Caused by a lack of sunlight during the winter months, the disorder visits mostly those in the north: In one survey, 10 percent of New Hampshire residents reported experiencing SAD symptoms, while

only 1.4 percent of Floridians were similarly bummed.

The warning signs of SAD resemble those of other forms of depression: lethargy, hopelessness, decreased libido, and a general inability to experience pleasure. The disorder also manifests itself in the midwinter irritability popularly known as "cabin fever," as well as in carbohydrate cravings, weight gain, and an increased need for sleep.

Many animal species show pro-

■
**Could the dark
 be the reason
 for your discontent?**

found seasonal behavior changes from which humans were thought to be exempt. Winter depression is a reminder of an evolutionary connection to our fellow creatures. "The need for sleep and the weight gain you see with SAD look hauntingly similar to that experienced by hibernating animals," says Michael Freeman, an assistant clinical professor of psychiatry at the University of California at San Francisco. "Some authorities call SAD a 'hibernation response.'"

Researchers have discovered that some SAD sufferers regularly go south for winter vacations, an almost instinctive form of antidepressant therapy. "The extra day-length and greater light intensity temporarily relieve their depression," Freeman says, "allowing them to function more normally for a few weeks after they return north."

But for those who can't take Caribbean vacations, another therapy has proved equally effective: daily exposure to high-intensity, full-spectrum light (minus ultraviolet, which causes sun-

burn and increases the risk of melanoma). Depression typically begins to lift about a week after the start of "phototherapy," but symptoms return a week or so after discontinuing treatment. As a result, authorities urge SAD sufferers to have light therapy daily from October through April.

Phototherapy has been around for about ten years. Originally, it required lifestyle adjustments that were, well, depressing. Those laid low by SAD were told to sit in front of "light boxes" (large TV-like units with high-intensity fluorescent bulbs instead of screens) for two to three hours every morning and evening. "It worked," says Michael Terman, director of the Light Therapy Unit at Columbia

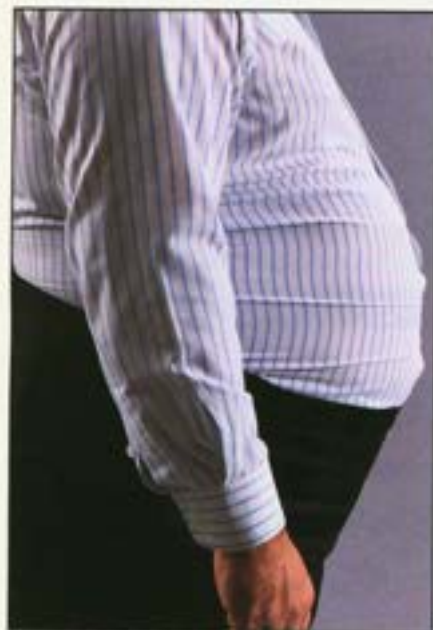




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Presbyterian Medical Center. "But light therapy took so long it just wasn't feasible."

Fortunately, further studies by Terman have made phototherapy as convenient as it is effective. First he showed that only a morning session was necessary, cutting treatment time in half. Then he turned up the brightness of therapeutic lighting.

Light intensity is measured in lux units. The typical home is illuminated at about 250 lux; early light boxes emitted 2,500. "Twenty-five hundred lux sounds like a lot, but it isn't," says Terman. "That's the brightness of outdoor light as the sun peeks over the horizon shortly after dawn. At noon on a summer day, you can have 120,000 lux." Terman constructed a 10,000-lux light, and found that SAD sufferers obtained effective relief with daily exposure of just 30 minutes. "You put the unit on your kitchen table," he says, "and by the time you've finished your morning coffee, you're protected for the day. In the not-too-distant future, high-intensity lights may become standard household appliances. Millions of people could benefit."

Can prolonged, regular exposure to 10,000 lux hurt? No, says Terman, but since individual tolerances to bright light vary, after a while some people may start to feel uncomfortable. Overdose symptoms include queasiness and agitation, but they disappear within a few hours of turning off the lights. "When people learn their limits and stay within them, they don't have any problems," Terman points out.

Several kinds of phototherapy units are now available, some through consumer health catalogues. But even if you invest in mood-elevating lights, a midwinter tropical vacation couldn't hurt. "With a diagnosis of SAD," says Freeman, "your trip might even be tax-deductible." ■

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

Truly, Madly, Deeply

HANNAH HINCHMAN

W yoming sometimes closes itself to a painter. In winter's deep cold I can read a snow-drift's curve, or analyze a purified blue, but by necessity I'm several steps removed, choosing views from windows or working out a system of mitten-sketching on skis. Summer is too knife-edged: Will the magpie finally drive the killdeer off her nest? Will the young red squirrels learn to negotiate slippery aspen trunks before the local cat sees how inept they are?

Sometimes, though, I find a breach. When summer wears out there comes an inviting pause. No more great stirring exhalations of pollen, few sudden blossomings. Most of the small-animal drama has resolved itself, and the survivors are perfecting their skills. The sense of completion in early autumn makes me linger outside longer, and drawings from that season usually

show a patience and degree of study I can't summon in the aggressive frenzy of summer.

I've taken a few stray hours to draw whatever comes to hand on the hillside behind the cabin. We've had frost, but the insects rebound each warm day,



and the flowers try a few final blooms.

The landscape is dominated by fireweed now. Blossoms fall off the tips of the seed-pod bellies, and when the pods open, fine clouds of down fan out—down so fine it makes milkweed fluff look like turkey feathers. The first plant I look at is just beginning the process, pod flanges curving back in a decorative spiral.

This fireweed is host to several garishly painted caterpillars, immobile as odalisques, reaching languorously for a better grip only when I bend their twig. I assume they are preparing to pupate. My cryptic insect book shows a moth caterpillar called an eight-spotted forester that looks very much like these—perhaps I'm looking at the western version. If so, I won't find the cocoon because they pupate underground, or inside wood.

On the bottom side of the fireweed leaf is a puzzle of quarter-inch caterpillars, black heads like seeds, grazing between the veins. I can't see their mouths moving, but their thor-

A painterly critique of life-and-death drama on the fireweed's stage



Why We Need A Smaller U.S. Population

A Message from Negative Population Growth, Inc.

Driven by explosive U.S. population growth, we are hurtling toward an environmental catastrophe.

With our present population of over 250 million (which is growing by about 25 million each decade!), we are poisoning our air and water, destroying croplands and forests, and setting in motion fundamental climate changes.

But even worse is yet to come, because we are rushing at breakneck speed toward a U.S. population of 400 million or more! If present immigration and fertility rates continue, we will pass 400 million by the year 2050 - just 60 years away - and still be growing rapidly.

Could any rational person believe that U.S. population growth on such a scale could be anything other than catastrophic for our environment? **What, if anything, are environmentalists prepared to do about it?**

We believe that all efforts to save our environment will ultimately prove futile unless we not only halt U.S. population growth, but reverse it, so that our population can eventually be stabilized at a sustainable level - far lower than it is today.

The central issue is surely this: **At what size should we seek to stabilize U.S. population?** Unless we know in what direction we should be headed, how can we possibly devise sensible policies to get us there?

The environmental organizations, with their millions of dedicated members, can play a decisive role in shaping public opinion - and eventually public policy - on this central issue.

We contend that recommending an optimum population size for the U.S., and policies to achieve it, should be the top priority issue for all environmental organizations.

The Optimum U.S. Population Size

The size at which U.S. population is eventually stabilized is supremely important because of its effect on vitally important national goals such as a healthy environment and a sustainable economy.

We believe these goals can best be achieved with a U.S. population size in the range of 125 to 150 million, or about the size it was in the 1940s, just before and after World War II. This optimum population size could be reached in about three to four generations if we do two things now that are well within our grasp:

1. Reduce annual immigration so that it balances with emigration (out-migration). Then, immigration will no longer contribute significantly to U.S. population growth, as it does now.
2. Lower our fertility rate (the average number of children per woman) from the present 2.1 to around 1.5 and maintain it at that level for several decades.

If almost all women had no more than two children, our fertility rate would probably drop to around 1.5, because many couples remain childless by choice, and many others choose voluntarily to have no more than one child. That is why we promote the ideal of the two-child maximum family as the social norm.

For many years our fertility rate was fairly stable at around 1.8, but for the last several years it has followed a sharp upward trend, and reached 2.1 in 1990. We believe that non-coercive incentives are necessary in order to reduce our U.S. fertility rate to about 1.5.

NPG Advocates These Measures:

- Eliminate the present Federal income tax exemption for dependent children, which now applies to all children, regardless of number. Such a program encourages large families, and further population growth, just the opposite of what is needed. (This recommended change would apply only to children born after a specified date.)
- To encourage couples and single parents to have no more than two children, give a Federal income tax credit only to those with one or two dependent children.
- Give a refundable tax credit (cash payment) to low income couples and single parents who are eligible for the tax credit, to the extent that the credit exceeds their tax liability.
- Give a cash bonus for voluntary sterilization to both men and women under age 35, who have already had at least one child.

We Need Your Help

With the reductions in immigration and fertility we advocate, our nation could start now on the path toward a sustainable population size of 125 to 150 million.

Without such a program, the United States is almost certain to continue its mindless, headlong rush toward a catastrophic population size of 400 million or more.

Could anyone doubt which of the two paths would best serve the broad national interest, and the interest of present and future generations of Americans?

We firmly believe that no couple, or single parent, has the "right" to have more than two children.

If you believe that too, and agree that we need to work toward a smaller U.S. population, we need your support.

NPG is a nonprofit, national membership organization established in 1972. Contributions to NPG are tax deductible to the extent the law allows. To become a member, and receive our newsletter, plus all our current and future publications, please send us your check today.

Yes, I want to become a member of NPG, and help you work toward a smaller U.S. population. I am enclosing my check for annual membership dues.

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S-1991

oughness is impressive and satisfying. They rest, then begin eating again in unison, their tiny heads swinging with each bite. The most recent meal moves along in their translucent abdomens, divided by a little space from the meal they've just begun. I imagine the constant rain of dung pellets, if somehow gathered into 50-pound sacks, would be sought-after fertilizer for opulent gardens. I am troubled, though, as I watch them. They are too young and tender; the killing frost will no doubt shrivel them as it will the last flowers.

The same fireweed seems lumpy at its still-blooming tip. It's encrusted with aphids, which vibrate when disturbed. Here comes a damsel bug, a predator akin to the ambush bug. It selects an aphid at the margin, grabbing it by one leg like a farmer clutching a piglet, struggling to pull it free. The aphid resists by hunkering down, thrusting its sucking mouthpiece deeper into the stem. Close by, a crab spider handles its now unidentifiable prey, turning it around like an art appraiser examining a Mimbres bowl.

My stray hours are up and I haven't gotten past the first fireweed. My theory of end-of-summer calm doesn't seem to apply on this scale—it's been no mild ramble through a resigned landscape. I've been kneeling here watching a life-and-death drama enacted by Felliniesque characters. The scientist's detachment is beyond me, and this simple sketching trip has frayed my nerves.

Behind the steady rain of death, though, is design, the artist's old refuge. If I'm unsettled by the thought of spider venom in a moth's circulatory system, I can concentrate on the moth's color pattern, or on the elegant joinery of the spider's thorax. I can turn from the battle itself to examine the armor, the camouflage, the weapons, knowing that many deaths, and many escapes, went into such fine workmanship. ■



The Dinosaur Story

TOM TURNER

Newton Drury read the clipping with interest. A Salt Lake City newspaper was reporting that the Bureau of Reclamation intended to build two dams within Dinosaur National Monument in Colorado and Utah. Although Drury was the director of the National Park Service—and so responsible for Dinosaur—it was the first he'd heard of the plan.

Drury wrote politely to his boss at the Interior Department, wondering if there might not be a mistake: Didn't

the bureau realize that Dinosaur was protected from this sort of thing? No, he was told, there was no mistake. But it was 1943, and with a war on, further debate was tabled.

The contemporary history of Dinosaur had begun three decades earlier. In 1909, during excavation of a hillside above the Green River, paleontologist Earl Douglass came upon one of the richest lodes of dinosaur bones ever found. Woodrow Wilson established an 80-acre national monument there in



1915, and in 1938 Franklin Roosevelt expanded the protected area to its present size—325 square miles.

Meanwhile, the Bureau of Reclamation, more interested in hydroelectricity than in archaeology, had targeted the Green as part of an ambitious plan to tame much of the Colorado and its principal tributaries. The bureau's Upper Basin Project was to consist of seven dams, including two in Dinosaur and one at Glen Canyon on the Colorado.

For nearly a decade the proposal languished, but the soaring demand for electricity during the postwar years brought the Upper Basin Project back to life. In 1950, when the Interior Secretary cast his lot with the dam-builders, Newton Drury resigned—

and the Sierra Club entered the fray.

Conservation organizations had a wealth of reasons for opposing the Dinosaur dams: The reservoirs would ruin wildlife habitat, drown Anasazi sites, and end whitewater rafting in the monument. More profound was the political question: If Dinosaur were sacrificed, what other national park or monument could be considered safe?

By 1952 the Sierra Club had hired David Brower, an editor and mountaineer who had served in many volunteer positions, as its first full-time executive director. Brower was immediately charged with rallying opposition to the Dinosaur dams. He teamed up with leaders of many national organizations, and together they hatched a multi-pronged strategy to bring Dinosaur to the public's attention.

The centerpiece of the campaign was a tried-and-true Club technique: Let people see for themselves what would be lost. During the summer of 1953 legislators, journalists, and hundreds of citizens floated the sandstone labyrinths of Dinosaur.

In January 1954 the focus moved to Washington, D.C., where the House Interior Committee was holding a hearing on the Upper Basin Project. A key witness was David Brower himself, who suggested that the Bureau of Reclamation's calculations were flawed, and that evaporation loss could be minimized by constructing one tall dam at Glen Canyon rather than a smaller one there and two in Dinosaur. The committee was flabbergasted. Who was this interloper from California to challenge the Bureau of Reclamation? Dam supporters ridiculed Brower, but he stood by his math and was proved right.

But humiliating the government's engineers was not sufficient, and the Club broadened its campaign. Wallace Stegner and Brower put together an illustrated collection of essays, *This Is Dinosaur: Echo Park Country and Its Magic Rivers* (Knopf, 1954). A special

**We won what we
fought for, then lost
what we scarcely knew**

issue of the *Sierra Club Bulletin* was devoted to Dinosaur, and articles in national magazines defended the sanctity of the monument. A coalition of conservation leaders published a full-page ad in the *Denver Post* vowing to fight the entire Upper Basin Project if the Dinosaur dams were included. Conservationists swamped elected officials with letters.

Congress got the message, and in 1955 the Dinosaur dams were dropped from the Upper Basin Project.

Victory's price, it turned out, was tragically high. By withdrawing their opposition when the dams inside the monument were removed from the proposal, conservation organizations in effect traded Glen Canyon for Dinosaur. Even less known than Dinosaur, Glen Canyon was at least its scenic equal, an intimate maze of gentle, multicolored sandstone. The few fortunate enough to have visited Glen Canyon before it was submerged—and many thousands more who have only seen photos and heard tales of its magic—have removal of the dam that drowned "the place no one knew" at the very top of their long-term wish list.

"Glen Canyon died in 1963, and I was partly responsible for its needless death," Brower wrote as Lake Powell began to rise behind Glen Canyon Dam. "The people need to know before a bureau's elite decide to wipe out what no men can replace. The Sierra Club has no better purpose than to try to let people know in time. In Glen Canyon we failed. There could hardly be a costlier peacetime mistake. With support from people who care, we hope in the years to come to help deter similar ravages of blind progress." ■



NEIL SHUTTLING

Afloat on the Nahanni

CECIL KUHNE

The floatplane disappeared and we were alone in the alpine stillness, the silence not even broken by the sound of rushing water. The six of us packed our three canoes and shoved off onto Moose Ponds, the modest headwaters of the South Nahanni River. A few moments later the ponds became a trickle of a stream edged by high, grassy banks. Our boats bumped over the water-smoothed stones as the young river forged its route through sweeping, wildflowered meadows.

Much of the Nahanni flows through the newly designated, completely roadless Nahanni National Park in the lower reaches of Canada's Northwest Territories. Even in whitewater circles, the river isn't well known. Presented with the possibility of spending two weeks paddling some 300 miles of it I had been mildly intrigued, but when I found that the region wasn't even named in my hundred-dollar atlas, I

realized that I couldn't pass it up.

We spent our first days negotiating a succession of small but serious rapids. When the whitewater stopped at the confluence of the Little Nahanni, we relaxed amid the dark, ice-shrouded Mackenzies, a northern extension of the Rocky Mountains. We pulled over to walk through the sweet spruce and crooked poplars, and with each step our feet probed the spongy moss like fingers testing a quiche.

As inviting as the shore was, for the next week we pitched camp on islands in the middle of the river, a strategy that served us well: The view was spectacular; the driftwood for evening fires was plentiful; and, we hoped, the water would protect us from midnight grizzly-bear visits. Guns are prohibited in the park (although all outfitters carry them openly), so we brought along a pressurized air horn as our bear defense. We had no need to blow, howev-

With paddle, tent,
and air horn in the
Northwest Territories

er, as our only encounter took place with us in our canoes and *Ursus arctos horribilis* foraging berries on the riverbank. With detached curiosity it gazed at us across the water until we drifted around a bend.

Rising high on our right was Mt. Sir James MacBrien, at 9,062 feet the tallest mountain in the Northwest Territories. Glistening blue glaciers flowing from the icefields of the Ragged Range, the narrow chain that embraces Sir James, rise straight up from the river. Nestled inside the range is Glacier Lake, an emerald gem that we reached on a dayhike by following a clear, cold, and fast-moving stream full of Dolly Varden trout and Arctic grayling.

When we arrived at the park boundary a few days later the current stopped, and our canoes hit the motionless water as though it were a retaining wall. We'd had whitewater, we'd had fast current, and now we had a lake—50 miles of it. Our only choice was to muscle the canoes across the limpid surface.

In the distance gold mountains signaled our approach to Virginia Falls. We had worried about missing our cue and falling over the big drop, but that seemed silly now: At twice the height of Niagara Falls, Virginia can be heard from far upriver.

We pulled over to shore and ran down the portage trail to see the falls, then spent the next several hours gazing at the tons of water tumbling over the rock. Reluctantly we broke ourselves away from the mesmerizing cascade to load up for the inevitable portage.

Nearly as remote as the upper stretch, the Nahanni below Virginia

Some of my friends prefer the warmth of an electric blanket. I go for the brilliance of Orion in winter and the heat of a hike through the drifts.

"Get serious," my friends tell me. And I do. First stop, Eastern Mountain Sports.



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in Colorado and in Minnesota.

Falls has seen more human settlement. Athabaskan-speaking Nahanni and Slave tribes moved into the river's lower reaches in the 18th century after the Cree drove them out of their hunting grounds on the Liard River. Outsiders began to penetrate the valley during the Klondike gold rush of 1897-98. Many of the fortune seekers floated the Yukon River to Dawson, but some ventured up the Nahanni, hoping to cross the Continental Divide at the river's source and then travel down the Pelly River to the gold fields.

A few prospectors even speculated that gold could be found in the Flat River, a major tributary of the Nahanni, but despite the legends of big finds, would-be millionaires met with disappointment—or worse. In the early 1900s two brothers, Charlie and Willie McLeod, trekked into the river valley seeking placer gold. They never returned; a search party discovered their headless remains tied to trees. Today the map marks such places as Deadman Valley, Headless Range, and Murder Creek.

At midnight of our last day on the river we arrived at a small Indian settlement at Nahanni Butte. Huge gray clouds drove in, making it difficult to see downriver. The storm hit as soon as we set up the tents.

In the morning we performed the melancholy tasks that must be done on every last river-day: taking out the canoes, meeting the shuttle driver, sloshing down the anonymous road to the airport, running to catch the plane. The sudden transition left us no time to say goodbye, but imprinted on my brain was an irrepressible, flowing image of the Great White North. ■

CECIL KUHNE is a freelance travel writer in Amarillo, Texas. A frequent contributor to outdoor magazines, he is the author of two books on whitewater rafting.

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

The Good Fighter

TOM TURNER

Fredric Sutherland, president of the Sierra Club Legal Defense Fund, died in an auto accident in Nevada on July 14. He often described his role at SCLDF as "the best law job in America," and those of us who worked for him found his particular combination of principles, brains, charm, drive, humor, and compassion quite perfect for that job.

Rick was an extraordinarily magnetic man with many passions: baseball, his family, the outdoors, and—as

with any skilled lawyer—a good fight. He liked nothing better than to whip the Forest Service or Union Oil or some other environmental miscreant in court, make the decision stick through the appeals process, and then have the defendant pay the legal fees. He saw in the practice of law the most powerful technique for bringing the scofflaws to heel.

Rick's professional career—he regretfully let go of his dream of being a major-league baseball player "for lack of talent"—began in a Los Angeles commercial law firm in 1964. After seven years there he and three colleagues established the Center for Law in the Public Interest, having secured a large grant from the Ford Foundation. (Rick's ability to coax contributions

from wealthy individuals and foundation executives was to become legendary.) The nonprofit organization—still very much in business today—represented citizen groups in various disputes, mostly with governmental agencies. Environmental organizations, the Sierra Club among them, were frequent clients. One of Rick's most important cases at the center ended with Southern California Edison and San Diego Gas & Electric being forced to cancel their proposed Kaiparowits power project in southern Utah, which included what would have been the world's largest coal-fired power plant.

When Rick took the job

Rick Sutherland:
on and off the field,
a leader and a friend



as executive director of the Sierra Club Legal Defense Fund in 1977, the organization (which is separate from the Sierra Club) was still small—two offices, five attorneys. Rick oversaw its expansion to eight offices, three dozen lawyers, and a new international program. His energy extended beyond SCLDF: He served on the governing boards of the Open Space Institute, the Southern Environmental Law Center, and the Southern Utah Wilderness Alliance, and was a founder of the Environmental Federation of California and the Environmental Federation of America/Earth Share.

It was his sound judgment, buttressed by the courage to piss off friends and enemies alike when necessary, that earned Rick the extraordinary respect and loyalty he enjoyed in the environmental community and among his staff. When it came to a big decision, the Legal Defense Fund's lawyers—all bright people supremely confident of their own abilities—would defer to Rick's opinion without objection.

And yet he refused to take himself too seriously. He could tell jokes so corny they'd roll a 12-year-old's eyes, and he could lecture the Supreme Court. He could pretend to moon a group of tittering people, and he could lambaste a roomful of Justice Department attorneys for the government's "bureaucratic lawlessness"—and be respected for doing so.

The Legal Defense Fund will carry on without him; Rick built a strong, stable, and independent organization. The environmental movement, of course, will continue. Yet we have lost a strong leader, a powerful advocate, a decent shortstop, and a friend. ■

The Legal Defense Fund has established the Sutherland Fund in Rick's memory. Tax-deductible contributions may be sent to Sierra Club Legal Defense Fund, 180 Montgomery St., Suite 1400, San Francisco, CA 94104.



KONALIN GAWO

Among Wind and Time

MARY OLIVER

I first came to Provincetown in what is, supposedly, the best of seasons—summer, everything glittering, the streets crowded, the vacationers cheerful. There is a saying here: You stay a little while and get sand in your shoes, and you can't leave. When this happened to me, more than 25 years ago, summer was already leaning into a spectacular New England fall.

The people had vanished. The ocean, blue and wild and empty, was everywhere, a last windblown prairie. Protected within the Cape Cod National Seashore were vast expanses of dunes, ponds, salt marshes, fields, and

woods. I was able to see the earth not as our reckless ambitions have rearranged it, but as it was created by those infinitely more mysterious forces: wind, storm, time.

At 6 a.m. the sky is awash with first light, pink and wild red, and even a few streaks of green. My dog, Bear, and I saunter through the trees and into the dunes—blond, swept sand nicked with the tracks of fox and deer—and through the sparse beach grass. All winter the long spears of the grass will bend down and draw, while the wind blows, perfect circles in the sand. Bear runs ahead and scatters a flock of snow buntings. They are small, perky, not so white on the ground as they appear in the air. They are of the most choice design and color—buff and russet and soft tones of gray and brown—with carefully drawn faces. Their voices are sharp flinders of sound, as though each

To observe intensely,
surrounded by
the wonderful ordinary

bird carries some small part of a complicated tribal music.

I would like to write a thousand lively, true, breathing poems. Or five hundred. Or one hundred. And I would like each one to have something of the real world in it. "Talent is long patience, and originality an effort of will and of intense observation," Flaubert wrote. I am patient as a stone and stubborn as crabgrass; that leaves intense observation, which is my reason for roaming as I do. It is from the particulars of the world that the mind begins its abstracting, thinking process. You can't have categories until you have examples. The perceptual experiences amass, the mind begins to swing out slowly to great, exciting thoughts. Out of both—and impossible without both—poems begin.

Later we go to the beach; it is a rare day when we skip this. Occasionally the wind pours ferociously from the northwest, a deadbolt wind we can't get through. Today the water is lively, bottle-green, and the wind is from the southwest. On the sandbars a dozen seals lift their heads as we approach; some trundle to the water and, entering it, become graceful, bold, and curious. When their mermaid faces appear

above the surface I wave, which makes them dive instantly, only to split the silk of the water farther on, and stare again. An enormous bull has lately appeared among them, dark as an old tire. He gazes at us from the sloping sand, looking like Teddy Roosevelt.

In high school I belonged to a knowledgeable organization that studied birds. I was by far the youngest member. Many kindnesses from this group of grownups remain with me; there is nothing better than to be taken into the woods with people who can identify flashes of color and songs and behaviors. But after a while I grew tired, not of the new knowledge itself, but of the constant seeking for it. (There is a day every spring—it is still observed—when people try to see, within a 24-hour period, a hundred different kinds of birds. On that day, as well as most others, I lagged behind, watching something ordinary and wonderful.)

In those years I was discovering my life's vocation. One of the reasons I continue to live where I do is that now I am able to collect the profits from premiums paid over years of residence—things are by now so familiar that I have no choice but to look deeper, and

deeper, into the ordinary. The catbird is my bird—and the wren, and the black crow, and the mockingbird. I am dazzled not so much by what I have never seen before, but by what I have never noticed before. Someone else might prefer raw wilderness, something new or strange. But I need the same old proving ground. I don't want the sight before me to change, only the depth of my looking.

In the afternoon I walk out toward Long Point, the final, bright curl of Cape sand where, near the lighthouse, someone recently saw a white owl.

Any poet will develop a theory of art, one encompassing his or her own intentions and the value of art in general. To me it is madness to set art apart from other social and spiritual endeavors. Writing that does not influence the reader is art that sleeps, and misses the point. Not infused with conscious intention, nor built upon polemic, a poem will inevitably reflect the knowledge and the outlook of the writer. Before we move from recklessness into responsibility, from selfishness to a decent happiness, we must want to save our world. And in order to want to save the world, we must learn to love it—and in order to love it we must become familiar with it again. That is where my work begins, and why I keep walking, and looking.

The owl is there, like a little white temple, on top of a dune. It swivels its thick neck and gazes at me peacefully as I come down the beach. When I am close enough, I see that its eyes are lemon yellow, and lashed with small feathers. The silky cloud-colored skin over one eye closes slowly. Then the great white wings open, and it floats off the dune, and out of sight. ■

MARY OLIVER's most recent collection of poems is *House of Light* (Beacon Press, 1990). She won the Pulitzer Prize for Poetry in 1984 for *American Primitive* (Little, Brown, 1983).



OWEN BERGSON



Photo by Craig Tuttle

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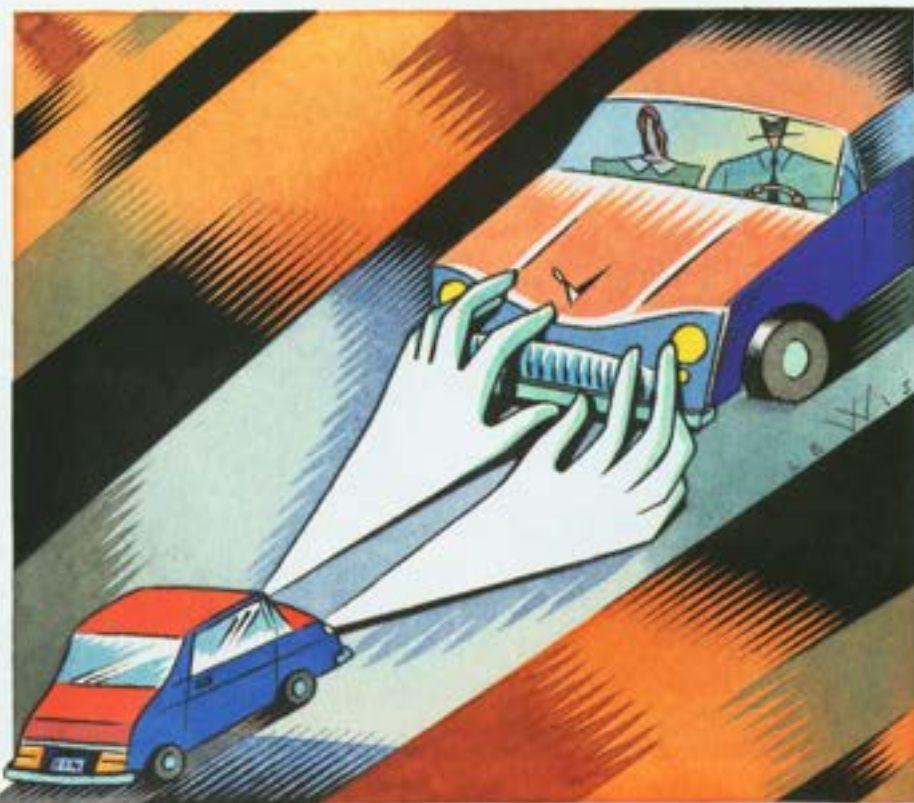
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Safe by Design

In the television screen a 4,000-pound luxury car collides in slow motion with a 2,300-pound subcompact. As viewers watch the hulk demolish the humbler vehicle (and, presumably, its occupants), a voice explains: "While smaller cars can save gas . . . they could cost you something far more precious."

The ad, prepared by a group called Citizens for Vehicle Choice, would have you believe that there's blood dripping from Nevada Senator Richard Bryan's proposed Vehicle Fuel Efficiency Act. By boosting the nation's "corporate average fuel efficiency" (CAFE) standards, Bryan's bill, S. 279, would require manufacturers to produce car fleets that average 40 miles per gallon overall by 2001, a significant increase from today's 28 mpg. While this would seem a prudent way to husband our petroleum resources in a precariously oil-dependent world, Citizens for Vehicle Choice portrays the Bryan bill as dangerous folly. Their multi-million-dollar ad campaign argues that only small cars can be fuel-efficient, and that small cars kill.

Before you decide you owe it to your loved ones to go out and buy a Mercury Grand Marquis, consider the source of these claims. Citizens for Vehicle Choice is hardly the bastion of grassroots activism it purports to be; most of its members are trade associations and other



groups linked to the auto industry. The same folks who have waged war over regulations requiring lapbelts, shoulder belts, air bags, rollover resistance, improved visibility, side protection, anti-lock brakes, and bumper-impact standards are now trying to convince you that they are deeply worried about your safety. The auto industry's real concern, of course, is not your welfare, but rather the effect of these changes on their bottom line—the cost of retooling for safety and efficiency, and the potential loss of plump big-car profits.

As the industry will eagerly tell you, bigger is better in a head-on bash, all other factors being equal. But all other factors rarely are equal. They certainly weren't when the compact Saab 900 four-door sedan recently earned the Insurance Institute for Highway Safety's rating as the

It's not size that determines a car's crashworthiness—but Detroit wants to scare you into thinking big.

■ ■ ■

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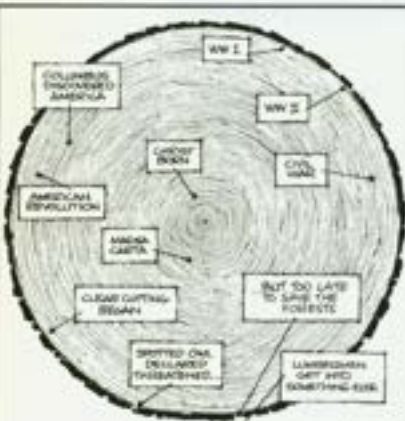
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safest sedan sold. (Its record was surpassed only by the "midsize" Volvo 240 station wagon.)

The critical variable is design, which can cleverly compensate for small size and light weight. Small cars (and large ones too) can be built for passenger safety if automakers choose to do so. That means, in part, air bags, tougher roofs and sides, anti-lock brakes, laminated sideglass, better interior padding, windshields affording greater visibility, and a frame designed to absorb the shock of a collision.

Even if you need room for kids, tents, and dogs, you can still travel efficiently: Despite industry claims, designers don't have to shrink a car to make it more fuel-efficient. Less than 2 percent of the efficiency improvements realized since 1974 have resulted from a shift to smaller cars. About 13 percent can be attributed to weight reductions that didn't reduce size; most came through other technological advances: better tires, engines, and transmissions, and improved aerodynamic design. Further gains could be made through use of recently developed fuel-saving options such as intake-valve controls, continuously variable transmissions, five-speed automatic transmissions, and two-stroke and lean-burn engines. Honda's 1992 Civic VX gets 55 mpg on the highway using lean-burn technology.

The years since passage of the nation's first CAFE law in 1975 have shown that the twin goals of fuel efficiency and safety are not mutually exclusive: While seat-belt laws, the 55-mph speed limit, and other safety measures helped reduce traffic fatalities by 40 percent, new-car fuel economy doubled. Some manufacturers made impressive gains in both safety and efficiency. The Volkswagen Rabbit was larger but lighter and more fuel-efficient than its predecessor, the Beetle. The newer model's gas mileage was 25 percent better, while its passenger death rate (as measured by the number of fatalities over a given number of miles driven) was 44 percent lower.

Ford showed similar results when it replaced its subcompact Pinto with the Escort in 1980; ditto Honda when it redesigned its Civic in 1981.

"'Big versus small' may make catchy ad copy," says Benjamin Kelly, president of the Institute for Injury Reduction, a Maryland-based research and educational group, "but it is not the issue. The issue is whether manufacturers will decide to make cars whose sizes, masses, materials, structures, crash-protection features, and fuel-consumption levels reflect widely available technologies."

When the facts are laid on the table, the small-car crowd can take heart: Their vehicles can be as safe as (even safer than) those of their gas-guzzling neighbors. People who have to have a bigger car need not hang their heads in the presence of environmentalists, either; they should merely try to get a gas-saving model in the appropriate size.

Unfortunately, that's a tall order. There aren't enough efficient midsize

or large cars available. But part of what the Bryan bill is all about is ensuring good choices for consumers who want fuel-efficient vehicles—something "far more precious" than shikking the auto industry from change.

—Joan Hamilton

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

Tennessee Valley Atomic

Nuclear New Deal: It's your patriotic duty to turn those lights back on.

Nothing fuels a utility's zeal for nuclear energy quite so warmly as unlimited access to taxpayers' pockets. What better nuclear booster, then, than the Tennessee Valley Authority, the Southeast's New Deal dinosaur with a \$30-billion line of credit

from the Treasury Department? Even after dropping \$20 billion on atomic misadventures over the past two decades, the TVA is still radiating nuclear enthusiasm. Three of the reactors shut down after the notorious safety scandals of the 1980s are back on-line (the latest, Browns Ferry Unit Two, going critical in June), with six more to follow by the year 2000.

When you're in love with the atom, there's no room for rivals. After Ronald Reagan appointed him TVA chair in 1988, former Nissan Motors exec Marvin Runyon promptly scrapped the TVA's nationally acclaimed, \$40-million-a-year energy-conservation program and vowed to bring all nine previously planned reactors on-line. Nuclear power, says Runyon, "could be considered to be the environmental power source of choice." He further declared it his "patriotic duty" to order a brand-new nuclear plant, the first for any U.S. utility since 1973. "Somebody has to take the lead," he says, "and I think that we're well suited to do that."

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The authority's suitability to kick-start the moribund U.S. nuclear industry comes by virtue of its blank-check financing and total lack of accountability. Beholden neither to stockholders nor a public utilities commission, the TVA's three-member, presidentially appointed board is free to pursue its energy whims. "There's nothing rational about the TVA's devotion to nuclear power," says former TVA chair David Freeman, who in 1985 managed to shut down the authority's mis-managed nukes and institute the energy-conservation program. (He now directs the Sacramento Municipal Utility District, where he oversaw closure of the Rancho Seco nuclear plant.) Ironically, Freeman says, the only way for nuclear power to return in this country is to go outside the marketplace: "No sane capitalist would put any money into the existing [nuclear] technology."

Powering current TVA chair Runyon's vision of a nuclear future is a forecast for vastly increased energy demand in the TVA's service area (which includes all of Tennessee and parts of six surrounding states). Karl Kurka of the Tennessee Valley Energy Coalition calls the TVA's demand projections "sheer insanity" and jokes that for the region to need the power the resurrected nukes would produce, "Knoxville would have to grow to be the size of Los Angeles and Nashville as big as Tokyo."

At a time when many other utilities are working to decrease power demand, the TVA is trying to make its dream come true by "load-building," financing customers willing to convert to electric heat and offering rebates to major power users. (The exercise is reminiscent of TVA's early years, when customers were encouraged to leave their lights on at night. In 1973, TVA ratepayers used electricity at *twice* the national average.)

Doug Carver, a TVA executive who once ran Freeman's energy conservation program, argues that the utility should stick with the nuclear program,

if only because of the enormous amount of money it has invested in it. ("That's like saying I ought to dig deeper because I'm in a hole," says Freeman.) Carver now hopes that any money ratepayers might save through conservation will be applied to the purchase of new electric appliances. "We want customers to use energy as efficiently as possible so they change their lifestyles, improve their standard of living," he told the Nashville *Tennessean*. "By doing that, they can go out and buy a Jacuzzi or a microwave."

But new toasters alone cannot save the TVA, which is rapidly approaching financial meltdown. It has evaded bankruptcy thus far only by postponing payment on its \$20-billion nuclear debt. By bureaucratic sleight of hand, Runyon has managed to keep rates frozen for the past four years, an essential element in keeping major customers like the city of Memphis from fleeing the system. There's no way, however, to stop enormous rate increases once troubled plants like Watts Bar start coming on-line and their construction costs have to be factored into the rate base. If a considerable number of customers drop out of the grid as a result, only a massive federal bailout will save the TVA from total collapse. (The exodus from the authority is beginning anyway: the Department of Energy's multibillion-kilowatt contract for uranium enrichment at the Oak Ridge National Laboratory expires in 1994, and Reynolds Aluminum has already opted for the hydropower bounty of the James Bay project in Quebec.)

Finally, there is the safety question. A fire at the Browns Ferry plant in 1975 came close to causing a meltdown; in 1985, safety violations, shoddy designs, and deliberate falsification of emergency-readiness reports shut down all of TVA's operating plants. Things have not improved much since. "I've never seen anything worse anywhere else," declared a Nuclear Regulatory Commission administrator inspecting construction at Watts Bar this January. In June, less than a week after Browns Ferry went back on-line,

the plant had to be shut down because someone left two doors to the containment vessel open. The Tennessee Valley Authority, suggests Freeman, "hasn't done anything for the nation but set a bad example."

—Paul Rauber

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

Cowboy Junkies in Grand Teton

This land was made for you and me, unless you've got more clout.

For many Westerners, the notion of wilderness is linked to the Marlboro Man mystique: a campfire by the river, horses grazing nearby, mountain peaks lit by the setting sun. The connection is especially close in Jackson Hole, Wyoming, with its century-old tradition of ranching in the shadow of the Grand Tetons. Now Jackson is debating the virtues of history versus wilderness: Is Grand Teton National Park the place to preserve the cowboy fantasy?

Grand Teton owes its present form to John D. Rockefeller, Jr. Starting in 1927, John D. bought up 33,000 acres of homesteads and dude ranches in the rapidly developing valley, intending to turn "the entire Jackson Hole back to nature as the greatest scenic and wildlife preserve on the face of the earth." Over the fierce objections of local ranchers and developers, the area was officially designated Grand Teton National Park in 1950.

Its return to nature, however, has been incomplete. Hundreds of old cabins and barns remain, as well as several entire ranches—one of which the Rockefellers reserved for themselves. Another, the Triangle X, was leased by the well-connected Turner family to operate as a dude ranch. Most prominent of the Turners is son John, the Wyoming state senator who has gone on to direct the U.S. Fish and Wildlife

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PRIORITIES

Service under George Bush. With his courtly manner and cowboy boots, Turner (frequently touted as a future Interior Secretary) is the picture of Republican environmentalism. In a somewhat gushing profile last year, *Outside* magazine proclaimed that Turner "could be the environment's most ef-

horses and mules than needed for ranch operations, the latter resulting in "chronic overuse" of some pastures and "near total elimination of vegetation from some 25 acres."

John Turner declines comment on the charges; his brother Donald says that the Park Service has "completely misrepresented" conditions at the Triangle X. John Turner, it should be

Grand Teton superintendent Jack Stark, "largely ignored the interests of the government . . . I hope this situation will not be repeated."

Now the Turners are trying to marshal support for the preservation of the Triangle X as a "working Western ranch." Nor are they alone in their desire to defend cowboy culture in Grand Teton. The Wyoming State Historic Preservation Office is seeking the "protection of the early homesteading and ranching resources" in the park by turning old buildings into new concessions or, in one case, a "Living History Exhibit for Ranching." According to the SHPO, "Historic settlement by man is as much a part of Jackson Hole as the mountains, rivers, and vegetation."

The problem is that "historic settlement" in the area has often been directly opposed to natural-resources protection. "Where there is a conflict," says Louisa Willcox of the Greater Yellowstone Coalition, "the resources should win." In the case of the Triangle X ranch, she says, history has been "the story of abuse by the Turner family over a long period of time." Superintendent Stark takes particular exception to the SHPO's notion of "historic grazing," saying that "the only historic grazing in Grand Teton was done by the buffalo, the elk, the antelope, and the deer."

The Wyoming SHPO insists that it doesn't want to turn Grand Teton into a new Ponderosa. The concessions were proposed, says SHPO program manager Sheila Bricher-Wade, only because of the Park Service's paltry budget for historic preservation. "I don't think any of us want to see someone setting up shop and selling rubber tomahawks in those buildings," she says.

While supporting the preservation of truly historic buildings, the Sierra Club nevertheless worries about the "political consequences" of the SHPO's proposals. Believing they have an ally in this state body, says the Club's associate regional representative, Kirk Koepsel, local ranchers like the Turners have renewed their call for "historic grazing" in the park, while "local entrepreneurs have been given the idea that they can



Culture or clutter? Grand Teton debates the merits of historic preservation.

fective ally in the White House," if he could just find a way to "shake off those adoring environmentalists."

Back at the ranch, however, the picture doesn't look quite so sunny. According to Park Service documents, operations at the Triangle X—which include grazing and farming more than 1,500 acres of land in Grand Teton—have been "seriously inconsistent" with Park Service policies. Alleged violations include an illegal dump that may contain hazardous waste; an unauthorized gravel quarry; cutting park trees for use as borders in the ranch's parking lot; consistently ignoring park rules in the conduct of raft trips on the Snake River; and running far more

noted, has not been involved in day-to-day ranch operations since becoming head of Fish and Wildlife in 1989. Many of the violations the Park Service alleges, however, occurred during the time he was directly involved in running the ranch.

The ventilation of Park Service complaints about the Turners sets the scene for negotiations on a new concession contract next year. Still fresh are the bureaucratic wounds sustained in the last round in 1974, when the Turners one-upped the Park Service by appealing to their friends in the Wyoming congressional delegation and the Interior Department. The resulting contract, gripes outgoing

obtain cheap housing or business locations by restoring historic structures." Indeed, the daughter of a U.S. ambassador has already applied to use a pioneer cabin as a ski lodge, while another local is offering \$100,000 to restore an old building—if she is granted a lifetime lease to the property. For such wealthy and powerful inhabitants of Jackson Hole, "historic preservation" means preserving their right to use Grand Teton National Park as their personal playground. —P.R.

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

Global Chilling

Pouring cold water on the greenhouse debate

Just to be on the safe side, Shell Oil is raising the height of its offshore drilling platforms. Island nations like the Maldives (elevation 3 feet) worry about sinking, Atlantis-like, beneath the foam. An upbeat U.S. offi-

cial tries to comfort anxious Bangladeshis: "Where you now have cows," he explains, "you will have fish."

Six of the seven hottest years ever recorded were in the last decade, and 1990 was the toastiest yet. Every industrialized nation in the world except the United States has committed itself to reductions in carbon-dioxide emissions; around the globe, everyone is eyeing the high ground in the New World Oven.

Well, almost everyone. "Who told you the earth was warming . . . Chicken Little?" sneers a full-page newspaper advertisement sponsored by a group calling itself the Information Council for the Environment (ICE). "How much are you willing to pay to solve a problem that may not exist?" Another ad shows Earth from space: "Doomsday is canceled. Again," it chortles. "In the 1930s, some scientists claimed we were in the middle of a disastrous warming trend. In the mid-1970s, others were sure we were entering a new Ice Age. It's the same with global

warming. There's no hard evidence it's occurring."

The stated goal of ICE is "to help ensure that action on the issue of global warming is based on scientific evidence." Internal ICE documents leaked to environmentalists, however, reveal a rather unscientific plan to "attack proponents through comparison . . . to historical or mythical instances of gloom and doom," with the apparent aim of preventing any action at all on global warming—a policy remarkably similar to that being pursued by the Bush administration.

The group is sponsored by two dozen coal companies and electric utilities, which explains its eagerness to put the global-warming debate in cold storage. "Public opinion polls reveal that 60 percent of the American people already believe global warming is a serious environmental problem," wrote National Coal Association President Richard Lawson, soliciting support for ICE from his members. "Our industry cannot sit on the sidelines in this de-



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bate." To pay for ICE's half-million-dollar test campaign this summer, participating utilities were dunned according to their coal-produced kilowatt hours. That is, the amount they pay to debunk the greenhouse effect is proportional to the amount of greenhouse gases they produce.

This June, ICE blitzed test markets in Fargo, North Dakota; Bowling Green, Kentucky; and Flagstaff, Arizona with its not-very-sophisticated ads. According to the leaked documents, ICE's strategy was to have a "spokesman from the scientific community" deliver "irrefutable evidence" to targeted demographic sectors: "younger, low-income women" and "older, less-educated males." (The papers also show a dispute over how to achieve the clever acronym. Intelligent Concern for the Environment? Informed Choices? "Informed Citizens for the Environment" was rejected because of its "activist connotations.")

Serving as "spokesman from the scientific community" was Robert Balling, director of the Center for Climatology at Arizona State University. Balling was asked by ICE whether its material was scientifically valid. "My initial response was, of course, 'No,'" he says. Yet he went along with it, even starring in a number of radio spots ("They said they liked my voice") largely because of his belief that global-warming partisans were overstating their case. "ICE was trying to sharpen its statement, where a scientist would use a lot of caveats," he explains. "That's the way an ad campaign works." By July, furor over the scientifically questionable ads led Balling and fellow advisory-committee member Patrick Michaels of the University of Virginia to drop out. Both men, however, continue to defend ICE as an appropriate antidote to what they call the "apocalyptic view" of climate change.

Even global-warming skeptics agree that greenhouse gases do trap heat in the atmosphere, and that the planet does seem to be getting warmer.



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What scientists disagree about is how hot it will get, how fast it will get that way, and whether the evidence warrants drastic measures. The danger, says John Pike of the Federation of American Scientists, is that "by the time you have signals so unambiguous that nobody is going to argue with them, you're in deep, deep doo-doo."

After evaluating its summer test campaign (which ironically coincided with a national heat wave), ICE is considering going coast to coast in the new year. Why the big push now? Industry is concerned about global-warming legislation pending in Congress, like the auto fuel-efficiency bill by Senator Richard Bryan (D-Nev.), or the proposal by Representative Pete Stark (D-Calif.) for a "carbon tax" on fossil fuels. "A few in industry would say that global warming is not happening or is insignificant," Stark said on the House floor. "They sound more and more like the tobacco companies claiming cigarettes are healthy and don't cause cancer." —P.R.

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

Compromise in Defense of Earth First!

*A monkeywrencher trial ends,
and no one's happy.*

It was the trial that was supposed to "send a message" to radical environmentalists: Hang up your monkeywrenches for good. In a Prescott, Arizona, courtroom, Earth First! co-founder Dave Foreman and four local environmental activists stood accused of conspiracy to sabotage nuclear facilities in three states. Their arrests followed an 18-month, \$2-million undercover probe by the FBI, which culminated on the night of May 30, 1989, in a dramatic bust in the Arizona desert by more than 50 heavily armed G-men equipped with night-vision

goggles and anti-snake leggings. Early the next morning federal agents brandishing guns burst into Foreman's bedroom in Tucson, dragging the former Wilderness Society lobbyist off to jail in his shorts.

From the start, the feds sought to portray the "Arizona Five" as dangerous "eco-terrorists"; Assistant U.S. Attorney Roslyn Moore-Silver promised the jury a case about "anarchy and revolution." Three of the defendants had been caught red-handed trying to topple a power line (albeit one leading to the Central Arizona Project, which diverts Colorado River water to suburban Phoenix and Tucson, not to the nearby Palo Verde nuclear plant). Furthermore, the FBI had tape-recorded nearly 1,000 hours of private conversations—including some that took place in the defendants' bedrooms—in which various self-incriminating statements were made regarding the sabotage of the controversial Snowbowl ski resort above Flagstaff and the Canyon Uranium Mine near the Grand Canyon.

Yet serious holes started appearing in the government's case even before the trial got under way. Foreman's colorful attorney Gerry Spence (fresh from his successful defense of Imelda Marcos) obtained a particularly damning tape recording made by Michael Fain, the FBI agent who infiltrated the group posing as an emotionally disturbed Vietnam vet. Forgetting that his body wire was still live, Fain discussed the case candidly with a fellow agent: "[Foreman] isn't really the guy we need to pop—I mean in terms of an actual perpetrator," he said. "This is the guy we need to pop to send a message, and that's all we're really doing."

Popping Foreman, however, was no easy matter. The prosecution made much of the \$100 (from an Earth First! yard sale) Foreman had given to Fain "to help on whatever work you wanna do." Yet Foreman had stubbornly refused to endorse Fain's wild talk of nuclear sabotage. As the money changed hands, a plane circling overhead recorded Foreman telling the undercover agent, "Just drop the plan . . .

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PRIORITIES

I am not a part of this . . . You don't get support for your movement by frightening people."

In the end, the prosecution's evidence boiled down to the inscribed ("Happy wrenching") copy of Foreman's book *Ecodefense: A Field Guide to Monkeywrenching* that he had handed to an FBI informant. "What my client did is write a book about the defense of Mother Earth," snorted Spence in court, "and they don't like it."

The Earth First!ers most keenly interested in the nuclear conspiracy, in fact, turned out to be those on the FBI payroll. While defendant Mark Davis fantasized about shutting down Palo Verde, Diablo Canyon in California, and the Rocky Flats plutonium plant outside Denver, it was the FBI that offered concrete support. Davis didn't know how to use a propane cutting torch; infiltrator Ron Frazier taught him, and drove him to three different shops to buy one. Frazier also lured the long-haired cabinetmaker into a scheme to buy incendiary thermite grenades from a phony Army source. Davis wanted to topple the water-project tower for "practice"; Fain urged him to hit Palo Verde instead. When Davis told Frazier he planned to give up monkeywrenching, Fain talked him back into it.

It takes at least two to make a conspiracy. The government's problem was that in every instance one of the two happened to be an FBI employee.

Star witness Ron Frazier proved an equal embarrassment to the prosecution. Although the FBI paid him more than \$50,000 to serve as a snitch, defense cross-examination revealed another motive: Defendant Ilse Asplund had jilted him in favor of Mark Davis. (More soap-opera shenanigans were provided by Michael Fain, who in his undercover identity romanced a Prescott single mother whose only relation to the case was that she happened to be a friend of defendant Peg Millett. Fain got access to Millett; Millett's friend ended up in therapy.) Also brought out was Frazier's 20-year history of use and



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sale of marijuana, LSD, and peyote, setting off a mad scramble by the government to get him immunity.

Ratting on your friends is not without its psychological costs: The FBI had to send Frazier to San Antonio for a five-hour hypnotherapy session to ease his conscience. Frazier admitted to practicing self-hypnosis on the stand (he called it "bridging in" and "bridging out"). He also volunteered in open court that, had he not been able to inform for the FBI, he was going to "pull a Rambo" and kill participants at the 1988 Earth First! Rendezvous.

A two-week recess followed the completion of Frazier's testimony in late July, and courtroom spectators waited eagerly to see Michael Fain take the stand. They never got the opportunity. When the trial resumed on August 13, the prosecution abruptly dropped its nuclear-conspiracy case and settled for a plea bargain to lesser charges (although still felonies) from all defendants. Davis pled guilty to vandalizing the Snowbowl ski resort, Millett to aiding and abetting, and the other two to failure to notify authorities of the crime. Foreman, who many thought had a good chance of walking away free from a full trial, admitted to conspiracy to damage property by autographing his book, for which he received five years' probation. The toughest sentence, six years in prison, went to Mark Davis, who said he accepted the plea bargain in order to save his colleagues from possible long jail terms. (The others received sentences ranging from 30 days to, in Millett's case, three years.)

Neither side was pleased with the outcome. The defendants, unwilling to trust their fates to a small-town jury, traded away possible exoneration for lesser sentences. As for the prosecution, its charges of violent "eco-terrorism" were shown to be largely the result of the bureau's own *agents provocateurs*. In its obsession to tie the issue of monkeywrenching to nuclear sabotage, the FBI had to invent a conspiracy where none existed; whatever "message" it intended to send was lost along the way. —Christine Keyser



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C. L. Rawlins

Winter's Tracks and Traces

Fresh snow comes to Black Joe Lake in October, ankle-deep in the conifers, soft on the north-facing slope above the outlet. In the whiteness there are marks—the prints of squirrels and newly cut pinecones—but no sign of boot or shod hoof.

The snow isn't a book, but it can be

of substance and of form. As water loses heat, it gains a serene architecture. The unhurried descent of snowflakes after the plummet of the fall rains, the quiet that accompanies them to earth: These speak of an order beyond logic and beyond our disorderly flood of feeling. To be liquid is to be alive. I palm some snow and let it melt on my tongue as my co-worker Jim catches up, puffing small clouds.

The summer has been like one long, exhausting day, and the snow comes as a relief. I want to catch that winter mind, to watch the flakes spin through the pines like ciphers for innocence. But the snow at our feet, the real stuff in which we leave tracks, is not as pure as thought. So we have work to do.

Our packs clank with wrenches and bolts. We carry large plastic bags, duct tape, rolls of steel cable. We have come to set up a snow collector, a hollow tower of galvanized steel painted white. Lined with three bags, it will intercept and hold the snow. By December, 60 pounds or more will be straining against

the plastic, six feet above the earth.

Hauled out in a pack, melted, bottled, shipped, and analyzed, the snow will soon tell its tale. Nitrates record a million distant cars coughing into life each morning and freeways glinting with currents of steel and glass. Sulfates track the wealth of coal and metal, the outlines of tall smokestacks topped by blinking lights and sprawled cities burning through the winter night.

When I think of the snow's chemical burden, I respond first as a poet, with

read. In it we find the two-by-two leaps :::: of a pine marten that tried to catch squirrels as they dug cone caches in the duff. Farther along a coyote also trotted up the trail, stopping to sniff at each cache, hoping to find a squirrel nose-down. Nearby are the tracks of a doe and fawn headed downslope for water (or for the winter, which comes early here close to the Continental Divide).

The snow shines whiter than any page, in any light. I've always thought of snow in the same mental breath as purity, both



*Reading the snow
can be a lesson
in mixed messages.*



anger: How could this be, that my friends and my people can set such poisons loose, unthinkingly, in the course of what we have come to consider normal lives? When the air itself is dirty, what can be clean?

Then I treat it as a scientist. I collect the snow. I analyze its chemistry. I trace the contour of the natural world with tables, graphs, and regressions. I want to add to the glittering bulk of knowledge, leaving passion to the politicians . . . and the poets.

I chose to work in this mountain range, years before this project started, because I wanted to live in the wild. I wanted to do so without felling trees or herding dudes or pounding summer-home nails, the usual things mountaineers do to contrive a living. I never imagined I'd end up confronting the city in trace chemistry, hundreds of miles downwind.

We cross the creek with careful boots on wet logs bowed above the roiling white. The sky lifts and the blue flanks of the peaks emerge. Snowy willows brush our legs and our feet tangle in a net of fallen bluebells. In the open, our steps compress the snow, packing it into the cured grass, scuffing it from bedrock.

In a gray canyon gouged by a glacier, at the outlet of a long, cold lake, stand two plastic bottles with white funnels open to the sky—rain collectors. We cap the bottles and dismount the funnels, stowing burrette clamps and rings in our packs. From a talus cave we retrieve three large tubes of galvanized steel—like culverts—and bolt them together to form a snow collector. We tape six-foot plastic bags around the rim and clamp them down. We string guy cables to expansion bolts set in three boulders and raise the whole thing—in effect a nine-foot-high trash can aimed at heaven. This is how we catch the snow. Big Science. Yodelay-hee-hoo.

How little of oneself there is in this world—in one corner alone, ranks of granite peaks, a million rocks, a thousand pines, a hundred cold clouds,

a two-mile lake, then just Jim and me in our parkas and mountain boots, leaving tracks.

To know this place as a scientist would take lifetimes. There is too much to understand: the atomic structure of the pink feldspar crystals in bedrock, the counter-entropy of water vapor chilled into crystals high in the air, the eco-chemistry of all that hydrogen coming back to earth as snowflakes instead of diffusing in space, the turbulent spirals of water molecules in the falling stream, the specialization of plant cells into bark, leaf, needle, that last purple aster, bowed by the heavy white. It's all here, but none of it tells you why.

I stand quietly, like a snowman, until Jim tips his pack and his hammer hits a rock. We begin to talk, in the light way of persons whose minds are turned to tasks, of nothing I will remember later. Like the snow, the talking comes as a relief.

I scoop another handful of white. The snow is good in my mouth, fresh with a slight seasoning of earth. The wind is raw and we have nine miles to hike out. The clouds are close to our heads. The wind veers and the snow swirls as we tighten the last cable and seek the pines.

I had asked Jim to pack "the lunch," meaning food for both of us. He misunderstood and packed only his own. After a grunt of dismay, I sit, stoic, and try to look as if I am above mere food. He, in turn, looks guiltier with every bite. So we share Jim's lunch: a mystery-meat sandwich, a Pop-Tart, and some gummy candy shaped like dinosaurs. Then we sit, half-hungry, waiting for a flurry to blow by, watching rollers on the long, black lake.

I believe that what I see has meaning. What's disconcerting is this ability to see double: snow as I first saw it, a cold, magic white, and then these perverse chemistries. Science has taught us much of concentrations and kilograms-per-hectare. It has yielded the polyester in my long underwear and the nylon in my parka and sunglass frames. It has yielded an immense amount of information about how the

world may work, from the Big Bang to the AIDS virus, yet we don't know how to integrate our knowledge into the legends that form and guide us. We don't yet know how to live with our facts.

Our ancestors lived in a world as complex with spirit as ours is with electromagnetic waves. Metaphor, the logic of the heart, was what they used to grasp the immensity. We have particle physics.

It would be more comfortable to see snow only as snow, to look at a stream and crave the wetness of it, to have no thought of dioxin or *Giardia*, to belly down and drink, to taste water again simply as water. To have no second thought about love.

Maybe that's what Eden means: a place of one mind. All sense and no judgment. Some stories call it the Dreamtime, when we talked with animals. Did we live it, or do we yearn for it so much that it comes to exist in our hearts? Our stories last longer than our selves.

The snow flurry abates and Jim and I return to work: Rinse the bottle three times and cap it. Shake the cold from your hands and pocket them until your fingers can hold a pen. Note the date, time, weather, and stream discharge. Pack the samples for the rough hike down.

We both know the drill. It falls together so easily, counting and labeling, doing the prescribed thing. We gather up the world in little bits.

Near sunset we finish, close to exhaustion. We hoist the packs, heavy as mammoth meat, too tired for anything but the immediate: get down, get home. The snow thins out and the cold deepens. We will do the last five miles in the dark.

Taking that long first step back, I have to stop thinking. My boots are soaked and the rocks are slick. As Jim balances across the snowy logs above the creek, I stop and lift my eyes to the clouds, cock an ear to the wind, and inhale a great, slow breath of the only world I know, whether or not it has anything to say. ■

THE ONE

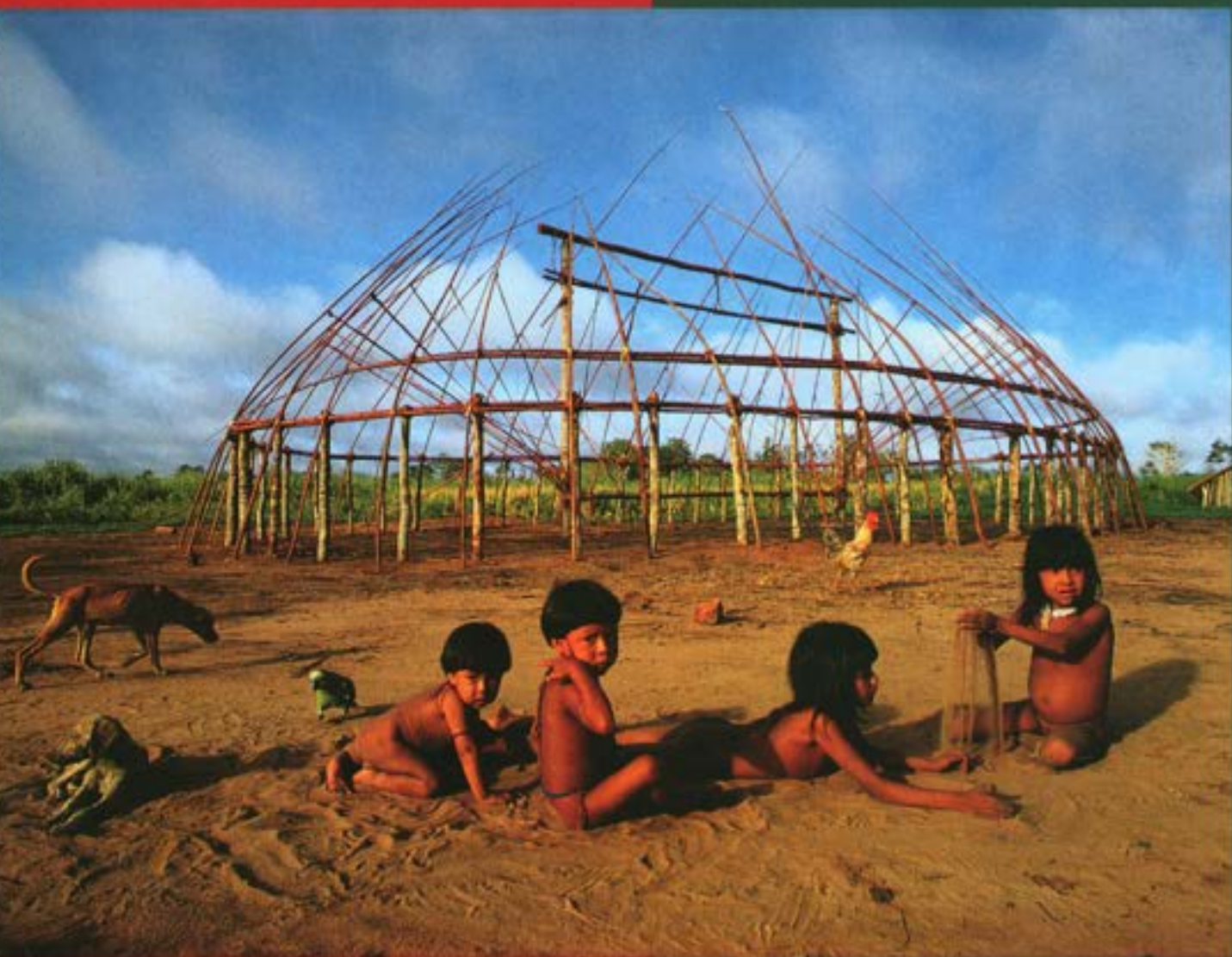


S WHO REMAIN

AN AMAZONIAN PORTRAIT GALLERY

In 1935, early in his lifelong adventuring career, Loren McIntyre was a high-spirited North American merchant seaman voyaging on South America's tropical rivers. At the time, his role models were the 19th- and early-20th-century explorers who saw the rainforest wilderness as a frontier to be discovered, conquered, colonized, and developed. He shared their notion of progress, and certainly didn't perceive the Amazon basin as an environment that needed saving. ♦ But his thinking shifted in the 1960s while working for *National Geographic*, photographing and writing about Amazonia and its indigenous peoples. If any one experience could be said to have shaped his attitude toward the region's fate, it was probably his being marooned among a tribe of Mayoruna on the Peru/Brazil border. In 1969 McIntyre appeared uninvited in the tribe's homeland, dropped off by a floatplane on the upper Rio Javari. No non-Indian had previously come the Mayorunas' way, and McIntyre was given little choice but to follow them through the forest as they migrated rapidly from one encampment to another. In the process, though McIntyre lost everything but his remembrances, he acquired a deeper sympathy for a people and a way of life he saw as imperiled by the advancing forces of Western civilization. ♦ Since then, in the course of traveling every major tributary in Amazonia's nearly 2.7-million-square-mile expanse, McIntyre has watched the gradual but (he insists) not yet overwhelming erosion of the ecosystem by enterprises ranging from lumbering to coca plantations. To show us this disappearing world he has produced *Amazonia* (Sierra Club Books, 1991), from which the photographs that follow have been assembled. As these images make clear, McIntyre has few equals in depicting the world's rainforest peoples. Only a handful of modern Amazon explorers have spent time with so many tribes in so many countries: the Yuruti of Colombia, the Chacobo of Bolivia, the Shapra and Achual of Peru, the Txicão, Munducurú, Kuikuro, and Txukahamëi of Brazil, the Yanomamö and Makiritare of Venezuela, the Cofán of Ecuador, and many others. ♦ It has been McIntyre's harrowing privilege to witness the twilight era of Amazonia's native cultures. As he observes, when Europeans first began exploring the Amazon in the 1500s, the Indian population was perhaps 2.5 million. By the year 2000, fewer than 100,000 may remain. Some of the tribes he has known no longer exist. McIntyre and his generation of explorers will probably be the last to encounter previously uncontacted aboriginal peoples.

Photographs reprinted by permission of Sierra Club Books from Amazonia, copyright © 1991 by Loren McIntyre.



For centuries, while the rest of Amazonia was being conquered, the tortuous rapids of the Rio Xingú kept slavers from paddling into Txicão Indian territory. But by the 1960s, hunters, prospectors, and settlers had advanced far enough to force the tribe to retreat from its native lands and to build a settlement in Xingú National Park (above). ♦ The rainforest of northern Peru, home to a Shapra father and son (right), is being eyed by another class of outsider – coca growers who would fell trees to plant their illicit crop.









For some Amazonian tribes, paint rather than clothing remains the decoration of choice. Traditional "red men" of the forest, such as these Kuikuro warriors of the upper Rio Xingú (left), wear pigment from the crushed seeds of *urucú* shrubs. ♦ To mimic a blue-and-yellow macaw (below), an Urueu-Wau-Wau warrior (above) has tattooed his cheeks with the juice of genipap fruit. The tribe regards the macaw as an ancestor.







To cross a river near their village in the Peruvian highlands, Machiguenga youths traverse a span made of living saplings bent from opposite banks and joined above the torrent (left). If its lashings fail, the structure can only fall *ap*. ♦ In ritual manner, an Achual man (above) in northeastern Peru drinks the regional brew, *masato*, made by fermenting manioc with saliva.





Scarlet macaws, often a tribe's totem or a child's favorite pet (above), live so long that some are rumored to speak the languages of extinct Amazonian tribes. ♦ Few inventions have been as useful to Amazonians as the hammock. A Makiritare woman (below) rests in one of classic forest-dweller design. ♦ A Yuruti boy in Colombia (right) luxuriates in the black waters of the Río Paca, which are tinted by runoff from murky swamps where decayed vegetation steeps like tea.



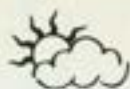




Chasing butterflies on the banks of the Rio Cururú, a tributary of the Rio Tapajós in Brazil, two Munducurú girls splash through amber water filtered by the white crystalline sand of the central Brazilian highlands. More than 500 miles downstream, the clear blue Tapajós merges with the muddy brown Amazon. The main stream itself is made opaque by earth eroding from the Andes, which stand thousands of miles to the west and northwest.

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





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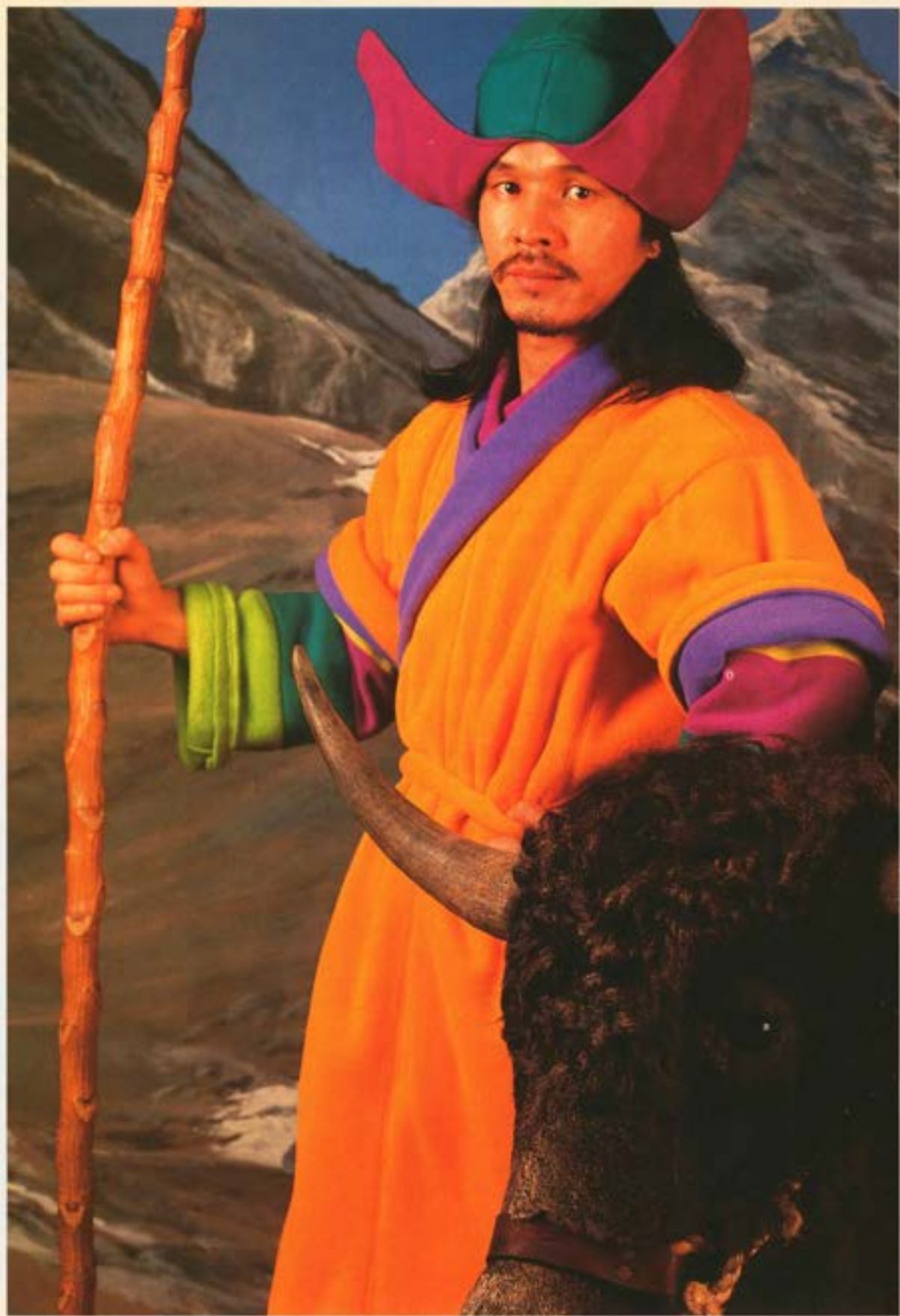
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WORDSCAPES



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If sheer numbers are any indication, Gaia's muse is working overtime. This year more than 800 people were moved to enter our contest, and the judges were impressed enough to bend the rules and choose four winners rather than three. Many thanks to Leica for its sponsorship of the contest, and many cheers not only for our winners, but for all those who had the steadfastness to commit their wild thoughts to paper.

BELUGA

BY NANCY LORD

Day One

July 27 already begins to tell of fall, here on the west side of Alaska's Cook Inlet. The north wind pushes swells in against the beach, rough enough that we anchor our fishing skiff around a protected point and head home at midday for something to eat.

Walking back at low water, I'm so intent on where I put my feet that I nearly stumble into a beached beluga, 12 or 14 feet of adult white whale. It's not the whiter-than-white, shoe-polish perfection of the belugas we see cruising the inlet, their backs rising like whitecaps from the sea. This one is dead and beaten, bloated and discolored, patchy with gray and yellow and pink. Still, it's startling—something so large and unexpected, so close to life.

We look it over, checking for a clue to its death. There's no wound that we can see, just a raw place on its side where it wore against rocks as it washed ashore. The skyward eye is missing, leaving only a hollow filled with dimpled rainwater. Its mouth, ajar in what looks like a broad grin, is crenelated with pointy white teeth. The last thing I

ILLUSTRATIONS BY MARK PENBERTHY



notice as we hurry on is the water pooled below the beluga; it's greasy, as though we'd just spilled a cup of salad oil there, and pink with blood.

Downwind the smell is strong, fetid, unpleasant without being nauseating. There's a thick, almost cloying sweetness to it.

Day Two

The tides are falling for the next week. We're stuck with a dead beluga high on our beach, a quarter mile from our cabin.

Tracks of a small bear circle the whale. There are chew marks along the tail and around one flipper, and one long swipe of claw scratches on the tail, but it's as though the bear couldn't figure out how to break through to something edible. All around, the sand is patterned with the prints of bird feet.

Ken tugs on a tooth, wants to know if I want him to pull one out. I don't. It doesn't seem right—to take to this animal with pliers and pick, like stealing gold teeth from a corpse. I think of the only beluga tooth I've ever handled, at an archaeological dig I participated in not far from here. In my square of the excavation, I discovered—along with the usual bits of worked slate, clam shells, and fire-broken rock of prehistoric Eskimo tradition—a two-inch-long beluga tooth, brown with centuries of age and carved with delicate, decorative rings.

That tooth is in a museum now, where I go see it on display. What I like best about it is that it has no *purpose*—

that is, as far as the experts know, it's not a part of any tool, not designed for any use. It's proof that there has been, since before history, more to human life than food, clothing, and shelter. Someone took that tooth in hand, admired it, worked it into something inspired, perhaps, by the place that owned it—a place, like this, of salmon and whales, foaming sea, mountains rising to peaks.

Day Three

Two eagles sit in spruce trees on top of the bluff and squawk at us like chickens. The eagles, along with ravens and seagulls, have been pecking at the whale; a large area on top is raw, picked over, sandy from many hopping-on-and-off feet. Guano streaks the whale's side, like vandal-thrown paint.

Beluga. The word is Russian—*byelukha*, from *byelo*, "white."

Day Five

As we pass back and forth in the skiff, tending our nets, I pick out the beluga on shore. It's more rounded than the boulders it lies between, and it's darker now, gray and a color like orange, a burnt desert color. Behind it, the lower slope of the bluff where it's not too steep for roots to take hold glows with yellow monkey flowers and a few fireweed stalks lit just by their top, final blossoms. Eagles and ravens loiter, flapping between rocks, posing on treetops. The sea this calm day has a solemn smell I've learned to associate with the end of the season, a smell like dead fish, a sea taken back its spawners, ghost salmon washing past with the current.

Day Six

Flies buzz around the whale. The teeth look larger now, starker and whiter, as though the flesh is pulling back from around the mouth. The eyehole swims with grease. The hide is torn away along the tail and side, exposing meat, dripping white fat that looks like Crisco. There are new bear tracks in the sand, two sets, one larger than the other, and softened by an earlier rain. I follow the tracks backward, see where the bears came down the bluff and walked along a log at the top of the beach, where one slipped and left a wide streak of muddy footprint. The bears didn't feed; their tracks go past the beluga and then disappear below the tideline. Perhaps they were hoping for salmon instead, looking for drop-outs from our nets. Perhaps there's too much human scent here, or too much smell altogether, too much rot.

Day Seven

The tide is ebbing, but the beach is narrow, and I feel pressed uncomfortably toward the bank as I walk. From a



distance, the beluga seems lessened, smaller, and very dark—orange gone to brown, purple like bruises on its enormous chin.

Closer, I see what's different. Where the whale's back had risen, now there's exposed skeleton, bone sticking into the air like paddles raised above a kayak.

The bears have eaten.

I approach slowly, stopping every few steps to look for movement, half expecting a bear to rise up from where it's been sleeping off its meal. I watch the grasses waving at the foot of the bluff, then angle closer to the water, as though running into the inlet might save me from a charging bear. I come to the first of several huge, pebbly mounds of feces, black as loamy earth.

There's no doubt what went on here: an orgy of eating and carousing. The sand is scuffed and beaten, spread with gobs of meat and strings of sinew. The bears feasted exclusively on the beluga's choice lower back—as much bulk, I calculate, as my entire self, more than a hundred pounds. About four feet of backbone lie exposed, as does a long pile of unbroken, shiny, swollen intestines, as thick as my arm. They are careful diners, then, these bears—able to pull away the intestines without puncturing them, to thoroughly clean meat from bone.

Before bed, from outside our cabin, I train binoculars on the beluga. A dark form moves around it, a bear I identify by shape—long neck, small head, stretched-out body—as a black bear. I watch it move around the whale, now on its back legs, now walking off to one side. I've forgotten just how graceful bears are, not a bit clumsy. This one seems nervous, lifting its head, standing, as though the breeze is carrying my scent.

And then, at the edge of the frame, there's more movement, more bears, bigger bears, lighter fur, extra bears bunched around the whale. Three brown bears have come down the bluff, dirt still spilling after them. The black scampers away, stops to look back from a safe distance. The new arrivals, muscular shoulders rolling, begin to eat. One is larger than the other two: a sow with twins. I expect them to settle in around the beluga like dogs at a dish of food, but they keep moving, stepping up and moving back, changing places, one disappearing behind a boulder and then reappearing. Each time the black bear edges too close, they run at it. Finally, they all move off down the beach and disappear into the dusk.

Day Eight

From offshore, we can see a clear, trampled bear trail that falls steeply from the top of the bluff to the draw just behind the dead beluga. This new trail, a hundred feet high, is beginning to look like a highway.

The beluga shows up clearly on the beach—its bony



back now exposed for most of its length, looking like a dinosaur skeleton among the rocks. The rest of the whale has shrunk to a low brown pile, like a pool of melted-down fat. Each time we pass in the skiff, that sticky, oily sweetness wafts across the water, making us catch our breaths.

Day Nine

The dinosaur look is gone, the bones of the back knocked apart to lie in pieces in the sand: three-lobed vertebrae like outboard props, rib bones licked clean, a scapula. Guts are piled to one side of a nearly leveled mess of red, wet flesh. Only the head is still intact, the ragged hide drawn back around it like a dirty cloak. But even the head is molten-looking, blackened and shapeless, the eyehole less distinct, the mouth tighter. In the rain, it all has a wet, vinylized look. A rivulet of water runs over the sand; a whitish piece of viscera is caught in it as though in a whirlpool, spinning around and around, fast. A wave smacks a rock behind me, makes me jump.

Day Twelve

The tides are bigger now, reaching the beluga, but the water has been coming in calm, riding up over the remains and then washing back out. Near high tide, a group of seagulls paddles over the area, feeding on whatever scraps float up.

When the tide recedes, there's little to see. The skull and what's left of the tattered hide are washed to the top of the beach. The part of the hide that's pulled off the skull is studded with teeth; this confuses me until I realize that the shrinking hide still gripped the teeth as they loosened in the flesh of the jaw. Other bones, bare except for a greasy slickness, are spread over the beach, stuck among rocks.

I find what remains of a flipper—a ball joint, like our own shoulders. The smaller bones are gone, though I know, from looking at a museum skeleton, that the bone structure of a beluga flipper is just like a hand, jointed bones that form five fingers. I remember something else from that museum display: The beluga is the only whale whose top vertebrae are not fused—the only whale, in fact, with a neck that allows it to turn its head.

Ken finds the lower jawbone, a few teeth still in it. He brings it back to the cabin, sets it on a log and pulls a tooth loose. He soaks the tooth in a cup of Clorox.

Day Sixteen

A pod of belugas passes today, heading south; this is the first group we've seen in weeks. They're close to shore, and the water is calm enough that I can hear their breathing, like the beating of hearts. *Phooof*. They exhaust their breaths with thin sprays of water that hang like

crystals in the air. There must be close to a hundred in this pod. I follow one animal, watching its sleek white roll, then move my eyes ahead, anticipating its next rise, the rhythm of its motion, its breathing. I try to see it in wholeness—its length, shape, but always there's only the brief arc it cuts through the water. At best, I imagine I make out the bulbous nose, the slight hump of a forehead and the indentation behind it, a certain ribbed look along the back.

Day Twenty

Our neighbor has visitors from California. We see them on our beach, looking at what remains of the whale. Only after they've left do we discover that they took the beluga's skull with them, wrapped tightly in layers of plastic. I try to picture it in California, hollow eye sockets pointed at someone's swimming pool.

Day Twenty-five

It's too stormy to fish, huge rollers pounding the beach. We tie a short net to our running line to get an idea of what we might be missing. When we check it, there's only one rubbery silver salmon, dozens of sticks, and a beluga rib,

the knob on the thin end wrapped so tightly in web it takes me several cold minutes to work it loose.

In the cabin I reach to unclip a washcloth from the line behind the woodstove, but the back of the clothespin is being used as a holder for Ken's beluga tooth. I forget the washcloth and take the tooth in my hand instead. It's so white, the root end hollowed and thin-walled, ringed with distinct ridges like growth circles. The tooth flares forward from the root, curving to a thick bulb before tapering to a hard enamel point, solid as ivory and slightly yellowed. I study a worn spot—a depression where this tooth must have hit another—and a network of spider-thin lines that etch the point end with a history of hard, gritty eating.

A souvenir of a dead and scattered and turned-to-new-flesh whale. Still, there's something satisfying about the tooth's irregular beauty. The shape is right, as is the weight of it in my hand, and the way it fits my palm. Any way I turn it, it forms its own artistry. I hold it to my nose and smell, very faint, something like dust, like chalk powder. ■

NANCY LORD is the author of two collections of short stories, most recently *Survival* (Coffee House Press, 1991). She is a commercial fisherman in Homer, Alaska, where she has lived since 1973.

SPRING RUNOFF

BY PETE FROMM

There'd been times in the beginning, back when the larches and the cottonwoods still carried their yellow needles and leaves, when I would have given anything to leave this place. I'd been near crazy with it, watching the last of the hunters' trucks drive away, racing the storm that would close the pass for good. But that same storm covered their tracks before the day was done, and soon it was hard to believe that I had ever been anything but alone. The snows took the last of the yellows from the trees and buried them, until it seemed the only colors left in the world were the sky's faded winter blue and the green-blacks of the unending ridges of spruce and fir and pine.

I would stand in that silent world and wonder how I had ever accepted such a job. The warden who hired me had repeatedly gone through a list of the conditions: I would live in a canvas wall-tent in the middle of the Selway-Bitterroot Wilderness from mid-October to mid-June. I would be responsible for two and a half million salmon eggs planted in a channel beside the Selway River. The closest plowed road was 40 miles away, the closest person, 60. If I were interested, he said, he could give me only two weeks to get ready.



I was 19, and had been reading far too many mountain-man books. I accepted.

Now it was late March and I lay in bed, the grayish light of pre-dawn reminding me of the socked-in times of midwinter, long after the crystalline cold snaps had silenced the country. I smiled, picking out the clown's-face mildew stain in the dingy canvas roof of my tent. The stains made other patterns, all heads and faces, that by now I could have traced blindfolded.

I wondered if any ice had built up on the channel overnight. I had to chop it out every morning to keep a flow going over the salmon, which had hatched in the fall and lain hidden all winter in the rocks. There hadn't been much ice-up lately, so I lingered in bed, wondering if winter might not end after all.

And then a cannon shot reverberated down my tight canyon. I sat upright and looked around, as if I could see the sound through the walls of my tent. There were often sonic booms back there, but this had not sounded like one.

It was as silent as ever after the shot, and I wondered if I had actually heard anything. Then there was a rumble, soft crackings and groanings. I pushed up on my elbows and murmured, "Ice." The river was opening up.

I dressed as I ran, but by the time I reached the Selway it was over. The river was open. In the last few weeks small spots had been thawing, but the ice that broke away jammed at the first still-frozen place. Huge ice dams had formed, flooding some of my old trails. The shot I had heard had been the last upstream dam bursting after being hit by the rush caused by all the other broken dams farther up. Now large blocks of rotting ice battered against the rocks, slipped by, and broke apart, or held up until they were slammed into by other blocks.

The air crackled with the sound. Not the grinding and bashing of the ice, but the normal gurglings and hissings and rushes of moving water. My world was no longer silent. I remembered that in the fall the river noise had followed me everywhere, surrounding me. At night, as the lantern fluttered and died, the sounds would change to musical voices that wove through the darkness as I shivered, waiting for the blankets to warm.

I smiled half that day, just listening. Walls of translucent blue ice with white snowcaps still hemmed in the water, but the river roared. Those voices had been buried all winter under the ice and snow. I'd missed them without knowing it.

Within days, at the base of a towering, red-barked ponderosa pine, I came across open ground. I stared at it—the first dirt I'd seen in five months.

I chugged up the hill and sat down in the two-foot circular patch. It was late in the afternoon of a sun-filled day and the dirt had actually thawed. It was muddy and covered with pine needles. I dug my fingers into it and laughed. It smelled of mud and wetness, with the hot smell of the dead needles. I hadn't even known some of those things had smells.

The days grew longer, but as my world continued to thaw I had enough energy for day after day of uninterrupted light. I hiked constantly, carrying snowshoes for my time up top, where the snow was still several feet deep. For the return trip, I would string them around my back and slog through the sloppy mud and rock chips of the southern and western slopes.

I began to see bear tracks regularly. Every day I crossed paths with herds and herds of deer and usually a group or two of elk. The calls of the ruffed and blue grouse boomed through the woods, so low-pitched it was hard to tell if I heard them or felt them. Then ducks started to move through, teal first, green-winged, followed by some goldeneyes and mergansers. Elk antlers lay scattered through the woods like chaff.

Flocks of small, sky-blue butterflies began to appear, hugging the ground and scattering around my legs as I walked. I cooked outside now, rather than remain cooped in the hot, smoky tent, and I lay on the ground waiting for



dinner, watching ants and flies crawling on the damp earth. Tiny wildflowers, specks of yellow and blue, were everywhere. I was surprised at how little of this I had thought about all winter.

The fine weather held for the first few weeks of April. I'd taken a day out to bake bread, and was sitting by the remnants of my woodpile, waiting for dinner and searching for ticks, when I heard a rumble. I sat up on my stump and turned to the end of my meadow as the noise became deafening. It wasn't long before a yellow snowplow roared into view, followed by a Forest Service truck.

I stared. Except for snowslides, the road had been clear for almost a week. The plow lumbered on but the pickup stopped and a ranger I'd met in the fall came out. We shook hands and talked a bit. It had taken them a week to open the road, and he raged about what a bitch the slides had been to cut through.

They wanted to get clean up to Paradise, the end of the road, and back out before dark, so he didn't stay long. He said they were opening the road for the bear hunters, who pushed for an earlier and earlier opening each year. I said thanks for stopping and went back into my tent to think. I was still there a few hours later when they roared out, beeping their horns.

The road was open. I could drive now, go anywhere I wanted. It was an odd feeling, and I didn't know what to make of it. Afraid I might miss something where I was, I didn't know if I wanted to go anywhere at all.

After a winter of wishing to get out for a few days, I didn't hop into my truck and go. I stayed in the mountains, watching the spring change everything I knew. If it was above 40 or 45 degrees I'd tie my shirt around my waist. I wondered if I'd really forgotten it would ever get warm again.

For the first time since my job began I saw my fish. They were leaving their hideout in the channel rocks to start the long swim to the sea. They were about an inch long, pinkish with dark vertical splotches down their sides, with scraps of red yolk sac still bulging from their bellies. They seemed too small to do anything, let alone swim 1,800 miles.

The salmon schooled up in the holding pool, some of them so weak that the current pressed them against the mesh of the screen and kept them from swimming off. They died there. I counted the tiny survivors and began to release them daily from the pool. They averaged 110 fish to the ounce, hardly keepers. Soon I was releasing 1,500 a morning.

The trout went wild. A few salmon would slip by the holding tank, enough to keep the trout lined up at the channel exit, waiting. One morning I even found two ambitious cutthroat in the holding pool. They'd squeezed

through the headgate and wriggled the whole length of the channel, through an inch of water, and thrown themselves over the waterfall at the top of the pool. I had them for breakfast. They were stuffed with my tiny salmon.

I'd always understood the reproductive strategy of the salmon—a swarming method, flooding the waterways with more fish than could possibly be consumed. But seeing the opened trout bellies spilling salmon fry and fry parts, I finally understood what that strategy entailed. The tiny fish had been set up for a massacre.

The road had been open for a few weeks when, after spending a day up top on snowshoes and sliding down the old Nez Perce trail as evening closed in, I heard engines. I stepped off the road and at the last second dropped back into the bushes. Two trucks went by, headlights on, two people to a truck, guns in the racks. The bear hunters had arrived.

I walked slowly in the darkness, hardly able to believe that someone had just driven in. It didn't seem fair that after all winter people could just drive in, as if it were nothing. This wasn't just some place you could come into and blast a bear or two. It was more than that.

I remembered how much fun I'd had in the fall with the few hunters who had invited me into their camps. I'd been embarrassed to talk to them because they seemed to know so much about all this mountain stuff. Now more hunters were coming in and I didn't want them. They didn't know anything about this place. They didn't know about nights at 40° below with the stars so sharp they seemed within reach. They didn't know that snow had sat here four feet deep for months, that the dregs of snow they saw in the meadows were my winter trails, the hard-packed snow lingering despite the sun. They would see the land as it was now, without knowing what it had gone through to get that way. That didn't seem right. I felt as if I'd paid my dues, and now freeloaders were driving in for what I'd earned.



I walked the last two miles home. When I entered my meadow and found the two trucks parked by my tent, I sat down in the trees and waited for them to leave before I crossed the blackened ground.

Before long came the weekend crowds—people anxious to do anything, even a long, rough drive, after the holed-up winter. The road, uncovered for only a month, began to grow rutted with their tracks.

It was still spring, just the middle of May, but the real spring, the opening of the mountains after their winter burial, was gone now. One day two tents, bright green-and-orange affairs, popped up in my meadow.

I climbed up top a last time. The mountains lined out as far as I could see. Due west was the giant cirque that had filled with blue ice after a freak storm last fall. I sat under the tree I'd hung my snowshoes on all spring. I'd been able to hike up that far without them, but would put them on to continue. I strapped them across my back. Everything was packed down below. These were the last things I had to collect.

When I reached bottom I dropped away from the trail and followed Indian Creek to my tent. I threw my snowshoes into the truck and started to drive toward the pass. The first thing I had to do was pull over for more incoming trucks. I looked through the window at the tight, dark, wet walls of the Selway, and then down at the wild jumble of water. The river was growing in strength every day, and my tiny salmon were in there somewhere, fighting to stay alive in the chaos.

When the road was clear for a moment I pulled back onto it, leaving the river, the spring, and my salmon behind. ■

PETE FROMM is the writer-in-residence for the public schools in Great Falls, Montana. His first collection of short stories, *The Tall Uncut*, will be published by John Daniel and Company early next year.

WILD CRANES

BY JAMES HILL

There were no birds in the city where I lived that year, on the coastal belt of China, east of the Taihang Mountains above the Yellow River on the North China Plain. There were no pigeons or sparrows or swifts, the birds one might expect to find in the heart of a large city—none in the open air and none in the trees that I passed while bicycling across town from the university compound to the Friendship Store.

I noticed an absence of insects as well—neither flies near the public toilets at midday nor mosquitoes near the river at dusk. Not even ants moved in the ragged patches of grass around the giant shade sycamores. I put the two together, and reasoned: There are no birds because of an absence of insects, a basic food, and there are no insects because of an absence of simpler organisms.

I tested my theory on Liu Wei-Dong one evening. Mr. Liu was a colleague in the foreign languages department where I was spending a year as a visiting professor. It was the beginning of the school year, and he came on his visit to my one-room apartment, as the Chinese do, with a gift of food. "My English is not good," Liu said, presenting me with a basket of oranges. He wore his dark-blue Mao jacket, though the weather was too warm for the heavy fabric, and he sat on the edge of a straight-backed chair, smiling and saying nothing. After ritual pleasantries, oranges, and tea, I broke with decorum and asked why there were no birds.

After a pause, but still smiling, Liu said, "Because they are unclean. Because they eat grain and cause disease." I had to imagine from his answer that Chairman Mao's campaigns in the 1950s to eliminate the Four Pests (rats, flies, mosquitoes, and grain-eating sparrows) had been too successful.

I reasoned that a great many animals were considered "unclean." Other than carcasses in the market stalls—chickens, pigs, and fish—the only ones I had seen in the city were emaciated little donkeys pulling laden wagons of scrap through the streets. For months I had seen no pets, not a dog or a cat or even a cricket, until one afternoon in the old section of the city, before the door to a walled compound, I saw a caged blackbird, set out to take the sun. When I asked Mr. Liu why this was so, he said the same thing: "Unclean." But remembering the fondness Americans have for pets, he added, "And they are too expensive to keep. They eat too much."

I knew about animals living wild in other parts of China, particularly to the south. I had seen pictures of the



giant pandas of Sichuan and the black gibbons of Hainan Island. I knew about yaks and antelope and snow leopards. In the jungles of south China there were monkeys, tree shrews, and clouded leopards, even Indian elephants, and to the west Bactrian camels. I also knew that the snow leopards were poached for furs, amulets, and folk medicines, their carcasses smuggled across the border to Hong Kong and shipped from there to world markets.

But in the Yellow River Valley, a country with no exotic leopards, animal nature existed to be eaten or driven before a cart. Gratuitous animal life was rare.

The reason for this attitude was not hard to guess. There were so many people, one-fifth of the planet's billions in a land no bigger than the United States, many with a memory of famine; there were so many for whom eating-to-live was the primary goal of each day. In a city where life was a zero-sum condition, with neighbor competing against neighbor for food and living space, what chance had a sparrow? Even a small bird that would fit in the hand was both competition for grain and food itself.

Utilitarian rigor was everywhere apparent. One afternoon, while walking down a street in Guilin in south China, I was surprised by a stack of caged animals before the door of a restaurant: rabbits, pigeons, and turtles were a living menu to tempt the passerby. Later, I passed a woman in the street squatting over a basin, cleaning a large boiled dog. She was roughly scraping away the blondish hair from what seemed to me to be an airedale; feeling my eyes on her she looked up with a flat, impassive gaze, then went back to her work.

I remembered Liu, cradling the teacup in his hands, smiling at me. "The Chinese will eat anything with four legs except a table."

On the Li River that flows through Guilin, fishermen have for centuries used the cormorant, a large diving bird, as a catcher of fish. The bird is released to swim underwater and swallow fish, which are held in its throat by a collar. When the bird surfaces, the fisherman gathers him in, shakes out the fish into a basket, and releases him to fish again. One good bird can feed a family.

I first went to Liu's apartment several months after his visit. It was January, just before the Spring Festival, and a cold afternoon was made colder by the grayness of the city landscape with its soot-darkened, hulking buildings and heavy, ashen sky. High-sulfur coal dust drifted down steadily, leaving the seat of a parked bicycle grainy after ten minutes, and the eyes of strollers reddened.

This, I knew, was the bitter fruit of the Four Modernizations: rapid, haphazard industrialization that forced people to bicycle to market wearing white-gauze surgical masks to filter the pollution. If there were an infant up front in a basket behind the handlebars, his head would be wrapped up in a fine netting against the airborne ash of the coal fires.

That afternoon I made my way across the dark university compound, past the coal piles and loose garbage to the dormitory where Liu lived with his wife and ten-year-old daughter. Finding my way with a flashlight to the dimly lit landing, I could see that many families lived there, sharing a common toilet and cooking in the hallway over coal fires. A curtain opened and Liu welcomed me into his cheerful little room, crowded with one large bed, three chairs, and a table on which was spread the banquet, nearly a dozen dishes, most fresh from the market that day: bamboo shoots, peanuts, rice, bean curd, cabbage, pork, chicken, and sea cucumber. It seemed a miracle, so much food on a schoolteacher's meager salary. Liu introduced his wife and daughter, then poured wine into thimble cups. We toasted one another.

By this time I had learned about the radical centrality of food in the lives of the Chinese. In a recent composition assignment, I had asked my students to describe one wonderful day, real or imagined, "that you wished would never end." Invariably, their essays described a meal with "much delicious food." Here was such a feast.

On this evening the question I had for Liu began with a reflection on the coal dust I had just passed through, and emerged as a comment on progress: "What do you think of the government's rush to industrial development, the Four Modernizations?"

Liu quickly stated the party line. "It is necessary. Progress must come to China in order to make life better for all." Then he paused and added, "Some Chinese are not happy. They say, 'We are now riding the horse.'" He proceeded to give me the full proverb: "It is better to ride a



donkey than a horse or a cow. A horse goes too fast and a cow too slow. But a donkey is just right."

The proverb led through some natural chain of association to talk about Confucianism and Daoism in Chinese culture. "Confucianism is our way," Liu said, putting his hand to his chest. "It is respect for order. It is respect for parents—mother, father, grandparents, leaders. Daoism is the other side," he said. "It is the way of Nature, sometimes wild like a waterfall. Very exciting and beautiful. But without order. And often dangerous."

Then, taking a white porcelain cup from the table, he raised it before me and said, "Confucianism is like this cup, very strong and beautiful with a picture of the wild crane we all admire,"

and he turned it so that I could see a slender white bird with folded wings standing in a pool of water. Next to the crane were the ideographs for "long life" in hastily applied brushstrokes. "It holds together all of China. All her families. All her traditions."

Then, very quickly, Liu turned the cup over in the air so that thin, brown tea-residue spilled out and made a pattern on the table. "And that is Daoism," he said. "That is what happens without the Confucian respect for order and authority."

The next day, just outside the university gates, I spotted a uniformed man with a scope-mounted air rifle staring intently into the branches of a sycamore. From his free hand dangled two sooty sparrows. This was the bird warden, I thought, keeping the streets free of disease. A week later, while walking through a holiday crowd of strollers in front of the East-Is-Red Exhibition Hall, I noticed a knot of children around a bird-peddler from the countryside. The man was busy making a sale. He reached into a bamboo cage, deftly curled his hand around a darting brown wren, and with his other hand attached a string securely above the twig-like joint of the foot. He handed the end of the string to a child. As the bird beat its

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PURSLANE

BY DANIEL MINOCK

Back from a week's vacation in the Yucatan to a soft, cool rain in southeastern Michigan. Donna and I plan to spend the second half of our vacation at home, on this mostly natural acre and a half, tending gardens, birding, reading, and writing in our journals.

That enumeration of activities reminds me of the power of lists to go on and on, to make me their tool. I want to resist making definite plans; to prevent "things to do" from becoming "things to be done"; to go where the current takes me, not where I've reasoned I ought to go. From the edge of the woods to a tree in those woods, from the tree to a leaf on that tree, from the leaf to a pattern of blight on that leaf—or out to the nebula of Orion.

June 17

All winter I dreamed of a warm, bright morning when I would walk, coffee cup in hand, down to the garden in the hollow out back, check for beetles on the eggplant (and find none), glance inside the green dome of the summer squash, and admire the perennial garlic with its looped stems and its cloves swinging in the air. The bluebird would be singing its fledglings out of the nestbox on the hill in back; there would not be a single weed in the asparagus, nor a single hole in the leaves of the peppers. The plants would be resting in their places, like dozing pets. There would be much to do, and none of it would need to be done right then.

And this was that morning—almost. After yesterday's rain the sky was a polished blue, and the big hickory over the hill a glossy green. The basil plants were working on their third story of leaves, and I filled my empty coffee cup with sugar-snap peas.

But the real garden, unlike the imagined one, was full of weeds, almost all of which, oddly, were purslane.

I knelt beside the kale and started to weed, following a succulent, low-growing stem to the central hub, then lifting the roots out of the ground. The rain had left the purslane vulnerable, and I hoped to bring it under control. Also I planned to eat some of it. After I had a whole purslane plant drooping octopus-like from one hand, I pulled off the tender tips, with their fat little tear-shaped leaves, dropped them into a bowl, and tossed the rest into the compost pail.

I don't actually like purslane, but I approve of the idea of it, common, persistent, fleshy, and nutritious. But I didn't harvest too much, just enough for me. Donna says she



doesn't care if purslane was Gandhi's favorite vegetable; she doesn't like the way it feels in her mouth.

June 18

When I stepped outside this morning I found a dead bird on the side deck—one of our catbirds, master of the underbrush, a slim, vigorous bird with much to say. Had it flown into the window? Or did a cat kill it and leave it on our doorstep as a gift?

I picked it up and began to look at it. Like all birds it was bigger in my mind than in my hand. It had something of a roadrunner's shape, forward thrust of small head, slim body, long tail. The smooth, dark-gray color had an almost bluish vividness and was nicely complemented by the black cap and by another patch of color I usually can't see: a dull orange under the tail. After I had turned it over and over in my hands, I carried it to a thicket of Virginia creeper and placed it under the leaves. I wondered why I hadn't heard its mate today. Did it have a mate?

Now I know why there is so much purslane this year. When I pull weeds, I put them in the compost if they haven't gone to seed. But last night I read that flowering, uprooted purslane has the power to continue producing seeds. So when I distributed last year's compost in this year's garden, I had accidentally planted a giant bed of purslane.

While I was continuing the weeding project this morning, I began to feel, in the hairs on the back of my neck, *watched*. You're being silly, I told myself, and went back to work. I stopped again and lifted my eyes. Nothing in front of me, though that wasn't the direction I felt watched from. It occurred to me what an odd concept a vacation is, really. Plants don't have vacations. And one of the tasks of an animal is to stay alert; they can't let up if they want to stay alive. Suddenly, I leaped up and whirled around, shocked to see a large creature standing behind me.

Dressed in my clothes but thinking its own thoughts, my scarecrow was watching me.

June 19

The other day I saw a few black dots in the low brush in front. This morning I went out there with a coffee can.

The blackberry patch has grown steadily for the past five years; it now covers half the ground of the wild place in front, sharing the space with the trunks of elm, box elder, and black walnut, and, on the lower level, Virginia creeper, wild grape, a few grasses, one scrawny bush of gooseber-

ries, and a small settlement of poison ivy, which I am monitoring.

Soon the can was full, the thumb and first two fingers of my right hand stained purple, and the interstices of my teeth lodged with blackberry seeds. I had enough for a pie. Still the berries stretched on, looking thicker and bigger just in front of me.

I emptied the coffee can into a bowl and went back out to pick more, thinking of pies, jellies, frozen berries, fruit fools. While I picked, I was also birding: first a robin and then a female cardinal flew in absentmindedly, only to thrash desperately away when they realized my near presence. I heard a yellow warbler, a house wren, a red-eyed vireo; stray notes of goldfinch, chickadee, bluebird, flicker, and, in the distance, crows, bluejays, and a wood thrush. I waited in vain for a catbird to come or call. I'm troubled by the absence: This blackberry patch needs a catbird.

June 20

The blackberry canes in the natural area in front of the house provide many more berries than the diseased raspberry canes in the garden out back. But it's hard to compare the two, since I am a *gardener* of raspberries and a *gatherer* of blackberries—two modes of being, two ways of relating to the natural world, two paths leading in different directions out of the city. I take both paths, and sometimes I am disoriented. I began to feel this the other day when I was weeding my garden, but also gathering purslane. Gardening and gathering at the same time—no wonder I kept mixing up the two containers.

A gardener is almost a city planner. The straight rows; the training of plants upward, like the building of multi-storied structures; the sense of an order behind it all—these elements seem essentially urban and civilized to me. Gardening is a matter of real estate. Gathering, though, is an activity of the wild in the wild. I go from place to place, visions leading me on before I manage to take everything. When I garden, I go back and forth and miss nothing except a few deep zucchini. When gathering, I'm focused on the present, or thinking just a little ahead to the pie.



When gardening, I'm planning the future. The present arrangement, to a great degree, is only a bridge from the past to the great garden that is to be.

When I'm following either road, I have trouble understanding the appeal of the other. Why go to the trouble of collecting seeds, cultivating, and hoeing? Much better to know the land and go to get the good exactly when it's available. The gatherer says, Live in the present. When human beings turned from the hunter-gatherer life to raising crops, the move was usually not made willingly, but rather as a result of climate changes that made game and familiar plants scarce.

But then, a garden! We are not mere turners of rocks, not just forest wanderers. With a garden we can make plans, we can dream, we can use our powers to build gently. We can avoid excess and chaos. The gardener says, Think about making the future better, more secure, more beautiful.

While I thought these thoughts, essentially a gardener's thoughts, I heard a nearby birdcall that I did not recognize. Instantly I switched back to the gatherer mode (birding being a filtered form of hunting) and waited. It didn't take long. I saw, leaning down toward me from ten feet away, a small, pert bird with yellow spectacles and a patch of pale yellow from chin to middle of belly: a yellow-throated vireo, a bird I usually hear high in the treetops early in May as it migrates through. I had never come across a yellow-throated vireo occupying territory, but here was one occupying mine. I remembered thinking I had heard a red-eyed vireo the day before, but now I believed it to have been the hoarser call of the yellow-throated variety.

I wanted to find the nest, to pick gallons of blackberries, to be a wild, spontaneous hunter-gatherer.

June 21

This morning, instead of weeding the asparagus or picking blackberries, I celebrated the solstice by unfurling the hammock we bought in Mexico and hanging it between the elm and black walnut behind the garage. At about

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THE DEVIL WAS ROUTED

FROM THE FRANKLIN, AND ON TASMANIA'S
FABLED RIVER THE ANGEL RAIN STILL FALLS.

BY RICHARD BANGS

On New Year's Eve in 1980 I stood with a group of strangers on a bridge spanning the Stanislaus River in Northern California. Just a few miles downstream the steel floodgates of New Melones Dam had been shut, and soon one of the Sierra Nevada's most magnificent whitewater rivers would be drowned. More than 100,000 people each year had floated through the spectacular limestone gorges of the Stan, splashing in its side creeks, exploring its caves, running its exuberant rapids. And for the last ten years, thousands of people had fought the congressionally funded dam through a state initiative, tireless lobbying, and hundreds of demonstrations. We were, finally, tilting at windmills. Two years later the most popular river run in the West would be submerged under a 24-mile-long lake.

Around the same time, at the bottom of the world, a similar battle was being waged to save another limestone-encased waterway: the Franklin River in southwest Tasmania, an island floating beneath the mainland of Australia. But this was a river not many had traveled:

CHASM OF PEACE

PETER DOMBOVSKIS / ENVISION



ROCK ISLAND BEND, FRANKLIN RIVER



Fewer than five hundred had negotiated its rough waters by the end of 1980. The Australian state of Tasmania, traditionally governed by populist, pro-development politicians, was suffering from high unemployment and a sagging economy. It was widely believed that the cheap electricity from a troika of dams would attract industry and provide a new affluence. Yet the fight to stop the dams on the Franklin became a *cause célèbre* among Australians, and thousands rallied in peaceful protest. Miraculously, in 1983 work on the dams was ordered to cease.

A decade after my vigil on that bridge across the Stanislaus, I was given the chance to celebrate the Franklin.

Two days after Christmas I met John and Andrea, both 25, and 12-year-old Molly in Hobart, Tasmania, not far from where, in February 1983, 20,000 people had marched against the damming of the Franklin in the largest land-conservation rally in Australian history. John, the leader of our little expedition, had made 25 trips down the Franklin; Andrea, though a world-champion kayaker, was a relative newcomer with 10 trips. Molly was the rusted, dented Mazda van they used to get around town.

Later that week 12 of us traveled to the put-in on the Collingwood River, a tributary of the Franklin. It was a blustery, drizzling day. Oblivious to the dismal weather, John merrily rolled out the rafts, two 12-foot-long Avon Adventurers, that he and Andrea would pilot, and a dinky 10-foot self-bailing black raft named *Darth Vader* that I was to paddle along with Steve and Pamela, the two other Americans on the trip. We buckled into our one-size-fits-nobody plastic helmets and slipped into our wetsuits and booties—all except John, whose outfit consisted of only a pair of shorts over his long striped thermal underwear, and wool socks with sandals.

By noon I was drifting downstream on a river of primal intensity, riding a

frail chip of a raft. A black cockatoo, harbinger of bad weather, screeched in the wind above, and below slurped a current that appeared as dark as the bird. The solemn color of the water matched my mood; I was damn scared of what lay ahead.

After a few hours of bouncing through modest rapids, we came to the confluence with the Franklin proper. The river ran the color of old beer, not especially appetizing, yet I dipped my cup knowing it was some of the cleanest water on earth. We continued through several more white-laced rapids and finally pulled over to camp on the eastern bank at Angel Rain Cavern, a grotto festooned with quivering ferneries and blanketed by a perpetual curtain of misty rain.

Ours was a large party for the Franklin—most groups are half our size because of the shortage of campsites on the steep, dense banks—and we had to squeeze our sleeping bags under the overhangs.

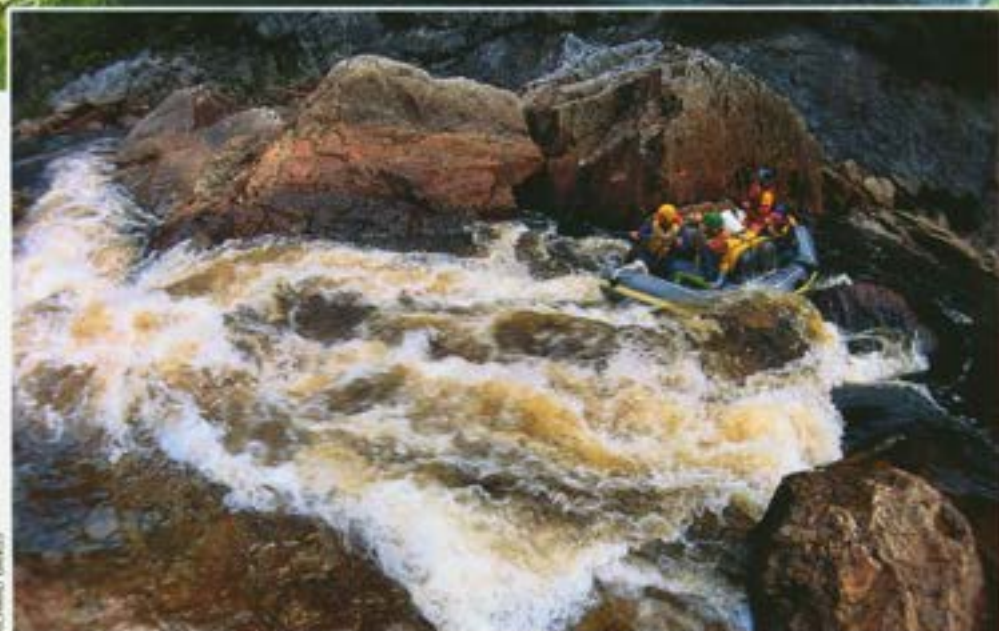
After dinner John took us for a nature walk through our wet, fertile lair and pointed out sassafras, the fragrant white flowers of the leatherwood, kerosene bush, the glossy leaves of native laurel, Christmas bushes, and scaly-bark tea trees. I slipped into my bag soon after dark and fell asleep to the regular plink of droplets, the Angel Rain.

I awoke to a narrow slice of azure sky and a fairy-tale river whose level had dropped, taking my fears with it. From the water I watched migratory martins dart from their cliffside nests, and gray fantails flit across the surface, snatching insects. Not far downstream we met our first impasse, a grand old log anchored on boulders and blocking the river from bank to bank. We wrestled the boats over it and continued down a corridor of scrub-hung cliffs. The river veered south past the Raglan Range, then picked up the Loddon River, where the first Huon pines, endemic trees thousands of years old, leaned from the banks. Loggers were the first to run the Franklin; they came up the river looking for these close-grained trees and floated them down-



PAMELA ROBERTSON

ADVENTURERS FIND BOTH TRANQUILITY AND TURBULENCE ON THE FRANKLIN, AUSTRALIA'S LAST FREE-FLOWING RIVER. THOUGH DAM-BUILDERS HAD FIRED UP THEIR BULLDOZERS, THEY WERE ORDERED STOPPED IN 1983.



RICHARD TANGOS



PAMELA ROBERTSON



stream to be hewn for ships and coffins. Between 1900 and 1950 more than 90 percent of all the Huon pines along the Franklin and its tributaries were felled.

Not far beyond we careened into the Overture, a rapid that spilled into the shadow-throwing cliffs of Descension Gorge. That in turn spun us into the deep, peaceful quartzite chasm called the Irenabyss—"Chasm of Peace" in Greek. I loved the name, *Irenabyss*, and it rolled on my tongue as we crept past the smooth, water-polished walls of the canyon, 150 yards long, 100 yards deep, narrowing to barely a boat's length in one spot. The crooked course finally blossomed into a quiet, sunlit pool at the mouth of Tahune Creek, where we pulled in and made camp.

After hanging my clothes to dry on the wind-pruned branches of a pine, I crawled on a rock shelf overlooking the Irenabyss. This was, John said, the site of one of the proposed dams. It didn't seem possible that such a beautiful place could have been marked for death, that the whispers of the river might have been replaced by the hum of turbines.

The next morning we exchanged our booties for hiking shoes and set out to climb the massive block of Frenchman's Cap, to some the most majestic mountain in Australia. It was a slog. The first hour we stumbled through thick, steep, twisted, tangled, leech-infested bracken forest. We waded through spiky buttongrass and knife-edged scoparia, over irregular, sharp schist, and through stunted alpine heath. About two hours up we stopped and looked back down the valley, over the eucalyptus, the great dark myrtles, and celery-top pines that rimmed the peat-brown river canyon: a wilderness we couldn't decide whether to praise or curse.

Finally we stumbled to the base of the final pitch to the summit. From this vantage it looked like Yosemite's Half Dome, radiant with quartzite whiteness, and imposing. Four of us decided to hike to the top that afternoon, while the rest descended to Lake Tahune to set up camp. We followed a trail that wan-

dered up the scarp of the bald bluff. Finally we were on the roof of Tasmania, nearly 4,000 feet above the sea. The wind buffeted us with its cold breath, but we hardly noticed, wrapped in the blanket of one of the grandest panoramas in the Pacific.

We made it down to the black waters of Lake Tahune just before sunset. Though we had walked only two and a half miles, it had taken us 11 hours to reach this spot and we were exhausted. But it was New Year's Eve, and we refused to die. From the heavy packs we had carried up came colored balloons and party streamers, which we slung between the trees. Pam produced noisemakers and pointy party hats. John and Andrea whipped up a Mexican meal, and even nature cooperated with a festive full moon.

Despite our efforts, it soon became apparent we wouldn't make it to the stroke of midnight, so we opted to celebrate the Fijian New Year instead. Fiji, just on our side of the International Dateline, would ring in the New Year at 10 p.m. our time, so we donned our paper hats. John and Andrea changed to Fijian sarongs they coincidentally had brought up, and at the stroke of ten we all cheered and knocked back a couple of bottles of Seppelt Great Western Champagne. It was a heady, happy moment, but it also marked the ten-year anniversary of my New Year's Eve protest on the Stanislaus. I lifted my bottle and silently toasted the Franklin's submerged sister river far to the northeast.

The next few days were packed with rapids and tributary waterfalls; at every turn the river gained in volume and authority. At last we reached the dreaded six-mile-long Great Ravine, the largest gorge in Tasmania, bane of Franklin rafters. The Franklin trip is a gamble. If the water is high and the weather bad, rafters can spend days or weeks in this section, making "high portages" in which all the gear, including the boats, must be lugged scores of yards up steep cliffs and through the raw terrain. Luckily the


Continued on page 98

MOUNTAIN HIGH: PAYING HOMAGE TO TASMANIA FROM THE SUMMIT OF FRENCHMAN'S CAP. AND RIVER LOW: NEGOTIATING THE EASIER, "LOW" ROUTE THROUGH ONE OF FOUR PORTAGES IN THE FRANKLIN'S INFAMOUS SIX-MILE-LONG GREAT RAVINE.


PLACE SETTING

Text by Reed McManus • Illustration by Julia Gorton

To first-time visitors, the intricate cliffs and canyons, wild rivers, and alpine peaks that sweep across southeastern Utah may seem both incomprehensible and impenetrable. And mostly, they are. This is an arid and rockbound region, brutally hot in summer, that accepts only the hardest settlers: Barely 28,000 people live in an area larger than Massachusetts, New Hampshire, and Vermont combined. But much of the region is frighteningly vulnerable to human intrusion, and many a miner or cattleman has forged a road through it or brooded over its economic potential. More recently, city-stressed visitors seeking recreation and solitude have eyed the wide-open spaces that remain untouched. The various groups cross paths in Moab, a once-sleepy town that serves as "city hall" for the debate between wilderness advocates and desert developers.



Moab itself is nothing much to look at, but with nearly 5,000 residents, it's the largest population center in southeastern Utah, the last place to get food, gas, and supplies before heading to nearby Arches and Canyonlands national parks or the lesser-known canyons, mesas, rivers, and mountains that surround the little town. Like any economy geared toward travelers, this one will grab you any way it can: Two dozen motels cluster on and near Main Street, the Hollywood Stuntmen's Hall of Fame celebrates the movies filmed in the area, and the 14-room Hole 'n the Rock entices you to spend your money to see a house hollowed out of sandstone. Last year Moab earned ranking as a true tourist town when McDonald's arrived—"Moab's Other Arches," its billboards crow.



Moab has become to mountain bicyclists what Aspen is to skiers. Attracted by miles of sparsely used jeep roads that course through redrock canyons, cyclists descend on the town en masse in the spring and fall tourist seasons. Their headquarters is Rim Cyclery, whose wares match those of the best city bike shops; their meeting place is the 10.3-mile Slickrock Trail, a one-time motorcycle route (painted lines keep cyclists from getting lost or shooting off cliff edges); and their con-convocation is the annual Fat Tire Festival, held in late October.



Moab's "big draws" are Arches and Canyonlands national parks, both short distances (5 and 36 miles, respectively) from Main Street. They offer all the usual services of full-fledged national parks (visitor centers, campgrounds, and well-marked trails), and more paved roads than some wilderness fans prefer. (Writer, redrock guru, and former park ranger Ed Abbey made a hobby of pulling out roadbuilders' survey stakes in Arches, while one auto-association magazine celebrated the paving of a Canyonlands road by announcing that visitors could now see some of the park's best sites "without turning off your engine.") Arches boasts the greatest concentration of natural stone arches in the world; the most famous include elegant Delicate Arch and 291-foot-wide Landscape Arch (the world's largest). Canyonlands, more than five times bigger than 73,000-acre Arches, encompasses some of the most spectacular and desolate wilderness in Utah.



Without flowing rivers, this wouldn't be canyon country. Over the millennia, the Colorado and Green rivers and their tributaries have cut thousand-foot-deep meanders into a slowly rising ancient seabed. Today the rivers are playgrounds: Moab's whitewater fans head to Westwater Canyon 68 miles northeast, or into Canyonlands, where they ride the 24 (out of 52) rapids in Cataract Canyon that survived the construction of Glen Canyon Dam. Calm-water devotees loll in the twists and turns of the Green's Labyrinth Canyon. At the moment, none of the rivers in the state have been granted federal wild-and-scenic status. A bill to protect Westwater Canyon died in Congress last year, and a Park Service proposal to protect the Dolores River has languished since 1979. The only permanent wetlands along the Colorado in Utah were recently purchased by The Nature Conservancy. The 690-acre plot outside Moab hosts more than 150 bird species; formally the Scott M. Matheson Wetlands, it's known by locals as "The Sloughs."





MOAB, UTAH

AMID WILDERNESS AND CONTROVERSY



Within spitting distance of town are several areas administered by the federal Bureau of Land Management that are as impressive as anything packaged as national parks. They include Negro Bill Canyon, a lush area with

the fifth-widest natural stone span in the country; Mill Creek Canyon, walled by high cliffs and bare-rock domes; and Behind the Rocks, a vast, trailless maze of sandstone fins. To the southeast rise the La Sal Mountains, Utah's second-highest range. A half-dozen of its peaks rise 6,000 to 7,000 feet above the desert. About 65 miles of trails wind through the range, past aspen, spruce, and fir forests that contrast sharply with the desert sands and slickrock below.



Outside of Arches and Canyonlands, few wildlands in the Moab area are protected, and the BLM has proposed wilderness protection for only a minuscule percentage of them. The agency has traditionally given short shrift to

the wilderness potential of its vast holdings (more than 40 percent of the state), preferring instead the "productive uses" of mining and grazing. But a federal mandate in 1976 forced the BLM to inventory its wildlands. The results were hopelessly skewed, and despite criticism from Congress and the Interior Department, in 1990 the agency proposed that only 1.9 million acres be designated as wilderness. (Fifty years ago, 18 million acres of Utah were wilderness; only 6 million remain wild today.) Meanwhile, the Utah Wilderness Coalition, an organization of 35 conservation groups, had conducted its own study. Their findings became the basis for H.R. 1500, a bill sponsored by Utah Representative Wayne Owens (D) that would protect more than 5 million acres of BLM lands. Until Congress acts, 3.2 million acres designated as "wilderness study areas" remain protected.

Local opposition to what's seen as "outside interference" can be fierce. Wilderness advocates and BLM employees have been threatened, and laws blithely circumvented; for example, county officials once sent a bulldozer into Mill Creek Canyon in an attempt to disqualify the area from wilderness consideration. The tension stems in part from the pride of those who've struggled hard to survive here; in part from resentment of the strictures placed on land long considered open and available to whoever came along; and in part from a historical reliance on cut-and-run extractive industry. Some people hope that coal or oil will bring back the prosperity of Moab's uranium boom, which collapsed in the early 1980s; conservationists hope to convince residents that protected natural areas will be powerful economic assets long after the next mining bust.



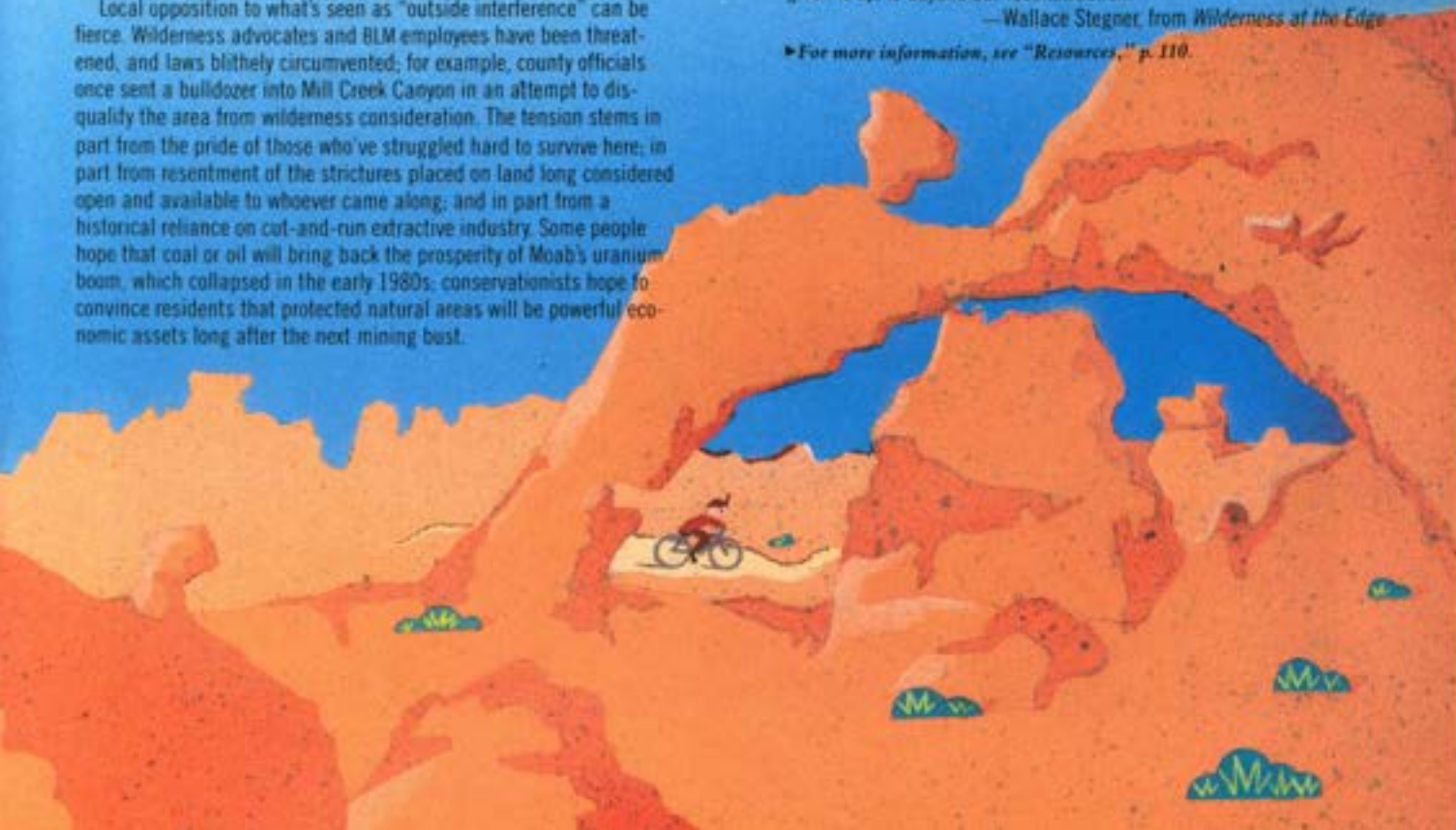
While most of the Sierra Club's 3,000 Utah members live in and around Salt Lake City 200 miles northwest of Moab, the town also has its own local representation, the tiny but heroic 60-member Canyonlands Group. Be-

sides co-sponsoring the omnibus wilderness bill, the Club takes on individual Colorado Plateau issues. It successfully fought a proposal by Coors Energy to drill an oil well near Moab that threatened the only viable bighorn sheep herd in Utah. The controversy is far from over, however; developers have flooded the BLM with lease applications. The Club opposes a planned 100-mile "tourist road" through canyon country north of Moab, and Club activists continue to work to reduce the impact of Moab's annual Jeep Safari, which attracts 1,600 off-road vehicles to routes that cross proposed wilderness areas. Elsewhere on the plateau, the Club is fighting timber sales in the forests that dot the region, the clearing of juniper and piñon for grassland, and a coal mine planned for the isolated Kaiparowits Plateau.

The Utah deserts and plateaus and canyons are not a country of big returns, but a country of spiritual healing, incomparable for contemplation, meditation, solitude, quiet, awe, peace of mind and body. We were born of wilderness and we respond to it more than we sometimes realize. We depend upon it increasingly for relief from the termite life we have created. Factories, power plants, resorts, we can make anywhere. Wilderness, once we have given it up, is beyond our reconstruction.

—Wallace Stegner, from *Wilderness at the Edge*

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



WILD CRANES

Continued from page 71

wings in a frantic effort to rise into the sky, the child laughed delightedly.

Months passed before I again sat in Liu's small room. By then the weather had turned warm and the dormitory door was propped open to let in fresh air. I had come unannounced to ask about some translations, and when Liu pulled back the curtain I realized from the surprise and unease in his face that he was not pleased to see me. His thin hair stood up from his head; he was unshaven and without his front-tooth prosthesis. Dressed in a T-shirt and trousers rolled to the knee, he was embarrassed at being seen in disarray. Still, he invited me in and poured water from a thermos into two teacups.

"My wife and daughter are out. I am sorry I have no tea leaves for your drink," he said. "This is what we Chinese call 'white tea.' It is what we drink

when we do not have guests."

I took my cup of boiled water, the same lidded white porcelain with the stately crane with its folded wings and "long life," and held it a moment. I asked Liu about the crane, whether he had ever seen one.

"As a boy in my village not far from here, I would see many cranes moving north and south across the sky with the seasons. A strange call. Very beautiful."

The beauty of the crane was much celebrated. I knew this from the countless representations on paper, wood, and silk I had seen in the past months: a tall, white water bird with a red spot on the crest of its slender, almost delicate head.

"It is a bird of good omen," said Liu. "But to kill a crane brings bad luck to a man's family. Double bad luck because its mate will die."

He shook his head at the question on my face. "It will die from a sad heart." Liu looked down at his feet.

"What happened to the wild

cranes?" I asked.

"Many were killed." He lifted his arms in the air to cradle an imaginary rifle and squinted to draw a bead. "Now I see them only in a picture."

I moved my thumb across the ideographs of the cup. Long life. The wind blew through the open window, pushing aside the light wings of the curtains and carrying a sound of voices that seemed too strong for this peaceful time of the afternoon. Maybe it was a distant soccer match; the muffled "rah" in the wind came from nowhere I could think of. Liu looked up quickly at the sound. His head tipped toward the window, amazement in his face. Perhaps he was seeing something unusual in the blank patch of sky, a wandering line of wild cranes moving steadily across the blue emptiness with a slow beating of wings. ■

JAMES HILL is a writer at the University of Iowa College of Medicine, where he focuses on medical humanities and the ethics of health-care management.

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S I E R R A C L U B

1992 SPRING TRIPS

*Along the Paria River, Utah,
by Howard Newmark*

1992 SPRING TRIPS

Spring's fresh beauty is yours to discover on a variety of Sierra Club outings. Whether you're backpacking in the Grand Canyon or trekking in Nepal, you'll enjoy sharing a wilderness adventure with fellow Club members. The following pages include brief descriptions of the exciting winter and spring trips planned by our experienced volunteer leaders. You'll be sure to find an outing that's just right for you. ♦ Sierra Club trips are cooperative ventures with an average of 12 to 25 participants. Trip members share camp chores, including food preparation and cleanup, an aspect of the outings that people enjoy. ♦ To order individual trip brochures, send in the coupon on page 92. Reservations are now being accepted for all spring trips, as well as for 1992 international trips. Note that leader approval is required for *all* outings. Before sending in a completed reservation application, please read the reservation/cancellation policy on pages 92 and 93. ♦ Watch for a complete listing of 1992 trips in the January/February issue of *Sierra*.

BACKPACK

Experience the wilderness on a rewarding and adventurous backpacking trip. Carrying everything you need for the journey in a pack adds an extra dimension of freedom and satisfaction to your outing.

Trips vary in length and difficulty. We have divided them into five categories: Light (L) trips cover up to 35 miles in four to five travel days, the remaining days being layovers. Moderate (M) trips may cover longer distances of up to 55 miles and involve more cross-country routefinding. Strenuous (S) trips cover as many as 60 to 70 miles with greater ups and downs and continuous high-elevation travel. Light-Moderate (L-M) and Moderate-Strenuous (M-S) are intermediate ratings. Individual trip brochures explain the ratings in more detail.

Leaders are required to approve each applicant before final acceptance, and will ask you to write responses to their questions. These responses help the leader judge your backpacking experience and physical condition.



Grand Canyon National Park, Arizona

Kofa Wildlife Refuge Exploration, Arizona—February 16–22, 1992. If you like adventure, you'll love this outing in one of western Arizona's most rugged deserts. Amidst the sharp pointed mountains and wide valley floors live about 1,000 desert bighorn sheep. Water is limited, so our camps will be dry—a small price to pay for the chance to see the head and horns of a big ram silhouetted against the sky. (Rated M-S) *Leader: Sid Hirsh.* Price: \$340; Dep: \$50. [92031]

Florida Trail Odyssey: Ocala Forest—February 23–29, 1992. Warm days and cool nights make this winter outing a perfect cure for cabin fever. Expect variety on this 65-mile trail: We'll pass by ponds, cross cypress and gum swamps on boardwalks, traverse longleaf-pine forests and clusters of dwarf liveoaks, and see wildlife from songbirds to black bears. (Rated M) *Leader: Carolyn Williams.* Price: \$345; Dep: \$50. [92473]

Pacific Crest Trail: Mexico to Scissors Crossing, California—March 22–30, 1992. Remember the old proverb: a journey of a thousand miles begins with a single step. To hike the 2,600-mile Pacific Crest Trail (going south to north), your first step will be at Campo, near the Mexican border. We will hike an 80-mile stretch of the trail in a series of dayhikes, using car shuttles to take us to trailheads and camps. Our longest hike will be 18 miles, the shortest 9. (Rated M) *Leader: Ben Fleming.* Price: \$350; Dep: \$50. [92032]

The Chute of Muddy Creek, San Rafael Swell, Utah—April 4–11, 1992. Join our seasoned group of canyoneers as we explore remote areas of the San Rafael Swell. Our scenic route will take us through the Chute of Muddy Creek and along the Southern Reef, where we will explore several canyons. Our trip ends in Chimney Canyon, the most beautiful of all. (Rated S) *Leaders: Ginger Harmon and Steve Allen.* Price: \$370; Dep: \$50. [92033]

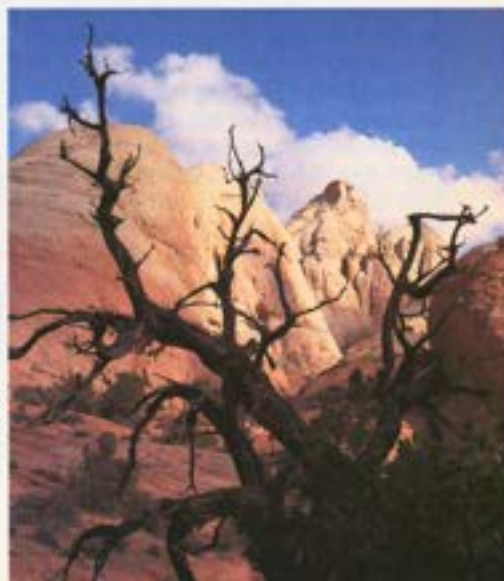
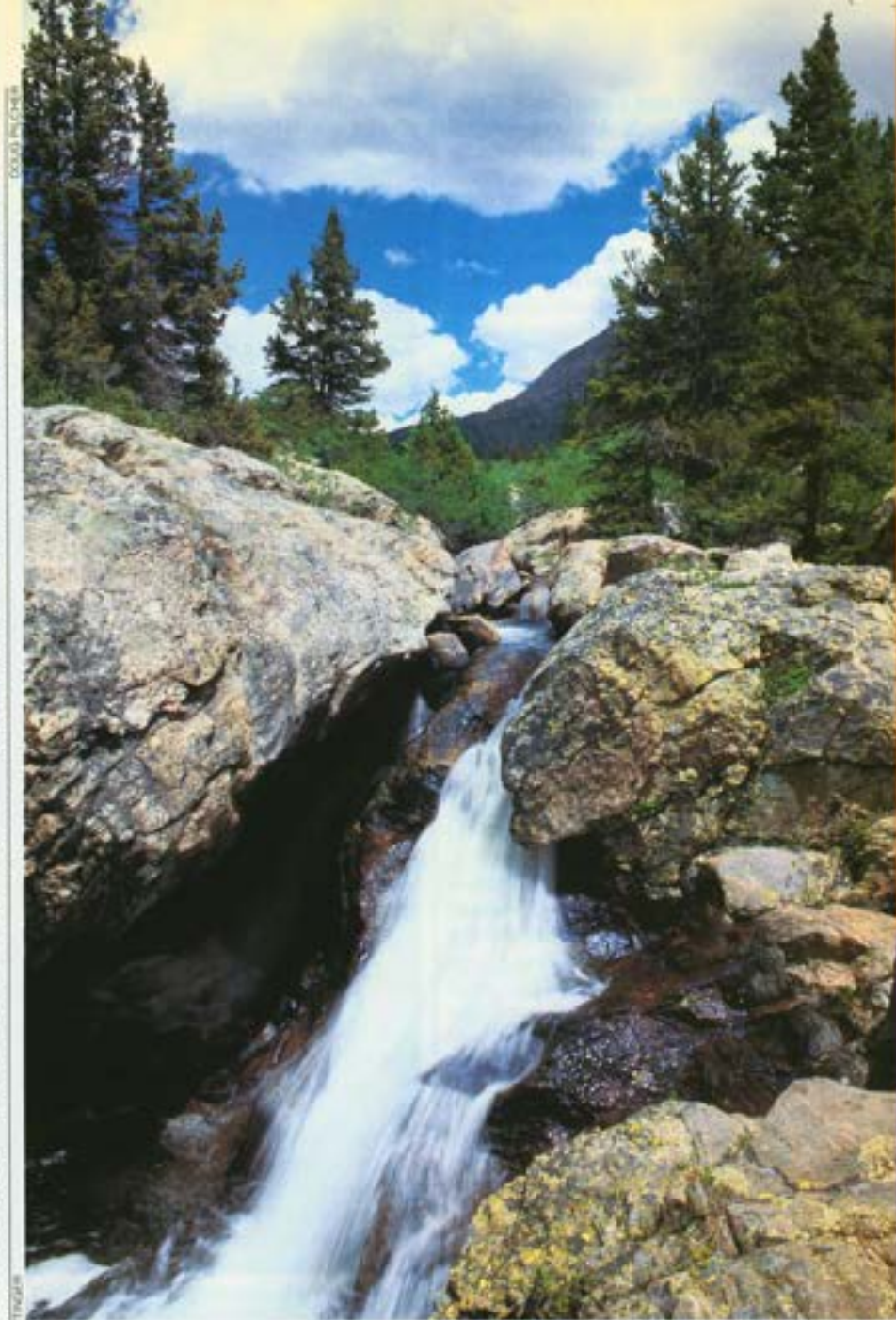
Sespe Secrets, Los Padres Forest, California—April 4–11, 1992. Only 40 miles from Los Angeles, Sespe country is a relatively untouched wilderness at the ocean end of Southern California's transverse ranges. Those who have discovered its secrets speak of pine-covered mountains, meandering canyons, brooks with swimming holes, and an inviting hot spring. Our journey will introduce us to all of these secrets, and a moderate pace will allow us to enjoy them fully. (Rated L-M) *Leader: Ricky Tate. Price: \$235; Dep: \$50.* [92034]

Redrock Secret Mountain and Sycamore Canyon Wildernesses, Arizona—April 11–18, 1992. Experience the redrock country of the Sedona/Oak Creek Canyon area in northern Arizona that the average visitor never sees. We will traverse two wildernesses, explore colorful canyons with flowing streams and natural arches, enjoy redrock vistas, and visit Indian ruins and a historic cowboy cabin. (Rated M-S) *Leader: David C. Mowry. Price: \$300; Dep: \$50.* [92035]

Easin' Down the Escalante, Glen Canyon Recreation Area, Utah—April 13–17, 1992. Starting on the historic Hole-in-the-Rock road, we'll descend gently through beautiful Harris Wash to the Escalante, taking plenty of time to photograph and explore side canyons in this redrock wilderness. Expect frequent stream crossings, warm days, and cool, crisp nights. Our exit route in Twenty-Five Mile Canyon tops off this scenic week. (Rated M) *Leader: Mike Murphy. Price: \$345; Dep: \$50.* [92036]

Escalante Canyons, Glen Canyon Recreation Area, Utah—April 17–25, 1992. Experienced slickrock adventurers will more than just enjoy this spectacular backpack down Forty-Mile Ridge, into Stevens Canyon and up into the Waterpocket Fold. Much of our hiking will be cross-country—into some of the most remote and beautiful areas of southern Utah. One layover day is planned. (Rated S) *Leader: Bert Fingerhut. Price: \$575; Dep: \$100.* [92037]

Thunder River and Deer Creek Falls, Grand Canyon Park, Arizona—April 18–24, 1992. The scenery in this remote area of the North Rim is the best the Grand Canyon offers to hikers. After descending into the canyon at Indian Hollow, we cross the Esplanade to Deer Creek Falls. Then we'll explore Hidden Valley on our way to Thunder River. Two layover days are planned. This trip is for experienced hikers only. (Rated S) *Leader: Gary Millsap. Price: \$325; Dep: \$50.* [92038]



Clockwise from top:
White River National Forest, Colorado;
Navajo Indian Reservation, Arizona;
spines of young fishhook barrel
cactus, Arizona

Thunder River and Deer Creek Falls, Grand Canyon Park, Arizona—April 19–25, 1992. See description for trip #92038 above. *Leader: Bob Cole. Price: \$325; Dep: \$50. [92039]*

Exploring the Kolob, Zion Park, Utah—April 19–25, 1992. This remote northwest section of Zion National Park features narrow canyons of Navajo sandstone, inviting streams with sand-bench campsites, gigantic Kolob Arch, and the challenge of Beartrap Canyon. Join us in exploring this unique and seldom-visited wilderness. (Rated M-S) *Leader: Don McIver. Price: \$375; Dep: \$50. [92040]*

California's North Coast: Redwoods and Surf—April 27–May 4, 1992. Spend three springtime days in the redwoods and experience an awesome silence as you stroll a fern carpet under these giants. Then hike five days along the lonesome Lost Coast, where you'll see harbor seals, sea lions, a riot of wildflowers, and—with luck—whales. You'll find an abandoned lighthouse, a black sand beach, and many other surprises. Don't forget your camera! (Rated L-M) *Leader: Bill Walsh. Price: \$265; Dep: \$50. [92041]*

Arches and Cliff Dwellings, Utah—May 2–8, 1992. The ruins of ancient Anasazi cliff dwellings perch high on the sandstone walls of Owl and Fish Creek canyons. On three layover days, we'll explore some of these ruins, visit the massive natural arches and amphitheaters, and stroll through pine and fir along trickling streams. We'll hike three to five miles a day at altitudes below 6,000 feet. Suitable for experienced backpackers. (Rated L-M) *Leader: Jack Zirker. Price: \$325; Dep: \$50. [92042]*

Kanab Canyon and Thunder River, Grand Canyon Park, Arizona—May 2–9, 1992. Our spring trip begins with a steep nine-mile descent to Thunder River, so spectacular that it will make our efforts worthwhile. Our itinerary includes almost every feature the canyon has to offer—120-foot Deer Creek Falls, hidden canyons with beckoning pools, the narrows of Jumpup, and a panoramic view as we ascend Kwagunt Hollow to Sowats Point. For experienced hikers only. No layover days are planned. (Rated S) *Leader: Gene Glenn. Price: \$315; Dep: \$50. [92043]*

Navajo Mountain and Rainbow Bridge, Arizona and Utah—May 3–9, 1992. Silhouetted against the southwest sky and sacred to the Navajo tribe, Navajo Mountain invites exploration of its twisting canyons and red sandstone

domes. Desert wildflowers add splashes of color at this time of year. A layover day allows us to take a side hike to Rainbow Bridge National Monument, the largest natural arch in the United States. (Rated M) *Leader: Jim Urban. Price: \$305; Dep: \$50. [92044]*

Escalante Canyons, Glen Canyon Recreation Area, Utah—May 24–30, 1992. Escalante features a unique combination of hidden alcoves, sculptured sandstone arches, hanging gardens, and waterfalls. The rust-colored streams along our route contrast with clear, emerald pools tucked away in side canyons. We'll have time for leisurely exploration. (Rated M-S) *Leader: Michelle Line. Price: \$400; Dep: \$50. [92045]*



Hunter-Fryingpan Wilderness, Colorado

Foothills Trail Adventure, South and North Carolina—May 30–June 6, 1992. Skirting the Blue Ridge escarpment in western South Carolina and North Carolina, this beautifully designed trail crosses some rugged yet lush terrain and several rivers. The rivers have cut deep gorges with many cascades and waterfalls. Views of Lake Jocassee and blooming mountain laurel will delight us. We will hike 6 to 10 miles daily for a total of about 50 miles. (Rated M) *Leader: Helene Baumann. Price: \$360; Dep: \$50. [92046]*

Deep in Death Hollow Wilderness, Escalante, Utah—May 31–June 6, 1992. Our adventurous off-trail route begins at 9,000 feet on the Aquarius Plateau. For the next 30 miles, descending 3,500 feet, we'll hike, scramble, and swim our way down Death Hollow Canyon to the Escalante River. This spectacular slot-canyon adventure is for experienced hikers only. One layover day is planned. (Rated S) *Leader: Lasta Tomasevich. Price: \$405; Dep: \$50. [92047]*

BASE CAMP/ HIGHLIGHT

America's Tropical Paradise, Virgin Islands Park, Virgin Islands—March 1–7, 1992. Virgin Islands National Park makes up most of the island of St. John, where we'll stay in rustic, beachfront cottages. On morning hikes we'll explore the island's rainforests and out-of-the-way places. In the afternoons we'll drive in our rental vehicles to beautiful white sand beaches to sunbathe, swim and snorkel. Please note that meals are not included in the trip price. *Leader: Gary Skomro. Price: \$665; Dep: \$100. [92052]*

Anza-Borrego Desert Natural History, Anza-Borrego Park, California—March 7–14, 1992. The Anza-Borrego desert comprises over one million acres in Southern California east of the coastal range. Uniquely juxtaposed terrain and landforms vary from 6,000-foot piney crags to fossilized badlands to a low inland sea supporting a rich variety of plants and animals. We'll be accompanied by a naturalist and enjoy easy to moderate hikes. *Leader: Carol Baker. Price: \$235; Dep: \$50. [92053]*

Historic Landmarks in the Old South, Louisiana and Mississippi—March 15–21, 1992. Lovers of history can step into the past on this bed and breakfast tour of plantations and gardens. Your southern experience begins in the French Quarter of New Orleans, takes you across Louisiana to Natchez, Mississippi, and north to the Civil War battleground of Vicksburg. Accommodations include antebellum mansion bedrooms styled in the romantic tradition of the Deep South. *Leader: Bill Carroll. Price: \$900; Dep: \$100. [92054]*

America's Tropical Paradise, Virgin Islands Park, Virgin Islands—March 22–28, 1992. See description for trip #92052 above. *Leader: Jim Absher. Price: \$665; Dep: \$100. [92055]*

Bison, Coyotes, Eagles, and Sacred Places, Badlands Park, South Dakota—May 10–16, 1992. Serenaded by coyotes, a full moon will illuminate colorful spires, pinnacles, and sawtoothed ridges in the *malpais* (badlands). Fossils of ancient camels, three-toed horses, and saber-toothed tigers are common. This is an ideal setting to learn about the history and culture of the Sioux people. Daily hikes provide observation of prairie dog towns and grasslands. *Leader: James Reidy. Price: \$380; Dep: \$50. [92056]*



STEVE LOTT/NOVA

Hiking Virginia's Rooftop, Mt. Rogers Recreation Area—May 17–23, 1992. Near where North Carolina, Tennessee, and Virginia meet, the Blue Ridge Mountains reach their highest crests. Staying at Beartree Campground, we'll use participants' vehicles to travel to nearby trailheads for daily hikes along the Appalachian Trail and its side trails, including an ascent of Mt. Rogers, Virginia's highest summit. Expect to find azaleas and laurels in bloom. *Leader: Ray Abercrombie. Price: \$300; Dep: \$50. [92057]*

Spring in Canada's Coast Mountain Wilderness, Tweedsmuir Park, British Columbia—May 25–31, 1992. Daily excursions into the wilderness of British Columbia's largest park are followed by fine dining and relaxation before the fireplace in historic Tweedsmuir Lodge. While the mountains and glaciers above are shrouded in snow, we will search out pockets of new life in the valley below—bald eagle nests, showy orchids, old-growth forest—and visit Indian petroglyphs and the Bella Coola coastal fjord. *Leaders: Katie Hayhurst and Dennis Kuch. Price: \$1,345; Dep: \$200. [92058]*

FAMILY

Arches Adventure for Preschoolers, Arches Park, Utah—May 17–23, 1992. Short, easy hikes make this park ideal for families with budding hikers and parents with child-carry packs. Daily hikes allow us to explore The Windows, Fiery Furnace, Devils Garden, Park Avenue, and Delicate Arch. Other highlights include evening ranger presentations and a layover day to explore Arches on your own or to visit nearby Canyonlands National Park in the Sky District. *Leaders: Sharon McEwan and Ellen Andrew-Kasper. Price: adult \$370, child \$250; Dep: \$100 per family. [92064]*



LEFT: JERRY HAZEN/NOVA; MIDDLE: ROBERT KAHN/NOVA

Clockwise from top:
Camp at Goldwater Ruins, Arizona;
Maine foliage; saguaro cactus,
Arizona

HAWAII

Kauai Family Adventure—April 11–18, 1992. Kauai offers the visitor magnificent scenery and many outdoor activities. We will sample the exciting and surprising contrasts the island has to offer: the beautiful Na Pali coast, rugged Waimea Canyon, mystic Alakai Swamp, lush Hanalei Valley, and picturesque beaches. Hiking, snorkeling, and sight-seeing are just some of the options available. We will stay in rustic lodging right on a beach. Children of all ages are welcome. *Leader: Wayne Martin. Price: adult \$770, child \$515; Dep: \$100 per family. [92069]*

INTERNATIONAL

Please note that international trip prices are subject to change and do not include airfare. International trips are tier-priced; for an explanation of tier-pricing, see page 93.

AFRICA

Kenya Coast and Wildlife Safari: From Lamu to the Maasai Mara—February 7–20, 1992. This multifaceted trip offers much more variety than the usual safari. We will explore the attractions of Nairobi, Mombasa, and ancient Islamic Lamu, which has retained its historic character. Our experiences will include gameviewing and birdwatching at Tsava, Shimba Hills, and Maasai Mara; snorkeling and dhow sailing on the Indian Ocean, and taking the overnight train on the colorful "lunatic express" from Mombasa to Nairobi. *Leader: Ruth Dyche. Price: \$3,605 (10–12)/\$3,840 (9 or fewer); Dep: \$200. [92548]*

Madagascar Revisited—April 16–May 3, 1992. Often referred to as "The Mysterious Island at the End of the Earth," Madagascar is a land of stark contrasts: rainforests, thorny deserts, pristine beaches, magnificent barrier reefs, and lush, grassy plains. Traveling by plane, train, bus, and outrigger canoe, we will visit the habitat of the endangered lemurs, distant relatives to monkeys, apes, and humans. We will also encounter rare birds, bats with three-foot wingspans, and beautiful orchids found nowhere else on Earth. We'll stay in first-class hotels as well as backcountry accommodations. Come prepared for it all! *Leader: Patrick Colgan. Price: \$3,735 (12–15)/\$3,990 (11 or fewer); Dep: \$200. [92590]*

ASIA

A Journey to Thailand: Temples, Hills, and Beaches—February 11–27, 1992. Thailand is an enchanting Buddhist kingdom with an abundance of attractions: palaces, temples, archaeological wonders, markets, mountains, beaches, and tribal cultures. After experiencing the palaces and temples of Bangkok, we'll head north to Chiang Mai to trek among the hill tribes and stay in villages. We'll conclude our trip in the south, where we'll swim and hike on the islands of Phuket and Phi Phi. *Leader: Wayne Martin. Price: \$2,230 (9–11)/\$2,490 (8 or fewer); Dep: \$200. [92550]*

SEE PAGE 94 FOR ADDITIONAL INTERNATIONAL TRIPS.

Annapurna Chitwan Trek, Nepal—March 2–20, 1992. Spring comes early to Nepal, and Nepal's national flower, the rhododendron, will be in full bloom during our moderate trek along the southern slopes of the Annapurna Himal. We'll enjoy close-up views of some of the most extraordinary mountains on Earth. After the trek, we will visit Royal Chitwan National Park for three days of elephant safaris and jungle walks. Time has been scheduled to explore the wonders of the Kathmandu Valley. *Leader: Peter Owens. Price: \$1,710 (12–15)/\$1,900 (11 or fewer); Dep: \$200. [92570]*

Japanese Alps and Country Inns—April 6–18, 1992. Head west to the "Land of the Rising Sun," where the cherry blossoms should be in full bloom and the alps still snowcapped. We will travel from Tokyo via train and bus to Nikko, Mt. Fuji, and across the alps to Takayama and Kanazawa on the Sea of Japan. Picturesque Kyoto will be our final stop before we bid *sayonara*. We'll stay at inns, a hot springs resort, and an old temple. *Leader: Carolyn Castleman. Price: \$3,370 (12–15)/\$3,625 (11 or fewer); Dep: \$200. [92580]*

Manaslu Circle Trek, Nepal—May 9–June 5, 1992. From the dramatic and precipitous gorge of the Buri Gandaki River to the snows of 17,000-foot Larya La Pass, our trail travels through some of the most spectacular terrain in the Himalaya. Beginning in Gorkha and ending in Pokhara, we will circumambulate the great Manaslu massif, crowned by its beautiful 26,510-foot namesake. Our 25-day trek passes very close to the Tibetan border and through Buddhist villages rarely seen by Westerners. *Leaders: Cheryl Parkins and Peter Owens. Price: \$2,310 (12–15)/\$2,535 (11 or fewer); Dep: \$200. [92600]*

EUROPE

England's Coast to Coast Walk: From the Irish Sea to the North Sea—May 31–June 13, 1992. Join us on a walk across the breadth of England through three of the country's most scenic national parks—the Lake District, the Yorkshire Dales, and the North York Moors. Our moderate daily hikes will take us to the towns of Grasmere, Keld, and Robin Hood's Bay—pastoral England at its finest! Our luggage will be transported each day by a minibus to our overnight accommodations in comfortable lodges and bed and breakfasts, where we'll meet fellow hikers from around the world. *Leader: Lou Wilkinson. Price: \$2,495 (11–14)/\$2,775 (10 or fewer); Dep: \$200. [92610]*



Clockwise from top: Mt. Dhaulagiri, Nepal; at the Grand Palace, Thailand; Guatemalan youth



CENTENNIAL TRIP

To celebrate the Sierra Club's Centennial in 1992, the National Outing Program is sponsoring special outings. Look for more Centennial Trips in the 1992 Outings Catalog to be published in the January/February issue of Sierra.

John Muir's Scotland—May 10–23, 1992. Enjoy two marvelous weeks exploring the Scottish Highlands, beginning at John Muir's birthplace, Dunbar, on Scotland's rolling east coast. We will travel west to the John Muir Trust's preserve on the rugged west coast's Knoydart Peninsula, where we will be treated to splendid views. Accompanied by the Trust's delightful director and naturalist, Dr. Terry Isles, we'll visit Skye and other Inner Hebrides isles by launch. Our accommodations will be in charming small hotels, transport will be by minibus, and hikes will be varied and moderate. A special feature is an optional, strenuous hike up Ben Nevis (4,406 feet), Scotland's highest peak. Come and be bagged to dinner, hike in the Black Woods of Macbeth, sing and dance in a *ceilidh*, and retrace John Muir's faded footsteps across the East Lothian dunes! *Leaders: John and Jane Edginton. Price: \$3,420 (12–15)/\$3,675 (11 or fewer); Dep: \$200.* [92605]

LATIN AMERICA

Belize: Reef and Ruins, Central America—February 15–24, 1992. Using a ranch as our base, we'll explore Belize's lush interior and visit the magnificent ruins of ancient Tikal in neighboring Guatemala. Moving to the Caribbean coast, we'll stay on a palm-studded island near a fascinating barrier reef. There we'll snorkel in clear water, learn about local conservation issues, and feast on fresh seafood! *Leader: Lola Nelson-Mills. Price: \$1,865 (10–12)/\$2,085 (9 or fewer); Dep: \$200.* [92553]

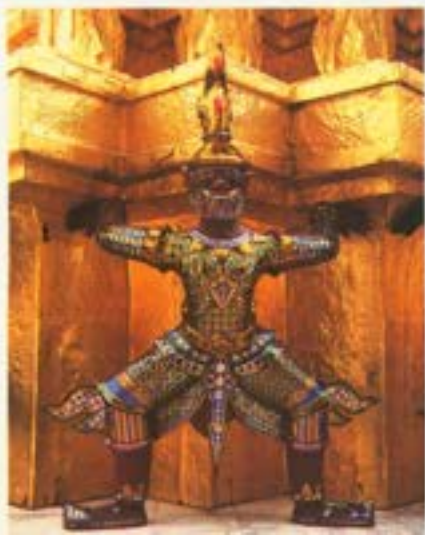
Magdalena Bay Whale-Watching, Baja California, Mexico—February 16–22, 1992. Imagine yourself in a 12-foot sea kayak paddling in the midst of a pod of California gray whales (some as long as 55 feet) as they play, rest, and calve in their winter home. Explore mangroves and hunt for shells along the dunes and shoreline of the bay's barrier islands. This trip is suited for both novice and expert paddlers. Basic paddling instruction is provided. *Leader: Jon Kangas. Price: \$1,295 (11–14)/\$1,375 (10 or fewer); Dep: \$200.* [92555]

The River of Ruins: An Archaeological Adventure by Paddle-Raft, Mexico—March 14–24, 1992. Come explore ancient Mayan ruins in a verdant jungle setting. Before setting foot in our paddle-rafts for a trip down the fabled Usumacinta River, we'll marvel at Palenque's ancient splendor and view the famous murals at Bonampak. At Yachilan, we'll enjoy an enchanted evening in an old Mayan courtyard lit by a full moon and thousands of fireflies. How can we help but feel the presence of Mayan spirits? We will be accompanied by an archaeologist. *Leader: John Garcia. Price: \$2,710 (12–15)/\$2,965 (11 or fewer); Dep: \$200.* [92575]

A Sailing Sojourn in the British Virgin Islands for Artists and Photographers—April 16–23, 1992. Come sail among the mountainous British Virgin Islands aboard a 50-foot yacht, with time scheduled to photograph or draw the remarkable scenery. We will also hike through tropical forests, snorkel over coral reefs, and relax on white sand beaches. Our trip starts on the main island of Tortola; we'll explore a different island each day and anchor in coves at night. No sailing experience is necessary. *Leader: Chuck Blouin. Price: \$2,205 (6–8)/\$2,625 (5 or fewer).* [92585]

Costa Rica: River Rafting, Jungle, and Beach Adventure—April 18–25, 1992. Because of its ecological diversity and national conservation consciousness, Costa Rica is a naturalist's paradise. We'll raft the Pacuare and Reventazon rivers for three days, enjoying white-water, waterfalls, and jungle wildlife. Then we journey south to Manuel Antonio National Park, where jungle and the Pacific meet. Here we'll hike in the rainforest to observe the extraordinary wildlife and snorkel in the warm ocean waters to see the myriad tropical fish. *Leader: Carolyn Braun. Price: \$1,935 (12–15)/\$2,190 (11 or fewer); Dep: \$200.* [92595]

Endangered Forests of Costa Rica and the Ecuadorean Amazon—June 1–14, 1992. This trip is a special opportunity to experience the variety and wonder of three endangered tropical ecosystems. In Costa Rica, we'll visit the cloud forest at Monteverde and a unique Pacific dry forest. Then we fly to Ecuador and camp in an Amazon rainforest at the Cuyabepo Nature Reserve. Skilled guides will help us identify the flora and fauna and describe local ecology. We'll also observe and discuss the impact of the human population on these areas. *Leader: Wheaton Smith. Price: \$2,890 (12–15)/\$3,225 (11 or fewer); Dep: \$200.* [92615]



SERVICE

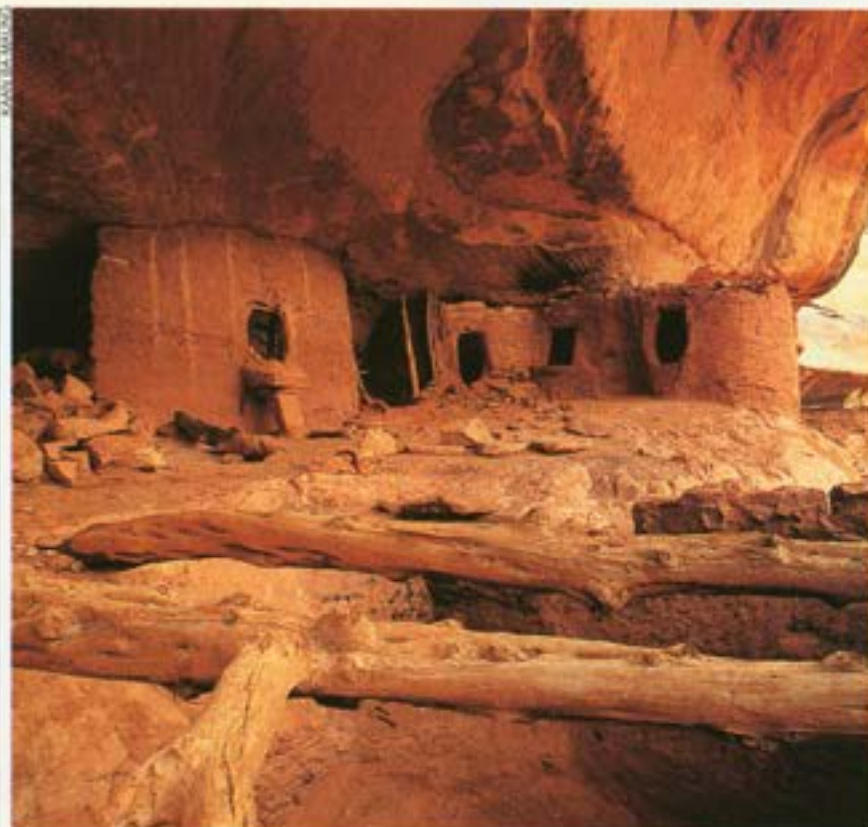
Phoenix Mountain Preserve, Arizona—February 29–March 7, 1992. This 7,000-acre desert mountain preserve lies within the Phoenix city limits. Our trail project will take us into rugged terrain with elevations from 1,180 to 2,318 feet. A wilderness still inhabited by coyotes, jackrabbits, and cactus wrens, the preserve is also home to the giant saguaro cactus. Weather this time of year is unpredictable, but days should be warm and nights cool. Our base camp will be primitive but vehicle-accessible. *Leader: Maureen Hymel. Price: \$155; Dep: \$50. [92074]*

Deadman Mesa Trail #17, Mazatzal Wilderness, Tonto Forest, Arizona—March 7–14, 1992. Against a backdrop of deep canyons, rugged cliffs, and the wild and scenic Verde River, we will reconstruct a neglected secondary trail near the top of Deadman Mesa. On free days, we can hike to places with such classic names as Hells Hole, Hardscrabble Creek, and Ikes Backbone. Our base camp will be along Fossil Creek. *Leader: Jim Vaaler. Price: \$175; Dep: \$50. [92075]*

Deer Creek Trail, Mazatzal Wilderness, Arizona—March 15–22, 1992. Help repair a neglected trail in the rugged Mazatzal Mountains. We will be continuing the efforts of previous years' crews: clearing brush, removing fallen limbs, and rebuilding trail tread. We will alternate work and free days, giving us time to explore some of the 240 miles of trail in this magnificent wilderness. *Leader: Vance Green. Price: \$160; Dep: \$50. [92076]*

Superstition Wilderness, Arizona—April 4–11, 1992. The Old West still lives in the high desert mountains and canyons of the Superstitions. We will do trail maintenance from a base camp, and on our leisure days hike to scenic canyons and prehistoric Indian sites. Wildflowers will be in bloom, days will be warm, starry nights cool. Sleep to the song of the coyote on this memorable trip! *Leader: Wil Passow. Price: \$160; Dep: \$50. [92077]*

Big Sur, Ventana Wilderness, California—April 11–18, 1992. Rising 4,000 feet behind the dramatic Big Sur coast, the rugged Ventana Wilderness offers year-round hiking opportunities. Our goal is to clear the last miles of the Black Cone Trail. From our camp on Pine Ridge, nearby peaks, thermal springs, and trout-filled streams offer entertainment on our free days. *Leader: Maura Eagan Harder; Cook: Charles Reimann. Price: \$225; Dep: \$50. [92078]*



Ancient cliff dwellings, Grand Gulch, Utah

The Arizona Trail Interpretive Project, Superstition Wilderness, Arizona—April 11–19, 1992. In an upper Sonoran Desert wilderness where the cacti are in bloom, we will help build an interpretive trail emphasizing the area's social and natural history. On free days we can hike to prehistoric dwellings and natural settings made famous by Southwest photographers. Expect clear desert air and night skies where stars abound. *Leader: Jack Hershey. Price: \$205; Dep: \$50. [92079]*

Buffalo River, Ozark Forest, Arkansas—April 12–18, 1992. We will begin building a major trail that will eventually traverse mountainsides and canyons near the Buffalo River's headwaters. Some of our worksites on this well-engineered project will be steep. From our base camp in one of the loveliest valleys in the Ozarks, we will take time to hike and explore historic sites while surrounded by springtime blooms. *Leaders: John and Mary Frantz. Price: \$195; Dep: \$50. [92080]*

The Arizona Trail, North Kaibab Forest, Grand Canyon Park, Arizona—April 20–29, 1992. We'll build a portion of the Arizona Trail in the fragrant piñon/juniper belt of this North Rim forest for five days, then hoist our back-

packs for a strenuous five-day adventure in the beautiful and remote western Grand Canyon. We'll visit fern grottos, waterfalls, and ancient cultural sites—and walk silent, narrow canyons on our way to the roaring Colorado River. *Leader: Deborah Northcutt; Cook: Jasmine Star. Price: \$325; Dep: \$50. [92081]*

Snowbird Creek, Slickrock Wilderness, North Carolina—April 25–May 2, 1992. Our work to develop and improve trails will be in the Slickrock Wilderness and Snowbird Creek area of Nantahala National Forest. From our base camp at Rattler Ford near Joyce Kilmer Memorial, an impressive virgin forest, we can hike to peaks more than 5,000 feet in elevation for sweeping views of the Appalachians. Spring wildflowers should be plentiful. *Leader: Otto Spielbichler. Price: \$220; Dep: \$50. [92082]*

"Arches—De Triomphe," Arches Park, Utah—April 26–May 2, 1992. Visualize a sunset, its various hues of red illuminating extraordinary examples of erosion. In Arches National Park you'll assist with exotic plant removal and trail maintenance. High-spirited individuals will enjoy working among an infinite variety of stone formations. Give of your time while getting a sense of the

OUTING RESERVATION FORM

Please read important policy information on reverse.

MEMBERSHIP NUMBER	TRIP NUMBER	TRIP NAME			DEPARTURE DATE	
YOUR NAME		HAVE YOU RECEIVED THE DETAILED TRIP BROCHURE? YES <input type="checkbox"/> NO <input type="checkbox"/>				
STREET ADDRESS		YOUR HOME PHONE ()				
CITY	STATE	ZIP	YOUR WORK PHONE ()			
PLEASE PRINT YOUR NAME AND THE NAMES OF OTHER PEOPLE IN YOUR PARTY		MEMBERSHIP NUMBER	AGE	RELATIONSHIP	NUMBER OF OUTINGS YOU'VE BEEN ON CHAPTER NATIONAL	YEAR OF LAST NATIONAL OUTING
1				SELF		
2						
3						
4						
PER PERSON COST OF OUTING	TOTAL COST OF THIS APPLICATION	DEPOSIT ENCLOSED	FOR OFFICE USE ONLY			



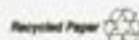
PLEASE MAKE CHECK PAYABLE TO SIERRA CLUB
MAIL TO: SIERRA CLUB OUTING DEPARTMENT, DEPT. #05618, SAN FRANCISCO, CA 94139

02

OUTING RESERVATION FORM

Please read important policy information on reverse.

MEMBERSHIP NUMBER	TRIP NUMBER	TRIP NAME			DEPARTURE DATE	
YOUR NAME		HAVE YOU RECEIVED THE DETAILED TRIP BROCHURE? YES <input type="checkbox"/> NO <input type="checkbox"/>				
STREET ADDRESS		YOUR HOME PHONE ()				
CITY	STATE	ZIP	YOUR WORK PHONE ()			
PLEASE PRINT YOUR NAME AND THE NAMES OF OTHER PEOPLE IN YOUR PARTY		MEMBERSHIP NUMBER	AGE	RELATIONSHIP	NUMBER OF OUTINGS YOU'VE BEEN ON CHAPTER NATIONAL	YEAR OF LAST NATIONAL OUTING
1				SELF		
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PER PERSON COST OF OUTING	TOTAL COST OF THIS APPLICATION	DEPOSIT ENCLOSED	FOR OFFICE USE ONLY			

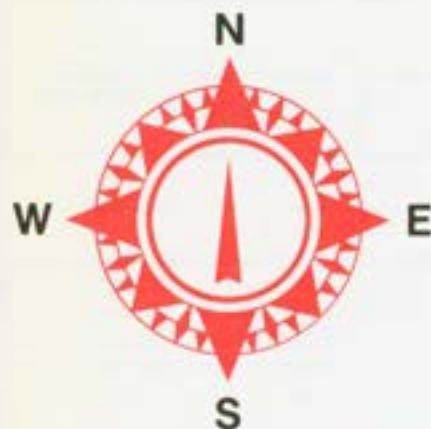


PLEASE MAKE CHECK PAYABLE TO SIERRA CLUB
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02

IMPORTANT INFORMATION ON SIERRA CLUB OUTINGS

Mail To:
Sierra Club Outing Dept.
Dept. #05618
San Francisco, CA 94139



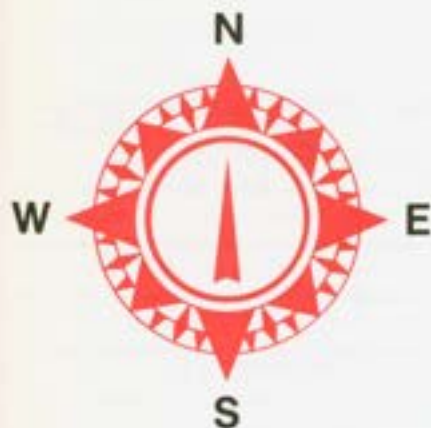
1. All reservations are subject to the reservation/cancellation policy of the Outing Committee; leader approval is required for all outings.
2. A signed liability release is required for all international trip participants.
3. All participants age 12 and over must be Sierra Club members to attend an outing.
4. Your address may be released to other trip participants for purposes of ride-sharing or other trip-related purposes.
5. Not all trips can accommodate special dietary needs or preferences. Contact the leader for this information before applying.
6. Applications for trip space will be accepted in the order they are received at the following address:

Sierra Club Outing Dept.
Dept. #05618
San Francisco, CA 94139

7. Please do not send Express Mail to this address. Doing so will delay your application.

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time that gave shape to this wondrous place. *Leader: Susan Estes. Price: \$270; Dep: \$50.* [92083]

Buffalo River, Ozark Forest, Arkansas—April 26–May 2, 1992. Amid the Ozark's spring flora along America's first national river, we will add a segment to a new, well-engineered trail. The rugged terrain is heavily forested and boasts much of the Ozark's finest scenery. Blooming dogwood and wildflowers will grace our base camp in the valley. Expect mild days, cool nights, and opportunities to photograph, swim, hike, and explore. *Leader: W.E. "Bill" Riecken. Price: \$195; Dep: \$50.* [92084]

The Arizona Trail, Superstition Wilderness, Arizona—May 2–10, 1992. After backpacking to our base camp in the Superstition Mountains, we will work on a historic 1860s miners' route. Throughout the trip we will enjoy the spring Sonoran Desert bloom as well as blue skies, warm days, and cool nights. On our free days we'll hike to ancient cliff dwellings, hidden pools, and stands of cedar, mesquite, and juniper. *Leader: Jack Hershey. Price: \$205; Dep: \$50.* [92085]

Gila Wilderness, New Mexico—May 9–16, 1992. This remote and beautiful mountain forest was the first designated wilderness area in the United States. It is home to deer, elk, turkey, antelope, javelina, and mountain lion. We will do trail work from a base camp and hike to scenic canyons and ruins on leisure days. Days will be warm, spring wildflowers in bloom, and the brilliant starry nights nippy. *Leader: Wil Passow. Price: \$170; Dep: \$50.* [92086]

Big Dry Creek, Gila Wilderness, New Mexico—May 23–31, 1992. We will restore an abandoned canyon trail in a remote section of the Gila Wilderness. After hiking in five miles (with a gradual 1,000-foot ascent, then a steep 1,000-foot descent), we will establish camp on Big Dry Creek. Expect spring flowers, animal sightings, nearby fishing, and no other people. *Leaders: Linda and John Buchser. Price: \$230; Dep: \$50.* [92087]

SKI

High Sierra Skiing, Tahoe Forest, Sierra—February 2–7, 1992. Take Nordic ski lessons at the Sierra Club's own Clair Tappaan Lodge near Donner Summit—a wonderful opportunity to develop or improve your skiing skills such as diagonal stride, Telemarking, and ski skating in an area of heavy snow-

fall. You'll also enjoy warm accommodations, good food, a hot tub, and other lodge amenities. Your leader is a certified ski instructor. *Leader: Jeff Hartley. Price: \$325; Dep: \$50.* [92091]

Cross-Country Skiing in Copper Country, Michigan—February 2–9, 1992. Ski the Midwest's finest—the rugged hills and woodlands of the Copper Country at the tip of Keweenaw Peninsula on Lake Superior. The annual snowfall here is about 250 inches, and there are wilderness trails in this remote winter wonderland for all levels of skiers. We'll delight in skiing from the front doors of our modern cabins. *Leader: Donna Small. Price: \$520; Dep: \$100.* [92471]

Gunflint Trails, Boundary Waters Canoe Area Wilderness/Superior Forest, Minnesota—February 9–14, 1992. Glide through the silence and sparkle of a Northwoods winter on the rugged edge of the Boundary Waters, where the snow comes early and lingers late. Groomed trails lead from our cabins into the heart of the lake country. Enjoy the optional challenge of camping out overnight—then indulge yourself in a sauna. This trip is for intermediate skiers and adventurous novices. *Leader: Sarah Reinke. Price: \$550; Dep: \$100.* [92472]

Backcountry Skiing, San Juan Mountains, Colorado—March 22–28, 1992. Spectacular scenery, expert instruction, and outstanding food are features of our ski week in the high peaks of southern Colorado. We'll ski in one mile to a rustic lodge at 11,500 feet from where we'll take

a variety of tours and downhill runs. This is a great chance to improve your skiing, whatever your skill level. Rental of ski equipment is included in the trip fee; vegetarians accommodated. *Leaders: Dana Densmore and Bill Donahue. Price: \$975; Dep: \$100.* [92092]

Spring Skiing in the Sierra, Tahoe Forest, Sierra—April 5–11, 1992. Enjoy spring skiing at its best. Corn snow, Telemarking, Nordic downhill, backcountry—you name it—it's all here at the Sierra Club's own Clair Tappaan Lodge. Daily lessons will be offered by a certified instructor as well as tours to Castle Peak, Crow's Nest, and German Ridge. The lodge serves great food, and even has a hot tub to relax in at day's end. *Leader: Herb Holden. Price: \$380; Dep: \$50.* [92093]

WATER

Everglades Park, Florida—February 16–21, 1992. We'll camp at Flamingo, a unique subtropical wilderness threatened by pollution and neglect, at the southern tip of the park. On our daily canoe trips we will explore mangrove and buttonwood environments, freshwater ponds, brackish water, open coastal prairies, and salt-water marshes—homes for rare plants, birds, and animals. This leisure trip is for competent canoeists who enjoy birding, wildlife-watching, and photography. *Leaders: Otto Spielbichler and Martin Brow. Price: \$215; Dep: \$50.* [92098]

Canoeing Okefenokee Swamp, Georgia—March 22–27, 1992. From base camps on the east and west edges of the swamp, we will canoe different sections of the Okefenokee, exploring coastal prairies and cypress forests. Parts of the swamp were logged 100 years ago, but it has restored itself to its primitive beauty, providing habitat for birds, mammals, and reptiles (such as Pogo and friends!) This trip is for competent canoeists of all ages who enjoy birding, animal-watching, and photography. *Leader: Vivian Spielbichler. Price: \$295; Dep: \$50.* [92099]

Springtime in the Delta, Louisiana and Mississippi—March 22–28, 1992. It's high-water time in the Louisiana bayous: Fresh green needles appear on the cypress trees; warm weather brings out birds, snakes, and alligators; and Cajuns are busy clearing their crawfish traps throughout the flooded forest. We'll meet for the trip in New Orleans and visit different regions by canoe and on foot. *Leader: Ernie Bauer. Price: \$465; Dep: \$50.* [92100]



Yellowstone National Park, Wyoming

RESERVATION & CANCELLATION POLICY

Eligibility: Our trips are open to Sierra Club members, applicants for membership, and members of organizations granting reciprocal privileges. You may include your membership application and fee with your reservation request.

Children must have their own memberships unless they are under 12 years of age.

Unless otherwise specified, a person under 18 years of age may join an outing only if accompanied by a parent or responsible adult or with the consent of the leader.

Applications: One reservation form should be filled out for each trip by each person; spouses and families (parents and children under 21) may use a single form. Mail your reservation, together with the required deposit, to the address below. No reservations will be accepted by telephone.

Reservations are confirmed on a first-come, first-served basis. However, since acceptance by the leader is required (based on applicant's experience, physical condition, etc.), the reservation is confirmed subject to the leader's approval, for which the member must apply promptly. When a trip is full, later applicants are put on a waitlist.

Give some thought to your real preferences. Some trips are moderate, some strenuous; a few are only for highly qualified participants. Be realistic about your physical condition and the degree of challenge you enjoy.

The Sierra Club reserves the right to conduct a lottery in order to determine priority for acceptance in the event that a

trip is substantially oversubscribed shortly after publication.

Reservations are accepted subject to these general rules and to any specific conditions announced in the individual trip brochures.

Deposit: A deposit is required with every trip application. The amount of the deposit varies with the trip price, as follows:

<i>Trip price per person</i>	<i>Deposit per person</i>
<i>Up to \$499</i>	<i>\$50 per individual (with a maximum of \$100 per family on family trips)</i>
<i>\$500 to \$999</i>	<i>\$100 per individual</i>
<i>\$1,000 and above</i>	<i>\$200 per individual</i>

The deposit is applied to the trip price when the reservation is confirmed. All deposits and payments should be in U.S. dollars.

Payments: Generally, adults and children pay the same price; some exceptions for family outings are noted. You will be billed upon receipt of your application. Full payment of trip fee is due 90 days prior to trip departure. Trips listed in the "International" section require additional payment of \$300 per person six months before departure. Please note that payments are due at the above times, regardless of your leader-approval status. If payment is not received on time, the reservation may be canceled and the deposit forfeited.

No payment (other than the required deposit) is necessary for those waitlisted. The applicant will be billed when placed on the trip.

The trip price does not include travel to and from the roadhead or specialized transportation on some trips (check trip brochure). Hawaii, Alaska, and International trip prices are all exclusive of airfare.

Transportation: Travel to and from the roadhead is your responsibility. To conserve resources, trip members are urged to form carpools on a shared-expense basis or to use public transportation. On North American trips the leader will try to match riders and drivers. On some overseas trips you may be asked to make your travel arrangements through a particular agency.

Infrequently the Sierra Club finds it necessary to cancel trips. The Club's responsibility in such instances is limited in accordance with the Trip Cancellation Policy. Accordingly, the Sierra Club is not responsible for nonrefundable airline or other tickets or payments or any similar penalties that may be incurred as a result of any trip cancellation.

Confirmation: A reservation is held for a trip applicant, if there is space available, when the appropriate deposit has been received by the Outing Department. A written confirmation is sent to the applicant. The reservation is confirmed subject to the leader's approval. If there is no space available when the application is received, the

For More Details on Outings

Outings are described more fully in trip brochures, which are available from the Outing Department. Trips vary in size, cost, and the physical stamina and experience required. New members may have difficulty judging which trips are best suited to their abilities and interests. Don't sign up for the wrong one! Ask for the trip brochure before you make your reservations to save yourself the cost and inconvenience of changing or canceling a reservation. The first three brochures are free. Please enclose 50 cents apiece for extras. Write or phone the trip leader if any further questions remain.

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Please send me brochures for the following trips (order by number):

_____ # _____ # _____

Enclosed is \$_____ for extra brochures at 50 cents each.

DO NOT MAIL CASH.

#5

Clip coupon and mail to: Sierra Club Outing Department, 730 Polk St., San Francisco, CA 94109

applicant is placed on the waitlist and the deposit is held pending an opening. When a trip applicant is placed on the waitlist, the applicant should seek immediate leader approval so that in the event of a vacancy the reservation can be confirmed. When a person with a confirmed reservation cancels, the person at the head of the waitlist will automatically be confirmed on the trip, subject to leader approval. The applicant will not be contacted prior to this automatic reservation-confirmation except in the three days before trip departure.

Refunds: You must notify the Outing Department directly during working hours (weekdays 9-5; ph. 415-923-5630) of cancellation from either the trip or the waitlist. The amount of the refund is determined by the date that the notice of cancellation by a trip applicant is received at the Outing Department. The refund amount may be applied to an already-confirmed reservation on another trip.

The Cancellation Policy applies to all reservations, regardless of whether or not the leader has notified the applicant of approval.

The Outing Committee regrets that it cannot make exceptions to the Cancellation Policy for any reason, including personal emergencies. Cancellations for medical reasons are often covered by traveler's insurance, and trip applicants will receive a brochure describing this type of coverage. You can also obtain information regarding other plans from your local travel or insurance agent. We encourage you to acquire such insurance.

Trip leaders have no authority to grant or promise refunds.

Transfers: For transfers from a confirmed reservation made 14 or more days prior to the trip departure date, a transfer fee of \$50 is charged per application. Transfers made 1 to 13 days prior to the trip departure date will be treated as a cancellation, and the

Cancellation Policy will apply. No transfer fee is charged if you transfer from a waitlist.

A complete transfer of funds from one confirmed reservation to another, already-held, confirmed reservation will be treated as a cancellation, and will be subject to cancellation fees.

Medical precautions: On a few trips a physician's statement of your physical fitness may be needed, and special inoculations may be required for international travel. Check with a physician regarding immunization against tetanus.

Emergency care: In case of accident, illness, or a missing trip member, the Sierra Club, through its leaders, will attempt to provide aid and arrange search and evacuation assistance when the leader determines it is necessary or desirable. Costs of specialized means of evacuation or search

(helicopter, etc.) and of medical care beyond first aid are the financial responsibility of the ill or injured person. Since such costs are often great, medical and evacuation insurance is advised, as the Club does not provide this coverage for domestic trips. Participants on international outings are covered by limited medical, accident, and repatriation insurance. Professional medical assistance is not ordinarily available on such trips. Be sure your insurance covers you in the countries involved.

The leader is in charge: At the leader's discretion, a member may be asked to leave the trip if the leader feels the person's further participation may be detrimental to the trip or to the individual.

Please don't bring these: Radios, sound equipment, firearms, and pets are not allowed on trips.

Time or event of cancellation	Amount forfeited per person	Amount refunded per person
1) Disapproval by leader (once leader-approval information has been received by the leader)	None	All amounts paid toward trip price
2) Cancellation from waitlist, or the person has not been confirmed three days prior to trip departure	None	All amounts paid toward trip price
3) Trip canceled by Sierra Club	None	All amounts paid toward trip price
4) cancellation from confirmed position or confirmed position subject to leader approval		
a) 90 days or more prior to trip departure date	\$100 or amount of deposit, whichever is less	All amounts paid toward trip price exceeding forfeited amount
b) 60-89 days prior to trip departure	Amount of deposit	As above
c) 14-59 days prior to trip departure date	20% of trip fee, but no less than the amount of deposit	As above
d) 4-13 days prior to trip departure date if replacement can be obtained from waitlist	30% of trip fee, plus \$50 processing fee, but in no event more than 50% of total trip fee	As above
e) 4-13 days prior to trip departure date if replacement cannot be obtained from waitlist (or if there is no waitlist at the time of cancellation processing)	40% of trip fee, plus \$50 processing fee, but in no event more than 50% of total trip fee	As above
f) 0-3 days prior to trip departure date	Trip fee	No refund
g) "No-show" at the roadhead, or if participant leaves during trip	Trip fee	No refund

INTERNATIONAL TRIP TIER-PRICING

International Outings are tier-priced. This means a trip's price is dependent on the number of participants. Two prices are listed for a trip, showing the signup levels associated with each.

Final billing is based on the signup level at 90 days prior to the trip departure date. If the signup level goes up sufficiently between the billing and departure dates, the lower tier price will apply, and refunds will be issued after the trip is over.

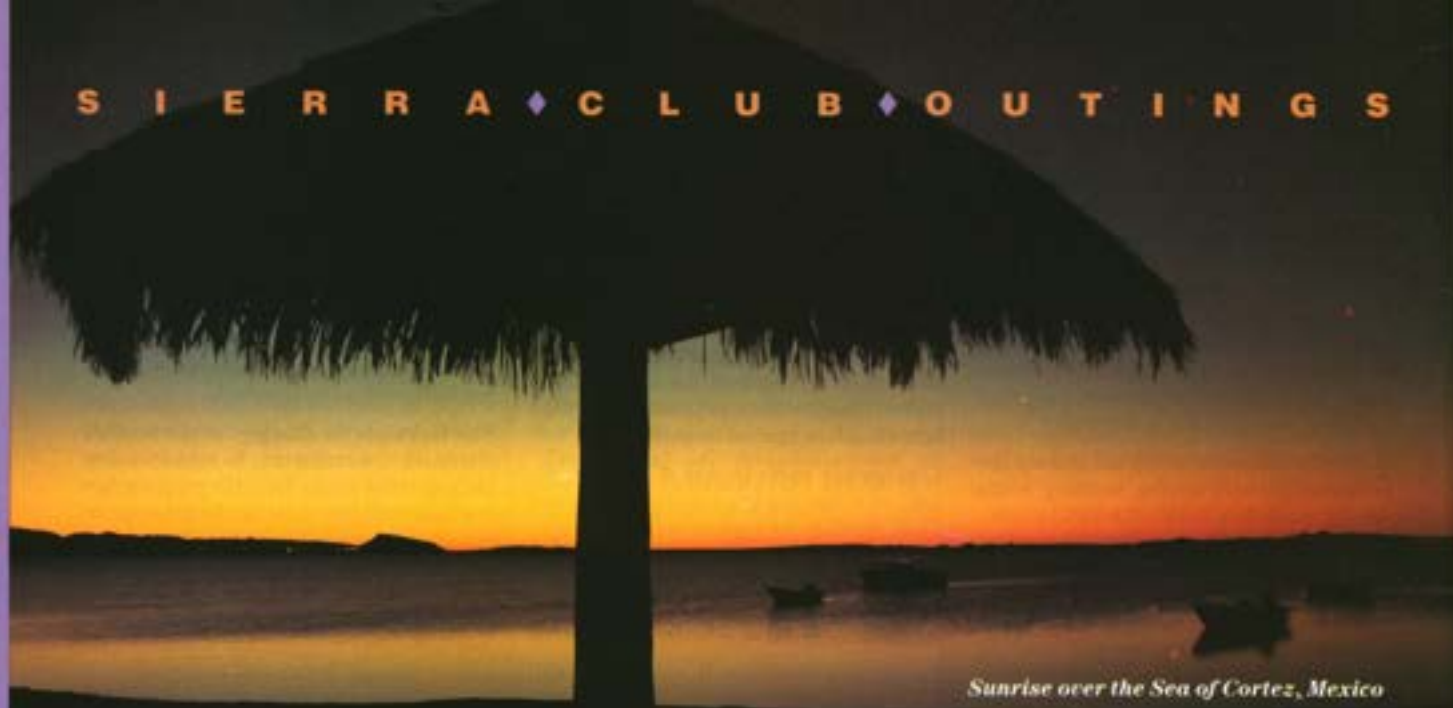
Cancellations from trips where the tier price has changed are subject to our reservation and cancellation policy. All regular cancellation fees will apply.

Mail checks and applications (excluding those sent by express mail) to:

Sierra Club Outing Department
Dept. #05618, San Francisco, CA 94139

Mail all other correspondence (including express-mail applications) to:

Sierra Club Outing Department
730 Polk St., San Francisco, CA 94109



Sunrise over the Sea of Cortez, Mexico

1992 INTERNATIONAL OPEN-TRIP LIST

LAURIE-ANN BARBOUR

Space is available on the summer and fall international outings listed below. (For descriptions of winter and spring trips, see page 88.) If you act promptly, you can probably find a spot on one of them. Use the coupon on page 92 to send for a trip brochure. International trips are tier-priced; prices do not include airfare.

Trip Number	Dates	Trip Fee (including deposit)	Deposit Per Person	Leader
Africa				
92625	Portrait of Kenya: A Leisurely Photo Safari	June 22–July 4	3230/3485	200 Carolyn Castleman
92640	Aardvarks to Zebras: A Safari to Kenya's Games Parks and Preserves	July 25–Aug. 9	3475/3730	200 J. Victor Monke
Asia				
92635	Batura Glacier and Nanga Parbat Treks, Pakistan	July 12–Aug. 6	2705/2960	200 David Horsley & Peter Owens
92665	Southern Dolpo: Pokhara to Jumla, Nepal	Oct. 5–Nov. 7	2805/3060	200 Cheryl Parkins
92675	Annapurna Sanctuary and Royal Chitwan Park Jungle Safari, Nepal	Nov. 11–Dec. 3	2100/2325	200 Laurie-Ann Barbour
93700	Lamjung Holiday Trek, Nepal	Dec. 19, 1992–Jan. 1, 1993	1435/1605	200 Peter Owens
Europe				
92630	Adventure in Iceland: Hiking the Lava, Caves, and Moorland	June 24–July 8	2920/3180	200 Ellie Strodach
92645	Trolls and Fjords of Norway	Aug. 17–27	2010/2260	200 Kathie Brock
92655	Mountains of Contrast: The Diverse Dolomites, Italy	Aug. 31–Sept. 13	2620/2875	200 Wayne Martin
92660	The Dordogne: Its History, Culture, and Ecology, France	Sept. 7–17	2120/2375	200 Elaine Adamson
92670	Romania's Fall Colors	Oct. 5–17	1835/2080	200 Jim Halverson
Latin America				
92680	A Holiday Adventure: Rio de Janeiro and the Rainforests of Brazil	Dec. 20–31	2800/3055	200 Gail Solomon
Soviet Union				
92620	Lake Baikal Service Trip	June 9–28	1635	200 Bud Bollock
92650	The Soviet Far East	Aug. 18–Sept. 6	3720/3975	200 Bob Madsen

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PURSLANE

Continued from page 73

four-thirty this afternoon the sun went behind clouds; I was still resting, thinking about the last lines of James Wright's poem "Lying in a Hammock on William Duffy's Farm in Pine Island, Minnesota":

*I lean back, as the evening darkens
and comes on,*

*A chicken hawk floats over,
looking for home.*

I have wasted my life.

Once, at a public reading, I heard Wright say that the last line meant his life was wasted because he hadn't been lazy enough. Today I knew exactly what he meant.

June 22

Donna and I picked blackberries today. I was trying to get something tangible from our week off—a pail of blackberries against the sorrow of returning to work. The yellow-throated vireo came very close when we picked a corner of the patch that I hadn't bothered with, since the berries were not large or thick there. We looked for the nest. According to my guide, the yellow-throated vireo builds in a fork near the end of a branch. We looked and looked, exercising the patience of gatherers, but did not find the nest.

So what have I done during this week of vacationing at home? I weeded the garden, harvested blackberries, and wrote some journal entries. But it's a gardener's question. The gatherer asks, What have I found? The body of a catbird, purslane, blackberries, a yellow-throated vireo, a way of holding still.

Toward evening I heard a catbird calling from the thicket of Virginia creeper. ■

DANIEL MINOCK teaches English at Washtenaw Community College in Ann Arbor, Michigan, and has published his work in Poetry Northwest and Country Journal. He is newsletter editor of the Sierra Club's Crossroads Group.

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Continued from page 79

river was low and the skies still clear, so we were able to tackle the relatively easy "low portage" on the first of four infamous routes. It took two hours to carry our gear around the chaos of rock and water called The Churn, while John and Andrea pulled the empty rafts up a cliff face, then dropped them into a boiling knot of water below two un-

navigable waterfalls.

On Christmas Eve 1840, surveyor James Calder had been in this area, cutting a track for Governor John Franklin's expedition across the southwest of Tasmania. For two days Calder examined this "abrupt country": "I tried to lead the road across at several points, but was thwarted by the intervention of a tremendous ravine. . . . This locality presents no other view but that of a sterile wilderness, and scenes of frightful desolation. The

great ravine is far too steep for traveling, and not to be crossed without excessive fatigue and risk. . . . I twice got to the bottom of this hideous defile, but was at last forced to relinquish the idea of a direct course . . . utterly disgusted with the adventure. A large and furious torrent flows through it, which, collecting all the water that falls on a wide extent of mountainous country, emerges from the glen a large and beautiful river. I called it the Franklin."

The Great Ravine's last gesture was the aptly named Cauldron, a boiling brew that had claimed a guide's life in 1984. John once again masterfully set up the complicated logistics of the portage, with strategically positioned throw lines and safety crew.

Once we were delivered through the Great Ravine, the pressure was off. John spent hours at the Rafter's Basin camp preparing one of his favorite meals, a pumpkin curry with plum cake pudding for dessert. The sunset that touched our tableau that evening was magical, almost as colorful as the ground parrot that flitted through camp.

Just downstream we passed the proposed site of the second impoundment in the grand \$500-million hydroelectric scheme, and up the western bank we saw the lacerations of bulldozers, a sobering reminder of the Franklin's close brush with death.

Perhaps because we knew we were beyond the worst of the river, we weren't as cautious as we should have been. When we hit the next rapids, I steered *Darth Vader* sideways onto a rock midstream. The boat started to wrap, the worst scenario for an inflatable raft. As the downstream side of the boat began to ride upward and the bow and stern bent around the rock, upstream water began to pound inside, plastering the whole affair with tons of pressure. Steve and I scrambled to the precarious perch of the rock, where we yanked and pushed and kicked, but we couldn't release the raft from the river's tight grip. The boat slowly continued to rise up the rock. A few more inches and it would have been lost, leaving us

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stranded on a slippery roost in the middle of the torrent. Again we groaned and pulled, and suddenly it was free. It rocketed downriver, leaving Steve on the rock for a long second. He leapt for the raft, reaching the bow with one hand, and Pam pulled him in. No more complacency, I vowed.

We continued through occasional shallow, shingly rapids. The terrain had changed now; the valley had widened and flattened. Low, leafy banks and occasional blue-gray limestone cliffs worn in fluted curves lined the broad water. We dawdled through tranquil, deep, dark-brown pools, perfect mirrors, glinting copper-colored where the sun penetrated.

On the final morning clouds gathered like angry thoughts. We met the feisty currents of the Jane River, named for Lady Jane Franklin, who gamely joined her husband on the eponymous expedition of 1842, during which she was carried by convict porters on a palanquin. A few turns beyond the Jane we scrambled up the soft bank to explore the aboriginal Kutikina Cave, a natural museum archaeologists believe to have been the southernmost human habitation anywhere on Earth during the last great ice age. Behind a proscenium of ferns were two crypt-like rooms lined with pimply stalactites and dark flowstones. A barrier protected the stone tools and wombat bones, among the world's oldest leftovers. It was sobering to know that the last full-blooded Tasmanian aborigine had been exterminated in 1876, less than 75 years after the arrival of westerners. We have yet to civilize: At the height of the Franklin controversy some of the pro-damers threatened to blow up Kutikina Cave and "burn down the Southwest."

We lined the rafts through the last bedrock rapids of the trip. Big Fall, a dangerous six-foot drop with a powerful barrel-shaped hydraulic at its base that sucks wayward rafts and rafters into a recirculating hole; to date two have drowned at this spot. From here on down the river is navigable by motorboat, although they have been forbidden for the past couple of years

because their wakes damage the shore. During the 1842 expedition Governor Franklin traveled up the river to this point. His diarist recorded the setting: "It was a scene of heaven-directed gratitude—of joyful exultation. Here the glorious masses of light and shade so peculiarly beautiful in all Tasmanian landscapes were seen in their fullest and finest effect."

Finally we rolled with the Gordon, Tasmania's Old Man River, its largest and longest waterway. Not far up the Gordon was Scotts Peak Dam, which drowned beautiful Lake Pedder in 1972. The lake's destruction was described by UNESCO as the greatest ecological tragedy since European settlement in Tasmania.

It was a glum and hunched paddle toward the conclusion of our voyage. Overhead a sea eagle watchfully soared. Two hours later we pulled into Sir John Falls, our take-out. Just downstream was the site of the blockade against the construction of the Gordon-Below-Franklin Dam. If history had dealt a different hand, our landing would have been 250 feet under water.

Before I left Tasmania I went to see Bob Brown, the leader of the movement to save the Franklin. I wandered over to the Parliament building, where I found the 46-year-old politician in an office filled with environmental memorabilia. I had heard Bob Brown praised in such religious terms that I approached him with some skepticism. In less than an hour, however, I was won over.

In late 1982, two weeks after being arrested at Sir John Falls for his non-violent action to save the Franklin, Brown was voted Australian of the Year. Less than a week after that he was elected to state Parliament as an Independent Green. Jug-eared, long-faced, his body all sharp angles that didn't seem to fit comfortably together, Brown told me he had rafted "his old friend" the Franklin six times, the first in February 1976 in a gaudy rubber duckie. He had hoped to go as many times again, but for now he was too caught up in other battles, such as an

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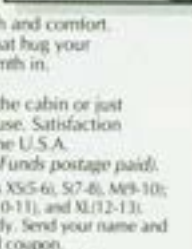
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action he had scheduled next week to protest the cable logging of the temperate rainforest along the Arthur River in northern Tasmania.

I asked him why the Franklin was saved when so many other great wild rivers of the world had been lost to dams.

He gave me a youthful, country-boy grin. "I think it was a test of conscience in Australia. For 200 years it had been 'open go' on the Australian environment by European settlers who had no recognition that it was a finite thing. There was always more over the horizon. And there was a prevailing attitude that the most scenic and spectacular places were elsewhere, in Europe and North America. When we showed the Franklin through words and pictures it awakened people to the fact that we have this extraordinary beauty in our own country, and that this ancient land has an integrity of its own that should not be destroyed to meet transient human needs."

When I returned to San Francisco I picked up a newspaper and found an article about the Stanislaus. After five consecutive years of drought the reservoir that had once drowned the nine-mile-long upper canyon was so low that the river had reappeared. Rafters had been running the resurrected rapids, new grass and wildflowers painted the shoreline, and a pair of ospreys had nested near the water. But even more important, many of the people who originally supported the dam had now publicly reversed their sentiments.

Yesterday it rained, and while out for a walk I stopped to watch the battle between water and rocks in the flooded creek near the road. There was no contest, I thought. Despite appearances, water would always beat stone. ■

RICHARD BANGS is a founder of *Mountain Travel-Sobek* and co-author of *River Gods* (Sierra Club Books, 1985), *Islands of Fire*, *Islands of Spice* (Sierra Club Books, 1988), and *Riding the Dragon's Back* (Atheneum, 1989).

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



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REVIEWS

KATHLEEN COURRIER

Sustaining the Earth

by John Young

Harvard University Press

\$19.95

If Australian historian John Young is right, environmentalism as we know it is about to give way to "post-environmentalism"—a powerful new social force springing from the remains of a passing age of innocence. We can no longer blithely assume, he says, that the facts about environmental problems alone will impel government or citizen action. Nor can we optimistically look to more friendly technology for the answer.

Young puts his finger on the paradoxes that run like so many faultlines through the bedrock of the old environmentalism. The movement is ambivalent about science. It rails against industries and bureaucracies that expropriate the land and resources of indigenous peoples, but shoves these people into ill-fitting "gardeners of Eden" stereotypes. It questions the effects of rapid economic growth, but does not come to grips with the dehumanizing poverty that has now engulfed a billion people.

So how do we heal the planet? According to Young, the challenge facing post-environmentalists is to seek environmental relief in tandem with social justice, cultural diversity, respect for family and community values, and reverence for life. Further, he calls for more self-employment to reduce reliance on big corporations and big government, which have contributed mightily both to environmental abuse and to the feeling that individuals can't do anything about it.

Young underestimates population growth as an environmental force, and his prose bogs down in spots. But the intellectual history of the environmen-

tal movement has never been better told, nor the hope and opportunity implicit in the current environmental crisis better understood.

*Biosphere Politics:
A New Consciousness
for a New Century*
by Jeremy Rifkin
Crown Publishers
\$20

An irony of the 1990s is that while the world's poor struggle to enter the consumer economy, some of the educated elite in wealthy countries are prepared to give that system a postmortem. Shunning materialism, they're embracing the earthbound values—stewardship, kinship, and worship—of traditional subsistence communities. To the poor, the grass certainly looks greener on the other side of the widening economic divide. But the new pastoralists fear that there will be no green *anywhere* if Western-style consumerism sweeps the world.

In *Biosphere Politics*, Jeremy Rifkin engagingly makes the case for exiting the consumer culture before the natural world's farthest reaches have been sacked or paved over. His thesis is that the human urge to conquer and control nature has begun to backfire.

According to Rifkin, the beginning of the biosphere's end was the "enclosure movement" that began in feudal Europe when village commons were privatized and fenced. That movement has now extended to the seas, the airwaves, and all natural resources. Through the loss of labor's connection to the land, even human work has been denatured.

Rifkin deserves considerable credit for bringing his knowledge of European history to bear on the current environmental crisis and for thinking

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big. But it remains for others to prove or disprove his thesis, since the evidence he musters is far too sparse, oversimplified, and (in some cases) outdated to be convincing.

The Global Citizen

by Donella H. Meadows

Island Press

\$24.95

For a 1970s generation drunk on affluence and seemingly unlimited possibility, the controversial best-seller *The Limits to Growth* sounded a sobering wake-up call. Two decades later Donella Meadows, the book's principal author, still stands by her early warnings about global environmental degradation, but the years have given Meadows perspective, humor, and an earthiness missing from her previous number-crunching attempts to save the planet.

Her new book bursts with (mostly) penetrating thoughts on garbage, farming, statistics, poverty, the stock market, land use, population, and right living. The 87 newspaper columns reprinted here range from a meditation on why a green society will inevitably be middle class to "the world's shortest report on the state of resources and the environment."

Meadows doesn't write about politics and ethics with the depth and ease she brings to discussions of science, technology, and her life on a New Hampshire farm. Sometimes she tries to make up in conviction what she lacks in insight, stringing together provocative quotations when her own thinking hasn't yet gelled. Still, the best of these brief takes are the peak performances of a born teacher and a keen mind.

Biodegradable Soap: A Novel

by Amy Ephron

Houghton Mifflin

\$19.95

Nestled in the niche hollowed out 15 years ago by Cyra McFadden's *The Serial*, Amy Ephron's *Biodegradable Soap* is a stick-figured send-up of California life as lived by the spoiled and confused. Set in Bel

How to raise a child on \$12 a month

Air, the book pokes fun at high-rollers and educated housewives who try to escape the daily monotony of work, family responsibilities, exercise, and extramarital affairs by submerging themselves in a cause—in this case, saving the environment.

To compensate for a lack of character development and to rescue a made-for-TV plot, Ephron embellishes the book with idle patter consisting mostly of mass-mediated tidbits on the ozone hole, global warming, and Southern California's infamous air pollution.

Although deft with dialogue, Ephron doesn't deliver on the title's promise to make environmentalists laugh at themselves. God knows the urge to save the planet without inconveniencing ourselves too much provides fertile ground for satire. But Ephron's attack on human folly lacks bite. On the one hand, she has not realized the full comic potential of either greenthink or the Los Angeles subculture in which it spreads like squid's ink in a swimming pool. On the other, *Biodegradable Soap* is too slight to tackle the broader stereotype of the true-but-oh-so-trendy believer in social causes.

Trees, Why Do You Wait?
America's Changing Rural Culture
by Richard Critchfield
Island Press
\$29.95

Environmentalists have long claimed that the kind of big-time farming made possible by powerful agrochemicals and dinosaur-size machinery degrades natural resources more than smaller-scale family farming does. Prizewinning journalist Richard Critchfield makes the parallel case that the consolidation of farms and the demise of rural communities—trends that began in the 1920s and accelerated with a vengeance in the farm crisis of the early 1980s—have put our culture at risk.

Critchfield found telling examples of rural decay on visits to his ancestral home in Iowa. In "Prairie" (the fictitious name of a real place), he shows us a still-healthy town hanging on largely because it's the county seat. In "Crow Creek" the railroad tracks have already

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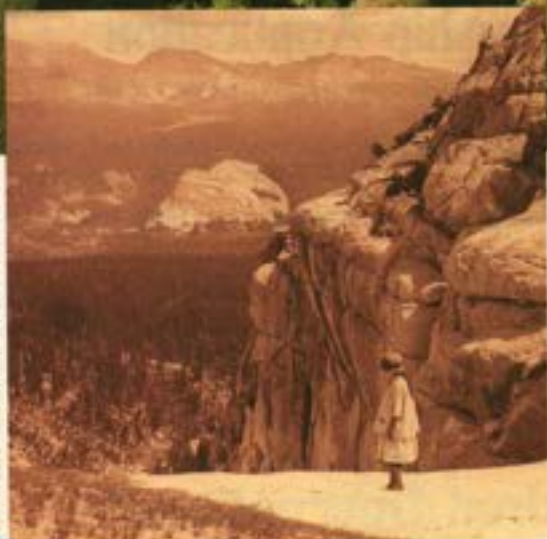
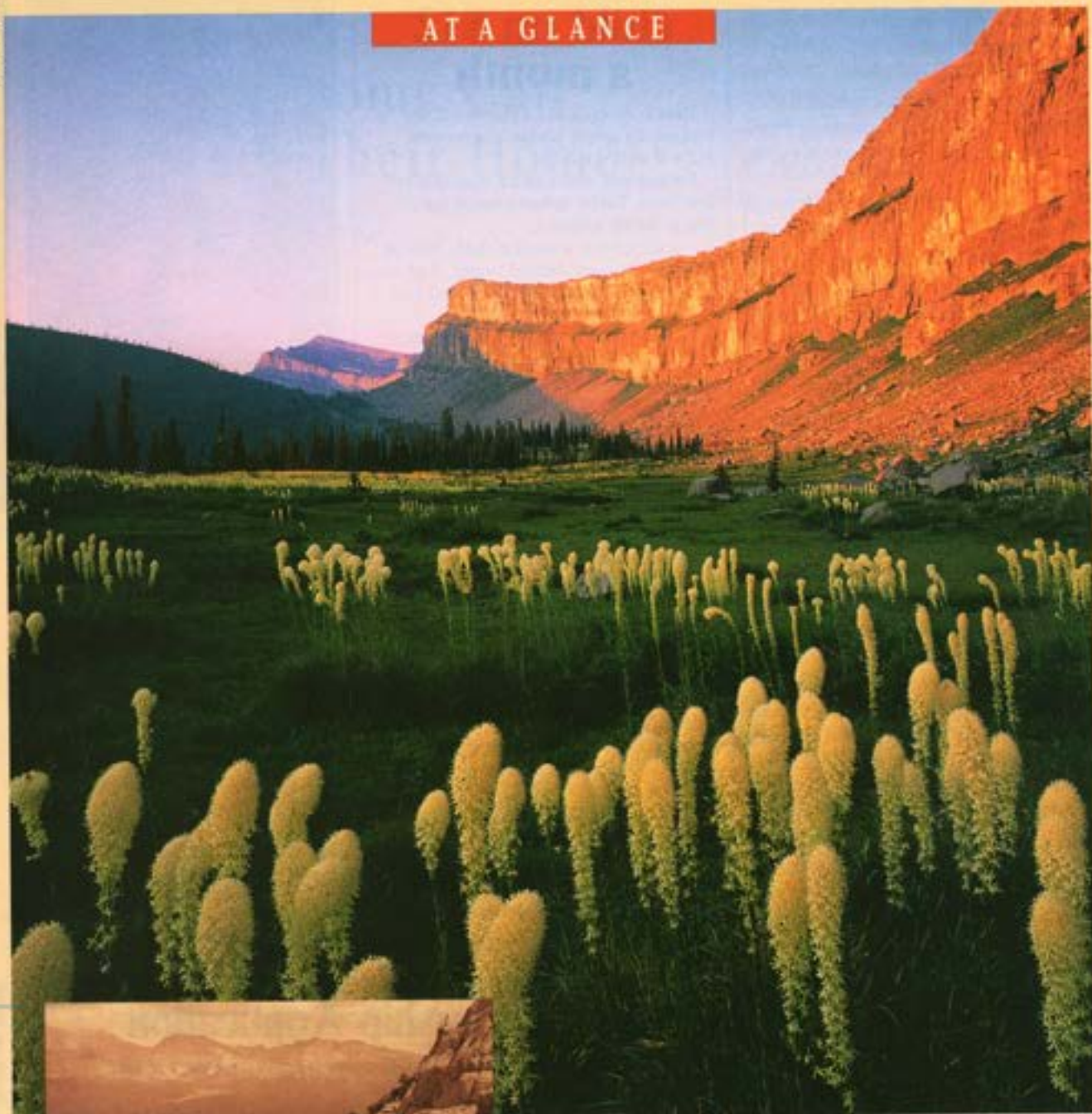
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AT A GLANCE



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*Sierra Club:
100 Years of
Protecting Nature*
by Tom Turner
Introduction by
Frederick Turner
Harry N. Abrams;
\$49.50

Almost 300 photographs—many of them from the Sierra Club archives—and a lively text compose this overview of the Club's first century. Tom Turner's behind-the-scenes accounts of legendary conservation battles and the organization's internal workings highlight the human effort behind the Club's unique contribution to environmental history.

been ripped out, though the town's prim tranquility and bargain housing attract newcomers from nearby Cedar Rapids. As for the farmers these small towns exist to serve, in both locales Critchfield finds some who have prospered, others forced to take second and third jobs to make ends meet, and a few, mostly over 60, who live and farm as though super-mechanization and high finance had never touched agriculture.

The unsentimental interviews at this book's heart give as true a picture of contemporary rural midwestern life as *Main Street* did in its day. But first-rate reporting is undercut by second-rate analysis. Critchfield's theory seems imposed upon the oral histories instead of extracted from them, and the author merely toys at the edges of truly important ideas: that the erosion of family and community is destroying urban life and that farms and small towns have much to teach us about sticking together.

BRIEFLY NOTED

After a Wyoming Justice of the Peace consigned Earth First! wilderness activist Howie Wolke to jail for six months in 1986 for pulling out survey stakes on a proposed logging road, Wolke found cause to thank the magistrate for giving him the time and solitude to begin writing *Wilderness on the Rocks* (Ned Ludd Books, P.O. Box 5141, Tucson, AZ 85703; \$15, paper). The book, completed early this year, is an impassioned (read "angry") discourse on the devastation of U.S. wildlands. . . . Two new books offer backcountry adventurers advice on how to prepare for and tend to injuries or illnesses. *The Outward Bound Wilderness First-Aid Handbook* by Jeff Isaac and Peter Goth (Lyons & Burford; \$13.95, paper) discusses general principles and specific procedures for assessing and treating emergencies. *Simon & Schuster's Pocket Guide to Wilderness Medicine* by Paul G. Gill, Jr., M.D. (Simon & Schuster; \$9.95, paper) leaves out the general principles but offers specific remedies in a folksy,

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literate way—going so far as to quote Horace and Shakespeare, among others. . . . Bogs, ravines, historical monuments, and numerous other attractions await those who conduct *Nature Walks in Southern Indiana* (Hoosier Chapter, Sierra Club, 6140 North College Ave., Indianapolis, IN 46220; \$13.95 plus \$1.75 shipping, paper). Author Alan McPherson traversed the midwestern state's lower half, eventually selecting more than 100 trails for inclusion in the guidebook. Cartographer Aileen Buckley's trail maps accompany the text. —*Mark Mardon*

READINGS

From Healing the Planet: Strategies for Solving the Environmental Crisis
© 1991 by Paul and Anne H. Ehrlich
(Addison-Wesley, \$22.95)

People unfamiliar with science often assume that when there are two opposing views on a scientific issue, the truth lies "somewhere in between"—an assumption that may sometimes

work for political or social issues. It is far from the rule in science, however.

[For example,] Darwin was right and his many opponents were dead wrong; organisms were not created once in a fixed form; evolution is a central fact of biology. Copernicus was right that Earth rotated on its axis and circled the sun; those who thought it was the center of the universe, although backed by the common wisdom of the time, were also dead wrong. Louis Pasteur was right in claiming that life cannot be spontaneously generated (worms springing from mud, maggots from garbage, and so on), and people who thought that life was continuously arising in those forms were completely wrong.

Accordingly, people should not automatically assume that a "compromise" will provide the answer to scientific disputes in matters relating to the environment—and indeed, intermediate views often have not carried the day. Some scientists believed, for example, that CFCs did not pose a se-

rious threat to the ozone layer; Molina and Rowland thought they did. Molina and Rowland were right. Some biologists warned in the 1940s and 1950s that overuse of synthetic organic pesticides such as DDT would lead to the evolution of resistance and damage to ecosystems. They were considered alarmist by others, but time has proven them correct. In the late 1960s, some scientists were greatly concerned about the problems of feeding 3.5 billion people; others were sure that many times that number could be fed. Since then some 200 million people have died of hunger and hunger-related diseases, and at least a fifth of today's population is not being adequately fed, despite irreversible depletion of stocks of soil, groundwater, and biodiversity in the attempt.

Other scientific disputes related to the environment will be solved one way or another, we expect, in the next few decades. The question of the seriousness of global warming is the most prominent. It will be settled by

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For a gift of \$100 or more, you will receive a "Certificate of Kindness." It is 8"x10", is suitable for framing, and has the "Prayer for Animals" by Dr. Albert Schweitzer. A \$100 gift will provide veterinary care and a week's stay at our shelter for one needy dog or cat. It will buy a week's supply of food for our orphans. THANK YOU.

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the gigantic experiment humanity is running—and we fear that the scientists who judged the threat to be severe (rather than nonexistent or minor) will be proven correct.

In sum, when one group of scientists says that an environmental problem is potentially very serious and another makes light of it, it is not safe to assume that the "truth" is that manageable. That may indeed sometimes be the case, but frequently it will not be. . . . To date, the record indicates that in environmental issues, the scientists who warned of hazards have been correct more often than those taking a more Panglossian perspective. The growing prominence of environmental problems, the continuing rise in the absolute numbers of hungry people, the failure of technological miracles (with the arguable exception of the green revolution) to materialize, all generally support that conclusion.

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- **Olympic Battleground: The Power Politics of Timber Preservation** by Carsten Lien (\$35).
- **Elephants: The Deciding Decade**, edited by Ronald Orenstein. A species examined in words and pictures (\$35).
- **The Pantanal: Brazil's Forgotten Wilderness** by Vic Banks. Explore a land of jaguars and anacondas (\$22.50).
- **Reef: A Safari Through the Coral World** by Jeremy Stafford-Deitsch. Nature at its most baroque (\$25).
- **Save Three Lives: A Plan for Famine Prevention** by Robert Rodale. Why old-fashioned farming is best (\$18).
- **Ancient Futures—Learning from Ladakh** by Helena Norberg-Hodge. The effort to save "Little Tibet" (\$25).
- **Chemical Deception: The Toxic Threat to Health and the Environment** by Marc Lappé. How humans attempt to outwit nature, and why they fail (\$25).

Celebrate the Occasion!



You, your family, or any group can share a special moment of pride, honor, and joy through the Sierra Club's Commemoratives Program. People have made commemorative gifts to celebrate a wide range of events from major accomplishments to those little happy events in life which we all experience.

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The process is simple. For more information call Teresa Sweeney at 415-776-2211.

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Kick the Oil Habit: Choosing a Safe Energy Future for America is a Sierra Club report assailing President Bush's National Energy Strategy and its legislative equivalent, the National Security Act of 1991 (S. 1220). The latter, sponsored by senators Bennett Johnston (D-La.) and Malcolm Wallop (R-Wyo.), would allow oil and gas developers to drill in coastal areas and the Arctic National Wildlife Refuge, and would promote construction of nuclear-power plants and deregulation of the nation's utilities. In outlining alternatives to such destructive policies, the 12-page document offers a detailed prescription for providing safe, plentiful energy for the future through efficiency and renewable resources. Copies of *Kick the Oil Habit* are \$1.75 each for Sierra Club members (\$2.75 for nonmembers) from Sierra Club, Dept. SA, P.O. Box 7959, San Francisco, CA 94120.

The Sierra Club Sourcebook is a comprehensive listing of fact sheets, films, videos, slide shows, posters, and policy statements produced by and available through the Sierra Club. The 48-page booklet, which includes activist profiles and thought-provoking information on environmental issues, is free from Sierra Club, Dept. SA, P.O. Box 7959, San Francisco, CA 94120.

The Environmental Film Resource Center assists people in locating existing films or in making new ones. The nonprofit organization maintains files on more than 1,200 titles, and can provide lists of films or quickly track down limited-circulation copies. For producers and directors seeking production and financing advice, the center can help identify funding sources, locate experienced technicians, and advise on how best to market and distribute the final product. For more information contact the Environmental Film Resource Center, 324 N. Tejon St., Colorado Springs, CO 80903; phone (800) 736-8345.

To help strengthen independent grassroots organizations, the Environmental Support Center (ESC) offers advice on how to raise funds, develop media strategies, obtain legal and scientific counsel, and acquire equipment at little or no cost. One of the center's goals is to enhance cooperation between environmental groups and organizations representing low-income communities and people of color. For more information contact ESC, 1731 Connecticut Ave., N.W., Washington, DC 20009; phone (202) 328-7813.

Environmentalists who enjoy down-home music can tune in to *E-Town*, a program recorded live each week in Boulder, Colorado, and aired coast to coast on National Public Radio. Host Nick Forster, who has performed as a guitarist and vocalist since the early 1970s, credits the activism of folksinger Pete Seeger with inspiring him to launch *E-Town*. Forster sees *E-Town* as a place for "honest music," and hopes it will become a public forum that will "allow performers to flesh out new things and to talk about issues with more leeway than they might have at their own shows."

The Mineral Policy Center (MPC), a nonprofit organization dedicated to reversing the destruction caused by mining and oil development, has published *Mining Conservation Directory '91*, a guide to 240 local, state, national, and international conservation groups concerned about mining issues. The 96-page booklet is intended to help activists get in touch with one another to devise ways of reforming extractive industries, especially by persuading legislators to abolish the archaic, pro-development 1872 Mining Law. Copies of the directory are available to MPC members only (free on request). To join, send \$25 to Mineral Policy Center, 1325 Massachusetts Ave., N.W., Suite 550, Washington, DC 20077-8508. ■

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First, the land certificate is still available. During the past two years, thousands of you have given to "buy an acre of rain-forest for \$50" or have purchased certificates for others. We still have a long way to go to pay back the Nature Conservancy for the purchase of 110,000 acres.

New for this year is a \$100 or more share certificate stating that the bearer has become a "shareholder" in the future of the Rio Bravo Conservation and Management Area, and is an investor in the effort to preserve its biodiversity. Shareholding of this sort sets a new standard of excellence in conservation action. Money from initial investors like you will provide operating funds needed for protection, for applied research, for public education, and particularly to set up appropriate economic development projects which will generate the income to protect the core conservation area and pay for its future. It puts operating money to work in the country where the work needs to be done.

The Programme represents creative land management in a critical part of the world. It is making the land benefit the people of the country and making the forest something of lasting value to them. Belize is in a unique position to achieve success in this important effort, but it needs "start-up capital." With your help, the shareholders in Rio Bravo will enjoy growing dividends and a truly lasting return on investment.



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

AFIELD

"Hearth & Home," page 20

Jay Shelton's *Solid Fuels Encyclopedia* by Jay W. Shelton (Garden Way Publishers, Charlotte, VT 05445; 1979).

For a list of EPA-certified woodstoves, and for literature on heating with wood, write to Wood Heaters Program, EPA, 401 M St., S.W., Washington, DC 20460, or call (202) 382-2874.

"Body Politics," page 24

The 10,000-lux Ultra Brite™ looks like an oversize desk lamp and costs around \$500. It's available from Medic-Light, 34 Yacht Club Dr., Lake Hopatcong, NJ 07849; phone 1-800-LIGHT-25.

"Good Going," page 30

For guided floats down the Nahanni, contact Nahanni River Adventures, P.O. Box 8368, Station F, Edmonton, Alberta, Canada T6H 4W6, (403) 439-1316. Experienced parties wishing to charter a bush plane and rent boats can contact Simpson Air Ltd., Box 260, Fort Simpson, Northwest Territories, Canada X0E 0N0; phone (403) 695-2505.

DEPARTMENTS

CLUBWAYS

Centennial Celebration, page 12

To organize or become involved with Sierra Club Centennial Celebration events in your community, consult your chapter or group newsletter. For general information about national-level events,

contact Sierra Club Public Affairs, 730 Polk St., San Francisco, CA 94109.

Descriptions of 1992 national Sierra Club Centennial outings will appear in the Outing Catalog bound into the January/February 1992 issue of *Sierra*.

Contributions to the Sierra Club's Centennial fundraising effort may be sent to Centennial Campaign, Sierra Club, 730 Polk St., San Francisco, CA 94109.

PRIORITIES

Car Safety, page 36

The Safe Road to Fuel Efficiency outlines a practical plan for simultaneously improving the efficiency and the safety of new cars. It's available from the Center for Auto Safety, 2001 S St., S.W., Washington, DC 20009. Send an SASE with your request.

Ralph Nader's group Public Citizen has produced a press packet challenging the auto industry's assertion that fuel economy and safety are incompatible. For a copy, write to Bob Dreyfuss, 2000 P St., N.W., Washington, DC 20036.

TVA, page 39

The nonprofit Tennessee Valley Energy Coalition publishes a newsletter called *The Energy Monitor*, available with a \$15 membership from P.O. Box 27245, Knoxville, TN 37927.

ICE, page 43

Two views on the greenhouse controversy: The standard global-warming model is found in *Global Warming: Are We Entering the Greenhouse Century?* by Stephen Schneider (Sierra Club Books, 1989). An alternative, skeptical view is provided by Robert Balling in *The Heated Debate*, forthcoming in early 1992 from the Pacific Research Institute for Public Policy, San Francisco.

A Sierra Club pamphlet, *21 Ways to Help Stop Global Warming*, is available free from Sierra Club Public Affairs, 730 Polk St., San Francisco, CA 94103.

PLACE SETTING

Moab, Utah, page 80

Canyon Hiking Guide to the Colorado Plateau by Michael R. Kelsey (Kelsey Publishing, 456 E. 100 North, Provo, UT 84601; 1986).

Hiking the Southwest's Canyon Country

by Sandra Hinchman (The Mountaineers, 1990).

Sierra Club Guide to the National Parks of the Desert Southwest (Stewart, Tabori & Chang, 1984).

Wilderness at the Edge (Gibbs Smith, 1990). The complete Utah Wilderness Coalition proposal.

Moab Visitor Center, 805 N. Main St., Moab, UT 84532.

Rim Cyclery, 94 W. 100 North, Moab, UT 84532.

Sierra Club Utah Chapter and Sierra Club Utah Public Lands Office, 177 E. 900 South, Salt Lake City, UT 84111; phone (801) 363-9621 (chapter) or (801) 355-0509 (public lands).

Southern Utah Wilderness Alliance, P.O. Box 518, Cedar City, UT 84721-0518; phone (801) 586-8242.

The Utah Wilderness Coalition, P.O. Box 11446, Salt Lake City, UT 84147.

FEATURES

Amazonia, page 50

The Sierra Club International Program works to preserve rainforests worldwide. To place your name on the Club's rainforest activist list, write to Tropical Forest Campaign Desk, Sierra Club, 730 Polk St., San Francisco, CA 94109.

A variety of Sierra Club publications focusing on tropical-forest issues can be ordered by mail. To receive a listing of these materials, request a copy of the *Sierra Club Sourcebook* from Dept. SA, P.O. Box 7959, San Francisco, CA 94120.

The South and Meso American Indian Information Center (SAIIC) helps build alliances among Indian people of the Americas and their non-Indian friends and supporters. To become a member, send \$15 to SAIIC, P.O. Box 28703, Oakland, CA 94604.

Amazon Beaming by Petru Popescu (Viking, 1991) is a detailed account of Loren McIntyre's "first contact" with the Mayoruna of Brazil, and tells of his later, historic discovery of the Amazon's source.

Franklin River, page 74

The Wilderness Society, 130 Davey Street, Hobart 7000, Tasmania, has been working for 15 years in defense of wild places throughout Australia. ■

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For any adult who spent his or her pre-parental days exploring the backwoods, returning to the trails with young children and introducing them to the beauty of wilderness holds a romantic appeal. Visions of your brood at one with nature may start to fade, however, when you recall how unforgiving the outdoors can be. And they all but disappear when you consider the bulky accoutrements that children require for even a simple trip around town.

But before postponing family trips to the woods until your kids can roller-skate there themselves, take a look at the array of gear and clothing designed to make hiking and camping with young children a bit closer to your notion of sylvan familial bliss: feasible, comfortable, and safe.

Hiking boots, sleeping bags, and high-tech outdoorwear are all available in miniature versions (with full-size prices, unfortunately). You'll find that most of the clothes your child already has will probably be fine for camping. On the other hand, the same costly Gore-Tex, polypropylene, or pile gear that keeps you so cozy will do the same for your kids—helping them discover the joyous (rather than cranky) aspects of being out-of-doors. If possible, spring for a top-quality item that will accommodate your child through a few growth spurts.

If you're planning to take long hikes with a child three years old or younger,

consider investing in one of the souped-up child carriers designed like external-frame backpacks, with padded, movable shoulder straps, a contoured hip belt, and adjustment straps. These carriers range in price from \$70 to \$120 and will hold children 35 pounds or lighter. (The ubiquitous Gerry child carrier costs even less, but its bare-bones features make it suitable only for short treks.)

Look for a carrier that has plenty of storage space and can be adjusted to the size of the child and the shape of the person carrying it. Parents planning serious hiking should consider the Stallion, made by Tough Traveler. It offers nifty features, including vinyl footrests and a mesh backband. Accessories such as a rain-and-sun hood and attachable storage sacks are also available.

For parents who hike with infants, one of the most inventive items available is Eagle Creek's "diaper pack." What looks like a simple daypack makes diaper changes less of a nuisance: Unzip the back



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panel, and out folds a changing pad.

Keep in mind that when a child is propped up in a pack, he or she doesn't generate much body heat. Head-to-toe "baby bags" insulated with Hollofil or pile will keep small hikers snug; they come in various sizes that fit kids from two months old up to 35 pounds, and cost less than \$50.

When a child has learned to walk, she'll want to spend at least some time with her own feet on the trail. Sneakers will hold up fine for short distances, but you should consider a lightweight hiking boot with heel and toe reinforcement if you've got more ambitious travel in mind. Vasque makes a kids' boot with a peel-back "Child Growth Platform" that adjusts to a growing foot and keeps a good fit.

If you plan to camp, a well-insulated child-size sleeping bag is a must, especially since kids are usually very sensitive to cold (their small bodies have a hard time warming an adult bag). Kelty and REI make children's bags for freezing temperatures, ranging in price from \$45 to \$85. Tough Traveler's modular bag fits snugly around a four-year-old; with attachments it can fit a child as tall as 4' 10" (about age ten). Parents should make sure that kids bed down with a hat, socks, and plenty of warm clothes. Young children are best off in thermal underwear with attached feet; babies and toddlers will be warm in their daytime garments.

Before heading out on an overnighter, try a weekend of car camping with short hikes. Veteran parent-campers will tell you that the success of a family trip often depends on parents' ability to know when to cut their losses and turn back. Even under the best conditions, don't expect to cover ground the way you did when you were footloose; a child under six won't be able to go much faster than a mile an hour—not with all those rocks to climb, leaves and sticks to examine, and creeks to splash in. Those are the kind of things only an adult would purposely avoid. ■

ELIZABETH MOORE is a freelance writer in San Francisco.



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If every person on the planet stopped eating meat tomorrow, we would still have polluted lakes and rivers, acid rain, nuclear proliferation, and air that's unfit to breathe. It would be sheer idiocy to alienate the burger eaters of the world (like me) by suggesting we are too morally bankrupt to care about the planet.

H. R. Sweet, Culver City, Calif.

The facts speak for themselves: ■ More than 50 percent of tropical rainforest deforestation is linked to livestock raising. ■ 2,500 gallons of water are needed to produce one pound of meat. ■ At least 85 percent of U.S. topsoil loss is directly associated with livestock grazing. ■ Forty-five percent of total U.S. land is used for livestock. ■ More than 50 percent of water pollution can be traced to wastes from the livestock industry (including manure, eroded soil, and synthetic pesticides and fertilizers). ■ An added note: 76 percent of Americans call themselves environmentalists; 2.8 percent are vegetarian.

S. R. Finia, Revere, Mass.

It takes 22 times more energy to produce a pound of protein from beef than from corn or wheat. Burning this extra energy means greatly increased carbon dioxide and nitrogen oxide emissions. This, plus the fact that cows release from 5 to 9 percent of what they eat as methane (a primary greenhouse gas), has led to calls for a climate tax on beef. Grilling that steak amounts to grilling our world.

J. Robbins, Felton, Calif.

If vegetarianism were a prerequisite for environmentalism, you could kiss 9/10ths of your constituents goodbye.

D. Armstrong, Fayetteville, N.Y.

Raccoons eat loon eggs. Cheetahs eat gazelles. Wolves eat cows. Aren't humans, like these predators, near the top of the food chain?

P. Davies, Brewster, N.Y.

Admittedly, a habit acquired in infancy and practiced daily for many years is difficult to break. But meat eating is not addictive. Let's hear it for plant foods—the foods that will sustain us in an overpopulated and resource-endangered world!

K. Bushnell, Palo Alto, Calif.

CAN YOU EAT MEAT AND CONSIDER YOURSELF AN ENVIRONMENTALIST?

The environmental damage associated with meat production and consumption is a symptom of human overpopulation and the inability of the environment to support an omnivorous human population. The fact is that environmental damage (erosion, pollution from pesticides and excessive fertilizers, salt buildup from irrigation, depletion of groundwater, loss of species and genetic diversity) is also associated with the production of wheat, corn, soya beans, rice, and oats. Natural ecosystems are much more productive (net photosynthesis and accumulation of organic matter, internal energy flow) than agricultural ones, although the net production is less edible by *Homo sapiens*. A human population that was within the long-term carrying capacity of the Earth could consume meat without damage to the planet's ecosystem.

J. W. Robinson, Seabrook, Md.

What a non sequitur! Remember: Aldo Leopold ate meat, Adolf Hitler did not. A real question would be: Can a rancher/farmer/logger/oilman/land developer be an environmentalist?

H. M. Stein, Washingtonville, N.Y.

By eating higher up on the food chain you put a greater portion of the earth's resources on your plate. You can't save the environment and eat it too.

A. G. White, San Francisco, Calif.

Balance is the key. A few lean slices of pork or beef in a stirfry are not going to ruin the planet. Americans strain the food chain unduly by thinking that a hefty chunk of meat must be the *pièce de résistance* of a good meal. Meat should humbly complement an artfully prepared and nutritionally balanced meal, not dominate or suffocate it.

C. Machado, Corvallis, Ore.

A meat eater has as much right to be considered an environmentalist as the person who drives an automobile a few hundred miles to go hiking.

A. Talentino, Cortland, N.Y.

I recently tried to devise an environmentally correct menu. I concluded that such a meal could not include crops grown with irrigation water or pesticides. It couldn't include coffee or crops such as bananas for which tropical rainforest was cleared. And it certainly couldn't include any fish or other seafood until the world's fish stocks are returned to their former healthy state. That didn't leave much except food salvaged from dumpsters.

B. Tellman, Tucson, Ariz.

Even vegetarians eat living organisms, including wheat, tomatoes, seaweed, and eggs. Can they assure us that these organisms suffer no pain when they are harvested, cooked, or eaten, or that their production creates no environmental damage?

C. Bos, San Francisco, Calif.

Predation is a natural and essential part of the real world. It is the driving force of evolution and the single most important factor in keeping species fit. If all humans became vegetarians, it would increase rather than decrease animal suffering. Many domestic forms would become extinct (who is going to keep all those pet cows?) and game species like whitetail deer would destroy their habitat (causing the elimination of many other animals in the process), leading to massive die-offs and great misery. Let us not confuse "factory farming," which is ecologically indefensible, with "carnivory," which is ecologically essential. I can think of nothing that would destroy the environmental movement faster than equating it with vegetarianism.

D. T. McGinty, Montgomery, Ala.

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