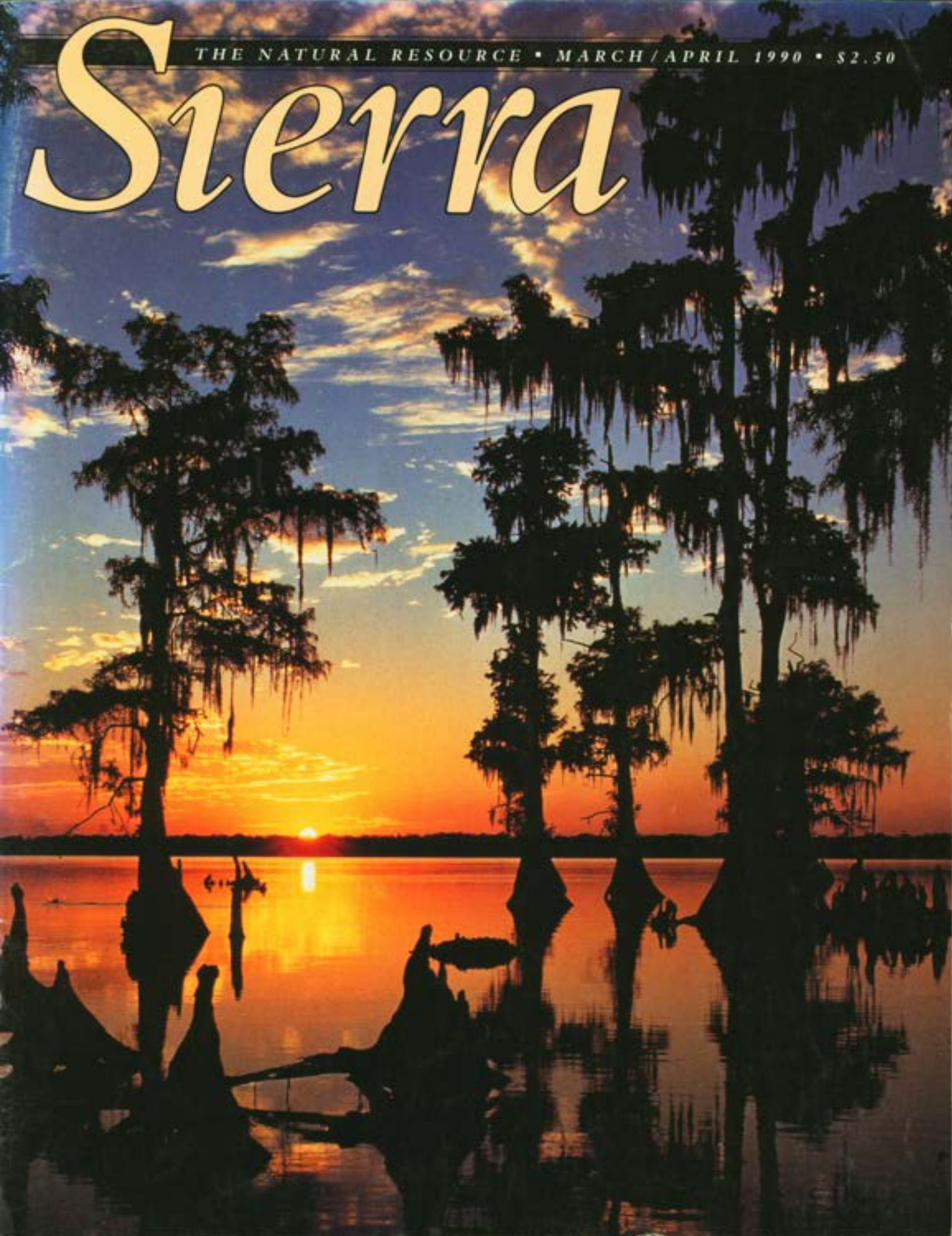
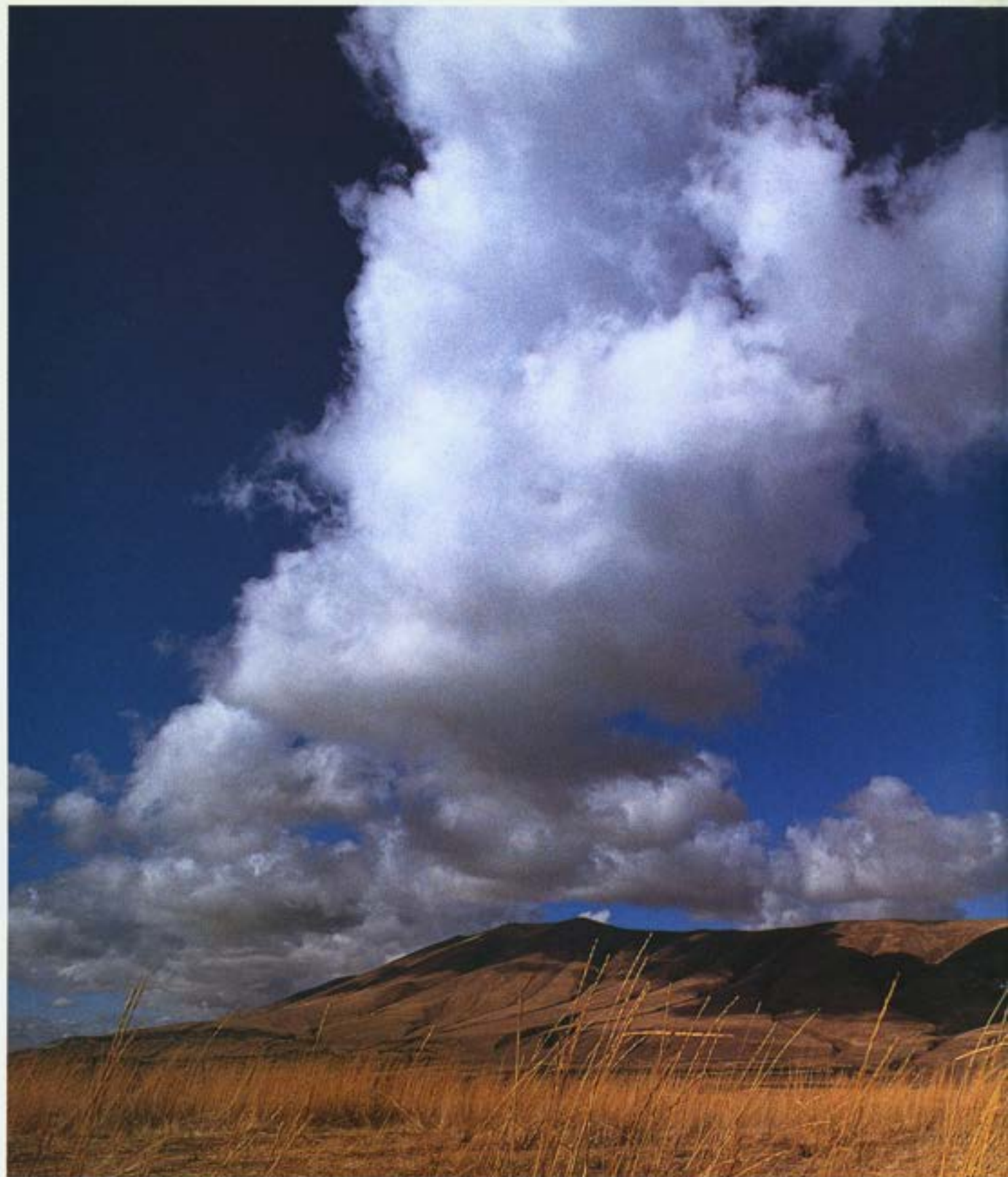


THE NATURAL RESOURCE • MARCH/APRIL 1990 • \$2.50

Sierra





MY GYM IS BIGGER THAN YOUR GYM.

For more information about ACC products, or to get the name of our nearest ACC dealer, call 1-800-344-NIKE between 7am and 5pm (Pacific Time), Monday-Friday. In Canada, call 1-800-663-1AIR.

Jan Reynolds, back-country adventurer and photographer. The Columbia Plateau, Oregon.



If the goal of exercise is fitness alone, virtually any gym or health club in the world will meet your needs. But if you're also hoping to find challenge, variety and thrills in the process, you should consider a visit to the



great outdoors. Here, you don't need a membership to get a workout. Just a few pieces of ACG™ All Conditions Gear from Nike. It's a layered system of athletic clothes for outdoor cross-training like the Snow-



patch Spire pullover and Mt. Robson jacket. All made from the most advanced materials on the planet and designed for uncompromised performance. If you're interested in expanding your exercise horizons, you'd do well to look into it. You'll discover it takes no more effort to have a workout that's exhilarating than it does to have one which is merely exhausting.



When it's time to leave it all behind,



take more with you in a Vanagon.

You'll know when it's time.

Your mind will tell you. Your body will tell you.
Then your family will tell you.

It's time to get up and go.

And there's no better way to go than in a Volkswagen Vanagon. Vanagon is America's most spacious minivan, with even more passenger and cargo room than the new "extended" minivans. In fact, Vanagon seats seven and offers three times more behind-the-rear-seat storage than Plymouth Voyager.

Which comes in handy when you realize leaving it all behind usually means taking a whole lot with you.

Of course, Vanagon offers more than loads of room. Its power rack-and-pinion steering

and four-wheel independent suspension deliver a ride that's uniquely European. And since Vanagon's actually shorter than any mid-size station wagon, it's easy to maneuver around town.

Even the price is easy to handle. Vanagon starts at \$14,080.* And Vanagon Carat (shown above) includes air conditioning, automatic transmission, and much more for just \$18,670.*

So the next time you want to get away from it all, see your Volkswagen dealer.

And take the minivan that leaves all the others behind. Vanagon.



*M.S.R.P. excludes options, tax, registration, destination charges and dealer prep. For details call 1-800-444-VWUS.

© 1990 Volkswagen

Seatbelts save lives.
Don't drink and drive.

Sierra

COVER: Atchafalaya Basin Swamp, Louisiana. For more on the bayou, see page 42.

Photo by C. C. Lockwood.

6/ THE ANCIENT FORESTS ARE FALLING

A call to save the trees.

10/ LETTERS

18/ AFIELD

Wingy gardens; eco-movies; *objets d'offal*; an Earth-mag for kids; states of the bike; sunny cookers.



24/ PRIORITIES

Social Responsibility: Some investors want corporations to do more than cry over spilled oil.

Wilderness: It's forbidding, frozen, and fragile—who'd want to mine Antarctica? The U.S., for one.

Recycling: Under a landfill or under the sun, degradable plastics could be as tenacious as their forebears.

36/ IN DEPTH

Paul R. Ehrlich and Anne H. Ehrlich
Ending population growth in the developing world is far more complicated than just taking a pill.



42/ THAT SINKING FEELING

Donald Schueler

Hang on to your porch swing, *dier*; the coast of Louisiana is vanishing faster than you can say "*laissez les bon temps rouler*."

52/ A PEDALER'S PACE

David Ewing Duncan

Slow down, cool off, and listen to the story your bike has to tell.

58/ COMING HOME

Paul P. Rome

A victim of war returns to Vietnam.



66/ IN NAMELESS PLACES

Hannah Hinchman

Raven's Wing, Lofty Doe, Lark Lyric: An artist honors a small corner of Wyoming.

72/ HOT SPOTS

Yasuni National Park, Ecuador; Ontonagon County, Michigan.

81/ SIERRA NOTES

82/ OUTDOORS

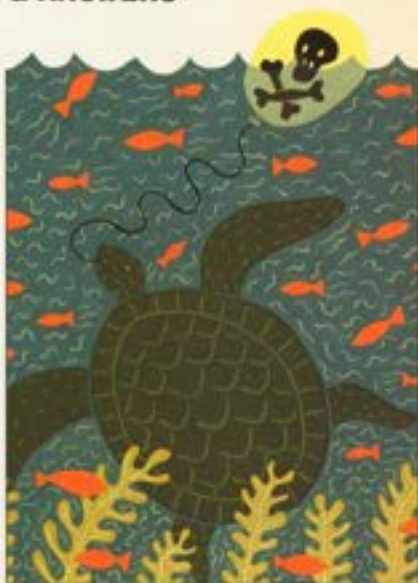
James L. Castner

You don't have to drive a bulldozer to spend time in a rainforest.

85/ SIERRA CLUB FINANCIAL REPORT

88/ BOOKS

106/ QUESTIONS & ANSWERS



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 \$33. Members of the Sierra Club subscribe to Sierra (\$7.50) through their dues. Nonmember subscriptions: one year \$35; two years \$26; foreign \$20; single copy \$2.50. Second-class postage paid at San Francisco, CA, and additional mailing offices. Copyright © 1990 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., San Francisco, CA 94109. READERS: Send old and new addresses and a Sierra address label. Telephone (415) 776-2211 (voice); (415) 398-5384 (TDD).

THE ANCIENT FORESTS ARE FALLING

North America's wild forests are in grave danger. The forest-products industry, the U.S. Forest Service, and the Canadian provincial governments seem determined to road and log nearly all the native forests not currently protected within parks and wilderness areas. The rich biological diversity found there is being wiped out as loggers convert these forests to tree farms, managed by clearcutting and repeated applications of herbicides and pesticides.

The way the logging industry is now structured, workers are stripping the region of its last remaining old growth and shipping much of it overseas without domestic milling. If the industry were to shift its attention to second-growth stands, invest in domestic milling (and mill jobs), and export only finished lumber, much of the remaining ancient forests could be spared. Thousands of jobs would be saved—not lost, as the industry is spending millions to persuade us—and the region could make a “softer” economic transition to a more diversified, sustainable economic base.

The Sierra Club and other conservation groups, represented by the Sierra Club Legal Defense Fund, challenged the ancient-forest-liquidation program in the courts. Broad injunctions were obtained, giving the forests a reprieve. But the real (and imagined) economic impacts resulted in great pressure on the members of Congress to override those injunctions in order to guarantee a steady flow of logs. Working with the National Audubon Society, The Wilderness Society, and others, we mounted a national campaign to head off this possible disaster. After months of lobbying and around-the-clock negotiations, a congressional compromise was struck—one with which we agreed to live.

That 1989 compromise was only a temporary, one-year truce, not a victory. But for the first time, it recognized old-growth forests as a national ecological treasure. Protected areas for the old-growth-dependent spotted owl were expanded 10 to 20 percent over Forest Service plans. The rate and extent of federal timber-cutting was dropped 15 percent below that of recent years.

We were proud to play a constructive role in these gains. As Oregon Representative Peter DeFazio (D) said: “When the deals are being cut, somebody’s got to blow some fresh air into the smoke-filled room. And that somebody has been the Sierra Club.”

But the one-year compromise is not good enough. It still allows an excessive timber-cutting level, including logging of old growth in some areas (though it precludes fragmentation of the largest, most ecologically significant blocks). Under the compromise, judges may only enjoin timber-cutting plans after a full trial (preliminary injunctions are precluded), but the trial process is to be expedited. Notwithstanding this provision, the Sierra Club continues to challenge in court the too-often biased and illegal plans and actions of the Forest Service and the Bureau of Land Management. And the Club opposes any language that would cripple citizens’ right to go to court to challenge logging plans that violate environmental laws.

Now, led by the Club’s experienced volunteer activists, we are going back to Congress and the American people with legislation that will guarantee permanent preservation of specific ecological units of old-growth forest—identified and studied by teams of Club volunteers—while further reducing the total cutting level in the region, outlawing the export of unprocessed logs, and moving toward a sustainable second-growth timber economy with dependable jobs.

The Sierra Club will be calling on our members nationwide to help lobby this forest-saving program through Congress. And we will continue to use the courts to protect old-growth forests in the meantime.

Michael L. Fischer
Sierra Club Executive Director

Sierra

Jonathan F. King • *Editor-in-Chief*

Martha Geering • *Art Director*

Annie Stine • *Managing Editor*

Joan Hamilton • *Senior Editor*

Reed McManus • *Associate Editor*

Julie Harris • *Copy Editor*

Mark Mardon • *Assistant Editor*

Evan Topal • *Editorial Assistant*

Hans Hollitscher

Editorial Volunteer

Susan D. Borowitz, Edith Pepper

Editorial Interns

Silvana Nova

Art and Production Manager

Charlene Charles, Robin Dick

Designers

Barbara Besser

Circulation/Business Manager

Gary Eagling • *Western Sales Manager*

Maggie Hudson

Eastern Sales Manager

Stasia Butsikares • *Sales Representative*

Lorraine Vallejo

Advertising Promotion Manager

Jackie Acampora, Jackie Briggs

Advertising Assistants

Editorial, Advertising, and Business Offices: 730 Polk St., San Francisco, CA 94109, (415) 776-2211. East Coast Advertising: 1308 Broadway, Suite 1900, New York, NY 10036, (212) 730-0270. West Coast Advertising: 14450 S.E. 25th Pl., Kent, WA 98042, (206) 630-3787. Midwest Advertising: Raymond A. Peterson, Share of Market, The Coach House, 110 E. Portawisconsin, Chesterton, IN 46304, (219) 926-9963. Michigan Advertising: Donald L. Rowe, 989 S. Adams, Suite 208, Birmingham, MI 48009, (313) 254-6161. 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.

SIERRA CLUB EXECUTIVES

Michael L. Fischer • *Executive Director*

Michael McCloskey • *Chairman*

Andrea Bonnette • *Associate Executive Director for Finance and Administration*

Douglas Scott • *Associate Executive Director for Conservation and Communications*

Jon Beckman • *Publisher, Sierra Club Books*

Marianne Briscoe

Centennial Campaign Director

Rosemary Carroll • *Director of Development*

Susan De La Rosa

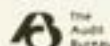
Director of Human Resources

Rich Hayes • *Director of Volunteer Development*

Joanne Hurley • *Director of Public Affairs*

Carl Pope • *Conservation Director*

USA Newsstand Distribution by Eastern News Distributors, Inc., 1130 Cleveland Rd., Sandusky, OH 44870.



Fill out this coupon and save the children

Complete this simple questionnaire, and befriend a needy child through Save the Children. For only seventy-two cents a day, your money, combined with that of other sponsors, can breathe new life into an impoverished village...help hardworking people in their fight for dignity...turn despair into hope for a child who has known only disaster. Seventy-two cents may not buy much where you live. But for the poorest of the poor where the need is so desperate, it can work miracles.

My Name is _____

Address _____ Apt. _____

City _____ State _____ Zip _____

Tell us how you want to help, by answering these questions:

1. What kind of child would you like to sponsor?

Boy Girl Either

2. What geographical area are you interested in?

Urgent need exists in all the areas listed below. If you have a strong preference for a particular location, check the area of your choice. If not, won't you please let us assign a child where the need is greatest?

Certainly. Choose a child for me in an area of greatest need.

I strongly prefer:

- | | | |
|---------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> Bangladesh | <input type="checkbox"/> The Gambia | <input type="checkbox"/> Philippines |
| <input type="checkbox"/> Bolivia | <input type="checkbox"/> Haiti | <input type="checkbox"/> Sudan |
| <input type="checkbox"/> Burkina Faso | <input type="checkbox"/> Java | <input type="checkbox"/> Thailand |
| <input type="checkbox"/> Colombia | <input type="checkbox"/> Jordan | <input type="checkbox"/> United States |
| <input type="checkbox"/> Costa Rica | <input type="checkbox"/> Lebanon | <input type="checkbox"/> Zimbabwe |

3. Would you like a picture of your sponsored child?

Shortly after we select a child for you, we can send you a photograph and brief personal history, if you desire.

Yes No

4. Would you like to exchange correspondence?

If desired, correspondence can help build a meaningful one-to-one relationship. Translations, where necessary, are supplied by Save the Children.

Yes No

5. Would you like information about the child's community?

Because 58 years of experience has taught us that direct handouts are the least effective way of helping children, your sponsorship contributions are not distributed in this way. Instead they are used to help children in the most effective way possible—by helping the entire community with projects and services, such as health care, education, food production and nutrition. You can receive detailed reports on these community activities which provide permanent improvements to the child's environment. Would you like to receive such information?

Yes No

6. How do you wish to send your sponsorship contribution?

My check for \$22 is enclosed for my first monthly sponsorship contribution.

7. Do you wish verification of Save the Children credentials?

Save the Children is indeed proud of the handling of its funds. Based on last year's audit, an exceptionally large percentage of each dollar spent was used for program services and direct aid to children and their communities. Due to volunteered labor and materials, your donation provides your sponsored child with benefits worth many times your total gift. Would you like to receive an informative Annual Report (including a summary financial statement)?

Yes No
(A complete audit statement is available upon request.)

8. Would you rather make a contribution than become a sponsor at this time?

- Yes, enclosed is my contribution of \$ _____
- Check here for general information about our unique programs for aiding impoverished children.



Mail to:

Save the Children®

50 Wilton Road, Westport, Connecticut 06880

YOUR SPONSORSHIP PAYMENTS AND CONTRIBUTIONS ARE U.S. INCOME TAX DEDUCTIBLE.

The original child sponsorship agency. Member of American Council for Voluntary International Action.

PHOTO: BENTLEY KASSAL

SCB 3/0

©1990 SAVE THE CHILDREN FEDERATION, INC.

VISIBLE
MEANS
OF
SUPPORT



EXPLORER

This boot breaks new ground. It gives serious hikers increased support and protection for ambitious weekend hiking, backpacking trips and travel on tough terrain. It has all the advantages of Merrell's patented Air Cushion™ Support System, along with an innovative, high-cut upper construction.

MERRELL TRI-WRAP SUPPORT SYSTEM. Our Innovative construction wraps the instep, snugly seats the heel and gives support around the ankle that's almost orthopedic. This adds up to exhilarating comfort and a precise fit.

MERRELL AIR CUSHION. Our patented air-chambered midsole absorbs shock to prevent injury to knees, hips and back. It also centers the heel to avoid missteps that cause twisted ankles.

MERRELL TRAXION SOLE. Our new sole design is engineered for total traction with an aggressive tread for uphill and a forward-angled heel for downhill security.



THE BEST IN THE WORLD

P.O. Box 4249

South Burlington, Vermont 05406

SIERRA CLUB

SIERRA CLUB DIRECTORS

Richard Cellarius • *President*
Susan Merrow • *Vice-President*
Robert E. Howard • *Treasurer*
Ruth Frear • *Secretary*
C. Freeman Allen • *Fifth Officer*

Joni Bosh, Jim Dougherty, Richard Fiddler,
Roy C. Hengerson, Vivien Li, Michele
Perrault, Sally M. Reid, Denny Shaffer,
Sanford Tepfer, Edgar Wayburn

HONORARY OFFICERS

Richard M. Leonard • *Honorary President*
Abigail Avery, Paul Brooks, David Brower,
Lewis Clark, Marjory Stoneman Douglas,
Polly Dyer, Patrick Goldsworthy, Kent Gill,
George Marshall, Eliot Porter, William Siri
Honorary Vice-Presidents

ISSUE VICE-PRESIDENTS

Susan Merrow • *Conservation*
Michele Perrault • *International*
Phillip Berry • *Conservation Law*
Edgar Wayburn • *National Parks*
C. Freeman Allen • *Volunteer Development*
Lawrence Downing • *Administrative Law*
Jolene Grabbill • *Political Affairs*
Rebecca Falkenberry • *Planning*

Neil Fernbaugh

Chair, Sierra Club Council

Katherine Gregg

Vice-President for Regions

REGIONAL VICE-PRESIDENTS

Barry Beasley, Karen Brewster,
Ron Burchell, James C. Catlin,
Calvin French, Nelson Ho, Steven Kulick,
John Lamb, Mike Martin,
Colleen O'Sullivan, Jim Pachel,
Charles Raines, Jerry Timanow

SIERRA CLUB OFFICES

Alaska: 241 E. 5th Ave., Suite 205, Anchorage, AK 99501, (907) 276-8048 **Appalachia:** 1116 West St., Suite C, Annapolis, MD 21401, (301) 268-7421 **Canada:** Sierra Club of Western Canada, 314-620 View St., Victoria, B.C. V8W 1J6, (604) 386-5255; Sierra Club of Ontario, 229 College St., Suite 303, Toronto, Ontario M5T 1B4, (416) 596-7778 **Midwest:** 214 N. Henry St., Suite 203, Madison, WI 53703, (608) 257-0994 **Northeast:** 360 Broadway, Saratoga Springs, NY 12866, (518) 587-9566 **Northern California/Nevada:** 5428 College Ave., Oakland, CA 94618, (415) 654-7847 **North-ern Plains:** 23 N. Scott, Room 25, Sheridan, WY 82801, (307) 672-0425 **Northwest:** 1516 Melrose Ave., Seattle, WA 98122, (206) 621-1696 **Southwest:** P.O. Box 11248, Knoxville, TN 37939-1248, (615) 588-1892; 1200 N. Federal Hwy., Room 25011, W. Palm Beach, FL 33408, (407) 775-3846 **Southern California:** 3550 W. 6th St., Suite 323, Los Angeles, CA 90020, (213) 387-6528 **Southern Plains:** 7502 Greenville Ave., Suite 670, Dallas, TX 75231, (214) 369-8181 **Southwest:** 1240 Pine St., Boulder, CO 80302, (303) 449-5595; 177 E. 900 S., Suite 102, Salt Lake City, UT 84111, (801) 355-0509; 3200 N. 14th St., Suite 6A, Phoenix, AZ 85016, (602) 277-8079 **Washington, D.C.:** 408 C St., N.E., Washington, DC 20002, (202) 547-1141.

In Colorado, Some Places To Stay Have Five Stars. And Some Have A Few More.



Every year, many of our hotels and resorts receive high marks from the travel industry. And more than our share even earn the coveted five stars.

But leave the city lights behind and you'll find an altogether different kind of rating system. Where every room comes with a view. And the stunning decor more than makes up for any lack of room service. It's your own private retreat at one of our 30,000 campsites. And you can find out all about them in our free Colorado Vacation Guide. So send in this coupon or call and ask for ext. 113 today.

COLORADO

1 - 8 0 0 - 4 3 3 - 2 6 5 6

Colorado Tourism Board, Box 38700
Dept. 113, Denver, Colorado 80238

Name _____

Address _____

City _____

State _____ Zip _____

Telephone _____

NEW WORLD JOURNEYS



COSTA RICA

Explore Monteverde cloud forests and the rain forests of Corcovado. Day hikes in national parks based from rustic lodges. Year-round group and individual trips.

PATAGONIA

Photograph wildlife and trek in Torres del Paine, Tierra del Fuego and Glacier National Parks with our Argentine ornithologist guide.

ANDES, AMAZON & GALAPAGOS

Trekking and jungle explorations in Ecuador and Peru to native villages and ruins of ancient civilizations. 8-14 day Galapagos wildlife cruises on small yachts.

MEXICO & BELIZE

Discover jungle-veiled Maya ruins and encounter highland Indians. Trek in the Copper Canyon and snorkel over barrier reef.

NEW 1990-91
CATALOG!

Featuring worldwide nature and culture explorations to South America, Africa and Asia, including Turkey and Egypt.

1-800-345-4453

(In Canada
206-365-0686)

JOURNEYS

3516 NE 155th, Ste B
Seattle, WA 98155

THE RIGHT
PATH TO
ADVENTURE



LETTERS

UTAH TRIPS AND MAPS

I greatly enjoyed Ray Wheeler's "Two Weeks to Wander" (January/February). Southern Utah is a wonderful place to explore: The scenery is fantastic, and Wheeler described it well.

The Sierra Club's Outing Committee has scheduled more than 25 backpack, service, van, and boat trips in this area for 1990. These trips can be easily identified by their listings in the Southwest geographic index on page 108 of the same issue of *Sierra*.

*Peter Bengtson, Chair
Sierra Club National Outing Committee
Seattle, Washington*

The map that accompanied "Two Weeks to Wander" suggests that the Bureau of Land Management has been incredibly wise and generous in setting aside wilderness-study areas throughout the Escalante, Capitol Reef, and Henry Mountains areas. Though the text of the article correctly states that the areas marked in yellow (labeled "proposed BLM wilderness") are included in Representative Wayne Owens' bill (H.R. 1500), your readers should know that the BLM itself proposes almost none of those areas as wilderness. In its 1985 Utah Wilderness environmental impact statement, the agency set aside only the most worthless places and provided no buffer zones around national recreation areas, national parks, or Forest Service lands.

*Valerie P. Cohen
Cedar City, Utah*

BAD AS GOLD

I presume that the title of Craig McLaughlin's "Priorities" article in the January/February issue ("The Rush for Invisible Gold") was intentional: Gold mining is creating some of the most visible and unsightly environmental devastation in history. (It's always been the most environmentally destructive form of mining, simply because of the low concentrations of gold ore.) The

mystique of gold mining should be laid to rest forever. Only when gold mining is understood to be just another industrial activity will it be subjected to the public and governmental overview that other mining interests accept as part of their business.

*Gerald T. Davidson
Menlo Park, California*

NAME THAT TREE

A small percentage of visitors to Sequoia National Park, mostly from the South, are genuinely bothered by the name of the General Sherman Tree ("Afield," January/February). Certainly, for those who are familiar with our nation's history, the name does recall the destruction and bitterness associated with the Civil War.

The tree was originally named by a veteran of General Sherman's army in 1879. In the 1880s, before the park was established, a group of socialist utopians organized a colony in the area and attempted to purchase the Giant Forest from the federal government. They proposed an alternative name for the grandest sequoia of all: the Karl Marx Tree.

In 1891, after Congress created Sequoia National Park, cavalry troops were sent to protect the giant sequoias. When confronted with the choice between General Sherman and Karl Marx, the soldiers had little trouble making a decision. By the time the army turned the park over to civilian administrators nearly a quarter century later, the name General Sherman had become solidly affixed to the world's largest tree.

Because the name is part of our history, and because we believe that history is better lived with than changed, we think it best that the General Sherman Tree retain its current nomenclature. Given a free choice in the matter, though, we might well consider abolishing all the names given to individual sequoia trees in past years. Few of them help us better see the trees for

the amazing organisms they are. Visitors like the names, however, and so we have retained the best known of them: We have trees named for Grant, Lincoln, Lee (two trees, actually), Washington, McKinley, Cleveland, Theodore Roosevelt, and Jefferson.

Stanley T. Albright

Regional Director, Western Region

National Park Service

San Francisco, California

I WANT MY MUIR T.V.

Your November/December 1989 "Outdoors" column, a pleasant and informative essay on the seemingly benign practice of videotaping in the backcountry, ignores its subject's dangers. One must ask: Does this new technology enhance or degrade the wilderness experience? As our distance increases physically from wilderness, it is important that we do not distance ourselves psychologically. Video places a barrier between individuals and the world around them. Video perception is radically different and certainly limited. From lack of practice, memory will soon lose its acuity, and a backcountry trip will endure not within us, but on a 90-minute tape.

Steven Tremble

Iowa City, Iowa

RHINO RUMINATIONS

A tremendous amount of rumor has been generated by the international press concerning Zambian ministerial involvement in the rhino poaching there ("Horns of a Dilemma," November/December). I have yet to hear this "rumor" from any reliable source. Only one Zambian poacher has mentioned "corruption" following his arrest. When I questioned this poacher personally, he was unable to identify any person or official position associated with such "corruption." This rumor, which has been quoted so often that the public seems to believe it to be true, originated with an overzealous and careless reporter and has been kept alive by irresponsible journalists ever since.

To set the record straight, I should point out that Paul Russell of the Zam-

THE EARTH BETRAYED

HOW THE U.S. ENVIRONMENTAL PROTECTION AGENCY PROTECTS THE POISONERS - NOT THE PEOPLE

This new 30-minute videotape reveals how the U.S. EPA systematically betrays the public interest by protecting industries that poison our communities. *The Earth Betrayed* exposes the truth behind EPA's 20-year record of environmental failure.

VHS or BETA • \$29.95 + \$2.40 postage • Available March 15, 1990

MASTERCARD & VISA orders call 1-800-382-0080 or write:

Organizing Media Project

1841 Columbia Road N.W. • Washington, D.C. 20009

New Video for Earth Day!

KELTY®



KELTY MEANS PACKS

See your Kelty dealer or send one dollar for catalog: Kelty Pack, Inc., St. George, Utah 84770

Invitation To a Voyage of a Lifetime.



Salen Lindblad expeditions aboard the M.S. Frontier Spirit give you our wonderful world, its wildlife, its sea life and its peoples. From Nov. 5, 1990, the three inaugural voyages capture the spirit... "South Sea Island Treasures" starts at Palau and voyages through the romantic Carolines. "Isles of Solomon to Friendly Fiji" takes you all the way from the legend of King Solomon's Mines to Vanuatu. The island Kingdom of Tonga and the Lau group are featured in the third voyage. "South Pacific Jewels and New Zealand" which disembarks in Christchurch, before you fly from Auckland on December 10th. Now is the time to visit these treasures, aboard a ship that is a tribute to exploration and the environment. Return the coupon today.

See your travel agent, or mail this coupon for a full color brochure on M.S. Frontier Spirit's inaugural Voyages to the South Pacific, New Zealand, Tonga, Fiji, Antarctica and Australia's Great Barrier Reef.

Name _____
 Address _____
 City _____ State _____ Zip _____

SE SALEN LINDBLAD CRUISING, INC.
 100 E. 50th Street, New York, NY 10022 212-692-6666 NY 212-750-2200
 (Formerly Salen Expeditions)
Frontier Cruises
 (Department 101)



bian government's Anti-Corruption Commission was correct when he told Margaret L. Knox that "the Zimbabweans have failed to present a 'shred' of evidence" of ministerial involvement in rhino-poaching.

We are bedeviled in this region with irresponsible and negative reporting, which only serves to portray a country like ours in an undeserved adverse light. I believe your readers will have been quick to realize that Knox's article is unbalanced, cynical, and dwells almost exclusively on negative and pessimistic aspects.

G. M. Nott
 Acting Chief Investigation Officer
 Department of National Parks
 and Wildlife Management
 Zimbabwe

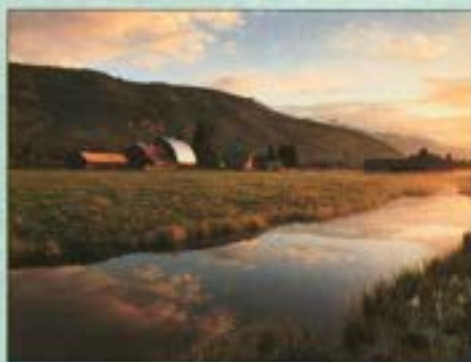
Ms. Knox's article and supporting statements from the Zambezi Society maintain that Mobil has tried to take advantage of the Zimbabwean government—to "pull a fast one," in her words. On December 4, 1989, we signed an agreement with Zimbabwe to explore for oil, after 31 months of discussions. That is hardly "a fast one." During this almost-three-year process we have worked with government officials to develop a plan that takes into account the expressed concerns of conservationists.

Our program will utilize exploration techniques that will be the least disruptive to the wilderness and wildlife. They will be more costly, certainly; but we have successfully employed these techniques in the rainforests of Sumatra and other sensitive areas. Briefly, we do not plan to use "vibroscis" vehicles, which would require cutting wide swaths through the jungle. Our seismic crews will be helicoptered in and will plant their seismic shots "by hand," thus minimizing the impact on forestation. We will limit the removal of vegetation in the seismic area to an absolute minimum. We will restore to the extent possible any affected area to its previous state.

We have also agreed that the government of Zimbabwe will oversee a thorough environmental impact as-

Since the

beginning of this century, the people of our community have worked diligently to preserve the valley's ranches for future generations to enjoy.



FOR YOUR FREE COPY OF OUR
 JACSON HOLE VACATION PLANNER
 JUST CALL 1-800-762-8611 EXT. 42
 JACSON HOLE VISITORS COUNCIL
 P.O. BOX 162, TWP. 32
 JACSON HOLE, WYOMING 82401

W JACKSON HOLE
 WYOMING
 E'VE SAVED THE BEST FOR YOU.



Now on video, NATURE can take you to Hawaii's reefs and volcanoes, Madagascar's lemurs...

The Serengeti... the kingdom of the ice bear... the bizarre realm of flesh-eating plants... the flowing oasis of the Sierra Nevada...

Nothing brings you and your family closer to nature than NATURE!

A production of WNET/New York, NATURE is the most popular series on public television and has won numerous awards.

New from TIME-LIFE, NATURE takes you to places you would never visit!

Available exclusively from TIME-LIFE, THE NATURE VIDEO LIBRARY shows you animal behavior never seen on film, reveals worlds invisible to the human eye and events previously unknown to science.

See Hawaii FREE... and save \$5.00! Your introduction to the best of NATURE is an extraordinary film that shows you Hawaii as it was in the beginning...

Stare down the throat of Kilauea. Watch amazing fire fountains. And listen to huge lava bombs explode beneath the sea...

Dive into the reef where a hidden Hawaii reaches far below the sea—morays lurk, sharks mass, and another world comes alive in gliding, darting, flitting, dazzling color.

Fly to remote atolls where rare monk seals loll on blankets of sand and you can watch birds court, breed, nest, hatch and raise their young.

Nowhere else will you find such astonishing cradles of life.

NATURE is not for sale in stores.

This is a unique opportunity for you and your family to experience and collect the greatest wildlife films ever made. Mail the coupon today—and save \$5.00 on Hawaii!

New From



Send no money now! Enjoy a 10-day FREE PREVIEW of *Hawaii*—without risk or commitment!

NATURE—As shown on PBS

- Complete and unedited, 60-minute videocassettes as originally broadcast
- FREE PREVIEW privilege with each tape—buy them all or just the ones you want
- Only from TIME-LIFE VIDEO—not available in stores

Satisfaction Guaranteed!



Order now to see *Hawaii* FREE and SAVE \$5.00!

YES! Send me *Hawaii* as my introduction to THE NATURE VIDEO LIBRARY for a 10-day free preview. I can keep it for just \$14.99* and future tapes will come about one every other month—with the same free-preview privilege. I can keep as many as I want—there's no minimum number to buy—for \$19.99* And I may cancel my subscription at any time. **VHS only.** **VGAKOB**

NAME (PLEASE PRINT)

ADDRESS

CITY

STATE

ZIP

Mail your coupon to: NATURE
TIME-LIFE VIDEO, P.O. Box C32350
Richmond, VA 23261.

*Plus shipping and handling.
Orders subject to approval.
© 1990 TIME-LIFE BOOKS, INC.

THE PEOPLE'S CHOICE. BY A MILE.



In an independent test, *Walking Magazine* rated the Tecnica Cross the best in its class. Now readers of two others show the Tecnica Cervino to be the most inquired about boot advertised.*

The Cervino GORE-TEX® has an anti-twist nylon insole with steel shank. The Cordura® nylon/leather upper, Cambrelle lining and removable soft-support insole makes the Cervino the supreme midweight pack boot.

The Montello's unique internal collar protects and cushions the ankle, while not restricting its natural movement. A steel shank and external motion-control device provide superior support. The result, exceptional comfort and performance in town or on the trail. Tecnica. Setting the pace, mile after mile after mile.

TECNICA

P.O. Box 551 West Lebanon NH 03784

GORE-TEX® is a registered trademark of W. L. Gore & Associates, Inc. Cordura® is a DuPont trademark.

assessment at various states of our exploration plan. This includes delaying the seismic survey work in the very sensitive World Heritage areas until we have demonstrated to the government the soundness of our procedures.

*J. R. Gaca, General Manager
Mobil New Exploration
Ventures Company
Fairfax, Virginia*

Margaret L. Knox replies: *I included the exchange between Mr. Nott and Mr. Russell not to perpetuate any rumor, but to illustrate the very real and destructive tensions between members of the two nations' enforcement teams.*

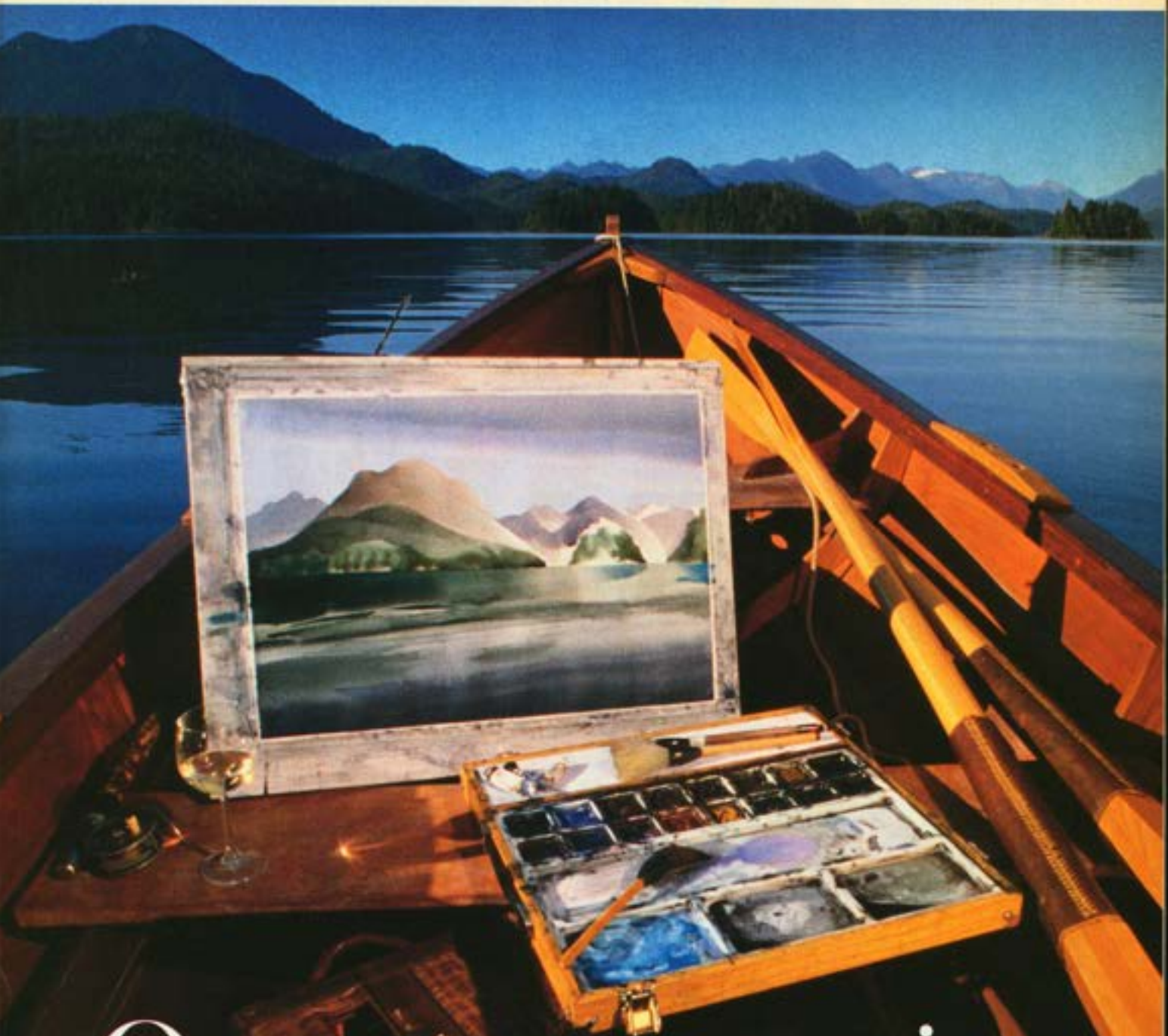
I am only sorry Mr. Nott was offended by what I considered constructive criticism of the continent's most earnest and innovative effort to preserve an endangered species. The region is bedeviled, as I see it, not by negative reporting but by government secrecy and paranoia about the airing of diverse viewpoints.

I am pleased to learn that Mobil abandoned the vibroseis trucks in favor of the less intrusive shots by hand, an alternative Zimbabwean officials said the company declined to consider before last fall's public outcry. I credit brave conservationists within the Zimbabwean government and watchdogs such as the Zambezi Society and the weekly Financial Mail newspaper with blowing the whistle in time at least to mitigate the effects of oil exploration on what until recently was a pristine national wilderness area.

It seems a mistake was made by the editors in including a picture of a mother and baby rhino identified as black rhinos (pages 58-59). The wide shape of the mouths and the humps present at the base of the neck on both animals would indicate that these are white rhinos (*Ceratotherium simum*), not black rhinos (*Diceros bicornis*), as indicated. Black rhinos can be identified by an upper lip that is triangular in shape and prehensile. They do not have a hump at the base of the neck, as exhibited in the white rhino.

*Karin S. Newman
American Association of Zoo Keepers
Milwaukee, Wisconsin*

British Columbia offers a new perspective on beauty. As wave after wave of coastal mountains reveal themselves, you may be moved to get out your camera. Or like artist Toni Onley, open a paint box. The soft pinks of sunset. Vancouver and Victoria's deep forest greens. The line between city and country here is very fine indeed. For more colourful words and pictures on travelling our province, call 1-800-663-6000 Tourism British Columbia, Parliament Bldgs., Victoria, B.C. V8V 1X4. You'll be inspired. **Super, Natural British Columbia** CANADA



On your next vacation
cross the border
between art and reality.

Gore-Tex™

Outerwear



Explorers Protected

On a 4,000-mile trek across the frozen desert of Antarctica, a buildup of perspiration in your clothing can do more than ruin your day. It can end your life. So it's not surprising that Gore-Tex™ outerwear was chosen by world class explorers to meet an unprecedented challenge — history's first ever non-mechanized traverse of the south polar continent. The 1990 International Trans-Antarctica Expedition. "We need the ultimate protection," says the expedition's co-leader, Will Steger. "Only Gore-Tex® fabric can stop 50 mph winds, yet let our own moisture escape."

Chances are you'll never deal with a windchill of -100°F in your outdoor adventures. But anytime you're out in the weather, you face the same basic problem: Get wet and you're soon chilled. Get chilled and your day's a disaster.

One of the official expedition garments worn by the Trans-Antarctica Explorers

Antarctica

By Gore-Tex™ Outerwear

The Science of Staying Comfortable

When you're active, your body sheds a pint to a quart of perspiration every hour. That



1/4 cup
At Rest

1 pint
Moderate
Activity

1 quart
Heavy
Activity

water vapor must pass through your clothing to the outside air, or you'll be soaked and miserable in no time. That's true in cold wet weather, not to mention the extremes of Antarctica.

Only Gore-Tex outerwear can provide essential protection, because of the unique patented Gore-Tex® membrane. The secret is found in the nine billion pores per square inch which allow perspiration vapor to escape yet totally block water and wind. The result? Complete protection and comfort.

The Art of Customer Satisfaction

In outerwear, state-of-the-art is more than a matter of science. It results from the Gore-Tex Partners in Performance™ program developed between W. L. Gore & Associates, Inc. and the makers of the world's best outdoor apparel, setting the highest design and construction standards – resulting in the only outerwear qualified to wear the black diamond hangtag: Gore-Tex™ Outerwear. Guaranteed To Keep You Dry.™

The Promise of No Compromise

For the members of the historic Trans-Antarctica Expedition, and for most people who've ever owned a Gore-Tex™ garment, second best isn't an option. Gore-Tex™ Outerwear. Guaranteed To Keep You Dry.™



Here is our straight forward guarantee. If you are not satisfied with the performance of your Gore-Tex™ outerwear, send it back to W.L. Gore & Associates, Inc. We will either repair it, replace it, or refund your purchase price.



**ABC documents the 1990
International Trans-Antarctica
Expedition:**

**Sunday, March 25
4:30 pm EST**

**For information, phone
1-800-431-GORE.**

WE SAY 'TWO PAWS UP' TO THESE

What is so rare as a major motion picture with an ecological theme? Why is it so difficult to find a feature film that stresses the value of simple ways of living, or that details the deficiencies of consumerism or the dangers of overpopulation? Or one in which animals are portrayed in terms of their own unique characteristics, and where—if they must interact with humans—they do so as equal members of a biotic community, not as clowns or intelligent slaves?

Still, some decent films with ecological themes *have* been made, and one fan's personal (and partial) list follows. It embraces only films that have been released commercially in the United States, and excludes documentaries. All except *The Bear* have been available on videotape at one time or another. —**Daniel Conner**

1. *Never Cry Wolf*, USA, 1983. Directed by Carroll Ballard. This film is number one in my book for its profound message, beautiful scenery (done justice by superb cinematography), and Mark Isham's electronic score. It's based on the Farley Mowat novel, in which a wildlife ecologist spends a few seasons in the Arctic studying the predator/prey relationship between caribou and wolves.

2. *Dersu Uzala*, USSR/ Japan, 1975. Directed by

Akira Kurosawa. The leader of a turn-of-the-century Russian survey party befriends a Siberian hunter, learning from him the ways of the taiga. Long on atmosphere, short on drama (though the ending is poignant), the film gave evidence of growing Soviet environmental consciousness.

3. *The Bear (L'Ours)*, France, 1988. Directed by Jean-Jacques Annaud. An orphaned grizzly cub teams up with an adult male wounded by hunters. Together they fight off dogs, riflemen, and a mountain lion. The bears have authentic "personalities," and while it may sound a trifle Disneyfied, it works.

4. *Koyaanisqatsi*, USA, 1983. Directed by Godfrey Reggio. Taking its title from the Hopi ("life out of balance"), this film visually dramatizes the conviction that something is terribly wrong with our way of life. The cumulative effect of its eerily juxtaposed natural and man-made vistas, in time-lapse and slow-motion photography, is a powerful sense of the interconnectedness of things.

5. *The Emerald Forest*, UK, 1985. Directed by John Boorman. The son of a dam-builder is abducted by a gentle rainforest tribe; after ten years he is thoroughly integrated into its way of life. The conclusion

is a bit hokey (and unnecessarily violent), but if you're like me, you'll be jumping up and down on your seat when *Croacus pistoffus* brings down the wrath of the rain god on that Amazon dam.

6. *The Last Wife*, Australia, 1977. Directed by Peter Weir. Aboriginal mysteries suck an urbane young lawyer into the Dreamtime. This supernatural thriller grows more and more visionary as it progresses toward its apocalyptic conclusion. It may turn out to be one of the most prophetic pictures ever made.

7. *The Gods Must Be Crazy*, Botswana, 1981. Written and directed by Jamie Uys. A Bushman introduced to civilization embarks on a quest to rid his tribe of its evil influence. A charming allegory, and genuinely funny—though the slapstick



Top to bottom: "Star Trek IV";
"The Bear"; "The Gods Must Be Crazy"



Above: "Dersu Uzala"
Below: "Bambi"



situations are sometimes clumsy. Don't deny yourself this treat in the mistaken belief that it comes from South Africa.

8. *Bambi*, USA, 1942. Directed by Walt Disney. Yes, it's sappy and sentimental; yes, it anthropomorphizes animals into cutesy-poo caricatures. (A forest with no predators except humans? Come on.) Still, this 45-year-old lawyer cries at every viewing, and never fails to leave the theater entertaining at least a few wistful ecocentric thoughts.

9. *Aguirre, The Wrath of God*, West Germany, 1972. Directed by Werner Herzog. A power-crazed conquistador seizes control of part of Pizarro's 1560 expedition in search of South American gold and leads the party to its death in the Amazon jungle. Mad Aguirre, alone in the vastness, winds up king of a tribe of river monkeys.

10. *Star Trek IV: The Voyage Home*, USA, 1986. Directed by Leonard Nimoy. "There are other forms of intelligence on Earth," Spock admonishes Dr. McCoy. "Only human arrogance would assume the message was meant for man."

In fact, the aliens' message—perceived by humans as life-threatening electromagnetism—is aimed at Earth's humpback whales, extinct for centuries. To save the planet, the crew of the *Enterprise* must find a pair somewhere. . . .

THE PERMANENT COLLECTION

The town of Lyndhurst, New Jersey, is no stranger to trash, having provided one of the state's larger dumping grounds for more than a century. Now that space and time are both running out, the Hackensack Meadowlands Development Commission is trying to educate consumers about where their garbage actually goes, and what they can do to create less of it.

One step in that process was the dedication last October of the nation's first trash museum, located in DeKorte State Park.

"We want people to understand that when they put their garbage out on pick-up day, it doesn't magically disappear," says Bob Grant, the commission's director of public relations. "Instead, it's often trucked to places like the Meadowlands landfills, where it adds to mountains of other garbage until there's no room left."

The museum's dramatic main display is designed to evoke the feeling of being inside a gigantic landfill. Heaps of worn-out tires, rusted fenders, discarded bottles, and old newspapers are piled so high that they

seem likely to topple over and inundate the viewer.

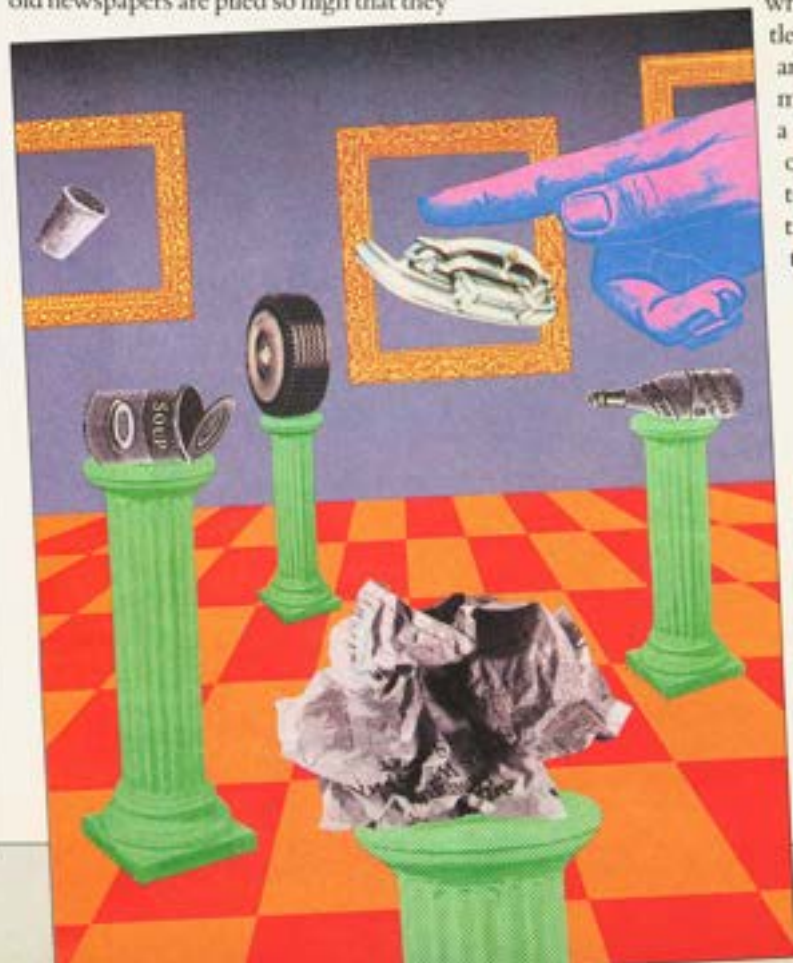
At another exhibit visitors peer through a peephole at a typical domestic scene from the late 20th century, complete with aluminum foil, plastic cups, soda bottles, and other nondegradables. Instead of faces, however, the family members in this tableau sport mirrors that reflect the viewers' own faces—as a tape recording rhetorically asks who it is that creates all this waste.

Elsewhere in the museum the emphasis shifts to solutions: recycling, and choosing products that decompose. One display compares the ways in which two hypothetical towns—one environmentally responsible, the other much less so—handle their trash disposal. And another exhibit describes new products that can be made from recycled trash.

When they leave, visitors are confronted by symbols of the two choices that lie before us: on one side, a mountain of garbage that makes up the Meadowlands' last active landfill; on the other, a restored marsh

where egrets, turtles, muskrats, and other animals roam. It's a final reminder of the need to manage our trash before it trashes us.

—Roberta
Chopp
Rothschild



People who ride bikes rather than drive do so for a variety of reasons. These range from the eco-philosophical (in those cases where a number of choices exist) to the imperatives of mundane necessity (in those places where cars are rare, and bikes usually ubiquitous).

Where the auto still reigns, and cyclists travel more or less at their peril, government action can either encourage or hinder bike usage. Government is showing itself responsive to bicyclists' special needs in states like Oregon and Ohio, each of which distributes maps showing routes suitable for cyclists, has worked out a "scenic byways" program, and provides funds for a state bicycle coordinator.

In other states similar cooperation has not been

YOU CAN RIDE THAT SHOULDER IN WYOMING

forthcoming. A survey by the League of American Wheelmen (LAW), a bicycle advocates group, ranked the 50 states and the District of Columbia for their performance in 26 key areas, including ongoing funding of cyclist-related state programs, access to rural interstates, tolerance of hand signals, and lighting and reflector requirements. The

bottom rungs were occupied by Missouri, Montana, Nebraska, New Mexico, and South Carolina, all rated harshly for their failure to fund educational programs, to abolish laws that compel cyclists to take poorly maintained, even dangerous alternate routes (sidepaths), or to permit travel on the shoulders of the interstates.

A state-level bicycle coordinator can be key

to improving the regulatory climate. "People in state governments aren't necessarily hostile to cyclists," says Andy Clarke, LAW's government-relations director. "It's that they don't always know what to do for us or how to do it. Once there's someone within the bureaucracy whose role is to work full-time on cycling issues, the legal system tends to follow up."

To obtain the state-by-state rating, or for other information, contact the League of American Wheelmen, 6707 Whitestone Rd., Baltimore, MD 21207; phone (301) 944-3399.

—W. B. Travis



UPDATE

- New Mexico's Gray Ranch, a third of a million acres of threatened biodiversity (J/F '90), was acquired in January by The Nature Conservancy for \$18.25 million.
- Forest Service Chief Dale Robertson has upheld temporary restrictions on clear-cutting in 16 national forests in the South, to protect the habitat of the endangered red-cockaded woodpecker (M/A '89).
- Southern California's air-quality management district has imposed strict new controls on so-called "specialty coatings" used in home remodeling, as part of its 20-year plan to clean up the region's air (J/A '89).



Bob Metcalf wants to teach the world to harvest sunshine.

A microbiology professor at California State University, Sacramento, who believes that "good science should be spent on improving the human condition," Metcalf hopes to wean the poor of the developing world from the wood fires over which they prepare their meals. He wants them to cook with solar power instead—using a simple and inexpensive 3- by 4-foot box of cardboard, aluminum, and glass. He's convinced that the solar box cooker (SBC) is the key to alleviating the fuelwood crisis that is deforesting many sun-rich but fuel-poor Third World nations.

The glass-topped device, which can cook 15 pounds of food at temperatures up to 275 degrees Fahrenheit, was designed in 1976 by Barbara Kerr and Sherry Cole of Arizona. Metcalf purchased one in 1978, and since then his family has cooked an SBC dinner about 200 days out of the year. He has no doubt that the SBC would be readily adopted by the world's poor if it could but be made available to them.

"Between 70 and 90 percent of the energy used in developing countries is fuel for cooking," Metcalf says, "while at the same time sunshine is the only abundant energy source most poor people have. The solar box cooker shows people how to use their most abundant—and renewable—energy source to address their major environmental problem."

Even as environmental and development agencies bemoan the growing fuelwood crisis and conclude that no significant substitute for wood seems to be on the horizon, Metcalf chafes under the frustration of having his grant requests for SBC workshops in developing countries turned down by a number of major foundations. Still, his crusade has met with some success: Workshops in Latin America and Africa have been sponsored or funded by

LIGHT CUISINE IS HOT STUFF



Foster Parents Plan and the Pillsbury Company, and the United Nations Food and Agriculture Organization has helped promote the SBC in the Middle East.

Solar Box Cookers International was formed in 1987 to disseminate information about the device and to train people to give workshops around the world. The core membership of this nonprofit group is made up of Californians who use SBCs regularly,

ship of this nonprofit group is made up of Californians who use SBCs regularly,



▶ Solve the fuelwood crisis—get your mitts on an SBC.

many of whom were introduced to them by Metcalf at environmental fairs and meetings.

"I have no illusion that this knowledge will spread to the 2.4 billion people who need it by the year 2000," Metcalf says. "But if you were an adolescent girl growing up in Bolivia, faced with the prospect of spending your life cooking over a stinking sheep-dung fire, wouldn't you want to know about a solar box cooker?"

Plans for building an SBC are available for \$5 from Solar Box Cookers International, 1724 11th St., Sacramento, CA 95814; phone (916) 444-6616. Inquiries about purchasing the units or assisting with international workshops may also be directed there. — Ted Rieger

If butterflies seem to be visiting your garden less frequently than they once did, you're not imagining things. Blame their absence on the years of habitat loss and insecticide spraying they've endured.

LURING LEPIDOPTERA

But even though their numbers are down, and their individual lives no longer than before (most North American

species live only 10 to 14 days), there still are ways to lure butterflies to your backyard during the coming gardening season.

One of the most important steps you can take is to avoid pesticides. The poisons that kill insect pests will also kill butterflies. You'll also need to have some plants in your garden



GENE GREY

that provide butterflies with food, and—if you have the space for them—other plants to serve as hosts for egg-laying.

Luckily, many of the plants that furnish nectar for butterflies are annuals already familiar to gardeners: alyssum, marigolds, petunias, verbenas, cosmos, zinnias. Others are perennials and shrubs appropriate for the new trend in landscape design toward informal, "English country" types of borders.

If you can, arrange to visit a commercial butterfly garden (another idea borrowed from the English), such as Butterfly World in Ft. Lauderdale, Florida, or the new Day Butterfly Center at Callaway Gardens, Georgia. You'll be struck by the informal, old-fashioned, almost weedy look of the areas planted for native North American butterflies. Consider bringing some old favorites back in your own garden: black-eyed Susan, butterfly weed, coreopsis, loosestrife, butterfly bush, lantana, and passionflower vines.

Host plants such as milkweed, ornamental grasses, butterfly weed, passionflower, spicebush, thistle, and members of the mallow family (hibiscus) are necessary if you want to raise butterflies through the entire life cycle. However, caterpillars munching away will surely leave unsightly holes in the leaves of your plants. You'll have to tolerate that, or else locate these host

plants in an unused or hidden corner of the garden.

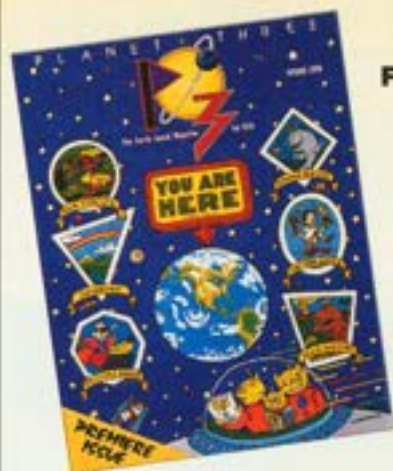
Here are some other tips to follow:

- Plant in full sun. Flowers that attract butterflies tend to be sun-loving.
- Butterflies are attracted partially by color, so use large splashes of it in your design. Groups of flowers are easier for butterflies to find.
- Plant single rather than double flowers; their nectar is more accessible.
- Plant for continuous bloom throughout the growing season so butterflies will have a constant food supply.
- Place flat stones in the sun for basking. Butterflies are cold-blooded, and often bask in the morning sun to warm their wings for flight.
- Provide shallow puddles in the garden for butterflies to drink from.

Butterfly gardening is challenging in many ways—you may find, for example, that organic pest-control methods aren't effective against ants and spiders, two butterfly enemies. Birds also feed on butterflies, so attracting both to your garden is tricky.

The Xerces Society (10 S.W. Ash St., Portland, OR 97204), an invertebrate conservation organization, publishes educational leaflets as well as a magazine, *Wings*. The society also has developed a book, *Summer Magic: Butterfly Gardening*, to be published by Sierra Club Books this fall.

—Barbara Deane



FROM MR. ROGERS' NEWSSTAND

When Randi Hacker and Jackie Kaufman realized that there was no magazine for children that deals exclusively with environmental issues, they invented one.

P3 ("The Earth-Based Magazine for Kids") debuts in March. The 32-page premiere issue, with its eye-catching cover promising "singing sea life," "wild history," and "fun and games," features stories about Earth Day, clean-air legislation, recycling, and grassroots activism. Also included are profiles of an animal-rescue worker in Alaska and an elephant researcher in Kenya, a celebration of "Earth: A great place to live!" and the first episode of "The Earth Rangers," an action-packed cartoon strip.

"Randi and I wanted to do something for the environment," Kaufman says. "We're not politicians and we're not scientists, but we do know about writing for kids." So they created the nonprofit P3 Foundation, composed of teachers, grade-school students, environmentalists, even film stars, and developed a plan for the first-ever kids magazine about the environment.

In an era of video games and innocuous sitcoms, are children really interested in environmental issues? Kaufman and Hacker think they are. "Surveys show that kids are really afraid of acid rain and the ozone hole," Kaufman says. "These are scary things even for adults; imagine what it's like for kids!"

P3, named for Earth's position as the third planet from the sun, is written in a playful, accessible style. ("If elephants could dial 911, they would have called for help a long time ago.") And it's informative without being condescending. Each page is colorful, fun to read, and (most important) interesting. Initial inquiries have come primarily from teachers, who receive subscriptions free; paid subscriptions are \$14 for ten issues. For information, write to P3 Magazine, P.O. Box 52, Montgomery, VT 05470, or phone (802) 326-4669. —Chase Reynolds

Missed Manners

In the wake of the Exxon Valdez disaster, concerned investors have begun prodding corporations to mind their Earth etiquette.



Keiko Ohnuma

CORPORATIONS MAY BE mules when it comes to obeying laws or accepting liability, but they know better than to bite the hands that feed them.

At least that's what anti-apartheid activists were betting on in the 1970s when they crafted the Sullivan Principles, a code of conduct for U.S. businesses in South Africa, backed by investors' threats to sell their stock in uncooperative companies.

Environmentalists may now profit from that successful experiment—or so hopes the Coalition for Environmentally Responsible Economies (CERES), a consortium of 14 environmental groups and the 325 members of the Social Investment Forum, a national trade association of money managers, brokers, bankers, analysts, and other socially concerned investors. Last fall the coalition unveiled its own set of guidelines designed to hit polluters from a new angle.

The ten rules, christened the Valdez

Principles to commemorate a particularly galling incident of industrial carelessness, are intended to legitimize the idea that corporations are responsible for their impact on the biosphere. "The principles are designed to be both a stick and a financial carrot for a new corporate consciousness," says Joan Bavaria, co-chair of CERES and president of Franklin Research and Development Corporation, a Boston-based investment advisory firm. "They're structured to reward responsible corporate actions with significant investment dollars, and potentially to withdraw dollars from irresponsible corporations. For example, a state that is endorsing the Valdez Principles might eventually sell off [its pension-fund] stocks in companies that did not pledge to support the principles."

The principles cover a broad range of topics. Under "protection of the biosphere," for instance, corporations are asked to

- "minimize and strive to eliminate the release of any pollutant that may cause environmental damage to the air, water, or Earth or its inhabitants;"

■ "safeguard habitats in rivers, lakes, wetlands, coastal zones, and oceans;" and

■ "minimize contributing to the greenhouse effect, depletion of the ozone layer, acid rain, or smog."

Nine other principles follow, which would commit signatory companies to, among other things, make sustainable use of natural resources; protect wildlife habitat, open spaces, and wilderness; preserve biodiversity; re-

duce and safely dispose of wastes; use safe and sustainable energy sources; invest in energy efficiency; and disclose accidents and hazards to employees and the public.

The tenth principle requires an annual evaluation of signatory companies' environmental performance in meeting these goals, working toward independent audit procedures that would be completed annually and made available to the public. In this audit "we're talking about something deeper than counting emissions," explains Bavaria. "Our dream is to create a great number of environmental-audit firms" that will be equipped to judge "the institutionalization of environmental practices," including such nebulous factors as management commitment to the Valdez Principles.

Backing up the invitation extended to at least 3,000 corporations to sign on to the principles are endorsements from groups that control 150 billion investment dollars: the Social Investment Forum, the Interfaith Center for Corporate Responsibility (the investment adviser to the National Council of Churches), and the government offices that control the pension funds of New York City and the state of California.

The coalition's environmentalist members include the Sierra Club, National Audubon Society, National Wildlife Federation, and Wilderness Society. Although these groups will not be promoting or endorsing signatory companies, they helped draft the principles and are now working—along with investors and corporations—to translate them into measurable standards.

In the business community most companies remain tight-lipped about the possibility of signing, at least while the details are unclear. "We have received the principles and are studying them," said an Exxon spokesperson in December, with "no comment" on the commemorative name.

Representatives of other oil companies, as well as chemical, timber, and manufacturing interests, were similarly vague, preferring to cite their own

OUTDOOR GEAR AND CLOTHING

REI has the best for your muscle-powered activities including hiking, climbing, skiing, bicycling, fitness walking and water sports. Satisfaction guaranteed.

FREE CATALOG!

Name _____
Address _____
City _____ State _____ Zip _____

Send to: REI, Dept. N0076, P.O. Box 88127, Seattle, WA 98138-2127,
or call toll free: 1-800-426-4840 (U.S. and Canada), operator #N16



Quality Outdoor Gear and Clothing Since 1938



Pack In The Adventure

...and come out with your degree.

The National Audubon Society Expedition Institute's traveling classroom takes you throughout the U.S. and Canada to explore the heart of Environmental Education where integrity, empathy and awareness go with you.

More than 50 accredited courses lead to High School, Undergraduate and Graduate degrees. Semester, one- or two-year programs available. Write now for our new program catalog:

National Audubon
Society Expedition
Institute
Department S
Sharon, CT 06069
(203) 364-0522



Name: _____
Address: _____
City: _____
State: _____ Zip: _____

Students are admitted regardless of their race, sex, religion or national origin.

environmental programs and guidelines. The response of Occidental Petroleum's vice-president for health, environment, and safety, Frank Friedman, was typical: "We're doing all these things right now."

Some of the principles' backers are also daunted by the prospect of implementation. John Lickerman, director of research for the social-investment fund Working Assets and a CERES collaborator, questions whether standards that corporations will agree to can still contain any substance. "I'm not saying all corporations are bad," he explains. "I'm just saying it's not in the companies' best interests."

But CERES Co-chair Bavaria takes a different view. Corporations will agree to exacting standards, she believes, because "in the long run companies that pay attention to these principles are going to be more profitable. They're not going to be constantly flirting with disaster."

The coalition's roster of committed investors may also cause some corpo-

rations to sit up and take notice—especially if CERES succeeds in wooing the Council of Institutional Investors, a group of state pension funds worth \$400 billion. It's unclear how far investors are willing to push their companies, however. New York City Comptroller Harrison Goldin, the main advocate of the Valdez Principles among pension-fund managers, avers that the principles "are in no way weapons of coercion," and Joan Bavaria is quick to point out that divestiture would be advocated only as a last resort.

Publicity may prove to be the coalition's most effective tool. In the case of the Sullivan Principles, says the other CERES co-chair, Earth Day 1990 organizer Denis Hayes, it wasn't the funds withdrawn from recalcitrant corporations that made the difference, but "the visibility, the substantial PR response." The chemical giant E. I. du Pont de Nemours has already shown strong interest in the Valdez Principles, lending truth to Sierra Club Chairman

Michael McCloskey's observation that chemical companies "are among the most likely to cooperate, because they have such bad press."

McCloskey sees his work with CERES as part of a broader movement to teach people to exercise their power for change through the economic choices they make every day. "We want to plant the idea that spending money is a way to vote," he says. "Cast ballots for the kind of economic endeavors you want to see. Businesses have stymied regulatory efforts, but they understand an economic message."

Denis Hayes agrees that this is the main purpose of the Valdez Principles: While legislation and litigation have been useful, he says, "we have to enlist people as consumers, as shareholders, as employees—in every way we can—to make sure the necessary changes over the next ten years are actually achieved."

KEIKO OHNUMA is a freelance writer and editor in San Francisco.

Independent research shows:

NordicTrack preferred six to one over bikes and rowers

In 1988 Burke Marketing Research conducted a survey among NordicTrack owners who also own exercise bicycles and rowing machines. Their findings showed that by a margin of 6 to 1, respondents prefer their NordicTracks.

They have several good reasons.

NordicTrack's upright position is more absorbing and fun, both mentally and physically, and provides greater freedom of movement than the sit-down positions of bikes and rowers.

NordicTrack simulates the motions of cross-country skiing—the most effective form of aerobic exercise known—which means it burns more calories and conditions more muscles in less time than bikes and rowers.

All of which means that owners have found that they can achieve their fitness goals more quickly and easily with NordicTrack than with bikes and rowers, and without risk of injury.

Patented Flywheel

Patented flywheel and one-way clutch mechanisms provide continuity of motion making exercise more pleasant and easier to sustain.



Independently Adjustable Upper Body Exerciser

Upper body exerciser works extensor muscles of the back, trunk rotators, biceps, triceps, shoulders, chest and upper back.

Stand-up Position

Comfortable upright position is more natural, more stimulating and allows greater freedom of movement.

Independently Adjustable Lower Body Exerciser

Exerciser works hip flexors, gluteus muscles of the buttocks, thighs, hamstrings, knee extensors, ankles and calves.

Non-Jarring Motion

Smooth, jarless, aerobic motion ensures maximum workout efficiency while eliminating the risk of injury to the knees, shins and back.

Free Brochure & Video

1-800-328-5888

In Canada 1-800-433-9582

NordicTrack
A CMI Company

The Great White Heap?

Fears that a rush for frozen treasure will ruin a pristine continent have stopped an Antarctic treaty in its tracks.

Paul Larmer

ANTARCTICA. The last large, unspoiled wilderness on Earth. Home of the cleanest water and the purest air on the planet, and the frontier for scientific research on the global environment.

Antarctica. A 5.5-million-square-mile chunk of real estate awaiting the right combination of economic forces that will send geologists and developers scurrying across its icy skin probing for coal, copper, uranium, and iron, and drilling its continental shelf for oil.

Antarctica's remoteness, nearly impenetrable ice, and harsh climate have long chilled prospects for oil and mineral development. Even today scien-

tists can only speculate about the riches to be found in and around the land mass. But what for years has been an intriguing riddle has become a fierce debate over the frozen continent's commercial future.

In June 1988 the 20 countries then operating research bases in Antarctica signed a minerals-development agreement. Six years in the making, the Convention on the Regulation of Antarctic Mineral Resources Activities (CRAMRA) signaled that, for the first time in three decades of cooperative scientific research, the signatories to the 1959 Antarctic Treaty were ready to get down to the business of resource exploitation.

But the minerals accord got a cool

reception from conservationists who want Antarctica maintained as a wilderness reserve, and they soon found powerful allies. In May 1989, Australian Prime Minister R.J.L. Hawke announced that his country no longer supported the agreement and would instead push for a comprehensive environmental-protection convention and the creation of a global wilderness park. The pact Hawke envisions would "ensure that no mining takes place" in Antarctica.

With the backing of the French government, Australia's move brought CRAMRA to a halt. The agreement cannot take effect until signed and ratified by 16 of its 20 sponsors, which must include the United States, the Soviet Union, and the seven countries with territorial claims in Antarctica, two of which are Australia and France. The United States has signed the agreement, but the Senate has yet to consider it for ratification.

Proponents of a world park see the actions of Australia and France, two

Amazing results:

After five years, 7 out of 10 NordicTrack owners still use their machines more than 3 times per week

The most effective aerobic exercise machine on the market.

In 1988, Maritz Marketing Research conducted a survey among NordicTrack owners who had owned their machines for more than five years. Their findings showed that fully 69% of respondents still use their machines an average of 3.5 sessions per week, 25 minutes per session.

Their reason is simple. They have found that NordicTrack not only exercises more muscles and burns more calories in less time than any other machine on the market, but that it's mentally and physically more stimulating and enjoyable as well.

Cross-country skiing—the best aerobic exercise.

NordicTrack duplicates the motion of cross-country skiing, which experts agree is the best form of aerobic exercise. Better than biking, rowing, running or swimming.

It works all the major muscle groups in your body: arms, shoulders, back, stomach, legs. Which means you achieve your fitness and weight-loss goals quickly and easily.



Patented flywheel and one-way clutch mechanisms provide true cross-country ski action.

NordicTrack features proportional resistance which places primary effort on the rearward stride just like cross-country skiing.

Unlike shuffle-type ski exercisers, the system allows you to develop a rhythm and continuity of motion that makes exercise more pleasant and easier to sustain.

Discover for yourself.

Call today. Or fill out the coupon below. We'll send you a free full-color brochure and video that describe in detail why 7 out of 10 users have kept their fitness and weight-loss goals on track.

Free Brochure & Video

1-800-328-5888

In Canada 1-800-433-9582

Please send me a free brochure

Also a video tape VHS BETA

Name _____

Street _____

City _____ State _____ Zip _____

Phone () _____

141 Jonathan Blvd • Chaska, MN 55318

3300

Bogen Monopods. The outdoor types.

They're a cinch to carry – and you'll find them especially handy when using a telephoto lens.

Choose the Bogen Professional Monopod: 3 sections and extends from 27 to 65 inches. Or select the Bogen 3-Section Monopod: lighter and slightly smaller, extending from 23 to 59 inches. Both are made of heavy-duty aluminum and can be equipped with a Bogen 3025 3-D Head.

To find out more, see your dealer or write: Bogen Photo Corp., 565 East Crescent Avenue, P.O. Box 506, Ramsey, NJ 07446-0506.

bogen

Lester Bogen doesn't sell anything he wouldn't buy himself.



Gossen Luna-Pro F...our shooting star.



The rugged Luna-Pro F does it all. From measuring reflected or incident light without accessories...to taking single or multi-flash or remote readings...to zone meterings.

See your dealer or write: Bogen Photo Corp., 565 East Crescent Avenue, P.O. Box 506, Ramsey, NJ 07446-0506.

bogen

Lester Bogen doesn't sell anything he wouldn't buy himself.

countries that have not traditionally been champions of environmental causes, as a sign of the growing strength of the worldwide conservation movement. Antarctica Project Director Jim Barnes, legal counsel for the Antarctic and Southern Ocean Coalition, an umbrella organization of about 200 groups, says "the Australian and French initiative reflects the thinking of the environmental community. It also reflects, on a personal level, the thinking of the leaders of France and Australia." Naturalist Jacques Cousteau personally urged French President François Mitterrand to oppose the agreement.

Mining foes have contended for years that any resource exploitation is inadmissible in Antarctica. "Because the food chain in Antarctica's ecosystem is extremely short and tightly interconnected, impact on one component of the ecosystem will spread quickly to its other members," says biologist Beth Marks of the Sierra Club's International Committee, who chairs the Club's Antarctica Task Force. Any damage will be especially devastating to the krill, the small, shrimplike organisms that are the primary food source for many species of whales, seals, birds, and fish.

New evidence that Antarctica pro-

foundly influences the world's climate is fueling the arguments of those who want a permanent ban on mineral development there. The continent is now the frontline laboratory for study of the planet's ecological crisis, a place where scientists can investigate the effects of global warming, the ozone hole, and the history of air pollution.

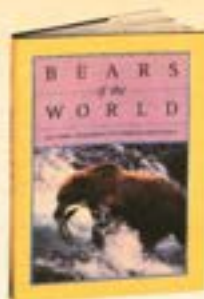
Environmentalists also point to the poor record of ongoing oil and gas operations in polar regions and the threat posed by tanker accidents. Antarctica's inclement weather makes devastating oil spills like the March 1989 Exxon Valdez accident in Alaska seem inevitable. The damage caused a year ago by a 250,000-gallon fuel spill less than two miles from the United States' Palmer Research Station demonstrates what even a relatively small accident can do to Antarctica's fragile ecosystem. "The spill wiped out a colony of newborn skua chicks, and with it 20 years of scientific research," says Marks. "It also devastated krill and phytoplankton populations, and destroyed the primary research on the biological effects of the ozone hole."

Nevertheless, the United States, along with the Soviet Union, Britain, Japan, and South Africa, remains committed to the 1988 minerals treaty. Lee Kimball, a staff member of the World



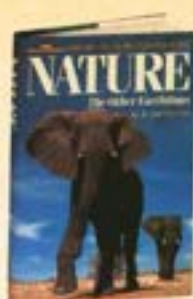
Can Antarctica survive with penguins and prospectors beak by jowl?

WOLFGANG MAENLER



#003-5
Retail \$29.95

Choose Any One Of Our Best-Selling Nature Books For Just \$1



#000-4
Retail \$29.95

When You Join The Nature Book Society!



#913-9
Retail \$18.95

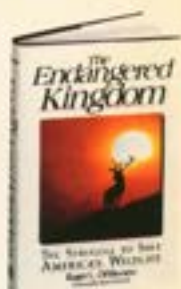


#593-0
Retail \$24.95

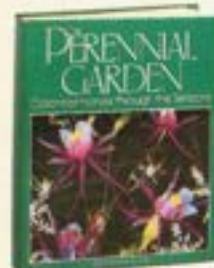
Discover a world where grizzlies roam wild... birds nest undisturbed... and man finds adventure in some of the most beautiful and exotic places on earth...



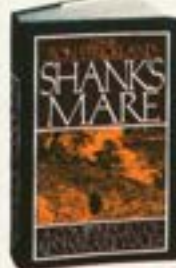
#999-0
Retail \$35



#610-1
Retail \$19.95



#644-0
Retail \$24.95



#808-0
Retail \$24.95



#608-5
Retail \$22.95



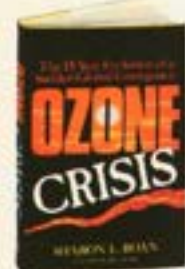
#210-0
Retail \$24.95



#610-3
Retail \$17.95



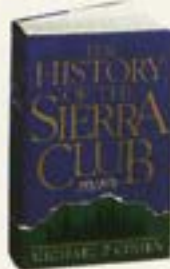
#335-0
Retail \$21.95



#610-5
Retail \$18.95



#316-0
Retail \$24.95



#911-7
Retail \$29.95



#913-8
Retail \$40



#005-5
Retail \$40

Join THE NATURE BOOK SOCIETY and save up to \$39 on your very first book!

Every four weeks you'll receive a bulletin containing an Editor's Choice, dozens of other selections and an order card. If you wish to receive the Editor's Choice, do nothing. It will be sent to you automatically. If you want another selection, simply mark your choice on the card and mail in by the date indicated. You never have to buy a book you don't want and every book comes with a free 15-day trial. With this offer you agree to purchase two additional titles in your first year of membership. A shipping and handling charge will be added to each shipment.

YES! Send me the best-seller I chose below for just \$1 plus shipping and handling, and enroll me in THE NATURE BOOK SOCIETY.

Send me book # _____ for \$1 (plus postage and handling).

Name _____

Address _____ Apt. # _____

City _____ State _____ Zip _____

Send no money now. To order, clip this coupon and mail today to:
The Nature Book Society, P.O. Box 10875, Des Moines, IA 50380

Choose any book for \$1
FREE for 15 days!

SS0

NBS142

IF A TREE FALLS IN THE SIERRA WILL ANYBODY HEAR IT?

Hopefully, everyone who cares for the environment has been listening. Because reports of road salt damage to vegetation are very clear. But now, there is an answer to this problem.

In the Sierra, as elsewhere in winter, salted highways are gradually becoming pathways through a dying landscape. Road salt eventually leaches into the roots of nearby trees. Lofty pines fall victim to our highways' chemical dependence.

Since both government agencies and the public recognize the damaging effect of road salt, there has been a constant search for an environmentally safe, alternative de-icer.

At Chevron, much of our research focuses on solving environmental problems. And our search for an environmentally safe de-icer has succeeded, with the development of one that no longer forces a choice between safe

travel and healthy trees. It's called calcium magnesium acetate, or CMA.



CMA, carrying the Chevron brand name of ICE-B-GON[®], has undergone the most extensive government testing of any de-icing product available.

During the past two winters, ICE-B-GON was used in six U.S. states and two Canadian provinces. Little or no adverse effect was found on vegetation, aquatic life or groundwater. Moreover, in areas where it has been used instead of salt, the environment has actually benefited.

We hope that local and government agencies as well as the concerned public will be alert to this alternative solution.

We owe it to the environment to listen.



© 1989 Chevron Chemical Co.



Resources Institute who helped negotiate the accord's environmental provisions, defends the American stance. Under the agreement the voting members (now 25 countries) must unanimously approve opening an area to exploration after assessing environmental risks; Kimball maintains that the agreement will provide essential ground rules for mining development where only an informal moratorium now exists.

"I can't think of a better mechanism to protect the environment," she says. "You've got to realize that Antarctica is the size of the United States and Mexico combined. To put a cap on all mineral development there forever is the kind of stricture most countries won't accept."

Barnes of the Antarctica Project sees no need for a compromise between commerce and wilderness in Antarctica. "We're in the middle of a very long battle in which individual governments will have to make their own decisions," he says, "but I personally feel that CRAMRA is dead." He hopes that a special meeting of Antarctic Treaty members later this year to discuss the nature-reserve proposal and other environmental concerns will spark stronger support for the "world park" initiative from the United States. "We need to turn our country around," Barnes says, "to unleash the membership of the major environmental groups."

American environmentalists have allied in Senator Albert Gore, Jr. (D-Tenn.), who is trying to persuade the Bush administration to take the environmental high ground. Gore has introduced a joint resolution that calls for the "full protection of Antarctica as a global ecological commons" and supports the wilderness-park plan. To date 15 senators have cosponsored Senate Joint Resolution 206, which now has a companion measure (H.J.R. 418) introduced by Representative Wayne Owens (D-Utah).

Because the United States has no territorial claims and primarily scientific interest in Antarctica, "the door is wide open for it to lead the protection

of Antarctica and the global environment," says the Sierra Club's Marks. While it is unlikely that the United States, which has consistently opposed an Antarctic mining ban, will make an about-face soon, many environmentalists remain hopeful: It was also con-

sidered unlikely a few years ago that a world-park proposal would be at the center of a heated debate over the icy continent.

PAUL LARMER is the Sierra Club's media-relations representative in San Francisco.

WHAT KIND OF A WORLD DO YOU WANT?



Environmentally Sound? Peaceful?
With Equal Opportunity?
Concerned About World Development?
Then Consider

PAX WORLD FUND*

A mutual fund that invests in companies:

- _____ exercising pollution control
- _____ producing life-supporting goods and services
- _____ not involved in weapons production
- _____ with fair employment practices
- _____ promoting some international development

Pax World is a no-load, diversified mutual fund designed for those who wish to develop income and to invest in life-supportive products and services. IRA and Keogh plans available. Minimum investment \$250.

* Pax World Fund is the only mutual fund in the nation affiliated with a Foundation that, for eight years, has supported tree planting in areas of the deforested Third World. This is not a solicitation in those states where the securities have not been qualified.

A prospectus containing more complete information about PAX WORLD FUND, including all charges and expenses, will be sent upon receipt of this coupon. Read it carefully before you invest. Send no money.

To: PAX WORLD FUND, INC.
224 State Street
Portsmouth, N.H. 03801

- Regular Account
- Send IRA Packet
- Simplified Employer Pension Plan
- 403 (b) Pension Plan

Please send me a free prospectus and information on Pax World Fund.

Name _____

Address _____

City, Zip _____

Occupation _____

Telephone No. Day _____ Evening _____

SI-2

A Panacea Falls Apart

Degradable plastic, touted by many in industry as an answer to our garbage ills, is just something else to worry about.

Stewart Wills

THE PEOPLE OF Minneapolis were fuming. Not only had the city's garbage-disposal costs nearly tripled in a year, but the locals—long avid recyclers of glass and aluminum—saw their food packaging steadily shifting to mostly nonrecyclable plastic. Result: The city council unanimously approved an ordinance that by this June will ban all food packaging that isn't returnable, recyclable through the city's curbside-pickup program, or made of degradable materials. Since its passage early last year, says Bill Barnhart, government-affairs representative for Minneapolis, some 300 localities nationwide have expressed interest in the ordinance.

"This is waste-stream management at the gut level," declares Barnhart. "We're telling businesses that before they can put packaging on the market, they've got to figure out how we'll get rid of it."

That kind of thinking has an \$85-billion industry shaken up, for never has the public image of plastics been worse. The trade is quick to note that, of the 160 million tons of garbage that Americans churn out yearly, plastic products constitute about 7.3 percent by weight, a seemingly reasonable amount. But they may account for two to three times that percentage by physical volume, a much more important variable when it comes to increasingly scarce landfill space. Further,

plastics are the fastest-growing component of our trash: Since 1960, while America's total solid-waste tonnage has roughly doubled, plastic waste has increased by a factor of 20. And more than half the plastic now discarded is throwaway packaging.

This pileup means money in the coffers of one tiny industry segment: the makers of so-called degradable plastics. Although degradables make up less than 1 percent of the total plastics market, and typically cost more than ordinary plastics, consumers are snapping them up. Sales of RMED International's degradable diaper, Tender-Care, burgeoned more than sevenfold in the fiscal year that ended in September 1989. The company woos its clientele with the slogan "Change the world one diaper at a time."

Degradable plastics come in several varieties, but the most ballyhooed mixture uses cornstarch to bond conventional plastic polymers. In theory the product degrades as the cornstarch is attacked by micro-organisms in the

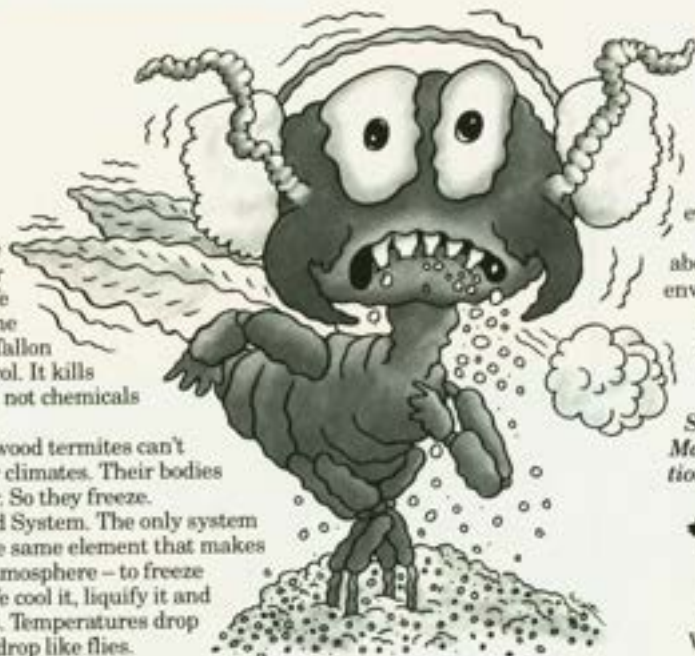
We Kill 'em With Coldness.

Finally, someone has developed a termite treatment that's safe for people, pets, plants, safe for the whole planet: The Blizzard System from Tallon Termite and Pest Control. It kills termites with coldness, not chemicals or toxins.

We discovered drywood termites can't survive extreme winter climates. Their bodies contain too much water. So they freeze.

Enter The Blizzard System. The only system that uses nitrogen—the same element that makes up 80% of the earth's atmosphere—to freeze termites on the spot. We cool it, liquify it and pump it into your walls. Temperatures drop to minus 20°, termites drop like flies.

Then—poof—the nitrogen just



evaporates. It's that easy.

If you'd like to find out more about the simplest, smartest, most environmentally sound way to eliminate termites, call us about The Blizzard System. We're the only ones who have it.

Serving California from Santa Maria to San Diego. For information: 213-422-1131.



We kill 'em with coldness.
Not chemicals.™

PERMANENT PLEASURES



The Compact Edition of The Oxford English Dictionary

for \$32.95 (Pub. price \$250)

"The most complete, most scholarly dictionary of the English language"—*The Christian Science Monitor*. Through photoreduction, the original 13-volume set has been reproduced in this two-volume *Compact Edition*. A Bausch & Lomb magnifying glass is included.



BOMC Modern Classics

for \$24.95 (Club prices total \$150)

Treat yourself to 10 of the most critically acclaimed books of the past half century, combined in one set. Produced especially by Book-of-the-Month Club, each hardcover volume re-creates the publisher's original edition and will make a lasting addition to your library.

Set includes: *All Quiet on the Western Front*, *Appointment in Samarra*, *The Big Sky*, *Catch-22*, *The Day of the Locust*, *A Death in the Family*, *In Cold Blood*, *A Moveable Feast*, *The Spy Who Came in From the Cold* and *The White Nile*.

Choose one of these fine works and save up to \$290.

You simply agree to buy 4 books within the next 2 years.



The Encyclopedia of Philosophy

for \$24.95 (Pub. price \$225)

Regarded as the most comprehensive encyclopedia of philosophy ever published, this superb set—compiled in collaboration with the world's foremost philosophers—encompasses aspects of ancient, medieval, modern, Eastern and Western thought. The four volumes represent an essential aid for students and a rewarding reference source.



The Times Atlas of the World Seventh Comprehensive Edition

for \$29.95 (Pub. price \$49.95)

"The best atlas available in English"—*The New York Times*. The only atlas printed in 8 colors for clear reading of geographic and political features. This volume contains 292 pages of color maps and a 277-page index with over 200,000 entries.



The Story of Civilization by Will and Ariel Durant

for \$29.95 (Pub. prices total \$335.45)

For almost half a century Will and Ariel Durant traced the continuity of world history—the religions and philosophies, the political and economic tides, the arts and sciences, the customs and

conquests—to show the foundations of society today. A Book-of-the-Month Club exclusive for almost 50 years, the Durants' illustrated masterwork is history come alive.

Facts About Membership. As a member you will receive the *Book-of-the-Month Club News*® 15 times a year (about every 3½ weeks). Every issue reviews a Selection and more than 150 other books, which are carefully chosen by our editors. If you want the Selection, do nothing. It will be shipped to you automatically. If you want one or more other books—or no book at all—indicate your decision on the Reply Form and return it by the specified date. *Returns Privilege:* If the *News* is delayed and you receive the Selection without having had 10 days to notify us, you may return it for credit. *Cancellations:* Membership may be discontinued, either by you or by the Club, at any time after you have bought 4 additional books. Join today. With savings and choices like these, Book-of-the-Month Club is where book lovers belong.

BOOK-OF-THE-MONTH CLUB®

Book-of-the-Month Club, Inc., P.O. Box 8803, Camp Hill, PA 17011-8803

© 1990 BOMC

A437-3-0

Check one box only.

952 BOMC Modern Classics \$24.95

905 Compact OED \$32.95

946 Times Atlas of the World \$29.95

963 The Story of Civ. \$29.95

907 Ency. of Philosophy \$24.95

Please enroll me as a member of Book-of-the-Month Club and send me the item I have checked at left, billing me for the appropriate amount, plus shipping and handling charges. I agree to buy four more books during the next two years. A shipping and handling charge is added to each shipment.

Name _____ 0-64
(Please print plainly)

Address _____ Apt. _____

City _____

State _____ Zip _____

Prices shown are U.S. prices. Outside the U.S. prices are generally higher. All orders subject to approval.

soil. Agribusiness giant Archer Daniels Midland (ADM) sells a cornstarch-based agent, PolyClean, that includes an "oxidative component" said to attack the plastic molecule as well, breaking it into pieces tiny enough to be consumed by bacteria. The company claims that the whole process takes three to five years, compared with some four centuries for ordinary plastics. At present PolyClean is used mainly in diapers, grocery sacks, and

composting bags, but ADM executive Martin Andreas envisions it in milk jugs, motor-oil bottles, even the ubiquitous plastic-foam cups. "I've never seen a product that has as much instant sizzle and reaction on the part of the public," he says.

That popularity worries many environmentalists, who question whether these products really do break down in landfills. Although the public tends to view landfills as vast compost

heaps, the sites are very poor places for biological activity, where even naturally degradable items such as newspaper often take decades to waste away. Critics suggest that the new plastics, which usually require light, oxygen, and moisture to degrade, would fare little better in a landfill's dark depths.

Even worse could be what happens if degradable plastics do perform as advertised. Susan Mooney, a scientist with the Environmental Protection Agency (EPA), points out that when plastic breaks down into tiny bits, more surface area is exposed to the soil. That in turn increases the possibility that heavy-metal pigments and toxic organics used as colorants, plasticizers, and stabilizers could leach out.

Andreas of ADM views these concerns as outdated. He cites as evidence a recent commercially sponsored study by the University of Missouri concluding that polyethylene film laced with ADM's starch breaks down into nontoxic waxes, even in landfill-like conditions. The problem, say environmentalists, is that virtually all such research has been underwritten by private industry, with no government standards to regulate the many technologies now rapidly coming to market. The very definition of degradable remains a gray area, notes Mooney of the EPA, who believes that many of the new products may really only disintegrate or deteriorate. "We're all talking out of different dictionaries," she says.

Meanwhile, several localities and some states, grappling with their mounds of garbage, have passed laws that could promote degradable plastics. Several such bills are also threading through Congress, most notably a measure sponsored by Senator John Glenn (D-Ohio), which unabashedly sets out to boost demand for degradables, particularly the cornstarch-based variety.

The driving force behind such legislation may be more agricultural than environmental. When introducing his bill, Glenn talked as much about the farmer's plight and new markets for cornstarch as he did about the garbage

THE SOUTHWEST IS OUR CLASSROOM



The educational journey here may take you to remote parts of the Grand Canyon, the Sea of Cortez, and to many other parts of the world. It will also take you within yourself, and into the vast world of thought, knowledge, and learning. For more information write to the:

Director of Admissions
PRESCOTT COLLEGE
220-B Grove Avenue
Prescott, Arizona 86301
(602) 778-2090

Prescott College is accredited by the North Central Association of Colleges and Schools. Prescott College, a non-profit organization, does not discriminate on the basis of race, color, sex, age, national or ethnic origin, or handicap in the administration of its educational policies or programs.

problem. Jeanne Wirka of the Environmental Action Foundation (EAF) charges that Farm Belt politicians are being "massively lobbied" by agricultural interests. As a result, she suggests, many members of Congress "aren't really thinking about the solid-waste crisis. They're thinking about corn."

Perhaps the biggest objection to degradable plastics is that they foster a consume-and-dispose mentality rather than a conservation ethic. Manufacturers sometimes make the opposite claim, noting that degradable products conserve nonrenewable petroleum, the raw material of plastics, by replacing it with renewable corn. But, points out Doris Cellarius of the Sierra Club's national Hazardous Materials Committee, "The amount of cornstarch in these biodegradable plastics is really small," typically 6 percent or so. "There's still a lot of petroleum in there." To many environmentalists it makes more sense to recover that resource through recycling than to let it dissipate in a landfill.

Degradable plastics could also spell trouble for recycling efforts, both by complicating separation of recyclables and by sowing complacency. As the EAF's Wirka observes: "It's a lot easier for environmentally conscious consumers to purchase a product that they think will disappear than to separate their plastics in a curbside bin."

Not surprisingly, petrochemical companies, desperate for something to burnish their environmental image, have also embraced recycling. Practically all the big names in the industry have recently announced recycling ventures of one kind or another. Du Pont, for example, plans to set up five plastics-recycling plants with a total annual capacity of 200 million pounds.

But plastics recycling still has far to go. Right now only about 1 percent of the nation's plastic waste is recycled, virtually all of it polyethylene terephthalate (PET) and high-density polyethylene. Those are the resins found in soda bottles and milk jugs, easily identifiable items that fetch top prices in the scrap market. The recy-

cling potential of other, lower-value resins remains an open question. The packaging industry itself hasn't helped matters. It's pushing complex mixtures of materials that, if they can be recycled at all, can go only into a low-grade "plastic lumber" used for such items as park benches and boat docks—limited markets at best.

Such kinks could well be worked out over time; plastics recycling and degradable polymers are both still in

their infancy. But a better long-range solution, suggests the Sierra Club's Cellarius, is simply to cut back on excess packaging, plastic and otherwise, and to encourage products that can be reused rather than tossed in the garbage pail or recycling bin. The key, she declares, is "to avoid the whole throwaway system." ■

STEWART WILLS is a freelance writer and editor in Brooklyn, New York.

THE 1990s— THE DECADE OF ENVIRONMENTAL ACTION

You can take part!

By investing in Freedom Environmental Fund, you can participate in what may be the world's next great growth industry, while your dollars work to create a healthier quality of life throughout the world.

To get more information on the new Freedom Environmental Fund, call us at 1-800-333-2327, ext. 2406 or 2480 or complete the coupon below and return it to:

Bear, Stearns & Co., Inc.
Thomas Brazil/David Chlapowski
One Federal Street
Boston, MA 02110

**FREEDOM
ENVIRONMENTAL
FUND**

YES, I would like a Prospectus containing more complete information, including charges and expenses, for Freedom Environmental Fund. I'll read the material carefully before investing or sending money.

**Combining Socially Responsible Investing
With a Dominant Growth Opportunity for the 1990s**

Name

Address

City State Zip

Home Telephone Business Telephone

My Investment Executive at FEF 073 889

Wildlife Refuge



Coated nylon skin resists punctures, keeps you high and dry.

High capacity Delrin® valve makes self-inflating and deflating virtually effortless.

Patented bonding technique prevents air displacement, assures support and sleeping comfort.

Thicker foam puts more insulation between you and the ground, so you stay warmer.

Therm-a-Rest, the best selling self-inflating mattress in the world, is heaven on earth. Because it's warm, comfortable, and made so well it's guaranteed for life.

Therm-a-Rest. When you don't want anything on earth to come between you and a good night's sleep.

For details and dealers write: Therm-a-Rest, Dept. S, 4000 1st Avenue South, Seattle, WA 98134
©1990 Cascade Designs, Inc.

The Original
THERM-A-REST
For the rest of your life.

IN DEPTH

POPULATION

Lowering global birthrates requires a mixture of political, economic, and cultural savvy. Perhaps the first step is for the world's wealthy nations to wake up to the problem.

Growing, Growing, Gone

Paul R. Ehrlich and Anne H. Ehrlich

REMARKABLY LITTLE has been accomplished in population control in the 20 years since *The Population Bomb* appeared. Global population growth has slowed a little, but nearly all of that slowdown is due to fertility reductions in two principal regions: China and the industrialized West. A few other developing nations have achieved significant fertility declines, but most are growing as rapidly as before.

Halting population growth in less developed countries will be much harder than in industrialized nations, for several reasons. Because these populations contain huge numbers of young people, to end growth quickly (except through high death rates), completed-family sizes must drop well below replacement—almost to the vicinity of one—for a period of time. That is what China embarked on with its one-child-family program, and it is no trivial task. Collectively, the developing nations (excluding China) now have an average family size of 4.8 children, so a decline of more than three offspring per family is required.

Children are highly valued for powerful economic reasons in peasant societies—a factor that has been a barrier to family-planning success in many developing nations. Children are needed as a source of labor or income while young, and as social security in their parents' old age. In societies where as many as 25 percent of all children die before reaching their fifth birthday, large families are seen as

necessary to ensure that some will survive to be adults.

Today more children survive than in the past, but infant mortalities in the poorest nations are still high by our standards, and the compensating tradition persists. Poor farmers with large families end up with several sons among whom they must divide their land. A few generations of subdividing leads to farms that are marginal or submarginal in size or quality. Poor people don't have the luxury of long-range planning. Where food is going to come from today, this month, and this year are problems for *now*. The size of future farm plots is beyond today's planning horizon; the sons must worry about that later.

Sons help work the farm or they go to the city to find work and, when possible, send money home. In the absence of a social-security system, sons are the principal hedge against starvation in one's declining years. Small wonder family planning has had little impact in much of the developing world, where both economic pressures and the traditions they have shaped (often codified in religions) are strongly pronatalist. The route to successful population control in less-developed countries is through changing these fundamental attitudes, and the best way to do that is to alter the conditions that created the attitudes in the first place.

Other problems, of course, must be overcome. In nations with primitive medical, transport, and communications systems, simply extending family-planning programs to remote rural

areas can be very difficult. In the past the motives of aid donors wishing to provide population-control assistance have been suspect, and often with good reason when racism or other prejudice has been behind their actions. Corruption among local officials dispensing aid is also a serious problem.

Far too much time has been wasted waiting for what was long believed to be an automatic demographic transition—a decline of birthrates as a result of industrial development. And far too many development advisers have grossly overestimated the carrying capacities of less-developed regions.

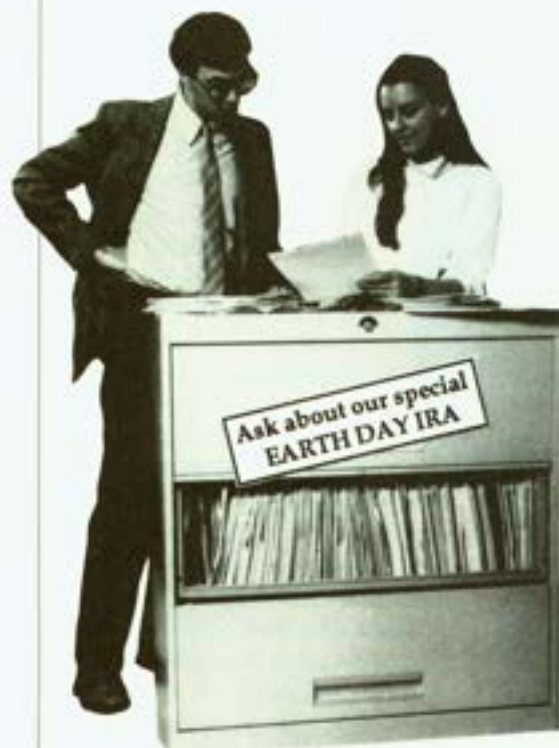
Faith in the demographic transition as an inevitable consequence of "development" has proved to be a snare and a delusion, in part because development was viewed as synonymous with industrialization. Because fertility reduc-

tions occurred in Europe and North America more or less in tandem with industrialization, it was blithely assumed that the latter caused the former. More recently, a closer examination of both processes revealed that in fact industry *per se* had little to do with lowering birthrates.

Indeed, the "just aim for development and the population problem will automatically take care of itself" proposition will not bear close scrutiny. Fertility rates generally are lower in more developed nations, but so are rates of illiteracy and malnutrition. Would those who recommend waiting for the demographic transition to solve the population problem also advise taking no direct action to educate or feed people while pressing for economic development? Of course not, because they know that literacy and a satisfactory diet can be achieved by ap-

propriate programs in the absence of high levels of per-capita income, and there are no taboos against such efforts (as there often are in the case of programs to decrease fertility).

According to demographic-transition theory, as per-capita incomes rise people tend to substitute consumer durables (automobiles, refrigerators, TV sets, etc.) for children. But if population growth among the poor prevents that rise in income, the demographic transition simply wouldn't occur. And if incomes rise in spite of the population growth, what exactly are the terms of exchange between goods and children? Will the average Indian have to consume as much as an average Canadian before Indian fertility rates will drop to the Canadian level? The result, if a rich level of consumption were achieved by the world's 4 billion poor, would be an environ-



THERE COULD BE MORE POLLUTION IN THESE FILES THAN ANY PLACE IN THE U.S.

That's because we run the largest socially responsible money market fund in the U.S. We've found that a growing number of people care a great deal about what their money is doing while earning money market rates.

Among other things, our shareholders don't want it used by companies that have a history of environmental pollution. So our researchers keep these detailed records and screen out violators.

Our investments also exclude nuclear power producers, major military contractors and anyone with South African connections.

This means a lot of research, and a lot of record keeping, but it also means an investment for you as clean as the world you'd like to live in.

Call Us **1-800-533-3863**

WORKING ASSETS MONEY FUND

SC50

230 California Street, San Francisco, CA 94111

Please send me a free prospectus and information on how to invest in the Working Assets Money Fund, its objectives and expenses.

Name

Address

City State Zip

Telephone ()

This fund is available before our next \$1,000 investment.

Printed by Working Assets Limited Partnership.

WORKING ASSETS MONEY FUND
THE LARGEST SOCIALLY RESPONSIBLE MONEY MARKET FUND IN THE U.S.

mental catastrophe of epic proportions.

In recent decades those wed to demographic-transition theory have had to ignore fertility declines that occurred in some developing countries with little or no industrial development (Sri Lanka, Costa Rica, and China, for instance) and failed to occur in others that had made progress in industrializing (Brazil and Mexico).

turned out that other factors were much more important in the fertility equation; not too surprisingly, they are related much more directly to women and families than to overall development. The critical prerequisites to reduced fertility are five: adequate nutrition, proper sanitation, basic health care, education of women, and equal rights for women.

care and sanitation, while men usually use an education to earn a better income. Improving the home situation reduces infant and child mortality, making women and men more receptive to the idea of smaller families. And the women's education makes them more open to contraception and better able to employ it properly. Finally, when women have sources of status

other than children, family size often declines.

Now we know that population growth in poor nations can be ended humanely, but is it too late? Despite the time that has been lost, the developing nations are ahead of the rich ones in at least one important respect: Most of them have committed their societies to reducing birthrates. Nearly all developing nations now have family-planning programs, and many of them have set a goal of ending population growth (but, except for China, not shrinkage—yet).

There is, of course, great variation among nations in the degree of commitment to their family-planning programs. But in recent years the commitment has tended to deepen, especially as other countries have witnessed the proliferating environment/resource problems plaguing Africa south of the Sahara. Most important, government officials in the affected Af-

frican nations have begun to shake off their deep-rooted traditions and take population control seriously.

Meanwhile, the United States and most of the other developed countries remain in a demographic dream world, failing to recognize the impact of our gross overpopulation on our own nations' environments and resources, and on the planet as a whole.



WILLIAM CONE

The connection between per-capita gross national product (GNP) and fertility was essentially nil, although development experts had asserted for years that the way to reduce birthrates was to increase the average income.

Part of the answer was that the benefits of industry and increased incomes had not been equitably distributed within the societies in question. It

The first four factors reduce infant mortality, allowing a reasonable expectation that a given child will survive to adulthood. Female education is an especially interesting and in some ways the most unexpected finding. Women will apply even a few years of schooling to improving life for their families by providing more nutritious, balanced meals and better home health

Rich nations have developed an economic system that increasingly depends on consuming humanity's stored inheritance, but which provides very unequal access to it. It is a system that has encouraged humanity to reach an astonishing level of overpopulation.

It is a temporary game: Serious consequences arising from such irresponsible behavior will sooner or later overtake us. There is no hope for saving civilization unless the rich quickly begin to institute programs aimed at speeding population shrinkage and more sensible policies of resource utilization at home.

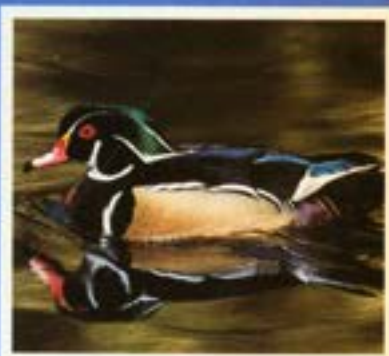
People in poor nations are very aware of our role in generating the global environmental threats that loom over us all—of our profligate use of energy and other resources. They can hardly be expected to listen to us telling them they must have fewer children if we still have no population policies whatsoever except to restrict immigration.

So rich nations need to establish population policies and make it clear that stopping growth is the first goal, followed by population shrinkage as soon as possible. They could also usefully launch a wide-ranging public discussion, with participation by scientists who are familiar with global problems and limitations, as well as by social scientists who can contribute ideas on how effective social policy can be developed. The central question is what kind of society each country should have one or two centuries from now. These discussions could be a beginning of planning to realize those goals. The discussions should involve many countries, including at some stage the developing nations.

A model for this process might be the international effort to address the depletion of the stratospheric ozone layer, one of the simpler problems in the whole knotty complex connected to overpopulation. The discussion of ozone depletion began among scien-



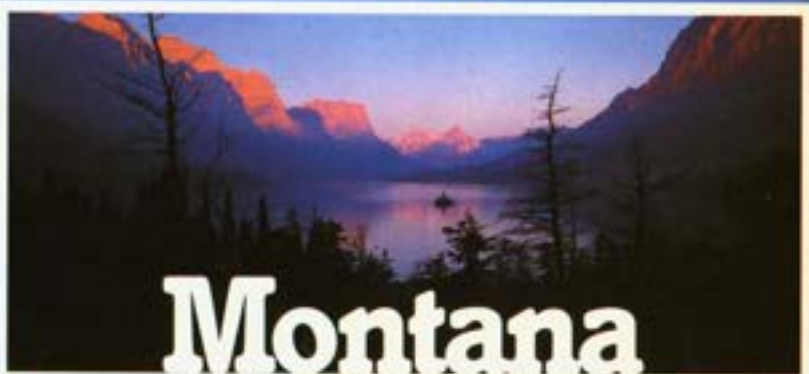
There's no telling



who you might meet



in America's Natural Park.



MAIL COUPON TO:
Travel Montana
Room 023
Deer Lodge, MT 59722
1-800-541-1447

Unspoiled, unforgettable.

From the grandeur of Glacier National Park to the wonders of Yellowstone, you'll find friendly faces and spectacular places in Montana. Send for your FREE vacation guide, lodging/camping guide and highway map.

Name

Address

City State Zip

Allow 3 weeks for delivery or enclose \$2 for First Class mail.

The Club's Own Sierra Lodge ...



... provides a
great vacation spot
in the heart of
outdoor fun...

- bicycling ■ hiking
- kayaking ■ climbing
- rafting ■ windsurfing
- spreading out on the
back lawn or holing
up in the library.

...at low cost

- Low summer rates
include two hot
meals and bag lunch.
- Summer classes &
other programs. Call
or write for brochure
(available early
March).
- Lodge is rustic, re-
laxed, & coopera-
tively-maintained.
- Families & groups
welcome.
- 170 miles east of S.F.
Bay Area.

**For information
& reservations,
call or write.**

CLAIR TAPPAAN LODGE
(916) 426-3632

PO. BOX 36 • NORDEN, CA 95724

A SIERRA CLUB TRADITION SINCE 1914

tists and widened to include the environmental community, and then policymakers. At first it was limited to Western nations, then expanded to the Warsaw Pact countries, and finally to the developing countries.

Even when the developed nations put sensible population policies in place, they will be obliged to expand their assistance to poor countries, both to help curb their population growth and to achieve sustainable development. As is surely clear from the foregoing, the poor can't do it without help; even the highly regimented Chinese require technological aid from rich countries if they are to have a chance for even moderate progress in development. And why should the poor go it alone? The rich played a major role in putting the poor in their present dilemma. Moreover, the rich stand to save their own hides by helping to resolve it.

The flow of aid from rich to poor right now is disgustingly small. The record donor, Norway, gives just 1.12 percent of its GNP, the Netherlands 0.98, Denmark 0.89, and Sweden 0.87. Among Western nations the United States is tied with Ireland for most niggardly: We give only 0.2 percent of our GNP.

In recent years, Japan's foreign-aid contributions have risen dramatically and have broadened in scope as well. Originally, most Japanese aid went to neighboring Asian nations and was targeted for industrial development. More recently, donations have gone to other poor countries and have included rising amounts for environmental protection. The Japanese are now way ahead of the United States in foreign-aid generosity in proportion to their wealth and may soon close the gap in dollar amounts.

In population assistance, the largest dollar amount given in 1989 was by the United States—\$197.9 million. That's about one-third the cost of a single, militarily useless Stealth bomber. Na-

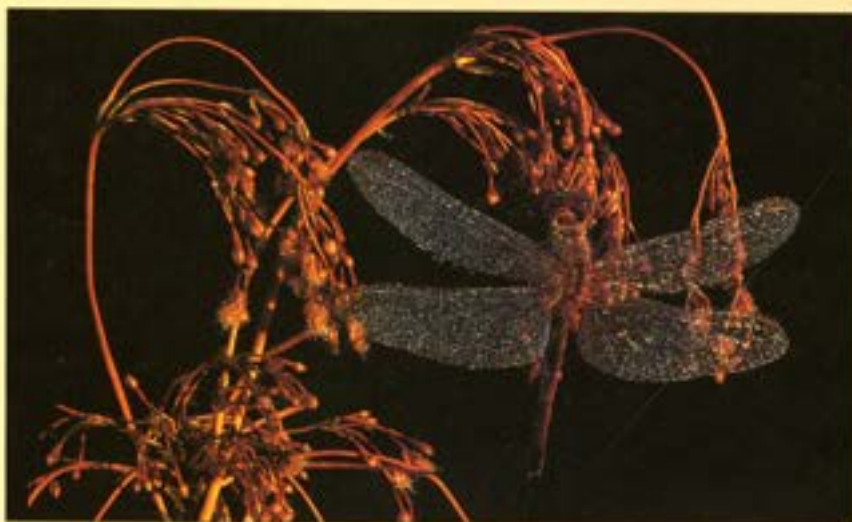
tions like Norway and Sweden give proportionately much more population aid. That type of aid, properly given and targeted, is the most necessary of all—although it is only a small percentage of all economic-aid donations. *Washington Post* columnist Hobart Rowan had the courage to say it right out: "It's time to face facts: Third World aid without birth control is like trying to pour water uphill. . . . The reason for the absence of honesty on this issue is no secret: Most officials panic at the thought of the political backlash from the Catholic Church in poverty-stricken areas of the Third World."

When industrialization began in Europe, obviously there was no competition from other regions, nor was Europe anyone else's source of raw materials or sump for surplus production. When the United States and Japan emerged as industrial powers a century ago, the world was still spacious enough for the newcomers to follow the European pattern. They therefore also sought to bottle up large pieces of the nonindustrial world as resource and marketing preserves. The "Third World" of today, by and large, consists of those formerly bottled-up lands whose infrastructures were formed not primarily for their national or regional benefit, but to serve the metropolitan industrial powers.

In short, citizens of rich nations will now have to pay for their greed and several centuries of their forebears' greed. But by paying the price, they will be buying a livable world for our children, grandchildren, and their descendants. ■

PAUL R. EHRLICH is the author of *The Population Bomb* (Ballantine, 1968) and several other books. ANNE H. EHRLICH is an author and biological researcher at Stanford University. This article is excerpted from the Ehrlichs' book *The Population Explosion*, to be published by Simon & Schuster in April.

THE
1990
SIERRA PHOTO CONTEST



"DRAGONFLY AND BUR REED," DONALD JOHNSTON, FIRST PLACE (COLOR), "WILDLIFE," 1989

Through its annual photo contest, *Sierra*, the national magazine of the Sierra Club, recognizes the contribution that photographers have made toward the protection of our environment. Last year's contest brought in entries from more than 2,000 photographers; we expect another record-breaking year in 1990. The winning photographs will be published in *Sierra's* September/October issue, then displayed at the Sierra Club's headquarters in San Francisco.

CATEGORIES:

- *Patterns*: Nature as designer, weaver, or abstract artist.
- *People*: Our species at play, at work, or otherwise in accord with the natural world.
- *Horizons*: Give us your sunsets, your vistas; anywhere heaven meets Earth.
- *International*: Images of nature from beyond the U.S. borders.

PRIZES

- Grand Prize: A Nikon N4004S 35mm SLR camera with an AF Zoom-Nikkor 35-70mm f/3.3-4.5 lens and a versatile all-terrain bike, the Sedona, from Giant Bicycle.
- Eight first prizes: Nike's Baltoro High lightweight cross-trainer boots with EVA mid-sole and polyurethane sockliner.
- Eight second prizes: a special-edition folding knife from Buck Knives.



SUBMISSIONS

No more than two color transparencies and/or two black-and-white prints may be submitted in any one category (each category will be judged separately for color and black-and-white). Either originals or high-quality duplicates are eligible as color entries, but prizewinners must provide originals for publication. No color prints or color negatives from print film will be considered. Black-and-white entries must be unmounted prints no larger than 11 x 14.



ELIGIBILITY

The contest is open to all amateur and professional photographers. Sierra Club staff, their immediate families, and suppliers to *Sierra* (including photographers whose work we have published since 1985) are not eligible. Previously published work, photos pending publication, or photos that have won other contests are not eligible. Wood where prohibited.



HOW TO ENTER

All entries must be accompanied by *Sierra Magazine Photo Contest Submission Forms*. To receive the forms, send \$5 (this serves as your entry fee as well) to *Sierra Photo Contest*, 730 Polk St., San Francisco, CA 94109. No phone calls, please. Entries submitted without the 1990 forms, or with photocopies of the forms, will not be considered. All submissions must be postmarked by midnight, June 1, 1990; we suggest mailing your request for submission materials by May 15, 1990.





THAT SINKING FEELING

BY DONALD SCHUELER

When I was young, I sometimes had dreams that featured New Orleans, my adopted hometown, as a familiar Atlantis drowned by the sea. Whatever the Jungians might make of this, I had at least the comfort of knowing that my subconscious was not alone in its fantasizing. When I mentioned my Atlantis motif to a gathering of friends, one of them recalled a dream of his own in which the city was set upon

**Son of a gun,
we're gonna
have no fun
on the bayou —
if Louisiana's
coastal wetlands
continue to
disappear.**



the deck of a huge barge done up as a Mardi Gras parade float; in fact, the barge *was* a Mardi Gras float, not at all watertight—as it proved by promptly sinking beneath the waves. Another acquaintance, known as Lucy-Sky, recalled one trippy afternoon when St. Charles Avenue filled up with water like a giant aquarium as she was heading uptown on the streetcar. Luckily, the streetcar proved itself more amphibious than the Mardi Gras barge. Immersed but undaunted, it forged ahead with all the élan of the Yellow Submarine. Not to be outdone, a friend who lived in the French Quarter informed us that whenever he listened to Debussy's "Sunken Cathedral" he heard the bells of nearby St. Louis toll-

ing underwater. "Ding-glug," he intoned, "Dong-glub."

We all laughed. In the late sixties it was fashionable to make much of dreams and spacey visions, but none of us thought for a minute that there was anything prophetic in our shared imagery of New Orleans submerged. True, our wonderful old city was eccentrically moored in an indeterminate zone between solid land and water, forever menaced by floods and hurricanes. But she had been weathering such calamities for hundreds of years.

It would have been stretching credulity a little too far to suppose that one day she might actually suffer death by drowning.

Now, more than 20 years later, the watery fate my friends and I once envisioned for New Orleans no longer seems so farfetched. We want to deny it, naturally. Even though there are facts aplenty to alarm us, the real danger seems unreal. San Franciscans, long before last October's earthquake, had no difficulty picturing the disappearance of their city. But here in

South Louisiana we have a hard time admitting that something like that is happening to us. There are no dishes rattling on the shelves, no pictures falling off the walls. The catastrophe is happening quietly. In slow motion.

Still, "slow" is a relative term. Although TV cameras cannot capture the action for the evening news, Louisiana's coastal plain has been noiselessly disappearing into the Gulf of Mexico at the staggering rate of 50 square miles a year. An area of wetlands larger than Rhode Island has al-

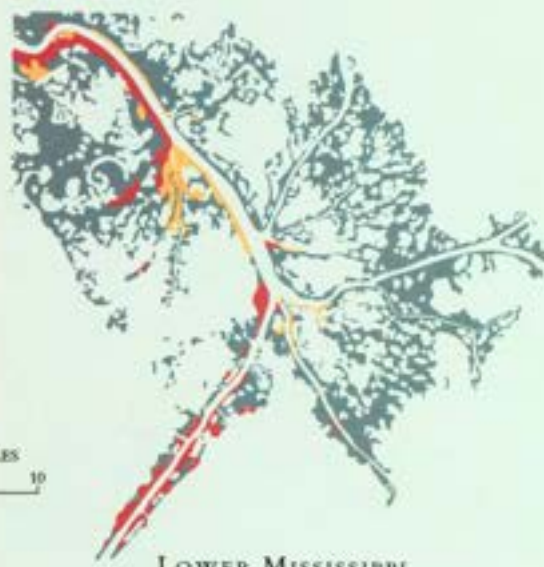
LOUISIANA'S CRUMBLING COAST

The U.S. Fish and Wildlife Service has documented a dramatic loss of wetlands along the Louisiana coast. In the area shown below, wetlands shrank by 48 percent over 27 years, from 183,000 to 96,000 acres. Transformed by levees, channels, and dams on its tributaries, the Mississippi no longer delivers the rich sediment that once supported these marshes. As a result, says FWS ecologist Carroll L.

Cordes, "They are sinking into the sea." Only upland areas increased during these years, primarily because of dredge material deposited by the U.S. Army Corps of Engineers. A 1988 map is in progress, but Cordes expects it to be less dramatic than those below because oil activity and the shrinking process have slowed in Louisiana's coastal zone. "The most vulnerable marshes are gone," he says.



LOWER MISSISSIPPI
RIVER DELTA, 1956



LOWER MISSISSIPPI
RIVER DELTA, 1983

SCALE IN MILES
0 5 10

■ MARSH ■ FORESTED WETLANDS ■ UPLANDS □ OPEN WATER

SOURCE: NATIONAL WETLANDS RESEARCH CENTER, U.S. FISH AND WILDLIFE SERVICE, SLIDELL, LOUISIANA



C. C. LOCKWOOD

Among the highly valued products of Louisiana's coastal wetlands are food and family recreation.

ready been lost in just the last few decades; if the status quo prevails, an additional 1,500 square miles will be gone before the middle of the next century.

Nowadays, when my less dreamy self faces up to the facts and figures—when I really confront the magnitude of this geological vanishing act—I get mad. Where, I ask myself, are all those agencies and organizations that are supposed to care about wetlands? Why aren't they on the barricades, demanding that something be done?

Actually, I already know the answer: The lower Mississippi Valley—Louisiana, Mississippi, and Arkansas—has always been the nation's Cinderella, lowest of the low in the pecking order of political power, prestige, patronage, and environmental clout. The region has already suffered the largest (and least publicized) loss of biological diversity in the United States in the last 50 years: the transformation of its immense bottomland forests into fields of subsidized soybeans. Yet no one on the national scene raised a fuss until most of the damage was already done.

Even that inexcusable loss will rank a poor second in future environmental histories compared with what is happening now in Louisiana's coastal

plain. Statistics are a bore, but because few people know we are talking about the destruction of 40 percent of the nation's coastal wetlands—the single most productive natural ecosystem remaining in the United States—I'll recite a few. Although the Louisiana marshes have shrunk by a third, the remaining 2,300 square miles still offer many blessings:

- They are the nursery for nearly all the commercial fish and shellfish and almost half the recreational fish taken in the Gulf.

- They are the indispensable wintering ground for two thirds of the Mississippi Flyway's migratory waterfowl—more than 5 million ducks and geese. They also offer the first and last rest station for millions of migratory songbirds crossing the Gulf, as well as a permanent home to the largest populations of wading birds, shorebirds, and southern bald eagles outside Florida.

- They supply, by far, the nation's largest harvest of wild furs and hides, including muskrat, mink, otter, nutria, and alligator.

- They protect New Orleans and scores of small coastal communities from the full fury of devastating tropical hurricanes.

- To their loss and our gain, they and

their offshore waters produce about 20 percent of the nation's oil and almost 30 percent of its natural gas.

So much for all that. A list of assets is useful when federal money is being handed out, but it doesn't define the real value of the Louisiana marshes any more than a bank balance defines a human being. They are, above all else, a bountiful habitat for a multitude of species that waddle, creep, fly, swim, or walk—including, most blatantly, our own. Indeed, I can think of no other place in the United States where a natural ecosystem continues, on such a large scale, to affect the cultural attitudes of its human inhabitants.

The influence is hard to quantify. But every perceptive traveler in the South knows that when you hit the coastal plain it's like crossing from Switzerland into Italy: For better and worse, you have entered a less anal-retentive country. People down here are no better than they should be, but they seem to know how to enjoy themselves more than most other people in most other places do. The influence of ethnic cultures—Cajun, Creole, and so on—is supposed to account for the easygoing lifestyle. But, the way I see it, ethnic makeup has little to do with it. Thanks to the marshes, no



A woman relaxes beside the Pearl River.

one, not even the poorest of the poor, has had to worry about an insufficiency of nutritious, and delicious, food. We have shrimp, crabs, oysters, redfish, snappers, speckled trout, channel cats, you name it—a couple of steps or a couple of miles from our front doors, ready to be cooked in a hundred plain and fancy ways and served on steaming beds of marsh-grown rice. Thanks to the marshes, South Louisianans have always been able to indulge their sociability and their taste for pleasure.

Even in an era of What-A-Burgers and Budget Gourmets, the marshes—mosquitoes and all—continue to define the Good Life, the Easy Life. In legions we ply the waterways in grungy skiffs and lofty yachts; or perch on bridges or sagging piers with crab nets or fishing poles; or wade the Gulf shallows at midnight, brandishing lanterns and flounder gigs; or shiver in the duck blinds on winter mornings, always entertaining the reasonable expectation that we will fill our ice chests—the ones not already filled with beer—with whatever bounty comes our way. And over and over again, in all seasons, we gather in each other's patios, or at rickety neighborhood restaurants, or in the citadels

of haute cuisine, to drink and be merry and eat what the marshes provide.

When we have not taken the marshes for granted, we have thought of them in terms of *our* way of life. Only now, when we are confronted with losing them, does it occur to some of us that they have a lifestyle of their own: complex, changeful, and—ah, that familiar word in the ecological lexicon—vulnerable.

From an outsider's point of view, the marshes are not easy to get to know. You can't ogle them from an overlook, or don your Colin Fletcher-approved boots and hike through them. Unless you know what you're doing, you can't even travel them in a canoe or flat-bottomed boat without losing yourself in a monotonous labyrinth of artificial channels—or worse, getting stuck on a mud flat or in a raft of water hyacinths.

Once you do make their acquaintance, however, they are magical places. They seem spacious, even though, away from the large bays and more trafficked waterways, they offer no wide views of anything but sky. What you notice is what is close around. Ahead, startled egrets, ibis, and yellow-crowned night herons



launch themselves from black willow perches. A nutria, large as a beaver but less work-oriented, mucks around in a bed of wild millet. On the serrated blades of a giant cut-grass, a self-support group of green and squirrel tree frogs keeps safe from ribbon snakes. At the side of the channel a wistful-looking three-foot gator shares his mudbank with three turtles, wishing he were big enough to eat them. Overhead, pelicans pass by, using their wings like oars.



The best times are the early mornings and late evenings. Then the marshes are not only the interface between land and water, but between real and surreal states of being. The world is a mysterious place. One becomes a connoisseur of mists: the dry-ice kind, filming the water like eiderdown; the gauzy-veil variety, spangled with gold dust as the sun rises; the Transylvanian super-special, a wraparound fog in which a passing shrimp boat looms like the spectral Flying Dutchman.



C. C. LOCKWOOD PHOTOS



Water hyacinths bloom near bald cypress in the Atchafalaya Basin (far left). Thousands of acres of bald cypress forests in Louisiana have been wiped out by subsidence and increasing salinity. Above and near left: Crawfish boiling; crawfish boiled.

For good reason the Louisiana marshes are always referred to in the plural. Between dry land and the Gulf, a dozen categories of intermediate wetlands separate the salt marshes from the fresh. All are worth exploring, but like the specialized plants and wildlife that live in one zone or another, I have my preferred habitat. This is the border area where fresh-water begins to shade into brackish marsh. Here is the chance of seeing an otter, or maybe a white ibis—a bird less versatile than its white-faced or glossy cousins, which settle for any kind of marsh as long as it is wet. Here also, because of its diversity, the vegetation is more noticeably subject to seasonal changes. In spring, blue iris and white-blooming bull tongues are the first to appear. Then the grasses emerge—millet, cattails, maiden cane. By midsummer, when the water has receded, they form dense walls six feet high. The marsh canopy is overlaid with flowering vines and legumes—deer pea, lavender ageratum, climbing

hemp weed. Come September, great swatches of marsh marigold burst into flower and the bull tongue blooms again. Then, with the first light frost, the show is over. The grasses are a flattened mat sinking and decaying in the rising winter floods.

In the usual way of the natural world, this process of decay fosters the marshes' life. Trillions of infant marine creatures, among them oysters, shrimp, crabs, and most of the fish species that inhabit the Gulf during their adult lives, come of age in their chosen solutions of salt and fresh water, feeding on a gumbo of rotting marsh grasses—the basic recipe that ultimately produces the glories of South Louisiana cooking.

For thousands of years, the Mississippi has been creating this largest of the continent's marshlands out of soils carried from as far away as Ohio to the east and the Dakotas to the west. Periodically the buildup of its own alluvium obliges the river to find a new outlet to the Gulf. This scene-shifting



RONNY FULLER

In the aerial photo above, the signs of marsh mutilation along the Louisiana coast are all too clear. The drilling rig at right was set up by one of the main culprits in this ecological crime, the petrochemical industry.



C. C. UDENKROD

keeps the geography of the marshes in a perpetual state of flux, with long-abandoned deltas subsiding into the Gulf even as new ones rise from the waves.

Geologically speaking, the spindly lobe of the modern Delta, the Balize, is a mere youngster; most of it has formed since 1718, when Sieur de Bienville sketched his street plan for New Orleans in the Mississippi mud. In the natural course of things, it ought to have a long, expansive life ahead of it. Instead it has become an emaciated shell of its former self in just the last few decades. To varying degrees the same process is at work throughout the coastal plain. Everywhere, but especially in the parishes nearest the Mississippi, open water is displacing marshland. To use the unusually charged terms of scientists studying the problem, the entire Mississippi River Delta is "collapsing," "falling apart," "breaking up."

How can this be? Why is this stu-

pendous piece of land crumbling like a cookie in a bowl of milk? The short answer is familiar to us all by now: What nature giveth, man taketh away. Although the disintegration of the Louisiana marshes occurs in diverse ways, and the blame for it can be spread around, there is just one basic cause: Thanks to human meddling, the Mississippi River is no longer allowed to do what comes naturally—build land faster than other natural forces (storms, minute rises in sea level, and subsidence) can destroy it.

Human meddling has taken various forms. The U.S. Army Corps of Engineers threw the biggest wrench in the works when, 60 years ago, it began to construct levees along the banks of the Mississippi below New Orleans to make its channel more navigable for commercial ships. Hemming in the river intensifies the scouring action of its current, reducing the costs of maintenance dredging for the Corps. Unfortunately, it also assures that billions

of tons of rich sediment, once dispersed across the surface of the marshes, are carried to the edge of the continental shelf, where they sink uselessly into the deep. Deprived of life-giving infusions of freshwater and silt, the fringes of the Delta are unraveled by erosive tides, while the center collapses through subsidence. In effect, the whole system is going down the drain.

What the Corps started, the petrochemical industry has done its best to finish: The big oil and gas companies have sliced the marshes with 10,000 miles of access canals and pipeline ditches. In some areas the spoil banks of these channels prevent the natural "sheet flow" of water across the marshes; in others the channels themselves allow saltwater to penetrate deep into freshwater and brackish marshes, destroying the vegetation.

The Corps has provided yet another killing touch. To accommodate the petrochemical industry, it has gouged





C. C. LOCKWOOD



C. C. LOCKWOOD



C. C. LOCKWOOD

Marsh mists shroud a swamper's houseboat (left). Delta wildlife includes nutria, imported from South America, and white ibis (above).

navigation channels through the coastal plain. Behind the spoil banks of these enormous ditches, tens of thousands of acres of marsh melt away almost overnight, destroyed by impoundment, subsidence, salt intrusion, and the erosive action of water traffic.

Such channels pose a threat to more than the marshes. Straight as Kansas highways, they aim toward human settlement. When a sluggish little hurricane named Juan churned around in the lower Delta four years ago, its unobstructed tidal surge rolled up the Barataria Waterway and right into New Orleans' West Bank subdivisions, swamping small communities en route. If Juan had been a really major storm, there would have been absolute hell to pay.

"What it all comes down to," says Paul Kemp, executive director of the Coalition to Restore Coastal Louisiana (CRCL), "is that we couldn't have devised a better plan for destroying the

wetlands in the Mississippi River if we'd deliberately tried."

Kemp's point is gloomy, but the existence of the CRCL is evidence that, in Louisiana at least, people are beginning to face up to what is happening. The organization is a grassroots coalition representing 85 business, religious, civic, and environmental organizations (including the Delta Chapter of the Sierra Club). In its two-year history it has rallied popular support for a comprehensive plan that, if implemented, could put much of our Humpty Dumpty of a marshland back together again. It has also successfully lobbied for an amendment to the state constitution that dedicates mineral revenues to marsh restoration—from \$5 million to \$25 million a year, depending on oil prices. By Louisiana's hard-up standards that's a lot of money; but everyone realizes it's chicken feed compared with the likely costs of reclaiming the state's wetlands. Nevertheless, insists Dave Soileau, the

governor's coordinator for wetland activities, the money should persuade the federal government of the state's eagerness to do its part in rescuing what is, after all, a national resource.

Federal help—or, for that matter, national support of any kind—has thus far amounted to little more than a kiss and a promise. But the promise elicited from President Bush by state Senator Ben Bagert (R) could be important. In a 1988 letter to Bagert, Bush said, "Wetland preservation is a priority and should enjoy the same level of importance as other responsibilities of the U.S. Army Corps of Engineers."

Even if Bush is in earnest, he will have a tough time forcing the Corps to accept this new responsibility, especially when it involves undoing the agency's own shortsighted handiwork. Soileau, who at one time worked for the Corps, says ruefully, "On average, it may take the Corps 22 years to implement a project. In that time the value of the wetlands lost will exceed the

cost of projects meant to save them."

At this writing, Louisiana's senators, John Breaux (D) and J. Bennett Johnston (D), are trying to speed change with a bill, S.1371, that would (1) set up a Wetlands Restoration Trust Fund using federal revenues from gas production on the Outer Continental Shelf (the lion's share from Louisiana); and (2) require the Corps, in conjunction with other federal and state agencies, to determine the feasibility of marsh-saving projects without playing its usual pork-barrel games with cost-benefit ratios. For Breaux and Johnston, the trick will be to convince Congress of an obvious but unacknowledged truth: The nation's economy, not the state's, has been the chief beneficiary of the exploitation that has ravaged Louisiana's wetlands. Now, if those wetlands are to be saved, the federal Treasury must foot most of the bill.

In theory there are 40 ways to save the marshes, just as there are 40 ways to split the blame for their destruction. Indeed, some marine biologists worry that available funds will be frittered away on a patchwork of "marsh management" schemes, such as stabilization structures and dikes, that would attempt to limit saltwater intrusion or the erosive action of the Gulf. In fact,

only one basic cure exists for the one basic problem. The marshes are dying because they have been separated from the river that built them. They can be revitalized only if the river is given access to them again. Even then, we are not talking about the restoration of the original natural system, or of repairing much of the damage already done. The issue is whether future losses can be offset by future gains.

It *can* be done, if there is the will. And the money. But success will require a sort of "ecological engineering" that is nothing if not grand in scope. The comprehensive plan that the scientists, the CRCL, and Dave Soileau's office have endorsed involves, in the short term, the speedy implementation of several relatively small plans to divert water from the main channel to the marshes, more stringent control of oil and gas operations, and increased diversion of water and sediment from the Mississippi to the neighboring Atchafalaya floodway, the state's only expanding delta system. But the big, long-term projects are the ones that will make the difference. The most necessary, and costly, of them all would be the construction on the eastern side of the Delta of an alternative navigation channel linking New Orleans with the Gulf. Such a

channel, complete with locks and control structures, would free the lower Mississippi of its function as a shipping lane, allowing for massive sediment diversions that would regenerate Barataria Bay, Breton Sound, and the barrier islands that flank the Delta.

Ironically, because some of these projects will have a disruptive effect on the breeding grounds of shrimp and oysters, they may be opposed by a fishing industry that will ultimately lose everything if the measures are not put in place. Even more ironically, the Corps, having just completed its most stupendous boondoggle ever, the \$2-billion Tennessee-Tombigbee Waterway along the Mississippi/Alabama border, now wrings its hands at the thought of spending considerably less than that to save the largest, most valuable wetlands system on the continent.

Down here we tell ourselves that eventually the federal government will have to do *something*. It would not be cost-effective, as Dave Soileau points out, for New Orleans to become more or less an island, inadequately defended against future hurricanes by perpetually subsiding levee walls. Nor would it be cost-effective for the petrochemical industry to allow its vast infrastructure of marsh installations to be swallowed by the Gulf. And most certainly it would not be cost-effective to permit the infinitely renewable marine resources of the marshes to disappear.

Yet, you never know. Time is running out. Even as President Bush pledges "no further net loss of wetlands," here in Louisiana another 100 acres of no-net-loss wetlands are lost between one midnight tolling of St. Louis Cathedral's bells and the next. Those bells may one day toll a requiem as an amiable city, the generous marshes that surround it, and, perhaps saddest of all, a better-than-average definition of the Good Life all go down the drain. ■

DONALD SCHUELER is the author of *Adventuring Along the Gulf of Mexico* (Sierra Club Books, 1986) and numerous travel and environmental articles that have appeared in *Audubon* and *Smithsonian*.

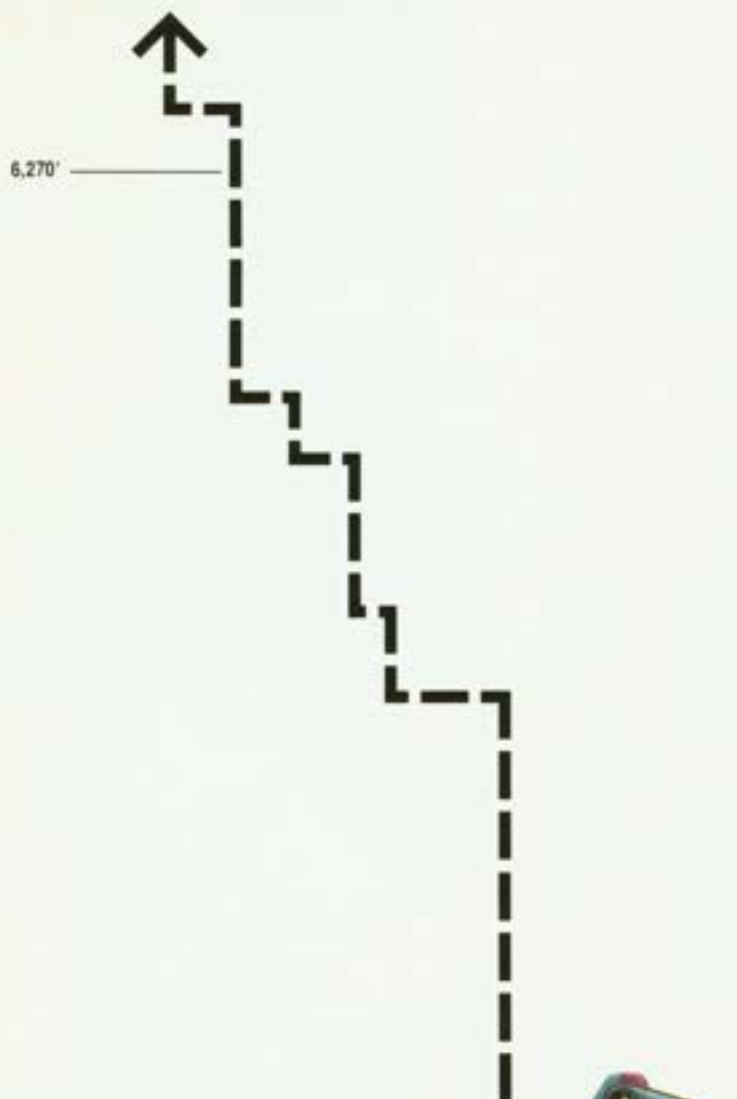
RESTORING AMERICA'S GREAT RIVER

The loss of coastal wetlands is only one of the serious ecological problems facing the Mississippi watershed, a region so vast that few people think of it as a single entity. The area benefits economically and suffers ecologically from producing more agricultural products than any other watershed on the planet. The region also bears the burden of the world's largest offshore oilfield and its most extensive flood-control and navigation project.

The Sierra Club's Gulf Coast, Midwest, and Southern Plains regional conservation committees have made restoring the Mississippi watershed a priority. Readers interested in helping should contact the *Public Lands Committee*, Michael J. Caire, M.D., 221 McMillan Rd., West Monroe, LA 71291, (318) 325-6790; the *Wetlands Task Force*, Keren Ensor Larson, 3909 Polk St., N.E., Columbia Heights, MN 55421, (612) 781-5131; the *Mississippi River Task Force*, Richard Mochow, 871 Kensington Pl., Memphis, TN 38107, (901) 274-1510; the *Coastal Committee*, Vivian Newman, 11194 Douglas Ave., Marriottsville, MD 21104, (301) 442-5639; or the *Agriculture Committee*, Robert Warrick, R.R. 2, Box 11, Meadow Grove, NE 68752.



The glaciers worked hard in New England, leaving lots of little hills behind, but no real great mountains. Mount Washington is the tallest one you can find. And so if you're any kind of self-respecting hiker sooner or later you have to try hiking up all 6,288 feet of it. You start at the bottom, where you read the signs erected by the Appalachian Mountain Club, warning you about sudden shifts in weather and how some of the coldest temperatures ever recorded were recorded on top of the very mountain you're at the bottom of, and then you start hiking through hard woods, then through pines, then through small pines, and then you get above the timber line and finally you're nearing the top of the mountain—the tallest mountain in all of New England you remind yourself—and you're going to celebrate your climb at the top and commune with nature up there and speak with God and enjoy the view of the Presidential Range and the White Mountains and you hike up the last few feet and at the top there's a...there's a...there's a parking lot. A stinking parking lot, with cars and trucks and pouring out of those cars and trucks are people and they're eating hot dogs and blasting radios and walking dogs and smoking cigarettes and they're enjoying the same view you earned by climbing up the entire mountain and all they ever did was drive up the thing. And while this is not to say you should not hike up Mount Washington, maybe you should only go up to around the 6,270 foot mark before you start down.



Baltoro High



A PEDALER'S P A C E

I met Charles Laport years ago while pedaling through Coos County, a wild edge of northern New Hampshire that once was an independent country, with its own president and legislature. I had been out for days, and looked it. My Lycra tights were glued by sweat and filth to my legs. Puddles fed by a quick April thaw had covered man, bike, and gear with a wet slime of black earth. Laport was the only man I saw in six days who looked worse than I did. He had been rummaging in an old barn on his property and had fallen into a hog slop. Abandoned for years, the pit was filled with about a foot of muddy water. It was a stupid thing, he said, since he had built the damn slop himself some 60 years earlier. I met him walking across a narrow road to his house. Saying that we were "mud brothers," he invited me in for a cup of instant coffee.

Laport, a farmer who had given up on farming decades earlier, called his place near the Canadian border "lean country." I asked him why, noting that for the past hour I had been cycling through thick secondary growth already entering the hardwood stage. "There are deer out there," I said, "and beavers, bears, maybe a moose. It doesn't look lean to me."

The farmer grinned, his teeth broken and yellow, as he stoked a cold iron stove with kindling. "I'm talkin' about lean against the modern world," he said in a slow, singsong voice. He was a fifth-generation man of Coos County whose farm, like most up here, was

O N A BICYCLE
TOUR, YOUR THOUGHTS
KEEP TIME WITH THE
LANDSCAPE PASSING BY.

BY DAVID EWING DUNCAN





DeLoess Smith

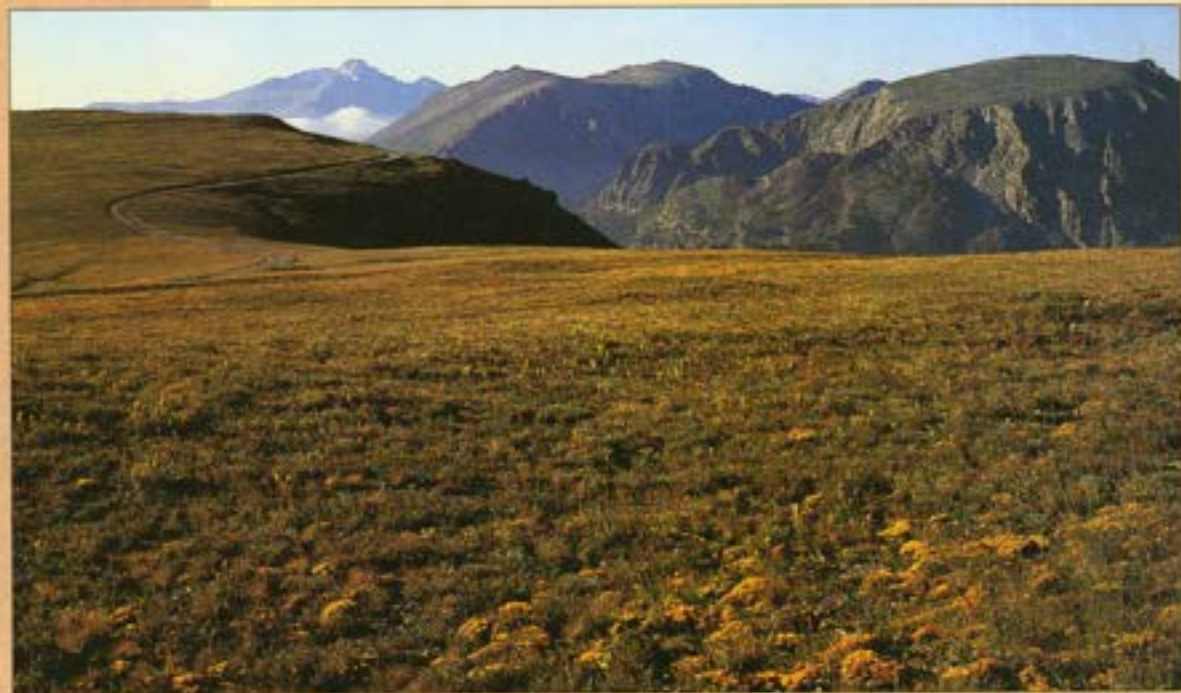
turning wild after two centuries of being organized. "This country is lean on modern things, on fancy things people don't really need. Everything here has its use. The trees and all, and my old house here—it's all lean. There ain't no fat. Only what's needed. Even the junk's turnin' lean." He pointed across the road at the farm's old dairy barns and silos, collapsed into heaps of gray boards and tangles of farm machinery—umber-colored scythes, a twenties-vintage tractor, a horse-drawn plow half-buried.

Charles Laport gave me more than coffee during that afternoon in his warm kitchen. He gave me a name for back roads where I bicycle, which I have come to call "lean highways." Lean because the trees and the farms run right up to the edge of the road, lean because the meat is still walking on four hoofs, lean because everything is weather-beaten and functional, whether it is natural or human-made, though there is a lot of the sort of junk Laport said couldn't be helped: rusted Model A's, abandoned gas islands, a half-crushed mobile home where people still live, huddling for warmth around their TV.

I have no favorite highway. Not in New Mexico, California, the Deep South, or my home state of Vermont. I don't ride to rate this path in West Texas over that state highway in Maine. I ride for the experience, for what I may or may not see, hear, smell, feel, and touch. I ride because I like to

move, but not too fast, and because I like to stop. I ride to absorb things, to shut off my mind or to turn it on. I think about things: global warming, my years spent in Africa, my wife, sunsets. I talk to people—to the only person still living in Redeye, Arizona; to Bert Peasley, one of the last potato farmers in Vermont; to a black man in Georgia who says he was a slave before "the war," though I don't believe anyone could be that old. Other times, I purposely avoid people, stopping to watch a pair of eagles watch me, or because I have found the perfect campsite under a canopy of birch. Each ride has its particular memory, even the quickest rides squeezed in at lunchtime.

I own three bicycles, which seems embarrassing for a man chasing lean. My father, who can remember the days when a boy could wear the same pair of five-dollar sneakers to play baseball and tennis, asked me one day if I were gathering inventory to open a bicycle shop. He reminded me that I used to be happy with an old red Schwinn, a canvas pack, and a pair of pliers. My father was raised in Missouri, the son of a preacher and a farmer's daughter. He is properly modern about most things, but, maintaining a stronger link than mine to the frugal blood of our ancestors, he cannot understand why one bicycle won't do—or one backpack, rain jacket, or pair of gloves. He's got a point, though I insist that I'm going places far beyond the reach of

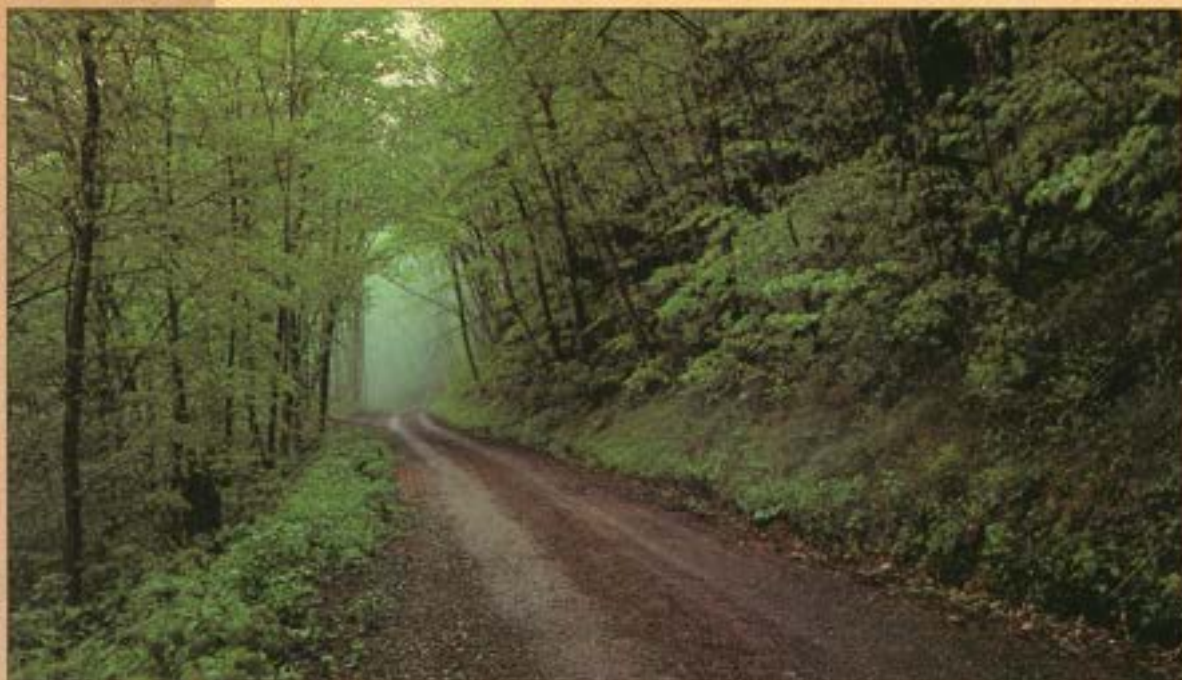


JEFF JONES

COLORADO ■ ROCKY MOUNTAINS

Not for the faint of heart, this high-mountain circuit climbs nearly 12,000 feet and covers about 250 miles. North of Denver, follow state route 14 west along the Poudre River and over Cameron Pass, then head east on U.S. Highway 40 to U.S. Highway 34, which becomes Trail Ridge Road as it traverses Rocky Mountain National Park (above). —Raymond Bridge





MARK E. DUBSON

NORTH CAROLINA BLUE RIDGE MOUNTAINS

Starting from Asheville, cyclists can set out on tours of any length through the hills and mountains of western North Carolina. Take rarely traveled rural roads, or well-known stretches such as the Blue Ridge Parkway, which leads to Great Smoky Mountains National Park (above).—*R.B.*



my old Schwinn. I start to talk about absorption into one's environment, about the power of memories, about the old ex-slave in Georgia, and he stops me.

"What kinds of places?" he asks.

I point at my racing bike, painted blue and gold, slender and beautiful. I tell my father that the racer is for fast, physical rides, a form of relaxation, a method of burning off aggressions and blue moods. The world passes by in a blur, I explain, a rush of the wind, of colors and sensations. I never stop on the racer. This is cycling at its most personal. To ride the racer is to revel in movement for movement's sake, to connect with the pump of muscles and the beating of one's heart. There is something primitive about riding the racer, about the importance of simple, exhilarating motion—though the technology of the bicycle is, paradoxically, the most advanced of my three machines.

My mountain bike, I tell my father, is for wilder places, for splashing about like a child in the mud and bounding up trails. I have ridden the mountain bike across the bush in Africa, up mountains in Appalachia, and across hopeless bogs during mud season in New England. I travel light, carrying two panniers for an overnight or a small backpack for an afternoon. Some mountain bikers ride for the death-defying challenge of bouncing like mogul skiers off boulders, bellowing like rutting antelope. I spend more time off

the bike than on it. I like to reach places and stop—a village on the Serengeti plain, an overview up high in the mountains with just enough space for a tent, a half-frozen waterfall in Vermont. Sometimes I meet up with people—that happened frequently in Africa. At a bonfire one night in Kenya, an aged Nandi warrior told me the story of his tribe's great migration. Another night, I ate roast goat with a Bushman who explained to me the significance of the stars. I seldom plan in advance where I'm going to stop. Mountain biking is random, an excursion to anywhere.

"And what about this mess?" my father asked, frowning at my touring bike, my oldest machine, the one I rode around the world. Panniers gaped open. Equipment and filthy clothing were strewn about and hanging off the bike's crossbar and handlebars. The heap reeked of sweat and campfire smoke. I'd been up north again, pedaling the back roads of New Hampshire.

I told him that touring was what I enjoyed most about cycling, taking off for several days, and occasionally for several weeks, with the stated goal of exploring a particular place, to focus on a destination. The best tours move slowly, to allow maximum absorption, though even the most laid-back cyclist has compulsive moments and wants to make time. I have taken tours on roads that delve deep into the wilderness—in the Green Mountains of Vermont, in the



DAVID MURPHY/ALISTON



CALIFORNIA ■ MOUNT SHASTA

Like a sentinel, Shasta's volcanic cone rises more than 14,000 feet over north-central California. A scenic 275-mile tour circumnavigating the peak follows U.S. Highway 97 and state routes 161, 299, and 89 through three national forests and across the Pacific Crest Trail. —*R.B.*

Himalayas, in the deserts of Africa. I have pedaled in human domains ranging from the Ganges River Valley, where villages follow one after another for days without a break, to the scattered mountain enclaves of central New Mexico, where towns are composed of three or four trailers, a general store, and, without fail, a tavern.

It was hopeless trying to convert my father to life with three cycles, though he is as responsible as Charles Laport or anyone else for teaching me to appreciate lean highways. Dad would call them lean paths, since he is a hiker, but the meaning is the same. Hiking and biking each offer a connectedness to the land, to people, to living. Years ago, when most Americans lived in one place, they knew every inch of their immediate country—the trees, the birds, who lived where. Today we are nomads, always rushing off. My father, who has done his share of moving around, once said that only a stretch of road or trail was dividing him from a deeper understanding of wherever he happened to be. This may be optimistic, because truly learning about a place takes longer than an afternoon. But we have to start somewhere, to take in at least a broad sweep, to absorb enough particulars from enough places to create our own whole.

My place to start is a simple, uncluttered road. It might be anywhere in the world. Lean highways are where the Charles Laports live, the Bert Peasleys, the Nandi warriors.

They are places where no people live, where the sands cover everything or the jungles buzz and steam. The link is in the humbleness of the roadways, in their function, in their steady, pragmatic attitude toward life.

Last spring, I pedaled back to Laport's farm. The rear half of the house had collapsed, joining the farm's other relics. Laport was gone. So was most of the furniture and the big iron stove. Someone had knocked down his mailbox, probably bored teenagers swinging bats from speeding cars, a rural pastime revived by the film *Stand By Me*.

I rode on to Pittsburg, New Hampshire, once the capital of the sovereign state of Coos County, and asked after Charles Laport. I tried the bait shop, the gas station, and the general store, which to my horror had recently been fixed up to look like a "real" general store by new owners from Massachusetts. No one knew what had happened to Laport. His place, they said, was too far from Pittsburg, as if 30 miles away were another world. Later that day, I swear that I saw his old stove, which was a peculiar shape, in the yard of a junk collector. Frank, the owner, was short and thick-waisted. His oval-shaped head and face were covered with white stubble, like a fuzzy melon. Some locals warned me that he was a little off.

Frank said he was sorry, but he knew nothing about the origins of that stove, which was set to one side of several

other stoves lined up in a row on his lawn. "Sometimes," he said, "these boys steal things from the old farms where the people have left. Take things away and leave 'em off here. I don't always know where they come from, which is a shame." He looked at the stove, as if trying to make it talk. I noticed it still was edged in soot from the last time it had been used. I imagined old Laport stoking it up for a final cup of instant coffee. "I'll tell you, though," Frank said, "all this junk has a story behind it. Sometimes I think about the stories, you know. Who used this thing or that." His voice faded out, as though he had caught himself saying something crazy. He seemed bewildered, so I started looking at his junk, which pleased him and brought him around.

His collection seemed entirely random, fragments of lives, like Charles Laport's, that made sense only to Frank. Why had he neatly arranged six faded track-and-field trophies in a bathtub? Why had he nailed ten smashed cans onto the amputated door of an automobile? Maybe he needed these things to feel secure, as if he could be more complete by surrounding himself with the junk of other people's lives. I asked him about the trophies, and he surprised me by having a ready answer. "Those were all won by the Wilson boys," he said. "They were the fastest boys in the history of the high school."

"And the bathtub?"

"That belonged to old Mrs. Wilson, their mother." He grinned, enjoying himself. "And over there, that's the hubcap off Mrs. Wilson's best friend's car. Her name was Wanda. She worked for the city government."

Then, pointing a stubby thumb at my bicycle, he said, "Hey, I'd like to buy that bicycle off yah. Five bucks sound okay?" He pointed at a collection of bikes and a graveyard of rusty bike pieces, arranged in a rough circle. As I was trying to figure out what to say, Frank started to stare at my machine. He stood transfixed for so long that I thought something really had snapped in his head. Then he looked up, his face abruptly eager. "I'd bet that bike of yours has its story to tell."

"It does," I said, feeling drawn into Frank's world, realizing that he was a lot like me, a collector of stories from lean highways. Except that he has his things laid out in his yard instead of scattered in his head. "I'm afraid, though, it's not for sale."

"Well, I hope you'll keep me in mind when the time comes," said Frank. "I'd sure like to have that bike in my collection." ■

DAVID EWING DUNCAN is the author of *From Cairo to Cape Town* (Weidenfeld & Nicholson, 1989) and *Pedaling the Ends of the Earth* (Simon & Schuster, 1986).



LARRY LEFEBER - GRANT HELMAN PHOTOGRAPHY



NORTH-CENTRAL PENNSYLVANIA

In the countryside of the Keystone State, a 40-mile stretch of state route 287 (from U.S. Highway 220 to Wellsboro) serves as a jumping-off point for many pastoral, often hilly, loop trips. A side road leads to the Grand Canyon of Pennsylvania (above), near the northern end of the tour. —R.B.



Eastern sarus cranes.

T

Twenty years ago a face-to-face encounter with Muoi Nhe might well have been fatal for one if not both of us. But that was wartime. Now his large, brown hands ease his robust frame back a space from the edge of the table. He lights a Jet cigarette, and I watch his congenial face as the thick smoke curls up toward the light. Muoi Nhe begins to speak, looking across the table at his American visitors, pausing every few sentences for his interpreter to translate. We are in the guest house of the People's Committee of Tam Nong District in Dong Thap province, the heart of Vietnam's Mekong River Delta. Twenty kilometers or so to the north lies the Kampuchean (Cambodian) border, and a few hours away to the west by boat runs the muddy main channel of the Mekong River. Its waters once saturated the entire

BY PAUL P. ROME

COM

In Vietnam, a

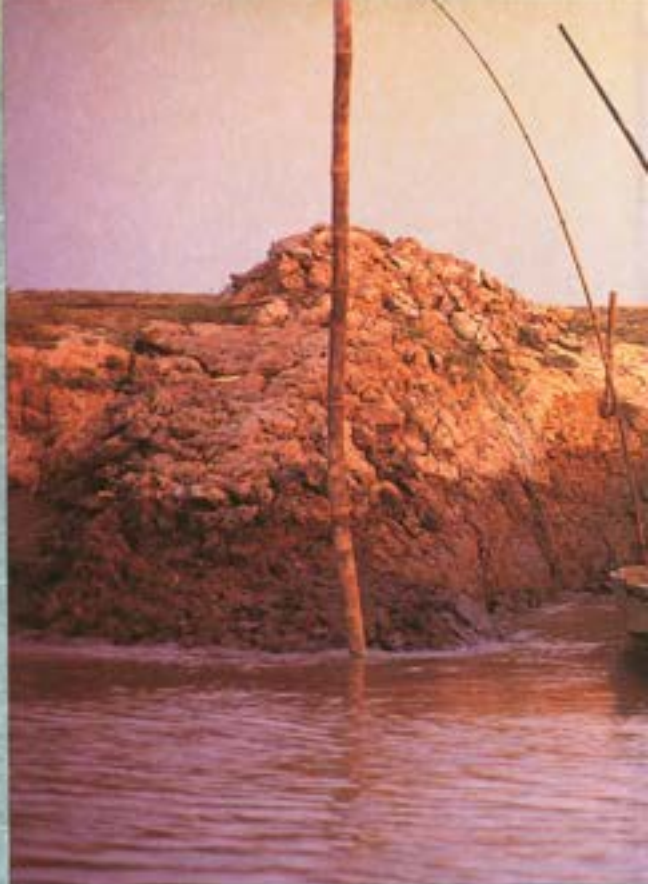
ING HOME

majestic bird rises from the ashes of war.





Having been their guest in Vietnam the year before, George Archibald hosts Muoi Nhe and Le Dien Duc at the International Crane Foundation in Wisconsin in July 1989.



region, creating a vast wetland called Dong Thap Moui.

Muoi Nhe was born here, and for most of his life he fought here, first against the French with the Vietminh, later against the United States as a commander of Vietcong operations. He talks candidly of the war; like most Vietnamese his point of reference is either "the French time" or "the American time."

These upper reaches of the Mekong Delta were important staging areas for Vietcong activity, a main entry point for supplies coming across the Kampuchean border. In an effort to roust the Vietcong from their marshy stronghold, the French (and later the Americans) dug huge canals to drain the wetlands. With the water levels thus disrupted, the drying forests and fields were an easy target. American napalm left the countryside in ashes. The vegetation that survived soon faced further assault: Under Operation Ranch Hand, American warplanes unloaded some 40 million liters of the herbicide Agent Orange and its cousins, Agents White and Blue. By some estimates 35 percent of the south was defoliated before spraying stopped in 1971.

As formidable as his reputation as a guerrilla leader was 20 years ago, it is Muoi Nhe's status as a conservationist that has drawn us to Vietnam. He is responsible—to the extent any one person can be said to be—for the restoration of this part of the delta and for the return of one of its rarest inhabitants, the eastern sarus crane.

The slate-gray, red-headed sarus is the tallest flying bird in the world, standing some four to five feet high. Its wingspan can reach up to ten feet. Once found throughout Southeast Asian wetlands, *Grus antigone sharpii* has been extirpated from much of its natural range, having disappeared from southern China, Thailand, the Malay Peninsula, and the Philippines. On Dong Thap Moui about a thousand birds survive, the last of their kind known in Asia. A sizable population does exist in northern Australia, but it apparently has been separated from the Asian birds for a long time, and the flocks do not intermingle.

"When I was young, I would see many, many cranes," says Muoi Nhe. "The war was hard on all the wildlife here, as it was on the people. When the fighting stopped, the birds were gone. I thought they would not return at all."

After the fall of Saigon and the reunification of Vietnam in 1975, Muoi Nhe was made chairman of the Dong Thap Province People's Committee. The post, one of 37 such provincial leadership positions across the country, carries power and influence roughly equivalent to that of a governor in the United States.

But he became the leader of a wasteland. Agricultural production had been all but obliterated. Of the vast mangrove stands that had covered much of the area, only patches survived. The native fauna was decimated; the



A girl tends an irrigation gate along a postwar canal (left). The water system has restored the wetlands—and lured sarus cranes back to Vietnam.

cranes retreated to parts unknown. It fell to Muoi Nhe to orchestrate the recovery of Dong Thap's people, economy, and environment.

"We knew that we must have the swamps here," Muoi Nhe says. "The water is very important, yet it was draining away. Also, it was too dry for the melaleuca, which the local people use for many things." *Melaleuca leucadendron* is a wetland mangrove with a resinous sap. It is important to the villagers for its medicinal value, and is crucial for construction. In the swampy delta, virtually every peasant house is built on rot-resistant melaleuca supports.

Determined to change things, Muoi Nhe launched a program of dike-building in the center of the province, near the village of Tan Cong Sinh. By 1984 he had overseen the construction of some 32 kilometers of dikes and the restoration of more than 5,500 hectares of wetlands. The area was recovering from its wartime pounding, and with the building of the dikes the lush wetlands bloomed.

Along with the rest of Vietnam, Dong Thap began a massive tree-planting program after the war, intending not only to repair its bombed and defoliated forests but to stem the tide of deforestation, as intractable here as in other areas of Asia struggling under massive population pressures. Melaleuca was replanted across Tam Nong as well as in other sections of the province. By 1985 the wetlands had regained a semblance of their former health and appearance,

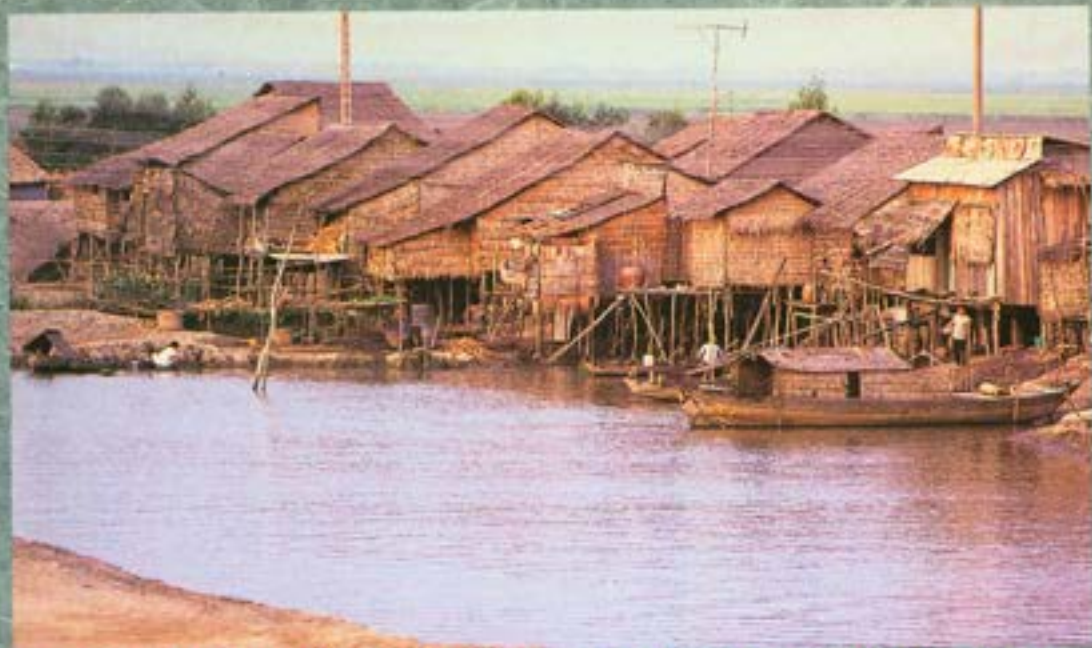
and reclaimed their historic role as a major wintering area for Asian waterfowl.

In August of that year, with help from West Germany's Brehm Fund for Bird Conservation—a philanthropic organization funded by profits from the huge Vogelpark Walsrode bird park near Hannover—a group of Vietnamese scientists undertook an expedition to the Mekong Delta to survey bird species. These scientists, from the Center for Resources Management and Environmental Studies at the University of Hanoi and from the National Center for Scientific Research of Vietnam, made up the Wetland and Waterbird Working Group (WWWG).

The team saw a single eastern sarus crane in the Ho Chi Minh City zoo that had been captured in An Giang province near the Kampuchean border. A search of that area proved fruitless, however; although the local people remembered the birds, the wetlands had been converted to cropland throughout most of the region.

On the recommendation of local officials, the WWWG scientists also went to nearby Dong Thap province, where they met Muoi Nhe. He and other residents confirmed that, historically, many of the eastern sarus spent the dry season in the area. But they had disappeared during the war, and very few cranes now frequented the local marshes.

The scientists recognized ideal crane habitat as they surveyed Muoi Nhe's restored wetlands. August is the wet



The population crunch: Recently built houses sprawl toward an inevitable showdown with the nearby crane reserve; local children (right) grow toward an inevitable struggle for food, land, and cash. Restrictions on family size are virtually impossible to enforce.



season, though, and the marshes were flooded with deep water. The team left, optimistic that the cranes might appear during the winter dry season.

"I was the first scientist to see one of the cranes when we went back," says Hoang Van Thang, a 31-year-old ornithologist at the University of Hanoi. Thang was surveying the marshes in the diked wetlands with Le Dien Duc, another ornithologist and a senior faculty member at the university. "We were looking out over one of the marshes in Tam Nong, and there was a very large bird there. Oh! What is this? But we could see its red head clearly. We were very happy and excited that we had found the cranes."

In the lore of Vietnam the crane is a powerful symbol, the icon of happiness and longevity, the bird that carries to heaven the souls of those bound for eternal life. Cranes also carry symbolic power in other parts of Asia and the world. They are revered in Japan, China, India, and North America. The majestic whooping crane, whose population had dwindled to just 15 birds by 1941, has been the focus of one of the most intensive, long-term wildlife-preservation efforts ever undertaken in Canada and the United States, its plight continually drawing international attention.

This legacy of crane, myth, and man comes together in George W. Archibald. Archibald is director of the Interna-

tional Crane Foundation (ICF) in Baraboo, Wisconsin. He began his quixotic quest to save the world's cranes after completing his doctoral dissertation at Cornell University on the birds' comparative ethology. In 1973, given a lease on some Wisconsin farmland and new horse barns from the parents of colleague Ronald Sauey, Archibald established the ICF.

The foundation prospered under Archibald and Sauey, growing from the shared dream of two graduate students into an organization of worldwide prominence. Its mission is single-minded: to save cranes. The organization pursues this goal through education, research, and its own special brand of conservation diplomacy. "We play middleman," says Archibald. "We are a catalyst, helping bring governments and private organizations and people together to help the birds."

At 43, Archibald himself is perhaps the most important ingredient in that catalytic process. He is the organization's director and guiding light, having taken over leadership duties after Sauey's death in 1987. He is uniquely qualified for the role: a competent scientist, a passionate conservationist, and an astute player in the big-money games of charitable foundations. Crane-protection plans in China, the Soviet Union, India, Japan, and Korea have been established through his adroit maneuvering, as have eight working groups of crane researchers throughout the world. He



Hoang Van Thong and George Archibald examining a crane at the Tram Chim Reserve.

was the first to breed Siberian and hooded cranes in captivity, and he pioneered captive-breeding techniques now in wide use.

Archibald started down the path to Vietnam in 1987, when he attended the International Crane Workshop in Qiqihar, China. "This intense Vietnamese man with incredible charisma gave a seminar on the eastern sarus they had found in the Mekong Delta. He had a presence that really impressed me." That man was Le Dien Duc, one of the WWWG members who had first found the cranes of Dong Thap.

"I was really excited about their finding the birds," Archibald says. "The ICF has had a project going in Thailand to reintroduce the eastern sarus there from the Australian stock, so to find out that there was still a wild population left on the Asian continent was really something."

Duc made arrangements for Archibald to go to Vietnam in January 1988, along with two other notable conservationists, George Schaller from the New York Zoological Society, and Abigail Avery, a member of the ICF Board of Trustees and the Sierra Club National Wildlife Committee.

The trip was a success. Muoi Nhe had formalized protection of the restored area, creating the Tram Chim ("Bird Swamp") Nature Reserve. The group spent two weeks in Tam Nong gathering important new information on the cranes' habits and habitat, and laying the groundwork for a

conservation program to help the cranes in the district. Perhaps most important, it directed international attention toward the Tram Chim sanctuary.

"Our government and our university have few resources to use for the conservation of nature," says Le Dien Duc. "We are very grateful for help from the Brehm Fund, the ICF, and similar organizations."

"One of the problems of working in some foreign countries, like Vietnam, is that their social and economic problems are staggering," Archibald says. "How do you convince governments that some little reserve for birds is important when they don't have many basic services like sanitation and transportation? It's fine when you want to bring their researchers over for a view of how we do things, but you sometimes wonder just how applicable it really is."

In early 1989, I accompanied Archibald to Vietnam as part of an ICF-sponsored research and educational expedition. We assembled in Ho Chi Minh City (most locals still call it Saigon) to meet the ICF team, a mélange of people Archibald had gathered from diverse sectors: a Southeast Asian historian, an official from the U.S. Agency for International Development (traveling as a private citizen; the two countries still have no diplomatic relations), a bird-watching entomologist, a public-health nurse, an environmental educator, two ICF members just

interested in seeing the birds and helping in their conservation, two photographers, and myself.

It was an arduous six-hour journey overland from Ho Chi Minh City to Tan Cong Sinh village, where we were put up at the newly constructed guest house of the People's Committee of Tam Nong. Our group brought in nearly 500 pounds of basic medical supplies for the village's primitive hospital, donated by the Georgia-based group Americans for International Aid.

The villagers warmed to us slowly. Often people assumed we were Russians, which did not make us any more welcome. Soon, however, the village children would come running out of their reed huts along the road shouting "sai! sai!"—the Vietnamese word for crane—as they saw us coming. We spent many evenings watching the cranes as they crossed low over a road about a kilometer from town, flying to their evening roost. The people from nearby huts stood beside us, intently scanning the horizon and pointing out the birds as they appeared over the trees.

While the other photographers and I spent most of our time vainly chasing the wary cranes around the marshes, others in the group worked more closely with the villagers. Some traveled to local schools—both in Tan Cong Sinh and in neighboring villages—to talk about the cranes.

As our group and the Vietnamese acclimated to each other, the villagers opened up, inviting us into their houses and stores as we walked by, or, through an interpreter, sharing recollections of the wetlands and fauna before the war. Many locals' knowledge of the native birds was considerable—albeit mostly along the lines of "heron tastes more like egret than bittern."

Whether the long-term prospect for protecting the wildlife of Tram Chim will improve is another matter entirely. While the efforts the Vietnamese have made to preserve the restored habitat are encouraging, the task remains formidable.

Vietnam is heartbreakingly poor; with a per-capita annual income of less than \$200, it is among the world's ten poorest nations. It receives limited foreign aid—about \$4 billion from the Soviet Union and \$50 million from Sweden in 1988. Inflation still runs rampant, though it is down from '88, when it was nearly 1,000 percent.

Overarching all these concerns, however, is population pressure. The population of Vietnam has now passed 65 million; the density is 200 people per square kilometer. (The average for other Southeast Asian countries is about 75 per square kilometer.)

The Vietnamese are aware of this growing burden, and have taken some steps to reduce their 2.4 percent annual growth rate. Couples are officially permitted to have just two children, and are threatened with the loss of state-supported health care and education for any children beyond the allotted pair. There seems to be little mechanism for enforcement, however, especially in rural areas, where the cultural pressure to have children is particularly high.

In the long run the people's toll on the land will surpass that exacted by war. At the end of World War II about 44 percent of Vietnam was forested. Today that figure has fallen to less than 25 percent, and despite the country's efforts at reforestation, Vietnam is still losing nearly 200,000 hectares of forest annually.

Necessarily, more and more undeveloped land is being converted to agriculture in an effort to match the growing demands of the population. Tam Nong is no exception. The government is moving a thousand families from highly populated regions around the country to less populated areas of Tam Nong. These settlers face a bleak existence along the edges of the district's myriad canals. They are given land, but little else. They can grow some rice and vegetables, and trees as a cash crop. The time between planting and payoff, however, is considerable, leaving intermittent years of hand-to-mouth agriculture with no means to generate cash income.

Even growing food is tough in this part of the delta, because the soil is poor and often highly acidic. On Vietnam's fertile plains, farmers can produce as many as 15 tons of rice per hectare annually, yet around Tam Nong the yield is often no more than four tons. Meanwhile the inexorable stream of settlers moves in, digging new canals, draining new land, growing poorer.

"None of this was here last year," George Archibald says as he surveys the sprawl of new huts reaching toward the Tram Chim reserve at the village's edge. A new bridge spans one canal between the village and the reserve on the other side. In the 13 months since Archibald first visited this place, a new line of huts has formed along the road at the reserve's flank and out along another of the canals. Children are swimming in the tepid waters, and rice is already going to seed in the fields on the other side. Twenty meters of muddy Mekong backwater separate the reed shacks from the "protected zones" of the reserve. Farther down the canal, fresh dredging is evident right up to the reserve boundary.

We stand in the bright sun, the tropical heat already oppressive at 8:30 a.m. We are on the second story of a building that is soon to become the management office for the restored wetlands. An impenetrable matrix of melaleuca poles supports the concrete molds for the building's superstructure. We set up a spotting scope and look out into the reserve at a flock of 30 or so eastern sarus cranes feeding. Below us young girls stir cement in piles. A stream of men carries buckets of sand and mortar out of a barge moored in the canal and enlarges the piles. The path between this noisy construction site and the birds half a mile away is too clear.

Archibald drops his gaze and leans his forehead against the eyepiece. "Now the battle is against time." ■

PAUL P. ROME is a photographer and freelance writer in Madison, Wisconsin.



*"All the wide world is beautiful, and it matters but little where we go. . . . The spot where we chance to go always seems the best."
—John Muir*

Discover a world of beauty on a 1990 Sierra Club Outing! From High Sierra vistas to wildlife refuges in Alaska, from Hawaiian beaches to Adirondack rivers, from Costa Rican rainforests to Himalayan glaciers – the Sierra Club can take you to a special place in the wilderness.

For trip information, see the 1990 Outings Catalog in the January/February issue of *Sierra* or order a catalog using the coupon below.

OUTINGS
Sierra Club
1990

1990 SIERRA CLUB OUTINGS

- Enclosed is \$2 for a 1990 Outings Catalog.
 I already have the 1990 Outings Catalog. Please send me brochures for the following trips (order by trip number):

_____ # _____ # _____

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Please do not mail cash. Allow 2 weeks for delivery.

#1

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

IN NAMELESS PLACES



here's a raven's wing in the wash. Angled sleekly, it reveals a blue sheen, the color of space through thin atmosphere. I picture it in a coyote pup's mouth. He drops it to follow his mother through one of the animal-

mapped paths out of the canyon, routes I can never find. Raven's Wing Draw.

Twenty miles upriver, where the spruces throng, it was snowing a mean spring pellet snow when I left the house. Knowing a little about Wyoming microclimates, I decided to rummage for something better in the badlands. Until recently, before four-wheelers, only cows foraged dismally here each spring before being sent to the mountains. A few hunters, a few walkers. It's just more Bureau of Land Management land, little attention paid to it.

In the badlands it's not only the colors that capture me—layers of red, pink, pearl-gray, and buff—but the substances. Scramble along steep terra-cotta flutings and break off a piece. Out pours red sand so fine it must have been sifted by crickets. Thunderstorm sheet-floods are responsible, mixing up a muck that then settles into a clay outer shell with sand inside. But vertically? These columns always look just poured, or melting.

Then there are walls of conglomerate: granite cobbles smoothed by some ancient river, entombed here way back in the Eocene. I like to spring a few, let 'em rejoin the dance after sitting out for 55 million years. There's also a harder layer of pale sandstone that forms lips, brinks, falls, and traps, and is responsible for many a thwarted route.

I'm following the wash, the least efficient path, admiring the braidings in the streambed and the crisp mud curls that look good enough to eat. This little canyon, offered up to the southern sun arc, is now warm enough to make me stop and look for a sandy bank away from anthills where I can lie down. To the north the pellet-spitting cloud is still closed over the spruces, but I'm sweating, and a hover fly is looking me over. Two bends of the draw block any sound from Route 287, a mile away. Now I hear only the spring air molding itself into notes of a mountain bluebird. Time for a snooze, full length, given over, cowboy hat on face, the ground fairly twanging with working roots and ready shoots.

Later, when the shadows start breathing coolness out of the side canyons, I cross the color threshold. After an hour outside walking, colors begin to appear much more brilliant, more saturated. Oxygen to the brain? Rods and cones sufficiently steeped? I get out the paints and brushes and pour canteen water into a cup. How many

ESSAY AND PAINTINGS
BY HANNAH HINCHMAN



WHITE CALICOES WASH

DINOWAN, THE BADLANDS, LATE MAY 1989

SAGEBRUSH AT ITS MOST SUBTLE



Canyon Kingbird dancing after rain, calling 'Whip-beep'

A week's rain and the badlands are made new: all the channels re-cut, gravel freshly heaped and polished, sand now calicoed with flowers. I recognize only a few—zenith-sky blue of penstemon's, scarlet palmbush, a lavender vetch, pink & white evening primrose. Even the sage, ordinarily rough and twiggy, is feathered with new foliage, docile and soft as an English garden border.

Now it's the rock wren who's the voice of the canyon. He runs around on the outcrops delivering his song with comic timing. "Eedle, eedle, eedle...Chu-DEE, Chu-DEE, Chu-DEE...Chukky, chukky chukky."

A spiny-cushion of vetch dangling over the edge of a cutbank looks like a tossed bouquet, detained by its long, woody root.

A fragrant yellow mustard family flower, visited by strange little bees and ants.

Out of a half-closed blossom strolls a weevil, or a snout beetle. A few minutes later I find him paddling 'hopelessly' in my water dish so I rescue him and paint him as seen through the hand lens.



THE BREATH OF LIFE MOVES THROUGH A DEATHLESS VALLEY OF MYSTERIOUS MOTHERHOOD WHICH CONCEIVES AND BEARS THE UNIVERSAL SEED

THE SEEDING OF A WORLD NEVER TO END,

BREATH FOR MEN TO DRAW FROM AS THEY WILL

AND THE MORE THEY TAKE OF IT

THE MORE REMAINS."

—The Tao Te Ching



Philip H. Taylor

Art by Philip H. Taylor

times have I felt this urge, almost desperate, to paint the badlands? It's the repeated lines here, a regular pattern, like the designs on African bark-cloth painting. Cascades of intersecting Vs. Yet if you get too seduced by the flat pattern, you miss the sensuousness—a creamy expanse of sandstone curved and chiaroscuroed just so, a Botticelli forehead of pink clay, siltstone in languorous poses.

Sometimes I imagine that if I get the arrangement and proportions exactly right—a massive columned wall above a ribbon of wash, the precise slant of an alluvial fan—I will be able to conjure up the particular emptiness of this place. When people accustomed to cities, those people who avoid being alone, encounter this almost obstinate stillness, they run, sure they'll be crazy in a matter of hours. The mind does at first rebel, churning out a steady flow of thoughts, then core-memory debris, and sometimes, when the disturbance deepens, gibberish.

As you leave the car and start into the canyon, the place is just another setting. A little while later you look up and realize it might swallow you. Whenever I approach the canyon in that frame of mind, I know I must stop at the first bend and sift through a gravel bar, or go to sleep on the ground, or just sit. By the time I get out the paints I've reached an accord with the emptiness, knowing it to be the original expression of the world. "Stillness becoming alive, yet still," Theodore Roethke described it.

Next time I look up from my paper, the horizon has changed, sprouting big Vs of ears: a dozen mule deer.

Another dozen deer look up, startled, as I emerge from a juniper grove farther down the canyon. I try the grazing method to put them at ease: look at the ground and paw it with my boot, turn my back on them idly. Unthreatening gestures. They remove to the next bench, turn their backs on me, and browse on new growth of a wiry grass. Lofty Doe Draw.

I remember seeing a dead fawn in one of the narrow arms of this canyon. There was no sign of how it died, no dismantling by ravens or coyotes. Dead in a cave-painting position, ribs like a Tang dynasty ivory birdcage, a little haystack where its rumen had been.

What about death, its evidence and presence everywhere? Briefly, occasionally, I think I glimpse how life and death embrace. Of course I know the story of their mutual dependence, and keep reciting it to myself for reassurance, but it reads more like a legal document or economics paper. Sadness from witnessing pain has left me with a permanent wince. The vulnerability of all creatures to pain often seems like the most vicious of jokes, and the best I can do is to envision a tangled web of empathy: If the worm isn't stuffed alive down the nest-

ling's throat, the nestling may starve. If the fox doesn't bring the nestling to her kit, the kit may die. We cling to life; the transition is rough.



any days I'm not content to stay in the draws, but feel a need to get up onto the plateaus, the high mesas, the remnants of an ancient plain. The geometric change from vertical wall to horizontal plateau is itself satisfyingly precise—no halfway about it. My favorite of these I've named for its giddy aerial wreaths of horned larks. Lark Lyric Plateau. To be accurate, it's a peninsula linked to a long, ascending ridge that becomes a foothill of the Absaroka Range. Except for a few sections, this is all BLM land too.

About a mile long and equally wide, Lark Lyric is napped with low grasses and fragrant white phlox. Oddly, it supports no sagebrush, and there are no badger holes. Rising gently, ringed by mountains, it's cowgirl heaven.

My pony Scout carries me up. We carefully open and shut gates, following trails that avoid the steepest badland walls. This is the time to slouch comfortably, to sing whatever best fits our pace: "Blue Shadows on the Trail" or "Riding Down the Canyon." We top the last rise and suddenly there it is, spread out before us, perfectly smooth and empty. For a while there are just wind-streaming eyes and thundering pony hooves. Then we pull up and the plateau, its sky and larks, its level swell, resolve into a particular music, a pealing air, a welling carol.

All this open western space, unattended! I always get out the maps when I come home and trace my route, amazed at how little ground I've covered, and at how unremarkable the places look on paper. My Lofty Doe Draw, my incomparably lovely canyon filled with bluebirds and echoing swifts, is nameless to the U.S. Geological Survey. Lark Lyric Plateau, an island of heaven, is not considered worth naming either. So I get out my smallest pen, bend over the topo, and carefully write the names the places gave me. ■

HANNAH HINCHMAN lives and works in Dubois, Wyoming. This essay was chosen as the winner of the 1989 Nelje Blanchau Award for nature writing and the 1989 Frank Nelson Doubleday Award for women's writing.



They set off the narrowest arm of Byrd Draw, still draining a rivulet of snowmelt. Tiny quartz-piece pyramids of rill had carried hundreds of quartz grains about this size over a lip and piled them in a multicolored cone 3 inches tall.

> Walking out. Liberated cobbles in the wash are strong presences, going somewhere, in circulation again.



Come quickly Spring!
Come and lift us
to our ends,
to blossom,
bring us
to our summer,
we who are
winter-weary
in the winter
of the world.
Come and
soften the
willow buds
till they are
puffed and
furred then
blow them
over with cold.
Let the darkness
be warmed,
warmed through
to a ruddy
violet,
incandescent purpling
towards summer
in the world
of the heart of man.

> Decide on the right fork this time. I've noticed the earliest growth in the deep of winter. Examining a fringe sage, carried up grey, and from last year, limp lilac-tan, I prove to have a steep but passable deer trail all the way to the ridge. Climbing, pot my hands on several layers of wind-eroded granite with some oddities thrown in. They've been motionless for sixty-five million years. Motionless for sixty-five thousand feet of lava, while yellowstone volcanoes, laid down within a half mile of this canyon, the glacier pushed boulders to within a half mile of this canyon, yet they made the journey down from newly-formed mountains, part of some lively torrent, carried along in floods...

> Hid in a limber pine shelter to eat lunch. Heavy snow, then the sun out - blue sky still filled with flakes. Shadows of flakes on trunk.

> Overland to narrowest arm of Byrd Draw, still draining a rivulet of snowmelt. Tiny quartz-piece pyramids of rill had carried hundreds of quartz grains about this size over a lip and piled them in a multicolored cone 3 inches tall.

> Walking out. Liberated cobbles in the wash are strong presences, going somewhere, in circulation again.



Northwest Wyoming
Early April 1964



Bunches of frigida



feather out, minidaisy from mat base - looks like a scabrous, white-pink grey-green to ground

Stood and watched the earliest growth, the place and time I've noticed in the deep of winter. Examining a fringe sage, carried up grey, and from last year, limp lilac-tan, I prove to have a steep but passable deer trail all the way to the ridge. Climbing, pot my hands on several layers of wind-eroded granite with some oddities thrown in. They've been motionless for sixty-five million years. Motionless for sixty-five thousand feet of lava, while yellowstone volcanoes, laid down within a half mile of this canyon, the glacier pushed boulders to within a half mile of this canyon, yet they made the journey down from newly-formed mountains, part of some lively torrent, carried along in floods...

Stood and watched the earliest growth, the place and time I've noticed in the deep of winter. Examining a fringe sage, carried up grey, and from last year, limp lilac-tan, I prove to have a steep but passable deer trail all the way to the ridge. Climbing, pot my hands on several layers of wind-eroded granite with some oddities thrown in. They've been motionless for sixty-five million years. Motionless for sixty-five thousand feet of lava, while yellowstone volcanoes, laid down within a half mile of this canyon, the glacier pushed boulders to within a half mile of this canyon, yet they made the journey down from newly-formed mountains, part of some lively torrent, carried along in floods...

Stood and watched the earliest growth, the place and time I've noticed in the deep of winter. Examining a fringe sage, carried up grey, and from last year, limp lilac-tan, I prove to have a steep but passable deer trail all the way to the ridge. Climbing, pot my hands on several layers of wind-eroded granite with some oddities thrown in. They've been motionless for sixty-five million years. Motionless for sixty-five thousand feet of lava, while yellowstone volcanoes, laid down within a half mile of this canyon, the glacier pushed boulders to within a half mile of this canyon, yet they made the journey down from newly-formed mountains, part of some lively torrent, carried along in floods...



After January 1964, when I stopped by the upper rockstratum



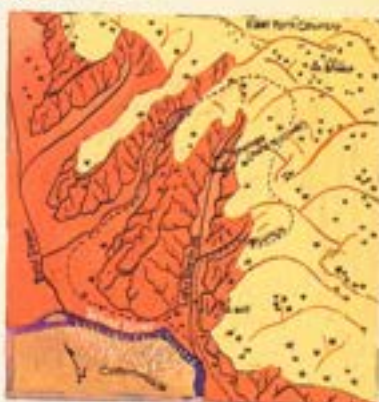
After January 1964, when I stopped by the upper rockstratum



After January 1964, when I stopped by the upper rockstratum



After January 1964, when I stopped by the upper rockstratum



Agave Cactus

1. Just breaking sheaths, for combustion
2. Extending flower parts being revealed
3. Fully extended, for and bracts drooping



The only wash and wash and wear



The water twists and roars and rages, spraying you into wet submission.

You're either in a Maytag® during spin cycle, or in a twenty-foot kayak crossing the Pacific.

Either scenario provides an excel-

lent demonstration of Polarsystem™ fabrics' indifference to water. Ed Gillet chose the latter, leaving Monterey, California last year with not much more than a kayak, a paddle and a Polarsystem jacket,

and arriving 63 days later and 35 pounds lighter in Maui.

For all of those 63 days, he never once removed his jacket.

That's because the revolutionary fabrics that comprise Polarsystem

wear fabric you can at the same time.



are not only light and astonishingly warm, but have the uncanny ability to leave you feeling dry, even when the fabric isn't.


What's more, they last. A year after his bone-chilling trans-oceanic

journey, Ed Gillet reports he's still wearing that jacket.

Now maybe you can attribute it to a strange fanaticism on the part of Ed Gillet.

But we'd prefer to attribute it to a

strange fanaticism on the part of the scientists who developed Polarsystem.

polarsystem 

The world's most beautiful way to keep warm.™

THIS EARTH DAY GO SOLAR!

Economists worldwide are predicting that the 1990's will be the decade of the environment. Since photovoltaics is one of the only technologies capable of generating electricity without waste or pollution, many money managers also believe that the 1990's will be the decade for solar power to come of age.

If you agree, you are not alone. According to a recent Gallup Poll, 3 out of 4 Americans now consider themselves an environmentalist. And these environmentalists are looking for a way to take personal action in both making the world a better place to live and to profit from the trend.

At Solar Electric we act out our conscience every day. Last year we generated electrical power to villages in Africa, provided emergency power to homeowners during the California earthquake, co-ordinated support services for a cross country solar car trip and sponsored a benefit for the homeless at an all solar home we built.

We distributed thousands of solar powered radios, battery chargers, fans, refrigerators and lighting systems. We helped educate millions to the advantages of Solar electricity making hundreds of media appearances on the radio, the television and newspapers.

The media has taken note of our expertise and willingness to lend a hand. When shows like Larry King, Today and FNN and newspapers such as the New York and Washington Times needed an alternative energy voice, they called on Solar Electric Engineering.

In the coming year we intend to continue our research into innovative products and processes in order to accelerate new solar technologies into the marketplace. Our daily experiences tell us that the day we will all be living in solar powered homes and driving pollution free cars is near. With your help it may be tomorrow.



**SOLAR
ELECTRIC**

YES! I want to help. Send me additional information on how I can put solar energy to use.

Name _____

Address _____

Phone (_____) _____

Send to: Solar Electric, 175 Cascade Ct., Rohnert Park, CA 94928.

I plan to use solar for: RV Boat
 House Investment

HOT SPOTS



The Waorani face "wrenching changes" if an oil road is built through their forest home.

Piercing the Jungle's Heart

YASUNI PARK, ECUADOR

NORTHEASTERN Ecuador's Napo River region has for centuries been home to the Waorani Indians, a fiercely independent people who live in cane dwellings and wear only waist cords and a few ear, hair, and neck ornaments.

But more and more, this land lush with tree ferns and orchids, sloths and anteaters, parrots, manatees, and Amazon dolphins has become a drilling field where multinational oil companies sink their bits and pump their fortunes. Since 1967, oil workers and contractors have swarmed to the area, bringing bulldozers, toxic chemicals, viruses, guns, and alcohol. They frequently secure the sexual services of Waorani women by bribing their brothers with sugar, boots, axes, and chainsaws—goods and equipment often pirated from company supplies. Sometimes the pilfering workers even contrive to blame the thefts on the Waorani.

One group of about 125 Waorani living in and around Yasuni National

Park—one of the Amazon Basin's largest rainforest preserves—has mostly avoided contact with oil workers. But its isolation from Western culture may soon be shattered. As early as March or April, Conoco Ecuador Limited, an affiliate of the Texas-based oil giant, expects to begin carving a road for pipeline construction more than 100 miles into the park, penetrating to the heart of the Waorani nation.

Not only will Conoco's road carry oil crews and equipment into Yasuni Waorani territory, says the Sierra Club Legal Defense Fund, but it will draw colonists to the forest from all across

Ecuador—speculators seeking to clearcut land for farms and cattle ranches. And that, the Defense Fund's lawyers say, will prove so disastrous to the Waorani way of life that Conoco and the Ecuadoran government, which approved the project, could be held liable for ethnocide, a criminal offense under international law.

"The Waorani Indians face cultural annihilation if there are any major incursions into their territory," says Karen Parker, a human-rights attorney



retained by the Defense Fund. "They aren't very adaptable to new influences. The Waorani are migrant people, hunters. Their territory has already been reduced to an area too small for their traditional lifestyle."

Conoco officials strongly object to the allegation of ethnocide. "In fact," says Conoco attorney H. J. van Wageningen, "we're trying to avoid any harm coming to the Waorani."

As evidence of their concern, Conoco officials point to an environmental assessment they commissioned from anthropologist James A. Yost, who lived among the Indians from 1973 to 1982. The company says it has developed policies based on Yost's observations that will prevent disruption of the Waorani culture.

Among Conoco's plans is a medical clinic for oil-company employees that would also be available to the Waorani. Whether that measure would suffice to guard against the spread of such diseases as influenza, which is alien to the Waorani people, is an open question. In areas of the Ecuadoran rainforest where flu viruses have been carried in by oil-company workers or tourists, many Waorani have died of secondary pneumonia.

Conoco Ecuador recognizes that the most severe threat to Waorani society would come from colonization along the new pipeline road. The company points out, however, that such settlement in Yasuni National Park is forbidden by Ecuadoran law. Colonists can be turned back, the company maintains, by means of around-the-clock police surveillance at key checkpoints along the road; those who ship through can be detected by satellite monitoring of the entire park.

Anthropologist Yost isn't reassured. "Colonists in all parts of the developing world have proved time and again to be tenacious and relentless," he says.

Yost believes the potential for disaster in Conoco's roadbuilding scheme is enormous. "Imagine the world of a Wao," he wrote in his environmental assessment, "a person born into a culture that has a technology limited to stone, wood, and fiber; a person who



LOOK TO THE FUTURE A Planned Gift Can Help Protect It

Our environment will be subject to increasing pressures from activities that would invade or degrade our natural heritage. Protection requires eternal vigilance and a continuing effort. This is the role of the Sierra Club.

You can help strengthen the Sierra Club in this ongoing struggle with a planned gift, and you may benefit financially as well through lower taxes and increased income.

A Planned Gift gives you the benefits of your money for life or a specified time, and eventually goes to the Sierra Club. Planned Gifts

take many forms and can establish memorial endowments:

- Bequests
- Life Income Trusts
- Short-term Trusts
- House gift with life use reserved

Planned Gifts can be tailored to your personal goals and circumstances.

Consult with the Planned Giving Office and learn how to get the best return on your gift, for the environment and for you. Please contact Carleton Whitehead, Director of Planned Giving, Sierra Club, 730 Polk Street, San Francisco, CA 94109, (415) 923-5639.

PLANNED GIVING PROGRAMS

The Sierra Club

The Sierra Club Legal Defense Fund

The Sierra Club Foundation

(Trusts are usually limited to a maximum of 20 years, or to beneficiaries over 65.)



Designed with a woman in mind

Glistening sterling silver earrings derived from a rare totem pole design. The pole, carved for the Tlingit Indian village of Tongass, was one of the few ever dedicated to a woman. The earrings are shown actual size. **\$29.95 postpaid.** Credit card orders call **TOLL-FREE 1-800-262-0040.** Or send check or credit card number-exp. date to:

Coldwater Creek

Dept. AS, 212 N. 1st Ave., Sandpoint, Idaho 83864

WORLDWIDE TREKS SAFARIS & WALKING TOURS



HIMALAYA & ASIA

Nepal trekking specialists—widest selection of trips & departure dates. Kashmir, Ladakh, Bhutan, Sikkim, Tibet, India, Sri Lanka, Maldives, Burma, Thailand, New Guinea.

AFRICA

Camping safaris in Kenya & Tanzania. Kilimanjaro & Mt. Kenya climbs. Trans-Africa overland. Nile sail by Egyptian felucca.

PERU

Trek the Inca Trail to Machu Picchu & Cordillera Blanca. Overland expeditions by 4WD vehicle. Amazon wildlife extensions.

EUROPE

Hike the Alps of Switzerland, Austria, France & Italy. Also Greece, Morocco, Britain.

Quality adventures at reasonable cost since 1978. Request our free 28 pg Himalaya/Asia/Europe, 12 pg Africa or 8 pg Peru brochures.

HIMALAYAN TRAVEL INC.

P.O. Box 481-S

Greenwich, CT 06836

(203) 622-6777

Toll Free 24 Hours (800) 225-2380

Quality Color Prints
From 35mm Slides
■ Since 1973 ■
We're The Experts

The Slideprinter

Inside Many A Slide
There's A Great Print
Waiting To Come Out
Let Us Prove It

The Slideprinter

8 x 12 ONLY \$4.00

Quantity Discounts Available
Write for our complete price sheet
and postpaid mailers.

The Slideprinter

P.O. Box 9506S Denver, CO 80209

WILDLIFE
T-SHIRTS



Support
wildlife
by wearing
environmental t-shirts
(10% of profits go to
environmental groups.)
Many designs. \$9.95 each.
Heavyweight, 100% cotton
t-shirts in S, M, L, XL, in white,
blue, silver, yellow. Sweats also,
\$21.45 each. **FREE CATALOG.**

JIM MORRIS
PO BOX 831 DEPT BC
Boulder, CO 80306
(303-444-6430)

Satisfaction guaranteed.
Share the Earth!

© 77 Maplewood/Jim Morris

has never seen a horse, much less imagined an automobile. . . . Imagine how easily this person's sense of well-being is going to be challenged when the age-old solutions of survival no longer work and he or she has no sense of control over the future."

Acknowledging that oil development seems inevitable in the face of

world demand for energy resources, Yost nonetheless advised Conoco Ecuador that his personal preference would be that no road be built into Yasuni National Park. "No matter how sensitive Conoco or any others going into the area might be," he observed, "the Waorani will undergo some wrenching changes." —Mark Mardon

A Hotbed in the Making

ONTONAGON COUNTY, MICHIGAN

Economic booms have come and gone in Michigan's Upper Peninsula—but in recent times their noise has faded to whispers. Rare now are the immigrants to the U.P. who hope to earn their livelihoods at lumbering, farming, or mining. These days the people coming here are likely to be just passing through: anglers, backpackers, canoeists, campers. If they happen to be looking for something more permanent, chances are good they're government-contracted geologists or engineers, several of whom have been seen scouting the sparsely populated western U.P. recently, searching for a place to bury tens of thousands of cubic feet of low-level nuclear waste.

"The only people who pay attention to us are the ones who want to dump their garbage here," says Pat Koski, a native of the region who lives and works in Ontonagon County, near the Wisconsin border.

Koski and many other western U.P. residents are alarmed that a nuclear-waste dump proposed for their area could contaminate a section of the Lake Superior watershed. They charge Michigan Governor James Blanchard and his radioactive-waste commissioner, Jim Cleary, with playing politics while disregarding the environment. The two officials, they contend, targeted Ontonagon County for a possible dumpsite primarily because of its remote location and lack of political clout.

For Michigan the issue of disposing



In this backyard? A nuclear dump may be sited near Michigan's Porcupine Mountains.

If you love parks...

You and Timotei[®] Shampoo
can keep them beautiful.

Whether your favorite park is an oasis in a city or a big natural wilderness, you want it to stay beautiful.

Now you can help keep parks beautiful — you and new Timotei Shampoo.

New Timotei, a mild shampoo made with herbs and wildflowers, leaves your hair soft and shiny, with the fresh smell of summer meadows.

And for every bottle of Timotei Shampoo or Conditioner you buy, we'll donate a tree or flower to California's parks, up to 50,000 trees or flowers.

Show your care. Buy new Timotei Shampoo and help keep our California parks as beautiful as ever.

To learn more about the Timotei Park-To-Park program call 1-800-243-5804.



PLEDGE ALLEGIANCE TO THE PLANET



The Earth Flag[®]
an Expression of Global Commitment.

On every continent, in every country, people are joining together to defend the planet and its inhabitants from further exploitation and injustice. We hope you are among them. If you are, SHOW YOUR TRUE COLORS by publicly displaying an Earth Flag[®]. An eloquent way to declare your allegiance to a global vision of liberty, peace, and environmental justice for all. The Earth Flag[®] (a full 3' x 5') is a lovely four-color image of the earth, screen-printed on blue polyester. It is equipped with brass grommets for both indoor and outdoor mounting. Enclose \$39.00 ea. plus \$2.50 shipping. Bulk prices available.

EARTH FLAG CO. Box 108 Middleville, NJ 07855
1.800.421.FLAG In NJ 1.201.579.7889

Name _____
Address _____
 Bank Check or Money Order MC # _____
 VISA# _____ Expires _____
Signature _____



of low-level nuclear waste has become what Sierra Club Midwest Representative Jane Elder calls a "political morass," involving not only radioactive garbage from its own nuclear reactors, factories, research institutions, and hospitals, but from those of six other states as well. Following passage in 1980 of the Low-Level Radioactive Waste Policy Act, which shifted the disposal burden from federal to state jurisdiction, Michigan, Wisconsin, Minnesota, Ohio, Indiana, Iowa, and Missouri formed a compact to find a regional home for their waste. Michigan drew the unlucky straw.

But settling on Michigan for the site didn't put the issue to rest. Next came a predictable phase in the contentious process: the NIMBY ("not in my backyard") syndrome. Now Commissioner Cleary must negotiate difficult political terrain to find a final resting place for a lot of nasty material, and grassroots activists are loaded with potent arguments against a U.P. site. "It's absolutely ridiculous to gather up all this radioactive waste from nuclear facilities and haul it 500 to 1,600 miles to contaminate the shores of Lake Superior," says Pat Koski.

As Sierra Club Board of Directors member Roy Hengerson sees it, the choice of Ontonagon County as a potential dumpsite could have been avoided if the federal government had retained control of the siting process. Now, he says, the country may have 14 regional dumps by 1993, when states must have found homes for their low-level nuclear debris. "We really don't need that many sites," he says. "Four or five would be sufficient."

Nonetheless, the Sierra Club doesn't want to see the decision-making process degenerate as a result of NIMBY arguments, and for that reason, Hengerson says, the Club is working to strengthen the regional dump-siting process. Though he hopes the Michigan dump won't be located in Ontonagon County, if the state demonstrates that it has selected its site carefully and will manage the waste responsibly, the Club will not challenge the decision. —M.M.

Your Gift May Be Worth More Than You Think

Your generous contribution to The Sierra Club Foundation can go twice as far if you are employed by one of the companies participating in a Matching Gift Program.

How does it work? Easy. Just complete the corporate matching gift form available from your company's personnel or community relations office and send it to Sierra Club, Director of Matching Gifts, 730 Polk Street, San Francisco, CA 94109.

Your company's gift will double, or even triple, the value of your contribution to The Sierra Club Foundation.

If your employer does not currently participate in a Matching Gift Program, you may be able to help your company join the program and join in our important efforts to protect and preserve our environment.

For further information please contact the Director of Matching Gifts at (415) 776-2211.

THE SIERRA CLUB FOUNDATION
MATCHING GIFT PROGRAM



Call for
Performance!

Social Responsibility has its Rewards

Although past performance is no guarantee of future success, The Dreyfus Third Century Fund has demonstrated by its

performance over the last ten years that a Fund with a socially responsible policy can also be a rewarding investment.

Dreyfus Third Century, while seeking growth of assets, also considers a company's record in the areas of protection and improvement of the environment, occupational health and safety, consumer protection and equal employment opportunity.

For the one, five, and ten year performance figures, call the toll-free number below.

Dreyfus Third Century Fund

Post Office Box 3498, Camden, NJ 08101

For more complete information, including management fee charges and expenses, obtain a Prospectus by calling or sending this coupon. Read it carefully before you invest or send money.

Please send information on IRA Keogh .

Name _____

Address _____

City _____ State _____

Zip _____ Phone _____

315C-013
315P-013



Call toll free, day or night,
7 days a week.

1-800-645-6561

In New York City: 1-718-895-1206

On Long Island: 516-794-5200

Ask for Extension 2292

C341

Share price fluctuates.

BOOKS ON TAPE®



1. Books on Tape. World's largest selection of full-length best-sellers on cassette. Rentals by prepaid mail-order delivery and return. For brochure call 1-800-626-3333 or circle our number. **Free.**



2. CedarWorks. Beautiful rugged wood playsets built for safety by Maine craftsmen and warranted for 20 years. Constructed of naturally rot-resistant, splinter-free cedar 4x4s and ash ladder rungs. No chemical pressure treatments are used. Every set is freestanding, easy to assemble, and maintenance-free. Write CedarWorks, Rte. 1, Box 64051, Rockport, ME 04856. Color catalog. **\$2.**



3. Deva. We are a network of friends and neighbors who handcraft a unique line of elegantly simple clothing—all of lushly textured, preshrunk cotton. We fashion all our styles with an eye toward versatility, comfort, and value. Catalog and fabric samples. Dept. SICO **\$1.**



4. Everybody, Ltd. Long awaited "Totally Animal Cruelty Free." No animal testing, no animal ingredients. Personal body care, health and beauty aids, household items, pet care. Quality products at reasonable prices. Call 1-800-748-5675 for catalog. **Free.**



5. James River Traders. Spring catalog features sportswear and career clothing styled for the successful man and woman. They're the kind of clothes that keep pace with the way you live today. Always correct. Undeniably JRT. Color catalog. **\$2.**



6. Jim Morris T-Shirts. T-shirts with a message. Exquisite artwork with information about endangered species and environmental issues on 100-percent cotton T-shirts. \$9.95 each. Designs include leopard, wolf/eagle, grizzly, koala, panda, tiger, clean air/acid rain, clean water, and more. **Free.**



7 & 8. Lindal Cedar Homes. Contemporary ideas for the kitchen, bath, and entire cedar home, showcased in the new Lindal Cedar Homes Planbook. Get 200 pages of beautiful color photographs, 90 custom plans, design tips, and full details on insulation and solar energy. Draw your own custom home using the unique planning grids provided. **\$10.** Video also available. **\$19.95.** Or call 1-800-426-0536, Dept. BB3.



Mad River Canoe

9. Mad River Canoe. Catch the canoeing spirit with Mad River's full-color 28-page catalog. Twenty-two models for everyday recreational use or extended wilderness tripping are renowned for performance design, choice of materials, and quality craftsmanship. Full selection of canoeing accessories. **Free.**



10. Northwest River Supplies. We're not just rivers anymore! We offer you quality water-sports equipment from waterproof bags to sea-kayaking and canoeing equipment, to the new exciting catarafts, plus much . . . much . . . more. For your 1990 catalog full of new items for spring, give us a call at 1-800-635-5202 or write: P.O. Box 918655, Moscow, ID 83843. **Free.**

C A T A L O G S



Old Town® A TRADITION OF QUALITY

11. Old Town® Canoe. Thirty-five classic canoes. Rugged, affordable modern materials and traditional wood. Call 24 hours 1-800-543-4340 for catalog (in Maine or outside the continental U.S. call 1-207-827-5513). Dept. C28. **Free.**



12. Walnut Acres®. Whole foods for healthful living. Five hundred delicious, chemical-free foods from America's leading organic-foods producer. Our catalog has everything from staples for your recipes to convenient prepared dishes: whole grains, flours, soups, fruit juices, vegetables, peanut butters, granolas, and much more. 100-percent satisfaction guaranteed. Call toll-free 1-800-344-9025, ext. 087, or send for a year's catalog subscription. **\$1.**



13. World Wide Games. Make the great outdoors even greater with tournament-quality bocce balls and horseshoes, premium rock-maple croquet sets, nature puzzles for all ages, and more! All are quality-crafted for durability and fun. Unique full-color catalog. **\$2.**

TRAVEL



The Art of Adventure Travel ©

1. Above the Clouds Trekking. We take small groups of travelers, averaging fewer than ten, to some very off-the-beaten-path corners of the Himalayas, Andes, Africa, Europe, and New Zealand. Most travel is on foot, providing us access to areas where living cultural traditions are intact. For travelers with an adventurous spirit. **Free.**

Papua New Guinea.

2. Air Niugini—Papua New Guinea. The world's last link to Stone Age cultures. Experience the mystery of jungle-fringed rivers. Witness the colorful highlands people; enjoy remote unique lodges; sail on the mysterious Sepik River, an area known for primitive art. For the adventuresome. Four-wheel-drive expeditions, trekking, and diving. Treat yourself to the adventure of a lifetime. **Free.**



Air Niugini

THE NATIONAL AIRLINE OF PAPUA NEW GUINEA
5000 Birch St., Suite 3000, Newport Beach, CA 92660

EUROPE 1990 BIKING & HIKING



3. Baumeler Walking and Biking Tours. Let Europeans show you Europe. Guided (multilingual) and self-guided tours in England, France, Holland, Italy, Switzerland, West Germany, Austria, Belgium, Spain, Portugal, and Greece. You can travel with Americans and/or Europeans with the leading European company for walking and biking tours. Twenty-five years of experience. Offices in the United States and Europe. Individuals and groups of all levels are welcome. **Free.**

Country Cycling Tours



4. Country Cycling Tours. Send for our new 1990 color catalog of more than 200 first-class bicycle tours for adults and families in the eastern United States, Europe, Thailand, China, and Barbados. Support vehicles. Great accommodations. As *The New York Times* says: "A venture that lives up to all those daydreams." Wonderful walking tours, too. Our 14th year. **Free.**

CATALOG OF CATALOGS

EARTHWATCH



5. Earthwatch. Track koala bears in Australia or orangutans in the rainforest of Borneo; teach dolphins to speak in Hawaii or monitor Mt. Etna's movements. Assist university scientists with fascinating research projects on any of more than 120 field expeditions around the world. No experience is necessary. Trips average one to two weeks. All expedition costs for research aid are tax-deductible. Color magazine/catalog. \$2.

JOURNEYS



6. Journeys. The right path to worldwide nature and cultural adventures. Our own expert local guides in Madagascar, Kenya, Tanzania, Botswana, Ladakh, Nepal, Myanmar (Burma), Papua New Guinea, Japan, Ecuador, Costa Rica, and Argentina lead your small-group explorations to areas most tourists can't go. Conservation emphasis. Prompt personal service. New 1990 color catalog. Free.



7. Mountain Travel. Discover the world of adventure travel with the oldest and most experienced adventure-travel company. Send for Mountain Travel's informative 1990 catalog featuring more than 130 unique and exotic adventures to 50 countries on seven continents. Small groups. Expert leaders. Call 1-800-227-2384. Free.



8. Oceanic Society Expeditions. From reefs to rainforests, expert-guided ecotours. Vessel-based and land-based trips depart year-round to destinations worldwide. Small groups, unique itineraries: swimming with wild dolphins, walking with penguins, arm's-length encounters with whales, meeting the mountain gorillas of Zaire. Ecotours since 1972; non-profit. Call 1-415-441-1106 for 1990 color catalog. \$2.



9. Outward Bound. Enjoy a wilderness experience that gives you the confidence you need to be the best that you can be. Outward Bound offers more than 600 courses in 22 different states. Choose adventures ranging from whitewater rafting, mountain backpacking, horsetrailing, and trekking to sailing, dogsledding, and canyoneering. For catalog, write Outward Bound USA, 384 Field Point Road, Greenwich, CT 06830; or call 1-800-243-8520 (in Connecticut call 1-203-661-0797). Free.



OVERSEAS ADVENTURE TRAVEL

10. Overseas Adventure Travel. Worlds apart in adventure travel in Africa, South and Central America, Asia, and the Pacific. Imagine trekking in remote regions of Pakistan, exploring the unexplored Serengeti, or visiting the heart of Borneo. Contact OAT for a glimpse of adventure. 1-800-221-0814. Free.

University of California Research Expeditions Program



11. University Research Expeditions Program. University of California field-research teams need your time and talents for worldwide expeditions. Archaeology, animal behavior, anthropology, environmental studies, and arts. Your participation and tax-deductible contribution make it possible. For a catalog call 1-415-642-6586. Free.



WILDERNESS TRAVEL

12 & 13. Wilderness Travel. Hiking, wildlife observation, cycling, sailing, natural and cultural journeys. Nepal, Tibet, Tuscany, Turkey, Pacific, Poland, New Guinea, Andes, Amazon, Africa, Alps, and much more. Twelfth year. All abilities. Small groups. Superb leaders. Call 1-800-247-6700. 92-page color catalog. \$3. 1990 trip preview. Free.



WORLDWIDE ADVENTURES

14. Worldwide Adventures. One thousand adventures! Invest in your next vacation! We offer the most exciting adventures in the world. Imagine hiking in Nepal, the Andes, or Kashmir; cycling in China; riding camels in India; sailing in Australia; going on safari in Africa; or exploring Iceland or Costa Rica. In North America call toll-free 1-800-387-1483 for a color brochure. \$1.

SIERRA NOTES

The 20th anniversary of Earth Day, an occasion to celebrate the natural world and redouble efforts toward its protection, will be commemorated on Sunday, April 22, the day following John Muir's birthday.

In a special effort to assist Sierra Club members and others in directing their post-Earth Day conservation activities, the May/June issue of *Sierra* will include a copy of *The Sierra Club Earth Day Sourcebook*, a guide to identifying and obtaining posters, videotapes, books, brochures, and other materials of interest to environmental activists. For information on obtaining the *Sourcebook* in bulk quantities, contact Sierra Club Public Affairs, 730 Polk St., San Francisco, CA 94109; phone (415) 776-2211.

National and international promotion of Earth Day is being orchestrated by Earth Day 1990, an organization based in Palo Alto, California. The group encourages ecology fairs, tree-planting ceremonies, beach cleanups, and other public events to mark the anniversary, and has solicited widespread support from government officials, entertainers, religious leaders, educators, and the media. For information contact Earth Day 1990, P.O. Box AA, Stanford, CA 94309; telephone (415) 321-1990.

Wetlands Preservation 90, an outdoor fair for heightening public awareness about shrinking waterfowl habitat along the Pacific Flyway, will be held in Los Angeles April 7-8. Hosted by the Angeles Chapter of the Sierra Club, the event will take place at a site adjacent to Ballona Lagoon, a wildlife-rich wetland where shifting tides attract ducks, mergansers, least terns, herons, egrets, and sandpipers. The weekend's activities include foot races, art exhibits, nature walks, bike rides, and kite flying.

For more information contact the Sierra Club Angeles Chapter, 3550 W. Sixth St., Suite 321, Los Angeles,

CA 90020; telephone (213) 387-4287.

A festival of environmental films will be held April 27-29 in Colorado Springs, Colorado, to coincide with Earth Day. Billed as the first such festival in the United States, the program will allow actors, scriptwriters, filmmakers, and environmentalists to meet and discuss project ideas. Some 40 to 50 feature-length, short, and animated films and videos will be shown in competition. For more information contact the U.S. Environmental Film Festival, 1026 Colorado Ave., Colorado Springs, CO 80904; telephone (719) 520-1952.

An expedition to clean up Mt. Everest, whose flanks have been strewn with the litter of countless mountaineering ventures, will take place this summer. Led by veteran Everest climbers Liz Nichol and Bob McConnell, the Everest Environmental Expedition ("E3") will arrive at base camp in Tibet in early August. From there a work party will set out to accumulate and compact garbage that cannot be burned or otherwise disposed of on the mountain. Bundles of trash will then be carried by yak back to base camp. With the support of local Tibetans, the crew will attempt to devise a permanent system for recycling metal, plastic, and glass trash carried in by foreigners. To participate in or support the trip financially contact the Everest Environmental Expedition, 3730 Wind Dance Lane, Colorado Springs, CO 80906.

For those who can't join the Mt. Everest expedition but wish to lend a hand in a Nepalese environmental restoration project, the Sierra Club Outing Program is organizing a service trip to Nepal in 1991. The details of this undertaking are currently being negotiated with Nepalese environmentalists and officials. See future Outing Program announcements in *Sierra* for further information. ■

A rare opportunity to experience the Yukon wilderness

Discover the secrets of the north with an expert Indian guide. An enriching way to learn, first hand, Indian traditions and skills acquired over countless generations.

Choose from gentle adventures to more demanding excursions. Explore by horseback, hiking or by comfortable van.

See animals in the wild. Ancient Indian campsites. Feast on berries, bannock and fresh-caught fish cooked over an open fire.

For complete details on tours and excursions, write for our free brochure.

SHATAN TOURS



101 - 307 Jarvis St.,
Dept. M-2

Whitehorse, Yukon, Canada Y1A 2H3
Phone (403) 668-3763 Fax (403) 667-6303

AUTOBIOGRAPHY of a YOGI



Beautiful, sensitive, profound...

Paramahansa Yogananda's life story is a timely yet timeless account that offers both hope and insight...A book that should be read by every person who is searching for the meaning of life.

Paperback, 604 pages, 52 photos

Available at your bookstore or from the publisher:

SELF-REALIZATION FELLOWSHIP

3880 San Rafael Avenue, Dept. G
Los Angeles, California 90055

Please send me AUTOBIOGRAPHY OF A YOGI
Enclosed is \$5.45 postpaid (CA add sales tax)

NAME _____

ADDRESS _____

CITY _____

STATE _____ ZIP _____

Pay Your Respects to the Rainforest

Fascinating and fast-disappearing, tropical forests are worth saving—and seeing.

James L. Castner

IN THE SARDONIC LEXICON of overseas journalists, countries that never reach the front page are TINs, "totally invisible nations." These unknowns languish until a coup attempt or natural disaster pushes them into the international spotlight, when they gain the status of TFNs, which translates (roughly) as "totally fouled nations." Such is the case with the world's tropical rainforests. For cons these regions were impenetrable jungles little known to and hardly noticed by the world at large. Just in the last decade or so have we learned of their richness, complexity, and importance—only to find that they are disappearing into the maw of progress at the rate of 50 to 100 acres per minute. This sobering fact should make an environmental evangelist out of any traveler to the tropics.

A little more than half of the world's tropical rainforests are in Central and South America, a quarter are in Southeast Asia, Australia, and the islands in between, and about one fifth are in Africa. They are home to several million kinds of organisms, barely half a million of which have been classified. The Amazon region alone harbors one of every five plant species on Earth.

For all their mystery, tropical rainforests are easy to visit. Formerly inaccessible Amazonia can now be reached by a four-and-a-half-hour commercial flight from Miami to Iquitos in northeastern Peru, where you'll find probably the highest concentration of rainforest fa-

cilities in the New World. Explorama Tours is one of the most established tour companies here, accommodating guests at three "jungle lodges" along the Amazon River and its tributaries.

In southeastern Peru, the Explorer's Inn adjoins a network of more than 18 miles of mapped trails in the Tambopata Wildlife Reserve. In the same region the Manu Lodge provides respite to tourists at the Manu Biosphere Reserve. Visitors reach the area via a 45-minute flight from Cuzco or a two-day bus trip over the Andes. Either route ends with a river voyage of at least several hours through terrain where it is common to see macaws, monkeys, and, on occasion, jaguar.

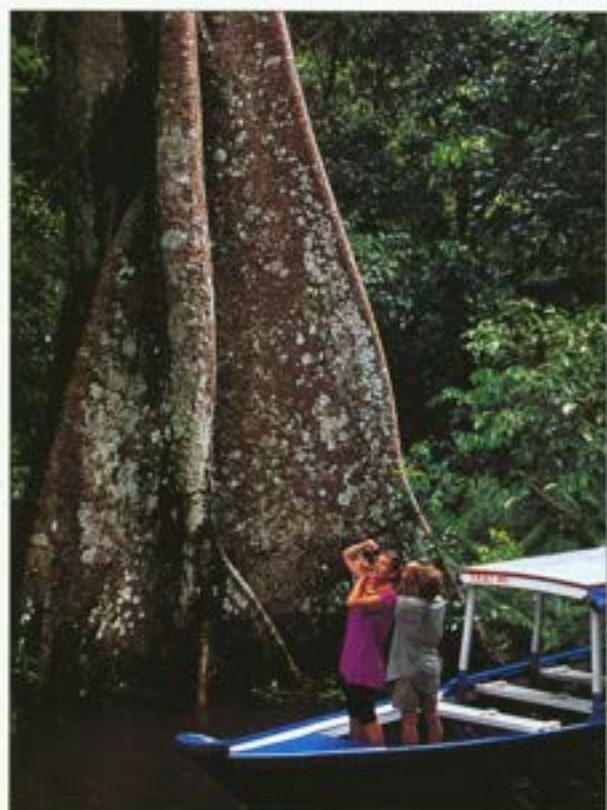
Central America's rainforests are less extensive but more accessible to North Americans. I highly recom-

mend Costa Rica for the first-time tropical traveler or those traveling on their own. The country has a long history of political stability, and 20 percent of its land is protected as national parks or preserves—more than in any other Latin American country. Less than four hours from the capital of San José lies the Monteverde Cloud Forest Reserve. The mist-shrouded forest straddling Pacific and Caribbean slopes offers an excellent system of mapped, marked trails.

How you visit the tropics depends only on your time, budget, and desire for comfort. Numerous companies organize natural-history package tours with fixed itineraries and all logistics prearranged. Among the best known are International Expeditions, Questers, and Journeys. Travelers with

more specific interests can hook up with companies such as Field Guides or Victor Emanuel Nature Tours for birdwatchers, Joseph Van Os Nature Tours for photographers, or Holbrook Travel for butterfly enthusiasts. Many conservation organizations (including the Sierra Club) and research institutions sponsor group trips to rainforest areas. If you want rugged adventure, look into the rafting, canoeing, and hiking trips offered by the likes of Sobek Expeditions, Mountain Travel, Wilderness Travel, and Canyon Explorers Club.

Travelers interested in research experience can volunteer as field assistants through nonprofit organizations such as Earthwatch, International Research Expeditions, and the Foundation for Field Re-



Just one look and you'll become an advocate for the jungle.

Who Says Environmental Protection Makes Economic Sense?

The Parnassus Fund Does!

Parnassus is a mutual fund that invests in companies that are sensitive to the environment. We also invest in companies that practice corporate social responsibility -- firms that, for example, treat their employees well, have good affirmative action policies and are creative and generous with their charitable contributions. At the same time, we avoid investing in companies that manufacture weapons, produce alcohol or tobacco, are involved with nuclear power or have operations in South Africa.

If you're interested in learning more about the Parnassus Fund, call us at (800)999-3505. We'll send you back a free prospectus and other information about the Fund.

THE PARNASSUS FUND

244 CALIFORNIA STREET
SAN FRANCISCO CALIFORNIA 94111

- Please send me a free prospectus containing more complete information on the Parnassus Fund including sales charges, management fees and expenses. I will read it carefully before I invest or send money.
- Please send IRA information.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Daytime Phone: _____

Call (800) 999-3505

Distributed by Parnassus Financial Management

SVB



Walk on the wild side



Find out how in our FREE, jam-packed wilderness course catalogue. There's something for everyone all year long!



Colorado Outward Bound School
945 Pennsylvania Street, Dept. 95
Denver, Colorado 80203-3198
(303) 837-0880

Please send me your course catalogue right away!

For ages 14 and over. Financial aid is available.

Name _____

Address _____

City _____ State _____ Zip _____

search. "Tuition" is tax-deductible.

Unless you're familiar with Latin America and proficient in Spanish (which is useful even in Portuguese-speaking Brazil), I don't recommend solo traveling. However, two to four people with a flexible schedule and a lot of patience can travel together in relative comfort for much less than they'd pay for a comprehensive tour. Several good guidebooks for independent adventurers are available. One of the most engrossing sources of information is the Denver-based South American Explorers Club, whose quarterly journal serves up timely tips and advice to a well-connected network of vagabonds.

Whether you sign on with a group or go it alone, keep in mind that tourism is hardly benign. While travelers leave cash rather than clearcuts, they represent a cultural intrusion (and in some instances introduce diseases). Scrutinize tour companies and guides carefully for their environmental and cultural sensitivity.

North Americans have several other opportunities nearby for visiting ancient-forest ecosystems. Tropical rainforests in the 28,000-acre Caribbean National Forest in Puerto Rico and Morne Trois Pitons National Park on the relatively unsullied Caribbean island of Dominica are protected refuges. On the island of Hawaii, the fate of one of the last large parcels of tropical forest in the 50 states is being decided by the courts; geothermal developers have already begun bulldozing roads through the area.

Finally, North America's temperate rainforests come close to matching the tropics in beauty and richness. Stretching from southeastern Alaska through British Columbia, the Pacific Northwest, and into Northern California, this ecosystem has more in common with its southern counterpart than most people would like: Deforestation is destroying it as well. ■

JAMES L. CASTNER is author of *Rainforests: A Guide to Research and Tourist Facilities* (Feline Press, P.O. Box 7219-S, Gainesville, FL 32605; 1990; \$14.95).



WILD BIRD, ANIMAL & MARINE MAMMAL MOBILES

Bring nature indoors. A truly unique gift that moves gracefully with the slightest breath of air. Silkscreened in lifelike colors and handmade in the Pacific Northwest USA. Over 30 species available.

Fully assembled and ready to hang. Attractively packaged with an informational fact sheet.

Send/Call for a FREE COLOR BROCHURE.

SKYFLIGHT MOBILES
Box 3393, Dept L
Bellevue, WA 98009
Call (206) 485-0730



Satisfaction Guaranteed! Wholesale inquiries welcome.
5% of profits donated to wildlife and conservation groups.



FROM REEFS TO RAINFORESTS

Ecotours since 1972
Expert leaders • Small groups

Galapagos • Costa Rica
Amazon • Belize • Baja
Alaska • Australia
Botswana • Tanzania
Patagonia • Indonesia

For free schedule of trips contact:

Oceanic Society Expeditions
Fort Mason Center, Suite 235
San Francisco, CA 94123
415/441-1106

FREE CATALOG

Products for a Healthy Planet!

Now, all the hard-to-find environmentally safe items you need for your home and office are found in one great catalog!

Seventh Generation brings you products for a healthy planet. Toilet paper made from recycled paper, biodegradable cleaners, recycling equipment, dioxin-free diapers, non-toxic stains, recycled motor oil and more! Dozens of products you'll use every day that are better for you...and our planet.

Call or write for a FREE catalog.

1-800-441-2538

Name _____ Dept: M04017

Address _____

City _____ State _____ Zip _____

Seventh Generation
Colchester, VT 05446-1672

SIERRA CLUB FINANCIAL REPORT

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

The Club's complete financial statements for the fiscal years ended September 30, 1989 and September 30, 1988, together with the report of Peat Marwick Main & Co., independent auditors, are available on request from Sierra Club headquarters at 730 Polk Street, San Francisco, California 94109.

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

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

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

INDEPENDENT AUDITORS' REPORT

Board of Directors
Sierra Club
San Francisco, California

We have audited the accompanying balance sheets of Sierra Club as of September 30, 1989 and 1988, and the related statements of revenue, expenses and changes in fund balances, and changes in cash for the years then ended. These financial statements are the responsibility of the Sierra Club's management. Our responsibility is to express an opinion on these financial statements based on our audits.

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

management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Sierra Club at September 30, 1989 and 1988, and the results of its operations and changes in its fund balances, and changes in its cash for the years then ended in conformity with generally accepted accounting principles.

KPMG Peat Marwick

Certified Public Accountants
December 13, 1989

TO THE MEMBERS OF THE SIERRA CLUB:

Fiscal Year 1989 was an outstanding year for the Sierra Club financially and in many other ways. Membership grew to more than 350,000 members, an increase of 12.2% over 1988. The number of volunteer groups increased by 5% to 366, and chapter dues allocations increased 6.3% to a record high of \$2,402,000. All the while, fund balances (net worth) increased \$2,066,200, up 34.2% from fiscal year 1988 to a record high of \$8,107,600. The operating surplus was \$2,060,400; \$1,174,700 increasing the unrestricted fund balance and \$885,700 distributed to board restricted life membership endowments.

Total revenues increased 20.3% in fiscal year 1989, to \$37,320,600. This was due primarily to the growth in membership revenue, up 7% to \$13,025,800, and also to increased contributions and grants, up 27.9% to \$10,708,400. Life membership revenues rose 53.3% to \$885,700. Outings and lodge revenue increased 30.4% to \$2,625,000. Book sales rose 40.5% to \$4,201,000. Royalties increased 9.3% to \$1,394,100, and advertising and investments increased 20.8% to \$3,022,800.

Expenses increased 13.3% to \$35,260,000. Program expenses represented the largest proportion (90%) of this increase, with the expenses associated with the studying and influencing of public policy rising \$1,681,100, and the associated costs of information and education rising \$1,761,800. Outdoor activities expenses were up 7.2% to \$2,455,400, while expenses for support services rose only 3%, to \$12,476,700.

This excellent financial performance was achieved while the Club also provided a Member Handbook for each membership, hosted its Third International Assembly, embarked on the Centennial Campaign and Celebration, and facilitated the growth of such Club functions as the Volunteer Development and Public Affairs offices. These results reflect the institution of a more comprehensive budget and financial review process, as is required for an organization the size and complexity of the Club, as well as excellent teamwork by those staff and volunteers with financial responsibilities.

Bob Howard
Treasurer

SIERRA CLUB FISCAL YEAR 1989



Source of Funds

Use of Funds

SIERRA CLUB BALANCE SHEETS

Years ended September 30, 1989 and 1988

| ASSETS | | | LIABILITIES AND FUND BALANCES | |
|---|----------------------|----------------------|--|---------------------|
| | 1989 | 1988 | 1989 | 1988 |
| Cash and cash equivalents | \$ 1,458,000 | \$ 1,007,000 | Accounts payable (note 10) | 2,764,300 |
| Accounts receivable: | | | Accrued expenses | 1,590,900 |
| Trade, less allowances for returns of \$289,000 and \$93,000 | 1,824,400 | 1,317,100 | Deferred revenue: | |
| Advertising, less allowances for doubtful accounts of \$49,000 and \$49,000 | — | — | Unrestricted | 468,600 |
| Grants (note 10) | 228,000 | 199,700 | Restricted | 276,800 |
| Other (note 10) | 360,300 | 301,700 | Obligations under capital lease (note 6) | 126,700 |
| Investments | 670,300 | 543,300 | Long-term debt (note 4) | — |
| Net realizable value of assets held for resale—discontinued operations (note 9) | 948,300 | 952,300 | | 6,839,300 |
| Prepaid expenses | — | 18,400 | FUND BALANCES: | |
| Advances, less allowances of \$75,000 and \$40,000 | 926,900 | 790,900 | Unrestricted | 1,798,400 |
| Investments—endowment fund (note 2) | 456,800 | 378,400 | Net investment in property and equipment | 839,100 |
| Property and equipment, net (note 3) | 5,152,600 | 4,261,100 | Endowment: | 1,156,600 |
| Paintings, photographs and books (note 11) | 2,895,300 | 2,732,100 | Quasi-endowments: | |
| | — | — | Life memberships | 4,239,800 |
| | — | — | Other | 870,100 |
| | — | — | Endowment-income restricted | 32,700 |
| | — | — | Treasury endowment | 10,000 |
| TOTAL ASSETS | \$ 14,946,900 | \$ 12,660,800 | | 8,107,600 |
| | | | TOTAL LIABILITIES AND FUND BALANCES | \$14,946,900 |

See accompanying notes to financial statements.

SIERRA CLUB STATEMENTS OF REVENUE, EXPENSES AND CHANGES IN FUND BALANCES

Years ended September 30, 1989 and 1988

| REVENUE | 1989 | | | 1988 | | |
|---|---------------------|---------------------|------------------|---------------------|---------------------|---------------------|
| | Unrestricted | Endowment | Restricted | Unrestricted | Endowment | Restricted |
| Member dues: | | | | | | |
| Annual dues | \$13,025,800 | — | — | 13,025,800 | — | — |
| Life memberships | — | 885,700 | — | 885,700 | — | — |
| Contributions and grants (note 10) | 8,644,700 | — | 2,063,700 | 10,708,400 | 6,577,400 | 1,798,300 |
| Outings and lodge reservations and fees | 2,625,000 | — | — | 2,625,000 | 2,012,200 | — |
| Book sales | 4,201,000 | — | — | 4,201,000 | 2,989,600 | — |
| Revenues | 1,394,100 | — | — | 1,394,100 | 1,275,200 | — |
| Advertising, investment and other income | 3,002,300 | — | 20,500 | 3,022,800 | 2,498,800 | 3,500 |
| Reimbursement (note 10): | | | | | | |
| Fundraising | 1,279,700 | — | — | 1,279,700 | 1,002,900 | — |
| Other | 178,100 | — | — | 178,100 | 126,700 | — |
| TOTAL REVENUE | 34,356,700 | 885,700 | 2,084,200 | 37,325,600 | 28,682,000 | 1,801,800 |
| EXPENSES: | | | | | | |
| Program services: | | | | | | |
| Studying and influencing public policy | 7,960,700 | — | 1,673,100 | 9,633,800 | 6,623,400 | 1,529,300 |
| Information and education | 8,007,800 | — | 284,500 | 8,292,300 | 6,261,500 | 269,000 |
| Outdoor activities | 2,574,200 | — | 81,200 | 2,655,400 | 2,210,000 | 79,800 |
| Chapter allocations | 2,402,000 | — | — | 2,402,000 | 2,258,800 | — |
| | 20,744,700 | — | 2,038,800 | 22,783,500 | 17,353,700 | 1,678,100 |
| Support services: | | | | | | |
| General and administrative | 4,680,300 | — | 45,400 | 4,725,700 | 4,516,600 | 71,500 |
| Membership | 4,713,800 | — | — | 4,713,800 | 4,536,900 | — |
| Fundraising | 1,466,700 | — | — | 1,466,700 | 1,744,500 | — |
| Sierra Club | 1,568,300 | — | — | 1,568,300 | 1,137,500 | 32,400 |
| Affiliates | 12,451,300 | — | 45,400 | 12,476,700 | 11,955,500 | 123,700 |
| TOTAL EXPENSES | 33,178,000 | — | 2,084,200 | 35,262,200 | 29,309,200 | 1,801,800 |
| Excess (deficiency) of revenue over expenses from continuing operations | 1,178,700 | 885,700 | — | 2,064,400 | 927,200 | — |
| Discontinued operations (note 9): | | | | | | |
| Income from operations of discontinued catalog division | — | — | — | — | 83,000 | — |
| Loss on disposal of catalog division | — | — | — | — | (252,200) | — |
| Loss from discontinued operations | — | — | — | — | (168,000) | — |
| Excess (deficiency) of revenue over expenses before capital additions | 1,178,700 | 885,700 | — | 2,064,400 | 925,800 | — |
| Capital additions: | | | | | | |
| Other quasi-endowments | — | 3,300 | — | 3,300 | — | 46,500 |
| Income restricted endowments | — | 300 | — | 300 | — | 10,700 |
| Excess (deficiency) of revenues over expenses after capital additions | 1,178,700 | 891,300 | — | 2,066,200 | 925,800 | 434,800 |
| Fund balances at beginning of year | 1,780,300 | 4,261,100 | — | 6,041,400 | 3,626,300 | — |
| FUND BALANCES AT END OF YEAR | \$ 2,958,000 | \$ 5,152,400 | — | \$ 8,107,600 | \$ 4,261,100 | \$ 4,261,100 |

See accompanying notes to financial statements.

SIERRA CLUB STATEMENTS OF CHANGES IN CASH

Years Ended September 30, 1989 and 1988

| SOURCES OF CASH | 1989 | 1988 | USES OF CASH | 1989 | 1988 |
|--|---|------------------|--|------------------|--------------------------|
| | Excess (deficiency) of revenues over expenses | \$2,064,400 | | \$ 2,066,200 | Purchases of investments |
| Add (deduct) non-cash items: | | | Acquisition of property and equipment, net | 498,300 | 344,800 |
| Depreciation and amortization | 335,100 | 295,800 | Acquisition of Washington, D.C. building | — | 1,843,300 |
| Amortization of discount on investments | (221,300) | (196,800) | Reduction of obligations under capital lease | 75,700 | 136,800 |
| TOTAL CASH PROVIDED BY (USED IN) OPERATIONS | 2,277,200 | (192,200) | Reduction of long-term debt | 6,500 | 1,100 |
| Proceeds from sale of investments | 4,351,200 | 1,221,600 | Increase in trade accounts receivable, net | 307,300 | 180,900 |
| Increase in other endowments | 3,800 | 57,200 | Increase in advertising receivable, net | 68,900 | — |
| Financing of fixed-asset additions through capital leases | 30,400 | — | Increase in grants receivable | 83,600 | — |
| Increase in investments | 3,800 | 323,300 | Increase in other receivables | 129,000 | — |
| Decrease in net realizable value of assets held for resale—discontinued operations | 18,400 | — | Increase in prepaid expenses | 136,000 | — |
| Decrease in advances | 121,600 | — | Increase in net realizable value of assets held for resale—discontinued operations | — | 18,400 |
| Increase in accounts payable | 155,800 | 38,700 | Increase in advances | — | 117,600 |
| Increase in accrued expenses | 182,000 | 424,200 | Decrease in deferred revenue—restricted | 143,500 | — |
| Increase in deferred revenues—unrestricted | 79,800 | 190,800 | | | |
| Proceeds from acquisition of long-term debt | — | 1,620,000 | TOTAL USES OF CASH | 6,772,600 | 4,262,500 |
| Decrease in advertising receivable, net | — | 8,700 | INCREASE IN CASH AND CASH EQUIVALENTS | 450,600 | 60,600 |
| Decrease in grants receivable | — | 32,200 | Cash and cash equivalents at beginning of year | 1,007,600 | 947,000 |
| Decrease in other receivables | — | 1,700 | | | |
| Decrease in prepaid expense | — | 8,000 | | | |
| Increase in deferred revenue—restricted | — | 146,000 | | | |
| TOTAL SOURCES OF CASH | 7,223,000 | 6,323,100 | | | |

See accompanying notes to financial statements.

SIERRA CLUB NOTES TO FINANCIAL STATEMENTS

NOTE 1 - Summary of Significant Accounting Policies

(a) Organization

The Sierra Club (the Club) is a nonprofit voluntary membership organization established to explore, enjoy and protect the wild places of the earth. The Club operates many public interest programs covering a broad range of environmental issues. The studying and influencing public policy program consists of staff and volunteers engaged in legislative and non-legislative activities, including lobbying, research, legal and policy development. Information and education includes the literary programs of Sierra Club books and News, the Club's magazine. Outdoor activities include national and international outings programs, consisting of approximately 290 trips annually. The membership program serves approximately 350,000 members and includes support and funding of 37 volunteer chapters and over 366 groups, and the development of a broad-based volunteer membership.

(b) Basis of Presentation

The financial statements include the accounts of the Club and its wholly owned subsidiary, Sierra Club Property Management, Inc. All material intercompany transactions have been eliminated. The financial statements do not include the financial activities of the Club's various self-directed chapters and group organizations. The Sierra Club Foundation and Sierra Club Legal Defense Fund are separate legal entities and, thus, are not included in the Club's financial statements.

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

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

Unrestricted funds represent the positions of expendable funds that are available for support of the Club's operations, including the Club's investment in property and equipment.

Endowment funds include funds that are permanently restricted by outside donors requiring that the principal be invested and only the income be used. The Board has designated quasi-endowment funds for conservation related activities and future use.

(c) Donated Services

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

(d) Cash Equivalents

The Club's policy is to invest cash in excess of operating requirements in money market accounts. Investments in money market accounts amounted to \$1,620,800 and \$594,200 at September 30, 1989 and 1988, respectively.

(e) Trade Accounts Receivable

Allowance for publication returns is determined using historical return rates.

(f) Inventories

Inventories consist primarily of books and are stated at the lower of cost or market on the first-in, first-out basis. Unit costs for new books are based on paper, printing and binding charges only. Production costs are allocated over unit sales for the first printing; however, not longer than the first twelve months of sales.

(g) Advances

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

(h) Property and Equipment

Property and equipment are stated at cost at the date of acquisition or fair value at the date of gift or bequest. Donated paintings, photographs and books are not reflected in the accompanying financial statements (note 11). Depreciation expense is provided on a straight-line basis over the estimated useful lives (2 to 32 years) of the related assets. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation are removed from the accounts, and any resulting gain or loss is recognized in income for the period. The cost of maintenance and repairs is charged to expense as incurred. Significant renewals and betterments are capitalized.

(i) Deferred Revenue

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

(j) Member Dues

Membership dues are recognized as revenue when received.

(k) Contributions

All contributions are considered available for unrestricted use unless specifically restricted by the donor. Restricted contributions are recognized as revenue as the restrictions are met. Legal services performed on behalf of the Club by the Sierra Club Legal Defense Fund are recorded as contributions with equivalent amounts charged to expense (note 10).

(l) Endowment Funds

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

(m) Reclassifications

Certain reclassifications not affecting income have been made to the 1988 financial statements in order to conform to the 1989 presentation.

NOTE 2 - Investments-Endowment Fund

Investments of the Endowment Fund are stated at amortized cost. It is the Club's intention to hold investments to maturity. Cost and market values at September 30, 1989 and 1988 were:

| | 1989 | | 1988 | |
|--|----------------|--------------|----------------|--------------|
| | Amortized cost | Market value | Amortized cost | Market value |
| U.S. government and Federal agency bonds | \$4,767,600 | \$4,529,200 | \$4,083,900 | \$4,148,800 |
| Money market funds and savings accounts | 385,000 | 385,000 | 177,200 | 177,200 |
| | \$5,152,600 | \$4,914,200 | \$4,261,100 | \$4,326,000 |

Investment income amounted to \$471,300 in 1989 and \$323,000 in 1988. The rate of return on endowment investments was 9% in 1989 and 8% in 1988.

NOTE 3 - Property and Equipment

| | September 30 | |
|--|--------------|-------------|
| | 1989 | 1988 |
| Land | \$ 563,300 | \$ 563,300 |
| Buildings and leasehold improvements | 1,975,300 | 1,655,400 |
| Furniture and equipment | 2,025,400 | 1,903,500 |
| Leased equipment (note 6) | 363,900 | 326,400 |
| Less accumulated depreciation and amortization | (2,082,600) | (1,775,900) |
| | \$2,895,300 | \$2,772,700 |

Depreciation and amortization expense was \$335,100 and \$295,800 for the years ended September 30, 1989 and 1988, respectively. Accumulated depreciation for leased equipment was \$253,600 in 1989 and \$176,300 in 1988.

NOTE 4 - Long-term Debt

In August 1988, the Club entered into a loan agreement for \$1,620,000 with American Security Bank to provide financing for the purchase of an office building in Washington, D.C. The agreement allows the bank to call the loan or change the interest rate at the end of each three-year period and expires at the end of 15 years, at which time the remaining balance is due in the form of a balloon payment. The current monthly payments are \$15,833 with an interest rate of 11.35%. The debt is secured by a deed of trust on the office building. Scheduled maturities of long-term debt outstanding on September 30, 1989 are as follows:

| Year Ended | September 30 |
|------------------------------------|--------------|
| 1990 | \$ 290,000 |
| 1991 | 290,000 |
| 1992 | 190,000 |
| 1993 | 190,000 |
| 1994 | 190,000 |
| Thereafter | 3,660,000 |
| Total obligations | 3,990,000 |
| Less amount representing interest | (2,384,200) |
| Present value of total obligations | \$1,605,800 |

The Club is in compliance with all covenants of the loan agreement.

NOTE 5 - Line of Credit

The Club has available until April 30, 1990 a revolving line of bank credit which permits borrowings of up to \$2,000,000 at the bank's prime interest rate. The line is secured by the Club's quasi-endowment investments. No amounts were outstanding at September 30, 1989 and 1988.

NOTE 6 - Leases

Leases are for office facilities (note 10), computer equipment, system software and other equipment. Certain leases provide for minimum and additional rental payments based on expenses. Future minimum payments under all noncancelable leases with terms greater than one year at September 30, 1989 are as follows:

| Year Ended | Capital Leases | Operating Leases |
|-----------------------------------|----------------|------------------|
| September 30 | | |
| 1990 | \$ 92,600 | \$1,315,200 |
| 1991 | 30,800 | 1,275,000 |
| 1992 | 9,300 | 1,225,200 |
| 1993 | — | 1,190,400 |
| 1994 | — | 1,158,000 |
| Thereafter | — | 148,500 |
| Total lease payments | 132,700 | \$6,348,200 |
| Less amount representing interest | (21,000) | — |
| Present value of lease payments | \$111,700 | — |

Minimum future rentals receivable under noncancelable operating leases at September 30, 1989 are as follows:

| Year ended September 30 | Operating Leases |
|--------------------------|------------------|
| 1990 | \$119,800 |
| 1991 | 90,700 |
| 1992 | 79,600 |
| 1993 | 66,000 |
| 1994 | 66,000 |
| Thereafter | 86,700 |
| Total rentals receivable | \$487,800 |

Rent expense for operating leases was \$1,330,500 in 1989 and \$1,201,000 in 1988. Leased equipment is pledged as security under the related capital leases. Rental income on leases was \$175,900 in 1989 and \$135,300 in 1988. Lease related interest expense was \$16,900 and \$33,900 in 1989 and 1988, respectively.

NOTE 7 - Income Tax Status

The Club's principal activities are exempt from Federal and California income taxes. However, certain of the Club's revenues are subject to the unrelated business income tax. Provision for the unrelated business income tax was \$303,000 and \$303,000 in 1989 and 1988, respectively.

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

NOTE 8 - Pension Plan

The Club has a defined benefit pension plan covering substantially all of its employees. The benefits are based on years of service and employer's compensation history. The following schedule sets forth the plan's funded status and amounts recognized in the Club's balance sheet on September 30, 1989 and 1988:

| | 1989 | 1988 |
|--|-------------|-------------|
| Actuarial present value of benefit obligations | | |
| Accumulated benefit obligation all of which is vested | \$1,366,200 | \$3,076,100 |
| Projected benefit obligation for service rendered to date | (2,206,200) | (1,894,900) |
| Plan assets at fair value, which consists of a pooled investment account | 2,515,000 | 2,123,200 |
| Plan assets in excess of projected benefit obligations | 216,800 | 228,300 |
| Unrecognized prior service costs | 67,800 | — |
| Unrecognized net gain | (22,800) | (28,900) |
| Unrecognized net asset at October 1, 1987 being amortized over 15 years | (122,000) | (131,400) |
| Prepaid pension cost included in prepaid expenses | \$ 139,800 | \$ 67,000 |
| Net pension cost for 1989 and 1988 included the following components: | | |
| Service cost | \$ 216,900 | \$ 175,100 |
| Interest cost | 173,200 | 136,000 |
| Actual return on plan assets | (195,500) | (263,500) |
| Net amortization and deferral | (1,000) | (3,400) |
| Deferred asset gain (loss) | (7,400) | 29,800 |
| Net periodic pension costs | \$ 185,500 | \$ 148,100 |

The weighted average discount rate and rate of increase in future compensation levels used in determining the actuarial present value of the projected benefit obligation were 9% and 7%, respectively. The expected long-term rate of return on assets was 9%. Contributions to the plan were \$256,100 in 1989 and \$213,200 in 1988.

NOTE 9 - Discontinued Operations

In late March 1988, the Club decided to discontinue its Catalog Sales Department. The Club disposed of its catalog inventory in February 1989. Total liquidation was in the form of bulk sales to wholesalers. At September 30, 1988, catalog inventory was valued at \$18,400. The Catalog Sales Department income from operations in 1988 was \$83,600. Net sales of the division were \$3,108,200 for 1988. Net sales of the division were \$37,400 from April 1, 1988 to September 30, 1988. Proceeds from final liquidation did not significantly differ from its estimated net realizable value of \$18,400 at September 30, 1988.

NOTE 10 - Transactions with Affiliates

The Sierra Club receives contributions from the Sierra Club Foundation and the Sierra Club Legal Defense Fund. Contributions from the Sierra Club Foundation represent direct grants to the Club in support of various programs and totaled \$1,613,700 in 1989 and \$1,481,300 in 1988. Of the preceding amount, \$385,300 and \$361,700 were receivable at September 30, 1989 and 1988, respectively.

The Sierra Club Foundation leases its premises from the Club. The Club also provides the Foundation with fundraising, accounting and other services. Amounts received for these services were \$1,457,800 and \$1,129,600 in each of the years ended December 31, 1989 and 1988. At December 31, 1989 and 1988, the receivable from the Foundation was \$209,600 and \$67,000, respectively. These amounts are included in other receivables.

Contributions from the Sierra Club Legal Defense Fund for legal services performed on behalf of the Club totaled \$4,825,300 in 1989 and \$3,309,800 in 1988. In addition, the Club received contributions on behalf of the Legal Defense Fund. At September 30, 1989 and 1988, \$51,300 and \$17,100, respectively, was payable by the Club to the Legal Defense Fund. These amounts are included in accounts payable.

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

Since its inception, the Sierra Club has been the recipient of various donated paintings, photographs and rare books. During 1987, the Club had certain paintings and photographs appraised for insurance purposes. The appraised market value of these paintings and photographs totaled \$650,000 at that time. The books have not been appraised for several years. The last appraisal indicated a market value of \$30,000. There is no value assigned to these items in the accompanying financial statements.

NOTE 11 - Paintings, Photographs and Books

Since its inception, the Sierra Club has been the recipient of various donated paintings, photographs and rare books. During 1987, the Club had certain paintings and photographs appraised for insurance purposes. The appraised market value of these paintings and photographs totaled \$650,000 at that time. The books have not been appraised for several years. The last appraisal indicated a market value of \$30,000. There is no value assigned to these items in the accompanying financial statements.

NOTE 12 - Commitments and Contingencies

The Club is a defendant in a lawsuit alleging breach of contract arising out of an affinity credit card membership agreement which was terminated. It is the opinion of management that the outcome of the lawsuit will not materially affect the operations of the Club, and no provision has been made in these financial statements. The Club is involved in a number of lawsuits resulting from the operations of its Outings program. The Club is covered by insurance for this program and, therefore, no provision has been made.

RAINFOREST SPECIALISTS

International Expeditions leads the world in nature travel and is the acknowledged specialist in Rainforest Ecotourism. Call today for our general catalog of natural history destinations or to receive detailed itineraries for specific travel programs.

For more information and free brochure call
TOLL FREE **1-800-633-4734**



INTERNATIONAL EXPEDITIONS INC

1776 Independence Court
Birmingham, Alabama 35216
205/870-5550

BOOKS

An Unsettling Dose of Isotopes

*Multiple Exposures:
Chronicles of the Radiation Age*
by Catherine Caufield
Harper & Row
\$19.95, cloth

Carol Polsgrove

OF THE MANY sad stories in this book, the one that tugs hardest at my sympathies is the tale of those women and girls—some of the girls only 12 years of age—who painted luminous dials on the faces of watches in the era of the First World War. To erase excess paint around the fine lines of the numbers, a painter had to clean her brush and draw it along the edge of the numbers. The best way to wipe the brush clean, the dial-painters found, was to pass it between their lips. Each time they did, they swallowed radium.

Less than ten years later, the young dial-painters began to die, several after operations on their jaws. Their employer, U.S. Radium Corporation, blamed the women: Poor oral hygiene, the company said. But, privately, the company commissioned a report from the Harvard School of Public Health. Let Catherine Caufield tell the story:

On their first visit to the U.S. Radium plant, the Harvard team found the work area spattered with radium paint. Examining workers in a dark room, they found that 'their hair, faces, hands, arms, necks, the dresses, the underclothes, even the corsets of the dial-painters were luminous.' Dust collected from the light fixtures and wall beams of the painting room and from offices in the plant glowed in the dark. Gamma rays emitted by the radium fogged up sealed dental films placed in the painting room within two or three days—at least

five times faster than considered acceptable. Tests of 22 employees failed to find a single one whose blood count was normal.

The conclusion: All the workers had been exposed to excessive radiation. They had swallowed it, they had inhaled it, it had penetrated their skin.

The company suppressed the report, but the county medical examiner turned up other evidence linking new deaths to radium exposure. He had made an important discovery: Radioactive materials inhaled or ingested stay in the body to irradiate and destroy. His finding cast a shadow of doubt over then-popular uses of radioactive substances to treat rheumatism, high blood pressure, menstrual irregularities, depression, and other ailments.

Yet the government established no standards for exposure to radium. In the 1930s the element was still showing up as an ingredient in face cream, contraceptive vaginal jelly, and other consumer products.

And so the story goes on—Caufield's long, painful narrative of America's failure to measure the power of radioactivity to destroy human health. With relentless discipline, as she describes the development of the atomic bomb, the nuclear tests, the coming of nuclear power, Caufield keeps the spotlight exactly on her subject: the failure of government and science to protect the public by setting clear and valid standards for exposure to radiation.

Instead, standards have shifted, and shifted, and shifted again, as new evidence has ominously lowered the threshold of safety. Even today our regulatory shield is a jerry-built structure, Caufield says, with standards based not "on scientific certainty, but on judgment, hunches, and compromise."

Caufield's account comes at a crucial time, as the nuclear-power industry lobbies hard to make a comeback after years

Carry The Plastic That's Actually Good For The Environment.



Every time you use your Sierra Club Classic VISA® Card, you'll help the club that's charged with preserving the environment.

Of course, along with protecting the interests of the environment, the card will appeal to your self-interests as well. With a package of VISA Values designed especially for Sierra Club members.

First, you pay no annual fee for the first year. And you'll get discounts on travel services that can save you hundreds. To satisfy your wanderlust economically, our Travel Agents will be able to help you find the lowest available fares for your travel. Every time you book hotel and travel reservations through our Travel Center, you'll help the club, and save yourself money as well.

You'll also save anytime you rent a car from Hertz, National or Avis. And you'll be automatically insured for up to \$10,000 on any car you rent. As a Sierra Club Classic VISA Cardholder, we'll be glad to send you a free supplemental card for anyone in your family. Plus, you'll get

\$100,000 Travel Insurance. And \$500 emergency cash whenever and wherever you need it, all over the world.

Finally, you'll find your Sierra Club Classic VISA Card gives you access to instant cash just by using the automatic teller machines in the PLUS® and VISA® banking networks around the country, and internationally. Or, use Direct Access Checks, available with your account. If there's ever any problem with your card, we offer a Customer Service Hotline, and a free card registration and address change service.

To apply for your Sierra Club Classic VISA Card, fill out the attached application. If you'd like a new application, or more information, just give us a call at 1-800-759-2278, or 1-800-759-2281. And start carrying the only piece of plastic that's both ecologically minded, and economically sound.



SIERRA CLUB

Want to brush up on a foreign language?



With Audio-Forum's intermediate and advanced materials, it's easy to maintain and sharpen your foreign language skills.

Besides intermediate and advanced audio-cassette courses—most developed for the U.S. State Dept.—we offer foreign-language mystery dramas, dialogs recorded in Paris, games, music, and many other helpful materials. And if you want to learn a new language, we have beginning courses for adults and for children.

We offer introductory and advanced materials in most of the world's languages: French, German, Spanish, Italian, Japanese, Mandarin, Greek, Russian, Portuguese, Korean, Norwegian, Swedish, and many others.

Call 1-800-243-1234 for FREE 32-p. catalog, or write:

AUDIO-FORUM®

Room M316, 96 Broad Street,
Guilford, CT 06437 (203) 453-9794

columbia
pacific
university

NON-RESIDENTIAL BACHELOR'S, MASTER'S, and DOCTORAL DEGREES for the ACCOMPLISHED INDIVIDUAL.

Columbia Pacific University, the largest non-residential graduate university in the U.S., has been granted full institutional approval to confer non-resident Bachelor's, Master's, and Doctoral degrees in Arts and Sciences, Administration and Management, Health and Human Services, and International Law.

Degrees are earned through a combination of academic credit for work and life experience, a core curriculum emphasizing independent study skills, and an independent study project in the student's area of special interest. The time involved is shortened due to accelerated, self-paced learning. The cost is as low as \$5,000.

Columbia Pacific University is attracting accomplished individuals, members of the business and professional communities, who want to have a hand in designing their own independent study programs and receive academic acknowledgement for their personal achievements. May I send you more information?

Richard Crews, M.D., President
COLUMBIA PACIFIC UNIVERSITY
Dept. 1263
1415 Third St., San Rafael, CA 94901
or call 415-459-1650

(toll-free 800-227-0119; in California 800-552-5522)

of performance and public-relations problems. But the author's greatest contribution is to remind us that nuclear power and nuclear weapons are not the only radioactive threat. In fact, to her mind, the greatest threat lies in other uses of radioactivity, medical and industrial in particular. She comes down especially hard on doctors and dentists, who routinely inflict unnecessary and damaging X-rays on patients for a variety of reasons—among them advance protection against lawsuits.

To this day, she points out, in 35 states anyone can operate an X-ray machine, and secretaries and office clerks often do. In California, which has the most stringent X-ray regulations, the latest survey turned up unsafe equipment in 75 percent of the state's hospitals. Doctors do not even heed the warnings of their own medical establishment; Caulfield notes that "in 1980, the year in which major American medical groups recommended that doctors not routinely X-ray pregnant women to check the size of their birth canal, 266,000 pregnant women in the United States were X-rayed for that reason."

This is not a book for the faint-hearted. Laying fact upon fact, anecdote upon anecdote, Caulfield builds a bizarre chamber of horrors, all the more chilling because of the undramatic, deadpan tone of her voice. There is no comfort here—not a shred; no reassurance that the powers that be have our best interests at heart; no basis for trust, even of doctors. In a grim array of situations—during nuclear testing, uranium mining, or at the X-ray department of the local hospital—what is deemed "safe" is what is expedient.

I had barely written the preceding paragraphs when I shattered my wrist into several pieces and found myself under the X-ray machine in the hospital emergency room in a small city. My wrist lay on my stomach as the technician slipped a small rectangular sheet of lead under the X-ray film. As he took several pictures, I kept saying, "It's slipping off. My shield's slipping off."

"Don't worry about that," he said, snapping away. "Worry about your arm." As if to prove how foolish my

Of digger bees and underground virgins...



Only very special plants and animals can flourish in a place where the temperature may rise above one hundred degrees each day for months on end; now John Alcock celebrates the beauty and diversity that can be found in even the most unpromising places.

Sonoran Desert Summer

John Alcock

illustrated by Marilyn Hoff Stewart

\$19.95 at bookstores now, or from
The University of Arizona Press
1230 N. Park Ave., Tucson AZ 85719
VISA/MC orders, call 1-800-426-3797

MAIL THIS COUPON FOR FREE FACTS! TRAIN AT HOME FOR A BETTER CAREER 42 ways ICS can help improve your life

Rush free facts and color brochure on how I can train at home for the career I have chosen. I understand I am under no obligation and no salesman will visit me. CHECK ONE BOX ONLY!

ASSOCIATE IN SPECIALIZED BUSINESS DEGREE PROGRAMS

- Business Management
 Accounting
 Business Management with option in Finance
 Business Management with option in Marketing

ASSOCIATE IN SPECIALIZED TECHNOLOGY DEGREE PROGRAMS

- Civil Engineering Tech.
 Mechanical Engineering Technology
 Electrical Engineering Technology
 Electronics Technology

CAREER DIPLOMA PROGRAMS

- Computer Programming
 Personal Computer Specialist
 High School Bookkeeping
 Secretarial
 Medical/Dental Office Assistant
 Legal Secretary
 Fashion Merchandising
 Auto Mechanics
 Hotel/Restaurant Management
 Child Day Care
 Legal Assistant
- TV/VCR Repair
 Surveying & Mapping
 Catering/Gourmet Cooking
 Fitness & Nutrition
 Small Business Management
 Drafting
 Air Conditioning & Refrigeration
 Microcomputer Repair
 Electronics
 Travel Agent
 Police Sciences
 Art
- Wildlife/Forestry Conservation
 Veterinary Assistant
 Diesel Mechanics
 Electrician
 Interior Decorating
 Motorcycle Repair
 Gun Repair
 Photography
 Journalism/Short Story Writing
 Dressmaking & Design

Name Age

Address Apt. #

City/State Zip

Phone ()

ICS International Correspondence Schools
Dept. 4MS30, 925 Oak St., Scranton, PA 18515

Peep



Show



Get a bird's eye view of the bluebird's life cycle through Cliff Dweller's unique plexi-glass window. The finest bird house available: 3/4" select red cedar, double thickness entry

for protection against predators, removable side for easy cleaning. Two-year guarantee. Made in USA. Plus 23-page booklet, "Getting To Know The Bluebird." To order, send \$39.95, check or money order to:



Cliff Dweller
Dept. C
P. O. Box 29340
Shreveport, LA 71149

Excitement . . . intellectual stimulation

University Travel Programs

Yes, send me information on these 1990 and 1991 adventures:

- Wildlife Viewing in India and Nepal
- Africa—A Primate Safari
- Botswana Wildlife Safari
- Kenya Wildlife Safari
- Headwaters of the Amazon
- Kashmir—The Undiscovered Himalayas
- Journey into Prehistory of the Grand Canyon
- The Essence of India
- Project Antarctica

Name _____

Address _____

City _____ State _____ Zip _____

Mail to University Extension, Susan Berman
University of California, Davis, CA 95616
or call (916) 757-8892 890 700

Join experts from the
University of California, Davis

fears were, he held my wrist with his own unprotected hands for two shots.

The doctor looked at the X-rays and suggested the treatment he thought would offer the best results: fixing the bones with pins to an external steel frame. As he performed the procedure, he would be guided by near-constant X-rays. "What about the radiation hazard?" I asked. "Minimal to you," he said. "You'll have a lead apron. Considerable to me, because I do these all the time."

I did not hesitate to accept his sacrifice: I wanted my wrist as restored as it could be.

The experience crystallized for me a reservation I had as I read *Multiple Exposures*. Something important is missing in this book: a larger perspective on risk. I know Caufield is not a scientist and cannot say on her own authority how risks weigh out in the medical use of radiation. But she is a thoughtful and experienced journalist, author of *In the Rainforest* (Knopf, 1985). She could have offered a concluding essay on the risks of daily life in America. Aren't automobiles, practically speaking, a bigger risk to most of us than X-ray machines? Just about anyone, I notice, can drive one, and both driver and car can be in just about any condition. When will we as a society take a hard look at the deaths and injuries inflicted by our system of transportation? Or will we go on accepting the price because it is expedient to do so?

Shouldn't radiation hazards also be considered in the context of the other chemical hazards to which we are subjected? Caufield notes that "ionizing radiation is the best-understood and most tightly controlled toxic substance known to men." How much energy and money should we be spending, therefore, on refining our understanding of radiation, and how much should go toward understanding other common hazards?

But I also understand why Caufield drew back from these questions—they lead to so many more. She acknowledges as much in her concluding sentences: "Radiation is a scientific matter, but radiation protection is more than

The Boat That Flies



So light and compact. The versatile, timeless Klepper America, the world's foremost folding boat, can go onto a plane, or into your car trunk. Stow in two pack-bags and enjoy the ultimate in travel freedom. It's a professional's boat, ideal for beginners.



A true year round boat, it sets up in minutes for river touring, lake cruising, some white-water, fishing, sailing, and sport rowing. Klepper

developed and continues to lead in sea kayaking. And the Atlantic has been crossed by Kleppers.

Get more information about these legends. Send for a free illustrated brochure and choose the boat to fit your recreation needs.



KLEPPER AMERICA

folding boats, kayaks

35 Union Square West, SM-130
New York, New York 10003

Please send information on:

- folding boats kayaks
 accessories

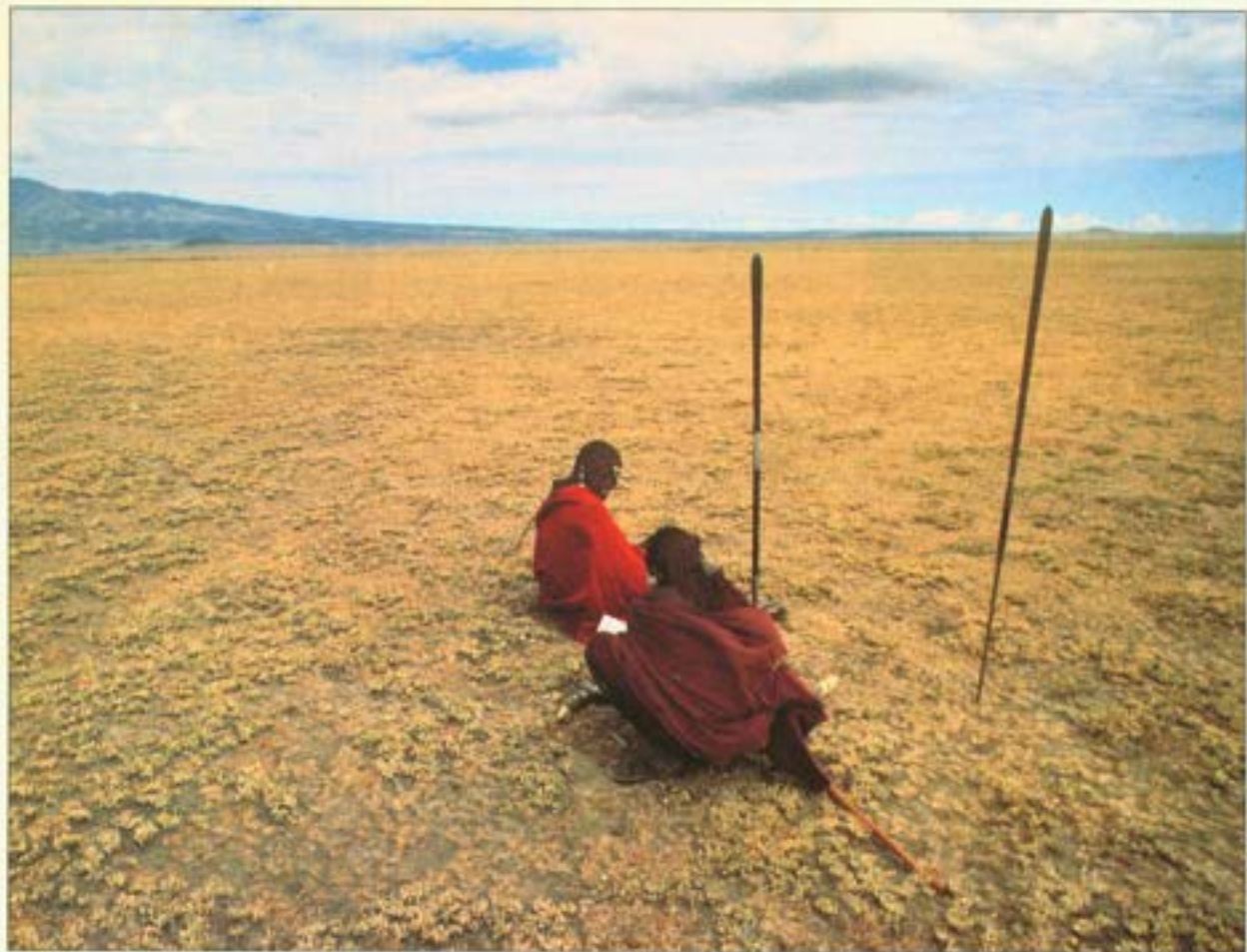
Name _____

Address _____

City _____

State _____

Zip _____



The Serengeti:
Land of Endless Space
 by Lisa and Sven-Olof Lindblad
 Rizzoli
 \$40, cloth; \$25, paper.

“When you take a nomad’s land away,” writes anthropologist Lisa Lindblad, “you are erasing his stories, the collective memory of his culture.” She and Sven-Olof Lindblad, whose camera captured this image of two Maasai warriors, spent years documenting the shifting fortunes of both Maasai and wildlife on the Serengeti.

that. It is, as [physicist] Lauriston Taylor has eloquently pointed out, a ‘problem of philosophy, morality, and the utmost wisdom,’ and these are qualities on which science does not claim to have a monopoly.”

These are qualities, we might add, for which journalism is not the most suitable expression. And so, *Multiple Exposures*, a journalistic account, is a book with limits. But it is still a book that tells true stories, and tells them well.

CAROL POLSGROVE has written for *Sierra*, *The Progressive*, and *Oceans*. She teaches journalism at Indiana University.

How Sweet the Hard Life!

The Stars, the Snow, the Fire
 by John Haines
 Graywolf Press
 \$16, cloth

Peter Wild

RECOUNTING HIS quarter-century-long struggle to survive in the far north, John Haines remembers sledding over a frozen river in midwinter when the ice suddenly cracked and buckled under

the runners, scaring the dogs and sending his heart racing. “How swiftly the solid bottom of one’s life can go,” he observes.

By contrast, most of us take for granted the safety and ease provided by our technological society. No longer are we frightened prowlers of the wilderness; instead, everyday necessities come to us by flicks of switches and pushes of buttons.

Yet despite this commotion of con-

veniences, a few people turn backward, chancing what wild nature has to offer and becoming, once again, haulers of wood.

John Haines is such a person. After serving in the Second World War, Haines took up homesteading outside Fairbanks, Alaska, and this book on his life there offers deeper and more profound reasons than we usually hear for taking leave of civilization. Yes, the former homesteader gives us stories of building cabins, running trap lines through the vast, gelid forests, and confronting an irate grizzly bear. But all this says something quite beyond the immediate drama of the situation—and says it, furthermore, in a well-honed and poetic account.

He begins the chapter "Shadows," for instance, by recalling what looked like a large, dark leaf blowing toward him through the dusk. The flittering object turns out to be a bat, a species not usually found that far north. This leads him to muse on other shadows flickering through his life, and he launches into a larger statement on the wonders and fears of existence. "Turn out all the lights in your town or city," he concludes, "and see how swiftly life returns to the shadows, how soon from within unlit trees and from silent doorways the ancient dread comes back, and night is once more filled with snouts and whispers, with leathery wings, and heavy bodies."

As lush as his writing may be, however, Haines is careful not to burden the reader with overly earnest attempts to wring meaning from nature. Sometimes his words spring from the sheer delight of being alone and at peace in the far north; on these occasions he finds a transcendent beauty in his surroundings, a beauty made hard and bright by intimate dealings with the raw give-and-take of wildness. In one such passage, the author stands on a chill gravel bar, hooking migrating salmon with a long pole:

If the fish happened to be a female heavy with eggs, the eggs sometimes spilled through the torn side of the fish, to lie pink and golden in the shallow snow with

Explore the world with the premier nature tour organizer.



Seventeen years ago, Questers was the first to offer first-class, all-inclusive tours of the natural world.

Today, we are still doing it better. We scout every tour before you set foot in a new area of the world. We give you the most intriguing and complete itineraries. And we send you out with the finest naturalist guides.

Is it any wonder then that 56% of the people who travel with Questers have done so before?

Explore the premier nature tour organizer. Send for the Questers catalog today.

YES: Please send me your catalog of exciting tours to every continent.

Name _____

Address _____

City _____ State _____ Zip _____

QUESTERS WORLDWIDE NATURE TOURS
The premier operator, since 1973.

SC

257 Park Avenue South, New York, NY 10010 • (212) 673-3120

PLAYED BY KINGS & COWBOYS.



The legendary Hohner harmonica. Played by kings, soldiers, astronauts and cowboys.

Be part of that legend with your own Hohner Marine Band Harmonica from Melody By Mail. Learn to play quickly and easily with your big 134-page beginner's guide and 66-minute cassette tape.

You'll start playing your favorite songs in minutes, even if you've never had a music lesson. Order yours today.

Hohner harmonicas. Played by kings and cowboys—played by you.



Great For Gifts!
Harmonica With Box,
How-To-Play Guide with Popular Songs
Cassette Tape (66 Minutes)

Complete Musical Package Only \$24.95
Plus \$2.50 Postage And Handling

CA & VA residents add sales tax. 6390

Please send me _____ Hohner Marine Band harmonicas, how-to-play guides and cassette tapes at \$27.45 (\$24.95 plus \$2.50 postage and handling) each.

Enclosed is () Check () Money Order

Charge to () MasterCard () VISA

Acct. # _____ Exp. Date _____

Name _____

Address _____

City _____

State _____ Zip _____

Mail to: Melody By Mail, P.O. Box 830,
Glen Allen, VA 23060

Melody By Mail Guarantees Your Satisfaction Or Your Money Back.

EST. 1973
MELODY BY MAIL
ESTABLISHED

We Feature
HÖHNER

FREE CAMPMOR CAMPING AND CLOTHING CATALOG



Hike the Alps.



Fred Jacobson, well known author/mountaineer, will once again lead special hiking trips to Appenzell, Kandersteg, Murren, Pontresina, Saas-Fee, Sils Maria and Zermatt. Spectacular Swiss alpine scenery. Challenging trails. Delightful inns and fine cuisine. For active outdoor people who also like their creature comforts. Our 18th summer!

For information write:
Fred Jacobson, Dept. E,
Chappaqua Travel
1 South Greeley Ave.,
Chappaqua, New York 10514
800-666-5161

the glazed, mottled bodies of the freezing salmon.

There was something grand and barbaric in that essential, repeated act. To stand there in the snow and cold air toward the end of the year, with a long hook poised above the ice-filled river, was to feel oneself part of something so old that its origin was lost in the sundown of many winters: a feeling intensified, made rich by the smell of ice and cold fish-slime, by the steely color of the winter sky, and the white snow stained with the redness of the salmon.

The Stars, the Snow, the Fire is a sensory book, full of smells, sights, and memories of the friends and animals of a wilderness life richly lived. As a painter and one of our country's foremost poets, Haines has done more than his share to help preserve the nature he loves. Many people have gone into the wilderness and been inspired; only a handful have emerged with the enviable ability of a John Haines to enrich us with first-rate stories about how—and how deeply—they lived.

PETER WILD is a poet, professor, and author in Tucson, Arizona.

Trickle, Trickle, Little Stream

*Down by the River: The Impact of
Federal Water Projects and Policies on
Biological Diversity*

by Constance Elizabeth Hunt
with Verne Huser

Island Press
\$34.95, cloth; \$22.95, paper

Jim Stiak

THE FEDERAL government has been manipulating the country's rivers ever since the U.S. Army Corps of Engineers began clearing sandbars from the Mississippi in 1824. Waterways have been dammed, dredged, and channeled for

It keeps more than memories alive.

THE AMERICAN HEART
ASSOCIATION
MEMORIAL PROGRAM



American Heart
Association



This space provided as a public service.

Remember



with a
Memorial Gift

Consider saving a meadow instead of sending flowers. You can honor and preserve the memory of a special person while providing important funds towards accomplishing the Sierra Club's long term goals. For more information call Teresa Sweeney at 415-776-2211.



SIERRA CLUB
Memorials Program

710 Tok Street, San Francisco, CA 94129

irrigation, flood control, transportation, and electricity. As a result, according to Constance Hunt, biological communities across the United States are "unraveling like a loosely knit sweater right before our eyes."

Down by the River is Hunt's account of the economic folly and ecological damage associated with the federal government's waterworks on four rivers—the Columbia, Colorado, Missouri, and Mississippi. A biologist who has worked for the National Wildlife Federation, Hunt details the sad legacy of dams and diversions that often look curiously like pork barrels.

On the Columbia and its tributaries, 28 dams have reduced the populations of a host of animal species, while the river's concentrations of selenium, pesticides, and fertilizers have risen. On the Missouri, channelization has caused a 60-percent decrease in total water-surface area, and continuing work is endangering the whooping crane, piping plover, sandhill crane, and interior least tern—destroying the diversity essential to any ecosystem.

The Colorado, Hunt points out, tamed by Hoover Dam, no longer annually overflows its banks, and peters out before it reaches the Gulf of California. Because legal rights to water in the West are governed by the principle "use it or lose it," communities and Indian tribes wield water rights like poker chips in a game they will lose by default if they don't play.

The stakes in this game are especially high in the dry Southwest, according to Hunt, where riparian groves are "the veins of life." Eighty-five percent of Arizona's riparian vegetation has been destroyed by irrigation diversion. By 1977 only 500 acres of pure cottonwood communities remained along the lower Colorado.

On the upper Mississippi, habitat destruction has led to decreases in waterfowl, bald eagles, beavers, herons, and egrets. The river is already losing those organisms at the bottom of the food chain. Not even national wildlife refuges along the waterway are damage-free.

On the lower Mississippi, wetlands



OH, BEAUTIFUL FOR SPACIOUS SKIES...

Each year, Americans throw away over 16 billion disposable diapers, 220 million rubber tires, 2 billion plastic razor blades and similar items that literally take thousands of years to break down. We are faced with growing environmental problems from acid rain to global warming and the depletion of our ozone layer. These problems are exacerbated by automobile and factory emissions, and the irresponsible disposal of hazardous waste. This spells out grave consequences for the air that we breathe, the water we drink and the land we live on. Perhaps it's time to change our tune.

Calvert-Ariel Appreciation Fund offers you the opportunity to begin to improve both your physical and financial environment *now* through a unique investment combining both stringent environmental and economic investment screens.

The Fund actively seeks to invest in companies demonstrating concern for the environment—particularly those that initiate environmental programs or take positive steps toward preserving our environment.

For more complete information about Calvert-Ariel Appreciation Fund, including all charges and expenses, contact your broker or Calvert Group today to order a free prospectus. *Always read the prospectus carefully before investing or sending money.*

New!

Calvert-Ariel Appreciation Fund Environmentally strong, economically sound.

800/368-2748

301/951-4820

 Calvert®
Group

A member of The Acacia Group®

Distributor:
Calvert Securities Corporation
1350 Montgomery Avenue, 1000K
Bethesda, Maryland 20814

How a dam gave birth to the environmental movement

"Extraordinary... narrative history as good as it gets—full of movement and color, rich in all the necessary detail... Martin reveals some of the unmeasured costs that accrue when the dream of human progress is left in the hands of engineers and the poetry of landscape is taken from us."

—T.H. Watkins, Editor, *Wilderness*

"Both a saga and a parable..."

We have needed such a record of the war between our appetites and our dreams, and now we've got it."

—Charles Bowden, *Los Angeles Times Book Review*

At all bookstores, or call
TOLL FREE 1-800-247-3912



HENRY HOLT AND COMPANY, INC.
115 West 18th Street, New York, NY 10011



that provide winter habitat for half of the nation's wood ducks and for more than 220 other species of birds have been disappearing at an alarming rate. Federal agencies are helping turn hardwood forests into soybean fields, causing erosion and pesticide contamination of the water. Dams, channels, and levees have pushed the river's mouth nearly to the edge of the continental shelf, carrying the fertile delta soil into the ocean.

Fortunately, Hunt offers several solutions, among them:

- Stop development in floodplains. It would make more economic sense for the federal government to buy the 2 percent of the land in the country that repeatedly floods than to continue distributing \$3 billion to \$4 billion in disaster payments every year.

- Stop viewing hydropower as a benign energy source—especially in the Northeast, where small, privately constructed dams have recently become popular.

- Collect user fees on the more than 25,000 miles of inland waterways that the federal government operates. Taxpayers now provide the river-traffic industry with a subsidy of more than \$350 million a year.

- Restore our rivers. The Bureau of Land Management has revegetated riparian sites in Arizona for as little as \$100 an acre.

- Create a system of local greenways, already begun with river-conservation programs in 28 states. Waterways with guaranteed in-stream flows could eventually connect the entire North American continent.

- Create an Endangered Ecosystem Act. The Endangered Species Act protects habitat only after a species reaches the brink of extinction.

In the sunset of the 20th century, writes Hunt, it's time for a "new American conservation ethic" of careful stewardship of our natural resources. The rivers of life that flow through our land, she proposes, are perhaps the best place to start. ■

JIM STIAK is a freelance writer in Eugene, Oregon.

Mountain Maps!

IN 3-D



Campers,

Backpackers, Fishermen, Hikers, Skiers, Hunters, Travellers... anyone fond of the mountains will love these maps. Printed in color on durable plastic, our raised relief maps provide all the detailed information of standard flat maps, plus an accurate, 3-Dimensional scale model of the terrain that looks and feels real!

Available unframed, or handsomely framed in walnut-stained solid wood, the maps make unique gifts and collectors' items—ideal for vacationers, visitors and mountain property owners. Over 250 regional maps are available... plus 10 national parks, the U.S. and the world.

Return the coupon now for our **Free Catalog!**

HUBBARD P.O. Box 104 Northbrook, IL 60065

Send me your free Topo Map Catalog

Name _____

Address _____

City _____ State _____ Zip _____

Dealer inquiries are invited. 96

100% RECYCLED PAPER!



The Perfect Gift!

Our HOME PACK contains:

| | |
|---------------------------------|----------------------|
| 375 napkins | 50 envelopes |
| 200 facial tissues | 8 rolls toilet paper |
| 100 sheets writing/typing paper | 4 rolls paper towels |

Only \$23⁹⁷ (+ \$3 shipping & handling)

Send check or m.o. to:



PO Box 11021 • Baltimore, MD 21212

READER SERVICES

Free brochures and catalogs

1. Audio-Forum Learn a foreign language on your own! Cassette/book courses in 56 languages from Audio-Forum. Free catalog.

2. Bogen Send for a 12-page brochure describing all Bogen monopods, tripods, and accessories. Free.

3. Bogen Send for information describing Gossen Luna-Pro F and all Gossen meters. Free.

4. British Columbia Tourism Our free travel kit shows you hundreds of ways to enjoy our magnificent scenery.

5. Calvert Social Investment Fund Invest in a better world!

6. Campmor Complete camping and backpacking catalog features brand names at discount prices.

7. Camp Trails Full-color catalog features more than 30 frame packs, travel packs, and day packs with expedition quality you can afford. Free.

8. Cliff Dweller® The Bird Feeder offers 3-4-inch, red cedar construction, see-through acrylic front, and an easily removable roof. Holds approximately 5 pounds of seed. Free information.

9. Colorado Outward Bound Explore the mountains, canyons, and rivers of Colorado and Utah. Free catalog.

10. Colorado Tourism Board Discover the incredible range of things to see and do in Colorado. For your free Vacation Guide circle our number.

11. Dreyfus Corporation "The Dreyfus Third Century Mutual Fund."

12. Earth Flag Pledge your allegiance to Earth! Beautiful four-color flags of our planet. Now in smaller sizes and on cotton. Free color flyer.

13. Eureka! Tents Full-color catalog features more than 40 models of tents for backpacking, canoeing, family camping, and high-adventure expeditions. Free.

14. Gore-Tex® For information about Gore-Tex® products and where to buy them, circle our number.

15. Hubbard Free full-color brochure describes and illustrates Hubbard Raised Relief Maps.

16. Jackson Hole Visitors Council Enjoy Yellowstone and Grand Teton national parks, the Teton Mountains, and the Wild West town of Jackson, Wyoming. For a free summer vacation planner call 1-800-782-0011, ext. 82.

17. Jim Morris T-Shirts Support the environment by wearing wildlife T-shirts (10% of our profits go to environmental groups). Many beautiful designs. Free catalog.

18. L. L. Bean Active and casual wear, spring sports equipment, furnishings for home and camp. We pay all postage and offer toll-free telephone services. Free spring catalog.

19. Merrell Merrell retailers offer a complete line of outdoor footwear. Send for a list of dealers in your area.

20. Montana Tourism Official vacation-planning kit, including lodging and camping guide, highway map, and color vacation guide with information about historical sites and museums, Glacier and Yellowstone national parks. Free.

21. Mountain Travel Trekking, wildlife safaris, adventure cruises, and touring... 130 trips to 50 countries on 7 continents. Free 1990 catalog.

22. National Audubon Society Expedition Institute Free information packet describes high-school, college, and master's degree programs.

23. Nike For information on Nike hiking products call 1-800-344-NIKE, Monday through Friday, 7am - 5pm Pacific time.

24. The Parmanus Fund Get a free prospectus from a growth fund that takes social and environmental considerations into account when making investment decisions.

25. Prescott College Free catalogs, brochures, and posters explain our experiential and interdisciplinary approach to the liberal arts.

26. REI The best outdoor gear, clothing, and accessories for hikers, cyclists, kayakers, and others. Competitive prices. Satisfaction guaranteed. Free catalog.

27. Sales Lindblad Expedition World Discover the remote corners of the world. Unique experiences for the discerning traveler. Call 1-800-223-5688 today for your free 1990-91 brochure.

28. Save the Children promises you won't go broke giving \$5 a week... you'll be richer. Free information.

29. Self-Realization Fellowship Free booklet, "Undreamed-of Possibilities," describes scientific methods of meditation that can help you create lasting happiness and harmony in body, mind, and soul.

30. Seventh Generation This 32-page catalog features products and information to help create a cleaner planet - everything from biodegradable garbage bags to nontoxic cleaners.

31. Sierra Club Gift Idea Pay tribute to the special people in your life with gifts in their honor to the Sierra Club. Help protect our environment while honoring a loved one. Free information.

32. Sierra Club Matching Gift Program Your company's gift will double - or even triple - the value of your contribution to The Sierra Club Foundation. Free information.

33. Sierra Club Planned Giving Program Life-income trusts and bequests provide tax and income benefits and support Sierra Club programs. Usually applicable to members 65 and up.

34. Silva Compass Full-color brochure describes how Silva compasses make finding your way as simple as 1-2-3. Free.

35. Skyflight Mobiles Colorful mobiles - wild animals, birds, marine mammals, and dinosaurs too! More than 30 designs. The perfect gift. Circle our number for a free color brochure.

36. Tallon Termite & Pest Control Exclusive patent-pending system kills drywood termites without toxic chemicals. Safe for humans, animals, and environment. No nesting or relocation. Free brochure.

37. Tecnica USA For a free brochure detailing the rugged line of Tecnica hiking boots, circle our number.

38. Therm-A-Rest The original self-inflating mattress lets you enjoy sleeping comfort anywhere. Free brochure.

39. University of Arizona Press Books about the American West - its nature and history. Circle our number for current catalog.

40. Wilderness Travel Wildlife trekking, adventure, cultural trips worldwide. Africa, Amazon, Andes, Arctic, Alps, Himalayas. Small groups, expert leaders. Free 1990 trip preview.

41. Working Assets America's leading money-market fund believes that whenever capital is at work it should also protect the individual rights of people everywhere. Free prospectus.

42. Wyoming Travel Commission Celebrate Wyoming's centennial with a year of festivals, rodeos, music, art, and more in the land of Yellowstone and natural wonders. Free schedule of events.

Priced literature

53. International Expeditions Leading the world in natural-history travel on five continents. Catalog \$1.

54. The Solar Catalog Let 1990 be the year you do something that benefits the environment. Choose from 80 pages of energy-saving and non-polluting products. \$5.

55. Questers Worldwide Nature Tours America's most experienced nature-tour company. Fully escorted; small tour parties; natural history, culture, antiquities. Catalog \$1.

Sierra provides a direct line of communication between our readers and advertisers. To receive information from a Sierra advertiser listed above, circle the appropriate number(s) on the reply card and mail the card and your check or money order (made payable to Sierra) to Sierra Magazine, Reader Service Management Department, P.O. Box 5181, Pittsfield, MA 01203. Please allow six to eight weeks for delivery of most items. Although all advertisers have assured us that they will respond to each request, Sierra is not responsible if they fail to do so.

SIERRA ADVENTURE

FOREIGN TRAVEL

J A P A N

HOT SPRINGS, HIKING, AND HAMLETS

Whether hiking in the Alps of Japan, staying in lantern-lit Zen temples, or exploring the folk architecture of northern Honshu, we specialize in "hands-on" adventures in Japan. For free brochure, call or write:

JOURNEYS EAST

2443 Fillmore #2895, San Francisco, CA 94115
(415) 647-9565



EURO-SELECT TOURS INCORPORATED

BUDGET BIKING IN AUSTRIA

Active—Cultural
Leisurely—Adventurous

Accommodations in comfortable small hotels.
Send for brochure

P.O. Box 9802-E Austin, Texas 78766 512/258-7661



BACKPACK CANADA, UNITED STATES, PERU & NEPAL

Backpacking treks and Base Camps on trails in scenic, exciting mountain areas in the U.S., Canada, Peru and Nepal. Adult, co-ed groups. We have a great time! No experience necessary. REQUEST BROCHURE.

WILLARDS ADVENTURE CLUB

Box 19 • Barrie, Ontario, Canada L4M 4S8 • (705) 737-1883

MADAGASCAR-JAPAN-TANZANIA-NEW GUINEA NEPAL-LADAKH-BURMA

Worldwide nature and culture explorations for travelers eager to cross cultures while avoiding the clichés and affronts of conventional tourism. Group, individual arrangements. Friendly local guides. Prompt response. Free color catalog.



1-800-255-8735

JOURNEYS

4011-B Jackson Rd.
Ann Arbor, MI 48103.

New 1990 color catalog available

BAUMELER—

European Biking & Walking Tours

Let The Europeans Show You Europe!

Austria, France, Germany, Italy,
Netherlands, Switzerland,
England

BAUMELER TOURS

10 Grand Avenue • BAT 8
Rockville Centre, NY 11570

CALL OR WRITE FOR FREE BROCHURE

516-766-6160

GALAPAGOS

Send for Galapagos Travel Guidebook

250 pages—\$16.50 post paid.

also free info—On-Your-Own Discovery Vacations and 2 week workshops on a 12 passenger yacht.

Galapagos Travel, 2674 N. First St. #112 D
San Jose, CA 95134 • (800) 223-3767



GMR and

HIKING & SIGHTSEEING TOURS TO:

POLAND - Polish Tatra Mountains

CZECHOSLOVAKIA - Czech Tatra Mountains

AUSTRIA - Tyrol (Ortler & Stubai Alps)

Vocatzberg also visiting Salzburg & Vienna

GRYMEK MOUNTAIN RECREATION, INC.

12 Dover Road • New Britain, CT 06052

Tel. (203) 229-8481 • (203) 224-7714



AFRICA

Independent & Group Travel

Create your own private safari or join one of our scheduled departures. Draw on 20 Years Experience. Walking, Kilimanjaro, Tented Camps. Write or call for a free catalog.

VOYAGERS

Dept S-3, Box 915, Ithaca, NY 14851
(607) 257-3091

GREENLAND • NORTH POLE BAFFIN • ELLESMERE ISLAND

Small, escorted groups track wolves, polar bears
Camp on sea ice and in mountains.

Explore Greenland all summer.
800-648-2544 • (212) 683-1145
Dominic Capezza, 88 Park Ave., NYC 10016 USA

THE ULTIMATE TREK

to the roof of the world. Trek on glacier to K2, second highest mountain in the world; KARAKORAM RANGE-PAKISTAN.

CONCORDIA EXPEDITIONS, INC.

20 East 88th St., New York, NY 10128
(212) 410-7548 Free Brochure
Founders: American Pakistani Couple

THE AMAZON TROPICAL FORESTS

Ecological tours in the Brazilian wilderness conducted by scientific specialists in flora and fauna.

ECOTOUR EXPEDITIONS
1-800-688-1822

Off the Beaten Path NEW ZEALAND CULTURAL TRAMPING

Unique three-week adventures for a combined group of eight backpackers and eight dayhikers, who enjoy the beautiful pristine environment, the people and varied aspects of the real South Island culture. Strong emphasis on natural miles! Backpackers and dayhikers tour together from place to place, but temporarily separate for respective wilderness treks and back country day-hike programs. Suitable for couples with differing abilities. November thru April in NZ warm months. Excellent country gourmet meals. Overnights in hospitable NZ homes, high-country sheep stations and mountain huts. Fond enterprise of long time NZ resident American. Sensible cost. Free brochure.

NEW ZEALAND TRAVELERS INC.
P.O. Box 605, Shelburne, VT 05482 USA 802-985-8865

SPECTACULAR DESTINATIONS

EUROPE, LATIN AMERICA, AFRICA, ASIA, PACIFIC • Classic & Unusual Tours. Also FABULOUS HIKING & BIKING WORLDWIDE. Groups/Individuals.

• Incredible Selection: All Europe, All Africa, Galapagos, Ecuador, Peru, Amazonia, Pantanal/Brazil, Antarctica, C. Rica, Belize, "Deserts Worldwide," China, Himalayas, S.E. Asia, Australia, N. Zealand AND MORE!

FORUM TRAVEL INT'L., 91 Gregory Lane (R2), PLEASANT HILL, CA 94523. (415) 671-2900

PEOPLE-TO-PEOPLE TOURS

Journeys through cultures, landmarks and history. Enjoy cross-cultural exchange and gain new insights.

Two to four week, destination & journey tours to North, South, East, West & Central Africa
1887-59 Columbia Drive South, Seattle, WA 98108
(206) 756-8228



Great New Zealand Holiday Bargains

We're simply not going to convince you how spectacular the "Finest Walk in the World" really is in one brief advertisement.

But give us a few days.

The Milford Track
A trifle hard to describe.
Quite impossible to forget!

To: Tourist Hotel Corporation of New Zealand
P.O. Box 2840, Wellington, New Zealand.

Please send me complete information on
**THE MILFORD TRACK, NO
ADVERTISEMENT CAN DO JUSTICE**

Name _____

Address _____

WANDERWEG HOLIDAYS

Join us for a walking experience in the Swiss Alps. Our new and expanded 1990 program featuring magnificent scenery and Swiss culture is now available! Contact us for details and brochures.

WANDERWEG HOLIDAYS

3353 Perkiomen Ave., Reading, PA 19606
(800) 323-8687 FAX (215) 370-2800



FOR ANY SAFARI UNDER THE SUN!

AFRICA: Kenya, Tanzania, Rwanda, Zaire, Zambia, Zimbabwe, Botswana, Morocco, Tunisia, Egypt
S. AMERICA: Venezuela, Brazil, Ecuador, Peru, Galapagos
ASIA: India, Nepal, Borneo, Thailand, Papua New Guinea

SAFARI CENTRE

3001 N. Sepulveda Blvd., Manhattan Beach, CA
Nationwide: (800) 223-6046 CA (800) 624-5342

AMAZON

CRUISES • LODGES • EXPEDITIONS

Explore the world's greatest ecosystem on our fully guided, all-inclusive programs.

SAFARI CENTRE

Nationwide: (800) 223-6046 CA (800) 624-5342

An Overland Tour of THE SOVIET UNION

July 2 - July 27, 1990

OR

July 27 - August 20, 1990

A 3 1/2 week self-drive tour through Northern Russia, Byelorussia, Lithuania, Latvia and Estonia. Accommodations in campgrounds and hotels.

For information, contact Pioneer Travel Service, specialists in organizing tours to the Soviet Union for 24 years.

203 Allston Street
Cambridge, MA 02139
617/547-1127

NEPAL • AUSTRALIA • CHINA

Worldwide Adventures!

Wildlife Safaris • Mountain Hikes • Cultural Trips
• Expeditions • Unbeatable prices • Small international groups • Expert leaders

FREE brochures!

ADVENTURE CENTER

1311-S 63rd St Ste 200,
Emeryville, CA 94608.

800/227-8747 USA

800/228-8747 CA

415/654-1879

KENYA • NEW GUINEA • PERU

Labrador Wilderness



Small group tours for every season that take you trekking in the mountains of the Labrador sea coast, sighting caribou, whales, and seals, or snowmobile witter camping, snowshoeing, and skiing, or canoeing traditional

Indian routes. Personal discovery and gentle challenge for the hearty.

Contact: Inulak Labrador, Box 11
North West River, Labrador, A9P 1M0
(709)497-8328

OUTBACK ECOEXPEDITIONS



The Rapid Expedition for sea kayak/fishing/boating in Mexico, New /Apr. Whales & Wilderness, Alaska, May/Jul. Icebergs & Icebergs, Canada Washington, Jun /Oct. Islands & Rivers. Also Tegahond Mexican Land Tours 7-14 day tours. NO EXPERIENCE NECESSARY! Free brochure.
OUTBACK EXPEDITIONS • Box 16243 • Seattle, WA 98116 • (206) 932-7012

ARCTIC WATERWAYS

offers the possible dream! Come, float the Coppermine, Horton or Anderson rivers, glistening in the midnight sun of Canada's Northwest Territories! The tundra awaits with its flora and wildlife. Peek into the nests of eagles and falcons, see caribou and muskoxen, or fish for char and grayling in teeming waters! An incomparable adventure! Large, safe inflatables! No motors! Small groups! Sex or age is no barrier! Good health and a real love of the outdoors are the only prerequisites! 11- to 14-day trips, July and August. Write or call:

ARCTIC WATERWAYS Inc.
Dept. S, Stevensville, Ont., Canada L0S 1S0
Tel. (416) 382-3882, Fax. (416) 382-3020
OUR 16th YEAR ON THE COPPERMINE!

BIKE EUROPE

Meander from castle to castle on little-traveled country lanes. Two week tours with first class hotels and support vehicle.

Gerhard's Bicycle Odysseys
P.O. Box 756 (503)
Portland, Oregon 97207 **223-2402**

THE FAR NORTHWEST: Yukon • Alaska • Western NWT

We specialize in our incredible home region. Exceptional guided trips (canoe, raft, backpack, ski) feature wildlife, natural history, and north country lore...for the discriminating. We live here...come join us. Color brochure.

Arctic Edge
LTD.
Box 4850 (S), Whitehorse, Yukon, Canada Y1A 4N6 (800) 633-5470

UNIQUE DESTINATIONS

From the SAHARA to BOTSWANA*, from ECUADOR to PATAGONIA, from INDIA to CHINA...nomads, tribal peoples, wildlife...over 30 itineraries!

TURTLE TOURS, INC.
9446 Quail Trail, Box #1147 L.A., Carefree, AZ 85377
(602) 488-3688 outside AZ (800) 283-2334

Postal rates from U.S. to Canada are now 9¢ letter and 3¢ postcard. Underpaid mail is returned to sender.

HIKING & SIGHTSEEING TOURS LAKE DISTRICT OF ENGLAND

SC members receive \$100 discount.
 OUTDOOR BOUND
18 Stuyvesant Oval #1A
NY, NY 10009 212/ 505-1020

SWISS ALPS

Moderate DAY hiking tours, 2 or 4 weeks. Ride up above tree line and hike down. Over 50 optional length hikes basing one week at 10 charming mountain villages in 3 or 4 star hotels. Write for free brochure.
ALPINE ADVENTURE TRAILS TOURS
783 Cliffside Dr. #202
Baton, OH 44113

NEW ZEALAND & AUSTRALIA Walkabouts

Nature, Hiking, & the Outdoors
A selection of group and independent tours featuring New Zealand's scenic National Parks & Milford Track; Australia's Outback, Far North, & Great Barrier Reef. Extensions to Fiji, Tahiti, & Rarotonga.
Write for descriptive brochure:
PACIFIC EXPLORATION CO.
Box 3042-S
Santa Barbara, Calif. 93130
(805) 687-7282
Travel Adventurers in the South Pacific

HIKE CENTRAL EUROPE WITH ME

1. POLISH TATRAS, July 7-21 or Sept. 1-15,
 2. BERCHTESGADEN, Bavaria, July 21-Aug. 4,
 3. TYROL, Austria, Aug. 4-18.
- John Murphy 914-776-6588
51 Harding Avenue
Yonkers, N.Y. 10704

Romantic Scotland!

Superb 6 and 9 day bicycling tours. Challenging, varied, passionate countryside. Historic castles, country houses. Cheerful accommodations. Custom touring bicycles. FREE brochure.
Peter Costello, Ltd./Dept 81
PO Box 23490/Balto, MD 21203
301 685-6918

OKANAGAN CANOE HOLIDAYS

S1-C6-RR#1, KELOWNA, B.C. CANADA V1Y7P9
PH: (604) 762-8156
WHITE WATER AND WILDERNESS WITHOUT HARSHIP
10 WARM RIVERS - MANY LAKES

- NOVICE AND INTERMEDIATE CANOE AND KAYAK CLINICS
 - WHITE WATER WEEKS FOR EXPERTS
 - 1 - 3 WEEK SEMI-GUIDED TRIPS
 - HONEYMOON TRIPS - SENIORS WEEKS
 - FARM FOOD AND ACCOMMODATIONS
 - CAMP GEAR AND CAR PACKAGES
- Super, Natural British Columbia

Sierra readers travel the world to find adventure. Advertise in AdVenture and they'll find you!

Call (415) 923-5617 to reserve space.

SIERRA ADVENTURE

Canoe Canada's Arctic

7-19 day expeditions

Fly in canoe trips into the heart of North America's last great wilderness - the tundra & tundra of Canada's Northwest Territories. Discover the warm dry summers, spectacular scenery & unparalleled wildlife concentrations of a land untouched by man. Photograph caribou herds, white wolves, muskox, moose, grizzlies & rich brook trout fishing for lake trout, grayling, northern pike.

Small groups (8 persons max.) assembled, outfitted & guided by Alex Hill, wildlife biologist & veteran arctic canoeing guide. CAN ACCOMMODATE A LIMITED NUMBER WITH NO PREVIOUS CANOEING EXPERIENCE. Season: June 1 - Sept 15. Operating the most remote wilderness expeditions in North America since 1974. For brochure write:

CANOE ARCTIC INC.
P.O. Box 1308
Fort Smith, N.W.T. Canada
X0E 0P0

SEA KAYAK THE BC COAST

Five day paddling trips on Canada's west coast. Areas featuring whales, eagles, sandy beaches and ancient village sites. No experience necessary.



TOFINO
EXPEDITIONS
(800) 926-9904

114-1857 W. 4th Ave., Dept. X, Vancouver, B.C. V6J 1M4

Sherpa-tastic Travel



Quality hiking in Nepal at the lowest prices. Everest, Annapurna, & others. Small groups Fall & Spring Departures. Experienced leader. Send for a free brochure.

c/o Classic Travel, 764 Plaza, Duncansville, PA 16835
(814) 696-3558

GALAPAGOS

You, nine others and our naturalist will explore by yacht more islands than any other Galapagos expedition. From simple adventures to splendid yacht charters, from scuba diving to serious hiking and even college credit, no one else offers as many ways to experience the Galapagos because no one else specializes exclusively in the Galapagos.

60 trip dates.
Machu Picchu option.

FREE BROCHURE

Inca Floats

1311-BL 63rd. St., Emeryville CA 94608
415-420-1550



Walk with The Wayfarers

Through England, Scotland & Wales. Further details from our U.S.A. representatives Judy Alpers and Ann Nickerson, The Wayfarers, 146 Thames Street, Newport, RI 02840. Tel: (401) 849-5287.

Travel Adventures for Women

womantrek



Any woman can trek to adventure, unbound by age, fitness or dating. Immerse yourself in the exotic sights and culture of the world's destinations. You'll be amazed at how much you see and learn in the camaraderie of women.

Free brochure: 206/325-4772. P.O. Box 20641A, Seattle WA 98102

ACTIVE, TOURING, & CUSTOM WORLD ADVENTURE TOURS



KAYAK & BACKPACK

BRITISH COLUMBIA'S NORTHERN GULF ISLANDS AND INLETS

Write or Call:
COAST MOUNTAIN EXPEDITIONS
BOX 25
SURGE NARROWS, B.C.
CANADA V0P 1W0
(804) 288-2064

Hike the Swiss Alps



One and two week trips
Hiking Trekking
Paragliding Course
Light Mountaineering
Scottish Highlands Tour
Relais, Romantik, 4 Star Hotels

Ryder/Walker Alpine Adventures
87 Morse Hill Road, Dept. S.
Millerton, NY 12546

914-373-7005 Free Brochure



BELIZE • COSTA RICA

Lush Tropical Rain Forests • Mayan Ruins
Jaguars, Monkeys, Exotic Birds and Wildlife
Snorkel or dive in warm, clear water

Magnificent Beaches • Active Volcanos • Friendly people
Call or write for free brochure

GLOBE ADVENTURES, INC.
P.O. Box 1897, Dept. S • Boulder, CO 80306
1-800-322-8911 Outside CO • (303) 440-8911 CO

HIKING IN ENGLAND & WALES



Discover the real Britain, join our small groups hiking through England and Wales. Led by experienced guides and accommodated in country hotels.

For colour brochure write or telephone:
FOOTPATH HOLIDAYS (E)
4 Holly Walk, Andover, Hants, SP10 3PJ, England.
Tel: 011-44-264-52689

THERE'S A LOT OF GROUND TO COVER IN GALAPAGOS!

Extraordinary adventures to Galapagos, Ecuador, Amazon, Peru, Costa Rica and Argentina.

Spectacular safaris to East Africa, Asia, Hawaii, New Zealand and Australia.

800 351-5041
63 S. Washington Ste A
P.O. Box 3856-B7
Sonoma, CA 95370



GEO
EXPEDITIONS

MOUNTAIN BIKE TOURING IN BAJA!

Ride the best of Baja's dirt backroads!

Week long "catered camping" adventures



Call for brochure
619-581-3311
or outside CA
800-843-6967

Baja Expeditions, 2625 S. Garret Ave., San Diego, CA 92109

GALAPAGOS, ECUADOR, PERU

CRUISE, HIKE GALAPAGOS: Budget to Firstclass Yacht Tours. Explore across ECUADOR. Hike/Bike Peru's INCA TRAILS. Tour CUZCO/MACHU-PICCHU and the "MANY AMAZONS." PANTANAL Wildlife Paradise. Brazil, Argentina, Antarctica, Venezuela, Chilean Fjords, Costa Rica, Belize. AND MORE!

FORUM TRAVEL INTL., 91 Gregory Lane #21,
PLEASANT HILL, CA 94523. (415) 671-2900

HIKE THE FRENCH ALPS!

Explore and discover the natural wonders of the Alps with bilingual biologist, 15 years experience. Two week trips, small groups, accommodations in Alpine villages. Write or call for details.

RANDONNEES DECOUVERTES
3003 N. Charles St., #3-1
Baltimore, MD 21218
Tel: (301) 989-9235



WILDERNESS IN COMFORT

Fly to our secluded Camp Harris in Ontario's virgin wilderness. Small family-oriented camp with comfortable H.K. cabins, good fishing, sand beach, sauna, thrilling flight by seaplane, boats, motors, gas, canoes, only \$459.00 per person per week. Brochure: Larry and Bill Ross, P.O. Box 177, Ely, Minn. 55731. Call 218-365-6771 or 5429.

DOMESTIC TRAVEL

THE VESSELS of WINDJAMMER WHARF



Schooner *Timberwind*
Schooner *Stephen Taber*
Cruise Vessel *Pauline*
3 & 6 day cruises write:
Windjammer Wharf Box 30505
Rockland, ME 04841
or Call - 1-800-999-7352



See the World at a First Class Pace
with America's preeminent bicycle
vacation company.

Backroads Bicycle Touring.

Year-round bicycling vacations throughout North America, Europe, and the Pacific for all abilities.

Free Color Catalog
Backroads 1516 5th Street, Suite ND3
Berkeley, CA 94710-1713
800-333-2573, 415-527-1355 In CA

ALASKA DISCOVERY



Join our award-winning program of wilderness expeditions by raft, canoe, touring kayak and backpack throughout Alaska. Please write or call for our 1990 schedule of 4-10 day guided and outfitted trips into Glacier Bay, Admiralty Island, the Arctic Refuge, and other outstanding wildlands. Rental canoes and kayaks also available.

369-S South Franklin • Juneau, AK 99801 • (907) 586-1911

May/June deadline: March 1

The
**MIDDLE
FORK** of the
Salmon

Idaho's classic wilderness river trip.

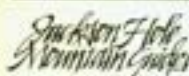
For a free brochure call ROW at
1-800-451-6034

River Odysseys West
P.O. Box 579-SS Coeur d'Alene, Idaho 83814



SAIL THE MAINE COAST
The Classic Windjammer Vacation
SCHOONER MARY DAY

Outstanding Sailing
Good Friends, Great Food
Wild Islands, Strag Harbors
Seals, Eagles, Whales, Puffins
Cape, Seve @ Chris Cobb
Box 798T, Camden, ME 04843
800-992-2218 • (207) 236-2750



& CLIMBING SCHOOL
307-738-4979

Grand Tetons, Wind River
Mtns, Devil's Tower, Bear-
tooth Range & Beyond...
Year-round climbing, back-
packing, ski touring, guid-
ing & instruction.
U.S. Park Service concession
since 1968.

P.O. Box 7477-S, Jackson, WY 83001

**Wilderness
River Trips**

1 to 12 days. California, Idaho, & Oregon.
19 years of the highest quality trips.
Free catalog & friendly advice.

ECHO: The Wilderness Company
6529 SC Telegraph Ave,
Oakland, CA 94609

(415) 652-1600
(800) 652-3246 in CA

**BICYCLE
ADVENTURES**



Bicycle vacations in the Pacific Northwest
Visit Washington's San Juan Islands,
the Oregon Coast, British Columbia's Gulf Islands
First Class Lodging, Support Van, Great Fun!

WRITE FOR FREE BROCHURE
Bicycle Adventures

Dept. S • P.O. BOX 7875 • Olympia, WA 98507
(206) 786-0989

Wilderness Alaska



Small groups in remote wilderness unfolding the unique
natural history of the Brooks Range. Photography, Adventure,
Peace of Mind. Nineteen years experience. Scheduled on
custom trips.

Write: WILDERNESS ALASKA
P.O. Box 83044, Fairbanks, Alaska 99718



HAWAII ADVENTURES
Hiking/Sailing/Divng

- Sail with Whales • Dive Coral Reefs •
- Swim in Waterfalls • Hike Active Volcanos •
- Non Camping • Small Groups • Resident Naturalists •

TOLL FREE 1-800-657-7730

EYE OF THE WHALE, P.O. Box 1269 M, Kapala, HI 96755

WHITewater KAYAK & RAFT TRIPS

**Grand Canyon/Costa Rica
Salmon/Tatshonshini**
Reserve 1990 Premier Trip Dates Now

Proceeds benefit river conservation.

Call: Friends of the River

(415) 771-0400 Ft. Mason Cr., San Francisco 94122

a non-profit organization protecting wild rivers, est. 1974



**WILDERNESS
CANOE TRIPS**
Ely, Minnesota

Canoe the **BOUNDARY WATERS CANOE AREA** of N.E.
Minnesota and **QUETICO PARK** of Ontario. Camping,
fishing, and wildlife photography in a true wilderness
environment.

We offer the finest in ultra lightweight camping equipment,
food supplies, and canoes. Guide available if desired. Call
or write for color brochure.

Bob Olson, Canoe Country Outfitters
P.O. Box 30, Dept. R, Ely, Minnesota 55731
Phone: 218-365-4046



Natural History
Safaris
7, 10, & 12 days
Denali Park
Kenai Refuge
Seacoast Glaciers

"Why sightsee Alaska when you can experience it!"
1-800-334-8730 P.O. Box 238, Trout Lake, WA 98660

CALL OF THE WILD



Wilderness Adventures
for Women since 1978

- Fit Trips: Condo, massage, low-fat meals
- Hiking, Backpacking, Sea Kayaking, Dog-sledding
- High Sierra, Grand Canyon, Hawaii, Thailand

Outdoor Woman's School 415-849-9292
2519 Cedar Street Berkeley, CA 94708

ALASKA ON YOUR OWN!

You can do it with Books, Maps, and Videos on parks,
RV touring, fishing, lodging, river floats, hiking,
wildlife viewing, biking, sea kayaking, and more.

FREE CATALOGUE

WILD ROSE GUIDEBOOKS
Box 1742, Anchorage, AK 99524

COPPER CANYON

Hike Mexico's Remote Sierra!

Cross Canyon Expeditions. Birdwatching or Day Hikes from
our comfortable mountain lodge or our tropical hacienda
hidden deep in the canyon.

Copper Canyon Lodge
(800) 543-4180

MISTY FJORDS
NATIONAL MONUMENT
Day cruises • kayaking



Outdoor Alaska
Dale Pihlman, Box 7814-SC
Ketchikan, AK 99901
(907) 225-6044

GEORGIA MOUNTAIN WALKING TOUR. Small groups, expert
guide, great food, modern mountain lodges, neat alpine village in
Georgia mountains. Moderate walk trails. Spring and Fall. Brochure
from Georgia Walking Holidays, Unit II, 518 E. Ponce de Leon
Avenue, Decatur, Georgia 30030. (404) 378-5795.

**WHITewater
RAFTING**

Alaska • Oregon • Idaho
Join us for our 18th season of
Adventure, Learning & Camaraderie
JAMES HENRY RIVER JOURNEYS
Box 807-S, Bolinas, CA 94924 (415) 868-1836



**Alaska
Rainforest
Trek**

Guided day hikes
Backpacking adventures

P.O. Box 21060-N
Anchorage, Alaska 99501
907-463-3466

**BROOKS
RANGE**

Guided Adventures
in Alaska's Gates of the Arctic
and Arctic Refuge

B.R.W.T. Box 485
Bethel, Alaska 99724 (907) 862-5312



Backcountry expeditions into the Tetons
and Yellowstone. Hike WITHOUT a heavy
pack! Great memories for life.
Day rates, too.

Call or write for 1990 trip schedule.

JACKSON HOLE LLAMAS

PO Box 7375 Jackson, WY 83001 (307) 733-1617

WILDERNESS WHITewater

Our rafts offer effortless conveyance
to the most spectacular landscapes on
earth: Grand Canyon, Canyonlands,
and Dinosaur National Parks on the
Colorado, Snake, and Salmon Rivers.



**HOLIDAY RIVER
EXPEDITIONS**
9400 39th South, Suite 1
Salt Lake City, Utah 84120
(801) 264-2001
(435) 351-2614

FREE WHITewater RAFTING CATALOG
CALL 1-800-624-6323.




Because you can't experience Alaska
in a hotel lobby.

Suite 8, P.O. Box 872247, Wasilla, AK 99687
(907) 376-9438

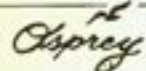
SIERRA ADVENTURE

• No Charge to You **WHITEWATER**
 • We book trips for more than 100 outfitters
 • Information on thousands of whitewater/float trips
 • Grand Canyon, Idaho, Utah, Calif., & around the world
 • 1-21 Day expeditions for individuals & groups
TOLL FREE 1-800-852-RAFT
River Travel Center 
 PO Box 85, Point Arena, CA 95448

BIKE THE WEST IN '90

 Yellowstone/Tetons, Glacier, Colo., Canadian Rockies, Idaho Santa Fe/Taos, Pacific Northwest Bryce/Zion/Grand Canyon
FREE BROCHURE
TIMBERLINE BICYCLE TOURS
 3261 S. Oneida Way, Denver, CO 80224
 (303) 759-3804

WILDERNESS CANOE TRIPS

 CANOE THE EASTERN BOUNDARY WATERS CANOE AREA OF MINNESOTA AND QUETICO PARK OF ONTARIO
 SIX PROFESSIONAL-FULL SERVICE CANOE OUTFITTERS
 FOR A BROCHURE PACKET CALL 1-800-338-6932
GUNFLINT TRAIL CANOE OUTFITTERS

 **Yacht Charters**
 205-987-9372
CRUISING • FISHING • DIVING
BAHAMAS—FLA. KEYS
 10,000 Islands/Everglades Nat. Pk.
 Write or call for brochure
 2425 Brook Run, Birmingham, AL 35244

Alaskan Wilderness Sailing Safaris
 The Queen of Wilderness (Discover the Spirit of Sea)
 Alaskan Wilderness Sailing Safaris sailing Prince William Sound. You have seen the worst on television, now let us show you the best—over 2,000 miles of unspoiled, wilderness coastline still remains. Special off-peak educational charters on request.

 Box 1313, Valdez, AK 99666
 907-835-5175

OUTDOOR EDUCATION


 • Backpacking
 • Mountaineering
 • Whitewater Rafting
For Ages 14+
 Write:
Colorado Outward Bound School
 945 Pennsylvania St., Dept. X5
 Denver, Colorado 80203
 (303) 837-0880

Environmental Writing Institute
 May 18-23, 1990
 Convalla, Montana
 directed by
Peter Matthiessen
 Contact: Center for Continuing Education, University of Montana, Missoula, MT 59812 or (406) 243-6480



WILDERNESS LEADERSHIP PROGRAM
 Semester-length courses with credit available. Exciting, challenging, career-oriented intensive instruction in climbing, mountaineering, canyon exploration, rafting. First aid/A&I certifications.
 Write: **Colorado Outward Bound School**
 945 Pennsylvania St., Dept. WR
 Denver, CO 80203 (303) 837-0880

UTAH'S CANYONLANDS
 Learning Vacations
 • Natural and Cultural History
Trips and Seminars
Canyonlands Field Institute
 Box 68-SR, Moab, UT 84532

DIG IN

JOIN archaeologists excavating 13th Century Anasazi sites.
WORK with archaeobotanists examining the diverse ecological communities of the Four Corners area.
 FOR MORE INFORMATION & A FREE CATALOG CALL TOLL FREE: 1-800-422-8975
CROW CANYON ARCHAEOLOGICAL CENTER
 Dept. SR 2306C R N • Cortez, CO 81302

Leisure & Environmental Resources Administration
 For Careers in
 ■ Outdoor Pursuits Recreation
 ■ Experiential Environmental Education
 ■ Outdoor Commercial Recreation
 The LERA program at Aurora University has earned international recognition for its innovative curriculum and outstanding faculty. The program is accredited by the National Recreation and Park Association/American Association of Leisure and Recreation.
Master of Science Graduate Degree Program
 ■ Outdoor Pursuits Recreation/Education
 ■ Administration of Leisure Services
 ■ Therapeutic Recreation Administration
Bachelor of Science Undergraduate Degree
 ■ Outdoor Leadership
 ■ Program Supervision
 ■ Therapeutic Recreation
 For more information, call or write to:
 Office of Admissions
 PO Box 3
 Aurora University
 Aurora, IL 60506
 708-896-1975



THE ANSEL ADAMS GALLERY PHOTOGRAPHY WORKSHOPS
1990 WORKSHOPS IN YOSEMITE
 50th Annual Ansel Adams Yosemite Workshop!
 100+ Years of Photography in Yosemite • Dye Transfer • Infrared • Cibachrome • Zone System • High Country • Black and White • Also, Alaska
 BOX 455 • YOSEMITE NATIONAL PARK CALIFORNIA 95386 209-372-4413
 The Ansel Adams Gallery is authorized by the National Park Service to operate in Yosemite.

VACATION RETREATS

KAUAI VACATION HOME

 2 Bdrms, 2 1/2 Bths. Fully furnished. Relax, Snorkel on Beautiful Beaches, hike Na Pali Trails.
 Free brochure - Affordable prices
 P.O. Box 2221, Saratoga, CA 95070
 (713) 444-5988 or (408) 241-4286

Great Smoky Mountains, Tennessee
 Announcing the limited availability of a cozy secluded hideaway. Uniquely situated on 18 acres, privacy for a single couple at a time is assured. A small cottage with modern conveniences offers picturesque views. The central location to the Great Smoky Mountains National Park allows access in minutes to hiking trails, Little River and Cades Cove for outstanding backpacking, kayaking, swimming, tubing, bicycling, birdwatching, and wildflowers. Write: Smoky Mountain Management, 15186 Stillfield Place, Centerville, VA 22020. Call: Mr. King (703) 815-0210.

4 Wild Days, 3 Cozy Nights
 Guided group walks with National Sierra Club Trip Leader Mark Minnis exploring Oregon's Wild Rogue Wilderness. Stay in comfortable lodges. Great food and no hassles with gear. Contact us for complete details and our 1990 Schedule.
503/476-4002
 P.O. Box S-15 Grants Pass, OR 97526

 On Oregon's Wild Rogue River

THE ONLY BEACHFRONT RESORT ON KAUAI'S NORTH SHORE!
 2-bedroom apartments, full kitchens, pool, jacuzzi, lush gardens, 4 acres of beachfront. Nearby Na Pali Coast hiking and wilderness seclusion. \$90-\$145. Car & room packages available.
U.S. TOLL FREE (800) 367-8047 Ext. 148
CANADA TOLL FREE (800) 423-8733 Ext. 148
HAWAII RESIDENTS (800) 628-3004
FAX (808) 826-9893
 **Hanalei Colony Resort**
 P.O. Box 206, Hanalei, HI 96714

Rent the Wilderness

Imagine you and your group having the exclusive use of a High Sierra retreat in the pristine beauty of the Muir Wilderness! Complete kitchen-dining facilities, beautiful hot spring baths, log cabins by river. Horseback riding optional. 7½ miles from road's end, elevation 7,600 ft. Group size 20 maximum per week; rates start at 10. Open June thru September. Muir Trail Ranch, P.O. Box 269, Ahwahnee, CA 93601, (209) 966-3195

CLOTHING EQUIPMENT

Wildlife Designs on Quality Casual Clothing

Naturewear™



By
Whales & Tales

Send for free color catalog.   429 University Ave. Palo Alto, CA 94303-0690
PO Box 51170

BUSH SHORTS

High Quality/Rugged Construction
Made in the U.S.A.

- ★ 6 Pockets
 - ★ Black 100% Cotton
 - ★ Khaki 100% Cotton
 - ★ Olive Drab 100% Cotton
 - ★ White 100% Cotton and Polycotton*
- Waist Sizes: 26 to 46



\$14.95
+ Shipping

CHECK • MONEY ORDER • MC • VISA

1-800-541-2841

P.O. BOX 4035
DEERFIELD BEACH, FL 33442-4035

*PLEATED WALKING SHORTS ALSO AVAILABLE

CLASSIC T-SHIRTS!

Bethoven, Hemingway, De Vinci, Jung, JFK, Mozart, Shakespeare, Chesire Cat, Joan Darwin, Van Gogh, Gandhi, Nietzsche, Poe, Thoreau, Auden, Sherlock Holmes, others.

T-Shirt: (white or 8 blue) \$12.25, 4/\$44
Sweatshirt: (white or gray) \$21, 2/\$40
Size: S, M, L, XL. Ship: \$2.00 per order
Illustrated brochure: 75¢

Historical Products, Box 228 SR



Cambridge, MA 02238

BOOMER'S™

ATTITUDE T-SHIRTS

SPEAK UP FOR
MOTHER EARTH!
MAKE THE
POINT AND
GET A GRIN

MOTHER EARTH GET



Premium 100% cotton
T-shirt S, M, L, XL in
Black, royal, navy, white.
To order send \$11.95 (free ship)
per shirt (XXX add \$3.00), \$17.95 for long sleeve (see
XXX), \$0.50 wear-shirt - \$21.95 (XXX), add \$4.00 to

BOOMER'S ATTITUDE T-SHIRTS
P.O. BOX 8454, DEPT. S-1 • BOULDER, CO 80501 (303) 441-8207
VISA/MC (248) 343-9812

Send \$1.00 (refundable) for catalog.
— Dealer inquiries welcome —



Send for FREE dolphins poster and catalog.
141 Blackberry Inn S. Weaverville, NC 28787

LEATHER BACKPACK

RUGGED

ONLY
\$29.50

HISTORIC EXPLORERS of America
wearing leather packs that were tough!
Now YOU can enjoy the rugged
comfort that leather and durability of
soft, 100% leather in this modern ver-
sion of the famous leather pack of
yesteryear. Rich golden color. All
leather hardware. Rooms 14" x 17" x 17"
large compartment (with 3 handy re-
movable outside pockets), 2" wide
collapsible shoulder straps. Offers 1,000
uses for any wilderness and a host of
uses for those "long hours on the
trail." Send \$29.50 + \$3.00 delivery
like \$1.00 less, money back if not
satisfied. MasterCard & Visa accepted.
Phone 312-445-2196, C.O.D. orders
\$5 deposit. Order today! Midwest Company, Dept. L-1987, 9643 S. Western
Ave., Chicago, IL 60630. Special 2 packs for \$57.00 present. Our 50th year.



BONUS: ORDER NOW
RECEIVE A COMPASS FREE

Ridge Runner Naturals

T-SHIRTS, SWEATSHIRTS
For ADULTS and CHILDREN

ORIGINAL HAND-PRINTED

NATURE DESIGNS

CALL or WRITE for
FREE COLOR CATALOG



1033 BALSAM RD
DEPT. S
WAYNESVILLE, NC
28786

(704) 456-3003

LOVEARTH™



for tomorrow today

or choose LOVEARTH - before it's too late or
LOVEARTH - for my tomorrows (Kids). 6 Color
design on quality white T's and sweats. Kids XS, S, M,
L - T's \$9.95. Sweats \$18.95. Adults S, M, L, XL - T's
\$12.95. Sweats \$21.95. Shipping & Handling \$2.55 per
order. Mail check or money order to Lovearth, Dept. S,
39-29 Bell Blvd., Bayside, N.Y. 11361. \$1 of every order
donated to an environmental organization. If you have
a favorite please specify. FREE 2 color LOVEARTH
bumper sticker with any order over \$25 or \$2 each.
800-486-LOVE VMC AmEx © 1989 LOVEARTH

Show everyone how close we are to global
destruction and help environmental conserva-
tion at the same time! We can save our planet!
\$1.00 from every order goes to an environ-
mental conservation group. Each artistically
hand-silkscreened on a black T. Please specify
size M, L, XL. Send \$15.00 by check or money
order (includes S&H) to: INNOVATIVE ALTER-
NATIVES, P.O. Box 8371, Trenton, NJ 08650.



WILDLIFE T-SHIRTS



© 84 Jim Morris

Support wildlife by wearing environmental t-shirts
(10% of profits go to environmental groups.) Many
designs, \$9.95 each. Heavyweight, 100% cotton t-
shirts in S, M, L, XL, in white, blue, silver and green.
Sweats also, \$21.45 each. FREE CATALOG.

JIM MORRIS PO Box 831 DEPT. 28C
Boulder, CO 80306 (303) 444-6430

Satisfaction guaranteed. Share the Earth!

PRODUCTS SERVICES

NEW LIGHTWEIGHT MODELS FOR 1990

BORN TO TRAVEL

NEW FOLDING & ROTOMOLDED BOATS from \$350

Stings, spray skirts, paddles and many other accessories.

FOLBOT™

FREE COLOR CATALOG

Call 1-800-533-5099

or write
Folbot, Inc.
PO Box 10871, Dept. B
Charleston, SC 29415

FACTORY DIRECT
PRICES - SATISFACTION
GUARANTEED



Friendly Kiwi Kayaks™

(707)
838-6262

Light,
small, safe,
stable, comfortable,
versatile (all waters)
inexpensive — \$349

Kiwi Kayak 10070 Old Redwood Highway
P.O. Box 988-A, Windsor, CA 95492

KITES

FREE COLOR CATALOG

Choose from over 100 exciting kites.
Many unusual & innovative designs.
Call or write for your catalog today!

Into The Wind • (303) 449-5356
1408-E Pearl St., Boulder, CO 80302



SIERRA ADVENTURE

ENVIRONMENTAL OPPORTUNITIES



Monthly bulletin lists jobs throughout the U.S. Write for FREE descriptive brochure: EOS, P.O. Box 788, Walpole, NH 03608. (603) 756-9744



ENJOY!!

Let our little magazine take you to your favorite hot springs that you might not even know are your favorite yet! From pristine wilderness springs to the classics, we cover them all with up-to-date articles, info, maps, pics and guidelines. Join the fun NOW!

Published Quarterly. Year Subscription (4 issues) \$15.00
Hot Springs Gazette • 12 S. Benton St. • Helena, MT 59601

Nature Sound Recording

Expert advice in application and audio recording equipment.

Featuring

SENNHEISER

Full range of "spot" microphones and monitor headphones.

Saul Mineroff Electronics

574 Meacham Ave., Elmont, NY 11003
Telephone (516) 775-1370

Cloth Diapering Made SIMPLE!



nicky diaper covers let you use cloth diapers easily, without pins! Best for baby, best for the environment.

BABYWORKS • (503) 645-4349
11725 NW West Rd. #1
Portland, OR 97229

Free Brochure!



WILDLIFE NOTE CARDS
ON RECYCLED PAPER!
FREE SAMPLES

ORR ENTERPRISES
BOX 1717 • MONROVIA • CA • 91017
(818) 301-0550

OUTDOOR BOOKS & VIDEOS

Choose from over 800 exciting books on hiking, bicycling, skiing, water sports, travel & adventure in the U.S. and world-wide.

Call or write for FREE CATALOG. 303-595-5700 or



Dept. D-D
PO Box 3191
Boulder, CO 80307

Call (415) 923-5617 for information on AdVenture advertising.

SEASONAL SPECIAL

A deluxe log cabin birdhouse, converts to large feeder. Made to last with 10 steel rods, real logs coated in polyurethane, translucent windows, ready to hang or mount, comes with official warranty. Can be used on gatepost lights. Free brochure-free shipping; large house spring sale price - ~~was~~ \$69.95, ~~now~~ \$59.95. Wren/Chickadee house \$16.95.

Send check or money order to:
Sugarlands Industries

P.O. Box 254 - Parsons, WV 26207

Phone (204) 479-2646 - 7:00 a.m. to 4:00 p.m. (Mon.-Fri.)

Hiking & Walking Sticks



Each stick is hand-shaped, sanded, heat treated, lacquered, and filled with stainless steel-reinforced rubber tip and sturdy leather thong. We ship same day via UPS if order received before 2:00 p.m.

There are four styles:

a. Hickory Staff 54"-60"

b. Sasparosa Staff 54"-60"

c. Red Cedar walking stick 36"

d. Somatic Roof walking stick 28"

\$14.95 each
Order all four - \$49.95

TO ORDER: Specify style, include shipping instructions and send check or money order to the address below. Please add \$3.00 per order. (All U.S.). Credit Card orders call 214-229-0220 between 9:00 and 5:00 p.m. Central time M-F. Dealer inquiries invited. ©



5050 Daurum #741 • Dallas, TX 75248 • 214-229-0220

BACKYARD HOT TUBBER

Save Thousands \$\$\$
Relax in our wood-fired hot tub!

The easy to assemble, affordable WOOD-FIRED hot tub systems are ideal for homes and vacation cabins anywhere.

The systems are energy efficient, with no electricity, pumps or filters needed and...

No freezing problems.

30 day satisfaction guarantee!

PACKAGES STARTING AT \$1095!
Free Bonus Gift, Too!

Snorkel Stove Company
Wood-Fired Hot Tubs
108 Elliott Ave., W., Dept. SE833
Seattle, WA 98119

YES, send me FREE information:

Name: _____
Address: _____
City: _____ State: _____
Zip: _____ Phone: _____

May/June deadline: March 1



SPONSOR A TREE - We Plant A Tree For You. Join the fight to cool the earth. Provide wildlife habitat. You dedicate a TREE to yourself or a loved one. A living tribute of your concern for the earth's environment. Tree planted in White Thunder Wildlife Restoration Area. You receive scroll of dedication suitable for framing. Map of area with tree location and newsletter. Act Now. Send \$15.00 per tree, check or money order, and name of your dedication to: White Thunder Restoration, Box 344, Wood, SD 57585

TREAT THE CAUSE NOT THE SYMPTOMS

Population increases are the primary cause of every major environmental problem we face. Want to do something about it?

Contact Population-Environment Balance, 1325 G Street NW, Suite 1003, Washington, DC 20005-3104.

202/879-3000

100% COTTON SHOWER CURTAIN

Don't "dunk" another plastic shower curtain! Tightly woven 100% cotton duck gets wet, but water stays in the tub. No liner necessary. Machine washable! No more grimy, sticky vinyl. Rustproof grommets. White. \$25 - \$35.50 shipping. Send check/money order to: NOPE (Non-Polluting Enterprises), P.O. Box 3335, Smithport, PA 16749. 1-800-782-NOPE. (VISA/MC)



—Recycling Kits—Reusable!—

Recycle wallpaper, giftwrap, magazines, calendars, computer paper, etc. into 3" x 5" x 11" bags or multi-sized envelopes!

Giftbag, lunchbag kit \$10.00

Envelope kit \$6.00, Combination kit \$13.00

All postpaid

ANTHONY'S ORIGINALS

P.O. Box 8336-S, Natick, MA 01760.

SIERRA ADVENTURE

| Classified Rates | 1 x | 3 x | 6 x |
|------------------|-------|-------|-------|
| One Inch | \$280 | \$225 | \$200 |
| Two Inches | 525 | 420 | 380 |
| Three Inches | 775 | 615 | 560 |
| Four Inches | 1,000 | 805 | 730 |

Fractions of an inch figured at a percentage of the one-inch rate. No commissions or discounts.

Call Lorraine Vallejo for information on AdVenture advertising at: (415) 923-5617 or send order and payment to Sierra AdVenture, 730 Polk Street, San Francisco, CA 94109.

Why are balloon launches considered bad for the environment? (W. E. Cooke, Charlotte, North Carolina)

Magnificent helium balloons seem to carry our hopes and dreams to the heavens—but they come back to Earth before a day has passed, littering land and sea for months or years.

The chief danger is to the sea creatures that mistake floating balloons for a jellyfish lunch. Even balloons launched inland can fly or float to sea. Once eaten, they become a sticky mass that blocks the intestines, slowly starving these animals to death. The Marine Mammal Stranding Center in Brigantine, New Jersey, has found both latex and mylar balloons in the digestive systems of several dead sea turtles and in that of a dead baby sperm whale.

Responding to environmentalists' concerns, Florida banned mass balloon launches last summer, and entities from Disneyland to the Department of Defense—along with many towns and schools—have canceled launches and opted for safer festivities.

Alternatives for buoying up school or civic spirit include tethered balloon arches, water-balloon contests, hot-air or weather balloons, indoor balloon launches, make-and-fly-a-kite day, and planting trees or colorful bulbs. For more information contact the Balloon Alert Project, 12 Pine Fork Dr., Toms River, NJ 08755-5152; the Entanglement Network, c/o Defen-



ders of Wildlife, 1224 19th St., N.W., Washington, DC 20036; or the Marine Mammal Stranding Center, P.O. Box 773, Brigantine, NJ 08203.

Do artificial firelogs burn cleaner than cordwood? (George Martin, Portland, Oregon)

Information on pollutants in firelogs is scant and conflicting; about the strongest statement that can be made based on existing studies is that firelogs may emit less of some kinds of air pollutants.

In a 1988 test for three firelog manufacturers, Santa Fe energy consultant Jay Shelton found that artificial logs emitted less carbon monoxide, creosote, and particulates per hour than a variety of woodfires. The study compared cordwood with

three brands of firelogs burned one at a time in a fireplace, and didn't measure all possible pollutants.

By contrast, a 1984 study by the Environmental Protection Agency found that one brand of firelog burned two at a time in a woodstove emitted much more air pollution than an oakwood fire. (Firelogs are labeled with warnings against burning more than one at a time, because it makes the fire dangerously hot.)

Fireplaces have relatively unrestricted air flow, which might account in part for the differing results of the two studies. This factor also makes fireplaces less efficient than woodstoves as sources of heat. Also, in Shelton's study the cordwood and the firelogs actually gave off similar amounts of pollu-

tants per pound of fuel, but because firelogs (which are half sawdust and half wax) burn more slowly and efficiently, they used less total fuel for an evening's fire.

I just received a handmade ceramic bowl as a gift. Is it safe to use for serving food? (Beverly Simmons, Walnut Creek, California)

The U.S. Food and Drug Administration has learned of isolated cases of lead poisoning caused by frequent use of ceramic mugs, bowls, plates, and pitchers with improperly fired glazes. Unfortunately, you can't tell by looking at a ceramic item whether it is safe to use.

Although the agency has set limits on the amount of lead in domestic and imported dinnerware, it admits that it can't inspect every piece; nor do the regulations apply to antique and collectible items or to ceramic pieces purchased in other countries or at crafts fairs.

You can reduce possible lead exposure by not using any ceramic vessel to store acidic foods such as coffee, juice, wine, tomato products, or salad dressing. Lead may also leach from painted or gold-rimmed glassware—especially if children suck on the edges of the glasses.

To be sure you're not serving a leaden lentil soup, you can get Screen America's \$24.50 lead-testing kit in some drug stores, or order the more advanced Frandon Lead Alert Kit (\$29.95) from Kerner Industries in Chico, California; (800) 332-7723 or (916) 342-8000. ■



Statehood Parade, 1890.
Wyoming State Archives, Museums and Historical Department

Wyoming has always known how to throw a party.



So don't miss our Centennial Celebration, the biggest and best yet! ● From Cheyenne to Jackson, Sundance to Rock Springs, the people of Wyoming have spruced up the towns, fired up loads of great events and pulled out all the stops. We want to show you the colorful heritage of Wyoming and why we're so proud to live here. ● You could tour the North American Indian Heritage Center, clap along at the Old Time Fiddle Contest, watch the chips fly at the Woodchoppers' Jamboree, dance up a storm at the Rocky Mountain Polka Festival, see the Snodeo at a Wild West Winter Carnival, trade for skins at a Mountain Man Rendezvous or help open the new Fossil Butte Visitor Center. These are just some of the many exciting, educational events going on throughout 1989 & 90. ● It will be a couple of years of excitement and surprises you won't want to miss. For a complete list of Centennial events, as well as accommodations, call the Wyoming Travel Commission at 1-800-225-5996. ● C'mon over—it'll be a hundred years before we do this again!

1890-1990
**WYOMING
CENTENNIAL**
A LASTING LEGACY





**Stress management,
Giant™ style.**



You've turned off the week...the beeps, the bells, the deadlines, the headlines, the morning rush, the traffic crush.

It's all miles and worlds behind. And what's ahead is wonderful.

The rhythmic rise and fall of the trail before you. The ever-changing contours of the land, sculpted by the arcing sun. The "can't wait" expectation of new rewards around each turn, over each rise. Every pedal stroke seems to bring you much closer

to harmony with yourselves and each other.

Your only question is where to end the day, and the setting sun will answer that for you. Just as its rising will announce a new day of adventure and discovery.

Your Authorized Giant Dealer can show you how our commitment to quality, value and service can help you make the most of your next biking adventure. Let them put you on the Giant bicycle that's precisely right for you.

GIANT
PRECISELY RIGHT

For the name of the Authorized Giant Dealer nearest you, write:
Giant Bicycle, Inc.
P.O. Box 1819S2,
Palatine, IL, 60078

©1990 Giant Bicycle, Inc.
All rights reserved