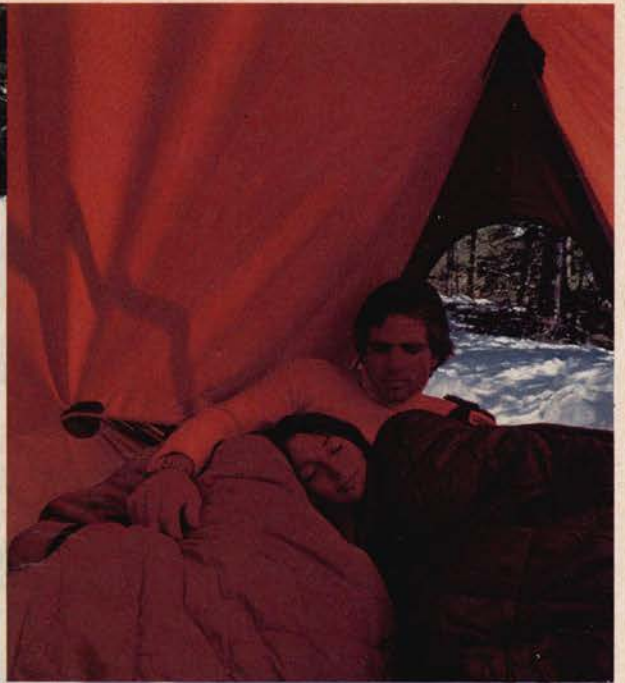


SIERRA

THE SIERRA CLUB BULLETIN

October 1977 **\$1.00**

**The Great Smokies
A Wildlife Portfolio
Sierra Club History: Part One
Books ~ Christmas Catalog**



Top left: Storm Coat, Super Sweater Jr., Guide Pack. Top Right: Mountain Ark Tent, Super Snug Sleeping Bag, Polar Snug Sleeping Bag. Center: Mountain Ark Tent, Reversible Vest, Vest, High Tour Pack.

Gerry brings you the warmth of winter.



For Camp Catalog write: Gerry/5450 North Valley Highway/Denver, Colorado 80216

Founded in 1892, the Sierra Club works in the United States and other countries to restore the quality of the natural environment and to maintain the integrity of ecosystems. Educating the public to understand and support these objectives is a basic part of the Club's program. All are invited to participate in its activities, which include programs to "... study, explore, and enjoy wildlands."

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OCTOBER 1977

VOLUME 62/NUMBER 8

- 6 The Great Smokies
A Sea of Soft Green Peaks
S. Russell Manning
- 10 The Sierra Club: A History
Part One—Origins and Outings
Douglas H. Strong
- 15 A Wildlife Portfolio
Tupper Ansel Blake
- 18 Smokestacks and Pagodas:
One Man's Impressions of China
Edward P. Morgan
- 22 Whose Land is This?
A Quiz
Peggy Wayburn
- 25 Sierra Club Books & Calendars
Christmas Catalog
Gail Chapman
- 44 The CEQ Unleashed
Tim Thompson
- 47 Beyond the Instamatic:
The Lens of the Heart
Edith Thacher Hurd
- 55 When the Water Baby was Born
Edith Thacher Hurd

Departments

- 4 **From the Editor:**
SIERRA Looks Ahead
Frances Gendlin
- 51 **Books:** "The Agricultural Crisis as a Crisis of Culture," an excerpt from *The Unsettling of America*
Wendell Berry
- 57 **The Observer**
Robert A. Irwin
- 58 **News:** Is Carter going nuclear?; Australia rescinds uranium ban; Water policy review under fire; Minnesotans split over BWCA Wilderness; Alcan route approved; The wild Skagit vs. nuclear power; Back to the family farm?; Plans to mine Grand Canyon dropped.
- 60 **Guest Opinion**
RARE II—The Administration's View
M. Rupert Cutler



Cover: Autumn: Aspens in Colorado celebrate with glowing colors as another year turns the corner toward sleep and rebirth. Photograph by Mark Fraser.

From the Editor:

WELCOME TO SIERRA—*The Sierra Club Bulletin*. Beginning with this issue, you'll find many changes—modification of our name, different paper, format and typefaces, and even some new kinds of articles we think will make the magazine more interesting and effective. Our basic thrust, however, won't change and will remain constant: our understanding that there's nothing in this world as important as the world itself. In fact, this belief is why we're working to improve the *Bulletin*, turning it from a "house organ" directed only to people who are already Sierra Club members, into *Sierra*, a publication the general public might also come to know. We think it's time to reach a broader audience, who might well be interested in participating as we do—as citizens—in helping to preserve the planet.

It seems clear that in many important ways environmentalists' efforts so far have been successful. I believe our main achievement has been to influence the climate of thought in this country, so that no one can any longer seriously denigrate the values we've been working to make paramount. Even the industries most responsible for polluting now speak of environmental values, for they too know—even if they're not always putting theory into practice—that environmental awareness has broadened considerably to include more than that strange bunch of people they once tried to label "ecofreaks." It isn't that saving any one wilderness area from destruction has made the difference, although each area saved has been a catalyst in the process; the point is that we've brought environmental thinking into the everyday consciousness of millions of people.

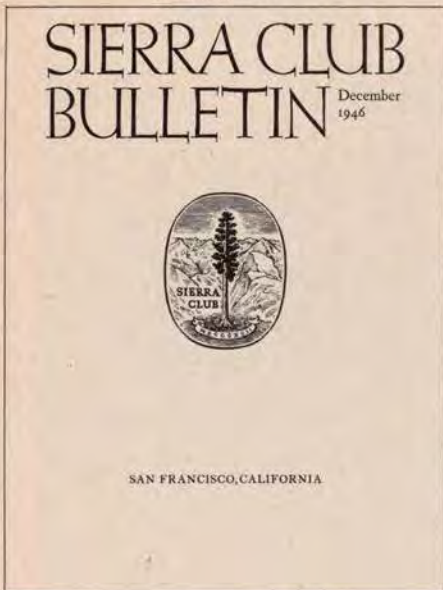
Now it's time to involve them further, showing them the process of cohesive citizen action and how it works. There are also college students who obviously want to participate, who refuse to be left out. And, there are children who, as our next generation, should learn early the values that will strengthen their lives. Not only must our magazine have material that speaks to these people and others, we must make ways for them to find us. This is what we're starting here: a process of improvement and expansion that will lead to a wider public distribution of the Club's magazine and thus its work.

First, then, changing the design of the magazine will allow us to highlight the month's most important stories more effectively and to accommodate several new features. There will be an action-alert page, a children's story, a White House column and articles for those who want to learn to live more simply and congruently with their surroundings. I suspect we'll keep refining and modifying the format over the months until we find the right balance for a consistently attractive magazine and I hope you'll bear with us. No, even more, I hope you'll be interested each month to see how we're faring in our attempt to include as much current editorial content as possible while still presenting an attractive product that will appeal to an ever-growing audience.

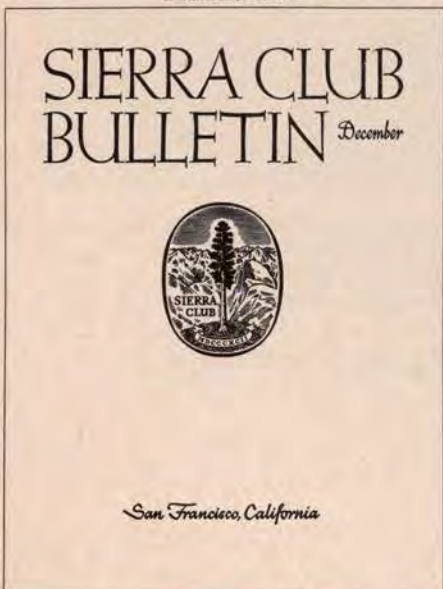
In this regard—creating an attractive yet environmentally sound magazine—



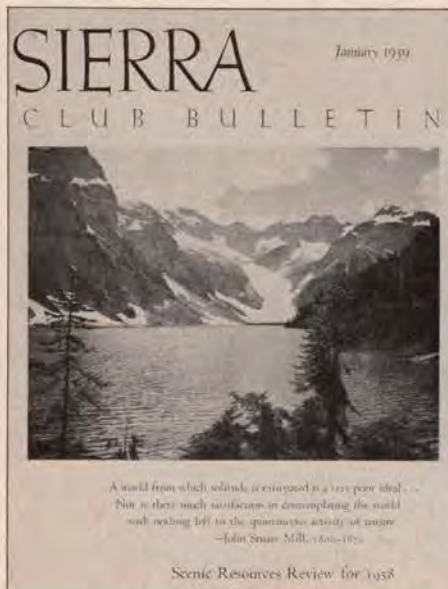
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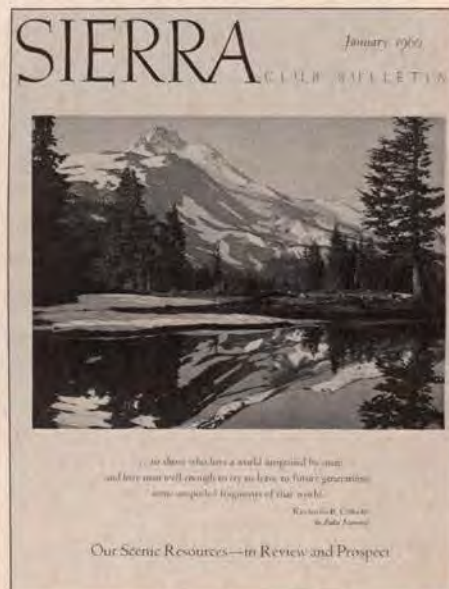
December 1946



December 1956



January 1959



January 1960

SIERRA looks ahead

I'd like to mention recycling, for all the paper in this magazine is recyclable. It's not recycled paper itself, for that type is in short supply and its price is way above our means. In addition, recycled paper doesn't readily give good reproduction to our wilderness art photos. But during the past two years, when a few people have written asking if our glossy paper is recyclable, my answer, despite their suspicions, has been "Yes, it is." It can't be recycled back into the same kind of paper, but instead is used, for example, in shoe boxes, wallboard and other items heavily used. As a matter of fact, the magazine should be easier to recycle than before, when consisting of two different types of paper, it had to be pulled apart and the different papers placed in separate receptacles. We'd like to urge you, however, to try a more important way of seeing that this paper is reused: give the magazine to someone else to read. If you don't keep *Sierra* for future reference, then see about donating used copies to a school, church or hospital, to people who otherwise might not know us. We've been told that homes for convalescents and for the aging are especially appreciative of donated magazines. You might even give the magazine each month to a skeptical friend—just think how your conversation could change!

Although several of *Sierra's* staff who appear on the masthead are new to the magazine, you should know all our names fairly well. I've been editor two and a half years and Carey Charlesworth, our editorial assistant, exactly one year less. She checks the accuracy of facts in articles, makes sure writers meet deadlines and does much more to ensure the quality of the material we print. David Gancher, our new managing editor, was formerly editor of Friends of the Earth's *Not Man Apart*. Thus he's been involved in both conservation and journalism for quite a while, and we're pleased to have his talents now at the Club. Gene Coan, the news editor, is also responsible for the Club's almost-weekly *National News Report*. Designer Rick Dinihanian has been with us a year too, and now really has his hands full with this new effort. Cathy Gasparini worked for more than three years in the Club's research department, and much of her new responsibility with us will have to do with increasing our advertising revenue so we can continue to publish a magazine of high quality while allowing important Club money to be used for other high conservation priorities.

During the past two years I have very much appreciated the support and encouragement I've received from our members, as we've improved and expanded the magazine, added new features and departments, changed layouts and changed them again. As I do each year, I'd like to renew my request to hear from you—general letters to me, or to our Letters column commenting substantively on articles and topics that we've covered. This two-way communication remains important, and I hope we'll continue to hear from you. Above all and increasingly, *Sierra* means to become a nationwide forum for citizen participation and involvement. That's what we're all about.

Frances Gendlin



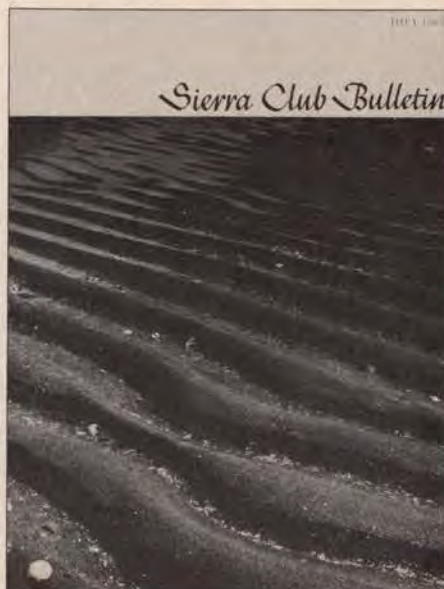
March 1977



September 1971



June 1967



July 1969



April 1970

Sierra
Club
Bulletin

The Great Smokies

S. RUSSELL MANNING

In October the Great Smoky Mountains are a blaze of sunset colors, the year dying in splendor. The reds and purples of maple, oak, sourwood, ash and sumac seem to burn against the gold of hickory and birch. By the end of the month it will begin to feel like winter in the high Smokies, with rain and wind whipping the evergreen spruce and fir.

The Great Smokies have always evoked superlatives from writers. A century ago Arnold Guyot, the naturalist and geographer, explored the Appalachians and concluded that the Great Smoky Mountains "by their number, their magnitude, the continuity and general elevation of the chains, and the base upon which they repose . . . are like a massive and high citadel which is really the culminating region of all the Appalachian System."

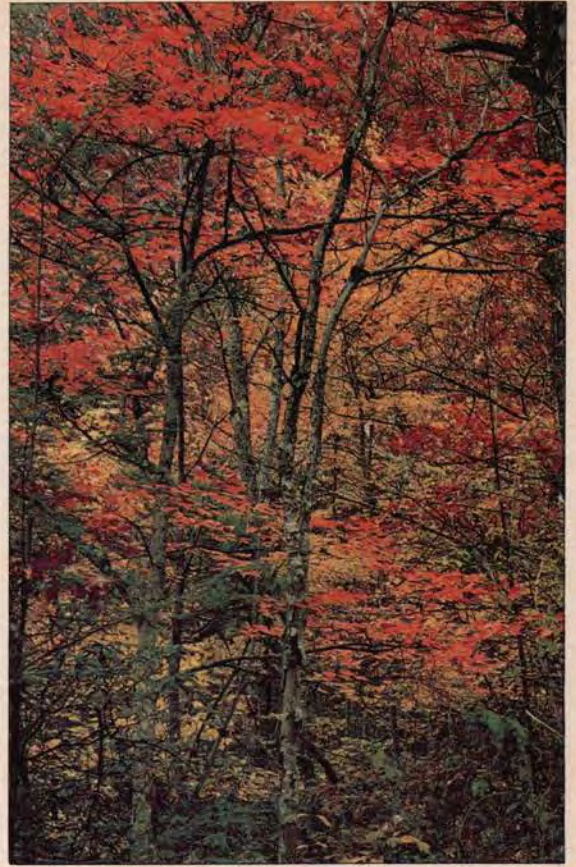
The Great Smokies, in the southern Appalachians, are part of what is often vaguely referred to as the Blue Ridge Mountains—which stretch from southern Pennsylvania, near Gettysburg, nearly to Atlanta, Georgia. It is a mountainous upland, sometimes seventy miles wide, between the Piedmont on the east and the Great Appalachian Valley on the west. Its heart is the Great Smoky Mountains National Park.

But the Blue Ridge, this far south, lies east of the Smokies. It is a functional watershed—one side drains into the Atlantic, the other into the Gulf. Standing on the Blue Ridge and looking toward the Smokies, an observer would feel lost in a sea of peaks. One geologist, throwing up his hands at the lack of apparent order, deplored the southern Appalachians as "very irregular in plan."

The mountains are ancient, so old that their geology is a complicated puzzle. They were once as tall as the Alps, the Rockies or the Sierra Nevada, but time and water have worn them smooth. Round and subdued, the Great Smokies appear soft, dressed in an impressive variety of green. It is a landscape where autumn seems at home, and it has inspired florid description. Naturalist J.P. Mowbray wrote, in 1901, that autumn days seemed "like indolent nymphs that, dressed for the nuptials, only arrived for the funeral, and could not abandon their voluptuous moods. They wear their bridal veils and look at us reminiscently through clouds of mist. These beautiful, dreamy days appear to have been thrown off somewhere like fragments by the revolving August, and they come along like the Leonids, and as softly disappear. We call them the Indian summer."

What inspires prose like this is the amazing variety of plants and animals. The numbers are impressive: there are 130 species of native trees

“A Sea of Soft Green Peaks”



Right: *Maple trees along the Greenbrier Pinnacle Trail.*
Below: *Andrews Bald, Great Smoky Mountains National Park.*



Photos by Scott Heppel



Myrtle Point on Mt. Le Conte.

within the Great Smokies national park—almost as many as in all of Europe. There are 1,400 species of flowering plants, 49 ferns, 325 mosses and liverworts, more than 200 lichen, and 1,200 fungi. The forests vary with elevation. The lowest forests feature a rich mixture of the cove hardwoods—the highest expression of the mature deciduous forest. In the middle elevations, the hemlock hardwoods are the most common, and the high slopes and ridges are thick with spruce and fir.

The park is home to more than 50 species of fur-bearing animals, 200 birds, 75 reptiles and amphibians, 74 fish and correspondingly numerous species of insects. The biggest animal is the black bear, and the rarest is probably the red-cheeked salamander. Because the gray wolf and perhaps the mountain lion are extinct in the park, the wild hog population has exploded. Nearly 2,000 wild hogs, weighing up to 300 pounds each, plow up large areas of the park as they root for tubers, acorns, hickory nuts and small animals.

The park is so rich in varied habitats and species that it has been designated an International Biosphere Reserve. There are twenty-eight such reserves in the U.S., but only four in the East.

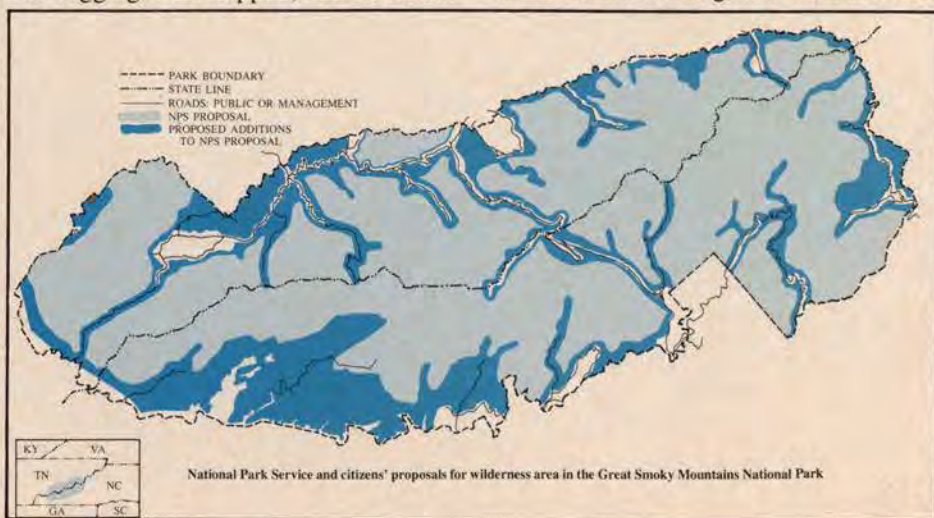
Unlike the wildlife, settlers found the mountains difficult to penetrate, and the Indians who lived there—the Cherokee—were hard to displace. By the end of the Civil War, however, the settlers pushed the Indians out, a sad and cruel chapter of United States history. The settlers, mostly

Irish, English and Scottish, established a familiar rural culture there—small farms and logging. Cattle and sheep grazed the high balds during the summer. But there were never many settlers. Even after the logging and homesteading of the nineteenth and early twentieth centuries, vast stretches of wilderness still remained. Today the park has 160,000 acres of virgin forest—and most of the park is wilderness, though none of it has been so designated.

The move to establish the Great Smoky Mountains National Park began in 1923, but the park wasn't officially established until 1934. In 1940 the park was formally dedicated to preserving and protecting the area's natural beauty and wild character. The logging was stopped, the mountain

homesites abandoned, and nature quickly covered the traces with luxuriant second-growth forest. The park straddles the border of Tennessee and North Carolina, with approximately half of its 514,757 acres in each state. The 2,000-mile-long Appalachian Trail winds about 70 miles over the highest peaks and ridges in the park. Over the years more than 600 miles of trails have been built throughout the park—access to the wilderness that is the park's chief feature.

It has not always been easy to preserve that wilderness. For the past thirty years, conservationists have fought a series of battles—sometimes with the Park Service—over roads. Periodically, trans-mountain roads have been proposed—roads that would fragment the wilderness



and funnel automobile-oriented tourists to the dubious attractions of the few neighboring towns. From 1965 to 1971 many friends of the Smokies worked diligently to stop a road that would have run through the hardwood forests of the western half of the park. Those activists are needed again. Today an equal effort must be mounted to pass the legislation necessary to protect the park's wilderness.

There are two planning processes going on simultaneously: first is the question of wilderness designation. Second is the development of a master plan for management of the park.

The National Park Service released its most recent (and best so far) wilderness proposal for the Smokies in 1974. It called for 390,000 acres of the park to be designated as wilderness. This, most conser-

vationists feel, is not enough. As defined by the Wilderness Act, wilderness need not be virgin forest. The essential requirement is that the area in question be wild in character, with the works of people substantially unnoticeable. Most of the Great Smoky Mountains National Park meets this definition. A coalition of environmental groups—the Great Smokies Park Wilderness Advocates—has come up with a proposal to designate 475,000 acres as wilderness.

The Park Service has been holding general planning workshops for the park. They have presented a wide variety of options, ranging from more development to complete removal of existing facilities. Conservationists have generally supported the options that leave the park as it is. They have opposed new developments and

urged that wild areas should be left wild so that they can be designated as wilderness. Conservationists have also opposed—once again—building new roads and upgrading old ones. They have supported, instead, a road ringing the park but located outside park boundaries.

The present administration of the Great Smoky Mountains National Park seems genuinely concerned with maintaining the wilderness of these mountains. But without wilderness designation, even the best-intentioned administration cannot guarantee that the wilderness will endure. It is our responsibility to preserve this great biological preserve—and to honor the trust we've inherited. □

Russell Manning is a member of the Tennessee Chapter's Harvey Broome Group. Scott Heppel won the Club's Ansel Adams Award in 1976.

The Long and Winding Road: A History of Wilderness Protection

1940

The Great Smoky Mountains National Park is dedicated: 514,757 acres, half in Tennessee and half in North Carolina.

1943

The controversial '43 Agreement is made by the Tennessee Valley Authority (TVA), the National Park Service (NPS), the state of North Carolina and Swain County, North Carolina. TVA agrees to buy and then transfer 44,000 acres to the NPS.

The NPS, in return, agrees to build a road on the north shore of Fontana Reservoir (within the park) to compensate for a road connecting the North Carolina towns of Deals Gap and Bryson City that had been flooded during construction of the reservoir. The agreement, however, is contingent upon Congress' appropriation of funds for the construction. Congress does not do so, the agreement remains unfulfilled, and Bryson City continues to press for a road within the park, which would bring the small town tourist dollars.

1951

The first effort to protect wilderness within the park: the Smoky Mountains Hiking Club (the most potent force for wilderness throughout the park's history) prepares a plan for wilderness use of Greenbrier Cove, a forty-six-square-mile area. This early plan bans new construction, except near the existing highway.

1960-65

Congress appropriates some funds for north shore road construction, but only a few unconnected sections totalling 5.7 miles are completed. Meanwhile, the State of North Carolina builds Highway 28, connecting Deals Gap and Bryson City. The highway follows the south shore

of Fontana Reservoir, well outside the park. Conservationists argue that the road fulfills the intent of the '43 Agreement. Bryson City is neither convinced nor satisfied.

1965

The director of the NPS proposes a second transmountain road across the Smokies, through the very heart of the wilderness west of the Newfound Gap highway. (The other transmountain highway connects Cherokee, North Carolina, and Gatlinburg, Tennessee, both of which have capitalized on tourist traffic through the Smokies.) Swain County wants the road; it would make Bryson City a major tourist center. Conservationists raise a storm of protest.

1966

The NPS releases its wilderness proposal for the Smokies in response to the Wilderness Act. The NPS recommends only 247,000 acres for wilderness, divided into six separate areas. A miles-wide corridor across the park is clearly intended for a transmountain road. Public hearings reveal widespread opposition to the NPS proposal and especially the road. Of the 5,532 individuals who testify or present statements, 4,371 oppose the NPS proposal.

1967

Interior Secretary Stewart Udall rejects the NPS proposal, ruling that the transmountain road is not an acceptable alternative to the north shore road mentioned in the '43 Agreement. Conservationists propose, instead, a wilderness area of 350,000 acres and a "Circle the Smokies" highway system to provide auto access to the outside of the park, leaving the north shore of Fontana

Reservoir and the interior of the park free from further road construction.

1969

Walter Hickel becomes Interior Secretary; road boosters ask him to reverse Udall's decision. But ninety-two road opponents appear in Washington to visit Hickel and local congressmen. Hickel instructs the NPS to study alternative transportation concepts to resolve the north shore road controversy.

1971

The transportation study is released. It recommends a circumferential highway and eventual closing of Highway 441, the Newfound Gap highway that crosses the mountains between Gatlinburg and Cherokee.

1974

Led by the Smoky Mountains Hiking Club, conservationists complete and circulate a proposal calling for 475,000 acres to be designated wilderness—including the 44,000 acres involved in the '43 Agreement.

The NPS revises and releases its wilderness proposal for the Smokies. It recommends that 390,000 acres be designated wilderness. The largest single difference between this and the updated conservationist proposal is the 44,000 acres of the '43 Agreement. Other differences include road corridors into the backcountry and the width of those corridors.

1975

Major conservation groups—including the Sierra Club—endorse the citizens' wilderness proposal. The various groups form the Great Smokies Park Wilderness Advocates.

THE SIERRA CLUB ~

DOUGLAS H. STRONG

THE SIERRA CLUB, both by name and intent of its founders, was originally a California association of men and women devoted to the exploration, enjoyment and preservation of the Sierra Nevada. The story of the Club is tied integrally to that mountain range, although since World War II the formerly small group devoted to the outdoors has gained prominence also as a national conservation organization and has grown far beyond its local origins.

It all started with the mountains. John Muir, who founded the Sierra Club, called the Sierra Nevada "the range of light." Running some 400 miles north-south along the eastern border of California, the mountains rise from the Mojave Desert in a vast granite spine and finally lose themselves in the north, around Mount Lassen, where the Cascades take over. The range crests some forty to eighty miles east of California's lush Central Valley, and beyond, plunges down an escarpment to the semiarid Great Basin. Apart from occasional summering tribes of Indians, the range was uninhabited and undisturbed until the 1840s, when pioneers climbed into California.

During the gold rush of '49, these mountains suddenly became known to the outside world—Yosemite Valley itself was explored in 1851 by a battalion of volunteer militiamen who were pursuing the Yosemite Indians. Within a few years the wonders of the valley and the Mariposa Grove of Big Trees had been publicized on the East Coast, and in 1864 Congress took an unprecedented step; it granted this land to the state of California to protect for "public use, resort and recreation."

Shortly thereafter, John Muir, a restless young Scot escaping from a tyrannical father and the drudgery of the family farm in Wisconsin, wandered south to the Gulf Coast and eventually booked passage on a ship for San Francisco via Panama. For the next few years he lived in the Sierra and explored its high mountain wilderness. In the years to come Muir, more than anyone else, celebrated the beauty of the Sierra Nevada in a series of intensely lyrical articles and books. Conservationist as well as poet, he also reported the damage to forests and meadows caused by loggers and sheep, and warned of the possible deterioration of the watershed so essential to the farmers of the Central Valley.

Even Yosemite Valley, which was supposed to have the protection accorded a state park, suffered from mismanagement and commercial development while under the control of a State Board of Commissioners. When Robert Underwood Johnson, associate editor of *Century Magazine*, accepted Muir's invitation to join him on a camping trip to Tuolumne Meadows in 1889, Muir took occasion to explain the dangers that threatened his former mountain home. Johnson responded by proposing that they work together to urge Congress to create a Yosemite

National Park to protect the high mountain region surrounding the state-controlled Yosemite Valley. They launched a brief and effective campaign that culminated in the creation of Yosemite National Park in the fall of 1890. At the same time, a small group of conservationists in the San Joaquin Valley worked success-



John Muir in Yosemite; in the background, Royal Arches and Washington Column.

fully to establish two other national parks—Sequoia and General Grant—to preserve the Big Trees of the southern Sierra.

However, creation of these California parks did not ensure their protection. Despite the introduction of United States cavalry troops into the parks in 1891 to protect them from trespassing flocks of sheep, the parks themselves (as well as the vast bulk of the High Sierra) remained vulnerable to the devastation caused by sheep and fire. Thus Muir responded enthusiastically to a proposal by Johnson that a "Yellowstone and Yosemite Defense Association" be established to protect the national parks. Since the Boone and Crockett Club, a New York-based sportsmen's organization, already had an interest in the preservation of Yellowstone, an officer of that club suggested that a new association be established in the West to protect California's parks. Both Muir and Johnson responded favorably to the proposal.

Photos from the Sierra Club archives

A HISTORY

Part I: Origins & Outings

Interest in the creation of an organization to preserve the mountain wilderness coincided with interest in creation of an outing club, to make the Sierra more accessible and better known. As early as 1886, J. Henry Senger, a University of California professor, had proposed that an information center be

the Pacific Coast; to publish authentic information concerning them; to enlist the support and co-operation of the people and government in preserving the forests and other natural features of the Sierra Nevada....

As for the first purposes—to visit the mountains and publish information about them—there were a few Californians who had been doing that for some time. Several of the Club's 182 charter members had visited Yosemite or explored the High Sierra for years. Muir began his wanderings in the mountains in 1868 and in the early 1870s began publishing his botanical and geological discoveries. Joseph LeConte, professor of geology at the University of California, made a notable record of his 1870 trip which was later published as *A Journal of Ramblings Through the High Sierra of California*. Yet despite early explorations, the work of the Geological Survey of California in the 1860s, and the publications of Muir, LeConte and others, there was still relatively little known about the High Sierra. Accurate maps did not exist, and descriptions of trails or possible routes for stock and backpackers were fragmentary at best. The earliest travelers simply took their chances, following the trails of sheepmen or pioneering their own routes.

During the 1890s the Sierra Club printed important maps made by LeConte and Theodore Solomons, both Club members. Articles published in the *Sierra Club Bulletin* contributed significantly to scientific knowledge of the Sierra and encouraged more people to venture into the wilderness. The Club's purpose in encouraging such trips and publishing accounts of them was not so much to promote recreational pleasure as to instill a sentiment for "the rights of nature and of man when off in the mountains."

With the increased interest in mountain travel and the availability of reliable maps and other published materials, Abbot Kinney, a Club member and Yosemite commissioner, revived Professor Senger's proposal for an information center in Yosemite Valley. The Sierra Club, with the permission of the Yosemite Board of Commissioners, took over a cottage in the valley in 1898, paid part of the salary of an attendant for the summer months, and supplied a collection of maps, photographs, books and other materials on the Sierra. A few years later, the Club constructed the LeConte Memorial Lodge in Yosemite Valley as its summer headquarters. LeConte Lodge, still operated by the Club today, marked a new endeavor—ownership of buildings in the mountains to serve as public information centers, recreation centers and emergency shelters.

The Club's selection of William E. Colby as the first attendant at the original information center in 1898 was most fortunate. Colby, who had just graduated from Hastings Law School, be-



John Muir with his Sierra cup, at an early Sierra Club outing.

established in Yosemite Valley to provide maps and books to anyone who wished to venture into the mountains. Senger's proposal attracted the attention of other faculty members at the universities in Berkeley and Palo Alto who, together with a scattering of professional and business people in the greater San Francisco Bay Area, soon began to discuss the possibility of an alpine club.

In 1892, a group composed of recreationists and conservationists founded the Sierra Club. Twenty-seven men met on June 4, signed the articles of incorporation, and selected John Muir as their first president. The articles, drawn up by Professor Senger and Warren Olney, a San Francisco attorney, stated clearly the major purposes of the Sierra Club:

To explore, enjoy and render accessible the mountain regions of

came secretary of the Club in 1900, a position he retained until 1946 except for two years as president. Colby had noticed how difficult it was for novices and families to make a mountain trip on their own. Therefore, he suggested that the Club sponsor summer trips modeled after successful outings conducted by the Mazamas, a mountaineering club with headquarters in Portland, Oregon. However, several Club directors objected. They thought that large parties, necessarily including strangers, were undesirable and that members would prefer to organize their own small parties. Muir, however, supported Colby's proposal enthusiastically, and the directors authorized a first outing with the explicit restriction in the bylaws that no Club funds be used for such a questionable venture.

In an impromptu speech at the 1895 annual meeting, Muir made a remark that could serve well as the motto of the outings program: "Few are altogether deaf to the preaching of pine trees," he said. "Their sermons on the mountains go to our hearts; and if people in general could be got into the woods, even for once, to hear the trees speak for themselves, all difficulties in the way of forest preservation would vanish."



Two campers enjoying a meal, at an 1898 camp on the south fork of the San Joaquin river.

ment was makeshift; there was none of the high quality-low weight equipment enjoyed by modern backpackers. For the cold nights of the highest mountains, Colby recommended a sleeping bag made

mosquito head nets, heavy gloves and colored glasses. Women were asked to wear short skirts, with hemlines halfway from knee to ankle, over shorter dark-colored bloomers. In time the skirts and bloomers gave way to overalls and then to knickers, and then to blue jeans.

Since Colby wanted the first trip to be a great success, he proposed to visit Tuolumne Meadows and the high country of Yosemite National Park, a region of outstanding scenic beauty but relatively easy access. On July 13, a party of ninety-six left Yosemite Valley, nearly all on foot. It was a cumbersome party. Wagons hauled all the dunnage. Heavy snows and broken bridges halted the freight wagons temporarily and endangered the entire outing. Fortunately for the hikers, however, hasty repairs on the bridges and the use of blasting powder on the heaviest drifts of snow saved the day. By all accounts they must have been a hearty group; forty-nine men and women made the ascent of Mount Dana in one day—a twenty-mile round trip from the base camp—and at the end of the High Trip on the return to Yosemite Valley from "Camp Muir," the entire party hiked twenty-four miles in one day.

Education was an integral part of the High Trips from the beginning. Prior to the first trip, campers were referred to Muir's *The Mountains of California* and LeConte's *Ramblings Through the High Sierra* for descriptive material on the scenery. In addition, qualified participants were encouraged to speak on scientific topics. Professor William R. Dudley of Stanford University gave excellent talks on forestry; Dr. C. Hart Merriam of the



Serving Fourth of July dinner at the Kern River camp in 1903.

With these thoughts in mind, Colby worked with Edward T. Parsons, a Club member who had helped plan the Mazamas' trips, to organize the first High Trip to the Sierra in 1901.

That first trip became a model for High Trips for several decades. The Sierra Club arranged transportation and provided the commissary, while campers supplied their own outfits. The Club also provided two or three large tents, one of which was used as a dressing room for the women. Equip-

by doubling an eiderdown or using two wool comforters, lining the inside with some comfortable, fine-woven material like gingham, and covering the outside with denim. The entire bag, he announced, would weigh only eight to ten pounds—not an excessive amount considering that, except on occasional side trips, the load was carried by pack animals. Anyone not used to sleeping on the ground was encouraged to rent a cot (fourteen pounds). Other standard gear included hobnail boots,



A party of hikers on snowy slopes on a 1905 outing.

United States Biological Survey lectured on birds and animal life; historian Theodore Hittell told the history of the Yosemite region, while Muir himself explained glaciation and other processes of geological change. Gatherings around the evening camp fires provided opportunities for songs, stories and recitations. Recruitment opportunities were not neglected either; Colby made sure that all campers were informed about the Sierra Club.

Although Colby and the other leaders necessarily learned by trial and error (for instance, dunnage sometimes got lost in transit), participants accepted inconveniences with a good grace and returned home with enthusiastic stories of adventures. The first outing was a remarkable bargain besides—less than \$40 for the round trip from San Francisco and two weeks in the mountains. Colby planned so well that he faced only a \$30 deficit for the entire outing, and this debt was more than offset by \$150 worth of equipment—tents, stoves, and utensils—left over for the next year's trip.

From the very beginning there were long waiting lists for each summer outing. Moreover, the first High Trip resulted directly in 50 new Club members, and roughly 200 had joined by the following summer, more than a third of the entire membership. The new members had the best of all motives for joining the Club: their mountaineering spirit and appreciation of the wilderness they already had experienced at first hand.

Following his initial success, Colby's plan for the following year was more ambitious. Nearly 200 persons made their

way via railroad and dusty stage to Millwood in the Sierra foothills and hiked for three days to "Camp Colby" on Copper Creek in the Kings River country. Most of them stayed there four weeks, climbing



Two women at Goat Mountain Camp on the King River in 1906. Note the bandanas, Sierra cups, and the spoon in the bootlaces.

Mount Brewer and taking side trips. Each year thereafter a large group (normally 200) visited the Sierra and stayed four or five weeks, moving from place to place. The 1903 outing tramped to the Kern River Canyon and Mount Whitney, while the following year the outing went again to Tuolumne Meadows and Hetch Hetchy. In 1905, the Club sponsored its only venture outside California prior to World War I, a trip to Mount Rainier. Here Club members

joined members of the Mazamas for a successful ascent of the mountain.

Participation in these summer outings encouraged Club leaders to cooperate with the Forest Service and the National Park Service in building and improving trails. After all, they argued, people would not invest their time and energy to protect mountains they could not visit. For many years Club leaders had discussed the idea of a trail along the entire crest of the Sierra. Finally Meyer Lissner, a Los Angeles attorney and member of the High Trip of 1914, proposed that the Club request the state legislature to finance the trail's construction. Muir favored the idea, Colby drafted the bill, and Lissner helped lobby for its passage. The John Muir Trail, finally completed in 1938, stands as a memorial to the Club's first president and a reminder of his desire that Club members enjoy and appreciate the mountains.

In time the High Trips changed. Colby resigned as chairman of the Outing Committee in 1936, and his replacement, Richard Leonard, expressed concern about the impact of 200 people at one encampment, the possible effect on the wilderness. Obviously the Sierra Nevada could



Three hikers at Glacier Point ponder Yosemite Valley below. Across the valley from them is Half Dome.

not accommodate increasing numbers of people without suffering damage. The Outing Committee, therefore, began planning trips with fewer people in order to prevent overgrazing by stock animals, rutted trails, shortages of wood in favored camping locations, and accumulations of trash. At the same time provision was made for older people and families with children to participate in wilderness trips. David Brower organized knapsack trips on



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The Sierra Club bought this cottage in Yosemite in 1898 to use as an information center.

which hikers carried their own supplies; Oliver Kehrlein initiated base-camp trips on which the party was left at a scenic location in the mountains for two weeks and pack animals were removed from the wilderness area until they were needed again; Milton Hildebrand started burro trips especially suited for families. (Burros ate less grass than mules and also could live on the shorter and drier grasses on the upper slopes.)

Club recreational activities were not limited to summer trips. Following World War I, a group of Sunday walkers in Berkeley decided to try snowshoeing in the Sierra. By the mid-1920s they had formed the Sierra Ski Club. Alex Hildebrand, following a trip to Europe in 1930 during which he learned the most advanced skiing techniques at Hannes Schneider's ski school at Sankt Anton, played a leading role in popularizing skiing in California. These early enthusiasts encouraged the construction of Clair Tappaan Lodge in 1934 (the Sierra Club lodge at Norden near the summit north of Lake Tahoe) and a chain of ski touring huts to the north and south of old U.S. 40. One year later, southern Californians completed San Antonio Ski Hut, nearly 4,000 feet above Harwood Memorial Lodge, another popular summer-weekend lodge.

At the same time, rock climbing became popular among Club members. Recorded ascents of Sierra peaks date back to the Whitney Geological Survey of 1863-1864, and Muir and several other Club founders climbed many peaks over the years. Not until 1931, however, were modern climbing techniques and equipment introduced. Robert Underhill, a Harvard University philosophy professor and member of the Appalachian Mountain Club, was invited by Francis Farquhar, an able climber himself, to join a small Sierra Club climbing

party in Tuolumne Meadows. Underhill, who had climbed in Switzerland and England, demonstrated the most advanced rope techniques. That summer he joined Norman Clyde, Jules Eichorn and Glen Dawson for a first ascent of Mount Whitney via the east face.

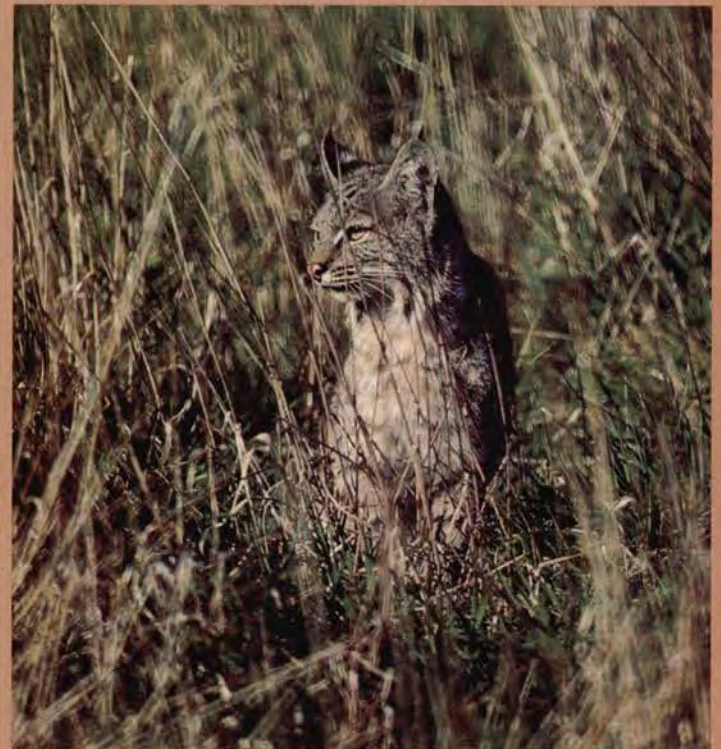
In the following year Richard Leonard, then in his last year of law school, decided to take up rock climbing to break the monotony of his studies. Largely through his efforts, the Club organized a Rock Climbing Section in Berkeley, which soon had a counterpart in the southern part of the state. Leonard, with Bestor Robinson and Eichorn, pioneered the use of pitons in the ascent of the Cathedral Spires in 1934. Climbing in the Sierra was never the same again. Leonard, Robinson, Brower and others later served in the military in World War II, teaching climbing and skiing techniques and developing mountaineering equipment to aid the war effort.

In the decades following the war, the outing program was extended to all seasons of the year and all corners of the globe. As important as outings had become as recreation, however, their principal purpose remained the same as when they were first started: to introduce people to the mountains, to teach them that mountain wilderness is worthy of preservation, and to show them how to enjoy it in non-destructive ways. Many persons who first went along on a mountain trip simply for a good time later became the Club's leading conservationists. Their story, the story of the Club's rise to national prominence as a conservation organization, will be told in the next issue of *Sierra*. □

Douglas H. Strong has written extensively on environmental history; he teaches history at San Diego State University, and is a long-time member of the Club.

A Wildlife Portfolio

Photo Essay by Tupper Ansel Blake



Left: The snowy plover lives along sandy Pacific beaches, where people also like to live, work and play. The plover is losing its habitat to humans. Right: The bobcat, unlike other spotted cats (such as the ocelot, the jaguar and the leopard), is not on the endangered list. As the price of bobcat pelts rises in response to the furriers' need, however, trapping pressure increases and population decreases. Since the bobcat is a predator, ranchers view it as a "varmint" and try to eliminate the cat with poisons, bullets and traps.

We fence off wild animals from our lives, driving some to extinction, endangering others and preserving fewer and fewer. Our malice is not to blame, only our forgetfulness. Henry David Thoreau, in the mid-nineteenth century, made an epic journey to remember the common heritage of our planet.

I spend a considerable portion of my time observing the habits of wild animals, my brute neighbors. By their various movements and migrations they fetch the year about to me. Very significant are the flight of geese and the migration of suckers, etc., etc. But when I consider that the nobler animals have been exterminated here—the cougar, panther, lynx, wolverine, wolf, bear, moose, deer, the beaver, the turkey, etc., etc.—I cannot but feel as if I lived in a tamed and, as it were, emasculated country. Would not the mo-

tions of those larger and wilder animals have been more significant still? Is it not a maimed and imperfect nature that I am conversant with? As if I were to study a tribe of Indians that had lost all its warriors. Do not the forest and the meadow now lack expression, now that I never see nor think of the moose with a lesser forest on his head in the one, nor of the beaver in the other? When I think what were the various sounds and notes, the migrations and works, and changes of fur and plumage which ushered in the spring and marked the other seasons of the year, I am reminded that this my life in nature, this particular round of natural phenomena which I call a year, is lamentably incomplete. I listen to [a] concert in which so many parts are wanting. The whole civilized country is to some extent turned into a city, and I am that citizen whom I pity. Many of those animal migrations and other phenomena

by which the Indians marked the season are no longer to be observed. I seek acquaintance with Nature—to know her moods and manners. Primitive Nature is the most interesting to me. I take infinite pains to know all the phenomena of the spring, for instance, thinking that I have here the entire poem, and then, to my chagrin, I hear that it is but an imperfect copy that I possess and have read, that my ancestors have torn out many of the first leaves and grandest passages, and mutilated it in many places. I should not like to think that some demigod had come before me and picked out some of the best of the stars. I wish to know an entire heaven and an entire earth. —Henry David Thoreau

Tupper Ansel Blake has explored much of the wildlife habitat between the Rockies and the Pacific and has exhibited his photography many times.



The California bighorn sheep competes with wild burros and with domestic livestock for food and water. Increased human encroachment on the bighorn habitat—more roads, trails, ORVs, houses, mines and disease caught from domestic sheep—also reduces bighorn numbers. A small number of trophy-hunters kill the bighorn illegally.



Left: The pronghorn antelope needs open spaces for migration and grazing. Its range is restricted by fencing in the West, for the pronghorn lives where ranchers raise cattle. Sheep-tight fencing kills more directly—the antelope get snared in the wires. Right: The spotted owl is not hunted, yet it is losing its habitat as logging destroys nesting sites and hunting areas in the humid old-growth forests along the northwestern coast. Dead trees (snags), in which owls nest, are eliminated by logging.



The trumpeter swan's numbers are increasing, but it is still rare. Human activities, such as mining, recreation and construction, disturb the swan's isolated wildlands from Montana to British Columbia.



The harbor seal's habitat, off the Pacific coast, is often polluted by DDT, PCBs and other toxic chemicals. This pollution leads to aborted and deformed pups, first noted in Puget Sound. Human interference with the baby seals at the pupping grounds and with herds at their rest areas have also had a bad effect.



A beaming Chairman Mao and a group of leaders standing before a large open-pit mine.

Smokestacks & Pagodas

One Man's Impressions of China

EDWARD P. MORGAN

PEKING—Dusk was falling over Canton. We were on a hill overlooking the biggest of China's southern cities. Behind us was a large, graceful five-story pagoda, its masonry deep red, housing an exhibition of pottery and ceramics where, we were told, Ming dynasty emperors played with their concubines 600 years ago.

Also falling over Canton was pollution from many factory smokestacks. Los Angeles would have admired the smog. I asked about the problem. Instead of answering directly, our Canton escort pointed to smoke rising just below us. "That," he said with a trace of pride, "is to kill the spring's first crop of mosquitoes."

In nearly a month of traveling through China under the watchful but understanding care of our principal guide and interpreter, a tiny and marvelous woman named Chang (it's like Smith), my wife and I counted only a few flies, mosquitoes or insects of any kind, but we did encounter pollution. The nation was nowhere near as spick-and-span as post-Liberation dispatches had indicated. It was, in fact, except for the endless, glistening paddy fields, distinctly dingy, and pollution contributed to the grime. (Cleanliness is not, it seems, next to godlessness.)

Ironic, I thought, since China, industrializing as she must, could learn from the

mistakes of the western powers which belatedly are being forced to spend billions to protect and cleanse the earth, air and water from the depredations of decadent and greedy capitalists. But such a logical process seems unlikely. Officials know the meaning of the word *pollution* and have even opened "environmental protection" offices in many cities. But lip service to the issue is more common than actual public service.

One afternoon in Kweilin, an hour's flight west of Canton in Kwangsi province and one of China's scenic treasures, I sat in our hotel, named after the river Li winding gracefully toward the sea beyond the win-

dow, and I interviewed Madame Tan Chih-mei of the local environmental protection staff. She was of solid peasant stock. A trace of red underwear peeked out beneath her blue trousers. I asked her about the chamber-of-commerce-like boast of a local guide that Kweilin had added 200 industries since liberation in 1949—among them textiles, machinery and rubber.

"We must do more about pollution," she said. But as she spoke I could count at least eight factory chimneys in the town and near suburbs belching black smoke into the air.

She said *some* polluted water was collected in an underground pipeline and diverted away from the river Li—which is already polluted but which still is an important source of fish. (Some of the best fishermen are cormorants, tethered to bamboo rafts thin as surfboards. Their long necks are tied with string "collars" so that the fish they catch when they dive can be disgorged before being swallowed.)

The Kweilin environmental office was set up in 1971 and included some scientists. Madame was recruited from city design. The most important tasks she listed as their responsibility included, not necessarily in order of priority:

- Noise pollution (Apparently this does not embrace the incessant honking of car, bus and truck horns to clear a path through the swarms of bicycles, a decibel count likely to drive unaccustomed foreigners right up the wall.)

- Collecting of waste from households and industry

- Precautions against pollutants in food; improvement of agriculture; and preservation of water and soil (Few pesticides are allowed now, she said, indicating that DDT is banned. This was not the story we got in Shanghai.)

- Dealing with radioactivity (This seemed a pathetic if not futile point, since Peking insists on continuing nuclear explosions in the atmosphere from secret facilities in Sinkiang.)

It became evident that Kweilin's environmental protection office had no "teeth" but was a propaganda facility to "educate" factories *et al.* to the dangers of pollution. It all seemed a kind of charade. In Shanghai, the world's largest city, with a population approaching eleven million, the quality of charade seemed to grow, though a few tangible measures were operating.

Enroute, we stopped at Hangchow. One morning I drove into the hills to the village



Ancient Chinese art techniques celebrate modern industry.

of Mei Chei-u, headquarters of one brigade in a commune embracing several tea plantations. (The specialty of the Mei Chei-u plantation is dragon well tea.) It was beautiful country. The well scrubbed village lay along a winding stream, paralleled by a steep cement street and sidewalk. Squat tea trees of a rich, deep green grew in orderly rows on the hillside.

Madame Chen Wu-yun, vice chairman of the revolutionary committee of this brigade, was illiterate in 1949. A stolid, determined but gentle and quiet woman, she was now a power in the community. (The ubiquitous revolutionary committee is the dynamic, activating force of government on the local level, in both the commune and the urban "neighborhood.")

No insects attack the trees in spring, Madame Chen said, but in summer and fall a worm resembling a silkworm and called, appropriately, a tea worm, shows up. This requires a pesticide, which also, she insisted, helps the growth of the trees. Madame Chen did not have the name of the pesticide handy but said each brigade had a scientific research station where pesticides and fertilizers were tested with care and restraint.

"Too much chemical fertilizer," she said, "is not good for the tea trees." Manure is preferred.

China's most prolific product is people. Eight hundred million now, there may be a

billion by the turn of the century. They are both a mighty source of energy and a burden, for they must be fed and clothed and housed.

As China struggles to industrialize, her people power is not yet at a high level of technology. Muscle and manure produce the food crops—which have never yet been plentiful enough. Under the circumstances, it is not surprising that conservation and protection of the environment come almost as an afterthought, though there are touching demonstrations of preservation. (After a barge ride down the river Li in the weird and spectacular scenery of Kwangsi province, we were driven through fields of pink-blossoming vetch—used as fertilizer—to see a 1,300-year-old banyan tree. It was huge and magnificent. One mighty horizontal branch was supported by a small carefully constructed tower of bricks.)

Though efforts persist to disperse industry into the countryside—with some success—Shanghai remains China's industrial capital. A huge exhibition hall, its exquisitely hideous architecture a relic of Sino-Soviet friendship—ruptured in the 1950s—holds impressive models of drill presses, computer consoles, cars, trucks and a variety of other products.

Human pollution—congestion—is part of Shanghai's problem. Seventy-five-year-old Wang Kuo-ching has a two-room ground floor apartment in a "modern"



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building complex constructed in 1963 on Pumpkin Lane. The catch: six other members of Wang's family share the apartment. They share the kitchen with two other families; there are communal baths.

As a boy, Wang begged in the streets as his parents did. His two teen-age sisters were given away; the family couldn't afford to keep them. He never saw them again. For twenty-seven years Wang pulled a rickshaw, banned now. After Liberation he ran a pedicab—which Peking is also trying to discourage in favor of buses. He retired in 1966 and now lives on a pension from his pedicab service.

Wang sits on a bed (the bedding is neatly folded and stacked, Chinese-style, with the pillows on top), his black leather shoes planted on the clean cement floor. He talks of how much better life is since Chiang Kai-shek was deposed. But isn't the apartment really crowded with seven people in two rooms?

"No," he chuckles. "If anybody complains, I show them how we used to live." He points to a hovel across the street hardly bigger than a doghouse where four people once lived. The neighborhood revolutionary committee keeps several such hovels intact to remind the young what the past was like for "the masses." Wang Kuoching pays 5.20 yuan a month rent (about \$3.12), but of course that and the utilities (about \$3.70) are shared by his three working sons and their wives.

From the eighteenth floor of the Shanghai Mansion hotel, a bizarre and exciting panorama of the city unfolds below. Up the Whangpoo river, along the bund, remain the big western-style buildings constructed by the French and British with coolie labor in the hated "concessions," where Chinese, except laborers and domestics, were barred. Beyond a green the size of a croquet court stands the former British consulate, now a seaman's club. Directly below is the Whangpoo's vital tributary, Soochow Creek, swarming with tugs, barges, bamboo rafts. A dozen freighters steam down the Whangpoo to the Yangtze and the sea. And across all this bustle, like a dirty handkerchief, lies a layer of smog.

When I penetrated the propaganda and asked Fu Su-kang, of Shanghai's environmental protection office, for specifics on fighting smog, he said techniques must be improved to avoid toxic materials, protect water supplies (some of which, after purification, come from the befouled Whangpoo), and recapture smoke before it is released into the air. He cited the recycling and reuse of 10,000 tons of chemicals, as well as remedial steps taken at as-

phalt and graphite factories, printing and dyeing plants that are using—and polluting—too much water. Each factory has its own environmental staff, and there is some coordination with Fu's office and public health officials, but impact statements don't seem to be standard operational procedure.

Where Shanghai shines—if that's the word—is in the conversion of human waste, after purification by fermentation, into precious fertilizer. (Pesticides and insecticides proved a somewhat touchy subject. Their use is "limited." DDT and 666 are not banned, but their application too is limited.) A fertilizer company collects 9,000 tons a day of "night soil" and sends it to the countryside. Each district is responsible for the retaining tanks at its respective sewer head. Where there is no plumbing, residents use chamber pots—sometimes called honey buckets—and the company collects their contents too.

Garbage is another valuable product. The same outfit (controlled by the government, of course) collects more than 4,000 tons a day of nonindustrial garbage. One third is converted to fertilizer, Fu said, and the rest, after treatment, can be used in construction work, road surfacing and the like. Paper is recycled. Broken glass, rags and other items are reclaimed. In the suburbs, waste food is fed to the pigs, one of China's most important products.

Tractors are not allowed in Shanghai. But according to a beaming Yu Ming-hua, "responsible member, administrative section, traffic department, Security Bureau" (full title), police are supposed to check all vehicles suspected of pollution. ("Private cars are not encouraged in Shanghai," Yu said. "Not only would they increase pollution, but plenty of garage and parking space would be required, taking ground needed for something more important." Private citizens can't own cars anyway. Private cars belong to the government, to haul around important officials, or unimportant visitors like us.)

China still must buy millions of tons of grain abroad to feed her people. Better fertilizer, more efficient agriculture, opening new land to cultivation—all will help redress the balance. It's hard to discover how effectively land is used with such measures as crop rotation. If agriculture becomes mechanized millions will be out of work, but officials insist confidently these millions will be easily absorbed in industry as it continues to move into rural areas.

China desperately lacks timber. For centuries warlords, landlords and conquerors denuded her forests of trees. The

People's Republic has embarked on a massive tree-planting program. You can see examples of it in healthy green patches on the naked brown slopes as you drive to the Great Wall. On the forty-minute commute from the airport into Peking you pass through rows upon rows of young trees, evergreens at the curb, then blossoming fruit trees beyond them, and shade trees besides.

If this planting were further along, the grit that blows into Peking from the sands of Mongolia's Gobi Desert would be less apparent, not to mention the dust from nearer arid areas, which seems to be a staple of the capital's atmosphere.

Are there any solid conclusions? It would be folly to build firm reactions on the quicksand of a rapid, if absorbing, journey. Here are some strictly perishable impressions:

- There are people concerned with nature but other priorities—food, shelter, industrialization—are overriding, and it will be a long time—if ever—before the People's Republic has the equivalent of a Sierra Club.

- So pollution levels will inevitably rise, doing damage that need not be done, but the pressure to become a major power doesn't leave time to learn by the mistakes of the United States and other industrial nations.

- Government by committee is cumbersome. It is authoritarian, but as a visitor I did not feel hemmed in or oppressed as I did in the Soviet Union in 1959.

- The key to progress is incentive. Up to now the driving, revolutionary, even compassionate spirit of Mao Tse-tung and the intelligent guidance of Chou En-lai provided the momentum. Now both are dead. What happens now, especially with the young, who know nothing of the Long March or the sins of Chiang Kai-shek and his Kuomintang except through schoolbooks, is a large question.

In Shanghai, an Austrian-born British manufacturer of herbicides with long experience in China told me flatly, "Communism won't work."

Maybe it won't and maybe the lack of driving incentive is a fatal fault. But I am not so sure. The Chinese are a strong, self-confident people with great pride. They have been through vicissitudes in just our lifetime that would make our own woes seem no more than a grain of Gobi Desert sand in our eye. It's not time to write them off. □

Edward P. Morgan is a Washington journalist and broadcast commentator with a long-time interest in conservation causes. He recently returned from China.



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Whose Land is

PEGGY WAYBURN

D ID YOU KNOW that approximately one of every three acres of land in the United States belongs to the federal government? That this public land is administered by numerous and frequently competing agencies? And that the federal government, in administering these lands, pays out far more than it takes in?

To test your knowledge of our public lands and some of their uses, try taking the following quiz. Answers appear on page 24.*No fair peeking at the answers until you've given all the questions a try.

Main Federal Agencies Concerned With Lands

- (a) Bureau of Mines
- (b) National Park Service
- (c) Bureau of Outdoor Recreation (BOR)
- (d) U.S. Geological Survey
- (e) U.S. Forest Service
- (f) Bureau of Reclamation (BuRec)
- (g) Bureau of Land Management (BLM)
- (h) General Services Administration
- (i) U.S. Fish and Wildlife Service
- (j) Federal Highway Administration
- (k) Department of Defense (including U.S. Army Corps of Engineers)
- (l) Energy Research and Development Administration (ERDA)

1. What is the total acreage of federally owned public lands in the United States?
 (a) 328 million (c) 762 million
 (b) 1.88 billion (d) 2.57 billion
2. Virtually every federal agency claims some public land for its own. Only four civilian federal agencies, however, are responsible for administering the bulk of our public lands. Using the list above, can you tell which are the four?
3. One of the principal federal land agencies listed above is a division of the Department of Agriculture. Which one is it? Why is it in the Department of Agriculture?
4. Which of the above agencies administers the most land?
5. Where does the Department of Defense rank in the hierarchy of lands owned?

*When not supplied by the agency itself, statistics were taken from Public Land Statistics: 1976, published by United States Department of the Interior, Bureau of Land Management.

- (a) largest (c) third largest
 - (b) second largest (d) fourth largest
6. Five states have more than half their lands in federal ownership. Which of the following are they?
 (a) Alaska (g) Nevada
 (b) Arizona (h) New Mexico
 (c) California (i) Oregon
 (d) Colorado (j) Utah
 (e) Idaho (k) Washington
 (f) Montana (l) Wyoming
 7. Which of the contiguous forty-eight states has the largest acreage of federally owned land?
 8. Which of the federal agencies on the list, while owning little or no land, plays a key role in the affairs of virtually every federal land agency?
 9. Two of these agencies, between them, have flooded and dammed an area larger than the state of West Virginia. Which are they?
 10. The term "public domain" is associated with land administered by which agency?
 11. The National Park Service, considered a model for countries around the world, administers approximately what percentage of the total land area of the United States?
 (a) 4.3% (c) 22% (e) 10.9%
 (b) 8.6% (d) 1.4%
 12. Along with the United States Army and the General Services Administration, one federal agency has land in each of the fifty states. Which one is it?
 13. The White House with its eighteen acres of grounds is administered by which of the following?
 (a) The United States Congress
 (b) The Smithsonian Institution
 (c) The National Historic Society
 (d) The Department of Defense
 (e) The National Park Service
 14. What is a "primitive area?"
 (a) a special Park Service Recreational Area with no facilities
 (b) an historical and/or archeological site in the Antiquities Act
 (c) a term used by the Forest Service in classifying land
 (d) a training area used by the U.S. Marine Corps

This?

A Quiz

15. Recreation is a principal use of most public lands. Which federal agency claims to have the greatest recreational use per year?

16. Which of the following uses are permitted on lands administered by the Forest Service?

- (a) water skiing (n) jeeping
- (b) commercial logging (o) motor biking
- (c) hardrock mining (p) rock hounding
- (d) pounding for worms (q) plant collecting
- (e) horseback riding (r) prospecting
- (f) grazing (s) vacation homes
- (g) berry picking (t) picnicking
- (h) snow skiing (u) duck shooting
- (i) fishing (v) canoeing
- (j) car camping (w) greens & cone gathering
- (k) backpacking (x) cutting
- (l) hiking (y) big game hunting
- (m) sailing (z) hiking with your dog

17. Which of the following uses are permitted on lands administered by the Park Service?

- (a) car camping (o) visiting historical sites
- (b) hiking (p) rafting
- (c) backpacking (q) photography
- (d) swimming (r) big-game watching
- (e) skiing (s) observing
- (f) canoeing (t) archeological sites
- (g) surfing (u) mountaineering
- (h) bird watching (v) hang-gliding
- (i) snorkeling (w) picnicking
- (j) bicycling (x) fishing
- (k) botanizing (y) motor boating
- (l) rock climbing (z) kayaking
- (m) snow machining (z) snowshoeing
- (n) admiring scenery

18. No single land agency is mandated solely to protect the land it administers. One, however, is charged with managing its lands so as to keep them unimpaired for the enjoyment of future generations. Which one is it?

19. The Wilderness Act of 1964 established the National Wilderness Preservation System. How many acres of "wilderness" are currently in the system?

(a) 39.8 million (c) 8.6 million

(b) 2.8 million (d) 14.5 million

20. Because of congressional mandate, all federal land agencies must cooperate to protect endangered species. One agency listed on page 22, however, is charged specifically with this function. Which one is it?

21. A National Park may be established only by an act of Congress. A National Monument may be established by which of the following?

- (a) the National Historical Society
- (b) the Secretary of the Interior
- (c) the Congress
- (d) the legislature of the particular state
- (e) a plebiscite
- (f) the President

22. Which of the agencies permit hunting on their lands?

23. Which permit mining on their lands?

24. Which sell timber regularly?

25. The Land and Water Conservation Fund, established by Congress in 1965, provides money for state as well as federal land agencies to acquire land for recreational purposes. From which of the following sources does money come for the fund?

- (a) duck stamps
- (b) offshore oil leases
- (c) automobile fuel taxes
- (d) hunting licenses
- (e) sales of Golden Eagle Passports
- (f) motor-boat fuel taxes
- (g) monies from sale of surplus federal property
- (h) the general fund of the Treasury

26. Virtually every federal land agency charges fees for recreational use. This money may amount to \$15 million a year. Where does it go?

- (a) into the general fund of the U.S. Treasury
- (b) to the county in which the land is located
- (c) to the state in which the land is located
- (d) to the agency charging the fee
- (e) to the facility charging the fee

27. The Sierra Club actively supported the formation of which of the above-listed federal land agencies?

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Whose Land is This?

Quiz Answers

1. (c) There are approximately 762 million acres of public land in the United States. This question was easy, if you knew that the total land area of the United States is 2.27 billion acres. Of this total, half is privately owned, a third is owned by the federal government, and the remainder belongs to the individual states, counties and municipalities. All land acreages are approximate, because the art of accurate surveying has developed only recently. Thus boundaries of many public lands are inexact.

2. (b) (e) (g) (i) Together, the National Park Service, U.S. Forest Service, Bureau of Land Management and U.S. Fish and Wildlife Service administer about 720 million acres, or nearly 95% of federal public lands.

3. (e) The Forest Service is a division of the Department of Agriculture.

Many people think that the Forest Service is part of Agriculture because trees can be considered "crops" and forests are referred to as "tree farms." Another popular misconception is that Gifford Pinchot managed to wrest the Forest Service away

from the Department of the Interior because in 1906 Interior was considered both inept and corrupt.

In fact, the Forest Service became part of Agriculture because of a simple legislative ploy. In 1876, Congressman Mark H. Dunnell, having twice failed to get a forestry measure passed by an indifferent Congress, tacked a rider onto the general appropriations bill to fund a forestry study and report through the Department of Agriculture. The rider sailed through unnoticed. From this obscure beginning, a Division of Forestry emerged within Agriculture in 1881. Ten years later, Congress authorized the first federal "forest reserves" under the Department of the Interior, and a move to consolidate all forest operations under Agriculture was under way before Pinchot became Director of the Division of Forestry in 1898. Pinchot pushed for the consolidation and on February 1, 1905, his good friend Teddy Roosevelt signed the bill that transferred 63 million acres of forest reserve from Interior to a just-established United States Forest Service.

4. (g) The BLM currently has charge of nearly 470.2 million acres—close to 62% of all federal public lands. About half of this BLM land is in Alaska and ownership of much of it will be transferred to the state of Alaska (a total of 104 million acres under the Statehood Act) and to its native peoples (44 million acres under the Alaska Native Claims Settlement Act) during the next few years. Even with its acreage reduced, BLM will remain a principal federal landowner.

An offshoot of the historic General Land Agency, BLM was established by President Harry Truman in 1947 with three principal functions:

- (1) to survey public lands,
- (2) to administer grazing (still a major use) on public lands,
- (3) to hold unclassified public lands.

In 1976, Congress mandated the BLM to add *management* and *planning* to its functions. Under its new Organic Act, BLM promises to be a much more vigorous multiple-use agency than it has been in the past.

5. (c) The Department of Defense, including the Army Corps of Engineers, is the third-largest federal landowner, with 36.5 million acres. Ranking first is BLM (see above); second is the Forest Service with 187.6 million acres; fourth is the Fish and Wildlife Service with 33.9 million acres; the fifth is the National Park Service with 31 million acres.

6. The following states are over fifty percent federally owned: (a) Alaska is at present about seventy-five percent federally owned, but not for long; (e) about sixty-four percent of Idaho is in federal ownership; (g) Nevada is tops with 86.6 percent of its lands in federal hands; (i) 52.3 percent of Oregon's lands belong to the feds, as do (j) sixty-six percent of Utah's.

7. Nevada has more than 60,615,000 acres of federally owned land within its borders. California follows with 42,800,000 of its 100,206,000 acres in federal hands.

8.(c) The Bureau of Outdoor Recreation (established by Congress in 1963) administers no public lands but holds the purse strings of the Land and Water Conservation Fund (\$900 million in 1977-78) which is used for the acquisition of recreational public lands by federal and state agencies. BOR is also responsible for the nationwide coordination and development of outdoor recreation, and any agency (including the Federal Highway Administration) must obtain permission for any action affecting park or recreation lands. BOR is further charged with developing a National Trails System, identifying the nation's Wild and

Continued on page 42

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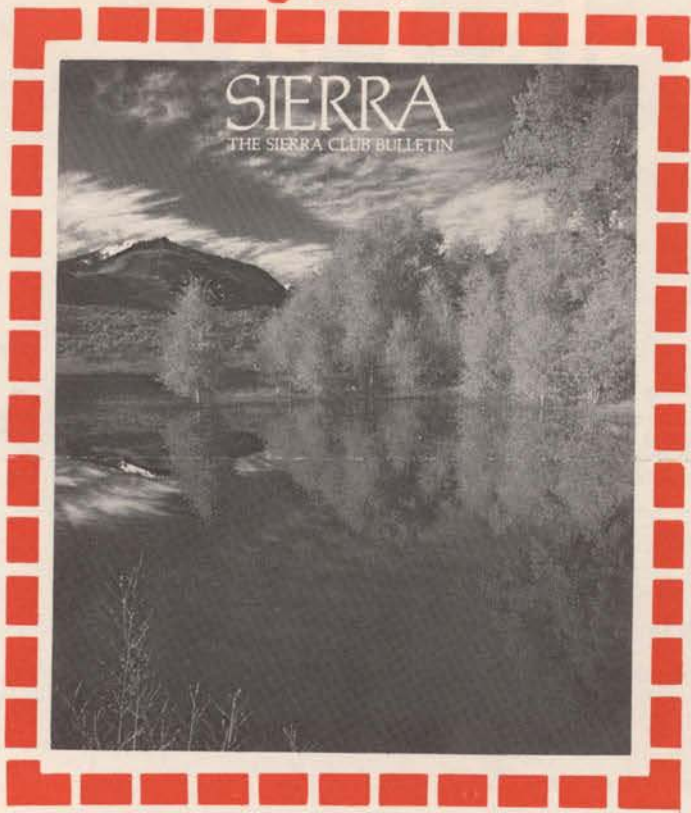
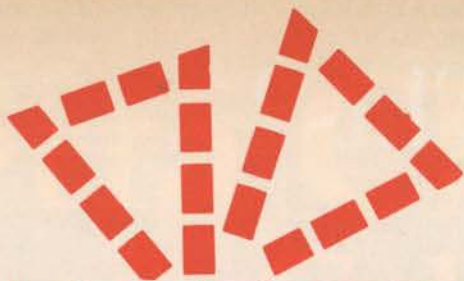
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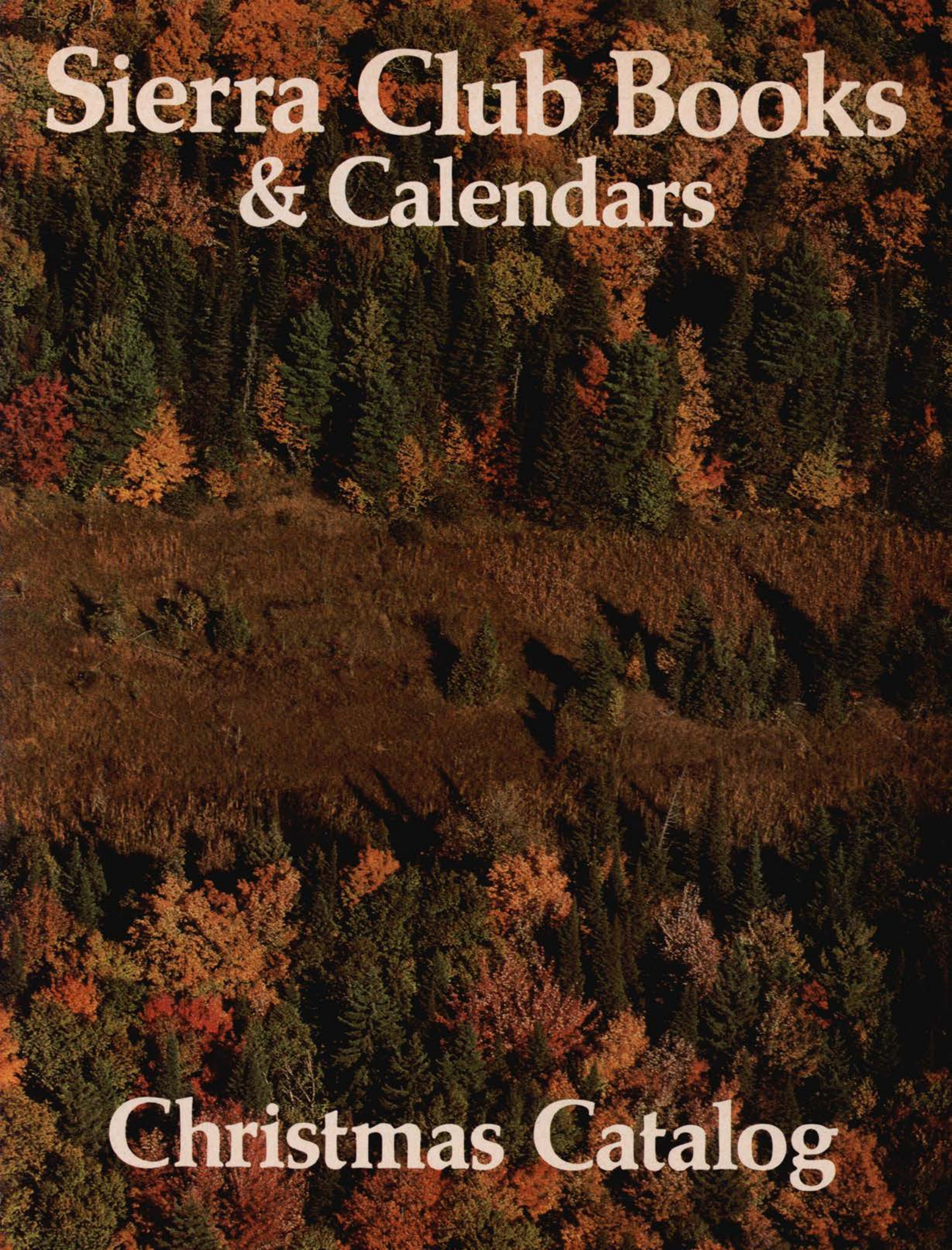
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An aerial photograph of a forest during autumn. The image shows a mix of evergreen trees, likely pines or firs, and deciduous trees with vibrant orange, yellow, and red foliage. The terrain appears to be a hillside or valley, with shadows cast across the forest floor. The overall color palette is dominated by earthy tones of brown, green, and autumnal reds and oranges.

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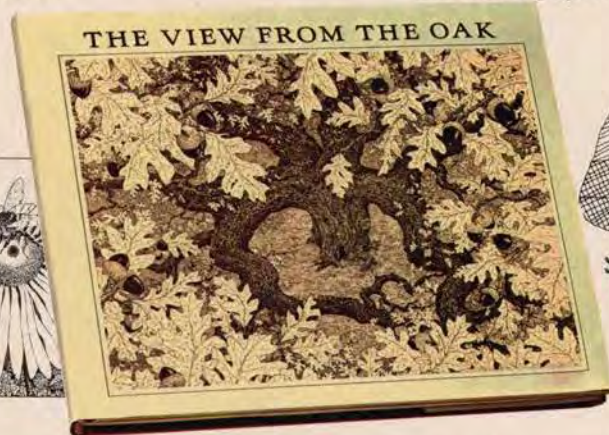
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The poet Gary Snyder observes, "This book is about *culture* in the deep, ripe sense: a nurturing habitat. Our habitat is the planet in all its local specifics. This has meant, for most people, for most centuries, 'the farm.' The farm not only grows food, it nourishes human character, is a challenge and a teacher, a source of insight and values." Wendell Berry is a poet and a farmer—in his own words, a nurturer. *The Unsettling of America* is his personal, dramatic inquiry into the state of farming today and our attitudes toward the land that sustains us.

Good farming, Berry argues, is a cultural development and a spiritual discipline. He challenges on the most fundamental level the values and assumptions of our officially sanctioned agricultural policies: techniques of farming that destroy the health of soil and sacrifice quality to mere abundance; the reliance on huge inputs of energy to fuel machines and manufacture chemicals; the emphasis on bigness that has driven millions of farmers from the land and "unsettled" whole communities. The estrangement of people from the land— from the

intimate knowledge, love, and care of it—is in Berry's view chiefly responsible for society's most deeply felt ills. Urban centers cannot thrive at the expense of rural culture; rather, both are visibly deteriorating. Work, for too many, is a necessary evil rather than its own reward. And Berry draws fascinating parallels between our concepts of sexuality and our relationship to the land.

No simple solutions are offered, because none exist: Berry makes us see the true "ecology" of agriculture and culture, the intricate cause-and-effect chain that the race for solutions too often ignores. But he does present a survey of creative options and possibilities, exploring historical methods and attitudes toward the land of native Americans, the Amish, and others. And he discusses some contemporary marginal approaches: homesteading, farm co-ops, alternative technologies, peasant agriculture.

The Unsettling of America is a work of passion and eloquence, a mind-changing reading experience. Profoundly conservative on one hand, fiercely radical on the other, it is sure to invite controversy, but no reader will come away from it unmoved.

Wendell Berry has been called, by Ken Kesey, "the Sergeant York charging unnatural odds across our no-man's land of ecology." Berry's books of poetry include *Farming: A Hand Book*, *The Country of Marriage*, and *Clearing*, to be published in 1977. He is also the author of three novels and four books of essays, including *The Long Legged House*, about which *The Nation* said, "When the day comes when courses in life and sanity are taught in our schools, [this] book should be the chosen text." Berry has taught at the University of Kentucky for many years; he and his family live and farm in Port Royal, Kentucky.

240 pages. 7 x 10. Cloth.

An excerpt from *The Unsettling of America* begins on page 51 of this issue of *Sierra*.

The
Unsettling
of America
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An Eco-Fiction of Tomorrow

By Christopher Swan and Chet Roaman

In one part of the country, in the near future, man decides to live with nature as it is, not as he thinks it ought to be. Yosemite Valley, 1988.

Very few books are truly called unique. YV 88 is. It is fiction based on fact, today's dreams based on tomorrow's technology. Set in a mosaic of characters, events, plans, drawings, maps, and diagrams, it is a detailed proposal to transform Yosemite Valley into a place where the values of man and of wilderness enhance rather than endanger each other. What happens in Yosemite Valley between the years 1983 and 1988 is intended as a blueprint for what might happen in the rest of the country. The tools are all at hand.

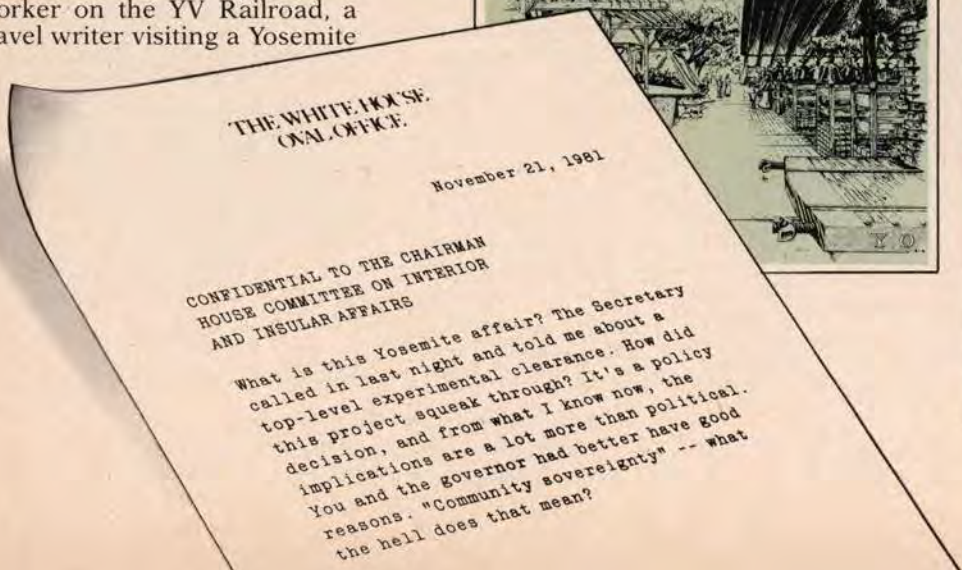
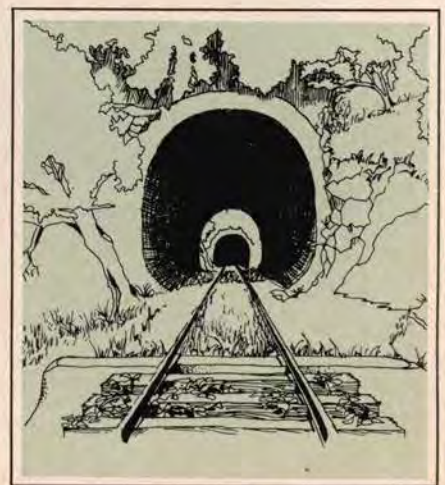
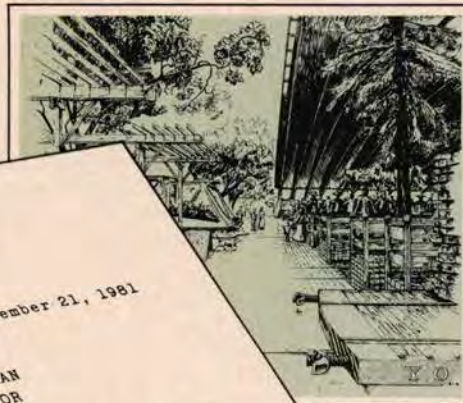
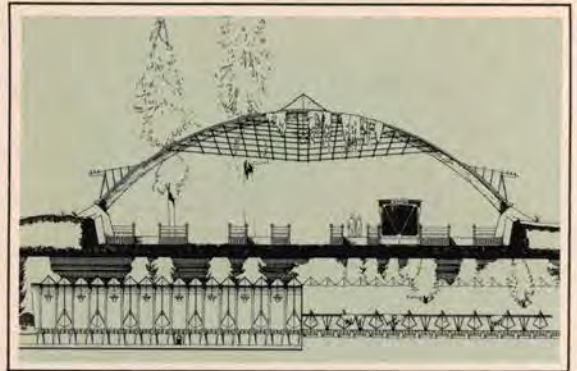
The book begins in 1983 with a dramatic innovation: the removal of all roads into Yosemite Valley. We join the inaugural ride to the Valley on a solar-powered train filled with politicians, celebrities, reporters and sight-seers. As the book moves toward 1988, it weaves the days and work of many people through the ecological transformation of the Valley—the National Park and surrounding towns. The hopes and accomplishments of the initial years move through a dark period of challenge and doubt and on to a final resolution—that nothing can be finally resolved. It is far from a simple Utopia or a California dream.

YV 88 gives us fleeting, fascinating glimpses into life in the Valley in the 1980's: we meet a worker on the YV Railroad, a travel writer visiting a Yosemite

Lodge, townspeople in Wawona, a group aboard a windship wafting toward the oceans, a young man descending a mountain grade by gravity car, park rangers, backpackers at Tioga Pass—to mention a few. A variety of characters, young and old, ignorant and wise, tell us through letters, conversations, thoughts, meetings, and documents (including architectural drawings, engineering diagrams, political proposals, and the like) what it might be like to create and experience a reality based on plans made in the 1970's. And, all around, the outside world seeps in through television, newspaper, letters, conversation. The climactic event—as dramatic as the removal of the roads—is the complete restoration of Yosemite region by removing Hetch-Hetchy Dam, which John Muir fought so furiously in the late 19th Century. The circle begun by the removal of the roads is closed.

Christopher Swan is a writer, graphic designer and draftsman. He is the author of the recently published *Cable Car* and lives in northern California. Chet Roaman is a San Francisco editor and writer.

256 pages. 100 line drawings, maps. 8¼ x 10⅞. Paper only.





THE FACES OF THE GREAT LAKES

photographs by B. A. King
text by Jonathan Ela
introduction by Sigurd Olson

The Great Lakes constitute an inland sea, with over 11,000 miles of total shoreline. Each lake shares recent ice-age origins and each faces similar modern-day problems whose solutions will undoubtedly determine the aspect of the region in the future. But the life and landscapes of this region spanning two countries are as various as those on the borders of the "outland" seas. It is only with a multifaceted approach, such as the one taken in this book, that one could capture the tremendous diversity of the lakes and the people whose lives depend, in varying degrees, on the flow of their waters.

The Faces of the Great Lakes combines word and image to create a dynamic and human portrait of the Great Lakes and their peoples. The text embraces the whole life of the area—geology, history and natural history—looks at the great urban centers, a fishing, shipping, mining, and other industry, and discovers the far-reaching effects each element has on the others. A detailed

explanation of the pre-Cambrian origins of the Lakes region and a clear description of the geography of the area is set against the Indian lore that explained to other former inhabitants the origins of their surroundings. The human history of the region, from the Indian tribes, the European explorers and their different settlements, to the increasingly industrialized life of the area, gives focus to the problems—the central issues of water flow and use, and the pollution questions particular to this region—faced by those living in and making their livings from the area today.

One hundred photographs, 32 in full color, by B. A. King, a Canadian who now makes his home in the United States, document the many-sided and changing life of the Lakes and highlight both historical and new connections between people and landscape. They depict with at once a subtle sensibility and a forceful clarity the activity of the Lakes, and ultimately the interconnectedness of the life that sustains and is sus-

tained by them. Text and images are complemented by selections from the historical literature and folklore, setting the current incarnation of the region in historical relief. The portrait that emerges is of a unique physical and cultural resource shared by two nations.

Jonathan Ela is a lifelong resident of the Lakes country. He is the midwest regional representative of the Sierra Club, and has contributed articles to the *Sierra Club Bulletin* and other periodicals.

B. A. King is a Canadian living in Massachusetts. His photographs have been shown widely in museums and galleries, and have appeared in *Ojibwa Summer*, and in the recent Sierra Club Book, *A Place to Begin: The New England Experience*.

The Faces of the Great Lakes is designed by Klaus Gemming.

192 pages. 32 pages of color photographs; 60 pages of black-and-white photographs. 11½ x 10. Cloth.

NATURE'S ECONOMY

The Roots of Ecology

by Donald Worster

This fascinating, superbly written book describes at long last the development of the "subversive science," ecology, from its origins in the eighteenth century to the present day. It has become impossible in the last ten years to consider man's relation to nature without referring to ecology; indeed, our era has been called "the era of ecology." Yet the science of ecology—the study of organisms and their environment—is like a stranger who just blew into town, a presence without a past. Donald Worster's aim in *Nature's Economy* is to establish the identity of this mysterious stranger, and to provide an understanding of what ecology is and what it has been.

The word "ecology" was not coined until the latter part of the nineteenth century but its conceptual origins—that of nature's economy—began with the great Swedish natural historian, Linnaeus, and Gilbert White, an eighteenth-century cleric who presided over a small parish in rural England. During the nineteenth century two men, one in a quiet but far-reaching way, the other also quiet, but whose writings were to literally shatter the scientific and religious assumptions of the Western world, added to the understanding of nature's

economy. The former was Henry David Thoreau, the latter, Charles Darwin. Around these dramatic shifts in Western man's perception of nature clustered other scientists, natural historians and writers, probing and, in turn, subtly shifting the new attitudes and discoveries. In the twentieth century, the concept proliferated into many endeavors, ranging from purely scientific investigation to the political activities of resource management and conservation. The twentieth century saw the efflorescence of ecological thought, affecting almost all disciplines from mathematics to sociology. Alfred Lord Whitehead, John Muir, Aldo Leopold, Theodore Roosevelt, Frederick Clements, and a myriad of other scientists, politicians, and interested observers influenced and were influenced by the rapidly evolving concept central to our age—at once terrifying and inspiring in its proposition that everything in the natural world is intricately interrelated. Worster concludes his book with an examination of the thinkers and thoughts that within the past few years are shaping our concept of ecology—from Joseph Wood Krutch to Eugene Odum. Not only does Worster give "ecology," now that the concept has come of age, its historical identity, he shows how each generation writes its own description of nature, revealing as much about human society and its changing concerns as it does about the world around us.

Donald Worster is Associate Professor of American Studies at the University of Hawaii. He

is the editor of *American Environmentalist: The Formative Period*, and has written papers and articles on environmental subjects.

320 pages. 7 x 10. Probable price: \$12.50 cloth. ISBN: 87156-197-2. October.

TABLE OF CONTENTS

Preface

Part One: Two Roads Diverged: Ecological Approaches in the 18th Century

Chap. 1: Science in Arcadia
Chap. 2: The Empire of Reason

Part Two: Roots and Branches: The Romantic Ecology of Thoreau

Chap. 3: A Naturalist in Concord
Chap. 4: Nature Looking into Nature
Chap. 5: The Disafforested Mind

Part Three: The Other Dismal Science: Darwinian Ecology

Chap. 6: A Fallen World
Chap. 7: Scrambling for Place
Chap. 8: Civilization and the Savage Beast

Part Four: O Pioneers: Ecology on the Frontier

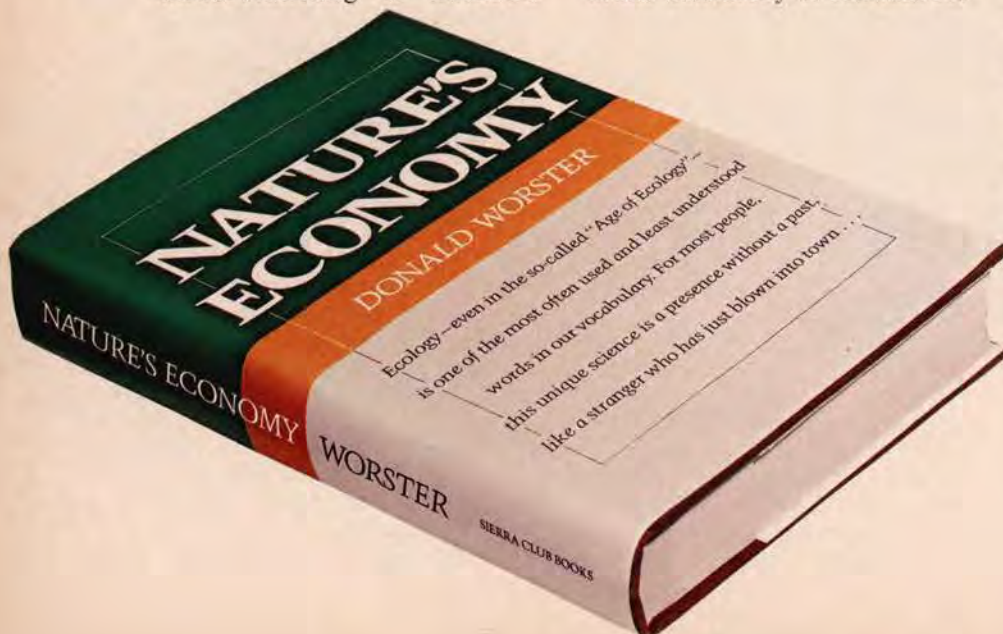
Chap. 9: Words on a Map
Chap. 10: Frederick Clements and the Climax Community
Chap. 11: Dust Follows the Plow

Part Five: The Morals of a Science: Ethics and Economics in Recent Ecological Thought

Chap. 12: The Value of a Varmint
Chap. 13: Producers and Consumers
Chap. 14: Declarations of Interdependence

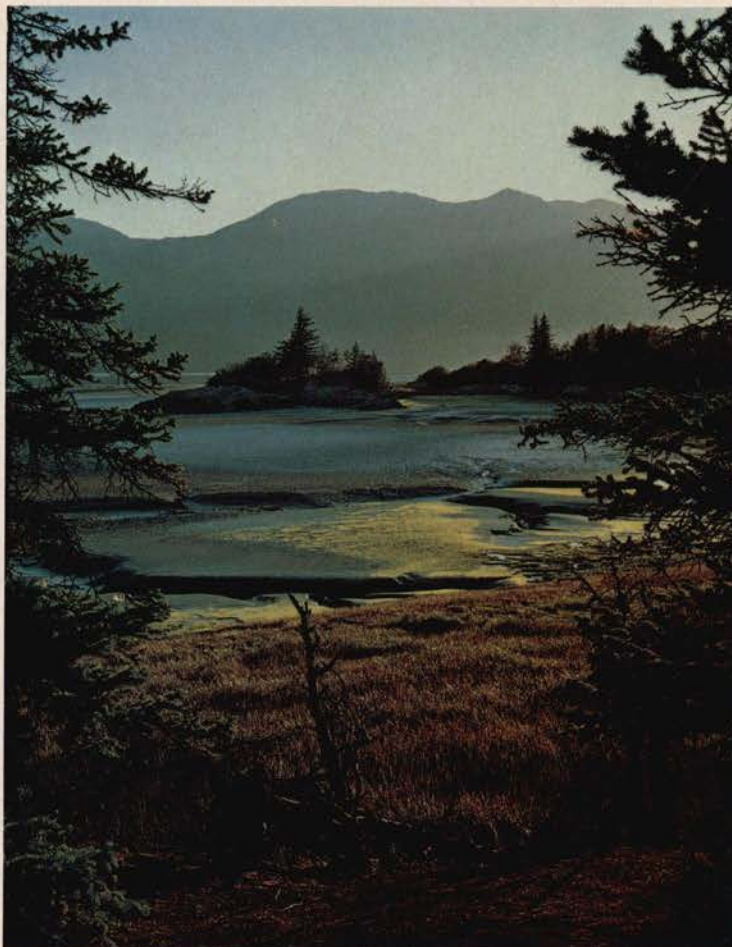
Epilogue: Faith and Doubt in the Age of Ecology

Notes



1978 Sierra Club Calendars are ready!

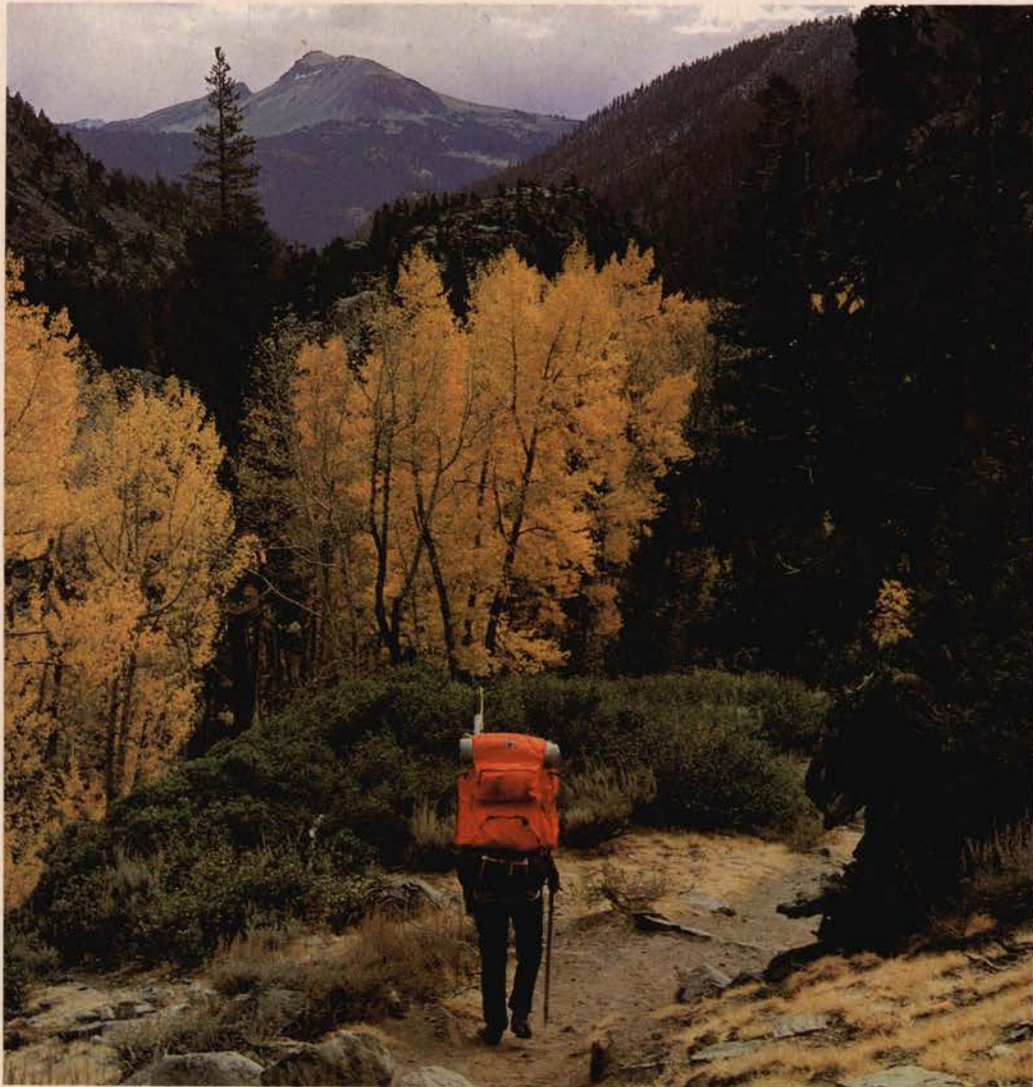
Wilderness 1978 Sierra Club Engagement Calendar



This week-by-week tribute to the natural glory of our continent and its wild creatures highlights among its 59 full-color photographs remarkable images of Alaska—our last great remaining wilderness. The calendar comes in practical desk format, designed for appointment and note-keep-

ing, and includes photography by Gene Ahrens, Robert Carr, Ed Cooper, Lloyd Englert, Wendell D. Metzen, David Sumner, and Myron Wright, among many others. The Introduction is by Peggy Wayburn. Spiral-bound at the side and individually packed in a self-shipping carton. 6¾ x 9¼.

1978 Sierra Club Calendars



Sierra Club Trail Calendar 1978

Mountaineering, wilderness skiing, kayaking, dogsledding, scuba diving; a hike in the desert and a ride down the Colorado—the 1978 Trail Calendar depicts the wilderness experience in 14 full-color photos, from the Florida Everglades to Alaska's Mt. Dickey to Grand Cayman in the British West Indies. Photographs by Galen Rowell, Steve Crouch,

John Blaustein, Bob Gunning, and others, with line illustrations and selections from the literature of the trail. Introduction by Colin Fletcher, author of *The New Complete Walker*.

Spiral-bound at the top, hole-punched for hanging, individually packed in a self-shipping carton. 10¼ x 11½ (new larger format).

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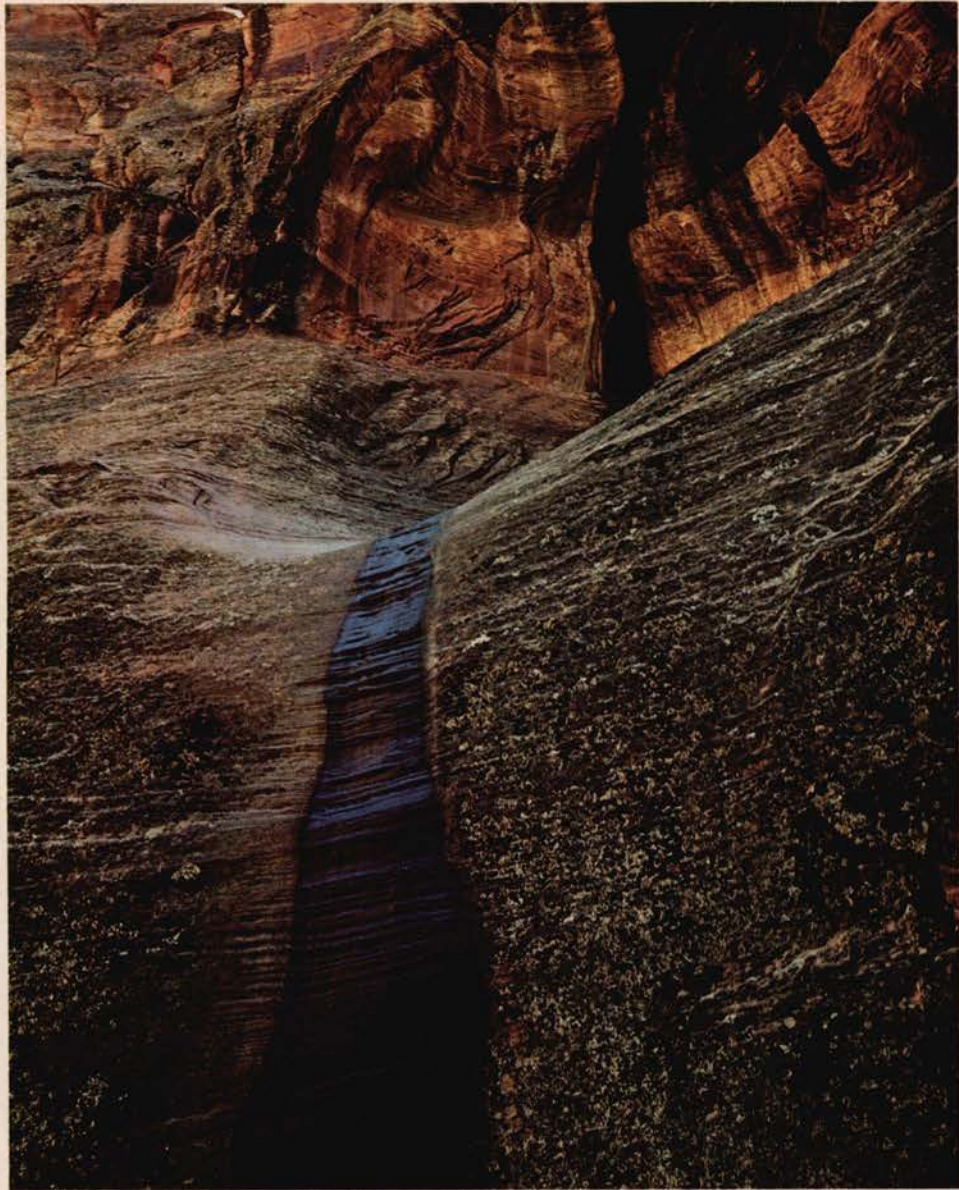
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Wilderness Calendar 1978 Sierra Club

The scope and texture of the beauty of North America's wilderness, depicted month by month in full color by photographers Tom Algire, Edward W. Bower, Gary Braasch, Philip Hyde, Bob Jaeger, Robert Glenn Ketchum, David Muench, James Randklev, Art Twomey, and Hans Wendler. Quotes drawn from the literature of natural America

by such authors as Emerson, Muir, and Thoreau, and from native American texts, accompany each month. Introduction by Michael McCloskey, Executive Director of the Sierra Club.

Spiral-bound at the top, hole-punched for hanging, individually packed in a self-shipping carton. 10¼ x 13½.

1978 Sierra Club Calendars



Sierra Club Wildlife Calendar 1978

The cover photograph of a central Indian tigress, taken in the wild by the eminent field biologist George B. Schaller, reflects the new international scope of the 1978 Wildlife Calendar. Other beautiful, often rare species, depicted in full-color in their natural habitats include a family of cheetahs in East Africa, Kodiak bears in Alaska, Siberian ibex in the Karakoram Himalaya, elephant seals off the California coast, a great egret in the

Georgia swamp, and guanacos in Patagonia. Photographs by Tupper Ansel Blake, Jeff Foott, Keith Gunnar, Stephen J. Krasemann, Olaf Soot, Bob Waterman, and others. Introduction by S. Dillon Ripley, Chairman of the World Wildlife Fund and Secretary of the Smithsonian Institution.

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...Introduced last year, and all-new for 1978

Little Creatures

The 1978 Sierra Club Calendar & Almanac for Young People



Heralding our new juvenile publishing program, Sierra Club Books added a new calendar last year: *What The Forest Tells Me: The Sierra Club Calendar and Almanac For Young People*. It was a resounding hit. *New West* magazine made it a "Best Bet," and reviewers called it "a knockout gift for the young naturalist"... "both practical and fun"... "a visual delight, and one calendar that's sure to be kept when the year has ended."

Little Creatures, the new 1978 Calendar and Almanac for Young People, will appear in the

same format and will focus on the universe of small animals, from microscopic protozoa to mammals. In a lively blend of images, poetry, naturalist's descriptions, diagrams, cartoons, and photographs, it will surprise and delight young readers, and help them to discover the small wonders of the natural world.

Spiral-bound at the side and individually packed in a self-shipping envelope. 88 pages. 13 full-color photos. 10 pages of activities. 10¼ x 10¼.

A Sierra Club Naturalist's Guide to the Deserts of the Southwest

by Peggy Larson,
with Lane Larson

Some of the most diverse terrain and highly adapted plant and animal life to be found in the United States make up the North American Desert. The ecology of this fascinating area, with its unique and unusual beauty, is the subject of this comprehensive, multi-faceted field guide, which brings to both the hiking enthusiast and the armchair observer a clear picture of this complex, beautiful, fragile wilderness. 224 pages. 40 diagrams, illustrations, and maps. 4½ x 8. Available in cloth and paper.

In the Throne Room of the Mountain Gods

by Galen Rowell

A dramatic chronicle of men and mountains drawn from the experience of the 1975 American expedition to K2, the world's second highest peak.

"One of the most fascinating stories in the entire canon of mountain literature..."—*San Francisco Chronicle*.

"Something new in the way of mountaineering books...a masterful blend of the personal and the objective!"—*Mariah*.

"Rowell has written one of the finest books on mountaineering yet."—*Seattle Post-Intelligencer*. 336 pages. 48 pages color photos. 165 black-and-white photos, maps, bibliography, index. 8¼ x 10¾. Cloth.

The Electric War

The Fight Over

Nuclear Power

by Sheldon Novick

"A must for consumer groups, ecologists, and students of the energy problem."—*Publishers Weekly*.

"Sheldon Novick has written a remarkable book about the (nuclear power) debate...what good public-policy writing should do."—*New York Times Book Review*. 376 pages, 26 black-and-white photos, appendices, index. 6½ x 9¼. Cloth.

Walking Softly in the Wilderness

The Sierra Club Guide to Backpacking

by John Hart

"For the most complete overall picture of what genuine, no-frills wilderness camping entails, this book is the ultimate manual."—*Houston Chronicle*.

"The graces of this book are several, not the least of which is good prose. In lieu of the plodding solemnity that paces most backpacking books, Hart comes at us in an easy, conversational gait...If we must have guides to wilderness use, we can be thankful if they exhibit the intelligence of 'Walking Softly.'"—*Washington Post*. 436 pages. 80 illustrations. 4½ x 8. Paper.

Ascent

The Mountaineering Experience in Word and Image

edited by Steve Roper,
Allen Steck, Jim Stuart,
and Lito-Tejada-Flores

The popular Sierra Club mountaineering journal, *Ascent*, expands in content and shifts to a new format with its publication as a Sierra Club paperback. The newly expanded *Ascent* combines personal reminiscences, histories, fiction, outstanding photography of mountains and climbers, and high-quality graphics. 128 pages. 120 duotone prints. 8¼ x 11. Paper.

Simple Foods for the Pack

by Vikki Kinmont

and Claudia Axcell

"If toting freeze-dried beef stroganoff packed in little plastic or aluminum pouches doesn't fit in with your picture of wilderness camping, you'll probably want to try a few of the 175 'trail-tested' meatless, sugarless recipes using natural ingredients in *Simple Foods for the Pack*."—*Organic Gardening*. 216 pages. Line drawings, glossary, bibliography. 4½ x 8. Paper.

The Forests of the Sea

Life and Death on the Continental Shelf

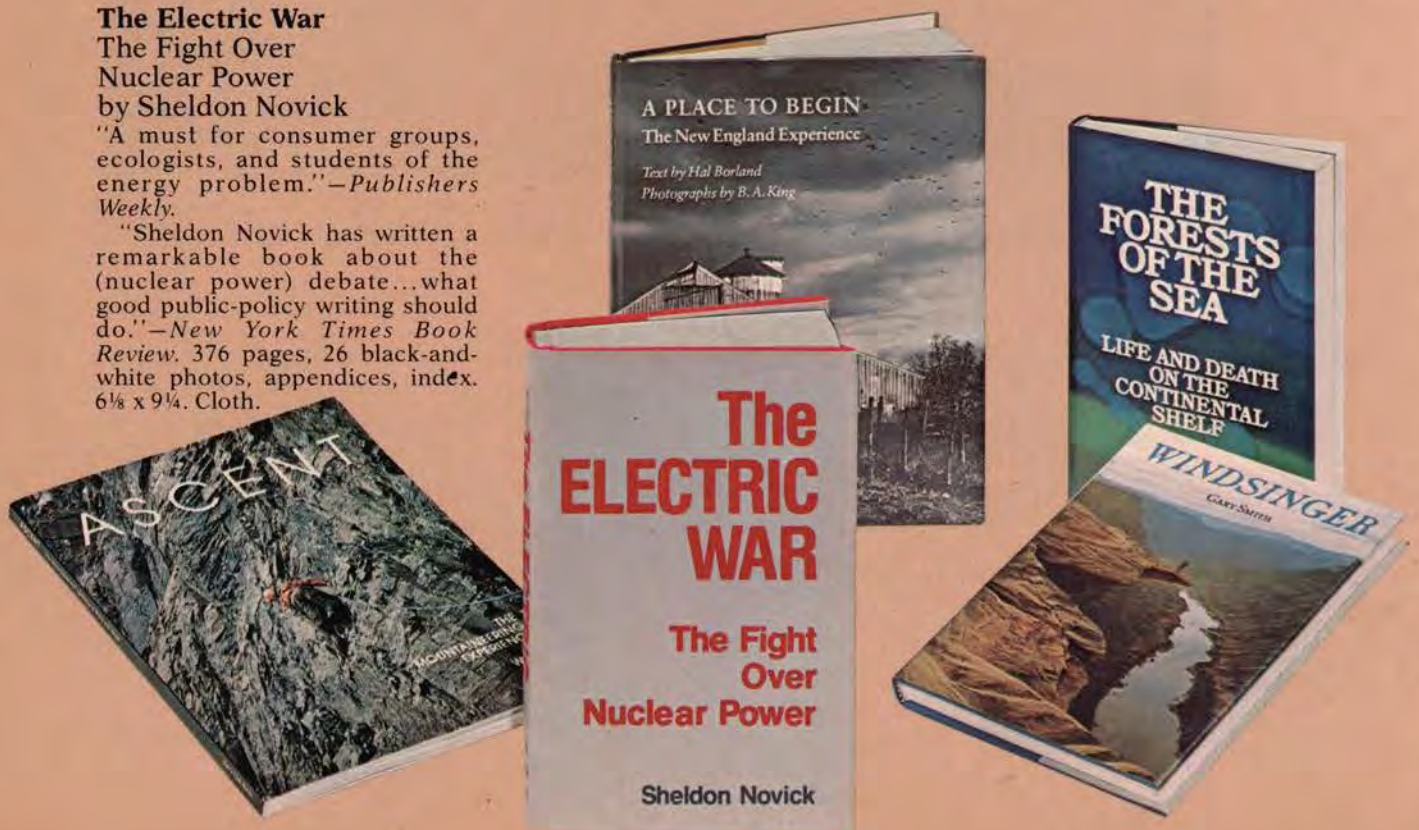
by John L. Culliney

"Marine biologist Culliney reports on the fascinating hidden world of the continental shelf in prose that far outshines the too frequently dreary attempts to popularize the science of the sea...Interspersing clearly written accounts of current research, speculative but not improbable scenarios, and warnings of disaster to the sea environment, this is a valuable contribution."—*Library Journal*. 256 pages. 20 line illustrations by Bonnie Russell. 6 x 9. Cloth.

A Closer Look

by Michael A. Godfrey

A fascinating description of the animal and plant life that can be found in or near your home or backyard. "An ecological masterpiece."—*Smithsonian*. 192 pages. 45 color photographs. 8½ x 11. Cloth.



A Place to Begin The New England Experience

text by Hal Borland
photographs by B.A. King

"Borland has written a typically New England kind of love letter: appreciative, but not effusive."—Anatole Broyard, *New York Times*.

"King's photographs make this a book for any lover of photography."—*Artweek*. 160 pages. 75 black-and-white photos. 8½ x 11. Cloth.

Mind in the Waters

assembled by Joan McIntyre
A book to celebrate the consciousness of whales and dolphins. "A remarkable compendium of mythology, scientific studies, whale lore, photographs, drawings and poetry."—*Washington Post*. 224 pages. 16 color photos, illustrations. Paper. Published in association with Charles Scribner's Sons.

The Grass Roots Primer edited by James Robertson and John Lewallen

How to save your piece of the planet, by the people who are already doing it. "The primer's case-studies testify that individuals inspired by a cause... can make their voices heard."—*New York Times Book Review*. 192 pages. Photographs, diagrams, line illustrations. 8¼ x 11. Paper.

Windsinger by Gary Smith

"A beautiful book. Immense care and feeling have gone into this volume, a sensitive folio combining photo-portraits, with Smith's prose portraits of people whose faces reflect a love of the land, songs and tales Smith himself has written."—*Publishers Weekly*.

"A thrilling symphony of prose, lyrics, music and the hues and forms of nature."—*St. Louis Post-Dispatch*. 160 pages. 16 pages color photos and 48 black-and-white photos. 6½ x 9¼. Cloth.

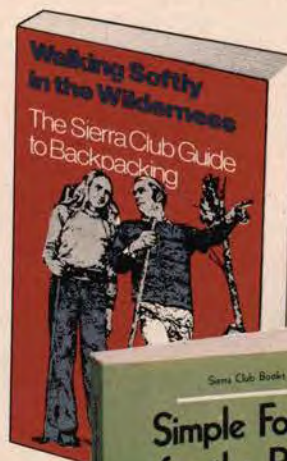
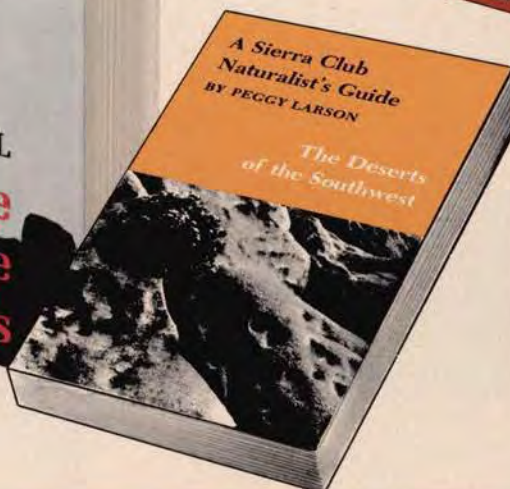
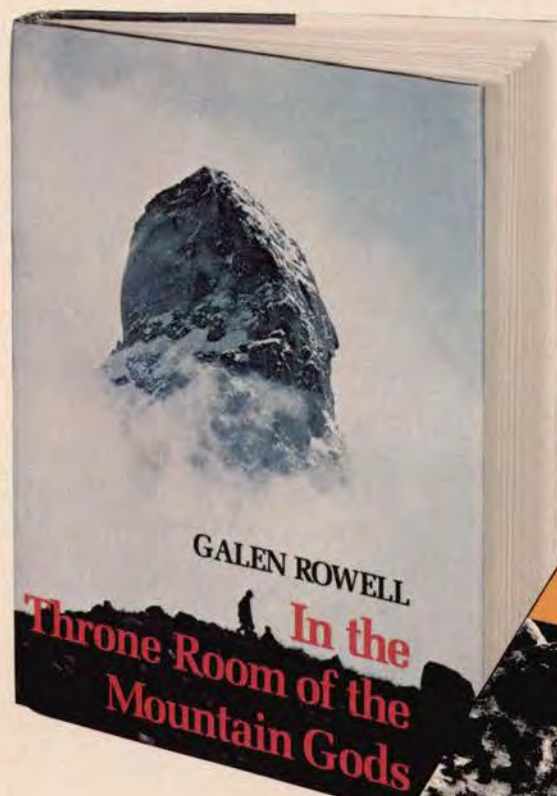
Other Homes and Garbage Designs for Self-sufficient Living by Jim Leckie, Gil Masters, Harry Whitehouse, Lily Young

"An excellent reference source for those who wish to study, design, construct, or renovate a building while reducing demands on the environment."—*Library Journal*. 320 pages. Diagrams, charts, tables, line drawings, mathematical formulae, index and bibliographies. 8½ x 11. Paper.

Thoreau Country Photographs and text selections from the works of H.D. Thoreau by Herbert W. Gleason

edited by Mark Silber
introduction by Paul Brooks
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An all-new guide to climbing over 500 peaks and passes in the most exciting and challenging range in North America. 384 pp. Maps and photos.

Climber's Guide to Yosemite Valley

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16 “locator” photos. 320 pp.

Cooking for Camp and Trail

by Hasse Bunnelle with Shirley Sarvis
Recipes. 192 pp.

Food for Knapsackers

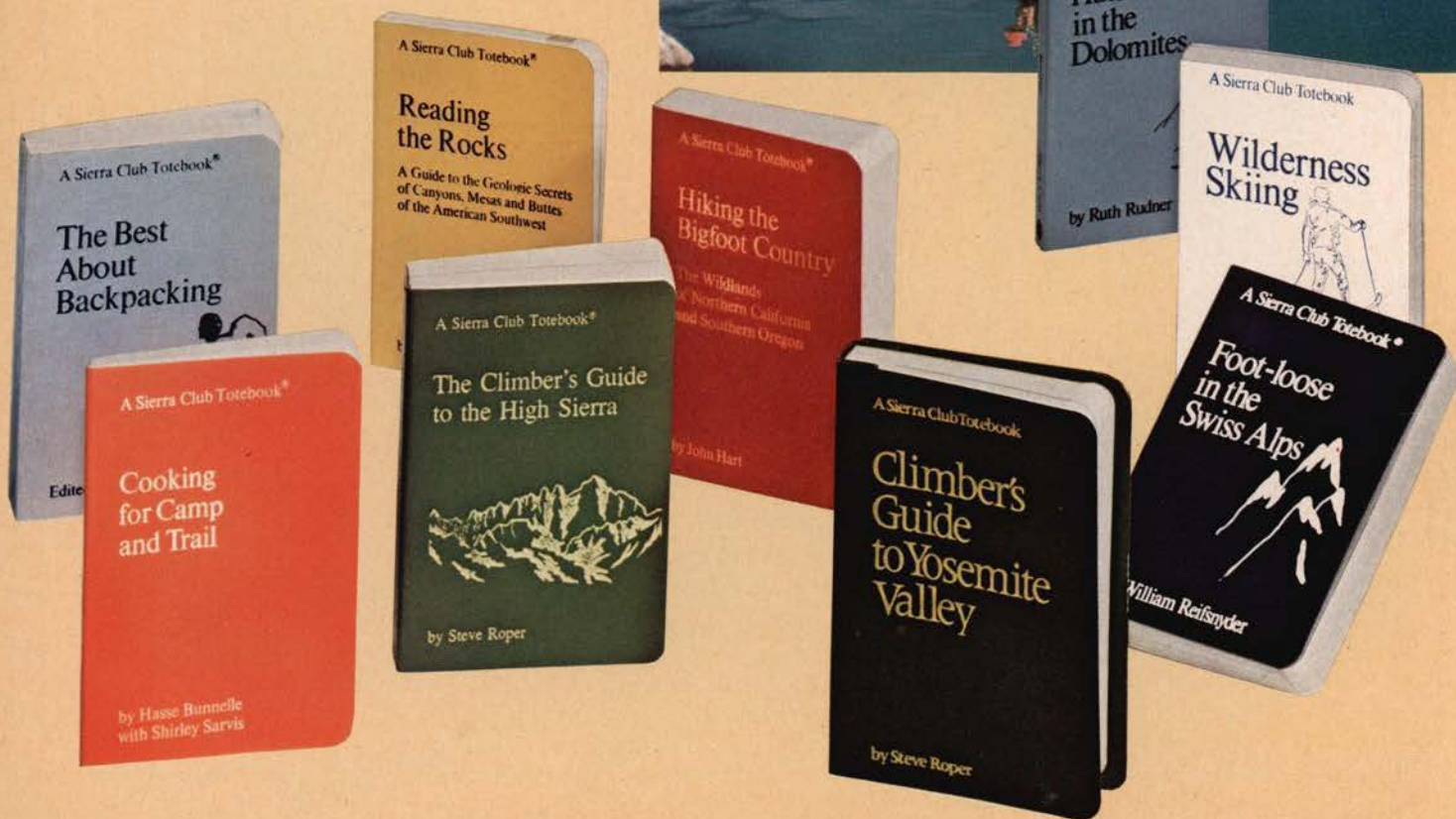
by Hasse Bunnelle
Recipes. 144 pp.

Fieldbook of Nature Photography

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A practical Totebook® tailored to the needs of the amateur photographer and attuned to the advanced outdoor photographer. 192 pp. Photos in color and black-and-white.

Foot-loose in the Swiss Alps

A Hiker's Guide to the Mountain Inns and Trails of Switzerland by William E. Reifsnnyder 450 pp. Maps and photos.



Hiker's Guide to the Smokies
by Dick Murlless and Constance Stallings
374 pp. Maps.
Smokies Map available separately:

Hiking the Bigfoot Country
The Wildlands of Northern California and Southern Oregon by John Hart
400 pp. Maps.

Hiking the Teton Backcountry
by Paul Lawrence
159 pp. Maps.

Hiking the Yellowstone Backcountry
by Orville Bach
228 pp. Maps.

Hut Hopping in the Austrian Alps
by William E. Reifsnnyder
207 pp. 30 photos and maps.

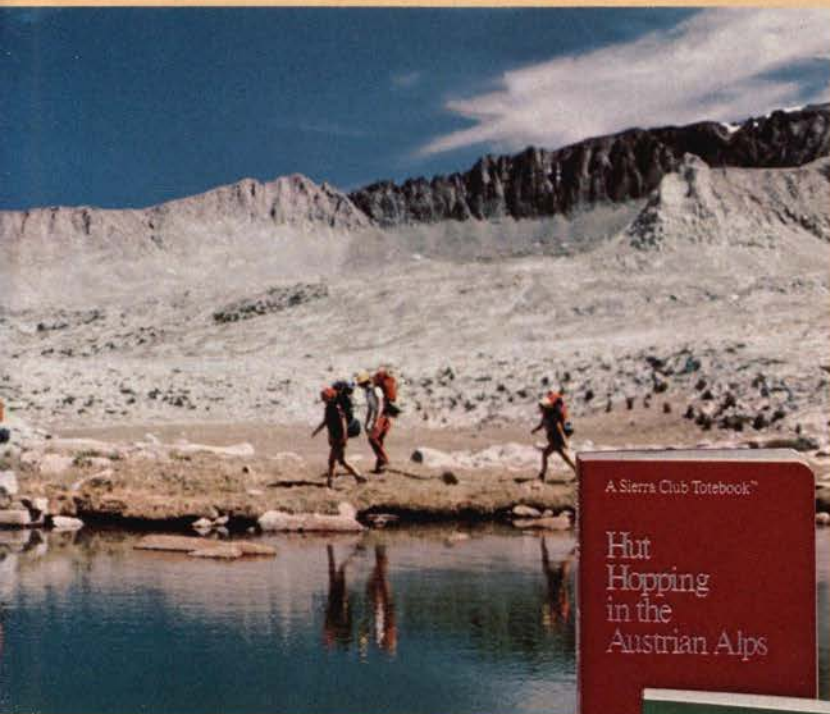
Huts and Hikes in the Dolomites
A Guide to the Trails and Huts of the Italian Alps by Ruth Rudner
244 pp. Maps and photos.

Reading the Rocks
A Layman's Guide to the Geologic Secrets of Canyons, Mesas, and Buttes of the American Southwest
by David A. Rahm
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Hikes in the Woodlands, Parks and Beaches of the San Francisco Bay Area
by Nancy Olmsted
256 pp. Maps.

Wilderness Skiing
by Lito Tejada-Flores and Allen Steck
310 pp. Sketches and photos.



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The Sierra Club titles listed on this page are available at *30% off the retail price* in a Holiday Price-Saving Offer. Take advantage of these substantial savings—and insure the earliest possible delivery—by placing your order now.

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edited by Elizabeth Gillette
Key guidelines for identifying and protecting wildland resources. 176 pages. Paper.

Alaska

The Great Land
by Mike Miller and
Peggy Wayburn

The last great wild place in North America presented in full-color photographs and authoritative text. 128 pages. 74 color photographs. 8¼ x 10¾. Paper. Sierra Club/Scribner Library.

Everglades

by Patricia Caulfield

65 color photographs accompanied by selections from Peter Matthiessen and an essay by John G. Mitchell. 155 pages. 10½ x 13¾. Cloth. An Exhibit Format Book.

Gentle Wilderness

The Sierra Nevada
photographs by
Richard Kauffman
text by John Muir

168 pages. 76 color photos. 10½ x 13¾. Cloth. An Exhibit Format Book.

Island in Time

The Point Reyes Peninsula
photographs by Philip Hyde
text by Harold Gilliam

96 pages. Color photos. 8½ x 10¾. Paper. Sierra Club/Scribner Library.

The Lands No One Knows

by T.H. Watkins and
Charles S. Watson, Jr.

The colorful history of America's "forgotten inheritance," the Public Domain. 256 pages. 64 pages of black-and-white photos. 7 x 10. Cloth.

Not Man Apart

Photographs of the
Big Sur Coast

by Robinson Jeffers
edited by David Brower

160 pages. 52 duotones and 28 color photos. 10½ x 13¾. Cloth. An Exhibit Format Book.

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photographs and
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by Terry and Renny Russell
Triumph and tragedy of the natural world, as seen by two young artists. 128 pages. Color photos. 6½ x 9½. Cloth.

Slickrock

Endangered Canyons
of the Southwest
by Edward Abbey and
Philip Hyde

Photographs of the wildlands of southeast Utah by Hyde and a brilliant, militant essay by Abbey. 144 pages. 68 color photos. 10½ x 13¾. Cloth. An Exhibit Format Book.

In Wildness is the Preservation of the World

by Eliot Porter
Selections from Henry David Thoreau accompanied by color photographs. 168 pages. 72 color photos. 10½ x 13¾. Cloth. An Exhibit Format Book.

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by Cedric Wright

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Quiz Answers

Continued from page 24

Scenic Rivers, and supervising the disposition of surplus federal lands for public recreational use.

If you answered (k), Department of Defense, to this question and had in mind the Army Corps of Engineers, you had a point. The corps administers relatively little public land (11 million acres) and most of it is under water, but because of a recent court decision this agency has jurisdiction over virtually all of the nation's wetlands as well as its inland waterways; any federal agency attempting to dyke, dredge or fill such an area needs a permit from the corps.

You might also have answered (d), the U.S. Geological Survey, whose function it is "to paper the United States" with maps.

9. (f) The Bureau of Reclamation (operating west of the 100th meridian) and (k) the Army Corps of Engineers (which dates back to 1775) have together drowned over 16,000,000 acres of land. (West Virginia is 15,410,560 acres in size.) It is estimated that BuRec, whose functions are principally to generate power and to provide water for irrigation, has been responsible for impounding enough water to flood all of New England to a depth of more than three feet. The corps operates nationwide and is charged with flood con-

trol as well as maintaining the navigability of inland water. In recent years the corps has begun to develop new flood-control policies and in places may now substitute "non-structural" methods for more traditional dam building.

10. (g) The term "public domain" originally referred to all public lands, later was applied largely to the lands west of the 100th meridian, and is now used generally to describe only the lands administered by the BLM.

11. (d) The 31 million acres of Park Service lands constitute less than 1.4 percent of the total land area of the United States.

12. (i) The Fish and Wildlife Service has units in each of the fifty states. The civilian branch of the Army Corps of Engineers is next, with property in the District of Columbia and every state except Utah and Wyoming. There is National Forest land in forty-two states (and Puerto Rico), National Park lands in forty-seven and BLM lands in only twenty-eight. The General Services Administration administers property—often only federal office buildings—in each state.

13. (e) The White House with its grounds is one of the 294 units of the National Park Service. The service also administers ten of the National Cemeteries, four National Parkways, a National Capitol Park, fifty-three National Historic Sites, thirteen National Battlefield units and twenty-two National Memorials. National Parks, *per se*, constitute less than sixty percent of the Park Service's 31 million acres, while National Monuments account for more than thirty percent.

14. (c) A "primitive area" is a land classification term adopted by the Forest Service in the late 1930s, when it was classifying areas primarily for wilderness values. Long before Congress passed the Wilderness Act in 1964, the Forest Service had begun the reclassification of its Primitive Areas into "wilderness areas" and "wild areas" (5,000 acres or less). A few remnant primitive areas still exist, but 12,695,405 acres of Forest Service land have now been accepted in the National Wilderness Preservation System under the act, and another 12,500,000 or so acres are under study for inclusion.

15. (k) The Army Corps of Engineers claims the largest number of visits to its facilities—391,000,000 to 401 of its lakes and waterways last year—and the corps now counts recreation as a "project purpose" in calculating costs and benefits of potential projects. The Forest Service (199,928,100 visitor days in 1976) and the Park Service (276,000,000 visits in 1977) together account for the major wilderness

In Memoriam (October 1976-August 1977)

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recreational use in the country. (No two agencies use the same method to tally and/or evaluate their recreational use. The figures used here were provided by the various agencies and are the latest available from them.)

16. If you answered (a) to (z), you were correct. The Forest Service is a "multiple-use" agency and manages its lands for these twenty-six and several other uses, although in many cases the use is strictly controlled and can occur only in restricted areas, and by permit only.

17. The correct answer, again, is (a) to (z). Note that many uses, particularly wilderness uses, are common to both Park and Forest Services. The Park Service, however, generally prohibits extractive uses, and mechanized uses (and hang-gliding) are restricted to certain areas.

18. (b) The purpose of the Park Service as stated in its enabling act in 1916 is "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." The dual charge of simultaneously protecting park lands while developing them for enjoyment sometimes casts the Park Service in a schizophrenic role.

19. (d) 14,443,705 acres are now classified as Wilderness. With a head start (see answer 14), the Forest Service has accounted for 12,605,405 acres, or eighty-seven percent of this total. The Fish and Wildlife Service has 718,087 acres in this pool, and the Park Service 1,120,213. Another 14,018,285 acres have been proposed by the National Park Service for inclusion in the National Wilderness System and await congressional approval.

20. (i) The Endangered Species Act of 1973 charges the Fish and Wildlife Service with the protection of endangered plant and animal species (with the exception of certain marine mammals) in the United States. Unlike other federal land agencies, the Fish and Wildlife Service operates without an Organic Act to specify its functions. However, under a variety of congressional acts it has been given responsibility for managing nearly 34 million acres of land, and it administers 367 National Wildlife Refuges. Wildlife Refuges may be established by the Migratory Bird Conservation Commission—consisting of two senators, two congressmen, and the President—as well as by Congress as a whole.

21. (c) and (f) National Monuments may be established by the President and by Congress.

22. (e) The Forest Service, (g) BLM and (i) the Fish and Wildlife Service all allow hunting on most of their lands. The Park Service allows hunting only in National Preserves and certain National Recreation Areas.

23. Mining has traditionally been permitted on virtually all public lands. The Park Service, however, prohibits it (with certain exceptions), and other land agencies have sometimes administratively withdrawn areas from mining.

24. (e) The Forest Service, (g) BLM, and (i) the Fish and Wildlife Service all sell timber. The BLM has an extensive timber program in Oregon, and the Fish and Wildlife Service manages several million acres of southeastern forest land "to benefit wildlife." The Forest Service, the nation's principal forest-management agency, sold 10,287,000,000 board feet in 1976.


25. (b) Offshore oil leases, (e) the Golden Eagle Passport, (f) motor-boat fuel taxes, and (g) money from sales of surplus federal property all support the Land and Water Conservation Fund, which was established in 1965. Recent legislation sponsored by Congressman Phillip Burton (D-California) tripled the yearly allowance of the fund from \$300 million for fiscal 1977 to \$900 million for the coming fiscal year.

Golden Eagle Passports cost \$10 and are good for fees charged at national parks and other park-service-administered lands for the calendar year. (Duck-stamp monies, incidentally, amount to about \$12 million a year and go to the Fish and Wildlife Service.)

26. (a), (b), (e) Until recently, all user fees went into the General Fund of the U.S. Treasury, and this is still true for those collected by the Army Corps of Engineers, the Forest Service and many units of the National Park Service. Some user fees also go to the facilities that levy them. In addition, the Forest Service and certain units of BLM and the Park Service return part of their income to the counties in which their lands are located.

27. (e) In 1905, the Sierra Club wrote every member of Congress urging the establishment of the Forest Service. (b) In 1916, the Sierra Club also strongly supported the establishment of the Park Service. Stephen Mather, the first Director of the National Park Service, was a friend of John Muir and a long-time Sierra Club member. □

Peggy Wayburn, a free-lance writer, is a frequent contributor to these pages.



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When President Carter took office, his reorganization team made a suggestion that alarmed environmentalists—to disband one of the most environmentally important agencies, the CEQ. Fortunately, things didn't turn out that way.

The CEQ Unleashed

GAIL CHAPMAN

THIS summer many environmental sympathizers were stunned as word leaked from the White House that Jimmy Carter might abolish the Council on Environmental Quality (CEQ). National papers reported the President's reorganization team had advised him to reassign CEQ's duties to the Environmental Protection Agency. That the Council should survive the Nixon and Ford years to be abolished under Carter, just as an environmental movement seemed to be coming of age, was perplexing.

During his presidential campaign Carter wooed the environmental community. He promised conservation would be a vital ingredient of economic planning in his Administration. Once elected he delivered the first "Message on the Environment" to Congress in four years. He took a detailed look at natural and historic resources, pollution problems, toxic substances and damage to the environment caused by the development of energy. He encouraged Congress to act quickly to prevent the destruction of unique scenic areas. He issued Executive Orders protecting floodplains

and wetlands from development, protecting endangered species from destruction, and giving the "proper agency" the power to prohibit off-road vehicles in wilderness areas. Further, he claimed "intelligent stewardship [of the environment] is a prime responsibility of the government. Environmental protection is no longer just a legislative job, but one that will now receive firm and unsparing support from the Executive Office."

But Jimmy Carter also promised during his campaign to reduce the complexity of the federal government. Budget Director Bert Lance worked with a twenty-one-man team from Georgia to reshape the Executive Office of the President. In early July they suggested a number of reorganization alternatives for the CEQ. They advised (1) transferring CEQ and its functions into the Environmental Protection Agency (EPA) or the Interior Department, (2) abolishing the CEQ altogether and replacing it with an environmental advisor to be a member of the Cabinet, (3) eventually reorganizing all natural resources management agencies into a single new body which would in-

clude CEQ, or (4) retaining the Council, but only as an advisor to the President, transferring all its functions regarding Environmental Impact Statements and oversight of federal agencies to the EPA.

Congress and the environmental lobby reacted sharply. Ten senators who serve on the Environmental and Public Works Committee told Carter they were "extremely concerned" that an agency that had shown "excellent performance in the past" might be destroyed. A coalition of virtually all national environmental groups was joined by the League of Women Voters and several labor unions in urging that the Council be retained. They feared the dismantling of CEQ "would be widely interpreted as a downgrading of environmental concerns." They felt that neither the Interior Department nor EPA could administer the National Environmental Policy Act because they were both regulated by it. They defended the Council against criticism that it was too outspoken to remain a part of the Administration. "CEQ is no more or less an advocate of environmental quality than the Council of Economic Advisors is an advocate of a healthy economy, or the National Security Council is an advocate of strong security," a coalition spokesman said.

Furthermore, neither the Interior Department nor EPA had demonstrated even mere competence at supervising NEPA. The coalition insisted that an institutionalized environmental policy office within the White House was indispensable, especially if future Presidents might be less environmentally aware than Carter. Many examples were cited illustrating how in the past CEQ was able to neutralize adverse Nixon and Ford Administration environmental proposals. A number of key research projects—e.g. ORVs, stripmining,



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sewers, and so on—could not have been done by other “on-line” agencies.

Labor spokesmen also felt that CEQ was very valuable; it alone had made clear that workplace health was part of environmental quality. The CEQ, they said, was the agency best suited to developing a vital labor constituency, strong support indeed for an environmental agency. But would it be strong enough? There was a widespread feeling in the conservation community that the CEQ was in trouble.

On July 15 the President met for a half hour with the three current members of the Council, all Carter appointees: Charles Warren, chairman, a former California legislator credited with developing many of California’s tough environmental protection laws; Gus Speth, an environmental lawyer formerly with the Natural Resources Defense Council; and Marion Edey, former director of the League of Conservation Voters. Within hours of the meeting Carter had discarded the proposed reorganization plans.

The President retained the Council, but requested a twenty percent staff cut. He ordered that those Council duties concerned with the daily review of Envi-

ronmental Impact Statements be shifted to the EPA so that CEQ could focus its full attention on advising the President and assisting him in developing policy. In a message to Congress on the reorganization recommended by Carter, Bert Lance said “the redefinition of the Council’s role was in no way intended to downgrade the importance of the Council and the development of the Administration’s environmental policy. By sharpening this role the Council could be more effective at the Executive level.”

Carter’s decision to retain the CEQ provides an opportune time to look back at its record and to consider the future role the Council will play in the Carter Administration.

The National Environmental Policy Act of 1969 (NEPA) established environmental protection as a national priority. It declared that all federal agencies were to be responsible for following the spirit and the letter of the law, and it created a council to oversee and coordinate federal environmental efforts. This Council on Environmental Quality was to be composed of three members (and a staff) appointed by the President and serving at his pleasure.

Under NEPA one of the Council’s re-

sponsibilities was to receive and review Environmental Impact Statements (EISs). CEQ was also to guide agencies in the preparation of these statements. In the early years of NEPA many EISs were written to justify decisions already made. There was no genuine attempt to explore options. When administrators failed to follow CEQ’s guidance and filed insufficient statements, the litigation that often resulted delayed projects. But the EIS process has become more familiar to government agencies in the past seven years. At a recent hearing by CEQ on the EIS procedure, the Army Corps of Engineers testified that since the passage of NEPA they “had learned to place EIS analysis among matters to be studied first—as part of the feasibility study—rather than leaving it until after the project had met other criteria. The key lesson was the necessity for handling environmental factors as an integral part of the overall planning process.”

This May, in an Executive Order, President Carter extended the Council’s authority over the EIS process. For the first time “CEQ will issue regulations regarding the Statement.” EISs must focus on real environmental alternatives. “Statements must



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However, the President's redefinition of the Council in mid-July assigned routine EIS review authority to EPA. The Council will still look at any statements referred to it by any government agency concerning "major federal action" the agency "believes to be environmentally unsatisfactory." The Council staff seems pleased to pass the daily monitoring of EISs on to EPA yet retain the oversight responsibilities.

Since its creation, the Council has worked quietly within federal agencies to oversee and coordinate projects having potential environmental effects. The interdisciplinary analysis it has encouraged may actually be its most important achievement to date. The Toxic Substances Control Act is the result of a task force the CEQ organized in the early 1970s. Under the present Administration, the CEQ expects to continue to chair the Toxic Substances Strategy Committee. While work of this nature is invisible to the public, the legislative spinoffs affect the quality of our environment.

NEPA gave the Council the responsibility of gathering and analyzing information on the quality of the environment. Each year the CEQ publishes an annual report, the definitive assessment of the state of our national environmental health. The many studies done by CEQ have earned a reputation as unbiased and thorough; perhaps the CEQ's most influential publication to date is a detailed statistical report showing that environmental protection actually has stimulated the economy by creating tens of thousands of jobs. The Council's studies are available to the public and are excellent source material on the nation's environmental problems.

Finally, it is the Council's job to develop and recommend to the President policies that will promote the improvement of environmental quality. Under previous administrations the Council's role in policy development was obscure. In order to preserve its access to top-level decision makers, usually not notably sympathetic with its views, the CEQ did not adopt a tough, public-advocacy position. The Council chose to try to influence the President privately rather than to castigate his decisions publicly. This led to a general distrust of the real sympathies of the organization. Environmentalist Joseph Sax commented in the early 1970s that the Council's role will be that of a spokesman for the Administration rather than—as had been widely

hoped—a spokesman for the public, openly expressing views which might be at odds with the Administration position. Furthermore, because executive legislative proposals that CEQ favored were always watered down by those in the Administration with a weaker environmental conscience, congressional legislative proposals seemed purer by comparison.

But Gus Speth of the Council feels that "in the future things will be different." This Council, endorsed by Carter, will play a major role in shaping Administration environmental policy. Speth feels "the Council is becoming a more direct advisor than ever before, as well as a stimulator of programs for the Administration. We are operating more effectively as a part of the Executive Office of the President." Speth says he is "pleased—no, really elated—with the influence the Council has." He feels "the President is interested in a strong environmental policy. The Message to the Congress and the excellent appointments he has made are convincing."

There are many areas in which the Council is just now developing policy with the Administration. Speth indicates that a comprehensive land-use bill is under consideration but says the problems are numerous. The President's Executive Orders regarding floodplains and wetlands and the stripmining bill are a beginning. Furthermore, the Administration has shown interest in protecting prime agricultural land. He expects an increase in the number of wilderness areas, better management of national parks and good coastal zone management. "There is already a major commitment within the Administration to protecting critical land areas." The hostility created by past attempts at a land-use bill means the Council will proceed cautiously in this area. The Department of Energy and the Council are working together to produce the Administration's recommendations for disposal of nuclear waste. Mass-transit problems are also being considered.

Gus Speth and the staff of the Council talk about its future with tremendous optimism. They believe in the President's concern for the environment. They expect CEQ to play a major role in shaping Executive policy. Though NEPA created the Council to be the nation's watchdog protecting our environment, former presidents have kept the Council chained at the back door. We hope President Carter will give the CEQ lots of leash to do the job NEPA intended. □

Gail Chapman is Sierra's White House correspondent.

Beyond the Instamatic:

The Lens of the Heart

TIM THOMPSON

THERE'S BEEN a revolution in photography over the past two decades—both in the machines we use and the things we look at with them.

Until the late 1950s, the cameras most Americans owned were awkward black boxes. For serious nonprofessional photographers, the choice was generally the sophisticated but inconvenient waist-level twin-lens reflex. Nature photographers frequently preferred (as some still do) the burdensome 4×5-inch-negative camera, with its razor-sharp images but limited mobility.

But then in the 1950s, something happened to change this—the first modern 35mm camera became widely available in the U.S.

Actually this new miniature camera (as it was called at the time) had been invented in the 1920s and had gained some notice among combat photographers as early as World War II.

But it was not until the 1960s that the 35mm single-lens reflex (in which one sees through the same lens that takes the picture) began to stir up a revolution. With its light weight and broad selection of interchangeable lenses, not only photojournalists, but nature photographers as well began exploring its possibilities.

Simultaneously, other things were changing in America. The public was becoming increasingly concerned about environmental problems, and many were focusing not only their minds but their cameras in that area.

By the 1970s, the landscape photog-



Illustration by Patrick Chapin

raphy pioneered by late nineteenth-century photographers in the West, and brought to rare aesthetic heights by Edward Weston and Ansel Adams, had finally come of age. For example, *Popular Photography* estimated, in 1976, that eighty percent of its submissions were photos of nature.

With this surge of interest, many people wonder what kind of camera to buy, which type of film to shoot and generally how to use their equipment in the field.

State of the Art

For most people, the 35mm single-lens reflex is the logical camera to buy. It is reasonably light, easy to handle, and usually has a built-in light meter. A wide variety of established brands are available. The major variables are price, heftiness and durability. Frequently when the price

is below average, so is the longevity. On the other hand, expensive models may have more features than you need or want to deal with. In general, a well known, medium-priced camera will be the best investment. If you want to move up to something more elaborate later on, most major companies offer more sophisticated models that can accept lenses you've already bought.

In fact, many medium- or high-priced cameras can be bought second-hand—often from people who have scarcely used them. Check the want ads, look the camera over, and ask the seller to accept a post-dated check so the equipment can first be checked out (usually for a low price) by a camera repairman.

You can also save on lenses. Off-brand lenses are often just as sharp as name-brand lenses—but they're only half the price. But *which* lenses?

The specific selection of lenses depends on what you want to photograph. A 35mm camera usually comes with a 50mm or 55mm "normal" lens. If you are interested in broad panoramas, or areas with restricted space, a wide-angle lens would be a good choice—a 28mm or 35mm. (The smaller the focal length millimeter size, the wider the scope of the resultant photo.)

For distant objects such as deer or whales, a long telephoto lens would be appropriate, preferably bigger than 200mm. However, for the average photographer, who wants to photograph friends as well as flowers and wildlife, a good selection would be the lens that comes with the camera, plus a moderate wide-angle and a

shorter telephoto, such as a 105mm or 135mm.

When buying 135mm or smaller lenses (except for close-up "macro" lenses) select those with a maximum aperture opening of f 2.8 or greater (that is, a lower-number f stop). This allows the use of slower (finer grained and more accurate) color film for shadowy or late afternoon situations. The so-called "automatic" lenses are best—they keep the aperture wide open until the picture is actually taken, thus capturing the maximum amount of light.

Most professional photography for publication is shot in transparencies, which, when developed, show the subject matter as it was seen when the photo was taken. (Therefore it is a "positive" image, rather than a "negative.") When this strip of film is then cut into individual frames and mounted in holders, the result is slides.

Most magazine and book publishers are geared for slides. Transparencies are also cheaper than prints if you don't want the photos enlarged—about half the price. After you take a look at your slides, you can always have prints of any size made.

The type of color transparency film to use also depends on what you're looking for. If you want the best possible color and the finest grain (thus the sharpest image), the film with a low (slow) ASA rating such as 25 is probably best. Many professionals, however, use moderate ASA film (in the 64-ASA range) since under most conditions it is virtually identical to the slower film and allows pictures to be taken in lower light or at a faster speed.

Some people favor high-speed films (100 ASA and above) for these same reasons, but high-speed films involve a compromise between convenience on the one hand and color saturation and increased grain on the other. As a general rule, if an object is not moving quickly, if you have adequate daylight, and if you are not using a telephoto lens that absorbs light slowly, high-speed film is probably not necessary. Each film is designed for a specific purpose, so it never hurts to have a variety of films on hand for special situations.

One more thing about film, often overlooked by non-professionals—color film is very sensitive to heat; direct exposure for a few hours to a temperature in the



Sometimes the light and color or the angle makes the photograph. Spectacular landscape is by no means required. This tawny, tufted scene in Hawaii's highlands turned bright and flat seconds later.

eighties or above may affect its color truthness. Store film in your refrigerator, but let it warm up for an hour before use. Keep film out of glove compartments and car trunks, which can become ovens in hot weather. This can be especially important on a long trip.

Some people pack their camera and lenses into a small knapsack when hiking or backpacking. This is convenient but unwise—it allows lenses and camera bodies to rub together, or even crunch together if the pack falls or bumps against a rock.

Another measure, though extreme, is an aluminum suitcase with each piece of equipment fitted into styrofoam. This is good for long-distance flights where it's impossible to keep equipment under the seat, but it's inconvenient to carry suitcases into the woods for any length of time.

My solution is a semi-rigid camera bag that's impervious to rain and snow. A zippered side helps keep away dust, but I prefer the snap type; it's quicker to open and close. A twelve-by-six-inch container will hold a carefully packed 35mm camera with a lens attached, plus two extra lenses. There's still room under the foam-rubber padding for spare light-meter batteries, a cable release (for time exposures), lens-cleaning fluid and tissues, plus perhaps a small screwdriver for making minor repairs in the field. The camera bag should also have an outside pocket for both film and a small flash unit.

Regardless of how you carry your camera lenses, keep the front and back caps on them when they're not being used. Also, buy "skylight" (1A) filters for all lenses—if you want to keep them around for more than a couple of years. Skylights give truer color in shadowy areas, but more importantly they protect the lens face from scratches, dust, rain and everything else a camera is exposed to during use. A scratched filter will give a blurry image, just as a scratched lens will. But the filter costs about a tenth as much to replace.

State of the Heart

The principal organs of photography are the quiet mind and the active heart. Our contemporary American attitude toward machinery often stands in the way of good photography. We are a nation

of equipment buyers; we spend a lot for good equipment and then expect it to do the work for us. Deep in our western minds we secretly reason, *If my camera is as good as Ansel Adams', I'll be as good a photographer.* Oh, we know it isn't true—but all the advertising and merchandising encourages these secret little fantasies. And we indulge them.

The truth is that equipment is not very important. Some of the most moving photographs were made with laughable equipment. Matthew Brady would have wept with joy to have had a Kodak Instamatic.

Anyone can buy a camera and film. But these will not make a good photographer. The two most important tools of the photographer are the mind and the heart. Without these two elements engaged, the camera will reliably record the mundane and unresolved moment, but only occa-



The challenge of photographing Alaska is to evoke the vastness of the landscape. Here, a medium telephoto lens provides a focal depth that relates the foreground to the background. The contrast of colors—warm against cold—and of forms—clouds against mountains—makes the scene look like a grandiose nineteenth-century landscape painting.

Photos by Tim Thompson

sionally and randomly catch an arresting image. Once the camera is loaded with film, the most important thing to prepare is the self.

Rapport with the subject is the first priority—whether it's rapport with a landscape or with a person. I can speak only from my own experience, of course, but my best work usually results from slowing down to the rhythm of the thing I wish to shoot.

I find it helpful to sit down and close my eyes—to feel the temperature and texture of the earth; to listen to the rustling patterns of a breeze on scattered leaves; to respond to the rhythms of surf landing on sand, and then receding again and again. After taking such a time to attune myself, I open my eyes and truly begin to look about me.

On a trip to Alaska five years ago, I came to the personal belief that nature is a subtle arrangement of equal living energies. Tree, flower, spider, deer or the sea itself—all equal. I then realized that I held that same equal stature—another segment of nature, whose only true separation from the whole was my attitude.

By allowing such sensations to suffuse me, I came to realize that once properly introduced, so to speak, nature revealed

itself as infinite layers of visual beauty. Here is the curve of a tree and beyond, the bow of a hill, grass textures and flower-hues. Each and all, near and distant, a picture.

For me this is a process of allowing the mind to become a silent partner in the photographic process. The mind is not absent, but it is the heart that is the true and final guide.

My finest photographs are attempts not only to create an outstanding composition of a lovely scene, but to infuse the film with the feeling—the very felt essence that was there when the shutter clicked.

To do this, I go through an experience that is at one time both mechanical and intuitive. I believe each fine picture has an invisible and perfect center. By merely moving the lens up a bit, left a bit, back a bit, until gazing across the image I feel an inner tingle, and then *without judging*, pressing the release, I can sometimes catch something of that fleeting beauty.

But even in less ethereal moments, a good photograph is the result of getting everything essential into the picture and (here's the trick) keeping everything else out.

One method for multiplying the ways an object may be perceived is to imagine that

the thing, a flower for instance, is the center of an expandable, transparent sphere. Then imagine that sphere is an infinite number of dots, or tiny locations. Which dots, then, are the best positions for looking at that flower—directly underneath and a little behind; three quarters of the way around and somewhat up? Also, how big is the sphere? Does it have a diameter of two inches or twenty feet, and how does that change the perspective from the chosen dots? By this method it is possible to perceive one object from an infinity of positions and an infinity of distances.

Just as no single perspective can reveal the total personality of a friend, no one approach to a flower will fully express it. I usually let my first photograph be an experimental probe into a deeper understanding. After the first shot, I try to re-feel, to re-respond. As I continue to shoot, I look and look again. Of six pictures, perhaps one will stand out.

Even the most creative photographer—a person sensitive to the self and disciplined in the intent to express this through interaction with all that surrounds—has a large percentage of unexceptional pictures. The goal is to keep the spirit high and the percentage of failures low.

On outstanding days I might shoot a par-

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Left: *Integration of the foreground and background creates the feeling of depth. The little mirror of sky within the rock emphasizes the contrast. Taken with a wide-angle lens near Sitka, Alaska.* Right: *Using a medium telephoto lens, I shot this Maui spider and his web against a soft cloud of flowers to create a contrast in texture.*



ticular thirty-six-exposure roll with only a few bad shots, many acceptable ones, maybe five first-class pictures, and—with real luck—two or three truly outstanding images. On bad days, there might be one half-decent shot in the whole roll.

The idea is to neither overshoot nor under-explore. And if the senses are really engaged, that fine balance is more likely to be approached. To me, intensely photographing a stand of aspen or a deep blue

span of glacier is the closest thing I know to spiritual contemplation. Done with conscience and without haste, it is a union of me with all that encompasses me. Such moments can evoke not only the finest images, but a finer knowledge of one's self as well. □

Tim Thompson is a free-lance writer and photographer; his work appears in Alaska, the Great Land (Sierra Club Books).

EIGHT PRECEPTS

1. Don't overequip. You don't need a \$1,000 camera with a half-dozen lenses to remind yourself where you went. Many a camera gets left at home because it's just too much trouble to take it along.
2. You can't photograph a smell or the experience of being alone with a hundred miles of forest. What you see through the camera is what will appear on the film. What you feel inside is the heart's photography.
3. Look at landscapes through your own eyes. Forget how things look in magazines. You're on your own.
4. Decide right away: are you in the woods just to take photographs? Are you only going to view nature seriously through a lens? Many a wilderness trip has been a slave to a camera.
5. Don't place the main subject in the exact center of the frame. Mount Whitney is not your family group standing in front of San Francisco's cable cars.
6. Don't put the horizon in the middle of the frame—instead put it lower or higher. The sense of space should be dominated by sky, by cloud, by ground—not divided in two by a line.
7. Try to frame your shots with trees, clouds, friends, mountains—or use a natural object in the foreground to establish depth. Look for dynamic perspective for the motion implicit in landscapes.
8. Never discard your film wrappers carelessly. Remember the old adage about leaving nothing behind but footprints.

The Agricultural Crisis as a Crisis of Culture

From *The Unsettling of America, Culture & Agriculture*,
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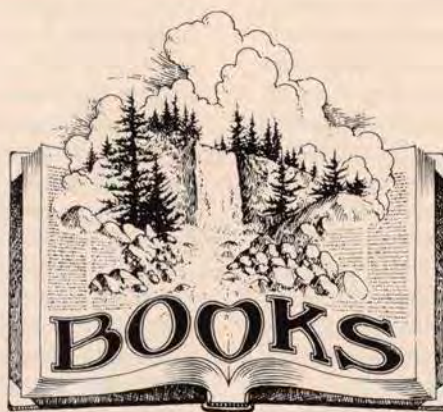
WENDELL BERRY

IN MY BOYHOOD, Henry County, Kentucky, was not just a rural county, as it still is—it was a *farming* county. The farms were generally small. They were farmed by families who lived not only upon them, but within and *from* them. These families grew gardens. They produced their own meat, milk, and eggs. The farms were highly diversified. The main money crop was tobacco. But the farmers also grew corn, wheat, barley, oats, hay, and sorghum. Cattle, hogs, and sheep were all characteristically raised on the same farms. There were small dairies, the milking more often than not done by hand. Those were the farm products that might have been considered major. But there were also minor products. In those days a farm family could easily market its surplus cream, eggs, old hens, and frying chickens. The power for field work was still furnished mainly by horses and mules. There was still a prevalent pride in workmanship, and thrift was still a forceful social ideal. The pride of most people was still in their homes, and their homes looked like it.

This was by no means a perfect society. Its people had often been violent and wasteful in their use of the land and of each other. Its present ills had already taken root in it. But I have spoken of its agricultural economy of a generation ago to suggest that there were also good qualities indigenous to it that might have been cultivated and built upon.

That they were not cultivated and built upon—that they were repudiated as the stuff of a hopelessly outmoded, unscientific way of life—is a tragic error on the part of the people themselves; and it is a work of monstrous ignorance and irresponsibility on the part of the experts and politicians, who have prescribed, encouraged, and applauded the disintegration of such farming communities all over the country.

In the decades since World War II the farms of Henry County have become increasingly mechanized. Though they are still comparatively diversified, they are less diversified than they used to be. The holdings are larger, the owners are fewer. The land is falling more and more into the hands of speculators and professional people from the cities, who—in spite of all the scientific agricultural miracles—still have much more money than farmers. Because of big technology and big economics,



there is more abandoned land in the county than ever before. Many of the better farms are visibly deteriorating, for want of manpower and time and money to maintain them properly. The number of part-time farmers and ex-farmers increases every year. Our harvests depend more and more on the labor of old people and young children. The farm people live less and less from their own produce,

more and more from what they buy. The best of them are more worried about money and more overworked than ever before. Among the people as a whole, the focus of interest has largely shifted from the household to the automobile; the ideals of workmanship and thrift have been replaced by the goals of leisure, comfort, and entertainment. For Henry County plays its full part in what Maurice Telleen calls "the world's first broad-based hedonism." The young people expect to leave as soon as they finish high school, and so they are without permanent interest; they are generally not interested in anything that cannot be reached by automobile on a good road. Few of the farmers' children will be able to afford to stay on the farm—perhaps even fewer will wish to do so, for it will cost too much, require too much work and worry, and it is hardly a fashionable ambition.

And nowhere now is there a market for minor produce: a bucket of cream, a hen, a few dozen eggs. One cannot sell milk from a few cows anymore; the law-required equipment is too expensive. Those markets were done away with in the name of sanitation—but, of course, to the enrichment of the large producers. We have always had to have "a good reason" for doing away with small operators, and in modern times the good reason has often been sanitation, for which there is apparently no small or cheap technology. Future historians will no doubt remark upon the inevitable association, with us, between sanitation and filthy lucre. And it is one of the miracles of science and hygiene that the germs that used to be in our food have been replaced by poisons.

In all this, few people whose testimony would have mattered have seen the connection between the "modernization" of agricultural techniques and the disintegration of the structures of urban life. What we have called agricultural progress has, in fact, involved the forcible displacement of millions of people.

*A culture is not a collection of relics or ornaments,
but a practical necessity,
and its corruption invokes calamity.*

I remember, during the fifties, the outrage with which our political leaders spoke of the forced removal of populations of villages in communist countries. I also remember that at the same time, in Washington, the word on farming was "Get big or get out"—a policy which is still in effect and which has taken an enormous toll. The only difference is that of method: the force used by the communists was military; with us, it has been economic—a "free market" in which the freest were the richest. The attitudes are equally cruel, and I believe that the results will prove equally damaging, not just to the concerns and values of the human spirit, but to the practicalities of survival.

And so those who could not get big have got out—not just in my community, but in farm communities all over the country. But as a social or economic goal, bigness is totalitarian; it establishes an inevitable tendency toward the *one* that will be the biggest of all. Many who got big to stay in are now being driven out by those who got bigger. The aim of bigness implies not one aim that is not socially and culturally destructive.

And this community-killing agriculture, with its monomania of bigness, is not primarily the work of farmers, though it has burgeoned on their weaknesses. It is the work of the institutions of agriculture: the university experts, the bureaucrats, and the "agribusinessmen," who have promoted so called efficiency at the expense of community (and of real efficiency), and quantity at the expense of quality.

In 1973, 1,000 Kentucky dairies went out of business. They were the victims of policies by which we imported dairy products to compete with our own and exported so much grain as to cause a drastic rise in the price of feed. And, typically, an agriculture expert at the University of Kentucky, Dr. John Nicolai, was optimistic about this failure of 1,000 dairymen, whose cause he is supposedly being paid—partly with *their* tax money—to serve. They were inefficient producers, he said, and they needed to be eliminated.

He did not say—indeed, there was no indication that he had ever considered—what might be the limits of his criterion or his logic. Did he propose to applaud this process year after year until "biggest" and "most efficient" become synonymous with "only"? Did these dairymen have any value not subsumed under the heading of "efficiency"? And who benefited by their failure? Assuming that the benefit reached beyond the more "efficient" (that is, the bigger) producers to lower the cost of milk to consumers, do we then have a formula by which to determine how many consumer dollars are equal to the livelihood of one dairyman? Or is *any* degree of "efficiency" worth *any* cost? I do not think that this expert knows the answers. I do not think that he is under any pressure—scholarly, professional, moral, or otherwise—to ask the questions. This sort of regardlessness is invariably justified by pointing to the enormous productivity of American agriculture. But any abundance, in any amount, is illusory if it does not safeguard its producers, and

in American agriculture it is now virtually the accepted rule that abundance will destroy its producers.

And along with the rest of society, the established agriculture has shifted its emphasis, and its interest, from quality to quantity, having failed to see that in the long run the two ideas are inseparable. To pursue quantity alone is to destroy those disciplines in the producer that are the only assurance of quantity. What is the effect on quantity of persuading a producer to produce an inferior product? What, in other words, is the relation of pride or craftsmanship to abundance? That is another question the "agribusinessmen" and their academic collaborators do not ask. They do not ask it because they are afraid of the answer: The preserver of abundance is excellence.

My point is that food is a cultural product; it cannot be produced by technology alone. Those agriculturists who think of the problems of food production solely in terms of technological innovation are oversimplifying both the practicalities of production and the network of meanings and values necessary to define, nurture, and preserve the practical motivations. That the discipline of agriculture should have been so divorced from other disciplines has its immediate cause in the compartmental structure of the universities, in which complementary, mutually sustaining and enriching disciplines are divided, according to "professions," into fragmented, one-eyed specialties. It is suggested, both by the organization of the universities and by the kind of thinking they foster, that farming should be the responsibility only of the college of agriculture, that law should be in the sole charge of the professors of law, that morality shall be taken care of by the philosophy department, reading by the English department, and so on. The same, of course, is true of government, which has become another way of institutionalizing the same fragmentation.

However, if we conceive of a culture as one body, which it is, we see that all of its disciplines are everybody's business, and that the proper university product is therefore not the whittled-down, isolated mentality of expertise, but a mind competent in all its concerns. To such a mind it would be clear that there are agricultural disciplines that have nothing to do with crop production, just as there are agricultural obligations that belong to people who are not farmers.

A culture is not a collection of relics or ornaments, but a practical necessity, and its corruption invokes calamity. A healthy culture is a communal order of memory, insight, value, work, conviviality, reverence, aspiration. It reveals the human necessities and the human limits. It clarifies our inescapable bonds to the earth and to each other. It assures that the necessary restraints are observed, that the necessary work is done, and that it is done well. A healthy *farm* culture can be based only upon familiarity and can grow only among a people soundly established upon the land; it nourishes and safeguards a human intelligence of the earth that no amount of technology can satisfactor-

*We can simplify our society—
that is, make ourselves free—
only by undertaking tasks
of great mental and cultural complexity.*

ily replace. The growth of such a culture was once a strong possibility in the farm communities of this country. We now have only the sad remnants of those communities. If we allow another generation to pass without doing what is necessary to enhance and embolden the possibility now perishing with them, we will lose it altogether. And then we will not only invoke calamity—we will deserve it.

Several years ago I argued with a friend of mine that we might make money by marketing some inferior lambs. My friend thought for a minute and then he said, "I'm in the business of producing *good* lambs, and I'm not going to sell any other kind." He also said that he kept the weeds out of his crops for the same reason that he washed his face. The human race has survived by that attitude. It can survive *only* by that attitude—though the farmers who have it have not been much acknowledged or much rewarded.

Such an attitude does not come from technique or technology. It does not come from education; in more than two decades in universities I have rarely seen it. It does not come even from principle. It comes from a passion that is culturally prepared—a passion for excellence and order that is handed down to young people by older people whom they respect and love. When we destroy the possibility of that succession, we will have gone far toward destroying ourselves.

It is by the measure of culture, rather than economics or technology, that we can begin to reckon the nature and the cost of the country-to-city migration that has left our farmland in the hands of only five percent of the people. From a cultural point of view, the movement from the farm to the city involves a radical simplification of mind and of character.

A competent farmer is his own boss. He has learned the disciplines necessary to go ahead on his own, as required by economic obligation, loyalty to his place, pride in his work. His workdays require the use of long experience and practiced judgment, for the failures of which he knows that he will suffer. His days do not begin and end by rule, but in response to necessity, interest, and obligation. They are not measured by the clock, but by the task and his endurance; they last as long as necessary or as long as he can work. He has mastered intricate formal patterns in ordering his work within the overlapping cycles—human and natural, controllable and uncontrollable—of the life of a farm.

Such a man, upon moving to the city and taking a job in industry, becomes a specialized subordinate, dependent upon the authority and judgment of other people. His disciplines are no longer implicit in his own experience, assumptions, and values, but are imposed on him from the outside. For a complex responsibility he has substituted a simple dutifulness. The strict competences of independence, the formal mastery, the complexities of attitude and know-how necessary to life on the farm, which have been in the making in the race of farmers since

before history, all are replaced by the knowledge of some fragmentary task that may be learned by rote in a little while.

Such a simplification of mind is easy. Given the pressure of economics and social fashion that has been behind it and the decline of values that has accompanied it, it may be said to have been gravity-powered. The reverse movement—a reverse movement *is* necessary, and some have undertaken it—is uphill, and it is difficult. It cannot be fully accomplished in a generation. It will probably require several generations—enough to establish complex local cultures with strong communal memories and traditions of care.

There seems to be a rule that we can simplify our minds and our culture only at the cost of an oppressive social and mechanical complexity. We can simplify our society—that is, make ourselves free—only by undertaking tasks of great mental and cultural complexity. Farming, the *best* farming, is a task that calls for this sort of complexity, both in the character of the farmer and in his culture. To simplify either one is to destroy it.

That is because the best farming requires a farmer—a husbandman, a nurturer—not a technician or a businessman. A technician or a businessman—given the necessary abilities and ambitions—can be made in a little while, by training. A good farmer, on the other hand, is a cultural product; he is made by a sort of training, certainly, in what his time imposes or demands, but he is also made by generations of experience. This essential experience can only be accumulated, tested, preserved, handed down in settled households, friendships, and communities that are deliberately and carefully native to their own ground, in which the past has prepared the present and the present safeguards the future.

The concentration of the farmland into larger and larger holdings and fewer and fewer hands—with the consequent increase of overhead, debt, and dependence on machines—is thus a matter of complex significance, and its agricultural significance cannot be disentangled from its cultural significance. It *forces* a profound revolution in the farmer's mind: once his investment in land and machines is large enough, he must forsake the values of husbandry and assume those of finance and technology. Thenceforth his thinking is not determined by agricultural responsibility, but by financial accountability and the capacities of his machines. Where his money comes from becomes less important to him than where it is going. He is caught up in the drift of energy and interest away from the land. Production begins to override maintenance. The economy of money has infiltrated and subverted the economies of nature, energy, and the human spirit. The man himself has become a consumptive machine.

For some time now ecologists have been documenting the principle that "you can't do one thing"—which means that in a natural system whatever affects one thing ultimately affects everything. Everything in the Creation is related to everything else

*A fundamental principle
must be the protection of the source:
the seed, the food species, the soil,
the breeding stock, the old and the wise,
the keepers of memories, the records.*

and dependent on everything else. The Creation is one; it is a uni-verse, a whole, the parts of which are all 'turned into one.'

A good agricultural system, which is to say a durable one, is similarly unified. In the 1940s, the great British agricultural scientist, Sir Albert Howard, published *An Agricultural Testament* and *The Soil and Health*, in which he argued against the influence in agriculture of "the laboratory hermit" who had substituted "that dreary principle [official organization] for the soul-shaking principle of that essential freedom needed by the seeker after truth." And Howard goes on to speak of the disruptiveness of official organization: "The natural universe, which is one, has been halved, quartered, fractioned. . . . Real organization always involves real responsibility: the official organization of research tries to retain power and avoid responsibility by sheltering behind groups of experts." Howard himself began as a laboratory hermit: "I could not take my own advice before offering it to other people." But he saw the significance of the "wide chasm between science in the laboratory and practice in the field." He devoted his life to bridging that chasm. His is the story of a fragmentary intelligence seeking both its own wholeness and that of the world. The aim that he finally realized in his books was to prepare the way "for treating the whole problem of health in soil, plant, animal, and man as one great subject." He unspecialized his vision, in other words, so as to see the necessary unity of the concerns of agriculture, as well as the convergence of these concerns with concerns of other kinds: biological, historical, medical, moral, and so on. He sought to establish agriculture upon the same unifying cycle that preserves health, fertility, and renewal in nature: the Wheel of Life (as he called it, borrowing the term from religion), by which "Death supersedes life and life rises again from what is dead and decayed."

It remains only to say what has often been said before—that the best human cultures also have this unity. Their concerns and enterprises are not fragmented, scattered out, at variance or in contention with one another. The people and their work and their country are members of each other and of the culture. If a culture is to hope for any considerable longevity, then the relationships within it must, in recognition of their interdependence, be predominantly cooperative rather than competitive. A people cannot live long at each other's expense or at the expense of their cultural birthright—just as an agriculture cannot live long at the expense of its soil or its work force, and just as in a natural system the competitions among species must be limited if all are to survive.

In any of these systems, cultural or agricultural or natural, when a species or group exceeds the principle of usufruct (literally, the "use of the fruit"), it puts itself in danger. Then, to use an economic metaphor, it is living off the principal rather than the interest. It has broken out of the system of nurture and has become exploitive; it is destroying what gave it life and what it

depends upon to live. In all of these systems a fundamental principle must be the protection of the source: the seed, the food species, the soil, the breeding stock, the old and the wise, the keepers of memories, the records.

And just as competition must be strictly curbed within these systems, it must be strictly curbed *among* them. An agriculture cannot survive long at the expense of the natural systems that support it and that provide it with models. A culture cannot survive long at the expense of either its agricultural or its natural sources. To live at the expense of the source of life is obviously suicidal. Though we have no choice but to live at the expense of other life, it is necessary to recognize the limits and dangers involved: past a certain point in a unified system, "other life" is our own.

The definitive relationships in the universe are thus not competitive but interdependent. And from a human point of view they are analogical. We can build one system only within another. We can have agriculture only within nature, and culture only within agriculture. At certain critical points these systems have to conform with one another or destroy one another.

Under the discipline of unity, knowledge and morality come together. No longer can we have that paltry "objective" knowledge so prized by the academic specialists. To know anything at all becomes a moral predicament. Aware that there is no such thing as a specialized—or even an entirely limitable or controllable—effect, one becomes responsible for judgments as well as facts. Aware that as an agricultural scientist he had "one great subject," Sir Albert Howard could no longer ask, What can I do with what I know? without at the same time asking, How can I be responsible for what I know?

And it is within unity that we see the hideousness and destructiveness of the fragmentary—the kind of mind, for example, that can introduce a production machine to increase "efficiency" without troubling about its effect on workers, on the product, and on consumers; that can accept and even applaud the "obsolescence" of the small farm and not hesitate over the possible political and cultural effects; that can recommend continuous tillage of huge monocultures, with massive use of chemicals and no animal manure or humus, and worry not at all about the deterioration or loss of soil. For cultural patterns of responsible cooperation we have substituted this moral ignorance, which is the etiquette of agricultural "progress." □

Wendell Berry has been called, by Ken Kesey, "the Sergeant York charging unnatural odds across our no-man's-land of ecology." Berry's books of poetry include Farming: A Hand Book, The Country of Marriage, and Clearing. He is also the author of three novels and four books of essays, including A Continuous Harmony and The Long-Legged House. He has taught at the University of Kentucky for many years; he and his family live and farm in Port Royal, Kentucky.



One of the endangered species on the Department of the Interior's list, the southern sea otter is having difficulty moving into its former range off the entire West Coast, because it is only protected in one small refuge near Monterey, California. Elsewhere, commercial shell fishermen and recreational abalone divers sometimes shoot and harrass otters because the animals also like abalone. Another real problem is that oil pollution and industrial waste in the ocean ruin the otters' fur, leading to the animals' chilling and death.

When the Water Baby was Born

EDITH THACHER HURD
Drawings by Margaret Owings

THE herring gull was the first to see him.
Then the old harbor seal saw him.
A big, slow pelican flying by,
looking for fish, saw him.
They all saw the new sea otter baby.
The sea otter baby lay still in the water
where he had only just been born.
He shivered in the coldness
of the new world.

THEN, quickly, something lifted him up
by his loose, baggy skin.
The baby sea otter felt the strong paws
of his mother lift him out of the
cold, green sea,
and put him down on her furry chest.

THE baby felt his mother's arms around him.
He felt her strong paws holding him.
He even felt her stiff whiskers
tickle him a little.

THE sun shone on the sea otter baby
and warmed him.
He blinked in the brightness
of the new world.



AS the baby lay still,
He felt his mother's tongue licking him,
licking his long wet fur,
licking his head, his nose and his whiskers,
licking his back and his stomach.
The baby sea otter's mother even licked
his stringy little tail and his two little flippers.
The baby felt his mother's sharp claws
combing his long fur so that
the sun could dry it.



HE was really a big baby.
He weighed three pounds
and was two feet long.
It had taken him nine months
to grow inside his mother
before he was born on this
bright day in December.

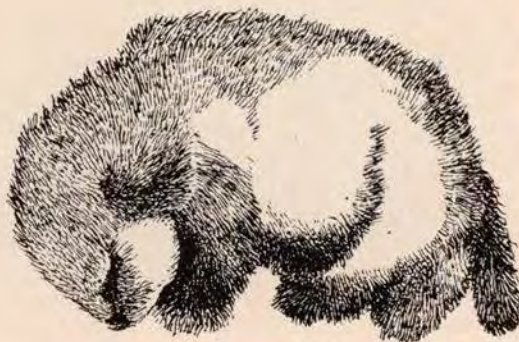
AND now he was hungry.
He made little squeaking noises.
He made almost a barking noise
to tell his mother
how hungry he was.

BUT his mother kept on licking
because when his fur was clean and dry,
and full of air,
it would keep him warm,
his little fur coat,
in the cold green sea.

THE baby could not swim yet
but when his fur was clean and dry
and full of air,
he could float.

When his mother dove for food:
crabs and clams and snails,
the baby would be safe.
He could float on the waves
or on the brown ribbons of kelp,
or seaweed,
that grew in the sea.

BUT now the baby could not wait any longer.
He was so very very hungry.
He squeaked his little squeak.
He made his little bark,
as loud as he could.
At last the strong paws picked him
up again and turned him around.
He nuzzled his mother and
drank her warm milk.



WHEN he had finished,
the baby felt himself lifted in the air.
He felt his mother's arms around him.
He felt her strong paws holding him.
He even felt her stiff whiskers tickling him,
as he lay on her furry chest.
The waves rocked him.
The sun warmed him.
The herring gull and
the pelican flew over him.
The old harbor seal swam around him.
But the new sea otter baby
was already fast asleep.

Edith Thacher Hurd's most recent children's book is Look for a Bird, Harper & Row, New York, 1977. Margaret Owings is president of Friends of the Sea Otter and editor of The Otter Raft.



DURING the last five days of July, the board of directors met informally on a ranch in northern New Mexico to consider the structure of the Sierra Club in some depth and to explore ways to improve Club programs and management procedures. A number of problems were probed, but no easy or immediate solutions were advanced. Much of the discussion centered on fund-raising efforts. There was concern that the Sierra Club does not have a capital base large enough to support its total program. Despite steadily increasing membership and the corresponding rise in dues collections, inflation continues to erode total dues income and thus hamper the Club's efforts to achieve its conservation goals. To free the Club from this inflation bind, the directors considered ways to increase fund-raising income by fifteen percent and explored how the board itself might encourage more effective fund-raising. They reached a consensus that the board needs to do more planning and to have more control over fund-raising. They appointed a committee consisting of Directors Phillip Berry and Theodore Snyder and Executive Director Michael McCloskey to consult with Sierra Club Foundation trustees on ways to improve the Club's fund-raising efforts.

Over the last five years, President Bill Futrell noted, the board has concentrated on establishing fiscal solvency and a more professional staff organization. In the meantime, he said, the volunteer structure of the Club expanded enormously. With hundreds of key activists scattered across the continent, it was impossible for the president to communicate directly on a continuing basis with any more than a few of those leaders. But, he told his fellow directors, he has succeeded in establishing regular twice-a-month communication with the ten regional vice presidents, each of whom chairs a Regional Conservation Committee and is thus in close contact with chapter leaders and other volunteers in each region. The rest of the board agreed that closer contact between national, regional and local leaders is necessary.

The Board of Directors and the Sierra Club Council will hold a meeting in San Francisco during the weekend of November 4 through 6, a so-called circus meeting. Workshop sessions and committee meetings, most of them on Friday afternoon and evening, as well as the regular sessions of the board and council are all open to members. Members who are able to attend should try to do so. These meetings afford an inside look at how the Club operates and give an opportunity to talk



ROBERT A. IRWIN

with Club activists from all parts of the country and Canada.

The board, by the way, has a new member. Denny Shaffer, a long-time activist from the Joseph LeConte Chapter (North and South Carolina) and currently chairman of the National Membership Committee, has been appointed to fill a vacancy on the board. He also serves as his chapter's vice chairman and as fourth officer of the Sierra Club Council. The vacancy was created by the resignation of former president Brant Calkin, who has accepted a post as the Club's Southwest Representative. Club by-laws bar staff members from serving on the board of directors.

Chapter and Group News

The Great Lakes Chapter's *Lake and Prairie* newsletter reports two environmental victories for two of that chapter's groups. The Heart of Illinois Group, centered in Peoria, successfully campaigned to defeat a bill that would have authorized the state to put one of its parks on the auction block. The bill concerned the Rock Island Trail State Park, a proposed hiking and bicycling trail that had been donated to the state. The bill was sponsored by a legislator whose property lies on either side of the trail's old railroad bed. The group charged conflict of interest and also opposed the bill as a dangerous precedent for opening state parks to a land grab—especially in a state that ranks fifth in population and only forty-seventh in parkland. The bill was killed in committee by an eight-to-four vote.

The chapter's River Bend Group—in the Quad Cities area straddling the Mississippi—also won a battle. The city of Davenport, Iowa, had planned to build a barge terminal on some valuable wetland, one of the few natural areas close to the four-city metropolitan area and one used

by inner-city people for fishing, bird-watching and hiking. The River Bend Group, along with other environmentalists, put pressure on Davenport officials by attending city council sessions, writing letters to newspapers, and calling on individual councilmen. Davenport chose to select a non-wetlands site.

* * *

A recent issue of the *Oklahoma Sierran* reports on a remarkably forward-looking conservation effort by Oklahoma's governor, David L. Goren, and the state's Natural Heritage Program. Marvin Baker, a Club regional vice-president and member of the Oklahoma chapter, described the program as one "of protecting the natural treasures of our land before development, greed, or ignorance destroys them." The program, worked out by the Goren administration and the Nature Conservancy, is administered by the state's Tourism and Recreation Department. Research and an inventory of areas are being done by the Oklahoma Biological Survey. Baker was appointed to the program's twenty-five-member council, which reviews the survey's progress, recommends new study sites and comments on future policies and strategies. The chapter is intensely involved, especially in the inventory process. Members are seeking out potential sites—from less than an acre to many square miles in area—to be set aside for their unique beauty, geology, flora and wildlife. It is a refreshing switch for Club members to be able to work for, instead of against, a state's program. □



News

■ Is Carter Going Nuclear?

In spite of the Carter Administration's opposition to the breeder reactor and plutonium recycling, there is a growing concern among environmentalists that a strongly pro-nuclear policy is emerging. Observers believe this is chiefly a reflection of the views of presidential energy advisers James Schlesinger and John O'Leary.

In his message to Congress on April 20, President Carter spoke of nuclear power as a "last resort" and of the need to "minimize the shift toward nuclear power." He also stressed the importance of reforming nuclear licensing procedures after a "thorough review."

With three vacancies on the critical Nuclear Regulatory Commission, environmentalists felt certain that the Administration would appoint persons who would begin to take a harder look at nuclear licensing decisions. Not so. Instead, Carter has appointed one possibly "neutral" commissioner and two proponents of nuclear energy.

The most neutral is Peter Bradford, a lawyer formerly with the Maine Public Utilities Commission. He once worked for Ralph Nader on a study of the Federal Trade Commission, long before Nader's involvement with nuclear power. Named as NRC Chairman is Joseph M. Hendrie, a nuclear engineer from the Brookhaven National Laboratory, once licensing director of the NRC's predecessor, the Atomic Energy Commission, under Schlesinger. The last appointment is Kent F. Hansen, a professor of nuclear engineering at the Massachusetts Institute of Technology. At his confirmation hearings, Hansen declared his support of the breeder reactor.

■ Australia Rescinds Uranium Ban

Australia lifted a four-year-old ban on uranium mining on August 26, the first step toward becoming the world's leading supplier of nuclear fuel. The decision was denounced by opponents of nuclear power, an informal coalition of environmentalists and labor unionists, who had worked hard to establish the ban on uranium mining. A Labor Party leader vowed revenge against the government policy in the next election. Tom Uren, Labor deputy leader, warned the government, "Don't expect any mercy from the next Labor government." Prime Minister Malcolm Fraser explained to Parliament that his decision was a defense against "dangers of international tension, friction and instability. . . if energy-rich countries like Australia deny resources to those less well-endowed."

■ Water Policy Review Under Fire

The Carter Administration's proposed changes in national water policy met strong opposition from water development interests at regional hearings held in July and August. The Administration's reforms are designed to give greater consideration to water conservation, nonstructural flood-damage control, minimum stream-flow protection, water quality maintenance, groundwater conservation and the environmental and social impacts of federal water projects.

In the West, where most federal land and federal water projects are located, congressional delegations, state politicians and water user groups were outraged at the policy review. Most speakers at the hearings feared that the federal government was trying to usurp state authority. Easterners were more sympathetic to the proposed changes, although they expressed concern that not enough attention was given to water quality issues and urban water problems.

At the hearings, the Sierra Club and other environmental organizations documented problems with existing federal water policy and urged adoption of many of the Administration reforms. Environmentalists hope that by changing the ground rules for federal water-development programs, environmentally disastrous projects would not get past the planning process.

■ Minnesotans Split Over BWCA Wilderness

A recently conducted poll refutes the argument that wilderness proponents are an elite fringe group. The poll, conducted this summer, shows that residents of Minnesota are evenly split over whether logging, snow mobiling and motorboating should be permitted in a sizeable portion of the Boundary Waters Canoe Area (BWCA) in northeastern Minnesota. The poll was conducted by the Minneapolis Tribune, which reported the following results: "Altogether, 49 percent of the 600 people interviewed favor having the BWCA as a total wilderness area and 46 percent prefer a multiple use and wilderness combination. Both sides in the survey feel strongly about their position, but the wilderness-only advocates to a much greater extent than the multiple-use fans." Supporters of total wilderness ranged widely in age, education and political affiliation.

■ **Alcan Route Selected for Alaskan Gas**

President Carter and Premier Trudeau have agreed that the Alaskan-gas pipeline will follow the 4,800-mile Alcan highway route from Alaska to the lower 48. Supported (if reluctantly) by environmentalists, the Alcan route follows existing transportation corridors. It follows the Alaska oil pipeline from Prudhoe Bay to Fairbanks, where it swings into the Yukon Territory along the Alaskan Highway. It then heads south through British Columbia and Alberta to the United States. At Calgary, a western branch will head for California, while the main pipeline continues south and east, eventually terminating in Dwight, Illinois.

Trudeau stipulated that there must be "appropriate conditions and safeguards" for the pipeline and expressed concern about possible social and environmental costs to small communities along its route.

The pipeline will eventually deliver 3.5 billion cubic feet of natural gas per day. To be completed by 1982 or 1983, the pipeline is expected to cost approximately \$14 billion. The official estimate is \$9.6 billion.

Congress has sixty days (from September 12) to accept or reject the proposal.

■ **The Wild Skagit vs. Nuclear Power**

Department of Agriculture officials are currently deciding whether a proposed pair of nuclear power plants would have significant adverse effects on the Skagit River of northwestern Washington. President Carter has endorsed inclusion of the river in the National Wild and Scenic Rivers System.

The decision was forced on the Agriculture Department when a local private utility began licensing proceedings for twin nuclear power plants on a hill near the river. The utility went ahead with its plan despite the Forest Service's mandate to study the river for possible designation as a Wild and Scenic River.

Several months ago the Nuclear Regulatory Commission completed a study claiming that the plants would cause no significant adverse effects. Conservation groups disagree, pointing to the proposed addition of 3,700 feet of riprap along the river bank, the visual impact of the 520-foot cooling towers, the withdrawal of river water for cooling, and the effects of plant construction and operation on the river's salmon and trout.

The Wild and Scenic Rivers Act leaves the final decision to the Department of Agriculture; conservationists have submitted their arguments to Assistant Agriculture Secretary Rupert Cutler, who is the official expected to have the final say.

■ **Back to The Family Farm?**

The family farm may return to California's agriculturally rich valleys, particularly the San Joaquin Valley's Westlands Water District, as a result of a 1902 law. The Reclamation Act of 1902 provided that cheap irrigation water would be available for family farms from dams built by the federal government. Farm tracts were limited to 160 acres — 320 acres for a couple. Since then, the area has grown wealthy. Land that once sold for \$500 an acre is now worth thousands. The law that limited the farms to 160 acres has been ignored until now. Large corporations own huge spreads, evading the letter of the law by speciously parceling the "paper" ownership of the land.

Now Interior Secretary Andrus, pressed by Governor Jerry Brown, has indicated that he will enforce the law. The large corporations will be forced to sell their lands to people who win the chance to buy it in a lottery. The lands can be sold only at pre-irrigation prices — a maximum of \$750 an acre — and owners will be required to live within fifty miles of their property. Controversy still rages about this move. Agribusiness spokesmen say that a 160-acre farm cannot be operated economically — the requisite machinery costs too much. Populists claim that a 160-acre farm, with cheap federally provided irrigation, can make a profit. But will the poor farmer benefit? Buying a 160-acre tract could cost \$120,000, more money than many farmers and farm workers who lobbied for the new regulations can afford. The New York Times opined that the Westlands reorganization would primarily benefit already prosperous farmers, at the expense of the corporations. Or is the whole shake-up really a roundabout attempt to change the 1902 law?

■ **Plans to Mine Grand Canyon Dropped**

Exxon has abandoned its plans to mine uranium within the Lake Mead National Recreational Area of the Grand Canyon. The energy company abandoned the leases because exploration proved unsuccessful. The Sierra Club had charged that the leases violated the Wilderness Act, the National Environmental Policy Act, and the act creating the recreational area. As a result, the Interior Department suspended the leases in June 1976 and ordered the National Park Service to prepare an environmental assessment of the proposed mining activities before reissuing the leases. Exxon's decision came on July 23, just before the Park Service had planned public release of the document it had prepared.

RARE II: The Administration's View

M. RUPERT CUTLER

AFTER looking at wilderness from both sides now—from the perspective of assistant executive director of The Wilderness Society, and from my present position as Assistant Secretary of Agriculture responsible for the Forest Service and other agencies—I'm convinced that the wilderness issues that face us all can be resolved by reasonable people working together. It's like entering a spectacular canyon from different trails—the initial perspective may be different, but a common landscape emerges as we move toward the heart of the canyon.

Everywhere I look, I see challenges—from industry, from loggers, from environmentalists. Perhaps most crucial of all, challenges from Congress, in major legislation such as the National Forest Management Act and the Forest and Rangeland Renewable Resources Planning Act, which require long-range land-management planning.

But the Forest Service land-management planning process has been delayed, and orderly allocation of land uses has bogged down. At the heart of these delays are conflicts over uses of the National Forests. Sooner or later, the conflicting demands must be reconciled. So why not do it together? The present piecemeal system of resolving conflicts by appeal and lawsuit is time-consuming, expensive and unsatisfactory.

Wilderness is the original natural resource, yet it is one of the most recent to come under special management. Since the first wilderness was set aside in the Gila National Forest in 1924, conflict over the use of federal lands has become acute. Beginning in the 1960s, wilderness and many other public land allocations have become increasingly entangled in controversy and litigation. The issues themselves have become obscured, and the concept of a national system for any resource has become, at best, hazy.

The wilderness questions that still confront us are the most basic ones:

- How much wilderness do we need now and for future generations?
- What should be the National Forest share of this total?
- How should wilderness be distributed geographically?
- What about eastern forests and national grasslands—do they require special judgments?
- What criteria should be used for wilderness designations?
- What are the trade-offs when we designate land as wilderness, and how should we deal with these trade-offs?
- How do we balance diverse and often diametrically opposed public views on wilderness?

Illustrations by Bob MacDonald



To help resolve these issues with the full involvement of all "publics," I initiated what has become known as RARE II. It is a new Roadless Area Review and Evaluation of the National Forest system. The objective is to locate roadless and undeveloped areas and determine which ones deserve to be designated as wilderness, which would be better put to other uses, and which may require further study.

RARE II can help "round out" the National Forest portion of the National Wilderness Preservation System. We hope to complete RARE II by the end of 1978.

President Carter's commitment to identify promptly areas to be added to the Wilderness System will allow the Forest Service to move ahead with many aspects of multiple-use management. In his environmental message to Congress, the President said "When the Congress passed the Wilderness Act in 1964, it established a landmark of American conservation policy. The National Wilderness Preservation System created by this act must be expanded promptly, before the most deserving of federal lands are opened to other uses and lost to wilderness forever...."

RARE II is a process to identify the key values of roadless and undeveloped areas—for wilderness, water, forage, wildlife, timber, developed recreation or any other use or combination of uses. I ask the Sierra Club and all others interested in the National Forests to help identify these key values, then to suggest ways we can proceed to get the appropriate areas designated wilderness. Once the roadless area question is resolved, we can use our energies to solve some of the problems of wilderness. We need to work on management and user conflicts within the wilderness, and on multiple-use management opportunities on non-wilderness lands in order to protect back-country recreational opportunities while providing for other extractive uses as well.

As I've talked to groups across the country—whether environmentalists, industry representatives or the residents of forest communities—one question recurs: "Why RARE II? What happened to the original RARE, completed in 1973?"

The original RARE resulted in an inventory of approximately 56 million acres, mainly in the West, with wilderness potential. Of these, 12.3 million were selected for wilderness study. However, some areas in the West were overlooked. In addition, the inventory did not direct attention to eastern national forests or the national grasslands. Also, the 1973 inventory used very pure standards of wilderness. Today there are indications that Congress may be willing to accept different and more flexible criteria. In the past four years, for example, Congress has shown

a particular interest in wilderness designation for eastern land recovered from such past uses as farming, logging or mining.

Many people feel that the "studied" approach is too long and costly. In the thirteen years since the Wilderness Act, we've had resource inventories and assessments of trade-offs. We've had wilderness studies and land-management plans. We've had public involvement, environmental statements and interagency reviews. The result has been designation of 12.6 million acres of National Forest wilderness, or eighty-seven percent of the entire system of 14.4 million acres. There are now pending before Congress seventeen proposals calling for the immediate addition of 3.2 million acres of National Forest wilderness.

This is still a long way from the wilderness goal of the Renewable Resource Program sent to Congress by President Ford on March 2, 1976. The program suggests a total of twenty-five to thirty million acres of National Forest wilderness lands by the year 2000. Must we go through the same painful, drawn-out process that resulted in the present Wilderness System? I sincerely hope not.

In helping round out the Wilderness System, the Forest Service is guided by the following principles, which I've set forth before Congress.

1. Maintain an enduring system of high-quality wilderness.
2. Perpetuate the wilderness resources.
3. Consistent with these first two principles, provide opportunities for public use, enjoyment and understanding of wilderness and the unique experiences that require a wilderness setting.
4. Maintain plants and animals indigenous to the area.
5. Accommodate and administer those "non-conforming, but accepted" uses provided for in the Act in a way that minimizes their impacts.
6. Maintain stable watersheds.
7. Address protection needs for endangered species and their habitats.

Initial Forest Service Inventory

Many people have asked how we arrived at the initial list of roadless and undeveloped areas—before public involvement in the process.

The basic list was developed by Forest Service resource specialists who work with the land daily. Each National Forest developed an initial roadless area list that included:

- All existing wilderness and primitive areas
- The original roadless area inventory (RARE I)
- Any areas missed in the original inventory that contain 5,000 acres or more; or that contain less than 5,000 acres but



because of physiography and/or vegetation are manageable in their natural conditions; or that are self-contained ecosystems, such as islands. These missed areas were not added if statutory rights or contractual agreements existed that would preclude future management of the areas in the natural condition—for instance, if there were cost-share road agreements.

- Qualified areas contiguous to existing wilderness, primitive areas, or Administration-proposed wildernesses, including those in parks and refuges.

- Areas identified since RARE I as roadless through land-management planning.

- As a separate group, areas designated by Congress for wilderness study, by Administration proposals pending before Congress, and by other pending legislative proposals endorsed by the Administration.

Areas allocated for nonwilderness use in land-management plans for which final environmental statements have been filed were not on the list, if the areas were not included in Administration-endorsed pending wilderness legislation.

I asked the Forest Service to “hang loose” on the initial list and to consider every area over which there is public concern. This includes undeveloped areas for which local people feel affection. I also directed the service to consider adding controversial roadless areas, even if a final EIS has been filed which would allocate the areas to nonwilderness uses.

The Public Inventory

More than 200 public workshops were held throughout the country during July and August. The workshops had two purposes: to have the public suggest possible additions to—or deletions from—the present roadless and undeveloped area inventory, and to have the public evaluate or suggest national criteria that the Forest Service could use to evaluate areas for wilderness potential. The agency also requested written comments by September 15.

In some of the workshops, local people worried that the entire inventory might be designated instant wilderness—as much as thirty to forty percent of a forest. This will not happen. We’ve been as liberal as possible in drawing up the initial inventory, but we know that many of the areas would not best serve as wilderness.

Some people have asked, “If Congress set criteria for wilderness in the 1964 Act, why are you asking for criteria again?” First of all, Congress set criteria for *an area* of wilderness and did not set criteria for a National Wilderness Preservation System as a whole. The make-up of Congress has changed. Con-

gress has indicated that it is now willing to use somewhat different criteria for classification, particularly in the East. Some people have suggested that the Forest Service has been too “pure” in wilderness considerations. And, finally, the new Administration has declared a new dedication to resolving wilderness issues.

These inventories will help develop the Administration’s wilderness proposals that will come before Congress and will provide new information for the 1980 update of the national assessment of forests and rangelands required by the Forest and Rangeland Renewable Resources Planning Act of 1974.

The Evaluation

During the public workshops, the question most often asked was “How will the criteria and inventory be used?” In the final analysis, this question will be answered by Congress, the only body that can actually designate wilderness. However, I can tell you how we envision the process, and what we in the Administration hope for.

First, the criteria will be used to identify what should be important in a quality National Wilderness Preservation System. Then an evaluation of the inventory will, we hope, result in some sort of package to present to Congress. We want to speed up the process. We want to telescope some of the steps so that omnibus-type legislation can be proposed, possibly on a state-by-state basis, to settle permanently the roadless area controversy and allow us to go on to other matters in managing our National Forests.

But perhaps the most desired result of a successful RARE II would be to ensure that the most appropriate lands are placed in the system.

The success of RARE II depends on the attitudes and actions of all those interested in the public lands, whether for wilderness or other resource uses. Lawsuits could kill RARE II by entangling and delaying the process.

Even if RARE II is successful, there are still a number of wilderness issues facing us. Two of the greatest involve user conflicts and management of wilderness. Obviously, RARE II is not a panacea for all wilderness controversy, but it would solve one of the first issues to be faced before we can truly address the others—the classification of areas into a comprehensive, high-quality National Wilderness Preservation System. □

During the next few months, SIERRA will present more articles on RARE II. In the next issue, Charles Clusen of the Sierra Club’s Washington office will respond to Dr. Cutler’s presentation of the Administration’s view.—Editor



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