

HENRY E. TIMBY: *Trail to Mt. Cook, New Zealand*

# *Sierra Club Bulletin*

MARCH 1967

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Outings to New Zealand and Hawaii

## NEWS OF CONSERVATION AND THE CLUB

### Club election results

Richard M. Leonard, Paul Brooks, Richard C. Sill, Patrick D. Goldsworthy, and Martin Litton were elected to three-year terms as members of the Board of Directors in the Sierra Club's April 8 elections. Leonard, Brooks, and Litton are incumbent Directors who won reelection; Sill and Goldsworthy are newcomers to the Board.

One-third of the club's 15-man Board is elected at each annual election. Directors continuing in office are Ansel Adams, Lewis F. Clark, Nathan C. Clark, Frederick Eissler, George Marshall, Charlotte E. Mauk, John Oakes, Eliot Porter, William Siri, and Edgar Wayburn.

In other election results, a proposed Bylaw amendment fell short of the required two-thirds majority and the Board's position on Diablo Canyon was upheld.

The vote for the amendment, which would have made anyone holding the position of executive director an *ex officio* member of the Board, was 9,059; the vote against the amendment was 6,994.

Nearly 69 percent of the members who voted on the issue approved of the Board's actions on Diablo Canyon, while a little more than 31 percent disapproved. The vote was 11,341 for approval and 5,225 for disapproval.

The first meeting of the newly constituted Board of Directors will be held on May 6. One of the first orders of business will be the selection of club officers for the coming year.

### Dams in Grand Canyon still serious threat

Secretary of the Interior Stewart Udall announced in February that the Administration had dropped both of the bitterly contested Grand Canyon dams from its Lower Colorado River Project plans. (Previously, it had recommended deferral of Bridge-Hualapai dam—which it still recommends—but supported the immediate authorization of Marble Canyon dam.) The Administration now proposes that the government purchase pumping power from a consortium of public and private utilities to pump water from Lake Havasu to the Phoenix and Tucson areas, and that the Marble Gorge area (including Marble Canyon

damsite) be included within an enlarged Grand Canyon National Park. This shift in the Administration's position was welcome, but press accounts hailing a great and conclusive victory for conservationists were premature. The Administration proposes but Congress disposes, and it was a foregone conclusion that despite the Administration's shift, bills authorizing one or both dams would be introduced and vigorously pushed.

Executive Director David Brower told a press conference immediately after the Udall announcement that the Canyon was still in serious danger. A Sierra Club advertisement conveyed the same warning shortly thereafter. But a widespread assumption that the danger is over persists, and this assumption constitutes a serious new threat to the Canyon.

### More dam bills

Bills now before Congress that provide for dams in Grand Canyon include:

H.R. 722 by Craig Hosmer (Calif.), a two-dam bill similar to the one that was approved by the Interior Committee last year but was not brought to the floor of the House for a vote.

H.R. 9 by Morris Udall (Ariz.), which would authorize Bridge-Hualapai dam.

H.R. 30 by Wayne Aspinall (Colo.), a bill similar to Udall's H.R. 9.

H.R. 6132 by Aspinall, which seeks in a curious way to undermine conservationist objections that Bridge-Hualapai reservoir would invade Grand Canyon National Monument and Grand Canyon National Park; the bill would abolish the monument entirely and amputate from the park all territory west of the head of the proposed Hualapai reservoir!

The Subcommittee on Irrigation and Reclamation of the House Interior Committee held hearings in March on these and similar bills. The club was represented by Executive Director David Brower, Southwest Representative Jeffrey Ingram, Northwest Representative Brock Evans, Gary Soucie of the New York Office, and Editor Hugh Nash. Laurence Moss and Alan Carlin of the Angeles Chapter also testified as individuals, as did Carl Chafin of the Grand Canyon Chapter and Max Linn of the Rio Grande Chapter.

Jeff Ingram pointed out that passage of legislation authorizing dams in Grand Canyon would subvert the proposed Na-

tional Water Commission by committing the government to obsolete financing arrangements for water projects before the Commission could determine whether such financing was in the national interest. He also argued that population projections that would be ruinous if they materialized should not be used as the basis for project planning; instead, efforts should be made to insure that ruinous population growth does not occur.

### Regional opposition

Brock Evans submitted a statement expressing the grave reservations felt in the Northwest about plans to augment the supply of water in the Colorado Basin by importing water from the Columbia River. (Opposition by Northwesterners was credited by some with being as important a factor as conservationist opposition in the failure of Colorado River legislation to pass in the last session of Congress.)

Gary Soucie reported the depth of feeling against Grand Canyon dams in the East, which regards the Canyon as a national treasure belonging to Easterners as much as it belongs to Southwesterners.

Hugh Nash called attention to obscure reports by National Park Service spokesmen concerning damage that would be done to scenic and recreational values by dams in Grand Canyon. (The Park Service has not openly opposed the ambitions of its powerful Interior Department sister agency, the dambuilding Bureau of Reclamation.)

Nuclear engineer Larry Moss and economist Alan Carlin presented economic and technical testimony showing that the dams are not economically justified, that steam plants can supply power more cheaply, and that the dams would have to be subsidized by the U.S. Treasury.

### Sedimentation data

David Brower, drawing upon scattered and fragmentary data from various sources, warned that (1) the dams in Grand Canyon would be filled with silt in from 60 to 160 years—or less if floods of unusual magnitude multiplied the Colorado River's carrying capacity; (2) the dams would operate at reduced capacity as silting-in progressed, and would probably become inoperative before they had been paid for; (3) the Grand Canyon dams, together with other

dams in the Lower Colorado Basin, would, when silted in, waste more than half the Colorado's flow to evaporation and irrecoverable bank storage.

"The Bureau of Reclamation," Brower said, "has postulated a revenue-producing operation of dams in Grand Canyon that in the course of a century will, they pray, pay for the fraction of their projects that the nation as a whole doesn't have to pay for first. The Bureau counts on that century of operation, and puts all the money from the operation in its cash registers and sounds very cheery about it, without having the slightest assurance that the century will ever leave their dams alone and unsilted up."

### Hyper-Hualapai

In a melodramatic conclusion to the hearings, Floyd Goss, chief electrical engineer of the Los Angeles Department of Water and Power, proposed a pumped storage plant at the Hualapai site that (he said) would triple its capacity and cost the government less because of participation by private investors. Pro-dam members of the committee seized upon this as a great idea, but Goss confessed that his hastily-contrived plan had not been submitted to the Bureau of Reclamation for study of its feasibility and that potential investors had not been approached to determine their willingness to participate. Larry Moss noted that the estimated cost of the Goss project, \$146 per kilowatt of capacity, is higher than that of any other large pumped storage plant, existing or proposed, in the country. Another "detail" that Goss admitted he hadn't solved is the placement of the afterbay dam. (Water released through Bridge-Hualapai dam's turbines would be recaptured by an afterbay dam downstream and pumped back up into the main reservoir to be released through the turbines again.) When filled, Lake Mead rises to within three miles of Bridge-Hualapai dam-site. An afterbay pool above Mead's highwater mark would almost certainly be too small, while an afterbay dam further downstream, in Lake Mead's reservoir area, would seem to be impractical. The Goss plan probably leaves too many questions unstudied and unanswered to pose an immediate threat, but it is an attempt to make development of the Bridge-Hualapai site appear more justifiable economically and it will bear watching.

### Approval once again?

Pro-dam forces, shaken by withdrawal of Administration support, weren't united behind a single bill as they had been last year. Their arguments were old and tired, while anti-dam testimony was more damning than ever. Nevertheless, a predominantly reclamation-minded House Interior Committee is very likely to approve once again legislation with at least one Grand Canyon dam in it.

### Senate hearings next

Senate hearings have not been held, but are scheduled for May 1-5. Senator Henry Jackson of Washington has introduced S. 1013 (the Administration's no-dam bill) and Senator Thomas Kuchel of California has introduced S. 861 (providing for Bridge-Hualapai dam).

### The FPC threat

Meanwhile, back in the Grand Canyon State, Arizona lawmakers passed legislation authorizing a go-it-alone Central Arizona Project in the event that a federal project is not passed by Congress. The Federal Power Commission is already considering an application by the Arizona Power Authority for a license to build a non-federal dam in Marble Gorge. As for the Bridge-Hualapai site, both the city of Los Angeles and the Hualapai Tribe are interested in building a dam there under FPC license if a federal dam isn't built. The club filed a petition for permission to intervene in the FPC hearings on the Marble application late last year, and later, filed an 80-page amended petition accompanied by 15 color photographs of the Marble Gorge area. On April 3, the club filed an alternative petition to reopen proceedings. Whether the club will be allowed to take part in the FPC proceedings is not yet known.

### Two friends in need

The threat of FPC-licensed dams could be extinguished by a Congressional moratorium on FPC licensing of dams in Grand Canyon. (A similar moratorium expired on December 31, 1966). Bills to remove the Colorado River in Grand Canyon from FPC jurisdiction have been introduced by two of the staunchest conservationists in Congress: Representatives John Saylor of Pennsylvania (H.R. 1272) and Richard Ottinger of New York (H.R. 2128).

Mr. Saylor, ranking minority member of the House Interior Committee who has been a tower of strength in countless

conservation battles, has also introduced H.R. 1305. This bill would enlarge Grand Canyon National Park to include both the Marble Canyon and the Bridge-Hualapai damsites. Nothing less than this can insure permanent protection of the Canyon.

The Administration's anti-dam position should lull no one into a sense of false security. Unless conservationists recognize that the threat to Grand Canyon is undiminished, and act accordingly, determined pro-dam forces could prevail over conservationists and the Administration. A sustained letter writing campaign could convince Congress that the Canyon's defenders are just as determined as those who still insist upon damming it.

### Bill submitted for a North Cascades National Park

The long-awaited bill for a national park in the North Cascades of Washington—one of the club's top-priority objectives—was submitted to Congress by the Administration in March. In general, the bill follows the recommendations of the North Cascades Study Team (Feb. 1966 SCB). However, the Granite Creek drainage was left out of the latest proposal and less of the Cascade River valley on the west was included. A major change was the insertion of a recreation area between the Picket Range unit of the park and the Eldorado Peaks-Stehekin unit. The recreation area, which would run along the route of the North Cross-State highway and includes Ross, Diablo, and Gorge dams, extends nine miles further downstream along the Skagit River.

### Kennecott spells calamity for Cascades wilderness

The Kennecott Copper Corp. is pushing forward with plans for an open-pit mine one mile east of Image Lake on Miner's Ridge, in the scenic heart of Glacier Peak Wilderness Area in the North Cascades. The pit would be 2,000 feet across and 500 feet deep; how and where tailings would be disposed of is uncertain.

A company spokesman, with evident satisfaction, states that the fate of some of America's finest alpine wilderness will

*(continued on page 22)*



# Compromise the Grand Canyon?

Conservation forces in America won an important skirmish in the battle for Grand Canyon when they stirred up enough opposition to block passage of Colorado River legislation in the last session of Congress. And although Interior Secretary Udall denied that subsequent withdrawal of Administration support for Marble Canyon dam was "a victory for conservationists," most of the nation's news media seem to disagree.

Now that conservationists have won a few skirmishes—no more than that, for the battle could still be lost—ardent advocates of "cash register" dams in Grand Canyon are taunting us to compromise. "If we'll settle for just one dam," they say, "and if we'll make it just a low dam, and if we'll agree to extend Grand Canyon National Park upstream, are you people so inflexible that you won't accept this compromise?"

When dam advocates felt they had the upper hand, their eagerness to compromise was not conspicuous. But let that pass. Their question deserves serious consideration. Is the club indeed too uncompromising? Might it accomplish more if it were less unyielding?

Dams aren't needed to finance the Colorado River Basin Project or to provide pumping power for it. Even the diehard Bureau of Reclamation admits that now. On the other hand, our only essential concern with the project is to prevent the damming of Grand Canyon. In the name of compromise, pro-dam forces are demanding that we yield on an issue that is essential to us but non-essential to them. The moral is plain: when you consider compromise, don't let the other fellow decide for you what the compromisable issues are.

Final decisions may require compromise of details, but not of principles. We would not expect Arizona to compromise away its water, nor should Arizona expect Grand Canyon and the park principle to be compromised. There is room for compromise on the technique and financing of water development, but not on the integrity of the Grand Canyon.

The club does not decide public policy. Our duty is to determine our own convictions and to commend them to the policy makers, urging that they not compromise on principles. If we compromise to start with, the final result is all too likely to fall between a weak position and a bad one. Moral: don't confuse the roles of policy maker and advocate, and don't deprive the policy maker of a viewpoint he should be cognizant of.

It is generally conceded, we believe, that two things are true of the Sierra Club: that it is among the most militant of conservation groups, and that it is one of the most effective of conservation groups. This would seem to belie assertions that the club would become a more effective force for conservation if it adopted a less militant posture. At a time when the club has come to public attention primarily because of its uncompromising stand on Grand Canyon, redwoods, and the dispute with the Internal Revenue Service, membership has grown very rapidly and our public image appears to be good.

Compromise the Grand Canyon? We wouldn't if we could, and we can't.

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THE SIERRA CLUB,\* founded in 1892, has devoted itself to the study and protection of national scenic resources, particularly those of mountain regions. Participation is invited in the program to enjoy and preserve wilderness, wildlife, forests, and streams.

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# Crisis In Conservation

by Thomas H. Kuchel

United States Senator from California

IT WAS LITTLE MORE than a century ago when waves of Americans sweeping across the country reached the Pacific Ocean and were turned back upon themselves. During the westward expansion, our nation had few people and an "inexhaustible" supply of land and natural resources. But, as oceans fenced in our territorial growth and population made increasing demands upon our dwindling resources, it has become clear that immense value must be placed on the remaining uncluttered, unspoiled and unique parts of our nation. One quarter of a billion humans are added to the face of this earth every four years, and we must bear the heavy burden of minimizing the destructive force of our rapid population growth.

Facing this burden, Congress and the States have acted in the public interest—the interest of today's public as well as posterity—in establishing vast new park and recreation areas in the past few years.

However, the conservation program of the United States is facing a crisis. The crisis is the lack of money.

The Land and Water Conservation Fund was created two years ago to

"assist in preserving, developing, and assuring accessibility to all citizens of the United States of America of present and future generations and visitors . . . outdoor recreation resources . . . and to strengthen the health and vitality of the citizens of the United States by (1) providing funds for and authorizing Federal assistance to the states in planning, acquisition, and development of needed land and water areas and facilities, and (2) providing funds for the Federal acquisition and development of certain lands and other areas."

The revenues coming into the Fund are made up of the amount realized from entrance and user fees collected at Federal recreation areas, sale of surplus property and miscellaneous fuel taxes.

When the enabling legislation was before Congress, it was estimated that the income of the Fund would be up to \$230 million per year. If these amounts were realized, the American people could move forward to complete the splendid State and Federal park and wilderness system we have planned. Herein lies the problem.

While the surplus property sales and the fuel tax revenues have proceeded as predicted, the entrance and user fees col-

lected have been substantially below expectations. Instead of the low of \$125 million per year planned coming into the Fund, only around \$101 million has been realized. The greatest disappointment has been the low sales figures for the \$7.00 "Golden Passports," which allow the purchaser access, without additional cost, to all National Parks and other areas for which an entrance fee is charged.

The Land and Water Conservation Fund benefits both Federal and State projects. Sixty per cent of the monies of the Land and Water Conservation Fund are returned to the states for state park programs and acquisitions. These grants are made to the states on a fifty/fifty matching fund basis, the states paying for at least one-half of the costs and expenses of their projects. Before a state is eligible for consideration for a grant out of the Fund, it must have a comprehensive plan for outdoor recreation acceptable to the Secretary of the Interior. This encourages the states to think and plan seriously about the critical recreational requirements, present and future, of their citizens, as well as providing a sound means for implementing their plans.

Some of the projects that have been accomplished by states with the use of these Federal grants-in-aid are: the Allagash Wilderness Waterway in Maine, where this beautiful river was rescued from disastrous timber cutting, logging roads, and unsightly subdivisions with the aid of \$1.5 million in Federal funds; the Lake Tahoe State Park on the Nevada side of that beautiful lake, which retained as wilderness 12,157 acres on the northeast corner of the lake which was so rapidly becoming an eyesore; an enlargement of the Humboldt Redwood State Park in California which preserved the Avenue of the Giants; the acquisition of Natural Tunnel State Park in Virginia; and the establishing of hiking, bicycle, and horse trails in some twelve urban areas in many states which demonstrate what can be done with a small capital outlay to enhance outdoor recreation for city dwellers.

## Funds for park purchases

The forty per cent of the funds to be used by the Federal government are to be used for the acquisition of land and waters by the National Park Service and the Forest Service, and for the protection of threatened species of fish and wildlife. This means that the Land and Water Conservation Fund is the primary source of financing for all new National Park and Forest Service acquisitions, as well as the expansion of presently existing facilities. Some of the current projects calling upon the Fund are:

- Delaware Water Gap National Recreation Area in Pennsylvania and New Jersey;
- Assateague Island National Seashore in Maryland;
- Fire Island National Seashore in New York;
- Whiskeytown National Recreation Area in California;
- Point Reyes National Seashore in California; and
- National Forest projects, such as those at Ottawa in Michigan; Monongahela in West Virginia; Allegheny in Pennsylvania; and Tonto in Arizona.

These are but a few examples of the projects now in progress. What the future holds by way of demands on the Fund is impossible to say, but ambitious projects, such as the proposed Redwood National Park, will require substantial sums.

In its present condition, the Land and Water Conservation Fund is inadequate to meet the needs for which it was cre-

ated. In every session of Congress we see more and more bills to have some worthwhile area designated as a National Park, National Seashore, National Recreation Area, or the like. The Fund simply will not bear these additional costs; the Fund is not even able to keep up with the presently existing demands made upon it to finance the acquisition and development of areas already authorized by Congress.

### Land speculation drives prices up

The problem of insufficient funds is additionally complicated by the rising cost of land acquisition and development. The time gap between the designation of an area for consideration for a national enjoyment area, its approval by Congress, and the appropriation of funds to carry out the plan of procurement and development, is often great. Often a period of several years elapses before funds are available to perform the actual purchases necessary to carry out a noble and farsighted plan. This time lag often produces a disturbing situation which repeatedly faces those of us who favor conservation of our natural heritage—land speculation. Frequently, soon after the announcement of the government's interest in establishing a recreational facility in a given area, the land in the area is bought up by those intent on holding up the government for as much profit for themselves as they can garner. Their activity drives the price of property up. They will not sell out cheaply and condemnation actions often result in an unreasonably high valuation. Coupled with the prevailing general increase in property values, as amplified by land speculators, the problem is enormous. The general upswing in the price of rural lands has been about 300 per cent between 1945 and 1965. The Forest Service is now paying on the average about five times more than it paid for equivalent land in 1950. The Park Service reports that an average increase of six per cent a year on lands in established areas in the East and ten per cent in the West is not uncommon. If this trend continues, the cost of lands will double in the next ten years. By the time the government is in a position to consummate the actual purchases, the funds originally appropriated are inadequate. This necessitates further delay, or in some cases, failure to procure the desired land.

**T**HERE IS a simple and straightforward answer to this dilemma. We must have adequate funds in the Land and Water Conservation Fund to allow the speedy acquisition and development of property once a National Park or Recreation Area is authorized by Congress. We must purchase needed land before speculation and inflationary trends make initial authorizations unrealistic. Money must be available for the acquisition of options, and the exercise of the options before they expire. Time is a great factor, not only in saving money, but also, in accomplishing realistic conservation objectives. It is mandatory to acquire lands before they can be turned into wasteland by private interests in search of the profits which may be unavailable once a park is created.

With our ever-increasing population, we must develop and protect our national outdoor heritage for ourselves and for future generations now. Soon it will be too late. A tree which took 2,000 years to grow, once cut, will not be replaced for another 2,000 years.

In January I introduced in Congress a bill, S. 531, which will provide the funds necessary to allow the establishment of a truly great system of state and national parks. I have proposed that the monies realized from the leasing of the outer continental shelf, and from certain other mining leases, to the extent that they would otherwise go into the Treasury's "miscellaneous receipts," be placed in the Land and Water Conservation Fund. These revenues have averaged \$100 million per year over the past ten years. On occasion they have exceeded \$300 million in a single year. These monies are the earnings of the people of America from their natural resources. It seems appropriate that they should be returned to the people in the form of an enhanced national recreation and conservation program.

This approach was used by the State of California when faced with a similar problem. Over 20 years ago California began financing its state park system with its tidelands oil revenues. Until recently, 70 percent of these revenues were allocated to the State Division of Beaches and Parks. These funds helped the people of California to build an unequalled state park system. California has provided state parks, campgrounds, recreation areas, beaches, marinas, and similar facilities with the aid of these offshore oil revenues. Few of these facilities or areas would have been possible without the tidelands funds. Some have asked whether this program was a worthwhile investment. To me, the enjoyment of millions of people is certainly an extremely sound investment. I trust that Congress will learn from the California experience and provide the necessary funds to accomplish our great conservation and recreation programs before more precious time is lost.

### Support for S. 531 and S.1401

I am happy to report that my bill, S. 531, has received substantial and enthusiastic support both from conservation groups around the country and from many of my colleagues in the Senate. The bill has been co-sponsored by Senators Brewster of Maryland, Clark and Scott of Pennsylvania, Gruening of Alaska, Inouye of Hawaii, Long of Missouri, Metcalf of Montana, Morse of Oregon, Moss of Utah, Nelson of Wisconsin, Tydings of Maryland, and Yarborough of Texas.

The principle of devoting revenues from leasing the outer continental shelf is also incorporated into S. 1401, introduced in the Senate early in April by Senator Jackson of Washington and co-sponsored by Senators Anderson of New Mexico, Nelson of Wisconsin, and myself. S. 1401 also would send the unallocated portion of Forest Service receipts into the Land and Water Conservation Fund and would allow limited contractual obligations to be undertaken in advance of appropriations, as well as authorizing "inverted scenic easements" through purchase and lease-back or sell-back of land with appropriate use restrictions.

I sincerely hope that when these bills come before the Senate Committee on Interior and Insular Affairs, of which Committee I am senior Republican member, they will receive rapid and forceful approval, in order that there will be a favorable law at the earliest possible moment. This is especially pressing because it is likely that the Land and Water Conservation Fund will be the only source from which the estimated \$43 million needed to complete the acquisitions at Point Reyes National Seashore, and the anywhere from \$50 to \$200 million needed to finance the proposed Redwood National Park, will come. ■

# The Seashore

## Wilderness Between the Tides

by Todd Newberry

With drawings by Dana Bean

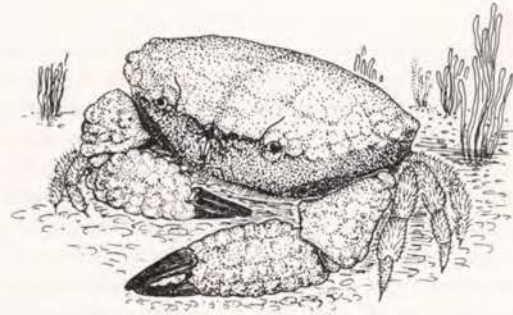
*Todd Newberry is Assistant Professor of Biology at the University of California, Santa Cruz. This article grew out of a talk he gave recently before the Santa Cruz Group of the Sierra Club's Loma Prieta Chapter.*

THE SIERRA CLUB admonishes us against "blind opposition to progress" and urges us to explore and judge reasoned arguments for and against the conservation of our natural heritage. America's seacoast is a part of this heritage, yet our protection of it is a challenge that often evokes more visceral sympathy than reasoned understanding. This understanding can grow out of the sympathy only as we become more knowledgeable about what it is we are trying to protect. In view of this, I would like to suggest some aspects of the seashore—and, by implication, of its conservation—that are especially cogent to my perspective as a marine zoologist. Hopefully, this will stimulate others, as well, to write from their acquaintance with our coasts. For a thoughtful conversation about the general prospects of seashore protection is long overdue, and many of us consequently have been hard-put to fathom the issues of this complicated matter beyond the pros and cons of specific and local controversies.

We can begin by making some rather obvious observations about the seashore—but then take them further or look at them differently than we usually do. We shall restrict our attention to the intertidal region of the seashore, to the zone that is covered at the highest high tides and uncovered at the lowest lows. This encompasses some eight vertical feet along cliffs in central California, while on beaches and mud-flats the zone may stretch horizontally over a belt many yards wide before this vertical difference of eight feet is included.

This intertidal region is at once the edge both of the sea and of the land. But when we go tidepooling, we feel far more that we are venturing onto the periodically exposed bottom of the sea than onto some periodically submerged surface of the land. This sensation seems to arise largely from the living things around us there. The familiar animals and plants of dry land stop rather abruptly at the uppermost reaches of the surf, sometimes a good many feet above the water on exposed coasts. From there down to where the sand and rocks are permanently covered by water, what we encounter are marine beings, not terrestrial ones, and marine animals often are bizarre to our eyes. Why should marine animals seem so strange to us? One sure reason lies in our unfamiliarity with many groups of marine animals that are rarely or never found on land. A little

arithmetic quickly bears this out. When we categorize the world of animals into its major groups—for example, into arthropods, molluscs, annelids, vertebrates, flatworms, sponges, and so forth—we thereby devise about 27 such major groups, or phyla. Surveying the distribution of representatives of these phyla in the sea, in fresh water, and on land, we find a very unbalanced picture. All but one or two of the 27 phyla are found at least in part in the sea, 17 of the 27 nearly or quite completely so. And the dominantly or wholly marine assemblages include some large and conspicuous animals: the echinoderms, such as the seastars and sea urchins; most coelenterates, such as the anemones and jellyfish and colonial hydroids; the sea-squirts or tunicates; most sponges; most moss animals or bryozoans, just to mention a few. In contrast, only five phyla have representatives that we would expect to find with any frequency on dry land in these latitudes: arthropods, annelids, vertebrates, molluscs, and roundworms. Consequently, despite the overwhelming *superficial* diversity of animals on dry land, especially of insects, we encounter a very restricted range of *basic* varieties around us. We are, in a way, protected from zoological unfamiliarity by this conservative range of basic animal types. But at the seashore we suddenly confront a panorama of other phyla, often in great abundance. So it is no wonder that we feel in unfamiliar surroundings, for much of the seashore's living element is basically, not just superficially, beyond our usual acquaintance.



The unfamiliarity of what we encounter in the intertidal zone goes beyond the anatomy of its inhabitants to include, as well, the ways in which they make their living; that is, how they gain food and protection and reproductive success. Taking feeding as an example, we see right away that land animals are forced to go to their food—to catch it, crop it, search for it actively—in order to eat. Thus, the cat goes to the mouse, the horse to grass, the bird to the worm. We do not find many instances (aside from parasites) where food goes to the feeder. This need to move in order to feed is so commonplace that many people even characterize animals by this capacity of movement itself: "Animals move, plants don't." Why should this be so? One reason is that, were food carried to the feeder, air would have to carry it, and air is simply not dense enough to carry much for long in suspension.

In the ocean and in its intertidal fringe a very different situation exists. There, the counterpart of our air is water; and moving water can carry very large amounts of substantial particulate matter for virtually indefinite lengths of time. As a result, the sea carries enormous quantities of food in suspension, both in the form of planktonic floating life and in the form of detritus, life's debris. Many bottom-dwelling animals in the

sea simply rest in place and, by means of diverse and elaborate filters, strain the water around them for this food. A tremendous abundance of animals that we encounter intertidally—such as sponges, barnacles, bryozoans, many worms, and tunicates—spend the great bulk of their lives firmly attached to the substrate, as sessile as plants, admirably adapted to feeding this way. In fact, once we get over our initial fixation on familiarly free-moving animals (such as crabs) in the intertidal region, we notice that great numbers of the animals around us are either attached or planktonic—in other words, are living in ways that find no animal counterpart on dry land.

This leads us to the sobering realization that, insofar as we cut ourselves off from the seashore or overrun it with our essentially terrestrial influences, we impoverish our range of experience with the diversity of the living world in basic, not just superficial, ways. We cut ourselves off not only from encountering a large variety of living things, but also, perhaps most strikingly, from experiencing the extraordinary range of ways that lives are led in the natural world. We cut ourselves off a little more from finding astonishment in the world around us.

The seashore, then, is unparalleled in the diversity both of the animals that live there and of the ways they live. It is also unique in being a zone of dramatic transition and conflict between the ocean on one side and the land on the other. Again, an obvious fact—but perhaps so obvious that we do not usually recognize some of its significant implications. We have already seen that the living organisms of the intertidal seashore are more part of the sea than of the land. But they endure conditions of life that are neither wholly marine nor wholly terrestrial. For example, while we associate waves with the sea, waves are relatively unimportant to most animals out in the open sea. Waves take on enormous significance, though, where they become surf, a phenomenon restricted largely to the shore. In contrast to the usually gently rocking movements of waves at sea, surf generates ceaseless scouring, cannon-like blasts, shearing, sedimentation, and incessant stress. Along our Pacific coast the energy of the breaking waves has accumulated over a fetch of thousands of miles and is utterly expended in a matter of yards amidst extraordinary violence. The often exquisitely delicate animals that live in this maelstrom thus face conditions that are clearly not terrestrial in character yet substantially different, too, from the open sea.

### Interplay of rhythms

Periodic exposure and submersion by the tides is another condition unique to the intertidal environment. This tidal rhythm, inconsequential on land or at sea, dominates the ecology of the intertidal zone. Consider, for instance, the lot of an anemone attached to a mid-tidal rock. It is exposed beneath the water to the rigors of the surf, to the physiological demands of life immersed in the medium of sea water, and to a marine set of predators, amidst all of which it must carry on its activities of feeding and reproduction. With the ebb of the tide, it is exposed to air—to drying out; to overheating or chilling; to winds; to the fresh-water of rain; and now to a whole new set of predators, this time terrestrial (birds, insects, rodents, people). Then, perhaps with a severe shock, the flooding tide sweeps the sea over the animal again. As if this were not enough, the 25-hour tidal cycle combines in continual variation with the 24-hour day-night one, with the monthly

lunar cycle of spring and neap tides, with solar cycles that add their own substantial influence to tidal fluctuations, and with the seasonal cycles. The resultant interplay of rhythms is such that intertidal organisms are exposed to their environment in almost every possible combination of conditions. Neither in the open sea nor on dry land is the rhythmic interaction of dominant environmental forces so remarkably complicated. In this respect, too, the intertidal seashore is actually a linear realm *between* sea and land.

Consequently, to the extent that we destroy this linear realm, we wipe out the possibility of our knowing not just the fringe of something but rather the whole of it. If this unique belt, often only a few yards across, is overwhelmed by construction or polluted or chopped to pieces or filled by dumping, we have not just encroached on the seashore, we have destroyed the whole thing. It simply has no room for give in the face of such misuse.

### Fascination of the seashore

The intertidal region holds not only unique and unfamiliar treasures but also tremendous variety within its limited expanse. But surveying the intertidal zone from six feet up (in other words, walking about and looking down at it) is rather like looking at the earth from an airplane and reveals roughly the same relative detail. Only by coming down out of the skies—by crouching or crawling or sprawling to get our eyes and ears and noses into the intertidal zone, too, along with our feet—do we really join the seashore world. When we do this, we quickly learn that, like a great city, a seashore is made up of neighborhoods, each with its own distinctive traits and peculiarities, each with a recognizable life of its own as well as a place in the life of the whole. But by and large, these intertidal neighborhoods are cryptic, hidden ones. Their real spectacles are under boulders, inside grottoes, beneath ledges, tucked away from drying, from too much sun, from wind, from the full force of the surf, from the rain of sediments or of fresh-water—and from the view of people standing above them.

Such explorations reveal that conditions of life in one grotto are not quite like those in the next, nor is either pocket like an adjacent exposed surface or a nearby patch of sand. The actual activities of the shore, the ways in which the organisms confront and interact with their surroundings, are everywhere fragmented and diversified into neighborhoods, into microhabitats. This awareness deepens the fascination of the seashore as it draws us on to compare such microhabitats and to try to discern and comprehend the ways in which they differ. Superficially (but deceptively) this seems a rather simple enterprise, but it is the sure route to the frontiers of understanding and into the wilderness beyond.

But close acquaintance is bound to impress the visitor with the vulnerability of the seashore, too. Despite its endurance of the rigorous consequences of surf and tidal rhythms, the intertidal seashore is a delicate place, as sensitive as an alpine meadow to unnatural disruptions. One of the most common agents of disruption and destruction is the visitor who rolls rocks over, to see the marvels underneath, but does not roll these rocks back carefully into their original positions. By our analogy of the city, this disruption would be virtually tantamount to bombing neighborhoods. It results in shifting to upper surfaces those organisms that need the protection of undersurfaces to survive, and in casting underneath boulders those



species that are adapted to conditions atop them. Whole microhabitats are turned topsy-turvy, and it is no wonder that they are destroyed as effectively as they are. Rocks that are rolled back carelessly may be almost as badly scarred by consequent instability in the face of surf, changed circulation of water, and suddenly altered patterns of biotic interactions. So a lot of damage is done to the intertidal region by people who do not realize that they are merely intruders into a region that has no real place for them and suffers, often drastically, from every human touch.



Seashore life is also jeopardized by being so often within reach of visitors. It is thereby exposed to the inexplicable greed of people who feel compelled to make a trophy of whatever interests them. In an earlier era, we could all collect our share of curiosities at the shore. But now virtual armies of adults and children are beginning to devastate regions in the name of education or intellectual stimulation or sport. The fate of their collections is almost always the garbage can, about as unfortunate and useless and absurd a fate as an intertidal animal can possibly have. The resulting destruction of the seashore makes some sort of restriction on this pillaging already well overdue. In fact, we already have some collecting laws on the books. But the impossibility of their enforcement, as well as the pressures of well-meaning people who have just not thought the matter through, eventually will seal the fate of some rich and biologically magnificent parts of our shoreline.

The seashore is vulnerable to more than the depredations of individual visitors. Its historic use for commerce imposes another whole order of disruptions. By this I do not mean the appalling ravages of commercial exploitation that abound above the high tide line. This sordid history of coastal devastation has been recounted by Alfred Bester in a recent issue of *Holiday Magazine*, and I recommend his article to every concerned citizen. Rather, I refer to the effects of commerce that reach below high tide. Necessary though it usually is, commercial development has almost totally destroyed California's natural quiet-water seashores, usually converting them into marinas, harbors, factory and power-plant sites, and other such facilities. Intertidal mud-flats, for example, have been frequent victims of this "progress." True, mud-flats are not especially pretty and they often smell bad. Consequently, it is hard to find friends for them. The recent controversy over an

oil refinery's proposed installation at Moss Landing, for example, focused on many issues, but not on the fate of the mud-flats there. Yet these mud-flats are the last of any extent in the entire stretch of coast from San Francisco to Morro Bay. For all their lowly appearance, they are as unique a natural habitat as a desert gorge, a cascade, or a coastal promontory. And when they are gone from Moss Landing, the loss will be as complete as would be the loss of all the alpine meadows or cattail marshes—or even redwood forests—over a major extent of the state. Again, by our own actions, we hem ourselves into a narrower world of natural experiences.

Finally, the seashore is vulnerable to the time-honored assumption that the sea is a safe and stable place for all the pollutants that are too noxious or, worse, too dangerous for disposal on land. It is certainly not a stable realm, for currents of enormous dimensions churn the sea throughout its depths. And it consequently is not a safe place to dump any materials that remain dangerous while they are borne far and wide, as they will be by these oceanic currents. Yet we witness the dumping at sea of sewage, explosives, atomic wastes, factory leavings, and now apparently quantities of pesticide-contaminated irrigation water as a presumably effective way to be rid of them. Particularly in the case of pesticide residues, presumptions of safety have no basis in fact. Sea life is as exposed as the land's to the disruptions of chemical pollution. Pesticides properly used and controlled are essential, but no less poisonous, agents in agricultural management. But pesticides in the sea are as wholly out of control as they are out of place. Organisms concentrate these substances many-fold, despite their dilution in the surrounding water, and doubtless suffer the same results in the sea that they demonstrably do on land. Knowing what we do about the dangers on land of uncontrolled dispersal of pesticides, the idea of spewing these agricultural toxins into our coastal waters, for subsequent general spread along the shore, at first seems too grotesque to be taken seriously. But the funds of ignorance and arrogance that would permit such misuse of our environment are as ample as they are powerful. Consequently, we are likely to sow a whirlwind in this domain—as we have with our fresh-water resources—before good sense intrudes.

### A limit to what science can salvage

As in so many instances of our society's destructiveness, the retort to worried scientists is that science will solve it. Science becomes what the biologist Marston Bates has dubbed "white magic." But it is the scientists who recognize most keenly their simple incapacity to salvage things beyond a limit. So it is often the marine biologist who is most concerned and most pessimistic about the needless and arrogant destruction of our seashore.

What is the outlook? While the characteristic resiliency of the natural world will reward every easing of man's pressures upon the seashore, these pressures themselves are growing. The seashore's prime defense of sheer isolation is now largely gone, and accessible regions find no alternative protection. Perhaps because the intertidal realm does hide its treasures, it most likely will never evoke widespread and sustained public concern about its destruction. Most people will simply never know what they have lost. This destruction would be an immense misfortune. If we are to avoid it, an awakening of improbable proportions will be called for, and soon. ■



*"New Zealand is to the fore in the world-wide awareness of the importance of preserving natural areas to provide sanctuary for native plant, bird and animal life and to enable men to gain inspiration and recreation from the outdoors. . . . Most of New Zealand's grandest scenery and unique natural areas are included in the five million acres of the country's ten national parks [8 percent of its land area]."*

*—P. H. C. Lucas*

*Mount Tasman  
and Tasman Glacier,  
Mount Cook National Park,  
by Henry E. Timby*

## Outing to New Zealand, 1968

FROM NINETY MILE BEACH at the northern tip of the North Island to Invercargill at the southern tip of the South Island, the second Sierra Club outing to New Zealand will travel the length of this beautiful and sparsely populated country, savoring its unusual variety of climate and landscape. Its northern portion is sub-tropical, its southern portion has a climate comparable to British Columbia's. We will see active volcanoes, glaciers, dramatic peaks, beaches, forests, mountain wilderness, and fiords—the scenic treasures of New Zealand, most of which lie within national parks. We hope to see some of the strange plants and flightless birds that are found nowhere else in the world. Experts will explain their country's natural features and discuss some of their conservation problems and accomplishments. (The true story of what happened when rabbits and deer were introduced into a country that had no predators nor other mammals is a fascinating and sobering tale.) Plans do not include city tours, but there are several days in Wellington, Auckland, and Queenstown for shopping and sightseeing on your own. Leader of the trip is Al Combs, who was assistant on the 1965 New Zealand outing.

The North Island has several active volcanoes, which are in Tongariro National Park. There are geysers and hot springs at nearby Rotorua, and at Wairakei there is a world-famous geothermal power project, utilizing natural steam.

On the South Island four of the national parks straddle the mountain chain of the Southern Alps. The western slope of the Alps has a jungle-like rain forest, and the rain can be measured

in feet rather than inches. The drier eastern slope, in the "rain shadow," has beech forest (and the plains to the east may be dry and brown). Arthur's Pass National Park has outstanding forests of both types. Westland National Park has magnificent glaciers, which tumble down from cirques at 9,000 feet to within a few hundred feet of the ocean. It is a short hike to two of the largest, the Fox and Franz Josef glaciers. Mount Cook National Park, with one third its area glacier ice and permanent snow, has some of the world's finest alpine scenery—glittering peaks, icefalls, and huge glaciers sweeping down the valleys. Mount Aspiring National Park has broad river valleys and steep mountains that are dominated by the shimmering white pyramid of Mount Aspiring.

In the southwestern corner of the South Island is three-million-acre Fiordland National Park, one of the largest parks in the world. The famous Milford Track (Trail) wanders among its gaunt peaks, sheer cliffs, waterfalls, large lakes, rain forests, and fiords (steep-walled glacial valleys, drowned by the sea, that reach inland for miles).

We leave San Francisco by commercial jet on January 27, 1968. (You may fly to San Francisco from Seattle, Portland, or Los Angeles at no extra charge.) From Auckland, our four groups take off in different directions. All groups will camp and cook for themselves part of the time, but without exception we will be "camping" under a roof of some sort—in lodges, huts, or small hotels. We bring our own sleeping bags, but no tents. Travel in New Zealand will be by charter bus, train, and overnight steamer.



*Milford Sound, Fiordland National Park, by Henry E. Timby*

### **Four Trips to Choose From**

*The New Zealand Ornithological Outing*, limited to 20 people, will visit bird rookeries and sanctuaries, several small islands off the coast of the North Island, Stewart Island off the top of the South Island, and national parks. Group leader, Al Schmitz.

*The New Zealand Alpine Outing*, a group of thirty, will spend most of its time in the Southern Alps—hiking, backpacking (10-14 miles a day), and staying overnight in Alpine Club and Park huts. This is a more strenuous outing, in rugged wilderness. There will be opportunities for mountain and glacier climbing for those interested. Group leaders, Al and Mary Combs.

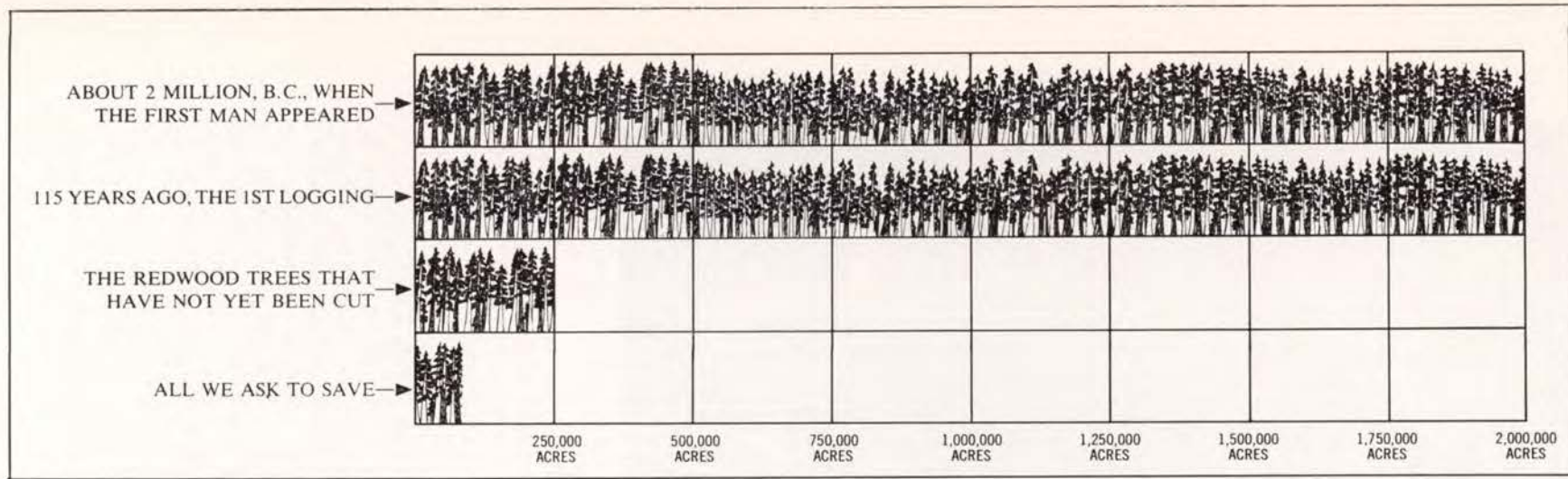
*The New Zealand National Park Outing*, two groups of thirty each, is less demanding than the Alpine Outing, for there is no backpacking. However, you must be able to hike 10 miles and climb 2,000 feet in a day, for we expect to hike the Milford Track, staying in lodges that furnish food and bedding. Group leaders: Genny Schumacher, Lewis Clark.

When we disband on February 26, you may fly home immediately or you may stay 15 days longer (in New Zealand, or stop over at no extra cost in Fiji, Tahiti, or Hawaii) since your ticket is good for 45 days. Accommodations are at your own expense.

### **Reservations and Fees**

Estimated cost of the four-week trip is \$1200, including round-trip air fare. A deposit of \$100, including the \$15 non-refundable reservation fee, will hold your place and is payable with your reservation request. (Please use the reservation request envelope in the January *SCB*, or ask for another.) The balance is due October 15. If you cancel your reservation prior to October 15, all but \$15 of your deposit will be refunded. After that date, no refund will be made unless your place can be filled by a substitute.

For more detailed information, write the club office, 1050 Mills Tower, San Francisco 94104, for the New Zealand Trip Supplement. If you have further questions write to the leader, *not* to the office: Al Combs, Box 3941, Portland, Oregon 97208.



“History will think it most strange that America could afford the Moon and \$4 billion airplanes, while a patch of primeval redwoods—not too big for a man to walk through in a day—was considered beyond its means.”

**E**ARTH BEGAN four billion years ago, and Man two million. The Age of Technology on the other hand is hardly two hundred years old, and to give you an idea of just how little relative time *that* is, imagine a line an inch long, and then one from New York to Japan.

Yet, during this inch of time, Man has become so impressed with his brand new power as to alter his world irrevocably.

For instance:

- 1) By the time Man appeared on this planet a forest of giant redwood trees already covered about two million acres of Northern California. (See chart.)
- 2) They were there in the age of the dinosaurs and when Rome was built. They were there when Christ was alive, and when Columbus discovered America. They

9) The real heart of the matter is simply this: A logger will resist his job being changed from logging to running a park; a local businessman will fear a decline for a time, and the companies believe they've an inalienable right to cut down trees for money.

But this planet is all we non-loggers have, and any other will forever feel strange.

It seems to us, therefore, we should not be so hasty about removing all our natural environment: the element which makes Earth feel like home.

Deciding what is *too much* destruction in the name of commerce is not always easy, but in the case of the redwoods it is.

By default, the world has given up the rights to 97% of

HERE ARE SOME STEPS YOU CAN TAKE:

HON. RONALD REAGAN  
 Governor, State of California  
 Sacramento, California

Dear Governor Reagan,

I urge that you join in support of a meaningful redwood national park in your state: 90,000 acres at Redwood Creek, saving but 2% more of what once grew.

It is an accident of geography that the redwoods are in California. They are the property of every American; even of every person in the world, and of future generations as well. And you are the steward of this inheritance.

I ask that you do your utmost to assure that they are preserved not only as isolated museum-like groves, but in their original magnificent sweep; so that walking through them will remain among Man's most moving experiences.

Yours sincerely,

were still there during the Gold Rush just a hundred fifteen years ago; a reminder, to those who've walked through them, of how we all started.

3) But in the last 115 years (a half-inch on your mental chart) nearly all of the forest has been logged.

4) Of that which remains a few are in small state parks. The rest is scheduled for cutting.

5) A national park has been proposed for Redwood Creek which could, at any rate, save 2% more of the old trees.

6) But lumber interests, having cut so much and taken the rest for granted, are eager to get on with business. They see little reason why they should not.

7) Tourists, they point out, want only enough old trees for the snapping of photos, and they have offered to leave "enough." (The result would remind you of the places on your face you missed while you were shaving.)

8) The companies add that redwood forests are dark and gloomy, and furthermore clearing out old-growth trees is good for the forest. "Overmature" timber they like to call it.

*It's hard to say how the forest grew so well before the loggers were there to protect it.\**

what was required for 2 million years. That is surely more than enough. Buying 2% back ought hardly be thought much to ask, on behalf of our children's children.\*\*

History will think it most strange that America could afford the Moon and \$4 billion airplanes while a patch of primeval redwoods—not too big for a man to walk through in a day—was considered beyond its means.\*\*\*

This generation will decide this question and hundreds of others just like it; questions that will determine whether or not something untrammelled and free will remain to prove we had love for those who follow. To impress people with that, and to suggest they do have some say in what happens, the Sierra Club (now with 47,000 members), has been taking ads such as this.

We have been asking that people write letters, mail coupons and that they send us funds to continue our efforts.

Thousands have written, but meanwhile, in this session of Congress, a bill which will propose a park at Redwood Creek—the only possible location for a meaningful, varied redwood park—will face its greatest and probably its last test.

More letters expressing your view are needed, and more dollars to help fight the notion that man no longer needs nature.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

MR. C. DAVIS WEYERHAEUSER  
Chairman of the Board  
Arcata Redwood Company  
Tacoma Building, 1015 "A" St., Tacoma, Washington 98402

Dear Mr. Weyerhaeuser,  
Yours is one of the two companies that presently own almost all the virgin redwood forests within the proposed Redwood Creek Park.

Therefore, you are in a rare position to singlehandedly assure that one of Mankind's great heritages will be preserved.

Considering that, 1) a meaningful redwood park would return to public hands only 2% of the forest that once grew, and 2) the government would then reimburse your shareholders more than amply, I urge that you join in supporting a 90,000 acre park at Redwood Creek.

Future generations will thank you even more than I do today.  
Yours sincerely,

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

MR. OWEN CHEATHAM  
Chairman of the Board  
Georgia-Pacific Corporation  
Executive Offices, 375 Park Avenue, New York, N.Y. 10022  
Dear Mr. Cheatham,

Yours is one of the two companies that presently own almost all the virgin redwood forests within the proposed Redwood Creek Park.

Therefore, you are in a rare position to singlehandedly assure that one of Mankind's great heritages will be preserved.

Considering that, 1) a meaningful redwood park would return to public hands only 2% of the forest that once grew, and 2) the government would then reimburse your shareholders more than amply, I urge that you join in supporting a 90,000 acre park at Redwood Creek.

Future generations will thank you even more than I do today.  
Yours sincerely,

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Also, write:  
The President, Secretary of the Interior Stewart Udall,  
Your Senators and Congressman.  
Urge them to support a 90,000 acre national park at Redwood Creek, in this session of Congress.

\*Lumber companies who own the redwood forests have spent tremendous sums to suggest that even when the land is cut completely clear of trees, as is often the case, no permanent harm is done the forests; as the cut-over area is immediately reseeded, and is then designated a "tree farm." However, because the special growing conditions that redwoods require are often impaired by modern tractor logging, the "tree farms" are most often not seeded with redwoods, but douglas fir, spruce, and Monterey pine.  
\*\*The arithmetic on the acreage goes this way: At present, 85% of the two million virgin acres has been cut. 3% of the original virgin acreage is held in tiny museum-like California state parks, while the other 12% that's left is scheduled for cutting; which would make a total of 97% of the redwoods given over to that purpose. A Redwood National Park at Redwood Creek would save, in one forest, an additional 2% of the virgin growth as well as a lovely, remote beach area, a number of spectacular wooded hills where redwoods are displayed in the variety of growth conditions in which they thrive, and a navigable river which includes The Emerald Mile, a stretch of huge redwoods running along both sides of the stream. The net effect, then, would be that instead of 97% of the original redwoods going to cutting, only 95% would be gone and we would then have a real sweep of forest large enough for people to walk in without it seeming like a parking lot outside a baseball game.  
\*\*\*A redwood national park of 90,000 acres in the Redwood Creek area would cost \$150 million. That is, about 75 cents per American. Or, if amortized into the future, a few pennies from our children as well. Considering it will last their lifetime, and THEIR children's and grandchildren and so on, it would seem to qualify, in economic jargon, as a "steal."

The Sierra Club, founded in 1892 by John Muir, is nonprofit, supported by people who, like Thoreau, believe "In wildness is the preservation of the world." The club's program is nationwide, includes wilderness trips, books and films—as well as such efforts as this to protect the remnant of wilderness of the Americas. There are now twenty chapters, branch offices in New York (Biltmore Hotel), Washington (Dupont Circle Building), Los Angeles (Auditorium Building), Albuquerque, Seattle, and main office in San Francisco.

(Our previous ads, urging that readers exercise a constitutional right of petition to save Grand Canyon from two dams which would have flooded it, produced an unprecedented reaction by the Internal Revenue Service threatening our tax deductible status. IRS called the ads a "substantial" effort to "influence legislation." Undefined, these terms leave organizations like ours at the mercy of administrative whim. [The question has not been raised with organizations that favor Grand Canyon dams.] So we cannot now promise that contributions you send us are deductible—pending results of what may be a long legal battle.)

EDGAR WAYBURN  
Vice President, Sierra Club  
Mills Tower, San Francisco

- Please send me more details on how I may help.
- Here is a donation of \$ \_\_\_\_\_ to continue efforts such as this to keep the public informed.
- Send me "The Last Redwoods" which tells the complete story of the opportunity as well as the destruction in the redwoods. (\$17.50.)
- I would like to be a member of the Sierra Club. Enclosed is \$14.00 for entrance and first year's dues.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Unusually successful ad generated interest, mail, contributions, and membership applications. It appeared in *The New York Times*, the *Washington Post*, and the *San Francisco Chronicle*.

# What the Redwood Industry Fails to Say

Peggy and Edgar Wayburn

*Vice-President and past President of the Sierra Club, Dr. Wayburn is coordinator of the club's efforts to establish a redwood national park in the valley of Redwood Creek. He and his wife, Peggy, are longtime contributors to the Bulletin.*

OUT OF THE MILLIONS of words written on the subject of a Redwood National Park, few make more interesting reading than those coming from the pens of the redwood industry. Ads, pamphlets, press releases—and most recently, letters written by the Arcata Redwood Company and Georgia Pacific in reply to people concerned about the proposed Redwood National Park at Redwood Creek — all conjure up a Utopia in the redwood region.

Life apparently was never rosier there!

The industry is taking great care of the redwoods—always has. It has helped save the truly outstanding park-like trees, those that were worth saving. It is managing the other trees — the commercial forests — carefully and scientifically to provide redwood products for the nation's needs in perpetuity. There are actually more redwoods now than ever before. The handsome young forests are thriving, and a joy to see.

Industry, the mainstay of the community, hires the most people, pays the most taxes, helps the most to educate the children. It cares about people, too. It generously opens up its lands to the hunter, the camper, and the recreationist. It worries lest it should have to let any employee go. It is, in fact, cutting down its trees for timber to benefit mankind.

In this never-never redwood land, there's patently no room for a national park that would disturb such an excellent arrangement and the future plans of the industry. Conservationists are unreasonable, if well-meaning, and *preservationists* are deluded. All this commotion about a redwood national park is a tempest in a teapot. There really aren't

any redwoods in industry's hands good for anything but commercial timber.

So says the industry in effect. And to anyone not familiar with the redwood region, the story may be convincing. The industry tells it with a straight face, reasonably, continuously, and *sincerely*. It is a masterful public relations job which employs various well-known techniques, the most effective of which is the selective presentation of facts. The redwood industry is telling only part of the story, from only one point of view. For a more complete picture of what's happening in the redwoods, let's examine what they're telling — and what they're leaving out.

**Industry says:** The truly park-like outstanding redwoods have already been saved, roughly one fourth of the superlative cathedral-like groves that ever grew on river flats.

**Industry fails to say:** This statement has never been documented, let alone proved. Some foresters believe that perhaps 5 percent of the original 2,000,000 acres of redwoods grew on river flats when logging first began. This would amount to 100,000 acres. But only 3,300 acres of superlative groves have been set aside in California state parks—possibly 3.3 percent of the original acreage. Furthermore, much of what *has* been saved is in a series of small isolated groves which, while lovely to look at briefly — as in a museum — or to drive through, do not offer the possibility of really experiencing a redwood forest.

**Industry says:** There are "two kinds of redwoods," the *scenic* pure redwood groves which grow on flats, and the *commercial* redwoods which grow in mixed stands on the slopes. Only the *flats* are worth saving, the *slope-type* trees are just ordinary timber.

**Industry fails to say:** This is an arbitrary and specious classification which makes it easier to justify the logging of superlative trees. According to this classification, over 90 percent of the virgin groves presently in state parks should be called "slope-type." "Slope-type"

groves are often exceedingly beautiful, with magnificent redwoods, douglas fir, and spruce. (Dr. Rudolph Becking of Humboldt State College has recently identified the tallest redwood on earth, 385 feet high, in a "slope-type" region of Redwood Creek, along with record-breaking trees of four other species. Arcata Redwood Company is currently logging "slope-type" redwoods within the area proposed by the Sierra Club for a national park; many are over 250 feet tall, with diameters 12 to 15 feet.) Redwood slopes are also critically important for protecting watersheds and scenic panoramas, as well as for preserving ecological units in which the *Sequoia sempervirens*—with all its marvelous variety and complexity — exists.

**Industry says:** It should be thanked for the redwoods currently saved in State Parks. They say most of the state park redwoods were made available by them and that they cooperated with the state and the Save-the-Redwoods League by removing the giant trees from their logging schedules. Meanwhile, they had to suffer the hardship of property taxes.

**Industry fails to say:** All redwood forests were in private ownership by the turn of the century, and those now in public ownership *had* to be bought back from industry, on industry's terms. Virtually every state park redwood tree has been paid for — handsomely. For instance, California recently acquired a 1,600-acre parcel of land — partially cut over — adjacent to Prairie Creek State Park in Humboldt County from a member of industry for \$2,000,000.

**Industry says:** There is no need to panic about disappearing redwoods. It is operating on a "continuing sustained yield program," the finest kind of "tree farming," and there is no reason why it shouldn't still be going strong 500 years from now.

**Industry fails to say:** The redwood region has a long and strong tradition of "cut-out" and "get-out." Even as late as the decade between 1952 and 1962 — roughly the period of the douglas fir

“boom and bust” — 110 mills shut down in the redwood region. More recently, two large Humboldt operators, Weyerhaeuser and U. S. Plywood, stopped operations. (We are fortunate that a fraction of the redwood forests “cut out” during the past 110 years has regenerated from the stumps. But the volume of second growth is relatively small; for instance, second growth went on the tax rolls of Humboldt County only last year.)

**Industry also fails to say** that even if it does remain in business, it will not be the redwood saw-log business as it is now known—it will be largely the pulp business. This means that future industry forests will be “cropped” or “harvested” every 40 to 60 years. (It takes redwoods centuries to mature.)

**Industry says:** It fully supports California’s Forest Practice Act and favors strict and effective enforcement of its provisions.

**Industry fails to say:** It wrote the provisions of the Forest Practice Act which apply to redwood logging, and they are among the weakest and most ineffectual on record. Under these provisions as they now stand, it is possible to ignore legally every known law of good forest practice.

**Industry says:** The redwood region is one of the greatest places in the world to grow trees.

**Industry fails to say:** The redwood region also has one of the highest erosion potentials of any place in the world. Massive erosion can and often does occur under present logging practices—especially with the clear-cut tractor methods being used increasingly. Recent studies suggest that sustained yield logging may not be practical in many areas because of soil loss.

**Industry says:** Redwood is the fastest growing species in America.

**Industry fails to say:** Redwoods grow fast, but mature slowly. They may shoot up, but inside they remain largely sapwood for the first half century of their existence. A 50-year old redwood is less valuable for commercial timber than a 50-year-old douglas fir. The industry is re-seeding widely to douglas fir, spruce and monterey pine, after cutting its old-growth redwood.

**Industry says:** There are more redwoods growing now than ever before.

**Industry fails to say:** There is a major difference between old-growth or primeval redwoods and second growth red-

woods — esthetically as well as commercially. A 50-year-old redwood stand is totally unlike a primeval redwood forest. While it may be true that more redwood *shoots* and *sprouts* are growing today where the old giants have been felled, these matchstick forests and millions of stumps are hardly comparable to the forests they replace.

**Industry says:** It has opened up 365,000 acres of its tree farms to public recreation. Furthermore, its forest land is being managed to assure outdoor recreationists maximum enjoyment now and in future generations.



*Redwood Creek, 368-foot “Tallest Tree,” and 6-foot observer. A 385-foot tree, 17 feet taller than the recognized world record holder, was recently discovered in the Redwood Creek watershed.*

**Industry fails to say:** The “opening up” is totally at the convenience of the owners, twelve months of the year. Recreationists have repeatedly been turned back from locked gates when attempting to enjoy industry’s supposedly “opened up” lands. Once “inside” the recreationist (unless he is a hunter) may find little to do except drive down the road and back, for there are few trails and almost no developed recreation spots. Because of destructive logging practices, almost every stream in the redwood region has lost its finest fishing potential, and many are utterly ruined, forever.

**Industry also fails to say:** The days of virtually *all* its forests are numbered. On a pulping cycle, after its old-growth is gone—a matter of 10 to 20 years—industry will be routinely cutting its second growth every few decades. Future recreationists may have a choice of a wasteland of fresh stumps, a brushfield, or a thicket of pole timber.

**Industry says:** It is the mainstay of the present—and future—economy of the redwood region. Its sound forestry practices assure the permanence of the jobs of its present employees.

**Industry fails to say:** It, in fact, “mines” the redwood forests, and the profits flow *outside* the region. **And it fails to say:** It is automating as rapidly as possible. Forest economists predict a 40 percent decline in employment in the wood products business in the redwood region in the next decade—20 percent due to declining log availability, and 20 percent due to automation. (The redwood region already has an unemployment rate twice the national average, unemployment is both seasonal and uncertain, and welfare in Humboldt County averages among the highest in the state.) **Industry fails to mention** it imposes the burdens of a *single industry* on the redwood region, and it is a declining single industry. Industry also fails to mention that the largest national park proposal would remove less than 5 percent of presently available redwood-growing lands. *A redwood national park could provide a much-needed shot in the arm to the local economy.*

**Industry says:** A national park at Redwood Creek would completely destroy the Arcata Redwood Company, render useless millions of dollars of plant facilities, and place all its employees out of work.

**Industry fails to say:** All park proposals ask for full recompense at market value for all lands and equipment acquired in establishing a park. All plans call for in lieu taxes to the counties. The Sierra Club also urges preferential employment be given to local people. A national park will need loggers and redwood-oriented laborers for road and trail building and maintenance.

**Industry says:** It pays more taxes than anybody.

**Industry fails to say:** The present tax structure favors large timber operators. On the other hand, small landowners carry a staggering tax burden. Industry pays almost no taxes on its cutover lands for 40 years following logging. Until last year, for instance, no timber taxes were paid on cutover lands in Humboldt County, and the assessed valuation of these lands was a few dollars an acre. As old growth is cut out, the tax contribution of the timber industry declines.

**Industry says:** California has 28 redwood state parks, a total of 117,000 acres, of which 59,000 acres are virgin redwood forests.

**Industry fails to say:** It has logged to the very edge of the finest of these parks. Only five of these parks are really sizable: some are almost taller than they are wide. One of the finest of these parks—Humboldt Redwood State Park—has been slashed by a freeway, and no redwood state park is presently safe from the same fate.

**Industry says:** Visitation of redwood parks is falling off.

**Industry fails to say:** It is using statistics which are selective, incomplete, and outdated. Recent statistics show greatly increased use of the redwood parks. Visitation at tiny Muir Woods National Monument near San Francisco last year topped all records: over 600,000 people walked through this small area, which is the only federally owned redwood park.

**Industry says:** Redwood Creek has never been considered for a park. A park on Redwood Creek would be "second rate by all standards."

**Industry fails to say:** Madison Grant, a founder of the Save-the-Redwoods League, described the marvelous "great forests" of Redwood Creek in the early '20's, and recommended it as one of the three choicest areas for a national

## October Trip to Hawaii

September 28–October 8. Cost: between \$300 and \$350 including round-trip jet fare from either San Francisco or Los Angeles. Limit, 100 people. Leader: Ted Grubb, 4 Lupine Avenue #7, San Francisco 94118.

Just one month after the Easter-week outing to Hawaii was announced in last November's *Bulletin*, the trip was sold out and there was a long waiting list. With such demand to visit the less traveled parts of Hawaii, which have little resemblance to the tourists' Hawaii, Ted is planning a second trip this fall and has just returned from scouting it (but not in time to have his itinerary printed in this issue). See the November issue of the *SCB* for the general plan of the Hawaiian outings; the fall trip will be

similar. October generally has fine weather—clear and pleasantly warm. For detailed information, write the club office for the Hawaii Trip Supplement.

Reservations are now being accepted. A deposit of \$75 (which includes the \$15 non-refundable reservation fee) must accompany your reservation request. If you cancel, \$60 will be refunded *only* if your place on the plane can be filled. Use the reservation request envelope in the January Outing Issue, or send for one.

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**Industry fails to say:** The National Park Service in its 1964 study of the redwood region chose Redwood Creek and its tributaries as the finest possible location for a national park. The Redwood Creek area, in fact, probably contains the greatest remaining sweeps of virgin redwoods in the world—and some of the finest trees alive.

**Industry says:** Not all conservation groups are in favor of the Sierra Club park proposals.

**Industry fails to say:** Most of the country's leading conservation groups—and conservationists—are in favor of the Sierra Club's park proposal, including the Wilderness Society, the National Parks Association, the Garden Clubs of America, the Izaak Walton League, the Wildlife Management Institute, the Federation of Western Outdoor Clubs, Trustees for Conservation, Citizens for a Redwood National Park, and Citizens Committee for Natural Resources. Equally important, to date, 60 congressmen and senators have introduced the Redwood Creek Park Bill in the current session of Congress.

**Industry says:** The best way to make a Redwood National Park—and they're for it—is to change the ownership of the present redwood state parks, and the labels on them.

**Industry fails to say:** Such an arrangement would allow industry to log its virgin old-growth timber to the end—an increasingly lucrative business, as the old-growth becomes scarcer and more valuable. For the personal profit of a few, millions of present and future Americans would be denied the full enjoyment of the coastal redwood forests.

The redwood industry can hardly be blamed for painting the rosier picture possible of its operations: it is fighting for its very way of life. But virgin redwoods are not ordinary trees, and there are vitally important decisions to be made as to their greatest value to people. These will be the *final* decisions. They should be made in the light of all the facts. And they must be made quickly, for while we ponder, the chainsaws continue with irrevocable decisions of their own. Do we, the American people, want Redwood Creek and its tributaries converted to pulp production, its great trees all levelled, its lush forest floor scraped raw and gutted, its bright clear streams strangled with slash and clotted with silt?

Or do we want there—for all time and for all people—a meaningful Redwood National Park?



# Mammoth Pass Road

## —The Recurring Crisis

by Genny Schumacher and Raymond J. Sherwin

*Genny Schumacher is editor of The Mammoth Lakes Sierra and Deepest Valley, both published by the Sierra Club. Raymond J. Sherwin is judge of the Superior Court, Solano County, California, and Chairman of the club's Nominating Committee. An earlier article by Judge Sherwin on the Mammoth Pass road appeared in the September-October 1966 Bulletin.*

FOR THE SECOND TIME, the California Division of Highways has studied and recommended against including the proposed trans-Sierra highway over Minaret Summit, long known as the Mammoth Pass Road, in the State Highway System.<sup>1</sup> This route, only 25 miles south of the Tioga Pass road in the central Sierra, has been denounced repeatedly by the Sierra Club as a wasteful expenditure of public funds which would benefit only a few persons, bisect the Muir Trail, invade an area of singularly attractive solitude, and permanently spoil a sportsman's paradise.

This second report makes three important points: (1) that a road of Forest Highway standards will not support commercial traffic; (2) that recreation traffic alone would not justify the huge costs of construction and maintenance; and (3) that an all-year, all-weather route over Minaret Summit is not economically feasible.

Lest the pro-wilderness forces think this settles the controversy, the danger is that despite these two adverse reports the proponents of the road remain just as determined as ever to see a trans-Sierra road built over Minaret Summit no matter what it costs. A bill was introduced earlier this year to make it a part of the State Highway System.<sup>2</sup>

The first report was released in March, 1966, in response to the Senate

Resolution 89 (1965).<sup>3</sup> It was a study of a two-lane, 60 m.p.h., 6 percent grade highway, designed according to the minimum standards for a trucking route. The State Engineer recommended against adding this route to the State Highway System because of its low traffic potential (estimated annual average of 600 vehicles per day now, 1900 by 1985 assuming all-year use),<sup>4</sup> compared to its high costs (\$125 million for 213 miles).

Proponents of the road criticized the report and took the State Engineers to task for misconstruing the intent of the Senate Resolution and for assuming that a high-standard highway was necessary. They have persistently and blandly ignored all the evidence and expert opinion contrary to their assumption that a less costly highway could take care of trucking the agricultural and industrial produce of the San Joaquin Valley to eastern markets. Their notion is to connect the route to Interstate 70 via Benton, California, and Cove Fort, Utah. Hence, the proponents sought another study of a lower standard road equivalent to Forest Highway standards; that is, forty foot widths, 7 percent grades, and curves with a minimum radius of 450 feet. Assembly Concurrent Resolution 44, providing for such a study, slipped through on June 16, 1966.

### Commercial benefits lacking

As requested by ACR 44, the Division of Highways undertook the Forest Highway 100 Study and published its findings last December. On the question of a road of Forest Highway standards serving as a commercial route, the Study has this to say:

"ACR 44 suggests the need for an all-year commercial trans-Sierra route in this locality. Traffic analysis does not disclose any need for considering the commercial benefits of this route. The

rough terrain, heavy grades, high elevations, modest standards of alignment, longer driving times, higher operating costs, and lack of roadside service facilities or market outlets make existing all-year high-speed trans-Sierra State Highway routes preferable to the use of Forest Highway 100 for commercial traffic. It would not be practical or economically feasible to construct a route in this locality which would provide standards equal to those on the existing trans-Sierra routes."

The potential of the route for recreational purpose was considered from various aspects, for ACR 44 states that the highway "will also provide a loop tourist circuit within a 250 miles radius of the mass urban areas of Los Angeles and San Francisco, providing unparalleled recreational, aesthetic and scenic values to the majority of the people of the State of California."

### Traffic potential slight

First, the report disposes of the bait dangled before the urbanites of Los Angeles and San Francisco, who account for 90 percent of the state's outdoor recreation participants. Studies by the California Department of Parks and Recreation, in cooperation with the State office of Planning, show that people do drive for pleasure, but seldom on a trip that requires more than four hours driving time, unless on a vacation. The vacationers constitute approximately twelve percent of the whole.

From either Los Angeles or San Francisco, to reach the nearest recreation areas served by Forest Highway 100, requires more than four hours driving time, and a loop trip would require more than thirteen. Both cities badly

1. Forest Highway 100 Study, Route 41 to Route 395 via Minaret Summit, Requested by Assembly Concurrent Resolution No. 44, 1966, First Extraordinary Session, State of California, Department of Public Works, Division of Highways, December, 1966.

The earlier report is reviewed in the Sierra Club Bulletin, September-October, 1966, at pp 15-18.

2. Assembly Bill 290.

3. Sierra Club Bulletin, Ibid, F.N. 1.

4. Estimates for the central corridor section made in 1965 in connection with the study of a high standard all year highway were 430 now, 1250 by 1985. The new report makes it clear that all-year use cannot be assumed.

need recreational facilities closer to home. From San Francisco, Bishop, the center for eastern Sierra recreation, can be reached as quickly by existing roads.<sup>5</sup>

The remaining recreation traffic potential; i.e., from the San Joaquin Valley, is minimal. Based on roadside interviews and origin-and-destination studies, it would average no more than 25 vehicles per day.

The total traffic potential for the section between Squaw Dome and Minaret Summit, assuming winter closure, is now estimated at 230 vehicles per day. (This is derived from averages of 500 per day during the four summer months, 95 per day during the remaining eight months). Even if the unrealistic assumption of all weather traffic is made, the average for this central section becomes only 280.

### Extravagant costs

To provide a road of these minimum standards, for these few travelers, the public is asked to pay a minimum of \$22 millions, plus maintenance costs. This construction cost figure comes from U.S. Bureau of Public Roads estimates, not from the California Division of Highways. The latter made no independent study other than the study of construction costs of a 60 m.p.h. highway.<sup>6</sup>

The more optimistic projections of traffic assumed an all-year highway, most likely because the Mammoth Mountain Ski Area looks attractive from anywhere, especially from the San Joaquin Valley. The ACR 44 Report makes it quite clear that it is too costly, as well as too dangerous, to keep the route open in winter.

Estimated yearly maintenance expense is \$551,000 for an all-year highway, or \$270,000 with winter closure. The initial investment in highway equipment would be \$2,350,000 for an all-year road, \$1,700,000 otherwise.

When these figures are broken down to show cost per car, we find that the per trip costs on Forest Highway 100 would be more than twelve times the per trip cost of any other highway in California. This is a lot of money. But what is even more significant, the money would have to be diverted from funds badly needed to maintain existing roads carrying greater traffic. The maintenance money comes from the State Highway Fund, which is principally derived from the motor fuel tax. Already that source is exhausted every year. The

share allocable to the District embracing Madera County would not be affected materially by adding State Highway mileage. Instead, its maintenance cost demands would drain money from other highways within the same District.

### Weather hazards

Another important factor is the danger of winter blizzards. Nearly 50 miles of the route are between 6000 and 9000 feet, the elevations of heaviest snowfall. The report reads:

"Aside from the extremely high costs of such a proposal in relation to its traffic usage, there would be serious dangers and hazards to the motorists who could become stranded in this remote area without service or medical facilities of any kind during severe winter storms. All existing all-year highways in California are at much lower elevations where storms are likely to be less severe, and numerous establishments exist throughout their length that provide safety and comfort to the travelers. These roadside service facilities, both public and private, have been established and developed over the long period that the routes have been in use.

"At present, adjacent to the Forest Highway 100 routing, roadside services are almost non-existent between the small town of South Fork on the west and Mammoth Mountain Inn on the east. This is a distance of 82 miles of rough, mountainous country, nearly 50 miles of which are from 6,000 to 9,000 feet in elevation, and subject to sudden and drastic changes in the weather. No existing trans-Sierra route in California has such great distances between available roadside services. Even in the Rocky Mountain States, roadside services and communities are at much closer intervals on roads maintained as all-year highways. The lack of facilities for roadside services and potential emergency needs would severely limit the use of Forest Highway 100 during the winter months both now and in the future. In view of the very low volume of winter traffic which would use completed Forest Highway 100, it is doubtful if business establishments in the central section of the route offering roadside services would be economically feasible."<sup>7</sup>

Characteristically, proponents of the proliferation of trans-Sierra highways proceeded to ignore the facts and caused the introduction of a bill in the current

session of the Legislature in Sacramento designed to incorporate Forest Highway 100 in the State Highway System. At least once before, despite the adverse recommendation of the State Highway Engineer, a similar effort was successful with respect to another highway.<sup>8</sup>

The current offering, known as AB 290, was introduced by Assemblymen Zenovich, Mobley, Murphy, Miliias, Badham, Bagley, Chappie, Duffy, Ketchum, MacDonald, Monogan, Pattee, Shoemaker and Veneman and was co-authored by Senators Way, Burns and Short.

The bill had ominous implications. On the face of it, it carried no appropriation. Therefore, it seemed innocuous and palatable. The catch in such a situation is that once a route is designated a part of the State Highway System, funds may be appropriated for its construction by the Highway Commission without further legislative consideration.

Hearings on AB 290 commenced before the Assembly Transportation Committee on April 4 and concluded on April 18. By voice vote the measure was then soundly defeated—only one vote in favor could be detected. But its sponsors indicated the likelihood that a similar proposal would be introduced next year.

It is conceivable that the introduction of the bill and its fate presents an unprecedented opportunity to sportsmen and conservationists. Never before has any official body determined if the road is *necessary* or *desirable*. In all of the proceedings leading to the declaration by the U.S. Bureau of Public Roads, in 1962, that the route was *feasible*, and its subsequent designation as Forest Highway 100, the only inquiry and the only

5. Depending on one's sporting instincts, driving time from the Bay Area to Bishop is from six to eight hours via Sonora, Tioga, Kit Carson or Luther Passes. Ebbets Pass is in process of improvement. The traffic on Highway 50 around the south shore of Lake Tahoe seems likely to be an incurable impediment.

6. Letter from J. C. Womack, State Engineer, dated February 17, 1967.

7. Compare this statement from the 1957 report by the Bureau of Public Roads: "... there are few possible routes through the narrow, rugged terrain of the corridor and none can be expected to provide for year-round traffic."

8. State Highway 190 to Mineral King.

subject upon which a public hearing was had concerned economic and engineering *feasibility*. The files of the Sierra Club contain letters from all of the then commissioners of the State Highway Department, from the Chief of the U.S. Forest Service, and from Gordon Winton, Assemblyman, disavowing responsibility for deciding whether the road *should* be built. Passage of AB 290 would have been tantamount to such a decision, at least as far as the State is concerned.

Whether rejection of the bill is equivalent to a determination that the road is neither necessary nor desirable is an interesting question. During the hearings, the shrewd and penetrating questions put by members of the committee to the witnesses on the opposing sides revealed that the legislators were interested in whether there was any evidence of need for the road, what its potential costs for construction, maintenance and snow removal would be, and whether it would be damaging to the Muir Trail and its wilderness environs. Earlier resolutions favorable to the road have been used by the proponents to help get the route in the Forest Highway System. These were adopted without hearing or debate. The fact that the proposed statute was rejected after full hearings demonstrates, at the very least, that the earlier resolutions should be discounted.

Now the problem is to keep the road from creeping through on Forest Highway funds. Only Congressional action to close the corridor by incorporating it in contiguous wilderness areas would provide a permanent solution. ■

# Sooty Campfire Sites in the Wilderness

by Edwin L. Braun

THE POPULATION of abandoned cook and camp fires in the Sierra Nevada is increasing even more explosively than is California's human population. Lake shores, stream banks, meadows and forests, high country pine thickets, are all becoming dirtied by these ugly and permanent products of unthinking use. Ten years ago the greater portion of the trailless backcountry gave the impression of true wilderness; it was largely clean, clear and unsullied. Today many a choice area presents scenes of one blackened fire site reaching to another equally blackened fire site. I believe that those of us who value and enjoy the high country must do all we can to bring this unthinking and indiscriminate firebuilding to a halt. I do not mean that fires should be forbidden, for one of the truly satisfactory aspects of the mountain experience is the warmth and friendliness of the campfire, the focus of camp life.

The use of fire, however, must be controlled. It's a matter of self-control really. *The camper* must appreciate the problem, know how to deal with it, and *be willing to take the extra trouble*. I write this in the hope of supplying the awareness and the know-how; the willingness must come from the camper himself.

The battle against this particular ugliness can be waged on at least three levels. We may use only existing camps, we may make our own camp and eliminate it, or we may carry stoves and fuel.

1. Use only existing and well-accepted camps. These may be badly kept, with fireplaces in disrepair, coals scattered in the sleeping sites, cans nearby and so on. It is possible to rebuild these fireplaces, to clean the grounds, and to burn the coals and other debris in a fairly short time. Such camps are often in the best places and a bit of effort in clean-up is rewarded by an exceptionally pleasant stay.

A better and cleaner camp influences the behavior of later campers, because it is more likely to be used, and it is more likely to be kept clean. The building of new camps and fires is thereby reduced.

2. Where no established camp is available, it is possible to build a *single small* fire for the party, and to eliminate it and other evidence of use from the camp area when leaving. The fire site should be a sandy or gravelly spot with a minimum of plant growth or inflammable debris.

Scoop a shallow pit in the sand, 8 to 10 inches wide, 12 to 18 inches long and about 6 inches deep. Save the sand to one side for later filling of the hole. Only three or four rocks need be used in the structure: one large, flat and moveable back-rock to protect adjacent rocks from blackening and to guide the smoke upward and away from the cook, and one or two long rocks on each side of the pit to support the grate above the fire. The grate should be just high enough to permit easy feeding of the fire and a good draft, probably about eight inches. A *small* fire does less damage than a larger one, is easier to cook on, uses less firewood and is easier to clean up. Other flat rocks may be placed for use as small ground level tables to aid the cook and to keep food and utensils clean.

A fireplace such as this one should be fed with *small* pieces of wood, two inches or less in diameter and short enough so that the fire remains wholly within the pit. This is a matter of both safety and cleanliness. Only *down* wood should be used. Dry, dead wood in the high country breaks easily over a knee or a rock. An axe is *not* needed. A party of eight used the fireplace shown.

When the time for breaking camp arrives, the coals should be allowed to burn down to ashes while other preparations are being made. The ashes will occupy less space than the coals and will

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be easier to cover. The fire *must be out* before the fireplace is disturbed. Make certain of this by adding water to the ashes and stirring with a stick until the mixture is cool enough to be held in the hand. Now remove the rocks and return them, *blackened side down*, to the holes from which they came. If this is not possible, place them in a natural appearing position, perhaps partly buried in the sand. (When an area of broken rock or talus can be found where the cracks are deep and dark, most of the ashes can be hidden there. This should be done *only* if it is certain that they will not re-appear through the action of wind and wa-

ter; otherwise leave them in the firepit. A pot can be used to carry the ashes, and rinsed afterwards.) Now, fill the pit with sand, covering the ashes as deeply as possible, and stamp the sand firm. Small rocks and pine needles, and a few splashes of water from the stream may be used to complete the camouflage. Excess wood supply should be scattered far and wide, putting it as naturally as possible. (For further suggestions on camping, food and cooking, see *Food for Knapsackers*, by Winnie Thomas and Hasse Bunnelle, Sierra Club, \$1.25).

3. The least damaging camp of all is that based on the use of gasoline or kerosene stoves. This is the great discovery which I made during the past two summers in the Sierra. These stoves can be

used when the camp is in a delicate, or very wild and clean place, or whenever one wishes to cut down on the amount and drudgery of camp chores. The group can be fed a complete meal without the need to build a wood fire if the food has been properly planned and if group members are willing to forego the warm companionship of an open fire. Without the light of the fire, one can see the stars, the moon, the mountains and lakes as never before. Such an experience is its own reward.

I have been able to feed, and feed well, groups of up to nine persons, using two small gasoline stoves (Primus 71 L) as the sole source of heat. I hope to be able to discuss the art of cooking on stoves at a later time. ■



The spray-can syndrome, as seen in the Arroyo de San Francisquito, Baja California. The photographer, William Aplin of Ventura, California, writes: "I don't know what can be done about vandalism of this sort, but wish a propaganda campaign could be started." Alpin, Si! Schulz, No!



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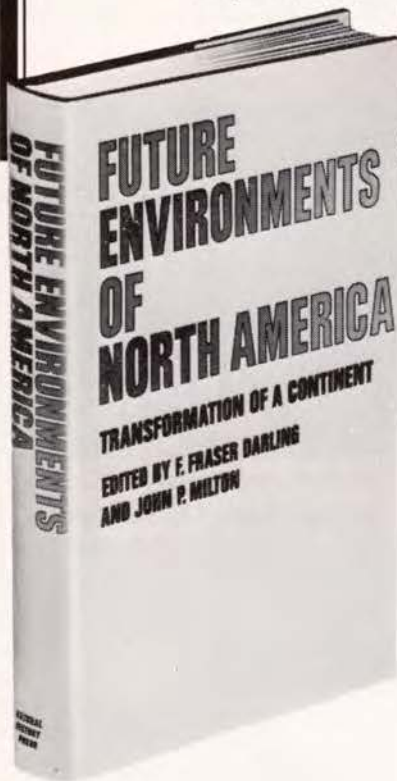
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— *Conservation News of the National Wildlife Federation*



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(continued from page 3)

hopefully be 30 years of blasting. After the ore deposit is exhausted, Kennecott intends to plant Australian vetch on the tailings and dump. Such introduction of an exotic plant into a dedicated wilderness area, however, is improper. Avalanches will fill the pit and obliterate access roads when the operation is closed down, the company believes (or purports to believe), so that "none of this will be noticeable." And excavated rock will be "indistinguishable from natural talus piles." Kennecott has not claimed that its operations will actually improve the natural scene, so far as we know.

Patrick D. Goldsworthy, President of the North Cascades Conservation Council and newly-elected member of the club's Board of Directors, says that "Our reactions to Kennecott's plans are crystal clear. They must not be allowed to even start. . . . The public is certain to protest to the President of the United States and to its Senators and Congressmen. The Forest Service must be convinced that it must exercise all the power it has to enforce the provisions of the Wilderness Act."

The Forest Service's superior, Secretary of Agriculture Orville Freeman, has conceded that Kennecott has the right under the Wilderness Act to develop the Miner's Ridge site. But speaking this month at the Tenth Biennial Wilderness Conference, sponsored by the Sierra Club, Secretary Freeman urged the firm to "consider the transcendent values that will be destroyed if mining is begun." Kennecott's Vice President in charge of mining, C. D. Michaelson, reacted this way: "Of course we're going to go ahead and mine. You can't desert property."

Although the Wilderness Act permits the exploitation of mining claims within wilderness areas, it also imposes restrictions and controls. Some observers hope that if provisions of the Act are strictly enforced, Kennecott could not operate profitably at the Miner's Ridge site. We trust that Secretary Freeman's Forest Service will hold Kennecott to the letter of the law.

## Photography and bookmaking workshops

The 1967 Ansel Adams Yosemite Photography Workshop has been announced for June 4 through June 19. Tuition:

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\$150. For information, write Best's Studio, Box 455, Yosemite National Park, California.

A workshop tentatively titled "Words and Images: The Making of a Picture Book" will be conducted at the Santa Cruz campus of the University of California from June 20 through July 8. Beaumont and Nancy Newhall will be assisted by Ansel Adams. For information, write University Extension, Carriage House, University of California, Santa Cruz.

## New Grand Canyon film is released by the club

"The Grand Canyon," the club's newest motion picture, is ready at last. Twelve years in the filming—and nearly twelve months after the hoped-for release—we have at last a moving and convincing way to show how a living river is vital to keeping a canyon alive.

David Brower, who produced "Two Yosemite" and "Wilderness Alps of Stehekin," calls it by far the best film the club has ever done. In artistry, purpose, and technical excellence, it is a film counterpart of the Exhibit Format books.

Cinematography is by Martin Litton, whose knowledge of the Canyon's secret places is hard to match (and whose ability to run the river and the camera at the same time can never be matched safely). Litton also helped with scriptwriting, as did Brower. The principal scriptwriter, however, was Southwestern Representative Jeffrey Ingram.

Under pressure of a deadline dictated by the Canyon's peril, Ingram wrote and rewrote the film script, rough edited the film sequences, found a film laboratory in Kansas City that could meet his demanding production schedule, selected a narrator, directed the narration, chose background music, and worked closely with professionals in final film editing and synchronization of the soundtrack. It was Ingram's first film production effort, and the result is a triumph.

The Canyon, as Litton captured it, is so magnificent that the film's message

can be understated. There is no stridency here. "Can we afford to keep some land free of the contrivances of the world we made? Can we afford places where all we need to do is learn to walk easily through the world we were made in? Can we afford to set aside National Parks? Can we afford not to?"

"If you think some land should be left, exalting its own life; if you think that somewhere a flower should be able to grow uncultivated, unplucked, perhaps even unseen; if you feel that clouds should not have to contend for space with smog, that a spring should be able to run free and pure, that a pond should be left to itself to support its community; if you are pleased to see a stream glorifying a natural pavement; if you are content to enjoy a rivershore, leaving its designs undisturbed; if you have ever felt that a wilderness river should be left dancing, alive and bringing life; if you have come, even a little, under the spell of this place, then the whole of this Canyon we have discovered only a little of, this Grand Canyon, is your Grand Canyon."

Anyone who sees this film will want to see the Canyon itself—will want it to be there, undammed and undiminished, for all to see.

Now available for purchase or rental, "Grand Canyon" is a 16 mm sound-and-color film. Running time is 25 minutes and the price is \$275 per copy. If individuals or groups get together to give the film to libraries and schools, the gift is deductible. Individuals may take advantage of a special pre-release discount of 40 per cent until May 15.

## Canyon photo exhibit

Grand Canyon's matchless splendor has been faithfully interpreted by an exhibit of superb color photographs as well as by the club's superb new motion picture. Only a boat trip could demonstrate more convincingly that the living river must be allowed to stay alive if the Canyon itself is to live.

During a Canyon voyage last September, led by Martin Litton, photographer Ernest Braun looked at Grand Canyon in a way it hasn't been looked at before. His camera saw things Ernie's way, and luckily, you can too when his exhibit comes to town. (Several duplicate exhibits were produced and will be kept traveling.) There is an intimacy to the Canyon and its creatures as Braun

sees them at river level that is a revelation to anyone who thinks that the Canyon is what you see from the rims.

Braun donated his transparencies to the club for exhibit purposes as a contribution to the Canyon's defense. For his part, Lawson Jones produced meticulous enlargements for no more than the cost of materials; in so doing, he made it possible for the club to circulate several exhibits instead of one. Exhibits have already been booked in Washington, New York, and San Francisco. They must be kept moving for the Canyon's sake. If you know of a museum, gallery, or hall where the exhibit might be shown, please let club headquarters know.

The color prints range in size from 11-by-14 to 40-by-60 inches, and the exhibit takes 120 feet of wall space. A brochure is available to explain the Grand Canyon controversy to viewers.

## Senator Anderson honored by Rio Grande Chapter

Two years ago, Senator Clinton Anderson of New Mexico was made an honorary life member of the Sierra Club. Last month, the Rio Grande Chapter presented a complete set of Exhibit Format books to the Senator with a parchment certificate of lifetime membership in the chapter. The certificate expressed "respect and appreciation for the most enduring among your many services to your fellow man: Your leadership in what you have aptly called 'the long struggle to save wilderness America.'"

## Labor union support for conservation

The 17th Biennial Convention of the International Longshoremen's & Warehousemen's Union this month adopted a policy statement on conservation from which the following is excerpted:

"It is the policy of the ILWU to support the responsible programs of legislators and conservationists which will protect the vacation and recreation areas of working people throughout the United States, while not imposing any unreasonable financial strain on taxpayers or citizens in particular areas. We commend those groups which have the farsightedness to protect the beauty of our land for generations yet to come and support the conservation efforts our members in Hawaii have already made.

"We support the Cohelan-Metcalf

bills in Congress for the creation of a 90,000-acre park in the Prairie Creek-Redwood Creek watershed of Humboldt County.

"We find the harassment of the Sierra Club by the Internal Revenue Service appalling, and urge an immediate end to such persecution. It is a rebuff to the public interest, and an abusive use of unbridled power. The Sierra Club, although we do not necessarily agree with all of its policies, continues to be the single most active participant in the struggle over conservation. It is oftentimes the public's only voice against the irresponsibility of private enterprise in the pursuit of its vested interest."

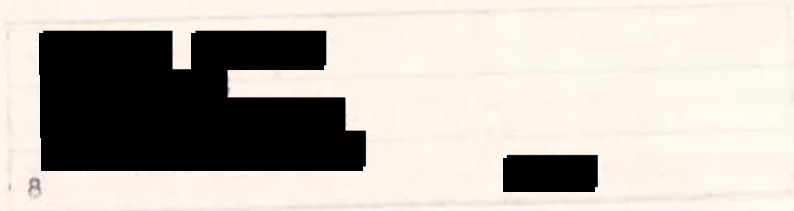
Barry Silverman, author of the ILWU policy statement, writes "I am proud of the position my union has taken. I would only hope that other labor unions would follow suit."

## Publishing bottleneck

Wondering why that book you ordered from the club hasn't come yet? One reason was reported in the *Wall Street Journal*: "In the past decade alone, dollar sales of books in the U.S. have doubled to \$2 billion a year and unit sales have risen a third to 1.2 billion volumes. As the crush of orders grows, more printers are being forced to turn down work and delay shipments; logjams in production scheduling are piling up in shops across the country. This already-serious strain on U.S. book manufacturing facilities will likely get worse before new capacity can ease it. . . ." We try, though.

## Wilderness field course in art and ecology

From June 19 to July 28, the California College of Arts and Crafts will conduct a combined course in art and ecology for art students, art teachers, and practicing artists. "The class will spend three weeks on the CCAC campus and three weeks in the field. From a wilderness camp the group will study the inter-relationships of geology, soil, and climate with plant, animal, and human communities. . . . Students and faculty will explore together some larger historical, scientific, esthetic, and philosophical aspect of the interactions of the natural landscape with man and his works." Application deadline: May 10. For information, write CCAC, 5212 Broadway, Oakland, California.



*Dave Bohn, photographer and author of Glacier Bay: The Land and the Silence, surrounded by press sheets and page proofs of the new Exhibit Format book. The photograph is by Dennis Galloway.*

## Change of Address

Please affix Bulletin label here and write new address below. Mail to the Sierra Club Membership Dept., Mills Tower, San Francisco, California 94104. Thank you.

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DAVE BOHN has climbed and photographed in the Cascades and Olympics, in Alaska's Chugach Mountains, Juneau Icefields and St. Elias Range, and in the Karakorums. He has spent 40 weeks in the field, since 1962, exploring Glacier Bay National Monument with his camera.

In this, Alaska's centennial year, Congress will consider legislation to transform the national monument into a national park. As timely as it is beautiful, *Glacier Bay* presents the work of an outstanding young photographer, outstandingly reproduced in color and black-and-white.

The 16th in the Sierra Club's Exhibit Format Series, *Glacier Bay* is priced at \$25. It will be available for shipment by the time this Bulletin reaches you.