

Sierra Club Bulletin



EDITORIAL

Who Are the Real Extremists?

Once again, conservation has become a cause which is popularly heralded in the press. Newspaper editorialists are all for conservation as long as it concerns controls on polluters or industries far from home. But they take a far different view if we criticize the leading industry of their area. Then we are sternly lectured about the dangers of becoming extremists or fanatics. The conservation that is acclaimed as a self-evident good by most newspapers is denounced for its extremism locally.

Such local editorialists want a sort of painless conservation—conservation that costs nothing in terms of inconvenience to their industry. The trouble is that conservation that costs nothing, usually accomplishes nothing, and the lack of effective conservation does produce *real* costs to the public at large in the form of declining environmental quality. All of the local exceptions that these editorialists want add up to national catastrophe.

Who then are the real extremists? Is it those who have gotten 90 per cent or more of our national forests earmarked for logging and want more, or is it those who would save another 5 or 10 per cent more? Are the extremists those who have cut out 85 per cent of California's redwoods, or those who believe more than 3 per cent should be saved? Are the extremists those who have killed off 90 per cent of the alligators and wading birds in the Everglades, or those who believe that those remaining deserve to live? Are the extremists those who have dammed, ditched, drained, and diverted most of America's watercourses and wetlands, or those who would keep a fraction wild? Are the extremists those who have loaded our tissues with DDT, those who blast our houses with booms and roars, and those who choke our air with fumes, or those who want to protect the integrity of man's habitat?

We are not gripped by any romantic illusion of wanting to turn the country back to the Indians, though undoubtedly they would be better stewards of it. But we are trying to keep the country habitable for those who now live here, and we do hope to keep those numbers from increasing much beyond their current size. Our effort is to keep the earth's life-support system in good repair, and nothing could be more reasonable or imperative.

It is time that conservationists stop being defensive about their campaigns. It is time to start singling out the real extremists:

- those who are devastating our last virgin forests and grasp for more;
- those who roll over the Everglades as if they should only be the habitat for jumbo jets;
- those who would line every stream with concrete and divert every flow into corporate farms and factories;
- those who drench our landscape with pesticides, poison our air, and blast our eardrums.

It is time to set the record straight. It is we who are being short-changed environmentally. We are being given the leftovers, and the leftovers are already too little. There isn't enough environmental integrity left for it to be compromised any further.

We must continue taking strong stands, no matter how unpopular they may be locally. We can only have a habitable planet if we do. The true extremists will be known by their deeds.

MICHAEL McCLOSKEY
Chief of Staff



Sierra Club Bulletin

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... TO EXPLORE, ENJOY, AND PROTECT
THE NATION'S SCENIC RESOURCES ...

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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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WASHINGTON REPORT

By W. Lloyd Tupling

NATIONAL TIMBER SUPPLY ACT

When the first U.S. forest reserves were set aside early in this century under the administration of President Theodore Roosevelt, recognition was given to the paramount service of a very large part of our forest land as a source of water, an erosion preventive, and a regulator of streamflow. Far-sighted men like the first Chief of the Forest Service, Gifford Pinchot, knew that flash floods, followed by crippling drought, form the inevitable cycle when ground cover is gone.

This basic concept has eroded with the passing of years as conflicting pressures built up over use of National Forest lands. The extent of this policy deterioration is evidenced in H.R. 12025, the bill reported out by the House Forestry Subcommittee which assigns timber-harvesting the top priority in National Forest management. Introduced in June as the National Timber Supply Act, the Subcommittee sanitized the proposed statute to the extent of changing the title to the National Forest Conservation and Management Act of 1969. But the name of the game is the same.

Basically, the Act requires that cutting rates be sharply increased on all National Forest timberlands capable of producing commercially usable timber, which are not presently withdrawn for recreational purposes. To promote intensive forestry, the bill earmarks receipts from timber sales for mandatory practices to increase the yield of wood fiber in the shortest possible time, including upward revision of the allowable annual harvesting rates. Except for passing reference to the Multiple Use-Sustained Yield Act of 1960, the bill ignores National Forest functions for water supply, grazing, recreation, wilderness and fish and wildlife protection.

Old-growth timber has rapidly disappeared from privately-owned timberlands. The bulk of this supply is now in government ownership, and H.R. 12025 is the instrument sought by the industry to convert these stands into saw-logs. The Forest Service had planned to ration this out for about 100 years. The industry-sponsored bill would reduce this to 15 or 20 years. Faced with overcutting on their own lands, the industry seeks liquidation of the publicly-owned mature timber.

Rather than a raid on the National Forest, our country needs a careful investigation by a blue-ribbon commission of the state of forestry under all ownerships—public, in-

dustrial, farm and small woodlands. Most of the potential for increased productivity is in the private sector where re-stocking practices have lagged.

Whether our National Forests will be diminished at a faster pace may be decided at this session of Congress.

At mid-October, H.R. 12025 was pending before the House Agriculture Committee for action. Similar measures are also before the Senate, and hearings have been held by the Senate Forestry Subcommittee. Many members of the Senate have questioned the need for increased National Forest cutting, especially since the industry has doubled the rate of exports to Japan and elsewhere in recent years. Estimates indicate that 4 to 5 billion board feet will move overseas this year. Can we afford to have our shrinking forest lands meet this demand in excess of domestic needs?

TAX REFORM BILL

The Sierra Club and other non-profit organizations have proposed amendments to the so-called Tax Reform Act which would permit tax-exempt organizations to engage in activities to influence legislation before Congress. Present law bars "substantial" efforts in this field, and the House-passed Reform Bill makes the regulations more stringent. In a statement to the Senate Finance Committee, the Sierra Club urged revisions to allow donors to deduct all contributions to non-profit membership organizations which are used to finance their chartered purposes, including dissemination of propaganda and legislative activity.

An amendment along similar lines also has been introduced by Senator John Sherman Cooper of Kentucky. In a floor speech, Senator Cooper pointed out that the "real effect" of Internal Revenue code provisions "has been to greatly restrict, and in some instances actually prevent organizations which possess important information from making it available to Congress in any meaningful and systematic manner." On the other hand, he said, the code "establishes a clear tax stimulus for profit-making organizations to influence any legislation that may effect their operations." Business can take a tax deduction on lobbying expenses. "This, of course, can only lead to the overrepresentation of some interests while others remain underrepresented," he said.

Adoption of the Cooper Amendment would lessen the competitive disadvantage of non-profit groups when they are opposing business entities on an issue before Congress.

NEWS NOTES

Nine candidates Nominated for Board The Nominating Committee proposes the following persons as candidates for the five positions on the Board of Directors to be filled at the election

of April 11, 1970:

Paul Brooks	Martin Litton
Alfred S. Forsyth	Virginia Prentice
Patrick D. Goldsworthy	Richard Searle
Charles Huestis	Richard Sill
Richard M. Leonard	

Members of the Club may add to this slate of candidates by petition. The requirements for such petitions are:

- Only one candidate may be nominated on any one petition;
- A petition for nomination shall be directed to the Nominating Committee through the Secretary of the Sierra Club at the main office, 1050 Mills Tower, 220 Bush Street, San Francisco, California 94104;
- Each petition must be signed by at least 438 members in good standing (1% of the number of ballots cast in the preceding annual election);
- No petitions will be considered which are received at the Club Office after December 31, 1969;
- Each petition must be accompanied by the signed, written consent of the proposed candidate.

—NOMINATING COMMITTEE

S.1075 sets national policy on environment Landmark legislation to establish a national policy on the environment and an independent body of environmental advisors within the executive

office of the President headed for a conference in mid-October between the House and Senate to work out differences in the legislation as adopted by the two bodies. Besides the important declaration of a national policy for a better environment, the legislation would require agencies of the federal government to consider environmental impact in deciding on project development, and would give the Council of Environmental Advisors surveillance over proposals.

Water pollution funds tripled by House The House has passed H.R.14159, the 1970 Public Works Appropriations bill, including \$665 million in grants to states for water pollution abatement facilities. The sum was three times the amount asked by

President Nixon in his budget proposals. The action marked a victory for a coalition of conservation, labor, and civic organizations who had sought the increase to fight water pollution. An effort to increase the water grants to \$1 billion failed by a vote of 146 yeas to 148 nays.

Interior releases Amchitka reports on eve of test In a press release issued prior to the Atomic Energy Commission's October 2 nuclear warhead test on the Amchitka Island Wildlife Refuge, the Sierra

Club asked to see the reports from Department of Interior wildlife biologists on the effects of AEC's activities on Amchitka and the permit by which the Interior Department authorized the AEC to test nuclear weapons in a wildlife refuge. "We have been advised by counsel that such reports should be made available to the public under the Freedom of Information Act," the club said. On the eve of the blast, the Interior Department released the requested information. As was expected, biologists with the Fish and Wildlife Service had indeed criticized the AEC's activities on the island and warned of the shortcomings of the studies undertaken before the blast. The biologists pointed out that research to evaluate the effects of possible venting seem to have been ignored. They charged, "The decision to delay such analysis until an accidental venting occurs is almost irresponsible."

Dams in the North Cascades—a Hetch Hetchy? Seattle City Light, the city's public utility, sent the Seattle City Council a budget request for three-quarter

million dollars to provide engineering funds for final design work on the controversial High Ross and Thunder Creek power projects on the Skagit River in the North Cascades. Because of rising opposition to both projects, at hearings on October 3 the utility modified its request by dropping the Thunder Creek project. Seattle City Light's strategy apparently is to push for raising the already existing Ross Dam first, and once that is approved to later seek funding for Thunder Creek. Conservationists suspect it's a "win one, win 'em all" strategy since the proposed new level for Ross Lake can't be maintained without a disfiguring drawdown, unless Thunder Creek dam is built. Ross Lake divides the north and south units of the North Cascades National Park. If, as City Light plans, the existing dam is raised 125 feet, the Ross Lake project will flood the shoreline of Ross Lake and most of the major tributary valley of Big Beaver Creek, the major wilderness entry into the Picket Range. The Thunder Creek project would divert up to 80 per cent of Thunder Creek through a tunnel into Ross Lake. The dam, tunnel, and construction roads would be built in a de facto wilderness valley within the Ross Lake National Recreation Area administered by the National Park Service.

Fund Campaign Gains Momentum

President Berry's request for donations from members to help the Club continue its conservation activities (September Bulletin) has brought many contributions from around the country. But, more is needed. If you have not yet sent your gift, please mail it now. If you can contribute more than the \$5.50 per member requested, please do so. The cause is worth it.

Congress moving ahead on wilderness bills

Congress has cleared one wilderness bill for the President's signature, and Senate Interior Chairman Jackson has introduced an omnibus bill to establish 14 additional wilderness areas. Final action on the 63,500-acre Desolation Wilderness in the El Dorado National Forest of California came when the Senate accepted House amendments. Meanwhile the Senate Public Lands Subcommittee scheduled hearings in early November on Senator Jackson's bill to establish 14 new wilderness areas within refuges managed by the Bureau of Sport Fisheries and Wildlife. The areas affected are: Hart Mountain, Malheur, Three Arch Rocks, and Oregon Islands in Oregon; Bering Sea, Bogoslof, Tuxedni, St. Lazaria, Hazy Islands, and Forrester in Alaska; Copalis, Flattery Rocks, and Quillayute Needles in Washington; and Bitter Lake in New Mexico.

Action against Lake Superior's major polluter

Since 1955 Reserve Mining Company's taconite processing plant at Silver Bay, Minn., has been dumping approximately 60,000 long tons of taconite tailings wastes daily in Lake Superior. Charging that the State of Minnesota is ignoring substantial evidence of violations of its permit to the company for industrial discharges, in September the Sierra Club and the Minnesota Committee for Environmental Information filed a lawsuit to compel the state to hold public hearings on revoking the permit. During the following month both federal and state agencies took action on this pollution issue. On October 1 the Federal Lake Superior Enforcement Conference gave Reserve Mining six months to devise a plan to reduce its discharges, and on October 7 Governor Harold LeVander of Minnesota urged the Minnesota Pollution Control Agency (PCA) to hold public hearings to determine if Reserve Mining Company is in compliance with its discharge permits. The club will not drop its suit until the PCA has followed the governor's recommendation and decided to hold the hearings.

Club sues to save Channel Island

The Sierra Club appealed in October to the Santa Barbara Superior Court for an order suspending the permit granted to Union Oil Company to begin drilling at Santa Cruz Island, a principal unit of the

proposed Channel Islands National Park. "Should Union Oil Company gain a foothold on Santa Cruz Island, the park prospects for the nation's most important marine reserve would be dangerously threatened by sky-rocketing acquisition costs and the ever present danger of massive oil pollution," a club spokesman said. The club's petition also asked the Court to require the Santa Barbara County Board of Supervisors to schedule public hearings on Union Oil's drilling permit. The geographical strata on Santa Cruz Island are "treacherous and fault-ridden and apt to cause blow-outs and seepage of oil into the channel waters," the club's suit states.

Conservation issues approved by Board

In addition to its adoption of four new priority projects (see September SCB) the Board of Directors of the Sierra Club at its September meeting unanimously approved the following resolutions:

—National Timber Supply Act. "The Sierra Club reiterates its opposition to legislation that would cause accelerated cutting on the national forests and the logging of all unreserved wilderness, and it calls for the appointment of a National Commission to investigate the state of forestry in the United States and to make appropriate recommendations."

—Olympic National Park Wilderness (Washington). "The Sierra Club endorses the wilderness plan of the Olympic Park Associates, but urges that there be no development of the now disused Whiskey Bend road."

—Machiasport Refinery (Maine). "The Sierra Club opposes present plans for the development of an oil refinery and deep water port at Machiasport in the middle of one of the last commercially untouched areas of the Maine coast, but this is not to be construed that the club supports oil import quotas."

—Weminuche Wilderness (Colorado). "The Sierra Club supports the proposal of the Forest Service to combine and reclassify the San Juan and the Rio Grande Primitive Areas in Colorado as Wilderness, and further urges that the Wilderness also include the Chicago Basin Area Westward to the Animus River plus portions of the Virginia Gulch and Florida River Drainages, and the Beautiful Mountain, Texas Creek and Elk Mountain areas."—Granite Chief Wilderness (California). "The Sierra Club proposes that approximately 35,500 acres in the Granite Chief Area west of Lake Tahoe, as defined by the Mother Lode Chapter Study, be managed as Wilderness until it can be classified as such."

On internal club matters the Board unanimously adopted the Sierra Club Council recommendation that the Uinta Group of Salt Lake City be given Chapter status with boundaries co-terminus with the state of Utah as of October 1, 1969.



Barren-Ground Caribou



It was April and the Arctic winter was slowly releasing its frozen grip on the Alaskan taiga. Only a few weeks earlier the temperature had been a steady 50 degrees below zero. In that bitter cold there had been little sign of life on the taiga except for the caribou. This was their winter home. Accompanied by small clouds of ice fog, the frozen moisture of their breathing, they browsed through the quiet stillness, scooping out craters in the soft snow with a forefoot to reach the lichen and mosses that meant the difference between life and death.

As it had for thousands of years the taiga—the circum-polar zone of open sub-Arctic woodland—had once again protected and fed the barren-ground caribou during the long Arctic winter. South of the Brooks Range in North-west Alaska, the forests of the taiga had softened the bitter harshness of the Arctic winds that sweep across the open tundra, packing snow crystals so tightly together the hoofs of the caribou cannot penetrate it to reach food.

Now, the sun was rising higher each day, the long winter night was passing, and the snow line was gradually creeping north. The taiga was beginning to stir with new life and the caribou were becoming increasingly restless. It may have been the change of climate, or the increasing amount of daylight, it may have been an altering of hormonal balance, or the tiny proddings of a genetic memory extending back a half-million years; but whatever it was, something was urging the caribou northward.

The pregnant cows are the first to start the movement north. Like the Pacific salmon which seeks its own natal ground to spawn, the caribou head unerringly for the traditional calving grounds to produce new life where they themselves were born. Along a broad east-west front of three to four hundred miles the movement begins, slowly at first, then picking up momentum. Initially, the migration is composed mostly of cows and younger caribou who have stayed together in groups of various sizes during the winter. Many of the adult bulls did not migrate as far south the previous fall. They join the migration later as the main movement sweeps by them.

In groups that vary in size from a dozen up to several hundred, the caribou move up into the passes that will take them through the Baird, Schwatka, DeLong and Endicott Mountains. Usually moving in single file, the caribou follow old trails that are so worn and deeply cut by centuries of use they can be easily spotted from the air. The movement is always northward but it is neither direct nor continuous. Sudden Arctic blizzards, not unusual during this time of the year, can delay segments of the migration for days or weeks. Thawing and refreezing, and freezing rains may produce a very hard snow crust that makes both travel and food foraging difficult.

During later stages of the migration the caribou come together in much larger groups and their passage is an

extraordinary mixture of sight and sound. The animals have a characteristic joint or hoof click when they walk and they grunt, bawl and cough a good deal. A biologist, Pruitt, describes the passage of a herd of some 50,000 caribou which he encountered in 1958:

“They poured over the hills, flowed up the valleys, running to a new patch of green vegetation, then stopping to feed while those behind ran to fresher vegetation ahead. They came to a little lake east of camp—some waded out and began to drink, others started around the edges, both sides. This caused them to bunch up and many began to wade and swim across. They came on toward me, stopping downwind. These moved upwind around me, but there were always more coming on. They came to within 30 yards of me, all around, except downwind.

“The clacking of their hoofs, the constant blating of the fawns, the grunting of the females, the constant coughing and wheezing all made a roar that was deafening. Then some bolted from my scent; the movement spread to about 1,000 and the ground fairly shook with the pounding hoofs, the roar increased. Each stampede only affected a thousand or so, then sort of petered out after one-half to one minute. . . . The herd kept moving northwest, it stretched fairly solid for about five hills (two miles) but was only about half a mile wide. . . .

“As they moved into the hollow north of the hill they split into two streams, moved across the flat, then up the hill where they spread out and flowed across more ridges.”

The caribou is well adapted to the extreme climate of the Arctic. Its long, dense guard hairs, enlarged toward the tip, form a coat that carries the caribou comfortably through all but the most extreme sub-zero temperatures. The blunt-toed, crescentic shape of the hoof is not only a successful adaptation for the wide variety of terrain over which the caribou travels, but it is also an efficient paddle for swimming rivers and lakes, and an excellent tool for digging in the snow for food.

The caribou relies almost entirely on its sense of smell to detect danger and to search for snow-covered food. When caribou sense something unusual either by sight or sound they seldom run away, and often move toward the source to identify it by scent. They may spend several minutes moving back and forth, sometimes circling to get downwind, displaying an unusual curiosity toward what may be potential danger. Even when a caribou is frightened enough to break into a run it is an ungainly gallop with the head thrown back over the shoulder as if to see what is going on behind.

For a creature of the wild the caribou at times appears to be a placid and unalert beast. Dr. Peter Lent, an authority on Alaskan caribou, has described how he once walked up to a sleeping caribou and kicked it before the startled animal was aware of his presence.



As the caribou continue their long journey through the passes of the Brooks Range their numbers gradually diminish. Some fall prey to roving wolf packs that follow the herds throughout most of the year. Others are shot by native hunters. Some are swept off mountainsides by avalanches; some drown when the thinning ice of lakes they must cross will not support them. Still others, caught in a howling Arctic blizzard, freeze to death or succumb to starvation.

The northern side of the Brooks Range makes an abrupt descent to a plateau of rolling hills. As the caribou move out of the passes the eastern segment of the migration turns westward and traverses this broad and desolate plateau for several hundred miles. Their immediate destination is a large area inland from the Chukchi Sea along the upper Colville and Utukok Rivers, the calving grounds of the Arctic caribou.

The caribou usually begin arriving in late May and within three weeks nearly all of that year's crop of calves have been born. Often, as much as 80 per cent of all births will take place within a four or five day period. The caribou calf is extremely precocious. It is able to stand and move about within minutes after birth. It can follow its mother at a walk in a few more minutes, outrun a man within 24 hours, and within a few days keep up with its mother when she is trotting.

Predation takes its toll of each calf crop yet it is nothing compared to the damage the erratic climate of the Arctic can inflict. By calving time the temperatures on the calving grounds are generally above freezing, but in some years a wet blizzard followed by a dry cold will sweep unexpectedly across the plateau leaving the ground littered with the frozen carcasses of new-born calves. Calves may

make up 25 per cent of a herd in one year, and less than 5 per cent the next.

In mid-June, after calving, the caribou congregate into large groups and major portions of the Arctic herd move further west into the western foothills of the DeLong Mountains. During July they swing back east along the north slopes of the Brooks Range picking up scattered groups of bulls and other caribou still moving northward from the wintering grounds. In July and August the larger groups break up and disperse over a wide area of the coastal plain stretching from the Chukchi Sea to the Beaufort Sea in northernmost Alaska.

During the brief Arctic summer—the only time of the year the caribou are not walking on ice or snow—the barren-ground does not really live up to its name. It is dotted with thousands of lakes of all sizes, and wherever there is soil, there is vegetation. The rocks are covered with lichen and the usual barren whiteness of the tundra is replaced with a brilliant variety of colors as literally hundreds of types of sedges, lichens, shrubs, grasses, mosses and ferns make their spectacular but brief appearance. The caribou graze back and forth across the tundra which is now alive with ducks, geese, Arctic hare, foxes and other wildlife. The calves are now large enough to run away from all predators but the wolf.

In mid-July an immense horde of insects descend upon the barren-ground attacking every warm-blooded creature. In years of heavy insect infestation the Arctic herd is literally driven off the coastal plain. The caribou migrate for a brief time into the foothills of the Brooks Range, returning to the warmer and lower elevations after most of the insects have lived out their short life spans.

By September the color has faded on the tundra, the air has become increasingly chill, and the scattered caribou begin grouping up, moving gradually south. The adult bulls have added 40 to 50 pounds of back-fat in preparation for the rutting period when they seldom eat. Their huge antlers with the distinctive brow tine have shed their velvet by mid-September and they are hard and shiny in the cold Arctic light. The bulls begin to join the slowly migrating groups of cows, calves and younger bulls.

The height of the mating period for the Arctic herd takes place in mid-October during the migration back to the taiga. Shortly afterward the adult bulls shed their antlers. The female caribou, the only one of her sex in the deer family to grow antlers, begin shedding in March.

After the rut the southbound migration picks up in tempo as the caribou move back through the Brooks Range, often along the same trails they had used in the Spring. The larger concentrations of animals break up into smaller groups to scatter out over the taiga. The herd has been renewed, and new life has begun. The cows will carry the future of the herd in their bellies through the long winter,

and in the spring, once again, begin the long journey to the calving grounds.

This is a somewhat simplified version of the Arctic caribou migration. The north-south movements of the caribou, between their wintering grounds and the calving area is an immutable and unchanging part of the caribou life cycle. But, within this greater movement, the movements of the caribou can be completely unpredictable. One year the migration north will be a vast tide of animals sweeping across the land. Another year the caribou may slip through the mountains practically unnoticed. Wintering grounds change for no apparent reason, and vast movements on both the taiga and tundra, having no recognizable relationship to the main migration, take place frequently.

In the past, this seemingly erratic behavior of the caribou had a profound effect on the natives whose entire culture was built around the movements of the animal. (In some parts of northern Alaska and Canada this is still true, but to a much lesser extent.) The natives depended on the caribou for food, clothing, tools and utensils. Villages were located along traditional caribou migration routes, and when for some reason these routes were not used, the native faced possible starvation. Caribou movement was so critical to the Chipewyans of the Canadian north it became a part of their mythology: "Caribou don't like being killed by bludgeoning with a wooden club; if this is done to an animal, the herd will not wish to return the following year. Caribou meat should be eaten with relish; if this is not done, or if a man should be sick and vomit after eating, the caribou will be offended and may not return."

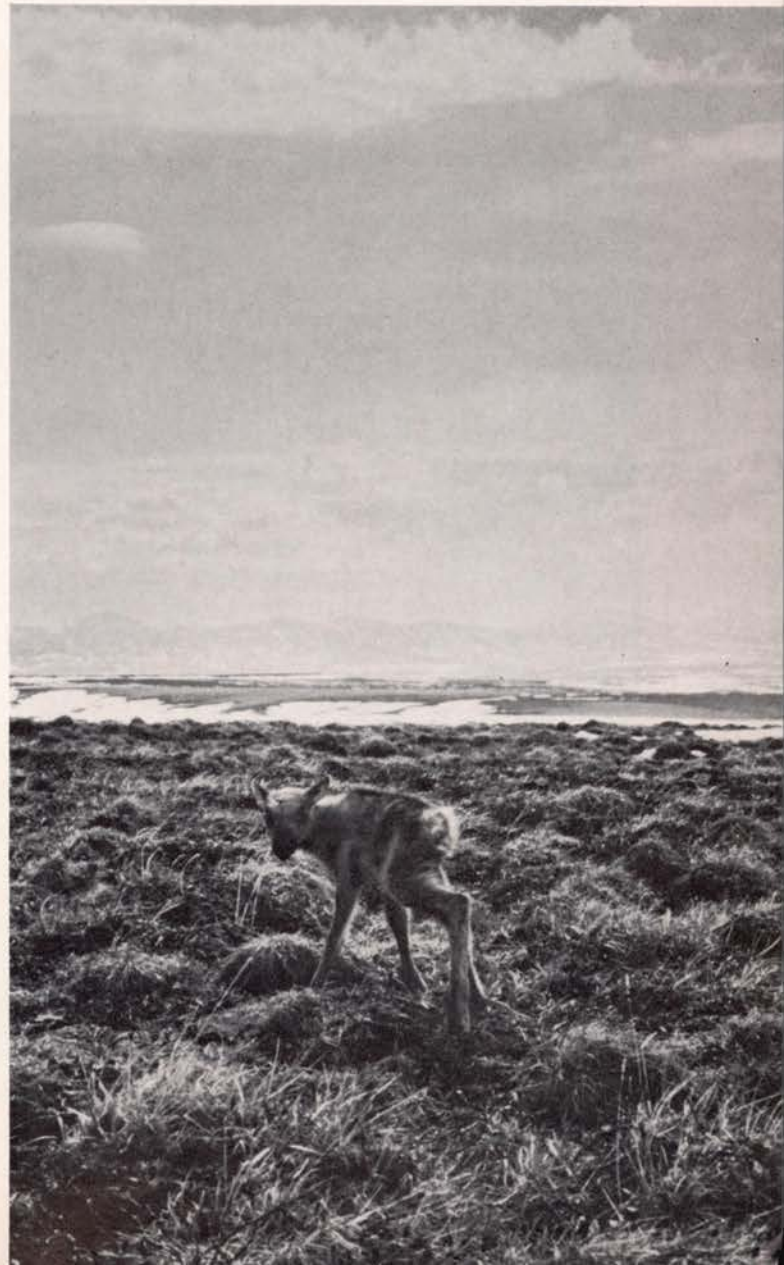
It is a little astonishing to discover that with all our modern technology and gadgetry, our present knowledge of caribou and their movements is only a little more sound than that possessed by the Chipewyans. As an example, at one time not too many years ago, the size of the central Arctic herd was based on the capacity per square mile of the state of Illinois to produce cattle. The humor of this type of reasoning turns a little sour as the need to know more about the caribou becomes increasingly critical in the face of human population movements northward.

The Alaskan herds seem to be prospering at the moment, but the ecological mechanisms governing the caribou are as delicate as the land they roam is harsh. The Canadian experience serves as a warning. In the past sixty-five years, according to the Canadian Wildlife Service, the barren-ground caribou have declined from numbers roughly estimated in millions to a present count of about two hundred thousand. Some of this decline is attributable to an increase in harvesting by native hunters with modern weapons and modern ideas of the need for material goods.

But most biologists believe the prime limiting factor in population growth is the amount of winter forage within the great taiga belt. There have always been fires on the

taiga set by lightning storms, but with the encroachment of civilization fires occur more frequently. Some are set deliberately by prospectors to clear the rock of its overburden; others are the result of carelessness. In either case, great chunks of the taiga have been burned, and in many cases, the fires have destroyed not only the trees, but the humus layers beneath them which have taken centuries to accumulate. It will be a half-century or longer before these areas will again support caribou.

The caribou occupies the last frontier on this continent. In spite of its hostile climate and apparent barrenness, man will eventually conquer this frontier as he has done all the frontiers he has faced before. When he does, it would be to his everlasting credit if, this time, in addition to his technological expertise, he were also equipped with an understanding of, and an appreciation for, the natural world and the creatures that inhabit it. — J.R.



WONDERLAND

REVISITED

"Would you tell me, please, which way I ought to go from here?" asked Alice.

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where—" said Alice.

"Then it doesn't matter which way you go," said the Cat.

—from Alice's Adventures in Wonderland

Move over Alice, you've got a couple of hundred million Americans for company. We don't know where we are going or where we want to get to either. Like the guests at the Mad Tea-Party, we eat and move on around the table to the next place-setting, leaving the dirty dishes behind, never once facing-up to the question of what happens when we complete the circle. Our national priorities are caricatures without substance, more illusory than the Cheshire Cat. We plan ahead with the same appreciation of the future as that enjoyed by the Mad Hatter. It is always six o'clock.

Consider these scenes from the theater of the absurd:

— At its National Reactor Test Station in Idaho, the Atomic Energy Commission is burying radioactive waste that will be deadly to any living thing exposed to it for the next 1500 years. The burial ground is in the same general vicinity where three rivers flow out of the mountains and disappear into the desert floor.

— This year, the U.S. Army decided it was overstocked with biological warfare weapons and as an economy measure proposed to dump a quantity of them into the Atlantic Ocean. While Army spokesmen argued the merits of this macabre plan, an entire train-load of the stuff was parked directly off the end of the main Denver airport runway.

In the rush to make it we have created a wonderland of rhetoric, rationalization and double-think that not even Lewis Carroll could have imagined.

— During the Redwood National Park controversy the logging interests complained bitterly that the establishment of a tiny parcel of land as a park would interfere with their sustained yield program. At the same time, they were going

ahead with plans to log the last commercial old-growth redwoods on earth within the decade, knowing full well that the growing period is too long, the supply too short for a sustained yield program.

— The dam builders were stopped from flooding the Grand Canyon by an aroused public, and in response proposed to plug Hell's Canyon, the deepest gorge on the North American continent.

— As a deadly twilight descends over our cities, highway departments across the land mid-wife the birth of new freeways, which spawn more automobiles, which demand more freeways . . .

— And the President of the United States, faced with the greatest domestic crisis his or any other administration has ever had to deal with, talks of national pride and pushes the development of a monstrous supersonic passenger jet that is neither needed nor wanted by his constituency.

These bizarre actions and hundreds more like them are accompanied by a chorus of Orwellian Newspeak aimed at convincing all of us of the ultimate truth—the stink of a pulp mill is actually the perfume of progress. Humpty Dumpty couldn't have put it better.

The latest symptom of this growing national malaise is taking place now in the mad scramble to explore and exploit the oil reserves of the Alaskan Arctic. The discovery of oil at Prudhoe Bay has been well publicized, as has the near-billion-dollar sale of leases by the State of Alaska in September. Under this barrage of good tidings the plea for ecological sanity is but a squeak. The race to nowhere is on. The long distance runners of this American Dream set piece are



On the trail of a caterpillar. Road building in the Arctic: scrape the tundra into a mound, expose the perma-frost, and the result is instant rivers.

the oilmen, the rugged sourdoughs of the late twentieth century. Armed with a bank of computers, a fleet of Lear jets, engineering degrees and a 27.5 per cent oil depletion allowance, a gift from a grateful government, they bravely face the perils of the Arctic. Theirs is a mission of Urgency and Importance. They speak darkly of troubles in the mid-east, of the need for a new domestic oil supply, diminishing national reserves, a viable economy, and the spectre of war.

They do not speak to the question of why we should pump billions of barrels of future air pollutants from an area that will almost certainly be irreparably scarred in the process; an area that if left untouched would be a far more valuable national resource in future years than all the oil beneath its surface. But not now, and oilmen have not been programmed to think beyond now.

Wonderland permits no such heresy. The rhetoric says Alaskan wilderness is infinite and therefore indestructible. The rhetoric says there is no connection between the extractors of a resource and its ultimate use, and anyone suggesting otherwise is demented and very possibly un-American. But rhetoric and reality do not agree. Given the pressures of population and the present state of our technological juggernaut, a relatively pristine Alaska should last at most about twenty years. Coincidentally, this is also about the length of time that urban air will still be breathable, unless something is done, and done quickly.

But the oilmen will not plug up their Alaska wells and go home. Their logic of exploitation has never progressed beyond the level of reasoning expressed by Mallory when asked why he wanted to climb Mt. Everest. "Because it is there" is a fitting reason for climbing a mountain, but shortsighted in the extreme as a basis for establishing a huge industrial operation on the last wild, untouched frontier of this continent, a frontier as fragile as it is beautiful.

It may seem inaccurate to describe the Arctic tundra as fragile with all the powerful environmental forces at work there. But it is precisely these forces—the eternal cold, the long winter nights, the howling blizzards, and the permanently frozen subsoil—that make the Arctic ecologically and esthetically fragile. The complex food chains of the temperate zones are reduced to the bare minimum in the Arctic; often an entire food web consists of only a few species of plants, plant eaters, meat eaters and scavengers. An iron law of nature is that variety means survival, and the Arctic is short on this kind of variety.

Left to themselves, the ecosystems of the Arctic tundra function perfectly, and have done so for millions of years. But they do not have the capacity to withstand any but the most careful incursions of man, particularly mechanized man. The passage of a single, tracked vehicle over thawed tundra may leave a scar that will last for decades, or forever. No one really knows what effect heavy concentrations of humans and their machines will have on the migratory



Gravel for construction pads and runways like this . . .

habits of Arctic wildlife such as the caribou, or on already endangered species that live there. In fact, the single most critical issue of the whole Arctic exploitation question is the fact that so little is known about Arctic ecology at this time that it is impossible to assess potential damage.

Given this incontrovertible fact, and in the absence of demonstrable proof that there is any urgent national need for Arctic oil in the immediate future, isn't it reasonable to conclude that the extraction of oil, if it is done at all, should proceed only after careful and extensive ecological studies are made? No, it is not; not in Wonderland. (*"But I don't want to go among mad people," Alice remarked. "Oh, you can't help that," said the Cat: "We're all mad here. I'm mad. You're mad."*)

The oil companies, the State of Alaska, and the Federal Government in the person of the Secretary of Interior, are all hell-bent to begin pumping oil out of the ground as soon as possible. They give lip service to the need for ecological studies, but if present plans are consummated, all but cursory investigations will be after the fact, not before.

The oilmen are full of brodingnagian schemes to transport the oil out of the roadless Arctic to the prime markets in the lower forty-eight. They are predictably products of the engineering mentality so prevalent in the extraction industries where biological considerations are always placed at the bottom of the priority list. One plan calls for a fleet of super tankers equipped with special ice-breaker bows which would transport the oil directly from Prudhoe Bay to the major east coast markets. A "successful" test was conducted this summer with the super-tanker Manhattan

Dear Sierra Club Member:

We are back in the season of gifts when the pleasure of giving is often complicated by the puzzle of what to give. It is topical then to point out that not the least of the joys of being a Sierra Club member is the ease with which the solution to this problem presents itself. Sierra Club publications offer books, calendars, portfolios, and cards of the highest quality and significance.

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Just published is *The Last Redwoods*. The happy marriage I have been talking about between medium and message continues here to afford the perfect gift to everyone who values the wilderness idea in general and the "legacy" of the Redwoods in particular. An eloquent book physically and in argument, *The Last Redwoods* is an ideal intimate gift and an exceptionally meaningful general gift. You will want one to feed your own spirit as well.

The tenth Wilderness Conference book, *Wilderness and the Quality of Life*, is also new. The authoritative word on our modern world's most urgent environmental problems from a gathering of the most knowledgeable people on the subject, it also includes seven color reproductions of American wilderness paintings. *The Manual of Ski Mountaineering* (completely revised for the fourth time) a classic in a field of growing popularity is available once again.

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... is taken from river deltas that now look like this.

reaching the Arctic area, but only after being unstuck from the ice on several occasions by Canadian ice-breakers. No tests were made, of course, on what would happen to Arctic marine life, including polar bears and seals, if one of these oil-bloated ships should duplicate the Torrey Canyon disaster.

Another proposed method of transporting oil to the states is an environmental horror that would put a huge pipeline across the state—an 800-mile long scar from Prudhoe Bay to the port of Valdez. Financed by a consortium of oil companies — Humble, Atlantic-Richfield and British Petroleum—the four-foot diameter pipeline would carry 1 million barrels per day and require a massive construction project involving roads, pumping stations and the pipeline itself cutting directly across the Arctic slope and through the incomparably beautiful Brooks Range. In spite of some serious doubt about the pipeline's technical and economic feasibility the oilmen are already unloading sections of pipe at Valdez.

The oilmen have asked Secretary of Interior Hickel to unfreeze right-of-way areas on Federally owned land presently held up pending settlement of Native Land Claims. The Secretary has displayed a remarkable eagerness to comply with their request. His department has performed one of the miracles of our time by preparing a list of stipulations governing the construction and operation of the pipeline based on ecological information that isn't even known yet. The stipulations and a request for approval to unfreeze the right-of-way were sent to the Senate and House Interior Committees on October 1.

As quoted in the *Oil Daily*, the Secretary embellished his

request with a statement that reached new heights in jargon-splendid splendor. "The stipulations," he said, "will insure that the wildlife and ecology of the Arctic, along with the culture and opportunities of Alaska's native citizens, will be enhanced." What, on the little that remains of God's green earth, does he mean by that? Federally funded Medicare for Caribou? How can an 800-mile-long mechanical monstrosity "enhance" the ecology of the Arctic? And as for improving the culture and opportunities of Alaska's native citizens, if the Secretary means by *their* standards, not ours, it will be the first time in this nation's history that any of its aboriginal inhabitants have been introduced to such a novel concept.

The Secretary also noted that the stipulations "are designed to meet *all* of the environmental and ecological goals set forth by the department, based on research by its own scientists, independent authorities and public hearings held in Alaska." Nonsense! If the pipeline is allowed at this time it will be installed on a trial and error basis, pure and simple. Most of the studies on just the mechanical phases of pipeline operation in the Arctic—investigations into the effect of the pipeline on permafrost and vice-versa, for example—have not been completed. Hardly any biological studies have even been started. Throughout the stipulations the emphasis is placed on remedial action *after* the pipeline ruptures or malfunctions, not on how to prevent it from happening in the first place.

The pipeline fiasco would be ludicrous if it were not the precursor of what is to follow in Alaska. If indeed, Alaska is allowed to be exploited with the mindless planning and narrow economic justifications that have characterized so-called progress in America, the last chance to bring some sanity to our choice of national priorities will have been lost. Alaska is a pivotal area, in a pivotal time. The battles that will be fought in Alaska will not be just to save a chunk of land or a specie of wildlife—they will be to decide what things are really important for human beings to continue living on this planet. If these decisions are left to those who have made them in the past, it will not be just another ecological battle lost; it will be, in the real meaning of the term, inhuman.

—J.R.

"First, the Dodo marked out a race-course, in a sort of a circle, and then all the party were placed along the course, here and there. There was no 'one, two, three and away,' but they began running when they liked, and left off when they liked, so that it was not easy to know when the race was over. However, when they had been running a half-hour or so, the Dodo suddenly called out 'the race is over' and they all crowded around it, panting and asking, 'But who has won?'"

POINT REYES

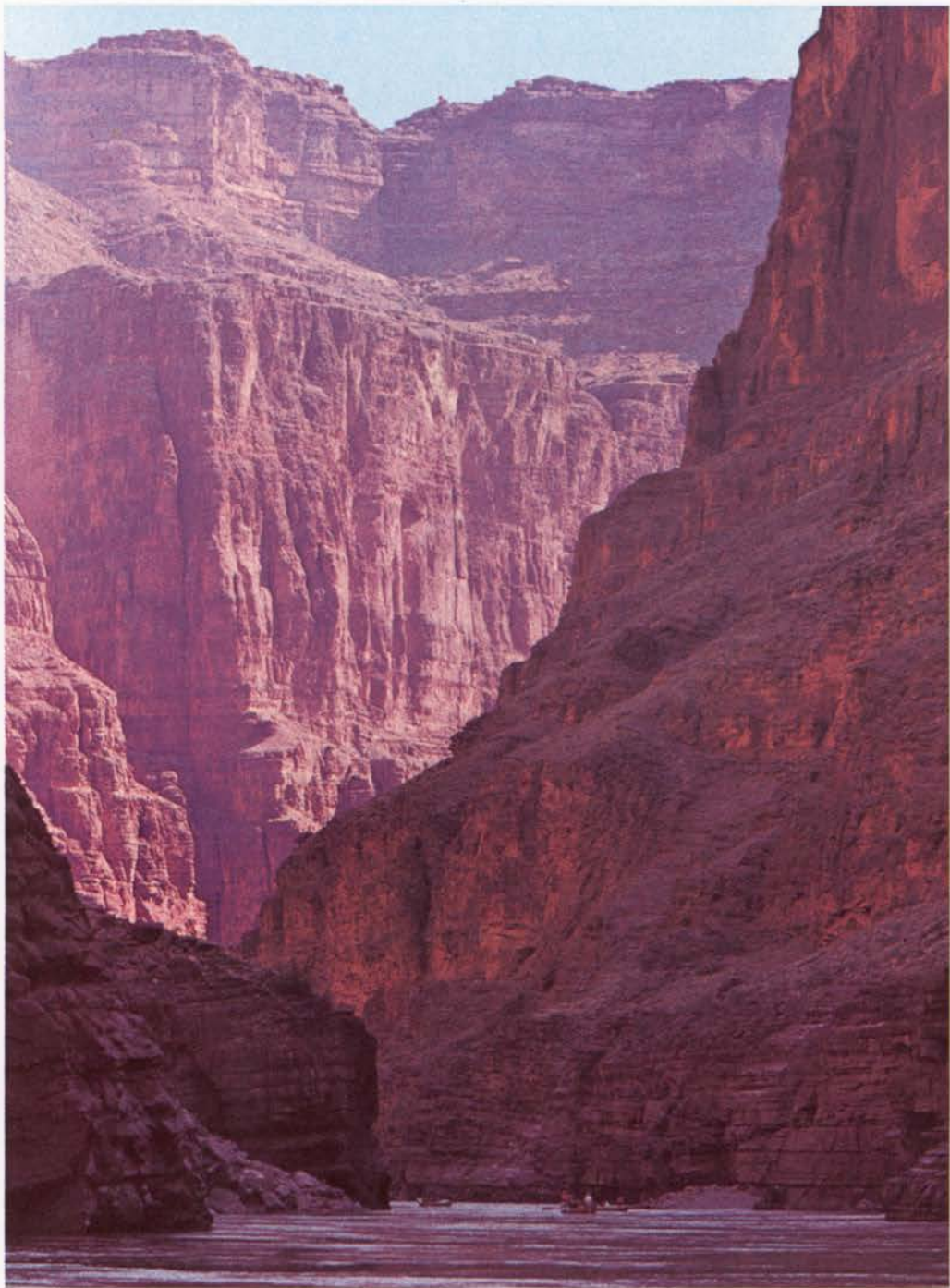
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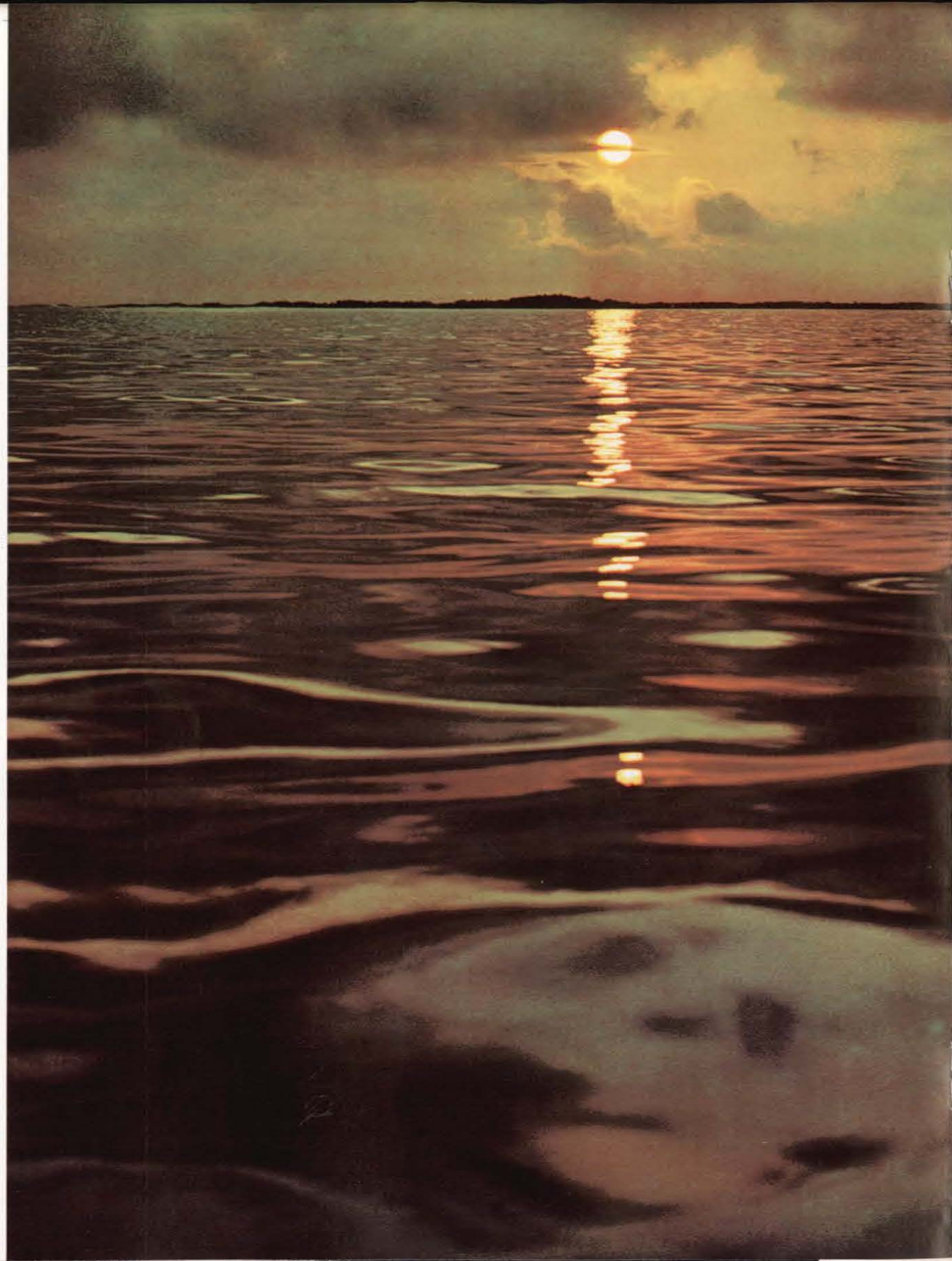
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The tenth conference held April 7-9, 1967 in San Francisco, upon which this book

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Point Reyes, California—November 1, 1975—A.P. Ground-breaking ceremonies were held today for the 70-story Inverness House, the fifteenth such structure to go up on the peninsula since the original National Seashore project was shelved in the early days of the Nixon Administration. The huge building will contain over 700 "summer cabins," each with its own, individualized, rustic plastic decor. The accompanying mall will have

For the "Island in Time,"
Time is Running Out



An Ecological Primer

by Gordon Harrison

Of all the creatures who over the eons have inhabited this planet, man has been unique in his ability deliberately and massively to alter the environment. One striking way in which he has done so has been to reduce disease by making the man-occupied world less hospitable for parasites and their insect transport. Technological success here has lowered death rates much faster than society could adjust to the implications. Hence to simplify slightly, the world population began to grow cancerously.

In the unindustrialized world this sudden imbalance faces millions with starvation. Family-planning programs cannot achieve results quickly enough to avert the food crisis. Technical efforts to increase food supplies, despite some dramatic successes, are too meager to do the job, and it is not certain that even an all-out effort could succeed. The typical conservationist approaches . . . to warn of a developing imbalance between resources and consumption while trying both to save the resource and rationalize the patterns of consumption—these have little relevance at this late hour. Many observers believe that millions of people will starve in the 1970's, victims of our failure to recognize that we are not masters of the living system on which we depend for our life but parts of it, just as much as cells are parts of a body.

That lesson of folly is infinitely more tragic than any we face immediately in the developed world. We here are nevertheless pursuing a course that is similarly at odds with our circumstances aboard a small planet, similarly heedless of natural constraints on consumption, and therefore finally catastrophic as surely as if a man were to spend his days gorging himself without stopping.

The most obvious symptom of our own approaching crisis is pollution. By pollution I mean not only the poisoning of air and water by the wastes of production but equally the splurge of metropolis, the needless engrossment of some of our most productive farmlands for suburban housing, and the cavalier destruction of landscape by strip mines, highways, power lines, billboards, as though man did indeed live by these alone. Pollution in this sense is often regarded like famine as another direct consequence of over-population, and there is no question that increased numbers of people and especially their concentration in urban areas have made pollution critical and highly visible. Pollution, however, is not caused by too many people: It is the result of human disturbance of the cycling of energy and materials in natural systems.

That cycle in outline is well known: Primary producers (chiefly green plants) with energy from the sun synthesize their own organic food out of carbon dioxide, water, and minerals. All other living creatures feed on these plants either directly by grazing or indirectly by grazing the grazers as carnivores or parasites. A part of the food eaten is excreted; all of it is returned in one form or another to the environment. The organic discard passing through a variety of scavengers is eventually broken down by bacteria into its inorganic components which are thus made available to the plants as raw materials once more.

Man's intervention is radically disruptive. When a farmer clears a wood and plows a field he functions with respect to nature like a natural catastrophe—indeed generally more effective than fire, earthquake, or tornado. He exterminates a system of interrelated plants and animal life which over a long period of time had become mutually adapted to the physical environment and to each other in such a way that each creature was just making a living.

In a natural system, fully developed as a primeval forest, for instance, the input of sunlight is used to maintain the community of organisms. While individuals come and go within it and populations of species fluctuate so that at times there may be more oak and less hickory or more mice and fewer owls, the total quantity of living matter remains constant; that is to say the system ideally yields no net biological product. Net biological product—a crop—however, is just what the farmer wants. He therefore destroys the balanced system and creates a deliberately unbalanced one whose cycle from plowed field to seed to crop to harvest and back to plowed field is completed in a single season. He does this essentially by simplification, suppressing on his farm as many of the living things as possible that would compete with his planted crop for energy and minerals. He weeds; he fences; he sprays against pests.

The result is a system that in nature's terms is disturbed. The excess product—the developing crop—represents unexploited environmental opportunities, or in the ecologist's jargon, unfilled niches. Pests arrive on the scene to take advantage of these unusual opportunities. Unlike men they cannot cart away the crop; they can only multiply in numbers to consume it. If left alone they would make off with the feast and then move on, or starve down to numbers adapted to lower supplies of food, or provide a bonanza for predators who obeying the same law of nature might increase in their turn to exploit it. By many complicated interactions over time, populations feeding on each other would come once more into balance. Balance of course is never a static condition but rather a moderated pattern of ups and downs around a mean, much like temperature fluctuations in a thermostatically controlled room, although immensely more complicated.

The simpler a natural system is the more unstable it must be. Consider a three-part food chain: grass, rabbits, and

lynx. Suppose drought destroys the grass crop. Then rabbits wholly dependent on it will die off and so will lynx who are wholly dependent on rabbits. But if among the grass were drought-resistant plants and rabbits were adapted to eat them, then at least a proportion of plants, rabbits, and lynx would be likely to survive prolonged dry spells. The more alternative ways there are of eating and being eaten the better the chance a living system has to avoid massive fluctuations in the birth and death of species. Variety thus appears to be nature's grand tactic for survival.

Man is the only creature who values wealth because only he can achieve it. An important consequence of the farmer's productive system is that it enables him to capture excess produce from the soil, more than he needs at once to consume. He can exploit wealth by storing it and that leads to the settled life, to villages, and at last to cities. It is in permanent human settlements that off-premise consumption produces the specifically human problem of garbage and wastes. Waste is in fact only a symptom that geographically the metabolic cycle has been split: Production has occurred at one place, consumption and excretion at another. The byproducts of human use that would in nature return immediately as food for other organisms in the cycle are, as it were, left high, dry, and a nuisance out of their natural context. Civilization so far has been more impressed with the nuisance than with the anomaly that processes which on the land sustain life, in town can poison it.

Currently this nation devotes a lot of energy and money (though not nearly enough) to seeking a technological fix for the waste problem. So long as this technology explores essentially for more sophisticated holes in which to throw things away, it may be immediately useful in changing the locus of the nuisance—garbage is after all more tolerable on the town dump than in the bedroom—but in the long run it is doomed. Let it be noted again that all the materials by weight extracted and processed for human consumption are breathed away or end up as waste. The concepts of use and discard therefore are simply irrelevant to the facts of life within a system that is closed so far as materials are concerned. The traditional focus on production and consumption looks at only one segment of the indivisible circle: Consumption, if it is to continue, must be tied to production at both ends, accepting the product and giving up the raw materials for new products.

The problem of waste disposal is not the focal or even necessarily the most important issue for conservation, but it serves as well as any to illustrate the principles of interdependence that make it necessary for man in all regards to pay more attention to his impact on his environment and vice versa.

Mr. Harrison is program officer in charge of Resources and Environment of the Ford Foundation.

1969-70 Winter Season at Clair Tappaan Lodge

At Donner Summit Clair Tappaan Lodge is being readied for its 36th season as headquarters for Sierra Club winter sports enthusiasts. We want all club members to know about the facilities, rates and reservation procedures for the lodge. It is located on old Highway 40, two miles after leaving Interstate 80 on the turn-off to Soda Springs and Norden, and only a few minutes' walk or drive from most major ski resorts in the Donner area. The lodge address is Box 36, Norden, California 95724; its phone number is (916) 426-3632.

Skiing, snowshoeing and ski touring are the main attractions in the winter. Opportunities for overnight tours to nearby shelter huts are available. The lodge operates the longest rope tow in the West. For those who want assistance, ski instructors are on hand. Fun races—the weekly Sunday slaloms—are open to all, and local one-day touring can be a way of enjoying the beauty of the area.

The lodge has a capacity for 150 people and provides hot meals morning and evening; food for bag lunches is available at breakfast time. Dormitories, dormettes or family rooms of five to eight bunks each and cubicles of two bunks each are equipped with mattresses, but no sleeping bags or blankets are provided. Since the lodge is run in a cooperative fashion, with only a paid manager and cook, each person must sign up for a daily housekeeping or maintenance chore.

Advance reservations for meals and lodging will be needed for any stay beginning December 1 through Easter, March 29. Requests for these reservations will be accepted at the Sierra Club office from November 3 until March 26, and can be made in person, by mail or by telephone if money is on deposit for this purpose. **Full payment must be made before a reservation will be accepted.**

To stay at the lodge before December 1 or after March 29 telephone or write the lodge manager, telling him the time of your arrival, the length of your stay and the size of your party.

Reservations at the office will be made only for weekends of two full days (starting with Friday night's lodging and three meals for each full day), and for any number of weekdays. Anything less than one full weekday or one full weekend must be arranged with the lodge manager on a space available basis. Members are encouraged to send money in advance as a deposit to draw upon during the season. Records are kept and any balance will be refunded upon request.

Deadline for making lodge reservations at the office for a weekend is 11 A. M. on the Thursday before that weekend. For those who have worked to maintain the lodge, ten beds are held in reserve until the preceding Monday noon. Until Wednesday of each week a maximum of ten



non-member guest reservations will be accepted at the rate of no more than one guest per member. After Wednesday additional guest reservations will be accepted if space is available. Sponsors must accompany their non-member guests for their entire stay.

Applications for Christmas and Easter holiday weeks will be accepted after November 3, but will be held until December 1 and March 2 before being acted upon. If demand exceeds available space, the lodge will be filled by lot and remaining applications will be kept on a waiting list or the money refunded or credited.

—CLAIR TAPPAAN LODGE COMMITTEE

1969-1970 Winter Rates at Clair Tappaan Lodge

<i>American plan by reservation</i>	<i>For members, applicants, and guests</i>
Weekends—Friday lodging through Sunday dinner.....	\$15.00
7 consecutive days (not to start with Saturday lodging)....	45.00
5 weekdays—Sunday lodging through Friday dinner.....	34.00
5 weekdays—children under 12 except Christmas weeks.....	22.50
Single days—weekdays may be reserved at the club office	7.50
Single days—children—weekdays only except at Christmas	5.00

Charter bus transportation

(WEEKENDS ONLY) January 9 through April
except Easter weekend

Round trip.....	10.00
One way.....	6.00

For further details see the December Sierra Club Bulletin.

Partial reservations made only at the lodge

Lodging—available only at the lodge.....	3.50
Breakfast—available only at the lodge.....	2.00
Breakfast and lunch—available only at the lodge.....	3.00
Lunch alone or as first unit of stay.....	not available
Dinner—available only at the lodge.....	2.50

Cancellation charges

Minimum charge for cancellation of meals and lodging.....	\$1.50, Bus \$3.00
Cancellation with more than six days' notice.....	10 per cent
One to six days' notice.....	25% meals and lodging \$4.00 bus (\$3.00 one way)
Less than 24 hours' notice—meals and lodging.....	\$2.50 per day —chartered bus.....\$5.00 (\$3.00 one way)
Failure to arrive or give notice of cancellation.....	100 per cent

Reservation slips must be returned for cancellations and refunds. Make CTL reservations at the Sierra Club office, 1050 Mills Tower, San Francisco 94104. Send full payment, and give age and sex of each person wishing reservations, to facilitate assignment of bunks.

Hutchinson Lodge—Reservations are made directly with the Manager, Clair Tappaan Lodge, Norden, California 95724. Rates are \$2 per person per night with a minimum charge of \$32 per weekend. Bring your own food. Scheduled groups of the Sierra Club have priority.

Memorial Ski Huts—Scheduled trips have priority. Reservations are made with the manager at CTL, and keys are obtained from him. A suggested donation of \$1 per person may be sent in to the lodge in the envelopes provided at the huts.



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High Sierra Meadow, Pine Creek Basin

Photograph by J. W. MacBride

1970 Wilderness Outings Preview

FOR THOSE who plan their vacations far ahead, we present this summary of the Sierra Club's 1970 wilderness outings. Places and dates of a few outings are still tentative and may be changed. You will find complete information and prices of all summer and fall trips in the coming Outing Issue (January or February) of the *Sierra Club Bulletin*. Unless otherwise specified, reservation requests for all trips are now being accepted.

HIGH TRIPS

Due to increasing concern by the Forest and Park Services about the impact of stock and large groups on the fragile Sierra, the tra-

ditional Sierra High Trips will be changed somewhat this year. While retaining a roving, leisurely character, High Trips will be cut back in size, number of pack animals and crew, and the amount of dunnage. More freeze-dried foods will be used although the excellent cuisine for which High Trips are noted will continue; a cook and commissary staff will prepare meals. Camp chores are at a minimum, leaving plenty of time free for hiking, climbing and pursuing special interests. High Trips will move every two or three days and distances will be planned to permit the fullest possible enjoyment of the area traveled. The Family High Trip is designed to fit the needs of

couples with young children, and moves are shorter than on the regular High Trip.

(80) **Family High Trip, Humphreys Basin Loop**—July 17–August 1. Leader, Steve Harding.

(15) **High Trip, Kern Headwaters**—August 22–September 6. Leader, John Edginton.

HIGH-LIGHT TRIPS

High-Light Trips are designed for those who want to go farther and faster than on High Trips, but still enjoy the luxury of having stock to carry the dunnage. The em-

phasis is on going light—food is the lightweight variety and personal dunnage is limited to 20 pounds. Moves between camps average 5 to 15 miles and are often followed by a layover day. While in camp, trip members take turns with all chores except packing the mules. Because of the more strenuous, do-it-yourself nature of these trips, they are not recommended for those completely unfamiliar with wilderness travel.

(2) **Kanab Canyon, Arizona—March 21–28.** See *Spring Outings* in this issue.

(3) **Superstition Wilderness, Arizona—March 22–28.** See *Spring Outings*.

(4) **Baja California, Mexico—May 17–24.** See *Spring Outings*.

(20) **Marble Mountains, Northern California—July 4–11.** Leader, Jerry South.

(21) **Siberian Outpost, Sierra—July 11–17.** Leader, Chuck Schultz.

(22) **Mount Robson, British Columbia—July 26–August 7.** Leader, Mary Lou Combs.

(23) **Circling the Tetons, Wyoming—July 26–August 6.** Leader, Arthur Earle.

(24) **Sawtooth Mountains, Idaho — August 9–21.** Leader, Jerry Lebeck.

(25) **Goddard Canyon, Sierra — August 8–15.** Leader, Tony Look.

(26) **Seven Gables, Sierra — August 15–22.** Leader, Tony Look.

(27) **Alpine Lakes, North Cascades, Washington — August 16–28.**

(28) **Southern Yosemite, Sierra — September 12–19.** Leader, Gordon Benner.

(29) **The Maze, Utah — October 4–10.** Leader, Tris Coffin.

BASE CAMPS

Base Camps traditionally attract people with a wide range of abilities, ages and enthusiasms. They can serve as a base both for strenuous mountaineering or leisure vacationing. Base Camps are usually one day's hike from a road end, and horses are often available for those who prefer to ride. You will enjoy the luxury of having mules to carry the loads (30 pounds per person) and an experienced cook and commissary to prepare the excellent food for which Base Camps are noted. While you are expected to help whenever you are needed, camp chores are minimal. Leaders are available for hikes, natural

history sessions, overnight backpacks and rock-climbing. Children six and over are welcome at all camps, but we encourage younger children to attend one of the camps with a family rate, where activities and times for meals and campfires are planned especially for families.

A more rugged version of Base Camp is Back-Country Camp, which is geared to seasoned mountain-goers. Located in a remote part of the Sierra that can be reached only by a two-day trail trip, Back-Country Camp provides a convenient center for reaching surrounding peaks, lakes and valleys on one-, two- and three-day knapsack trips.

Ashley Lake, Iron Mountains, Sierra: (40) July 4–17, special family rates; (41) July 18–31. Leader, Ed Miller.

Fourth Recess, Mono Creek, Sierra: (42) August 8–21, special family rates; (43) August 22–September 4. Leader, Steve Thompson.

Bridger Wilderness Area, Wind River Range, Wyoming — special family rates: (44) August 9–21; (45) August 23–September 4. Leader, Jim Belsey.

(49) **Back-Country Camp, Silver Divide, Wilbur May Lake, Sierra — July 26–August 8.** Leader, Allen Van Norman.

FAMILY OUTINGS

Families are welcome on most Sierra Club trips, the mixing of ages being one of the joys of club outings. There is a special demand, however, for outings tailored to the needs of couples who want to take young children. For them we offer Family Trips, which are less strenuous than regular club outings, and have special family rates.

Wilderness Threshold Camps

Basic to the program of family outings are the Wilderness Threshold Camps. These camps are planned especially to introduce families with little camping experience to the wilderness. The hike in is easy enough for most children, although very small ones may have to be carried by their parents. Mules carry the loads. While in camp, all families take turns preparing the meals. Each camp is limited to ten families, most of which are new to the program. However, some trips will be open to repeater families. Campsites this year will be in the Sierra, Colorado, and Wyoming.

Reservations will not be accepted until the spring Outing Issue of the *Bulletin* is published.

Family Knapsack Trips

For more experienced families whose children are older and who can equip them-

selves with the necessary lightweight gear, we offer Family Knapsack Trips. Reservation requests are accepted now.

(85) **Sequoia-Kings Canyon, Sierra — July 25–August 9.** Leaders, Fran and Gordon Peterson.

(86) **Fourth Recess, Sierra—August 15–23.** Leaders, Helen and Ed Bodington.

(87) **Lassen National Park, Northern California—August 16–23.** Leaders, Eva and Merrill Hugo.

Family Canoe Trips

Family Canoe Trips are planned especially for families with teen-agers. A family must have at least one teen-ager to qualify. An enthusiasm for adventure and an ability to swim are trip requirements and canoe experience is preferred. These trips operate like moving Wilderness Threshold Trips, with everyone assisting with camp and commissary duties. Canoes will be provided and a car shuttle arranged. This year two trips are planned on the Eel River in Northern California in late June and early July and one trip on the Sacramento River from Red Bluff to Colusa in early August.

Reservations will not be accepted until the spring Outing Issue of the *Bulletin* has been published.

Family Burro Trips in the Sierra

Previous experience in burro-handling and camping is not essential for these fun-packed family trips. The only requirement is that both parents come; one parent alone just doesn't have the time and strength left over from camp and trail duties to enjoy the trip. Trips are limited to five families each. Children must be over four and a half years of age. Reservation requests are accepted now.

Northern Yosemite: (95) July 3–12, leaders, Rosina and Bud Siemens; (96) July 18–26, leaders, Diane and Al Fritz.

(97) **Center Basin — July 25–August 2.** Leaders, Vickie and Bill Hoover.

(98) **Evolution Valley — August 23–September 4.** Leaders, Judy and Pete Nelson.

Other Family Trips

See listings under *High Trips* and *Base Camps* for additional trips.

SERVICE TRIPS

Service Trips are offered for those who want to actively spread the conservation message while enjoying the fun of an energetic outing. All Service Trips are limited to re-

sponsible, cooperative workers with a minimum age of sixteen. All is not work, however, for alternate days on both Clean-up and Trail Maintenance Parties are free for climbing, hiking, or just plain relaxing. Camp organization is informal and trip members handle all chores.

Clean-up Parties

In an effort to restore overused campsites and trails to their natural state, Clean-up Parties scour the wilderness for refuse, burning what they can and sacking the rest

Trail Maintenance Parties

Trail Maintenance Parties are designed primarily for high-school and college-age young people. These trips are noted for their spontaneity and zest, frequently manifest in campfire hootenannies and impromptu water and snow fights. Work involves building and repairing trails under the supervision of either the U.S. Forest Service or the National Park Service. This year, two of the Trail Maintenance Parties will be 12-day trips, each involving a two-day backpack into a more remote work area.



Drawing by Cynthia Huntting

for mules to haul out. The purpose of these trips is not to continually clean up for irresponsible hikers but rather, through example, to publicize the crucial need for mountain manners.

(100) Northern California — June 29–July 6.

(101) Lyell Fork, Yosemite, Sierra—July 10–17.

(102) Selway-Bitterroot Wilderness, Idaho — July 15–22.

(103) Cascades, Oregon or Washington —July 29–August 5.

(104) Sierra Nevada — August 19–26.

(105) Sawtooth, Idaho — July 1–10.

(106) Lyell Fork, Yosemite, Sierra — July 21–30.

(107) Mount Whitney, Sierra — August 4–13.

(108) Kings Canyon, Sierra — August 10–22.

(109) Kings Canyon, Sierra — August 24–September 4.

RIVER TRIPS

River running can be the most effortless and enjoyable means of wilderness travel. Most of the river trips listed are float trips, using

large neoprene rafts and requiring no previous river experience; professional boatmen, who also double as cooks, guide the rafts while you sit back and enjoy the wild-life and scenery. For the more rugged, there are some trips of the “paddle your own” variety. The ability to swim well is not essential, but you must wear the life jackets provided, and will probably get wet from time to time. Traveling usually ends in the afternoon so that there is ample time for hiking, fishing and swimming.

(5) Suwannee River, Georgia — March 22–28. See *Spring Outings* in this issue.

The Grand Canyon of the Colorado, Arizona: (6) March 22–31, see *Spring Outings* in this issue; (7) May 18–27, see *Spring Outings*; (120) June 29–July 12 (two weeks), leader, Doug McClellan; (121) June 15–24, leader, Rouen Faith; (122) June 22–July 1, leader, Frankie Strathairn; (123) June 29–July 8, leader, Blaine LeCheminant; (124) September 21–30, leader, Peter Myers.

(125) Gray-Desolation Canyon, Utah — June 15–19. Leader, Wheaton Smith.

Rogue River, Oregon: (126) June 15–19, leader, Sam MacNeal; (127) June 22–26, leader, Hunter Owens.

(128) Cataract Canyon of the Colorado River, Utah — June 21–26. Leader, Rolf Godon.

(129) Vancouver Straits-Gulf Islands Canoe and Kayak Trip, British Columbia—June 21–28. Leader, Elmer Johnson.

(130) Yampa-Green Rivers, Dinosaur National Monument, Colorado-Utah—June 22–26. Leader, Mr. Lynn Dyche.

(131) Lodore Canyon of the Green River, Dinosaur National Monument, Utah—June 29–July 3. Leader, Mr. Lynn Dyche.

(132) Middle Fork of the Salmon River, Idaho — June 29–July 4. Leader, Steve Anderson.

(133) Lewis and Clark Wilderness Waterway Kayak and Canoe Trip, Missouri River, Montana—July 6–13. Leader, Marvin Stevens.

(134) Bowron-Spectacle Lakes Canoe and Kayak Trip, British Columbia—July 28–August 7. Leader, Bill Huntley.

(135) Snake River Kayak and Canoe Trip, Grand Teton National Park, Wy-

oming — August 10–19. Leader, George Pickett.

(136) Canoe Trip, Texas or Mexico—October.

(137) Puerto Vallarta Dugout Canoe Trip, Mexico—November 11–20. Leader, Ellis Rother.

KNAPSACK TRIPS

Knapsack Trips are geared to those modern-day pioneers who want to explore the most challenging and remote wilderness areas. Because the knapsacker carries all of his own food and equipment on his back, he must demonstrate a strength and perseverance not always required of other wilderness travelers. It is important that the knapsacker and the trip he chooses be well matched; trips vary from those suitable for the novice backpacker to very strenuous cross-country scrambles. Juniors Trips are designed especially for 11- to 15-year-olds. Personal gear is limited to 20 pounds and to that a share of community food and equipment is added; starting loads usually weigh between 30 and 40 pounds. Unless otherwise specified, trips listed are in the Sierra.

(8) Paria Canyon, Arizona — March 22–28. See *Spring Outings* in this issue.

(9) Grand Gulch, Utah — April 18–24. See *Spring Outings*.

(10) Thunder River-Deer Creek, Arizona — May 19–25. See *Spring Outings*.

(150) Dome Land Leisure Trip — May 16–23. Leader, Terry Bissinger.

(151) Emigrant Basin Leisure Trip — June 13–21. Leader, Ken Lass.

(152) Tunnabora Peak—June 27–July 5. Leader, Dan Holland.

(153) Mineral King Wilderness — June 28–July 11. Leader, Bill Colvig.

(154) Banner Backside — July 3–12. Leader, Kathy Middleton.

(155) Thousand Island Juniors Trip — July 11–20. Leader, Molly Edlin.

(156) Snowmass, Colorado — July 13–24. Leader, Bob Berges.

(157) Tower Peak, Yosemite — July 18–26. Leader, Wes Bunnelle.

(158) Pioneer Basin Leisure Trip—July 25–August 2. Leader, Paul DeWitt.

(159) Cathedral Range Juniors Trip — July 25–August 2. Leader, Raleigh Ellisen.

(160) Seven Sisters, North Cascades, Washington—July 27–August 7. Leader, Dave Corkran.

(161) Taboose Pass—August 1–9. Leader, Bob Maynard.

(162) Goddard Divide — August 1–9. Leader, Larry Pohl.

(163) Glacier Divide — August 8–16. Leader, Cliff Mastenbrook.

(164) Siberian Army Leisure Trip — August 8–16. Leader, Walt Weyman.

(165) Titcomb Basin, Wind River Range, Wyoming — August 17–27. Leader, Bob Stout.

(166) Lost Canyon Juniors Trip—August 23–September 6. Leader, Mark Weyman.

(167) Ragged Spur II — August 29–September 7. Leader, Gordon Peterson.

(168) Kern Amphitheater — September 12–20. Leader, Jim Skillin.

(169) Royce Lakes — September 19–27. Leader, Mike Rockford.

(170) White Mountains, Arizona — October 4–11. Leader, John Ricker.

(171) Cabeza Prieta, Arizona—December 28, 1970–January 2, 1971. Leader, Lester Olin.

(172) Salt Trail Tanner, Grand Canyon, Arizona — December 28, 1970–January 2, 1971. Leader, Edith Reeves.

BURRO TRIPS

If you want to explore the mountains in the humorous company of long-eared, pack-carrying burros, then the trips listed below are for you. On these do-it-yourself trips, you'll learn the joys of finding, packing and leading burros. Moves, averaging 6 to 12 miles, often at timberline altitudes, alternate with layover days. In camp, each trip member helps with the chores.

South Rim, Grand Canyon, Arizona: (11) March 22–28; (12) March 29–April 4. See *Spring Outings* in this issue.

Indian Lakes, Sierra Nevada: (180) July 11–18, leader, Ned Robinson; (181) July

18–25, leader, Don White; (182) July 25–August 1, leader, Jake Bronson; (183) August 1–8, leader, Jack McClure; (184) August 9–22, leader, Ted Bradfield; (185) August 22–29, leader, Tom Pillsbury.

EASTERN TRIPS

(190) Monongahela National Forest Knapsack Trip, West Virginia — June 21–27. Leader, Bruce Sundquist.

(191) Adirondack Mountains Knapsack Trip, New York—July 26–August 1.

(192) Mount Katahdin Knapsack Trip, Maine — August 9–15. Leader, Henry Scudder.

(193) Allagash River Canoe Trip, Maine — August 25–September 5. Leader, Robert Reeves.

MID-WEST TRIPS

(196) Buffalo River Canoe Trip, Arkansas—June 8–13. Leader, Harold Hedges.

(197) Isle Royale Knapsack Trip, Michigan — August 24–September 2. Leader, Virginia Prentice.

SPECIALS

Hawaii Specials: (1) Kauai and Molokai — March 20–29, see *Spring Outings* in this issue; (200) Island of Hawaii — October 2–11, leader, L. Wheaton Smith; (201) Maui and Lanai — December 18–27, leader, Walt Weyman.

Alaska Specials: (202) Glacier Bay-Chichagof Island Boat Trip — June 22–July 10, leader, Joanne French; (203) Brooks Range-Arrigetch Peaks Knapsack and Climbing Trip — July 27–August 14, leader, Doug Powell.

(204) Teton Saddle Trip, Wyoming — July 12–24.

(205) Ape Lake-Monarch Mountain Climber's Base Camp, British Columbia — late July, early August. Leader, Gary Colliver.

The outing material in this issue of the *Bulletin* has been prepared by Susan Fousekis, editor, and Marion Kane, assistant editor, with the help of Betty Osborn and Jane Edginton.



Grand Canyon, 1969 High-Light Trip

Photograph by Philip Hyde

1970 SPRING OUTINGS

THE 1970 SPRING OUTINGS will encompass a wide range of wilderness trips, from a canoe trip on the Suwannee River in Georgia to a luxury outing in the Hawaiian Islands. Most of the trips, however, will focus on the canyon and desert country of the Southwest, an area that is in its prime in the early spring when water is plentiful, temperatures are comfortable, and flowers are in full bloom.

Trips vary markedly in type, size and cost. Some are more rugged and require trip members to help with all camp chores, while others are leisurely and supply a crew to do the cooking and packing. To determine which outing best fits your needs, read the following trip descriptions carefully. If you have questions, write directly to the trip leader. Reservation requests are being accepted now for all spring trips. See "How to Apply for Sierra Club Trips" in this issue of the *Bulletin*.

Hawaiii Special

(1) **Hawaii Special: Kauai and Molokai**—March 20–29. Limit, 100. Leader, Monroe Agee, 13750 Rivulet Road, San Jose, California 95124.

This Easter-week Special will explore the two least-developed and perhaps most scenic of the Hawaiian Islands, Kauai and Molokai. We will begin our visit on Kauai, oldest island of the Hawaiian group, where high rugged mountains and a heavy annual rainfall combine to produce spectacular waterfalls and lush rain forests. Among the spots we will visit are Mount Waialeale, wettest spot on earth; the Hanalei Valley; and Waiimea Canyon, the "Grand Canyon" of Hawaii. Several layover days will provide time to explore these and many other scenic areas. There will also be warm water for snorkeling and swimming, and plenty of flowers and plant life.

On Wednesday, March 25, we will fly to Molokai for three full days. Here we will have the chance to hike the three-mile trail to Kalaupapa, the ancient place of banishment for sufferers of leprosy. We will also visit Halawa Valley and Palaau State Park with its wilderness of koa, paperbark, ironwood and cypress trees.

We will be camping out, and rain can be expected in heavy downpours, so come prepared. Hasse Bunnelle, who is well known for her delicious menus featuring island dishes, will be our commissary chief.

The total trip cost, including airfare from and to San Francisco or Los Angeles, is \$350; children under 12, \$250; and residents of Hawaii joining in Lihue, \$150. A deposit of \$75, which includes the non-refundable reservation fee, must accompany each reservation request. The regular refund policy will apply to cancellations. Arrangements can be made through our travel agent

for you to arrive earlier or stay longer than the scheduled time.

High-Light Trips

(2) **Kanab Canyon High-Light, Arizona—March 21–28.** Total cost, \$160. Limit, 50. Leader, Howard Mitchell, 65 Hillside Avenue, San Anselmo, California 94960.

Kanab Canyon is located deep in the wilderness of the western Grand Canyon, between the Kanab Plateau and the Kaibab National Forest. On this 30-mile High-Light, we will descend the canyon from its rim to the Colorado River below. Pack animals will carry the food and gear as far as possible down the canyon until the way becomes impassible for stock. There, at about 2,800 feet, we will set up a layover camp. A two-day optional knapsack trip will take the more ambitious down to the Colorado. For those who wish to take it easy, however, there are spectacular shorter hikes from our campsite into nearby side canyons.

On this moderately strenuous trip, we will travel between cliffs streaked with hanging gardens of red monkey flowers, columbine and maidenhair fern. An occasional glimpse of desert Bighorn sheep may also be had.

For further details about this area, see page 10 of the March, 1968, *Sierra Club*

Bulletin. Write the leader for a copy.

(3) **Superstition Wilderness High-Light, Arizona—March 22–28.** Cost, \$150. Limit, 30. Leader, John Ricker, 555 West Catalina Drive, Phoenix, Arizona 85013.

The Superstition Wilderness Area is a spectacular desert region about 50 miles east of Phoenix. In early spring, the desert flowers and cacti will be in bloom and streams will be full. Although the trip will be on dry trails, our campsites will always be near water and we will spend our only layover day in a scenic valley dotted with Indian ruins, deep canyons and sparkling streams. Along the way, we will explore many historic sites and swap yarns with some of the old prospectors still searching for the Lost Dutchman Mine. This is a moderate trip and some conditioning is necessary.

(4) **Baja California High-Light, Mexico—May 17–23.** Total cost, \$150. Limit, 30. Leader, Wes Bunnelle, Gate Six Road, Sausalito, California 94965.

The high, forested wilderness of San Pedro Martir will be our destination on this mid-May High-Light. We will gather at the Meling Ranch on Sunday and spend the first night amid the live oaks at the end of an early-day mining road. Monday morning, we hand our duffel bags (20 pounds) to the

packers and commence a circuit of this little-visited, open pine country. There will be one layover at La Grulla Meadow, a lush green carpet with a sparkling trout stream. The 50 trail miles of this outing will be at elevations ranging from 6,000 to 9,000 feet. There will be an opportunity to climb Blue Bottle, the second highest peak in the range, and to enjoy dramatic views of the Gulf of California and Picacho del Diablo.

River Trips

(5) **Suwannee River Kayak and Canoe Trip, Georgia—March 22–28.** Total cost, \$105. Limit, 25. Leader, Marvin Stevens, 6010 Franklin Avenue, Hollywood, California 90028.

This unique Easter trip offers the opportunity to explore a magnificent but endangered ecological province. Rising in the Okefenokee Swamp, the Suwannee River travels 240 miles out of Georgia and across the Florida panhandle to the Gulf of Mexico. Our week-long journey by kayak and canoe will begin as close to the Okefenokee as possible and concentrate on the northern part of this wild and lonely river. Along the way, we will see exotic bird life and uncommon river creatures, all in a lush garden-like setting.

While river skills are desirable, more important is some wilderness camping experience and a cheerful acceptance of any surprises this remote environment may hold. A naturalist will probably accompany our group and we will have the opportunity to hike at several spots along the way. Minimum age 16.

Grand Canyon of the Colorado Raft Trip, Arizona: (6) March 22–31, leader, R. Kurt Menning, 6463 Crystal Springs Drive, San Jose, California 95120; (7) **May 18–27,** leader, Ellis Rother, 903 Sunset Drive, San Carlos, California 94070. Total cost, \$315. Limit, 30.

Running the Grand Canyon in the spring offers ten days of deep canyons and exciting rapids, all during the most temperate and delightful time of the year. The Grand Canyon is a country of contrasts: crashing rapids just around the bend from quiet swirling eddies, delicate fern grottos side by side with lifeless desolation, and waterfalls seeming to spring from barren rock. It is also an area of great historical interest and we will camp in many of the same spots as did Major Powell on his pioneer exploration of the Colorado. We will cover 312 miles of river from Lee's Ferry to Temple Bar in Lake Mead with layovers at Phantom Ranch and Tapeats Creek. This is a trip for active people who preferably have had some river experience. Minimum age 16.

CHARTER FLIGHTS

The Sierra Club has joined the United International Social Foundation, Inc., a non-profit organization whose program of charter flights to Europe is now available to all club members of six months' standing. The purpose of the U.I.S.F. is to promote friendship and recreational activities for members of groups such as ours on an international scale.

Flights via Caledonian Airways, the Scottish International Airline, will leave from Los Angeles or Oakland, although flights from Oakland are not yet confirmed.* A list of round trip flights, from Los Angeles to London, in late 1969 and early 1970 follows:

Depart	Return	Duration	Price
Dec. 19	Jan. 2	2 Weeks	\$245
Dec. 20	Jan. 3	2 "	\$245
Dec. 21	Jan. 4	2 "	\$245
March 7	March 21	2 "	\$199
April 10	April 24	2 "	\$219
April 25	May 23	4 "	\$229
April 26	May 25	4 "	\$229
May 2	May 15	2 "	\$235
May 23	June 20	4 "	\$265
May 31	June 29	4 "	\$275
June 19	June 5	2 "	\$285
*July 31	Sept. 7	5 "	\$295

In addition to many more charter flights, tours will also be available to members during 1970. For information and applications, write to: Flight Chairman, P. O. Box 6089, San Jose, California 95150, or phone (408) 378-3507. Do not write the club office.

*See *Norway write-up* for special flight from Oakland.

For More Details of Spring Outings

For further details of our coming spring outings, ask the club office for the *specific supplement* for the trip in which you are interested. Trips vary greatly in size, cost, in physical stamina demanded, and in distance covered. New members, particularly, may have difficulty judging from these brief *Bulletin* write-ups which outings are best suited to their experience and ability. Don't be lured into the wrong camp! If you are in doubt as to whether you and a trip are mutually compatible, ask for a trip supplement *before* you send in a reservation—saving yourself the cost and inconvenience of changing or cancelling your reservation later. Telephone or write the trip leader (not the club office) if you have further questions.

Knapsack Trips

(8) **Paria Canyon Knapsack, Arizona** — March 22–28. Total cost, \$55. Limit, 20. Leader, Dewey Wildoner, 3744 Grand Avenue, #39, Phoenix, Arizona 85019.

The Paria River starts in southern Utah and flows southeast to Lee's Ferry, Arizona, where it empties into the Colorado. Along eight miles of its course, the river has cut a deep narrow slot in the colorful Navajo sandstone to form a spectacular canyon. We will explore the main Paria Canyon as well as numerous side canyons.

In the event there is too much water flowing through the Paria narrows to permit our getting through, we will reroute the trip to the Rainbow Bridge area in Navajo country. Either trip is limited to experienced backpackers. Minimum age 18.

(9) **Grand Gulch Knapsack Trip, Utah**—April 18–24. Total cost, \$60. Limit, 12. Leader, Frank Nordstrom, 800 Glad Road, Farmington, New Mexico 87401.

Grand Gulch is located in the colorful canyon country of southeastern Utah at an elevation of 4,000 feet. This is an area of towering walls, sculptured pinnacles and natural bridges. Of interest to the amateur archeologist will be the many pictographs which can be found on the canyon walls. At this time of year, the desert water holes are full and wildlife and wildflowers are plentiful. The hike will be moderate in difficulty.

(10) **Thunder River–Deer Creek Knapsack, Arizona** — May 19–25. Cost, \$55. Limit, 20. Leader, Edith Reeves, 1739 E. San Miguel, Phoenix, Arizona 85016.

Thunder River springs from the North



Kanab Canyon

Photo by Allen J. Malmquist

Rim of the Grand Canyon, drops rapidly for one-half mile and joins Tapeats Creek to flow into the Colorado. Nearby, Dear Creek flows beneath cottonwoods through a deep gorge in the Tapeats sandstone and enters the Colorado from a high notch in the canyon wall. On this knapsack trip, we will explore these two beautiful streams and hike from the North Rim of the Grand Canyon down to the Colorado River. Fishing along the way in Tapeats Creek is usually good, and at the head of the creek, there is a large, virtually unknown cavern to explore. This trip will be moderately strenuous and conditioning is necessary.

Burro Trips

South Rim, Grand Canyon Burro Trip, Arizona: (11) March 22–28, leader, Tom

Pillsbury, 1045 Castle Rock Road, Walnut Creek, California 94598; (12) March 29–April 4, leader, Don Sheppard, 6719 E. Monte Vista Road, Scottsdale, Arizona 85257. Cost, \$115. Limit, 20.

These two loop trips offer the opportunity to see some of the most remote and untraveled areas of the Grand Canyon. Wherever possible, we will follow abandoned trails in use over 50 years ago. Highlights of the trip will include Clear Creek with its Indian ruins and waterfalls, and the Tonto Trail to Monument Creek. We will also spend two nights at the bottom of the canyon beside the Colorado River.

As on all burro trips, everyone will help pack and care for the burros and take a turn with cooking and pot washing. No previous experience with burros is necessary but you must be in good physical condition. Children eight and older are welcome.



Yak Pastures near Dhaulagiri, Nepal

Photograph by Wayne Woodruff

FOREIGN TRIPS 1970-71

Galapagos

Galapagos Islands, Ecuador: (410) January 10–February 7, 1970, leader, Edgar Wayburn; (415) February 6–March 7, leader, Al Schmitz.

Once known as a hide-out for pirates and later as a stopover for whaling ships, the Galapagos Islands have until recent times carried an aura of mystery. These volcanic islands first aroused scientific interest through the writings of Charles Darwin, who visited them on a world cruise in 1835 and there formed the first ideas of his revolutionary theory of evolution.

Within the many beautiful lagoons and along the rocky shores are flightless cormorants, flamingos, large colonies of boobies, and frigate birds, all of them so unaccustomed to man that they can be studied closely. Of special interest are the volcanoes,

lava flows, tree-like cacti, 60-foot-tall sunflower trees and other unusual flora.

A unique sea voyage has been planned to and from the Galapagos Islands on the schooner, *Te Vega*. Hiking, camping and knapsacking, study of the exotic wildlife, and a visit to the Darwin Research Station will all be features of this trip.

The all-inclusive price of each outing is \$1640 or \$1840 depending on ship accommodations. For further details, request a trip supplement from the outing office.

Guatemala

(425) **Guatemala Highlands and Jungles of Tikal — March 21–April 11.** Leader, Tom Erwin, 251 San Jose Avenue, San Francisco, California 94110.

Rediscover bygone civilizations and explore active volcanos and luxuriant tropical jungles on this three-week journey through Guatemala. From Guatemala City, side trips are planned to visit the remarkable ruins of Tikal and to climb the active Volcan Pacaya. Four days in the old city of Antigua will include exploration of the ruins of this ancient capital, a moonlight hike on

Volcan Agua, and a visit to nearby plantations. A two- or three-day hike from Lago Atitlan to Chicacao is also planned.

Full details will appear in the December, 1969, *Sierra Club Bulletin*, and a trip supplement will soon be available.

Norway

(400) **Norway — August, 1970.** Leader, Betty Osborn, 515 Shasta Way, Mill Valley, California 94941. Knapsack leader, Jim Watters, 600 Caldwell Road, Oakland, California 94611.

In addition to the previously announced hiking trips in the mountains of southern Norway, a group of 15 knapsackers will follow an entirely different itinerary through some of the deep valleys and along the celebrated glacier routes of the Jotunheimen and Jostedal regions. Nearly half of the outing will be spent in the Jotunheimen, "Home of the Gods," where we will sample the extraordinary scenery of the Gjende "Edge," Memurubu Valley, the Sognefjell Highlands and the inner valleys of the Hurrungane. We then move to the Jostedalsbreen, the largest glacier in Europe, to make a crossing into

**Interested in
CHARTER FLIGHTS?**

See page 26

the steep fjord country of the Norwegian coast. We plan to break the crossing with an overnight bivouac on one of the rock outcroppings in the middle of the glacier. We conclude our trip with a few days north of the Arctic Circle. Although primarily we will travel off the tourist routes and live out of rucksacks, we will stop at a resort hotel and at a number of the service and self-service hostels and huts for which Norway is famous. Members must come equipped with ice axe, crampons and sleeping bags. The leadership is arranging for tents from Norwegian outfitters.

If you are interested in this 21-day knapsack tour of some of Norway's most spectacular mountain country, write the outing office for a trip supplement. The reservation deposit is \$100 per person.

Hiking trips. Although there is a waiting list for the two- and three-week hiking trips in the Jotunheimen, Finse and Sunnmøre (see February, 1969 *Bulletin*), it is a short one and prospects of getting on the trip are good—but make your reservation now. If you are interested in these trips, which consist of small groups of 15 people, write the outing office for a supplement. The reservation deposit for these trips is also \$100.

All Norway trip participants may take advantage of a special five-week U.I.S.F. charter flight from Oakland to London and back, leaving Friday, July 31, and returning Monday, September 7. Round trip cost is \$295 plus a \$10 nonrefundable administrative fee. (This flight is not exclusively for Norway trip participants; any Sierra Club member, who wants to take advantage of this reduced-fare flight without joining the hiking trip, is welcome, provided he has been a member of the club for six months prior to flight departure. If you are interested, request a flight reservation form from the Sierra Club outing office.)

Afghanistan

(450) **Afghanistan, Hindu Kush Mountains—Summer, 1970.** Leader, Pete Overmire, 122 La Espiral, Orinda, California 94563.

A highly successful scouting trip, which followed the Bashgal River into the remote, snow-capped Hindu Kush range of north-eastern Afghanistan, was completed this summer. As a result, we have planned a trek in 1970 which will cover 100 miles in this isolated, undisturbed corner of Afghanistan, and will cross at least one 16,000-foot pass. A portion of the trip will be devoted to sight-seeing in many renowned historical and archaeological sites and shopping in the city of Kabul. Just before starting the journey home, trip members will cross the famous Khyber Pass into Pakistan. Although we will have porters, knapsack experience, good

physical condition and a medical certificate will be required of all trip participants.

Full details will appear in the December, 1969, *Sierra Club Bulletin*, and a trip supplement will soon be available.

Nepal

Nepal: (460) Annapurna-Dhaulagiri — September 25–November 1, 1970. (465) Everest, Kathmandu-Darjeeling — October 30–December 20, 1970.

Full details of both these trips will appear in the spring Outing Issue of the *Sierra Club Bulletin*.

Micronesia

(500) **Micronesia — February–March, 1971.** Leader, John A. Edginton, 1508 Fernwood Drive, Oakland, California 94611.

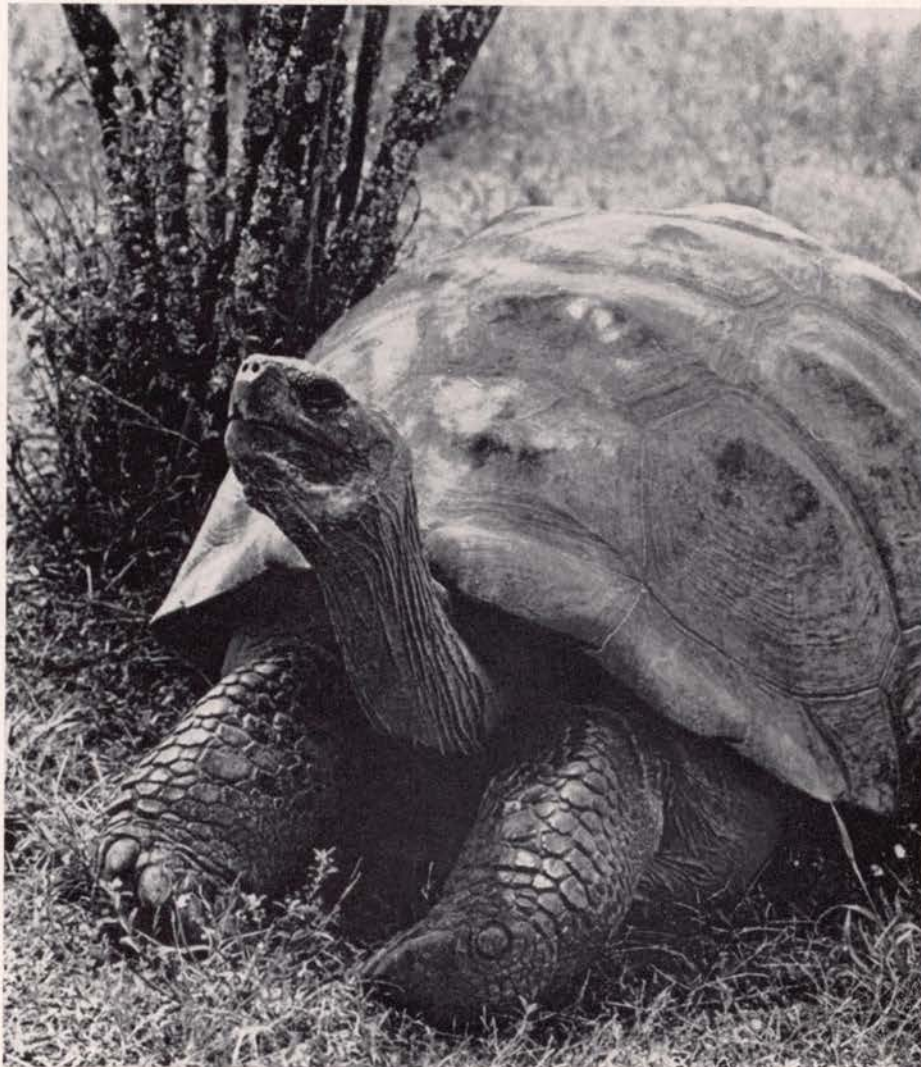
Between the Tropics of Capricorn and Cancer lies the vast, three-million square

mile area known as Micronesia. We are proposing a trip in the early spring of 1971 which will give an intimate exposure to long-hidden Pacific islands and atolls, and to a unique and often primitive environment. Our visit will include some of the islands in both the eastern and western Carolines, the Marianas, and the Marshalls. We will walk, canoe, fly, and sail; sleep in village guest houses, first class hotels, on the beach and in quonset huts; swim, shell, beachcomb and fish; and study first-hand the native cultures of these islands. Close observations of the interesting and often unusual bird and animal life (coconut crabs, alligators, fruit-bats, squirrel fish and many other species) will be possible in and around the warm waters of the tropical lagoons.

A great deal of planning will be required to organize this outing. It's too early to accurately predict the cost, but we hope to provide three to four weeks of Micronesian exploration for an all-inclusive fee in the \$1,100–\$1,300 range. If you are interested, write the leader for further information.

Huge Land Tortoise

Photo by Eliot Porter from Galapagos: The Flow of Wildness



How to Apply for Sierra Club Trips

It is essential that you apply on the reservation form provided in this issue of the *Bulletin*. If you are applying for more than two trips, send to the club office for additional forms, one per trip. Please print (in ink) in block letters. Fill out your application carefully and completely; writing you for missing information could delay processing your request and result in your not obtaining a place on the trip you want.

- In the space asking for "membership number" insert the 7-digit number you will find on your membership card or on the address label of your *Bulletin*.

- In the space marked "trip number" insert the number you will find before the name of each trip listed in the *Bulletin*.

Sierra Club outings are open only to members, applicants for membership, and members of conservation organizations granting reciprocal privileges. Children under 12 need not be members; children 12 and over must be junior members. You may apply by completing a membership application (see fall and spring Outing Issues of the *Bulletin*, or ask for one) and sending your admission fee and annual dues with your reservation fee.

When the trip of your first choice is filled, but the alternate is open, you will automatically be placed on your second choice. If the alternate choice is filled as well, you will be placed on the trip with the shorter waiting list and notified. If you wish to be placed on the waiting list of your first choice only, regardless of status, please indicate so in the space provided on the reverse of the application form. A reservation for more than one waiting list requires a separate application and deposit for each.

Listed trip fees will probably cover expenses; the management reserves (but has seldom exercised) the right to levy small assessments.

PAYMENTS, CANCELLATIONS, REFUNDS AND TRANSFERS

All payments will be refunded under the following conditions: 1) if a vacancy does not occur; 2) if a reservation is not accepted; or 3) if the Sierra Club must cancel a trip.

The following rules, pertaining to both Foreign and Domestic trips, will apply as indicated unless different provisions are expressly stated in the *Bulletin* trip write-up and in the trip supplement, which applicants should review carefully:

DOMESTIC TRIPS

A reservation deposit of \$15 per family or per person must accompany each reservation application, except for Trail Maintenance and Clean-up trips to which the family reservation policy does not apply and a \$15 per person deposit is required. *The reservation deposit is not refundable.* "Family" means husband, wife, and their own children under 21—all of whom must be Sierra Club members, except children under 12. Grandchildren, nieces and nephews are not considered family.

The balance of the trip fee is due two months before the beginning of each trip; if payment is not made, the reservation may be cancelled.

Refunds (not including the nonrefundable \$15 reservation deposit) following cancellation are made in accordance with the following schedule, based upon the date notice of cancellation is received by the outing office: 1) 100% up to 30 days before the trip starts; 2) 90% if cancellation occurs in the period 14 to 30 days before the trip starts; 3) 75% up to 14 days before the trip starts (not including the day of departure); and 4) 75% or less, at the discretion of the leader, if cancellation is made on the day trip starts or if a trip member leaves during the trip. A "no-show" will generally not receive a refund.

A \$15 transfer fee is charged for changing reservations from one trip to another.

FOREIGN TRIPS

These trips require payment in accordance with the following schedule: 1) a deposit of \$100 per person with each reservation application, and 2) the balance of the trip fee, paid in full, 90 days before the trip leaves. The trip leader may replace a reservation holder with a person from the trip waiting list, if full payment is not made 90 days before trip departure date.

Refunds following cancellation are made in accordance with the following schedule, based upon the date notice of cancellation is received by the outing office: 1) the entire amount paid, less \$15, up to six months before the trip begins; 2) within six months of departure, the entire amount paid, less \$15, if the vacancy created by the cancellation is filled; and, 3) if no replacement is available, the entire amount, less \$15, less out-of-pocket trip expenses and Sierra Club outing office overhead expenses. This charge will be computed by the trip committee

after the trip is concluded and bills have been paid.

A transfer of reservation from a foreign trip is treated as a cancellation, and entitles the applicant only to refunds in accordance with the cancellation policy.

CHILDREN

Unless otherwise specified, a minor under 18 years of age may participate on outings without the consent of the leader, only if he or she is accompanied by a parent or other responsible adult.

EMERGENCIES

In case of accident or illness, the club, through its leaders, will attempt to provide aid and arrange evacuation when the leader determines evacuation is necessary or desirable. Costs of specialized means of evacuation, such as helicopters, and of medical care beyond first aid, are the financial responsibility of the person involved. Medical insurance is advised as the club does not provide this coverage.

MEDICAL PRECAUTIONS

Since the trips are fairly strenuous, a physical examination is advised. As the danger from tetanus (lockjaw) is extreme in accidents occurring where stock have been, members are strongly urged to consult their physicians regarding the advisability of anti-tetanus injections, or a booster shot as appropriate. Full effectiveness from an initial tetanus immunization takes about two months—do it now!

TRANSPORTATION

Transportation to and from a trip is the responsibility of the individual. For information, write to the trip leader whose address is supplied in the trip supplement and *Bulletin* write-up. A form is provided with your reservation acknowledgement for advising the leader whether you want, or can provide, transportation on a shared-expense basis to the roadhead. The outing office does not make transportation arrangements.

CONDUCT OF TRIPS

The leader is in complete charge of the trip. He may require a trip member to leave the trip at any time if, in his sole discretion, he feels that such member's further participation in the trip might be detrimental to the trip or to the member's health. Any such required departure may be treated as a late cancellation insofar as any refund is concerned. Acceptance of a trip reservation is at the discretion of the club and the trip leader.

INSTRUCTIONS FOR PREPARING REQUEST FOR OUTING RESERVATIONS

One family or one individual may use this form to apply for one trip.

- 1) Read carefully "How to Apply for Sierra Club Trips" in the Fall and Spring outing issues of the *Bulletin*.
- 2) Sierra Club outings are open only to members, applicants for membership, and members of organizations granting reciprocal privileges. Children under 12 need not be members; children over 12 should file application for junior membership. You may apply by completing the membership application below and sending your admission fee and annual dues along with your reservation fee.
- 3) The reservation fee for each trip is \$15 per family or per person unless otherwise specified. It is not refundable and must accompany this reservation request. *Family* means husband, wife, and their own children under 21. Grandchildren, nieces, and nephews are not considered immediate family and should send in separate requests and reservation fees.

When special trips warrant a greater deposit, it is also not refundable, unless your place can be filled by a substitute. In such cases, all but \$15 will be refunded.

- 4) When the trip of your first choice is filled, but the alternate is open, you will automatically be placed on your second choice. If the alternate choice is filled as well, you will be placed on the trip with the shortest waiting list. If you wish to be placed on the waiting list of your first choice, regardless of status, please indicate so in the box for special instructions provided below. Registration for more than one waiting list requires additional deposit.
- 5) When you write a trip leader (re additional information or re reservations requiring the leader's approval), write him on a separate sheet of paper, not on this reservation form. See trip writeup for his address.

This year we are introducing a new system, and would appreciate your cooperation in using the application that has your name, address and membership number included. If your name differs from the one on top, or if you need a second application, an additional form is included.

PLEASE PRINT — USE INK AND BLOCK LETTERS

Write any special instructions or requests here:

INSTRUCTIONS FOR PREPARING REQUEST FOR OUTING RESERVATIONS

One family or one individual may use this form to apply for one trip.

- 1) Read carefully "How to Apply for Sierra Club Trips" in the Fall and Spring outing issues of the *Bulletin*.
- 2) Sierra Club outings are open only to members, applicants for membership, and members of organizations granting reciprocal privileges. Children under 12 need not be members; children over 12 should file application for junior membership. You may apply by completing the membership application below and sending your admission fee and annual dues along with your reservation fee.
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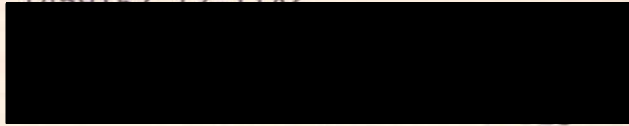
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Write any special instructions or requests here:

Trip number	Name of first choice trip	Departure date	1050157 17 1186 
Alternate number	Alternate choice trip, only if first choice filled	Departure date	
Amount of reservation fee enclosed. Minimum \$15 per trip. Make check payable to Sierra Club. \$		No. of reservations requested	
Residence Telephone		Business Telephone	

Print your name and the names of all other family members going on this outing		Member or Applicant?	Age if under 21	Relationship	About how many S.C. trips (other than chapter outings) have you attended?	On future club trips, what length domestic trip would you prefer?
FIRST	LAST					
1.						
2.						
3.						
4.						
5.						
6.						

Trip number	Name of first choice trip	Departure date	MEMBERSHIP NO. OF APPLICANT			
Alternate number	Alternate choice trip, only if first choice filled	Departure date	Print name of applicant			
Amount of reservation fee enclosed. Minimum \$15 per trip. Make check payable to Sierra Club. \$		No. of reservations requested	Mailing Address			
Residence Telephone		Business Telephone	City	State	Zip Code	

Print your name and the names of all other family members going on this outing		Member or Applicant?	Age if under 21	Relationship	About how many S.C. trips (other than chapter outings) have you attended?	On future club trips, what length domestic trip would you prefer?
FIRST	LAST					
1.						
2.						
3.						
4.						
5.						
6.						

READ INSTRUCTIONS OTHER SIDE BEFORE COMPLETING!

PLEASE PRINT — USE INK AND BLOCK LETTERS!