



*Sierra  
Club  
Bulletin*

APRIL 1970





## ON THE WHITE HOUSE MEETING

President Nixon met recently with leaders of national conservation organizations to promote his environmental program and hear from conservationists who have sought so long to bring about the current upsurge of interest in protecting the environment. No such meeting had occurred before. It lasted a brief one and a half hours in the White House Cabinet Room.

The President invited support for his environmental program, stressing he felt he and conservationists have the "same basic goals," though there might be disagreement over the adequacy of federal funding for conservation. Conservationist's support will be necessary to put over the administration program, he said, because "the current ecology fad won't last — certainly not among the students who will drop it and be on to something else soon." The President expressed fear the public is too "fickle" for conservationists to be complacent about getting his program through Congress, or to be hopeful of adding much to it. The various groups represented were invited to back his program and fight for it.

Various specifics were discussed in a pleasant exchange, with conservation leaders acknowledging they did want "more," particularly more adequate funding. Without directly seeking to do so, I drew the first Presidential frown when I suggested our goals go considerably beyond the President's and that the distance between us couldn't be measured in dollars alone.

I explained that conservationists believe limitless expansion of the economy is an outmoded idea which is causing us to eat into our basic and irreplaceable capital — the environment itself. I noted conservationists believe we can't any longer measure progress by growth of the gross national product alone, or even primarily in such terms. On the contrary, conservationists are urging we measure progress by additions to the quality of life. I argued that zero population growth should be a national priority, in keeping with the urgency of the population problem. Finally, I said conservationists want fundamental changes in the ways we think about the environment: they want those who would change it to carry the burden of proof that the change will not be adverse; they want effective controls over now rampant technology; they want adoption of the land ethic and the changes in life styles it implies. I said I hoped the President could adopt these ideas.

I came away from the conference convinced the President has been moved by the public outcry over degradation of the environment. I concluded he has made a knowing but minimal political response. He has not really caught the flavor of the moral and ethical renaissance implicit in the recent expressions of public concern. Most of all I left convinced that the President wants to be assured of having a majority with him — *before* he moves. I judged he's not yet convinced we have the power, the influence or, more particularly, the votes to force our way against the considerable opposition.

Our work is clearly cut out. Conservationists must become committed to and expert in the exercise of political power. Proponents of ruthless exploitation must be voted out of office. Apologist spokesmen for polluters must also lose their seats. Both political parties must be urged in most forceful terms to make strong conservation planks truly part of their platform — or else. In short every politician must be made to know that if he fails to get our vote he will lose.

Phillip S. Berry  
*President*





# Sierra Club Bulletin

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

Cover: A wolf along the Sheenjek River. The wolf and other wildlife of the Arctic Wildlife Range are threatened by increasing pressure from oil industry companies who want to exploit this area. See page 4.

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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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## NEWS

### ALASKA PRIORITIES

The Alaska Wilderness Council has recommended five wild areas in Southeast Alaska as "priority areas" for special land management classification by the U.S. Forest Service. These areas are: Admiralty Island, West Chichagof-Yakobi Island wilderness, The Prince of Wales wilderness and recreation complex, East Behm wilderness and scenic area, and Tracy Arm-Holkham Bay wilderness. Currently, logging is going on in or near all of these areas except the Tracy Arm-Holkham Bay tract. The Sierra Club, which has been pushing for the establishment of a West Chichagof-Yakobi Island wilderness for the past year and a half, has endorsed the Council's recommendation.

At present the Forest Service administers all of Southeast Alaska, except for municipal areas, and within this 21 million acres, there are no designated wilderness areas and only two scenic areas. Though the Forest Service is expected to announce its choice of classification study areas this spring, Dr. Edgar Wayburn, the club's Alaska Project Coordinator, noted that the agency has already committed the vast majority of the commercial timber lands of Southeast Alaska to logging.

The Alaska Wilderness Council has also proposed the creation of a blue-ribbon committee to be composed of Alaskan and national experts in the fields of wildlife, wildland management, and recreation. This committee would study the recreational and wildland needs of the public — both Alaskan and national — in relation to the needs for other resource use on public lands in Southeast Alaska. It would then, according to the Council, provide the Secretary of Agriculture with detailed management recommendations. This procedure has been followed very successfully in other areas such as the northern Cascades of Washington and the canoe country of northern Minnesota.

### CAROLINA CHEMICAL PLANT

A West German chemical concern announced early in April that it has suspended construction of a \$200 million petro-chemical complex at Port Victoria, S.C. In a letter to Secretary of the Interior Walter J. Hickel, Dr. Hans Lautenschlager, president of Badische, Analin and Soda Frabrik (BASF), said, "We are announcing today the suspension of construction of the chemical plant.

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Photographs by Wilbur Mills

# Arctic REFUGE







Dall's sheep

Snow buntings and young nesting on Coastal Plain



Moose along the Sheenjek River





Snowy owl on Coastal Plain

Caribou migrating in the Franklin Mountains





A little more than a decade ago Secretary of Interior Fred Seaton established the Arctic National Wildlife Range. He set aside the 8.9 million acres in the extreme northeastern corner of Alaska "for the purpose of providing unique wildlife, wilderness and recreational values." It was a wise decision. Bounded on the east by the Canadian Yukon the range extends west along the Arctic Coast for 125 miles. From the coast it runs south for 150 miles through the three major physiographic provinces of northern Alaska; the treeless expanse of the coastal plain, the glaciated peaks of the Brooks Range, and the spruce-birch forests of the interior. The wildlife shown on these pages are only a sample of the diversity of its inhabitants. It is likely that the area also contains oil.

Under the terms with which the Range was established surface exploration and mineral leasing are permitted within its boundaries. So far, leasing has not been allowed because the required land classifications in the Range have not been made. Surface exploration has been going on for several years with oil company exploration teams criss-crossing the Range leaving a trail of debris-laden campsites behind them. In an area set aside for wildlife, Grizzlies and wolves are routinely run to exhaustion by oil company helicopters. Supervision of oil exploration activities is almost negligible because the Department of Interior has set aside insufficient funds for that purpose. As long as the oil companies are permitted to deface the Range and disturb the wildlife any pretense that it is being administered for the purposes its establishment intended is pure sham. The Arctic Range should be treated as a wilderness area. It must be closed to all oil and mineral exploration and development until Congress can review the area under the terms of the 1964 Wilderness Act. The man who can make this decision is Secretary of Interior Walter Hickel.



Barren-Ground Grizzly along the Arctic Coast



# PARK *or* PIT?

By Russell Brown

Idaho's Sawtooth Mountains evoke all the superlatives which have been the battle trumpets of conservation for this century. The land is beautiful, providing solitude for the crowd-weary, myriad alpine lakes for the gem seekers, and high peaks for the children of challenge. But the battle trumpets have no proper song to play. The young war now alive in central Idaho will not be won with the old songs. The alpine highlands of the greater Sawtooth region are neither the highest nor the deepest, not the longest, not a curiosity, not a museum piece, and not the last of their kind. (Not just yet, anyway.) The life of the Sawtooths and their sister ranges, the White Clouds, Pioneers and Boulders, must be preserved for those more subtle reasons, those that remain after the novelties of our land have been saved. Inaction's reward will be open-pit mines in the White Clouds, pollution of the headwaters of the East Fork of the Salmon River, subdivisions' patterned vulgarities in the Stanley Basin, bulldozer slashes and dynamite blasting in the Pioneers and Boulders, and the defloration of the Sawtooth Primitive Area by aspiring mineral kings.

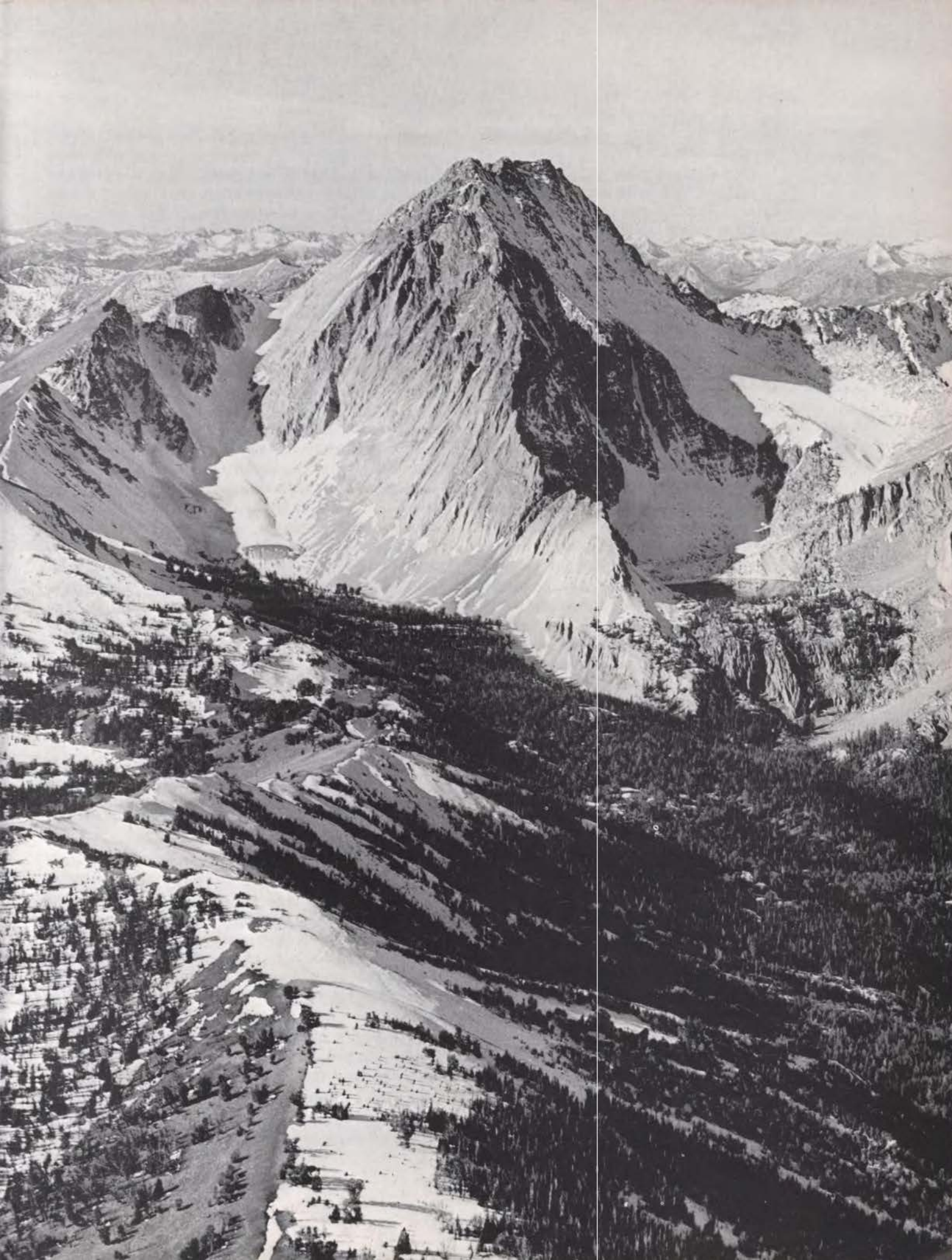
The story of the White Clouds is one more confrontation between the old American pioneer ethic—where destruction of virgin country means “civilization”—and the new environmental preservation ethic, where the myopia of the pioneer is intolerable. It is, in its simple and accelerated way, the battle of the North Cascades retold.

In 1911, the first National Park proposal for the region was made. Its failure was followed by similar vain attempts in 1913, 1916, 1935, 1960, 1963, and 1966. What will probably be the last park proposal for the Sawtooths is now alive. Convergent with it are two forces which are mutually exclusive with national park status. The overt threat is clear, present, and

growing; a mining rush has started and the molybdenum strike in the White Cloud area has become the focal point of controversy. A huge open-pit mine has been planned and, if created, will submerge not only the Park quality but any other significant wilderness usage. The second threat is more subtle, but no less final. The outcome of Congressional hearings on Senator Frank Church's 1966 Sawtooth National Park bill was the creation of a National Recreation Area bill, which finally passed the Senate in mid-1969. The death of the 1966 Park bill and creation of the NRA bill were the result of an extraordinary lobbying campaign by the U. S. Forest Service, anxious to retain its empire. The NRA bill, S. 853, now languishing in a House committee, is a sweetheart bill. Its virtues are best described by the conservation credentials of some of its supporters, the American Mining Congress, the Idaho State Mining Association, and the American Smelting and Refining Company, the hopeful open-pit miners.

The White Clouds war started quietly, with the future antagonists working without knowledge of each other. In 1968, an informal group of Idahoans began to study the Sawtooth region of south central Idaho seeking an optimum means of preserving its wilderness values from present and future erosion. Late that year, the Forest Service released the news that the American Smelting and Refining Company (ASARCO) had been conducting extensive prospecting operations near 11,820-foot Castle Peak in the White Cloud Mountains east of the Sawtooth Valley. The conservationists, anticipating the need for organization, formed the Greater Sawtooth Preservation Council (GSPC), and accelerated their research on meaningful alternatives for action and their impact on Idaho. ASARCO, shut down for the winter, evaluated their core drillings and decided that the mineral







content warranted expanded operations. They applied for a special use permit from the Forest Service to construct a road to their claim area, an eight to ten mile run up Little Boulder Creek from the East Fork of the Salmon River. The purpose of the road was to facilitate prospecting, allowing the extraction and shipment of large samples of the low-grade ore for bulk processing. The GSPC completed its studies, deciding that a National Park—National Recreation Area complex, similar to that established in the North Cascades, provided an ideal combination of preservation and management for the area. The Council's plan created three wilderness park regions in the Sawtooth, White Cloud, Boulder and Pioneer mountains; surrounding the insular park areas was the NRA, established to carry the bulk of the recreational traffic while maintaining traditional uses and "old west" atmosphere of the area.

In the spring, planning, analysis, and comment gave way to action. The major newspapers of the state started to cover the issue heavily and were unanimous in their condemnation of the proposed mine and road. Idaho's senators, Frank Church and Len Jordan, and Representative Orval Hansen opposed the venture. Press releases by the miners declared their righteous interest in keeping America strong, asserted their legal right to prospect and mine anywhere they wished, and promised an economic bonanza for the local and state economy. Conservation representatives emphasized the irreplaceable values of the area, suggested that our known reserves of 100 years and exports of 30 per cent of domestic production hardly made the need for molybdenum overwhelming, and noted that the instability of mining and its inevitable failure hardly made it a growth industry.

In response to the growing interest in the issue, the Forest Service held two public information meetings to present its position and to examine public opinion on the proposed mine (and road) and on long-range management plans for the area. The meetings, held in Boise and Idaho Falls, both followed the same format: a Forest Service statement, a presentation by two representatives of ASARCO, and statements by citizens attending the meeting. In Boise, the meeting was dominated by conservation opinion, with a discordant note from Idaho's governor, Don Samuelson, ("The Good Lord never intended us to lock up our resources") who favors resource consumption above all else. Ernest Day, Idaho State Park Board Chairman, resigned in protest over the Governor's position immediately after the meeting. The Idaho Falls meeting, held the next day, was even stronger in terms of

public interest in conservation. Every major conservation and sportsmen's organization in southeastern Idaho had supported the preservation of the White Clouds. Strong mining support did exist in Custer County, which includes the White Cloud area. After overwhelming defeats in Boise and Idaho Falls, a compensatory meeting was demanded by the people of Challis (pop.—700), and when held, demonstrated the very predictable enthusiasm for mining.

Ten months later, the Forest Service is still considering "alternatives" for transportation of the ore. They had announced that access permission would be given in early 1970 but ASARCO has now deferred their road demand until the heat is off. Under present laws, the Forest Service claims that it has no way to stop the open-pit mine.

During the late summer and early fall, Governor Samuelson started a surrealistic battle with the Forest Service. Months after testifying, he decided that the meetings should never have been held at all and that public meetings, not the issue, had stirred up all the opposition. While at a Governors' conference in Seattle, he told Ed Cliff, chief of the Forest Service, "If you had just issued a permit for the road, there would have been no controversy." After returning to Boise and his harried advisors, he made the awkward statement that the meetings should have been held two years ago, before prospecting had started (about what, no one has ever discovered). He continued his attacks on a day-to-day basis for the next two months, until ASARCO's embarrassment and concern about his obsession with the issue became apparent. The inane battle ended. The war had just begun.

While the verbiage was feeding back on itself in the outside world, action was picking up in the White Clouds. ASARCO's workers were busy making buffer claims, surrounding the mineralized area with legally claimed, though minerally worthless, land, thus discouraging other miners from making nuisance claims. The ASARCO claims were located in the Castle Peak area, extending several miles down Little Boulder Creek. A few miles from there, in the Frog Lake-Boulder Chain Lake region, the Vernon Taylor Co. of Denver had moved in and was duplicating ASARCO's claiming efforts; Taylor's claims now cover more than two square miles. A third interest, the Meadow View Mining Group, run by five employees of J. R. Simplot, has requested a road permit into the Big Boulder Creek drainage, where twelve claims have been established. The total number of claims in the Castle Peak region of the White Clouds now exceeds 300.



Eleven of the claims have been validated by Forest Service examiners. ASARCO's estimated value of "their" ore body ranges from \$100 million to \$1.5 billion. Allowing for optimism, it's still a handsome bit of largesse from the public. Considering the destruction of wilderness planned, it would be both a fiscal and moral crime. The construction of a road would be the finishing touch. The search-and-destroy campaign now under way would be accelerated by providing access for the gouge-and-run bulldozer boys, whose prospecting techniques are best described as burning down the haystack to find the needle.

ASARCO spokesmen claimed complete surprise at the opposition they encountered in Idaho and indicated that it was the first time such problems had occurred for them. Their early indignation at the interference with their plans was soon muted and gave way to environmental concern. A public relations campaign was started and promises of "complete restoration", a reclamation bond created out of profits, and the creation of a "beautiful lake, ideal for recreation, pure enough to drink, and stocked with trout," were soon heard. Blending with these temptations (not legal obligations, one must note) was the soothing message that mining and wilderness recreation were compatible. The scale of the planned open-pit operation reduces all such pretensions to their proper dimensions. Ore removal will be 20,000 tons per day (40 million pounds per day, or a pound for everyone in the country every five days) for at least 20 years. 99.8 per cent of the ore removed will be waste, leaving a tailings pile of roughly 146 million tons plus or minus a few hundred million pounds. The 7,000-foot long pit would be 700 feet wide and 350 feet deep. A 400-foot high dam of waste ore would be used to create a one-and-three-quarter-mile long tailings pond from the open-pit site(s) into the Little Boulder Creek drainage. The proposed tailings pond, the final(?) resting place for the processing wastes, has been named (apocryphally) Lake Samuelson in honor of the Governor's efforts to make it a reality. In addition to the controversial road to the mine site, ASARCO also plans to construct an ore processing mill in the White Clouds. Additional National Forest land may be claimed for such purposes and for the disposal of processing wastes.

ASARCO's public relations strategy has been implemented by the hiring of guest experts who all can be expected to issue comforting press releases on the virtues, ecological enhancements, and scenic improvements that will be the products of open-pit mining in the White Clouds. They have been hired to certify

the purity of the company's intentions and make recommendations on "how the mine can be developed with the least environmental impact." Understandably, ASARCO has not asked their consulting ecologist to decide whether or not the impact of the mine will be so great that the mine should not go in at all. So far, the sciences whose names have been dropped have been ecology, forestry, fisheries, wildlife, agronomy, hydrology, landscape architecture, and archeology. (The indecently superficial archeological study was done in part, by helicopter.) The buying of scientific opinions captures all of the morality of the purchase of indulgences for the absolution of sins.

The image of environmental concern that ASARCO has assumed is in strange contrast to their activities in the real world. In Tacoma, Washington, where the ASARCO smelter dispenses a blessing of 22 tons per hour of sulfur dioxide into the city's atmosphere, they have claimed that the danger of sulfur dioxide to human health has been "grossly exaggerated". They have also threatened to shut down if forced to comply with air pollution standards, and filed suit against the Puget Sound Air Pollution Control Agency, challenging their legal right to protect the area's atmosphere. There is far more sound than substance in ASARCO's belated concern for the environment.

The Sawtooth NRA bill, which lacks the mineral entry withdrawal of other NRA legislation, cannot stop the proposed open-pit mine. The best that it offers is that mining claims located *after* passage of the Act shall be subject to "such measures *as may be reasonable* to protect the scenic and esthetic values of the recreation area." The NRA bill, now supported by the miners, offers only a hint of a whisper of a promise of protection; it would, in fact, provide legal sanction for destruction.

Only National Park status can protect the wilderness beauty of the Sawtooth region and preserve it as a national trust for future generations. Only the creation of the Park-NRA complex proposed by the Greater Sawtooth Preservation Council will save the area from imminent devastation. Only the highest form of preservation will serve that purpose so well described by John F. Kennedy in 1961, when he said, "It is our task in our time and in our generation to hand down undiminished to those who come after us, as was handed down to us by those who went before, the natural wealth and beauty which is ours."

*Russell Brown is a Club member, and Vice President of the Greater Sawtooth Preservation Council.*



# Conservation Education

By Al Cline

In a recent *Bulletin*, Lloyd Tupling made the sage observation that action frequently makes a mockery of words. So does inaction. The California State Legislature two years ago in a move heralded by some politicians and educators as a "magna carta" rewrote a large section of the Education Code, a difficult and controversial chore removing reams of useless verbiage. The goal was an educational process more closely related to reality.

Conservation education was mandated for all the grades — not suggested, but required from the first grade through high school to give students a sense of man's relation to his environment.

Wonderful! Another first for California.

The hitch was obvious. No funds were provided. So, to quote the Conservation Advisory Committee to the State Board of Education, conservation education remains a stepchild in the crowded family of education, "a bright and promising child, but ignored or neglected, with little nourishment of any kind."

The food that exists comes from individual teachers and a district or two relying on their own resources. The lack is particularly apparent in those vital early grades. A 114-page bibliography of free and inexpensive conservation publications compiled last year by a committee of educators listed nothing for first graders, a few namby pamby cartoon coloring books for second and third graders. "Smokey's Forest Fire Prevention Song Book, Snappy Songs for Youngsters," is one example. "Sniff and Snuff, the Super Fire Safe Snoopers," another. A sorry diet, indeed.

Mrs. Louise Brown, a science teacher at the Jefferson Elementary School in Berkeley, refuses to accept such fare. She teaches only first graders. They spend an average of 2½ hours a week with her, and Sniff and Snuff are not a part of the classroom. Ecology is. Eco-systems are. Pollution is, along with polluters. The six year olds delve into smog and DDT; organisms and habitats; water problems and the conservation of African animal life. No subject concerned with planet Earth is taboo.

For all the sound and fury in state and federal legislatures over conservation education, the biggest contribution is still being made by a few dedicated teachers.

The major goals to Mrs. Brown, a vivacious woman with 20 years experience in the classroom, 18 in Berkeley, are scientific literacy and environmental education. Trained in the University of California Berkeley-developed Science Curriculum Improvement Study (SCIS) technique, a system stressing exploration, invention and discovery, Mrs. Brown emphasizes the diversity of organisms, both plants and animals. Her students observe the life cycle—birth, growth and death. They learn what makes water turn green, what the black stuff is at the bottom of the fish bowl, what sustains life and what causes death.

When the students bring something from home, and they do this consistently, it is discussed with enthusiasm. The science room is covered with articles of interest: a news story and pictures of a Minnesota fish kill; an article on a new and complex system of converting salt water to fresh; that not so







scenic Sierra Club poster depicting the rape of a redwoods stand.

"I try to make the children aware of what's going on around them," Mrs. Brown says. One lad spelled out his theory for eliminating smog, a simplistic idea perhaps, but to the point. "Make difrent ingin for cars, trucks and motor cicles." Others in a free-wheeling discussion on air pollution called for development of an electric auto, a steam driven car, and a return to the use of feet. In a discussion of pesticides, a girl gave a lucid explanation of the role of DDT in the demise of the pelican. Using the Redwood poster as a takeoff, another girl left no doubt that she understood the cause and meaning of erosion.

This is Mrs. Brown's second year of working with first graders and she acknowledges that no one really thought her program would succeed to the extent that it has. The argument was that the kids just weren't ready for such advanced material, that their attention

span could not be held for such a long (one hour) period.

But it is working.

"There is a terrific increase in vocabulary, in the ability to describe things," the teacher reports. "I get tremendous feedback from both parents and teachers. And the second graders continue to be as enthusiastic as they were last year."

An eighth grader and budding oceanographer who helps Mrs. Brown an hour a day expresses amazement at the goings on at Jefferson. He says those first graders are involved in subject matter he did not hear about until the sixth grade.

Despite her obvious enthusiasm, her conviction that youngsters must become aware of the world around them, Mrs. Brown does not consider herself an ecology or a conservation fanatic. "It is important, and I certainly am interested in it," she says. "But my major interest is in what I consider America's No.



1 problem, the survival of black people." Mrs. Brown is black.

"Conservation doesn't mean just saving birds and trees. It means saving people, all kinds."

She is disturbed by what she considers a consistent policy of pushing urban problems into the background. To her, there is something ominous about the plain fact that something always seems to come along claiming priority. "First it was Vietnam," she says. "Then it was inflation. Now it's the environment. I'm not saying anything is less important. I can't see why we can't tackle both at once. I hate being put in a position where I have to choose. That bothers me particularly as a teacher."

As do many teachers, she cares about her profession and the several hundred youngsters that come to her classroom. She provides many small items for the room in addition to supplementary SCIS materials, but knows she could offer much more if she had microscopes (the children do use magnifying glasses), an outdoor area "left undisturbed where youngsters could see for themselves the interrelationship among organisms," a pond and a small garden.

The hope for financial help to purchase such things appears to rest with the State Legislature where, at present, rhetoric is the major conservation commodity. Assemblyman George Milias has a pending bill (A.B.

1050) to establish a Bureau of Conservation Education within the State Department of Education with operating funds coming from a severance tax on crude oil, timber, natural gas, cement and gravel. "If we can spend \$15 million each year on driver's education to teach our young people how to survive on the highways," he says, "we ought to be spending a comparable amount teaching them how to survive—period."

Milias, chairman of the State Assembly Committee on Natural Resources and Conservation, is optimistic, reading the "current tide as being deeper than rhetoric." Others in Sacramento are more cynical. The oil and timber and natural gas and cement and gravel lobbyists never have allowed severance tax bills to go anywhere. They are not likely to change now, tide or no tide.

However, a chance does exist for some other kind of financing, something akin to the driver education collection of extra traffic fine money. A bill is pending to preempt all highway litter fines for conservation education. The sum would be nothing like the \$15 million Milias talks about.

Another assembly bill appropriates \$176,000 to implement a statewide conservation education program. The figure is from the Administration. Governor Reagan spoke out for conservation education at his Los Angeles conference on the environment. The







budget contained no funds for it. The record, it seems, leaves little room for optimism.

In 1968, the California Legislature created a Conservation Education Service empowered to make grants to local districts. A sensible way for Jefferson to get its microscopes, pond and garden. Although the Service was established, no money was appropriated. Last year a master plan representing three years of effort was presented to the State Board of Education. The plan detailed programs and funding. The nine advisory committee members pleaded for prompt action. The report was accepted with great thanks. The ensuing silence has been deafening.

"Here is the State of California with a blueprint when the environmental crisis is being recognized nationally," says Committee Vice Chairman Peggy Wayburn. "We're talking on a far more profound level than pollution. That is just a symptom. There's a far more profound ill we have to deal with."

The State Departments of Fish and Game and Parks and Recreation both have education specialists and many worthwhile films and other types of useful material, but this cannot be considered a statewide program.

Mrs. Wayburn points out that other states, Colorado

and South Carolina to name two, are progressing much faster. California does have a developer of conservation education programs. He is Rudy Schaefer, former National Park Service ranger, school administrator and conservation education specialist for Los Angeles, a position never filled, incidentally, when Schaefer left. He is in Sacramento doing his work with a \$35,000 federal grant. It expires in June. The theory is that the State takes over when the federal money runs out.

What is more likely is that Schaefer's output—his reputation as a capable, knowledgeable planner is outstanding—will find a convenient home on some dust covered shelf, and, due to lack of funds, may not even be published.

Mrs. Wayburn notes a master catalog of all available materials for teaching conservation education exists in Sacramento, but no money is available for printing. There also is a Handbook on California's Natural Resources written two years ago for teachers. It is out of print.

*Al Cline specializes in environmental reporting for the San Francisco Examiner.*



# OIL SPILL! — a familiar and foreboding pattern

By Wesley Marx

On February 10 of this year, an offshore oil platform blew out of control off Louisiana. The results add a new and significant chapter to this nation's obsessive drive for oil at all costs, including the destruction of the planet we happen to live on.

The platform, a 12-well affair that represents in many respects the zenith of oil extraction and industry pride, blew out 11 miles from the eastern border of Louisiana's coastal marshlands. This 5 million acre expanse, created by the meeting of two great life systems—the Mississippi River and the Gulf of Mexico, is a quiet water kingdom of lakes, bayous, ponds, saline sloughs, salt water bays and brackish shallows. Plains of marsh grass, stands of cypress shawled with moss and hamlets with names like Alluvial City exist amidst this watery kingdom. Its modest, flat and seemingly empty appearance belies a formidable fertility. The botanical collision of the rooted plants of the land and the floating plants of the sea (plankton) generates life by the millions: flocks of waterfowl, schools of fish, beds of shellfish, herds of deer and otter. This celebration of life spills far beyond the borders of Louisiana and the United States. 3,000 miles to the north, snow and blue geese on Baffin Island rise high into the Arctic sky, and, after a 3,000 mile migration, settle down on the Louisiana marshes until their numbers reach 350,000.

To the south, in the depths of the Gulf of Mexico, shrimp, mullet, menhaden and snook rise to spawn, or feed, or rest in two-foot deep shallows dense with nutritious detritus. Two-thirds of this nation's marine catch is estuary-dependent, and the Gulf's largest and most fertile nursery is the Louisiana marshlands. Without these simple-appearing marshes, the skies of mid-America and the waters of the Gulf would be emptied of much life. With the marshes, the Gulf of Mexico can support the world's most profitable fishery—the shrimp fishery, a bountiful oyster industry, an extensive fin fish industry and a growing crab industry. In fresh water ponds bounded by saline sloughs, sport fishermen pull out catfish and bass. Even the shell heaps of oysters harvested or long dead become a resource — construction aggregate for

gravel-poor coastal regions.

This present bounty pales beside the future potential. As food demands rise and marine technology expands, Louisiana, more than any other coastal state, has at its doorstep an unmatched food factory which requires no fertilizers, pesticides or plows. At the same time, as leisure demands rise, Louisiana finds itself next door to a vast marine parkland that requires no bulkheading, dredging or fingering to accommodate thousands of pleasure-cruising craft.

While oil was discovered in this region before World War II, this nation's voracious appetite for fossil fuels has pushed oil development to a feverish pitch that now permeates the area. From the air, parts of the coast resemble an area under military siege. Drill

platforms rise above the green marshes like a string of iron lookout posts. Pipelines and barge channels knife across the meandering shores to hook up with smoking refineries. Flare gas doesn't let the night sleep. Industrial shades of black, yellow, silvery aluminum and rainbow oil leaks now intrude on the natural blues and greens of the marsh. In the offshore, crews on one platform require a truck. The platform is a mile long. In federal waters alone, there are 3,000 oil wells.

On February 10, eight oil and gas wells on Chevron's Main Pass platform started blowing out of control, and the platform caught fire. A familiar pattern

ensued once the blowout occurred. As in the Union oil blowout off Santa Barbara, a large aerial and marine fleet was assembled to "control" the blowout. Red Adair, Boots Hansen and the Hellfighters were called in. News reports spoke of "wild well experts", "relief holes", "around-the-clock efforts" and "specially-designed equipment".

However, the duration of time to control this blowout suggests just how much progress has been made since the Santa Barbara blowout in 1969. Effective attempts to control the blowout were delayed until the fire was controlled. This took until March 10, or a month. With the aid of dynamite, tons of drilling mud and sheet lead, the last blowing well was controlled March 31, or 50 days after the initial blow. During





this time, up to 42,000 gallons of crude oil spilled daily into the Gulf to form oil slicks as much as 100 square miles in size. This historic spill, the largest this planet has seen—at least so far, is only equalled by the accumulative total of oil spills, leaks and bilge discharges that occur yearly in our waters.

The crucial controlling factor in the blowout was not so much Red Adair, however courageous and brave he and his colleagues are, but the winds. During winter, Gulf winds and currents generally run southerly, and the mammoth slicks were thus ushered out into the open sea. However, during the summer, the winds and currents tend to swing 180 degrees to the north and directly towards the marshes. Most of the large and dramatic oil spills have occurred off sandy shores in which straw has been drafted for clean-up efforts. If the spill had occurred in summer, this nation's richest estuarine area would have been inundated with crude oil and even straw clean-up would have been out of the question because the marshes simply can't support men or machines in mass, as high school science classes discover in collecting specimens. Notes *Environmental Science and Technology* in its February 1970 issue, "The U.S. still does not have adequate oil spill technology, and has not yet provided the means for bringing an adequate technology into being."

The Chevron blowout also suggests strongly that no adequate technology exists to effectively prevent such blowouts and spills in the first place. Once more a familiar pattern reasserted itself. In the wake of the blowout, there were the usual conflicting reports between the Federal Water Pollution Control Administration, the Coast Guard, the U.S. Geological Survey and the oil industry on just what was happening. Interior Secretary Walter Hickel did charge that Chevron was guilty of over 100 violations of federal safety regulations, including removal of storm chokes that allegedly would have thwarted the oil spill. The Interior Department is now prosecuting Chevron in the courts for these violations. The charges, if true, belie the image of a safety-conscious industry out to protect our environment even if it cuts into profits. At the same time, the dramatic disclosure of these violations by Interior *after* the cow was out of the barn casts doubt on the efficacy of Interior's safety regulations or the Department's inspection system or both.

Indeed, it suggests a Department more sensitive to press coverage than to the daily risks of offshore drilling — suspected at Santa Barbara and verified in the Gulf.

This writer was told by an informed source that the efficacy of a storm choke is questionable itself. Storm chokes are prone to clog up with sand and become eroded, thus requiring constant maintenance. Indeed, the storm chokes in question were reportedly withdrawn to be cleaned. It might be reasonable to assume that the well be shut down during cleaning operations. However, waivers to continue pumping are routinely requested and approved by Interior officials, according to this source. (The Chevron request was reportedly waylaid in the "in" box of a company administrator.)

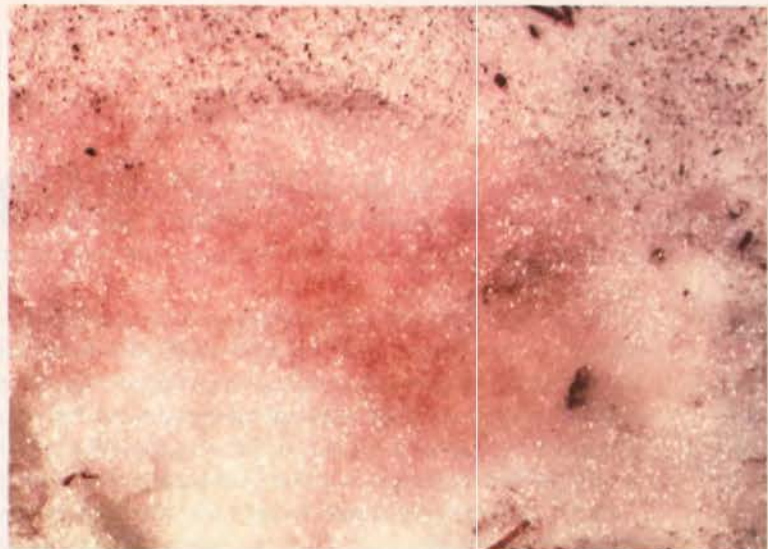
With no fully effective controls over blowouts and spills, it would seem appropriate that such a risky technology be restricted until controls can be achieved and implemented. Federal offshore leases in the Gulf were temporarily suspended. Alabama's Governor did cancel offshore oil bids in his state because of "an ever present danger of oil leaks and oil slicks." However, such suspensions and cancellations often have an ephemeral quality. While the Gulf was being treated to the Chevron spill, the Interior Department was going ahead and approving drilling operations by Humble in the Santa Barbara Channel, which saw a flurry of suspensions in the wake of the Union blowout. Suspensions in one area have a tendency to intensify offshore oil development where the "bureaucratic heat" is not on. There were a number of reports in the local papers about how Gulf oil service firms were shifting their attention to offshore leasing activity in Africa, Alaska and South America.

In sharp contrast to Alabama's Governor, Louisiana Governor McKeithen has been directing his efforts to having the suspension on federal offshore leases lifted while maintaining leasing activity in state waters. This hoped-for expansion of offshore oil development in the face of the world's largest oil spill is justified on the basis of "not killing the goose that laid the golden egg," in the words of one Louisiana official. The environment risks inherent in this expansion extend beyond dramatically large blowouts. More modest oil spills and leaks are a constant occurrence.



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# What Colors the Mountain Snow?

By Robert Pollock

Summer visitors to alpine areas often notice that the surface of some of the snowbanks is colored. Orange and various shades of red are commonly observed; the extent of the colored snow varies from a small patch to an entire bank. The color has often been attributed to wind-blown dust, but in most instances it is due to the presence of large numbers of algae which are adapted to live in the austere environment of the snowbank. Besides the algae, which are visible to the naked eye because of the pigments they synthesize, the snowbank also contains cold-adapted bacteria, fungi and protozoa, all of which can be detected by a microscopic examination of fresh snow or by various culture methods commonly used in microbiological research.

The ecosystem is the basic functional unit of ecology; it is defined as an area of nature composed of interacting living and non-living components. For example, a pond is a natural ecosystem while a test tube of synthetic culture medium inoculated with various microorganisms is a man-made ecosystem. A summer snowbank is also an ecosystem. The non-living components of the snowbank include water, dissolved atmospheric gases, various other inorganic and organic ions and molecules, and several types of radiation including visible light, ultraviolet light and ionizing radiations.

Water in the liquid phase must be present in the

snowbank for several days continuously before substantial growth and reproduction of snow microorganisms occur because metabolism ceases when the water freezes. Accordingly, a snow microorganism community does not begin to develop until May or June in the mountains of North America. The temperature of the liquid water in the snowbank is always 32°F since energy coming into the snowbank is used to melt snow rather than to raise the temperature of the water already present. The snow microorganisms are adapted to grow at a temperature of 32°F, but many microorganisms cannot grow at a temperature below 45°F. Microorganisms which can grow at 32°F are classified as psychrophiles or cryophiles (cold-loving). Mesophiles can grow at temperatures from 45-115°F while thermophiles, such as those found in hot springs, can grow at temperatures up to 175°F.

Dissolved oxygen from the air is required by all of the snow microorganisms that have been studied. The oxygen is utilized primarily in a metabolic process that releases energy from organic molecules such as carbohydrates in a form that is readily available to the organisms. Carbon dioxide dissolved in the liquid water of the snowbank is of importance to the algae in particular because carbon dioxide and water are the raw materials from which these organisms photosynthesize carbohydrates with the aid of energy from sunlight. The carbohydrates are then used by the



algae for the synthesis of various chemical components of protoplasm and also as a source of energy for cellular processes. In this way energy from the sun is made available directly to the algal component of the snow microorganism community.

Snow water contains both inorganic and organic ions and molecules. Some were dissolved from soil or organic debris at the snow-soil interface or from debris which was blown onto the snow while others were components of the dust nuclei in the atmosphere around which snowflakes formed. Phosphates, nitrates, and several other of the inorganic ions are essential for all living organisms. The organic ions and molecules can be absorbed and used by various snow microorganisms to provide energy and the chemical components of protoplasm in much the same way as the carbohydrates photosynthesized by the algal cells.

The role of visible light in photosynthesis has been mentioned above. Ionizing and ultraviolet radiations generally have deleterious effects on snow microorganisms. A small proportion of the cell population in a snowbank will be either mutated or killed by these radiations in any given period of time. If, as seems likely, the snow microorganisms evolved from others which were not capable of growth at 32°F, then these same radiations were in part responsible sometime in the past for the production of the mutations which allowed cells to grow in the snowbank. Evolution is probably going on in snowbank communities at the present time but, now as before, the great majority of new mutations are deleterious. To understand why this is so, one must keep in mind the fact that, regardless of their small size, microorganisms are complex, intricately regulated structural and functional entities. A mutation randomly changes some aspect of structure or of function; most mutations, therefore, will upset the complex functioning of the cell rather than render it more harmonious.

Algae are the most conspicuous of the snow microorganisms because they synthesize pigments of various kinds which render them visible to the naked eye when the cells are present in a high concentration. Red-colored algae are commonly observed but orange- and green-colored algae are also found in summer snowbanks. The majority of the red- and green-colored algae are members of the genus *Chlamydomonas* and the orange-colored algae include members of both the genera *Scotiella* and *Chodatella*. A total of 15 to 20 species of snow algae have been described for North America and Europe.

Research done at the University of Colorado's Institute of Arctic and Alpine Research has resulted in

a classification of summer snowbanks which correlates the algal species present with the amount of sunlight the snowbank receives during the day. Banks at timberline or below which are shaded throughout most of the day generally are populated by green algae, while banks in the alpine which are fully exposed to sunlight for at least one-half the day usually contain red algae. The orange algae are found in banks which receive an intermediate amount of sunlight. This is the main reason why mountaineers see red and orange algae more often than green algae: banks which contain the former persist sometimes for the entire summer while banks inhabited by the latter melt completely in the early summer. The reason for the correlation between exposure to sunlight and pigment color is not clear, but there is evidence that red pigments protect cells from the deleterious effects of intense visible light. Hence, the ability to synthesize the red pigments may have evolved as one of the adaptations which allowed algae to colonize alpine snowbanks.

The concentration of algal cells may be as high as 500,000 per milliliter of melted highly-colored red snow. The red footprints made by mountaineers are primarily due to an increase in concentration of the cells resulting from compression of the snow. Most of the red cells are resting stages or spores which are passively distributed by flowing meltwater in the banks and tend to be concentrated in low areas and in depressions. Intensely colored red snow smells and tastes like watermelon; the curious should remember, however, that for some individuals red snow is a laxative of considerable strength.

Algae are the only members of the snowbank community which photosynthesize. Hence they and they alone can obtain energy directly from the sun while the other microbes must get their energy second-hand by eating other organisms or by absorbing organic molecules present in the liquid water of the snowbank. For this reason algae, and green plants in general, are classified as the producers of the ecosystem. In the case of snowbanks, some of the energy available to the other microorganisms comes from wind-blown organic debris and from debris on the soil surface beneath the snowbank.

The protozoa are the consumers of the snowbank ecosystem. By definition, consumers are generally animals which obtain their energy by ingesting other organisms or particulate organic material. Very few studies have been done on the protozoa, the fungi, or the bacteria of snowbank communities. Work done at the Institute of Arctic and Alpine Research revealed



that there are four or five species of protozoa in the snow of the Colorado Rockies. They are present in a very low concentration relative to the algae: there are an average of about 100 protozoa per milliliter of melted snow water. When observed through the microscope most of these protozoa are transparent. A few, however, appear opaque and, as the slide warms up, they burst and release up to twenty or more algal cells which they had previously eaten. The majority of these cells are green algae; the basis for choice by the protozoans may be that red and orange snow contain primarily spores encased in a tough coat while green snow contains cells which are growing and reproducing and which lack this coat. Accordingly, it was predicted that more protozoa would be present in snow which contained algae, and in particular green algae, than in snow which lacked algae. This was found to be true: green snow contained about ten times as many protozoa as red, orange, or white snow, in spite of the fact that the red and orange snow had approximately the same concentration of algal cells as the green snow. The presence of protozoa in snow other than green suggests that although they eat algae, they are not dependent upon them as a sole source of food. Since protozoa are known to eat bacteria and since bacteria are widely distributed in the snow, it seems likely that they as well as the algae are a major source of food for the protozoa.

The bacteria and fungi make up the decomposer class of the ecosystem. Decomposers break down the complex chemical compounds in the bodies of dead organisms into simpler compounds. Some of these compounds are then utilized by the decomposers for their metabolic processes and the remainder are released into the environment and are available to other organisms. Thus, there is a fundamental difference between the flow of energy in the ecosystem and the flow of matter. Energy comes ultimately from the sun in the form of visible light. It is converted to chemical bond energy as the result of photosynthesis by the producers. The consumers and decomposers obtain their energy from producers: algae photosynthesize, they are eaten by protozoa, and the protozoa are decomposed by bacteria and fungi — a simple food chain. However, at each nutritional level within the chain and in the transfer between levels, energy is continually being lost to the environment in the form of heat. If the sun did not perpetually supply energy to the chain, eventually all of it would be converted to heat and lost, and life would cease to exist. The flow of matter, on the other hand, is cyclical: atoms are taken into the food chain from the environment

and eventually are returned to the environment to be utilized again. If a cyclical process did not exist, our environment would eventually be depleted of certain essential atoms and there would be a vast accumulation of dead organisms. Returning atoms to the environment is carried out primarily by decomposers.

The concentration of bacteria in the snowbank is approximately the same as the concentration of algae except in white snow where there are about ten times as many bacteria as algae. Work done at the Institute of Arctic and Alpine Research in the summer of 1968 showed that there are at least ten to twenty species of bacteria adapted to living in snowbanks. Along with the bacteria there are a small number of fungi. So far only one of the bacteria has been classified to the species level and it turned out to be a variety of the common soil and water organism *Pseudomonas aeruginosa*.

It may be asked why snow microorganisms should be studied. There are several answers to this question. The snowbank ecosystem could be of considerable importance in the study of ecosystems because of its relative simplicity and the rapidity of growth of its components. It is characteristic of science that a phenomenon is most easily studied when conditions are the simplest possible and that the results thus obtained may convert chaos to order when the same phenomenon is studied under more complex conditions. In view of the direct relation that ecology has to man's survival, the more that can be rapidly learned the better. Also, research aimed at understanding the physiological characteristics of psychrophiles which allow them to grow and reproduce at low temperatures has a direct application to the frozen food industry and to the low temperature storage of human cells for medical purposes. Finally, snow microorganisms are interesting to the biologist simply because of their ability to survive in an austere environment. And the beauty of the environment makes the study of this much neglected group of microorganisms even more rewarding.

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*Most of the research described above was done at the Institute of Arctic and Alpine Research and was supported by grants from the National Science Foundation, the National Institute of Health, and the National Aeronautics and Space Administration. The research was carried out by Dr. John Marr, Dr. Clifford Amundsen, Dr. Janet Stein, Dr. Kenneth Bandelier, Mr. Ronald Bigelow and the author.*



A year before the Chevron blowout, an associate director of the Louisiana Wildlife and Fisheries Commission, Dr. Lyle St. Amant, was warning a Congressional subcommittee on the estuarine threat posed by hundreds of oil pipelines, many old and rusting, others not properly protected. Marsh habitat is being continually altered and reclaimed to accommodate new and bigger pipelines, barge channels, spoil disposal, and oil wells. Oil companies are often quite willing to buy up adjacent shellfish grounds to avoid the possibility of damage suits, thus removing additional habitat. As oil operations phase out, the oil companies often have a new and lucrative use for the battered marsh: real estate. Such trends foretell *increased* dependence on oil in Louisiana's economy and decreased investment in biological resources in an area whose future natural condition is at the mercy of proliferating oil development. Alaska, are you listening?

This tragic economic and social dependency on an unpredictable technology suggests the need to face up to just what we are letting ourselves in for. Will the next oil blowout occur in Cook Inlet in Alaska as the salmon fleet moves out to greet the fall salmon run? Will the next blowout in Santa Barbara Channel occur in the summer rather than winter season? Will the next *Torrey Canyon* run into another supertanker instead of a rock reef... and do it in New York Harbor rather than offshore? Will a dredge excavating for a luxury marina snap a pipeline that leads to an offshore well that cannot be shut off because of a storm choke that became sand-clogged shortly after being cleaned? Will the next Gulf blowout occur when the winds are blowing onshore... and in hurricane strength? Will the next oil tanker break up in the Arctic Ocean, whose slow rate of bacterial decomposition insures a long life for oil spills?

As the horizons of oil leakage expand, so do the potential damages. In addition to the potential toxic effects on wildlife in the confined intertidal zone or the nearshore area and the well-documented damage to marine recreation and fishing equipment, Dr. Max Blumer of Woods Hole Oceanographic Institution raises an undetermined risk affecting the open sea: "What we do not know at all is whether exposure to hydrocarbons not only in one oil spill but over a very long time period in the open ocean may not in some way interfere

with processes that are essential to the reproduction of food organisms or the organisms themselves."

In the face of such possibilities, the case for a *nationwide* moratorium on federal offshore leases is compelling. This should be coupled with stringent regulations on offshore tanker movement, including the wholesale dredging of harbors to accommodate jumbo supertankers. It will do little good to restrict offshore oil development if it only serves to intensify the traffic of jumbo supertankers to our ports.

The case for such restrictions on oil development can rest on strong economic as well as environmental grounds. The insatiable drive for oil development stems from a public that is oriented to consuming petrochemicals in a most reckless and wasteful manner. This society is literally on a hydrocarbon high, and the symptoms include gas station wars fought

with blue chip stamps, natural landscapes littered with throwaway plastic cups, traffic burning up gas while in freeway standstills, oceanographic nets which gum up with oil in the middle of the Atlantic Ocean, the expenditure of \$10 million in federal contracts to control the oil industry's spill problem, and gas-burning decorative fireplaces. With this sort of gluttonous mandate, Humble Oil official James Galloway can tell the 1969 Alaska Science Conference, "The world needs it... Oil is going to be extracted and some of the country hitherto unmolested is going to be torn up in the process."

Avoiding public commitments to oil development that is presently unpredictable or uncontrollable can help adjust oil prices so that the total cost to the environment is better reflected and physical waste in particular is priced out of the market. At the same time, more rational energy and material alternatives — electric, steam or turbine cars, rapid transit, returnable bottles — can compete more equitably. Getting off the hydrocarbon high may be discomforting at first, but society will be that much more healthy and free in the long run. The alternative could be a black coastline girdled by an ever-widening ring of steel towers, pipelines and jumbo tankers, with calls to Red Adair and Boots Hansen carrying across the waves.



*Wesley Marx is a lecturer on Marine Affairs at University of California, Irvine, and author of The Frail Ocean.*



CONTINUED FROM PAGE 3

This gives the responsible federal agencies time to formulate the requirements which will be made of us." The plant, which would produce oil based chemicals for conversion into plastics, dyes, and other chemical end products, would discharge 2½ to 5 million gallons of effluent and industrial wastes daily into South Carolina tidal waters.

Secretary Hickel had written to the West German corporation in March warning that the Department of Interior would oppose construction of the proposed plant unless BASF would guarantee "nondegradation" of coastal waters. Hickel also announced that he would oppose strenuously any proposal for channel dredging which would cause environmental damage or which would cause a significant increase in environmental hazards. In addition, Hickel wrote to HEW Secretary Finch, Army Secretary Resor, and Governor Robert McNair of South Carolina urging their cooperation for environmental protection.

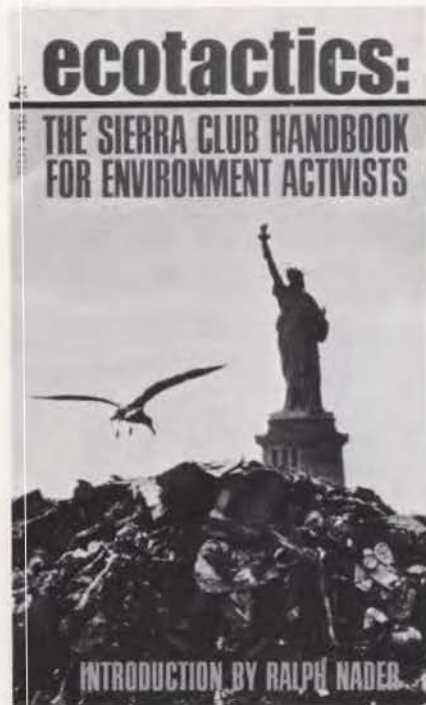
Conservationists in South Carolina have brought two lawsuits against BASF to halt construction of the chemical plant on the grounds that the very nature of the plant's operation makes it impossible for the plant to comply with the following federal acts: the Water Quality Standards Act, the Water Quality Act, the National Environmental Policy Act, the Refuse Act, the Oil Pollution Act of 1924, the Foreign Trade Zone Act, the Rivers and Harbors Act of 1899, the Fish and Wildlife Coordination Act, the Anadromous Fish Act, the Endangered Species Act, and the Estuarine Areas Act. Action on these two lawsuits will proceed, and the initiation of a third suit is being considered.

## TAPS

Interior Secretary Hickel met with officials of Trans-Alaska Pipeline System on April 10 to discuss engineering problems resulting from recent geologic testing along the 800-mile route from Prudhoe Bay to Valdez. Hickel said that pipeline construction might be delayed so public hearings can be held on the new information. It now appears that considerably more of the pipe will be above ground, rather than buried, in zones where the pipeline filled with hot oil would melt the permafrost.

In other developments concerning TAPS, U.S. District Court Judge George L. Hart, Jr., dealt two judicial blows to the pipeline. Judge Hart issued a preliminary injunction on April 13 which prohibits the federal government from issuing a permit allowing the construction of an equipment road parallel to the pipeline route. This "haul road" is necessary if the pipeline is to be built. The court's ac-

tion came as a result of a suit brought against the Department of Interior by the Wilderness Society, the Environmental Defense Fund, Friends of the Earth, and the legal block will remain in effect until the suit challenging the construction of the road and pipeline is taken to trial. A few weeks earlier, Judge Hart issued a preliminary injunction against pipeline construction in the vicinity of Stevens Village, on the Yukon River just south of the Brooks Range. Judge Hart ruled that under a 1848 law the Interior Department cannot run the pipeline and haul road across Stevens Village without the consent of the 66 natives who live there.



Over 400,000 ECOTACTICS handbooks are now in print. Published jointly by the Club and Pocket Books, the book is the first publication in a program keyed to guide the efforts of members and friends in the fight to save the environment. The paperback is 95¢, and may be obtained from the Club's San Francisco office, care of Mrs. J. Lacy.

## NEW UNDERSECRETARY

On April 7 the Senate confirmed the nomination of Fred J. Russell of Beverly Hills, Calif., as Undersecretary of the Interior, succeeding Russell Train, who now heads the National Environmental Quality Council. Russell was president of a Los Angeles door lock company and a developer and builder of houses, apartment buildings, and shopping centers before coming to Washington last year as a deputy director of the Office of Emergency Preparedness. Russell also is the

developer and operator of Southland Water Company, Mira Loma Water Company, and Mira Loma Farms in California.

## ASCENT

The Sierra Club Journal of Mountaineering for 1970 will be available May 15th. Featured this year are the major desert climbs of the four corners area, including a color photograph taken on the first ascent of Spider Rock on the front cover. There are articles also on the Kichatna Spires in Alaska and a new route on the north face of Half Dome by Royal Robbins — a bold, honest interpretive piece on one of the more difficult climbs yet to be done in Yosemite Valley. You will also find a few innovative pieces by Lito Tejada Flores and Howard Bussey and a six page photo essay features snow and ice texture. Price is still \$2.50 postpaid (\$2.65 for California resident, tax included). Order at your book dealer or directly from the Club Office in San Francisco.

## CLUB ELECTION

The five candidates who received the five highest number of votes and who have won three year terms on the Sierra Club Board of Directors are: Richard M. Leonard, Richard Sill, Paul Brooks, Charles Huestis, and Martin Litton. According to the report of Lewis Clark, chairman of the Judges of Election, a total of 32,544 ballots were received.

## HUDSON RIVER

The appeal of the Hudson River Expressway case in which the Sierra Club and the Village of Tarrytown, New York, won a permanent injunction in a New York Federal District Court against construction of the expressway has been decided in favor of the conservationists. In its appeal, the Justice Department attempted to test the growing tendency of federal courts to grant standing to conservation groups. Thus, the court's decision not only prevents construction of a multi-lane freeway up the East Bank of the Hudson River, it also establishes a valuable precedent for future environmental issues that may be raised by conservationists in the courts.

## FUND RAISING COMMITTEES

The Sierra Club Foundation with the assistance of the Sierra Club directors, chapter and group chairmen, is organizing fund raising committees in each chapter area. These committees will consist of volunteers, who perhaps are not too experienced as fund raisers, but who realize the great necessity to obtain money to accomplish local and national environmental goals. Write your chapter chairman or your fund raising committee chairman.



The ultimate and probably irreversible decision on further multi-million dollar subsidies for construction of U. S. super-sonic transport planes will be made by Congress in the next few weeks.

The decision will come when the House and Senate complete work on the \$13 billion appropriations bill for the Department of Transportation. Included in the bill is an allocation of \$290 million requested by President Nixon for construction of "two prototype super-sonic transport aircraft of the same design." This is the largest single expenditure yet planned in the SST program, for which the federal taxpayers are paying 90 per cent of the cost. The federal government paid out \$291 million in the phases 1 and 2 of the SST project, the portions dealing with research and designs. Another \$350 million of federal funds has gone into phase 3 so far.

Now, however, the project is moving into construction stages of the controversial "boomdoggle." Thus, if Congress keeps the appropriations spigot open this year, the costs may mount to several billion dollars eventually.

The SST project has been criticized on several counts, aside from the heavy federal outlays. The sonic boom created by these large aircraft will have adverse effects on millions throughout the world. There is no prospect of eliminating the sonic boom by technical means, thus vibrations will be felt for about 50 miles everywhere the plane flies in excess of the speed of sound. A single cross-country super-sonic flight would blanket an area of 100,000 square miles.

The take-off noise of an SST would exceed the noisiest commercial jets. In a report to President Nixon, Undersecretary of Interior Russell Train, now head of the Environmental Quality Council, said the SST would cause "heavy discharge of pollutants." He added that "atmospheric pollution and ground contamination" would result from the SST's inefficient combustion at subsonic speeds. Also, a panel of the President's SST Review Committee said that the planes would deposit large amounts of water vapor in the stratosphere which could cause significant, but unpredictable, climatic changes.

As Rep. Sidney Yates of Illinois, a member of the House Appropriations Committee, has said, the report of the committee appointed by President Nixon "recommended overwhelmingly in favor of suspending the project." Yet the funding continues.

Supporters of the program have little to say about the aircraft itself. Instead, they talk of national prestige and needs of industry. In fact, Transportation Secretary John Volpe says merely that the SST is necessary for the economic well-being of the aircraft industry.

"If the SST is not pressed to completion," he said, "the industry would go to pot." He cited the need for employment of aircraft workers and plant facilities as the major reasons for pushing ahead.

Both the House and Senate Transportation Subcommittees have taken testimony on the next major step-up in the project. The decisions of these committees will be a key to what occurs on the floor of the House and Senate when the votes are counted. The Chairman of the House Transportation Subcommittee is Rep. Edward P. Boland of Massachusetts. Other House committee members are Rep. John McFall of California; Sidney Yates of Illinois; Tom Steed of Oklahoma; Silvio Conte of Massachusetts; William Minshall of Ohio and W. Jack Edwards of Alabama.

Members of the Senate Transportation Subcommittee are Sen. John Stennis, Mississippi, Chairman; Warren Magnuson of Washington; John Pastore of Rhode Island; Alan Bible of Nevada; Gale McGee of Wyoming; Mike Mansfield of Montana; Clifford Case of New Jersey; Karl Mundt of South Dakota; Margaret Chase Smith of Maine; Gordon Allott of Colorado and James Pearson of Kansas.

The reports on the legislation by members of these two groups could well decide whether this decade of the environment — the 1970's — will be the first to be inflicted with escalating sonic booms.

The House Government Operations Committee has produced a committee report which could turn into a "get rich quick" kit for enterprising individuals. The document, House Report 91-917, is entitled: "Our Waters and Wetlands — How the Corps of Engineers Can Help Prevent Their Destruction and Pollution."

Despite its title, the report is concerned mostly with how the Corps of Engineers has *not* helped. But, it also includes useful information on how a citizen can obtain half of the maximum fine of \$2,500 for each incident or day of violation of the Refuse Act of 1899 by polluters.

The Refuse Act of 1899 — 33 U.S.C. 407 — prohibits the dumping of "any refuse matter of any kind or description whatever . . . into any navigable water of the United States" without a permit from the Corps of Engineers. The Act provides that a citizen with evidence of pollution without a permit may inform the United States Attorney of the violation. The informer gets half of the fine. Moreover, the reports suggest that if the U.S. Attorney fails to act, the citizen can sue the violator in the name of the United States himself to collect the reward. Hundreds of potential cases exist. Good hunting.

— W. Lloyd Tupling



THE NEW YORKER  
MAY 19 1974



“Here the New Yorker comes . . . he hears once again,  
if ever so faintly, the world’s music and his own.”



— from the Sierra Club Exhibit Format book *Central Park Country*