

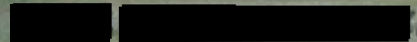
Sierra Club Bulletin



June 1974

Saving Our Coasts
1975 Foreign Outings

JUL 9 1974



A slightly bizarre new energy crisis! HAS OUR GOVERNMENT RUN OUT OF GAS?

Have our leaders in Washington lost the energy they once had to clean our air, protect our land and cut our waste of fuel?



Write your
Congressman
now.

We deal now with a curious kind of energy crisis: the possibility that many of our government officials have run out of gas. Hundreds of paid energy lobbyists have reached them with the oily persuasion that the private industrial sector expresses the public will. Sometimes maybe, but now it isn't so. What the lobbies want to do to the Clean Air Act of 1970 is a dirty, filthy shame. Already they have delayed and weakened vital environmental legislation. And pending strip mine controls,¹ land use planning legislation,² and energy conservation laws,³ could all go up in smoke. The lobbyists mean business — big business. But the people mean business, too. Write to your Congressman now.

Ask your Congressman not to muddy his own clean air laws, opposed by the lobbyists, but upheld by the Supreme Court. These laws require that those remaining clean air areas must *never* be fouled down to the lowest minimum standards; and they insure that

only the least harmful fuels be burned in urban centers. And tell your representatives we need new laws to eliminate the unearthly effects of strip mining and encourage deep mining, where the greatest supply of low-sulphur coal is found. Urge him to resist those lobbyists who would sacrifice national land use planning legislation for galloping urban sprawl. Insist on laws that will insure an ample supply of clean energy sources and curb our grotesque energy waste. Write to your Congressman now.

Hundreds of paid lobbyists have been very busy, indeed. But there is yet another lobby — the most influential of all — the people, who are paid by their conscience alone and who, in the final count, must prevail. Our elected leaders have heard the special interests. But the most *special* interest of all is the interest of the people, who want their air to be clean and their land to be saved for tomorrow. The lobbyists mean very big business. But the people mean business, too. And a *personal letter* to your Congressman and Senators will persuade them that you mean business now. At the very least, please mail the coupon below.

Sierra Club

You may wish to send a contribution so that we may continue these campaigns to protect our natural resources.

Please mail checks to: SIERRA CLUB, P.O. Box 7959 Rincon Annex, San Francisco, Ca. 94120

¹H.R. 11500 S. 425 ²H.R. 10294 S. 268 ³H.R. 11510 H.R. 10952 S. 2176 S. 1283

Hon. _____:

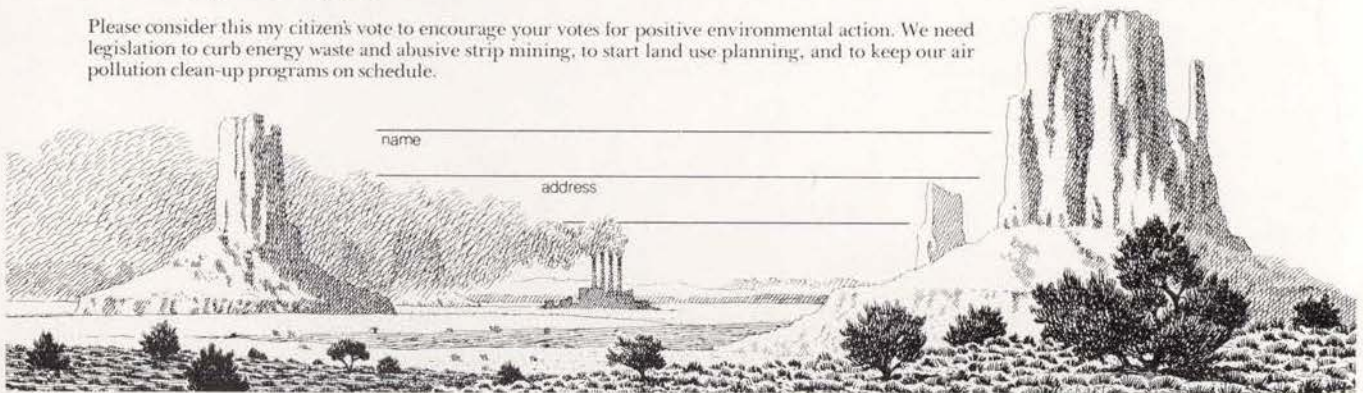
(Your Congressman or Senators)

United States Congress, Washington, D.C.

Please consider this my citizen's vote to encourage your votes for positive environmental action. We need legislation to curb energy waste and abusive strip mining, to start land use planning, and to keep our air pollution clean-up programs on schedule.

name _____

address _____



A Sierra Club Ad To Combat Congressional Apathy

The advertisement on the page opposite was published in 42 newspapers and magazines during the week of May 20 to reach constituents of 37 congressmen and senators who were considered to be crucial to the success of key environmental bills now pending in Congress. They were the uncommitted "swing vote" members of four committees (House Commerce, Senate Public Works, House and Senate Interior) with jurisdiction over these bills.

As you read this, some of the bills listed undoubtedly will have made progress in the legislative process. However, the "sense" of the appeal is likely to still be valid. Congress is especially sensitive this year to constituent attitudes. A letter to your congressman and senators now, asking for final action on environmental legislation, will help persuade fencesitters.

Unlike our public service ads ("Don't Muddy Up the Googol" and "A Probability Report"), which have been published gratis in many magazines, this ad was paid for by the Sierra Club. Contributions to defray its cost are welcomed.

Sierra Club Bulletin

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Cover: From the living waters of an unspoiled shore an egret takes wing. Will our children, our grandchildren see the likes of this scene that Jim Stuart captured in a moment to remember? For directions, see the following article by Senator Ernest W. Hollings.



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

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Will We Save Our Coasts?

ERNEST F. HOLLINGS

THE FUTURE OF THE UNITED STATES, like its past, is tied to the coastal zone. Not only is it our greatest resource, capable of providing food, energy, and a host of economic and environmental benefits, but it is the scene of our most intense resource-use conflicts. It is in the coastal zone where the problems of the land meet those of the sea. In this narrow belt are concentrated the majority of man's activities—his habitation, industry, recreation, and wastes. The single-purpose pursuit of short-term gain has led to an intense competition for space and resource use. As a result, the thoughtful protection of existing or potential benefits, such as wildlife, fisheries, esthetics, and recreation, has too frequently been ignored.

I grew up in the coastal zone, and my own home town of Charleston, South Carolina, is a microcosm of the problems that have resulted from careless development. Wetlands have been filled and marshes destroyed. The place where I learned to swim is now polluted. Because of man's carelessness, the rivers have become silted so that ocean-going vessels now even have difficulty docking.

The list of major coastal problems is virtually synonymous with the total issue of environmental protection and conservation: offshore oil and gas operations; deepwater ports; floating nuclear power plants and the siting of major energy-related facilities such as refineries; urban sprawl and the dreariness of instant second-home slums; recreation; beach access; fisheries; esthetic, cultural, and historic values; hurricane and flood protection; wetlands dredge-and-fill operations; transportation and other major public works projects.

This litany of concerns is not unique to the coastal zone, but nowhere else are so many concentrated in such a small and fragile space. For a variety of environmental, economic, and sociological reasons (which in part reflect the unique conditions in the coastal zone), the problems there are greatly magnified. For one thing, the coastal marshes and estuaries are the most fertile and biologically productive areas on earth, providing the breeding and nursery grounds for an incredible array of wildlife, including most of the fish species that have commercial or recreational value.

But many human uses of the coastal zone are not compatible with this enormous biological resource. Industrial uses, navigation, mineral and petroleum extraction, power generation, and waste disposal all take their toll. The rapidly expanding second-home and recreation markets, spurred by increases in leisure time, the standard of living,



The Coastal Zone Management Act provides the ways and the means for saving our coasts. The ways that Congress authorized have been ready for two years, but the Administration has been stingy with the means.

Senator Ernest F. Hollings is the author and chief congressional proponent of the Coastal Zone Management Act. Senator Hollings also authored the Ocean Dumping Act and managed the legislation that became the Marine Mammal Protection Act.

mobility, and new recreation industries, place their own kinds of stress on the system. Estuaries and submerged lands are dredged and filled, thermal and chemical wastes added, and the general environment degraded. Today about 60 percent of the rare and endangered or threatened animal species in the United States reside on the coastal plain, mostly within a mile or so of the water.

Congress recognized the great importance of the coast by passing the Coastal Zone Management Act (P.L. 92-583) in 1972. The passage of this act culminated more than a decade of congressional activity and interest in coastal and marine affairs and comprises the first federal land-use program. The battle was not easy. The legislation was strongly opposed by both the administration and parts of the entrenched bureaucracy. Yet it passed overwhelmingly—68 to 0 in the Senate and 376 to 6 in the House. This strong support clearly reflected an awareness of the need for immediate and decisive action in the coastal zone.

What will the Coastal Zone Management Act help states deal with in the future? A few of today's problems give us graphic examples:

- When Aristotle Onassis tried to ram through a deepwater port and refinery complex at Durham, New Hampshire, there was no state mechanism other than power politics for dealing with this most controversial and critical issue.

- Environmentalists and industrialists are at loggerheads in places like Jacksonville, Florida, and Hilton Head Island, South Carolina, over construction of large-scale manufacturing facilities.

- Florida's Keys are being ravished by developers whose concept of beauty consists of wall-to-wall condominiums and marinas.

- Port authorities vie with private landowners and environmental interests in dredging dozens of channels necessary for the movement of large ships.

- California citizens are continuing their fight over the controversial San Onofre nuclear power plant in a battle that might have been avoided with proper planning.



- Despite the large annual loss of property caused by storm erosion, development and construction continues around the edges of our Great Lakes.

The Coastal Zone Management Act furnishes a means of overcoming the fragmentary and short-term decision-making processes regarding coastal resources that prevail today. Ideally, it will form a basis for unified long-term planning and management processes that will help provide for future state and national needs.

The environmental intent of the act is paramount. It is designed to restore a balance between competing uses of the coastal zone. While defining a national interest in the effective management, beneficial use, protection, and development of the area, the act clearly and strongly emphasizes the ecological value and vulnerability of the coastal resources. It recognizes the destructive side of man's activities and concludes that population growth and poorly planned economic development have irreversibly damaged or destroyed essential ecological, cultural, and esthetic values. The Congress proposed that through sound planning and management practices, the natural biological and physical resources of the coastal zone could be preserved and protected. Development and utilization should only proceed in such a fashion as to be compatible with these other resources and uses.

The act might be considered the beginning of the second generation of environmental concern by Congress. The National Environmental Policy Act requires that federal agencies build into their decision-making process an appropriate and careful con-

sideration of the environmental aspects of proposed federal actions. The Coastal Zone Management Act goes even further by requiring that such concerns be a part of the everyday decision-making process at the state level and by providing a specific vehicle for expressing that concern.

The failure in the past to provide adequate planning and management for coastal resources can be attributed to many factors. Perhaps the most important is the widely scattered management authority and responsibility. Local governments have traditionally exercised primary controls over land and water use, but they have been hampered by a lack of funds and expertise to manage coastal resources in a comprehensive fashion. So their policies often have been narrow-view and short-term.

The other major voice in coastal resource management has been the federal government, but its activities also have been limited largely to single-purpose planning (for example, roads, or harbors, or recreation, or flood prevention—but never all together) that generally lacks comprehensive familiarity with local needs and problems. When bureaucracies are at odds, we get diverse and conflicting plans and programs. In many cases, management policies have evolved by default, rather than as the product of a thoughtful planning process.

The federal Coastal Zone Management Act encourages states, through grants and other incentives, to develop and implement management programs for the wise use of coastal land and water resources. While underscoring the importance of public local, regional, and federal participation, the act clearly places the planning and management responsibilities squarely at the state level. It suggests, in essence, that if the states will assume authority for what traditionally has been the role of local governments in coastal resource management, then the federal government will relinquish some of its prerogatives. It requires that federal activities generally be consistent with approved state programs. Three separate grant programs are established by the act: (1) grants to assist states in the development of coastal zone management programs; (2) grants to implement those programs after federal approval; and (3) a grant program to establish a system of estuarine sanctuaries.

Administration and overall coordination of the act were placed in the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA), which controls the nation's nonmilitary interests in and responsibility for marine resources. NOAA has created the Office of Coastal Zone Management to develop and implement the program.

A three-step process is envisioned in the implementation of the act. States must first develop coastal zone management programs. Broad guidelines and minimum requirements in the act provide the necessary direction for developing these programs. During the program development, each state must address specific issues such as the boundaries of its coastal zone, geographic areas of particular concern, and permissible and priority land and water uses, including specifically those uses that are undesirable or of lowest priority. During the planning process, the state is directed to consult with local, regional, and relevant federal agencies and governments, and general public interests.

After development of the management program, the state will submit its program to the Secretary of Commerce for review and approval. The Secretary will make a decision based on a state's ability to manage its coastal zone. He will want to know whether the state has:

- held adequate public hearings in the development of the management program;
- provided for adequate consideration of the national interest in the siting of refineries, power plants, highways, airports, deepwater ports, and other facilities more than local in nature;
- developed procedures whereby specific areas may be designated for the purpose of preserving or restoring them for their conservation, recreational, ecological, or esthetic values;
- provided adequate authority to permit or reject proposed uses of coastal land and water.

Public hearings and public views will be essential elements in the development of a management program, as will coordination and cooperation with all interested federal and state agencies. Such interaction is essential to the success of the program. The

active involvement of federal agencies during this time should serve to reduce conflict and delay during subsequent agency permit actions.

The third stage of the process is implementation of the program. Congress firmly intends that an aggressive management program will be implemented for our entire coastal area. It has determined that this will be more than a planning exercise to be shelved at its completion. Therefore, a strong provision for administration of the management program was included in the act.

As state programs are being developed, the Coastal Zone Management Act will also be helping create estuarine sanctuaries. Grants will be made available to states to acquire, develop, and operate estuarine sanctuaries, which are to be set aside as natural field laboratories. These sanctuaries are intended to be used for the long-term scientific and educational study of the important estuarine ecosystem. Although implemented through state initiative, the program will be administered under federal guidance to produce a national inventory of undisturbed sanctuaries, carefully selected to represent the major ecological variations of estuaries in the United States.

The federal Coastal Zone Management Act thus provides the basic tool for long-term planning and manage-

ment of our endangered coastal resources. While providing general guidelines, it is flexible enough to let states cope with their own special problems. The primary responsibility rests with the states, but in order to achieve a well-balanced program, a great many public, private, and governmental groups will have to work together.

When Congress passed the act, many people thought it was merely a "nice" gesture, but today they are beginning to appreciate fully the necessity for the coastal legislation. The intense pressure to expand the broad range of energy-related facilities and activities—deepwater ports, floating nuclear power plants, offshore oil and gas production—will have its greatest impact on the coastal zone. The Coastal Zone Management Act should be the appropriate vehicle for decision making related to the siting and development of these energy facilities. More than that, proper planning and management will be essential ingredients in preparing for the expansion of offshore petroleum production into new areas of our coasts and oceans. The greatest impact of offshore oil recovery will be the onshore economic, environmental, and social effects it generates. Without adequate planning, the development of onshore support facilities—pipelines, tank

Continued on page 38



The Public Forester and



GORDON ROBINSON

LEADERS in conservation have recognized the need for public regulation of private forestry in the United States since the turn of the century. Yet every major effort to achieve this objective has failed. The first serious proposal was launched by the Society of American Foresters in an article appearing in the December, 1919, issue of the *Journal of Forestry*. In response to that article, Senator Arthur Capper introduced a bill in 1920 that would have authorized the Forest Service to control cutting practices on private forest lands. The bill failed.

Under the National Industrial Recovery Act of June, 1933, the Secretary of Agriculture required that all timber operators on "lands under their ownership or control" practice "conservation and sustained production of forest resources." A series of conferences, attended by both the forest products industry and the general public, was held to draw up forest-practice regulations for the various forest regions, but before the new regulations were put into effect the Supreme Court struck down the act.

A National Forest Practice Act was subsequently introduced by Senator Pierce in 1941, again by Senator Hook in 1947, and finally by Senator

Clinton Anderson in 1949—all without success. These bills each would have created a federal forestry board, which, through the states, would have required the establishment of administrative areas to govern private forestry practices. A forest-practice committee for each area would promulgate rules to cover fire protection, insects and diseases, reforestation, cutting of immature timber, preservation of vigorous trees as growing stock to keep lands productive, control of logging methods to protect young growth and the soil, regulation of grazing, and prohibition of clearcutting.

In 1971, Senator Lee Metcalf of Montana introduced yet another bill to control forestry on private lands. Metcalf's bill required the states to license foresters and forbid logging except under state supervision and required owners to file timber management plans to be prepared by a licensed forester.

The stated purpose of the bill was "to create and maintain an effective and comprehensive system of regulation and use of all forest lands in the nation so as to ensure that (1) the environmental quality and productivity of forest lands are restored, enhanced, and maintained; (2) multiple-use values are effectively taken into account with respect to the management of

such lands; and (3) the goal of maximum sustained yield of high quality timber products is achieved consistent with such multiple-use values." The bill was never voted out of committee.

The foresight of those foresters and conservationists who have supported legislative proposals like Metcalf's is now evident, for the long-predicted timber shortage is now here and will be with us for many years to come. The need for such legislation has become obvious and acute, yet we still do not have anything like adequate public regulation of private forestry. A recent survey by the Forest Service indicates that we can expect a 73-percent decline in the output of softwood timber products from forest industry lands in western Oregon between now and the year 2000 because of excessive cutting and careless management practices. Similarly, redwood lumbering in California is drawing to a close because this uniquely valuable species has been relentlessly exploited, with no provision for perpetuating a supply of trees large enough to continue the industry once the virgin timber is gone. There is not enough old-growth redwood to last another decade. Similar disasters lie ahead for other species of trees in other forest regions throughout the West.

We have enjoyed some very effective

Our Public Interest



improvement in forest management in the South through both private enterprise and the efforts of state and federal agencies. But even here, we have cause for concern because firms liquidating their timber in the West are now investing billions in acquisition of young forests and in plant construction in the South. If present trends continue, those young forests might well be liquidated before we achieve a sustained yield of trees of optimum size for the production of high quality lumber and plywood.

The state with the greatest forestry problem and possibly the greatest opportunity to avoid disaster is Alaska. Most of the good forest land in Alaska is in the Tongass and Chugach National forests, which together contain 5.1 million acres of commercial timber. Next in importance are the state forest lands, which comprise 353,000 acres. Federal agencies other than the Forest Service account for 112,000 acres of commercial forest. Most of this land is under the jurisdiction of the Bureau of Land Management, but 25,000 acres are controlled by the Bureau of Indian Affairs. In contrast with this substantial public ownership, there are now only 30,000 acres of private timber land in the state. But it is likely that vast areas of the public domain will in one way or

another pass into private ownership or control as a result of the Alaska Native Claims Settlement Act. There is no way of knowing how much, but certainly a great deal of land to be acquired by the natives will be forest. This prospect poses some serious problems. With timber scarce and prices high all over the world, officials of the native villages will be tempted to sell off the timber for quick profit, without adequate concern for the future. Such has been the history of American settlements with natives.

To begin with, Japanese- and American-based international corporations are busy purchasing options to buy timber from the Alaskan natives when they take title from the federal government. Timber may thus become excessively committed to liquidation even before the new owners have a chance to decide how their forest should be managed. Furthermore, Alaskans have no decent examples of good forest management to follow. To be sure, Congress attempted to protect the natives from themselves by requiring that any patents under the act that are located within the boundaries of a national forest are required to "contain such conditions as the Secretary [of Agriculture?] deems necessary to assure that the lands are managed under the principle of sustained yield

Because Congress has failed to regulate private forestry, the job falls to the states. Here, the Sierra Club's own forester shows how they can ensure that private forests are managed in the public interest.

and under management practices for protection and enhancement of environmental quality no less stringent than such management practices on adjacent national forest land for a period of 12 years." The safeguard is nonexistent because the U.S. Forest Service is selling timber in such excessive quantities that sustained yield is a mere slogan, and the agency's concern for the environment is almost entirely on paper. Its management of the national forests is so bad that old timers were forced to seek legal assistance from the Sierra Club in the hope of correcting the situation.

Management of Alaska's state forests is even worse, even though the Alaska Division of Lands also is required by law to practice sustained yield. Title 48, Article 4, of the Alaska

Statutes, reads partly as follows:

"The Commissioner upon recommendation of the Director shall determine the timber and other materials to be sold and the limitations, conditions and terms of sale. The limitations, conditions and terms shall include the utilization, development and maintenance of the sustained-yield principle, subject to preference among other beneficial uses."

The reference to other beneficial uses is the basis for the State Department of Natural Resources policy on timber, which reads as follows:

"It is the policy of the State of Alaska to manage its timber lands for the maximum benefit of its people, consistent with the professional concept of multiple use and sustained yield as recognized and practiced by the forestry profession."

In the Haines-Skagway area, where most state forest is located, the state cooperated with the Forest Service in developing an inventory of timber resources and in calculating allowable cut. Unfortunately, errors committed by the Forest Service on the national forests have been repeated on state lands. Much timber—probably half of the timber that appears in the inventory—is either on such steep slopes that it cannot be logged without excessive damage to the environment, or exists in such small quantities that under normal business conditions it does not pay to log it at all. Logging on steep slopes typically causes erosion and landslides, which damage fish resources and wildlife habitat and reduce the recreational or scenic values of the surrounding areas. The allowable cut of about 20 million board feet in the Haines-Skagway area is based upon this exaggerated inventory. Further exaggerations result because the timber estimates are determined by one unit of measure and the timber sold by another. The first unit of measure is the short-log or inventory scale; the second, the water or long-log scale. The differential between the two units of measure is at least one-third, yet the state uses a factor of only 15 percent to convert one to the other. Finally, the state permits immense waste to take place. In one area 75 percent of the timber was left on the ground after logging.

In Yakutaga, on the coast just north of the Malaspina Glacier, the state has sold the entire amount of timber acquired from the federal government

to a firm that plans to clearcut the area over a 20-year period. Yet it takes at least 120 years for the original volume of timber to grow back to pulp-log size. To regrow the same size trees as are now being logged so hastily would require a much longer period. In the Rocky-Windy Bay area south of Soldovia, the state sold its entire timber holdings of an estimated 120 million board feet to be clearcut in a ten-year period.

Possibly, some citizens of Alaska will consider suing their Division of Lands for failure to observe the state sustained-yield law and multiple-use policy. But litigation would not be much help to the natives, who are about to receive title to forest lands and may become victims of opportunists from outside. The best chance Alaskans have to save their forests is probably through the Federal-State Land Use Planning Commission established under the Native Claims Settlement Act. Local citizens would do well to have the commission consider forest-practice legislation to prevent the natives from being exploited by private commercial interests, to save the fisheries insofar as they are affected by logging operations, and to protect the tourist industry by preventing destruction of state scenic resources.

Another difficulty that will arise with settlement of the native claims is that much of the timber to be acquired is noncommercial, in the sense that the growth capacity of the land is so low the forest will not renew itself within

Alaskans have no examples of good forest management to follow.

any reasonable period of time. This characteristic is particularly true of lands in the interior, where the largest areas are expected to be acquired.

Before we think about remedies, let us consider the art of forestry and the role of the forester in society. Good forestry is not a lucrative business. It never was and never will be. The reason for this is that it takes longer than a man lives to grow high-quality timber, longer than anyone can wait for a return on investment. It takes anywhere from 75 to 150 years to maximize growth of timber in sizes useful

for lumber and plywood. It takes twice that long to grow high-quality wood such as we use for fine furniture and musical instruments. The large spruce trees in Alaska which are being cut and shipped to Japan for piano sounding boards, for guitars, and for their exquisite residential paneling are often as much as 1,000 years old.

Yet, trees become marketable for pulp on our better lands in as short a period as 25 years. Trees can be mass-produced for pulp, rough lumber, and construction-grade plywood under sustained yield in from 50 to 75 years. It should be evident, therefore, that a forest being managed for high-quality wood will always contain a large inventory of marketable timber—the higher the quality, the higher the inventory. In other words, it takes a lot of low-quality marketable timber to grow high-quality wood. Consequently the value of the amount of timber that can be sold annually under a high level of sustained yield will never represent a high percentage of the total value of the forest because as the price of lumber rises, the value of one's entire inventory rises with it. Generally, the value of the sustained yield or the annual income of a well-managed forest will range from one to two percent of the cash value of the entire forest inventory. Likewise, the annual return on investment in commercial timberland in the United States is only 2.5 to 3.5 percent. This contrasts with 10 to 15 percent for industry as a whole. A well-managed forest, therefore, will always be in danger of exploitation by the forest industry and will seem to be inefficiently managed in the minds of unimaginative, shortsighted people.

Owners of timberland, confronted with the choice between a high income for themselves or an even higher income for their heirs, will nearly always choose the former. Few of us can afford to be philanthropists. Firms with large investments will always do what they must to obtain the highest possible rate of return on investment, and this decision means growing low-quality timber and cutting trees as soon as they become marketable instead of letting them grow to achieve high quality.

The forester, on the other hand, if he loves the forest and has not confused his role with that of the businessman, will resist the temptation to maximize income and will be more concerned with a wide range of environ-

mental factors. He will want to restrict the removal of timber to those trees which can be spared to improve the health and vigor of the forest. He will want to keep trees growing until they reach their highest value, and he

The Forest Service's concern for the environment is almost entirely on paper.

will recognize that maintaining a high inventory of marketable trees is an absolute necessity if the forest is to be managed for recreation, watershed, and wildlife, as well as for raw material for the forest industry.

For these reasons we require a clear separation of responsibility between the forester and the businessman. The forester alone should have responsibility for the forest. It is quite properly the role of the businessman to make what profit he can from the timber the forester makes available. But the businessman should not be able to set policy or production goals for the forester. Otherwise, forestry cannot be properly practiced.

For the benefit of people throughout the country facing problems of forest mismanagement, let us therefore consider what measures might be taken by state governments.

A satisfactory program for state regulation of forestry on private lands consists essentially of the following:

- A law requiring that foresters be licensed and that it be unlawful to practice without a license. The licensing board should be comprised of people representing a broad cross-section of the areas of expertise involved in wild-land management. These include aquatic biology, entomology, forest ecology, geology, hydrology, mycology, ornithology, plant and animal ecology, pathology, soil science, and wildlife biology.

The licensing law should contain a clear statement of purpose relating the practice of forestry to the public interest in good management of forest land. California's recently enacted licensing law begins:

"The purpose of this act is to declare the existence of a public interest in the management and treatment of the forest resources and timber lands of this state and to provide for the regulation of persons who practice

the profession of forestry and whose activities have an impact upon the ecology of the forest and the quality of the forest environment, and through such regulation to enhance the control of air and water pollution, the preservation of scenic beauty, the protection of watersheds for flood and soil erosion control, and the production and increasing yield of forest and associated resources including timber, forage, wildlife, water and outdoor recreation to meet the needs of the people."

There must be no exemptions for foresters who are employees of lumber companies, because corporations are frequently the greatest offenders.

- There should be a sustained-yield law. The best way to achieve this goal is to require states to identify all commercial forest lands and require that all owners file timber-management plans, prepared by a licensed forester, with the State Division of Forestry. A sustained-yield law should define good forest practices in general terms such as the following:

- (1) Practicing sustained yield. This means achieving and maintaining a perpetual yield of timber in approximately equal annual or frequent periodic amounts consisting of the same or improving quality, and in quantities that do not decline but may increase;

- (b) Practicing a selection system of management and employing selective silviculture wherever consistent with the biological requirements of the forest, and otherwise keeping the clearings no larger than necessary to meet those requirements.

- (c) Growing timber on long rotation periods in order to maximize quality and value of forest products. Except for thinning and stand-improvement cutting, trees should be allowed to mature before being cut.

- (d) Maximizing diversity of species and ages of trees, in contrast with currently popular even-age management and monoculture. This policy is necessary to protect the forest because insects and diseases tend to attack trees of a particular species or age.

- (e) Taking all the precautions necessary to protect the soil from accelerated erosion and leeching of nutrients. Such steps should include, but not be limited to, standards for design and construction of logging roads, skid trails and landings, and regulation of

kind and size of logging equipment.

- Exempting timber from ad valorem taxes, except for timber cut and removed during the tax year. It is neither fair nor reasonable to require good forest practices on private land unless property taxes on forest land are consistent with those on other properties providing similar net income.

- Citizens' right to sue. Fifty years' experience with regulatory agencies teaches us that they tend to serve the industries they are intended to regulate unless they are brought to task by the courts. This is the very essence of our American check-and-balance system.

- Enforcing water-quality standards for streams originating in or flowing through lands on which logging has occurred. Standards should specify that the water not contain more than normal amounts of suspended matter and nutrients, and streams should be monitored regularly to assure that the standards have been met.

Generally speaking, these recommendations are substantially what would be required of the states under the Metcalf Bill, S.1734, which was the subject of public hearings in 1971. In

Good forestry is not a lucrative business—it never was, it never will be.

1972, California, the most populous state and the third largest producer of forest products, adopted the strongest foresters' licensing law in the nation. Last year, California adopted a new forest-practices act that implements all these requirements, except tax reform and the sustained-yield provision. Those will be considered by the state legislature this year, and the prognosis is good. If California can do it, so can other states. But time is short. Alaska is in a unique position to implement such a program because of its Federal-State Land Use Planning Commission set up under the Native Claims Settlement Act. But federal legislation is the best solution to avoid leaving the more progressive states at a competitive disadvantage.

Gordon Robinson, a leading spokesman for sustained-yield forestry, is the forestry consultant to the Sierra Club.

intermittent control system 1. emission-control systems that do not reduce the amount of pollution produced by a source, but merely spread it out over time and space to avoid technical violations of clean-air standards. Typical elements in an ICS are tall stacks to spread pollution out, and slowdowns of plant operations when air conditions get particularly bad. 2. the favored control technique of big public utilities and the Nixon administration 3. a way of saving big polluters big money.



best available technology 1. the best that we know how to do 2. CLEAN AIR ACT the best, "taking into account all the costs." 3. the quality of emission-control equipment required by the act for new factories 4. INDUSTRY technology that has already been installed on factories. 5. hence, a level of technology that cannot be installed until available and that is not available until after it is installed.

new-source performance standards: EPA rules that define what the agency considers to be the best available technology and that set the emission standards for newly built or modified stationary sources, such as powerplants.

carbon monoxide (CO) / a colorless, odorless, toxic gas produced when gasoline in an engine is not completely converted to carbon dioxide (CO₂). Carbon monoxide at present freeway levels increases the risk of heart



attacks. Studies show that up to one-third of urban populations have blood levels of carbon monoxide higher than those considered safe by doctors.

particulates / dust, soot, particles of smoke, any small suspended particle in the air. Particulates enter the lungs when air is breathed, and may lodge there, causing such diseases as emphysema, lung cancer, and bronchitis.

fine particulates / very small particulates, so small that they are not effectively controlled by electrostatic precipitators. They are particularly hazardous to health because they are the ideal size to lodge in the lungs. No air-quality standard for fine particulates has been established.

electrostatic precipitator / the major control technology for particulates. In

effect, a large magnet that attracts charged smoke and soot particles in exhaust gases from burning fuels. Electrostatic precipitators do not capture fine particulates.

sulphur oxides pollutants produced by the combustion in engines or boilers of sulphur contained in fossil fuels. Sulphur dioxide (SO₂) and sulphur trioxide (SO₃) are among the most dangerous air pollutants, and have harmful effects on plants and buildings as well as man. Sulphur oxides in the air are converted to sulphuric acid (H₂SO₄), which contributes to acid rain, or to the formation of suspended sulphates.

suspended sulphates particulate matter formed by the atmospheric breakdown of sulphur dioxide and sulphur trioxide. Recent studies show serious health consequences from suspended sulphates even when national air-quality standards for sulphur dioxide are being met. There is no national air-quality standard for suspended sulphates.

stack gas scrubber 1. a device that removes sulphur oxides from gases emitted from a power plant after combustion,



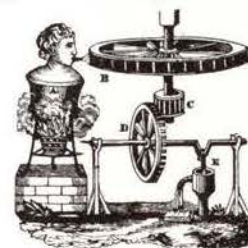
thus enabling clean-air standards to be met while burning high sulfur fuels 2. INDUSTRY an expensive, unnecessary, and unproven device that should not be required. 3. EPA a reliable, effective means of controlling pollution and protecting the public health.

acid rain / rain which has suspended sulphates or suspended nitrates dissolved in it; hence dilute sulphuric or nitric acid. Acid rain has already produced dramatic slowdowns in rates of growth in forests in Sweden and New England, and may be about to reduce agricultural productivity in much of the U.S. by acidifying the soil. Rain clouds do not observe the boundaries of air-quality control regions, so this effect of pollution may be felt many thousands of miles away.

trace elements / toxic substances, such as mercury, cadmium, and beryllium, found in very small quantities in fuels. Trace elements are emitted into the atmosphere as fine particulates when the fuel containing them is burned. In general, clean fuels (such as natural gas) contain far fewer trace elements than dirty ones (such as coal). But so-called "clean" Western coal contains far more trace elements than so-called "dirty" Eastern coal. No emission-control sys-

tem exists to adequately control trace elements from burning coal.

fuel switching 1. changing from one fuel to another, as from burning natural gas to burning oil or coal 2. the major



strategy used to date by public utilities to comply with clean-air standards, as when plants went from coal to oil, from high-sulfur oil to low-sulfur oil, or from any other fuel to natural gas 3. a major proposal of the coal industry and public utilities to save money and reduce consumption of imported petroleum by switching from natural gas to any other fuel, from low-sulfur oil to high-sulfur oil, or from oil to coal.

clean-fuels deficit 1. the difference between projected 1975 fuel demands and the amount of clean fuel that will then be available. 2. INDUSTRY an argument for postponing the 1975 deadline on the grounds that sufficient clean fuels will not be available to meet the standards by that time. 3. EPA an argument for requiring industry to install emission-control equipment to enable it to burn "dirty" fuels, such as coal, and still meet clean-air standards.

hydrocarbon 1. a chemical compound made up of atoms of hydrogen linked to atoms of carbon 2. such compounds when emitted into the air as pollutants, particularly from chemical, petrochemical, and refinery installations, and from automobiles. Hydrocarbons are emitted from automobiles in two ways: as incompletely burned gasoline leaving the tailpipe as black soot, or as evaporated gasoline from the crankcase, fuel tank, or service stations.

external-combustion engine / an engine, such as a steam engine, in which fuel is burned outside the cylinder, as opposed to internal-combustion engines, which burn their fuel inside the cylinder. Because combustion in an external combustion engine takes place continuously, at low pressure, and lower temperatures, such engines are intrinsically much cleaner than internal combustion engines and do not require elaborate emission-control equipment.



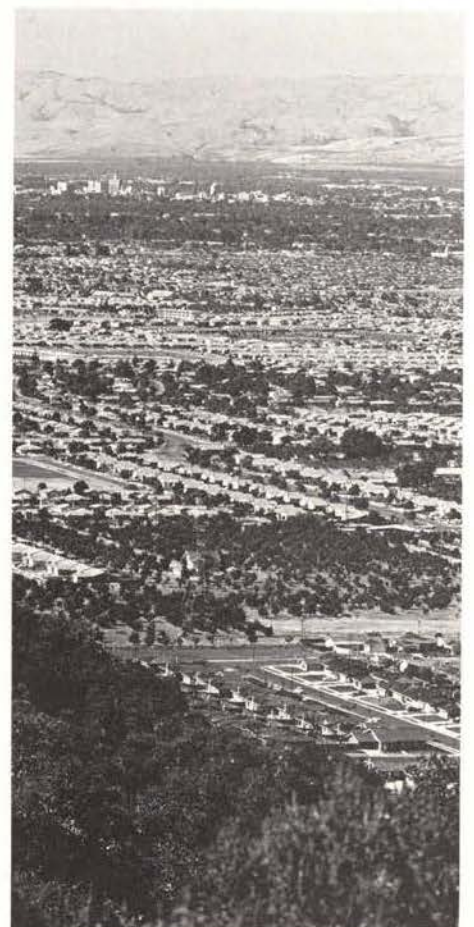
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The Case Against Mid-century Spread

The environmental problems associated with city living stem not so much from crowding as from sprawl. Here are a few good reasons why high density should be good for you.

AMERICANS have never really reconciled themselves to living in cities. Even as most of us depend on the city for our income, we persist in the dream of someday owning a small place in the country or at least a house and yard in the suburbs. Today, cities have become more unpopular than ever. A survey conducted by the National Wildlife Federation indicates that only 13 percent of city dwellers would stay there by choice, while 55 percent would move to rural areas if they could. For many, the city has come to symbolize the environmental crisis because there we must daily confront its most obvious manifestations. The typical problems and inconveniences of the city, whether environmental or social in nature, are typically regarded as the results of congestion. In fact, the opposite is closer to the truth: for the most part, the things people tend to dislike about the city are the products of dispersion, of what is known generally as "sprawl." Still other problems, as Jane Jacobs has pointed out in her book, *The Death and Life of Great American Cities*, are the results not of congestion but of monotonous uniformity. Although practical upper limits on the size of a city may exist, high urban density itself is not a problem. When combined with sufficient diversity of style, activity, and opportunity, it can not only produce stimulating environments for people to live and work in, but ultimately can begin to alleviate many of the social and environmental problems associated with big cities.

Unfortunately, in the lexicon of the environmental movement, high density somehow has become synonymous with the evils of the urban environment. Films invariably seem to include telephoto shots of crowded downtown streets, with buses, trucks, garish signs, and hordes of people jostling each other on the sidewalks. Opponents of new subdivisions often feel that their efforts have been partially successful if they succeed in reducing the density of the subdivision. Lists of the city's major environmental ills are more apt to include excessive urban densities than excessive size. Among environmentalists, the assumption about urban density reflects more than anything a preference for natural over man-made environments. But men, after all, do have to live somewhere, and there are substantial arguments to indicate clearly that it is low rather



than high densities that are destructive to both urban life and the environment.

I have seen my own values change from a very clear anti-city, pro-nature position to one where I have come to value both, though for very different reasons. I have been fortunate to live in several university communities where it was possible to spend a thoroughly pleasant afternoon simply walking around, watching people, meeting friends, window shopping, or just sitting and watching the world go by. In thinking back on such experiences, I have become aware that it is the presence of people that gives these environments their value, just as it is a lack of people that enhances the value of natural environments. Neither is a substitute for the other. If cities are for people, it follows that the ideal should be densities high enough to make cars unnecessary and a scale appropriate for walking. European cities with such qualities have flourished when cars were banned recently; most American cities would die.

But the quality of city life aside, it has become apparent that our pursuit of low urban densities in cities such as Los Angeles has destroyed recreational and agricultural land, wildlife habitat, and open space in general. It has resulted in freeways, decaying downtown areas, traffic jams, smog, higher utility costs, higher demands on energy and other resources (such as timber), and even an increase in urban crime. Many environmental problems, from air pollution to clear-cutting the national forests, stem directly or indirectly from our pursuit of the suburban ideal.

After more than 30 years of uninterrupted urban sprawl, there are signs at last that more and more people are beginning to understand that the health of both our cities and our countryside depends on halting low-density urban growth. Recently, in places as far removed as Jacksonville, Florida, and Sonoma County, California, a major grass-roots movement to slow urban growth has suddenly sprouted. But the slow-growth movement has run into some formidable political and legal obstacles. Labor unions and business interests oppose it because it seems to threaten jobs and business incomes. Groups concerned about housing oppose it because they claim it would further constrict the availability of housing, push prices higher,

and force more people out of the home-buying market at a time when jobs are continuing to gravitate to the cities. (What is often overlooked is that almost all suburban housing is financially out of reach for precisely those people who need it most.) Voters in big cities oppose it because they themselves hope to move out to new residential areas. Even some courts have opposed it, striking down growth-restriction ordinances as violating the constitutional right of Americans to live where they please.

Given the importance of slowing urban growth and the strenuous opposition this suggestion has aroused, it seems desirable at this time to re-examine our traditional attitudes toward high-density versus low-density developments. My arguments for high density will be based primarily on environmental and social considerations, but before moving on to these, it would be useful to point out that the most attractive cities in the United States tend to have high densities.

Surveys invariably show that San Francisco is considered the most desirable city in the United States in which to live, twice as desirable as its nearest competitor, Boston, which also has higher densities than most American cities. San Francisco has many social and environmental assets in addition to high density, yet its most popular neighborhoods, such as North Beach-Telegraph Hill, have amazingly high densities of around 100 dwellings per acre—without high-rise structures. Los Angeles, which also started with an extraordinarily desirable physical environment, is now frequently used as an example of the wrong answer to urban needs. Its residential areas commonly have four to ten dwellings per acre. And yet, ironically, it is the suburban residential pattern that originated in Los Angeles that has been reproduced nationwide. The results of the surveys on urban attractiveness are hard to explain when the personal preferences of the majority of home buyers overwhelmingly seem to be for low density.

For the purposes of comparing cities of different densities, let us think of two hypothetical cities that have the same population and are otherwise identical except for density. The diameter of Compact City is one-half that of Dispersed City, and Compact City therefore has one-fourth the area and

four times the density of Dispersed City. To help visualize these two cities one can think of San Francisco as Compact City and San Diego as Dispersed City; they have approximately the proper relationships although there are many other differences between the two cities.

Dispersed City uses up four times as much land as Compact City, land that may have valuable uses for agriculture, open space, or wildlife. The relationship between density and land requirements would seem to be obvious, yet when I ask the students in my conservation classes where they would like to live when they get a job, their first preference is for the semi-rural towns outside the fringe of the city that are seeing their first growth. Their second choice is the new recreational communities being built on the urban fringe. Their third is suburbia. Their last choice is the condominiums or townhouses in the city. When told that such preferences are producing urban sprawl faster than that which created Los Angeles, they have mixed reactions, but generally they wish to express their conservation values by living as close to nature as possible and as far away from the city. In the matter of housing patterns, our understandable preference for nature leads to its loss.

Dispersed City will inevitably require much more energy than Compact City, particularly for transportation. The distances in Dispersed City will be, on the average, twice as long as those in Compact City because its diameter is twice as big. In addition, cars must be used for trips in Dispersed City that in Compact City can be accomplished on foot or bicycle. The huge amounts of gasoline required for commuting, shopping, and entertainment in Dispersed City is part of the reason why the United States is so desperate to build the Alaska pipeline, drill for off-shore oil, and exploit oil shales. Imagine the predicament of the suburbanite if fuel were not available.

Dispersed City has been built on the convenience and flexibility offered by the private car. This choice has required the provision of freeways, wide streets, and space for parking, all of which add significantly to the land requirements of Dispersed City. Such developments make sense for the automobile, but for public transportation they are all wrong. The large area of

Dispersed City cannot be served efficiently, requiring either the provision of tremendous mileages of line or else a long walk or drive to the nearest transit station. For example, around suburban BART stations in the San Francisco Bay Area, we see parking areas, so people can escape farther into the hinterlands, rather than the growth of neighborhood centers that would conserve resources. The anti-urban values of Californians have succeeded in making BART reflect their interests. The system provides very few benefits to the people living in San Francisco, but it permits commuters who take advantage of city jobs to escape more easily to distant bedroom communities.

Compact City, in contrast to Dispersed City, will normally have the basic physical relationships necessary to make energy-saving public transportation possible—enough people close to bus stops or rapid transit stations to make these forms of transportation convenient and economically feasible. Not only will it be a shorter walk to the bus stop or rapid transit station, but transit vehicles will come twice as often as they would in Dispersed City (assuming an equal number of transit vehicles) and the trip will be half the distance. San Francisco's saving grace is its extensive system of buses, trolleys, and cable cars. It is possible to live in many parts of San Francisco without a car, and be free of any worry about gas rationing. This is not so for the suburbanite.

A disturbing feature of Dispersed City is that once it is built around freeways and shopping centers, it is hard to modify to other patterns appropriate for a less energy-affluent age. At the same time, the decreased use of automobiles in Compact City will result in less air pollution and in more convenient and less costly solutions to that which does exist. The air pollution problem, given the costs in terms of agricultural damage, public health, and sheer amenity could alone justify a move away from low-density developments with their dependence on the private automobile.

In Dispersed City, the main businesses that can survive are those that efficiently serve people in cars, resulting in the dominance of shopping centers with huge parking areas. The neighborhood market, drugstore, cleaner, coffee shop, nursery, and florist in Dispersed City have virtually

disappeared because small businesses depend on having enough potential customers within walking distance, or well served by public transportation. In addition, they require a high volume of casual sidewalk traffic of the sort found only in Compact City, where small businesses still thrive and where the convenience and charm they provide is significant. Prices in the corner store may be slightly higher because of the lower volume of sales, but the cost of driving to a shopping center in Dispersed City is significant. If 200 miles per week are driven in the course of shopping and other errands, this would mean an expense of around \$20 per week (or \$1,000 per year) and would require five or six hours of driving per week, an activity that is rarely enjoyable. Life in Dispersed City frequently requires a family to have two cars, a major additional cost.

High density has often been associated with high crime rates, but as Jane Jacobs has argued, it is more properly related to a lack of neighborhood community regardless of the densities involved. While many high-density areas of the inner city tend to have crime rates, these areas often tend to be racial or economic ghettos into which people have been forced by either circumstance or the local redevelopment agency. Instead of identifying with these neighborhoods, residents often see them as stigmatizing their condition in the eyes of the rest of society. Even so, there are some neighborhoods in the heart of our largest cities that have developed into quite satisfactory places to live. At the opposite extreme, Los Angeles, perhaps our most dispersed city, has traditionally had one of the highest crime rates in the country, a condition that may be in part explained as a result of a lack of real neighborhoods such as can be found in many more densely populated cities. If a sense of neighborhood community exists, it is one of the best deterrents to crime. There will be eyes on the street to notice any unusual activity and a sense of mutual aid among neighbors.

But such community feeling requires that neighbors make contact. In Compact City people get to know each other on front porches, on the sidewalks, while shopping, or in neighborhood gathering places such as parks, cafes, and bars. But in Dispersed City, such contact is limited to a chat over the backyard fence, at the

voting booth, or at the local PTA meeting. Suburbanites form most of their friendships at work and church; often two people on the same block will not know each other. In such neighborhoods, burglaries are fairly easy to arrange because no one will notice any unusual activity. High density and crime may coexist, but crime is not caused by high density *per se*. It will thrive wherever neighbors no longer know each other.

One of the most fascinating sections of Jane Jacob's book on American cities is her analysis of why some city parks succeed and others fail. The successful city parks are usually small, often just a square, with benches and plantings that are used by many different people all day long and into the night: by mothers sitting on a bench while their children play, by old people playing checkers in the sun, by office workers on their lunch or coffee breaks, by shoppers resting their feet, and by theater goers and lovers in the evening. The unsuccessful city parks frequently are the larger, naturalistic ones, which have become unsafe because they take people away from the eyes of passersby and offer hiding places for thieves. This problem is especially characteristic of parks in Dispersed City because there are fewer eyes on them in the first place. Yet the provision of bright lights, to reduce the danger of assault, and vandal-proof facilities to cope with the problems only serve to make the parks less attractive. At best, parks in Dispersed City may be well used on weekends, but are empty a good part of the rest of the week. Here, open space is too often simply wasted space.

The open spaces within Dispersed City generally suffer from problems that are similar to its park problems. Youths race motorbikes through them, hold beer busts in them, or fights, generating fear in the minds of legitimate users and distractions for all. Litter and junk accumulate—beer cans, old clothes, and the rusting booty of vandals—all of which discourage use and reduce the justification for public acquisition, at least for the majority of voters.

As far as access to true open space is concerned—the land beyond the edge of the city—it will be twice as far away in Dispersed City as in Compact City. Even worse, the urban fringe may stretch out a long way in car-oriented

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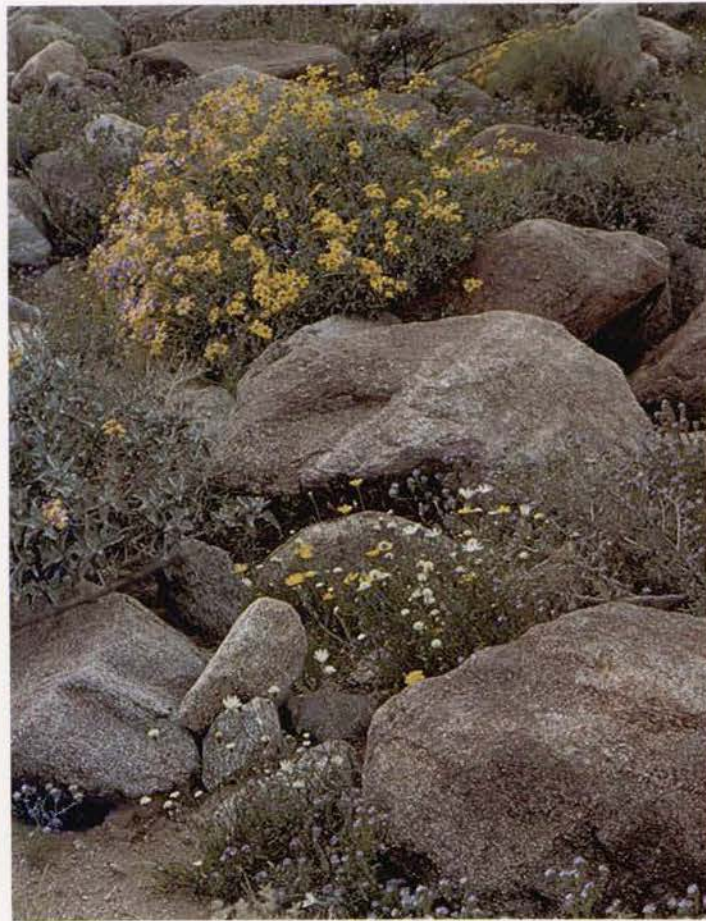
Mojave Spring

Two Seasons from a Century of Fragile Bloom

STEPHEN CASTAGNETTO
AND ROGER OLMSTED

THE hard-packed soil of the desert is a quiet ground. The dormant seeds of flowers that bloomed perhaps a decade ago lie buried in this unyielding earth, waiting only for the calculated in-juncture of moisture to begin their germination. The rain is scant, the snow is fleeting, and buds of spring are few—in most years. Yet there come those times of heavy precipitation when the desert comes to life with the beautiful colors of yellow primroses, lavender purplemeat, orange desert mallow, and the brilliant reds, greens, and whites of over a hundred species of wild flowers. In two weeks these flowers will develop, blossom, pollinate, and die—leaving their seeds behind to wait for the next average season of thrifty growth, or another season of spectacular bloom.

The year before last we saw “the bloom of the century”: this year we have seen a spectacular aftermath. It is a sight to remember, because of late years the desert is drying, it would seem: the golden carpet flower (*Gilmania luteola*), was last seen in 1939 when the unusual rains necessary for its development last occurred. Still, the desert blooms in one year or another—until recently—by the whim of the gods, but more lately by the whimsicality of man and his machinery.



With off-road vehicles cutting up the gulches where the flowers bloom every ten years or so, it is hard to say when ever again we will see the wildflower display shown on these few pages. The lands we see are public lands, administered by the Bureau of Land Management. Today, these public lands are treated as one vast roadway, the common right-of-way for any citizen who is affluent enough to own a “recreational vehicle” that can hump through the desert. The scars, the junk, the ground-in tracks spread across the vast and fragile space. The flower of the bloom of the century lasts a few days; the beer can looks as though it will last for decades.

Nowhere so much as in our Western deserts, where a man can see fifty miles from a high spot on a typical day, is the tiny touch of nature so evident to the careful walker. Against the vast expanse of mountains and sky is the carpet of flowers ranging down to pin-head size. Look closely at this ground: your footsteps spoil the setting; your wheels crunch blossoms of a decade; your garbage lasts forever. Here, there is no way to escape the effects of our most casual mistakes; here, we learn what we mean when we speak of the desperate fragility of life—all life.

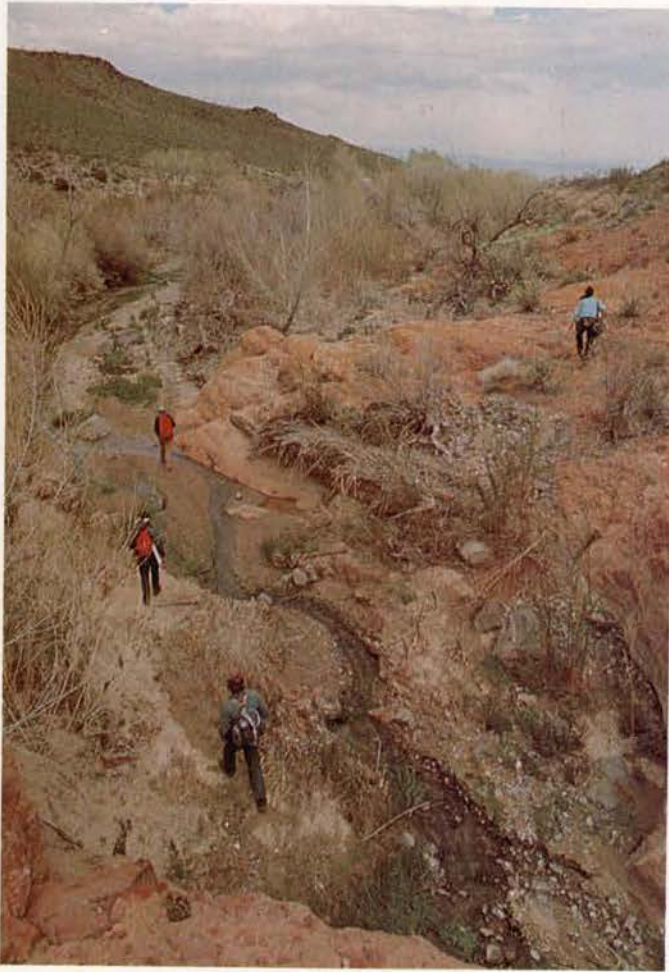




The varieties of the desert's palette: left, the California prickly poppy; top right, Indian paintbrush, and just below that, the Mojave Desert mallow.

Like gentle asterisks, the pastel colors of the cactus flowers (below, left and right) frequently annotate such bright carpets as the field of poppies seen at the left.



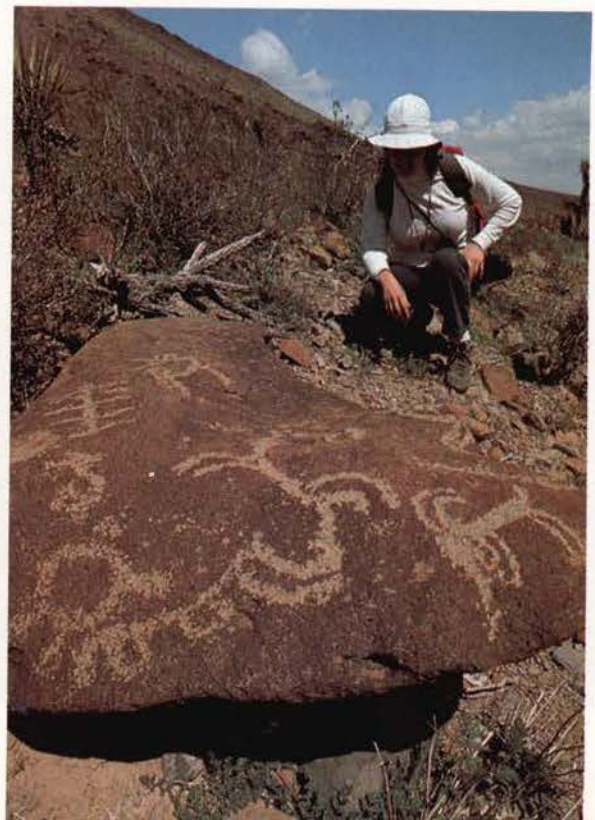


THE neglected desert has during the last decade attracted the attention of scholars and study teams as well as the advocacy of individual enthusiasts once called "sagebrush freaks."

Today we have biologists, ecologists, and environmentalists scouring these "wastelands" for clues to the development of species. Among these researchers, a group from Merritt College in Oakland has done an outstanding job in combining field instruction with college studies. Led by such members of the faculty as George Hilton, Roland Grangloff, and Marian Reeve, more than 400 students and a dozen teachers have sought to contribute to environmental impact reports that have saved Indian archeological sites as well as such outstanding features as the Kelso Dunes, largest in North America.

The things these young environmentalists have seen, the things their elders have sought to teach them, have much to do with the continuity of plant, animal, and human life on this earth. For in the living desert is the living man; in each thorn is the sting of eternity.

The desert is a place of time and beauty and ghosts. Above, students from Merritt College seek the beauties of Paiute Springs in the Paiute Range of the Mojave Desert. At the right, the same area reveals some of the artful scratchings of "the people who have vanished"—petroglyphs made by Indians more than 800 years ago.





This landscape requires a kind of toughness from even its most delicate forms of life; the California purplemat, shown above and in detail at the right, has an unusually rough and textured strength to resist water loss from evaporation.







THE DESERT SPEAKS of time and the curious tenacity of life that will not admit the odds against it. In the desert, as in probably no other natural landscape, we begin to sense the antiquity of the forces which have shaped this earth and the unimaginable journey life has made from its forgotten beginnings to the bright wonder of a small yellow flower. That is the desert's meaning and its legacy. And that heritage belongs to all Americans, for the desert is part of the public domain that we all own, no matter how vulnerable it may be to the pressures of a spreading megalopolitan society, no matter how much good clean "fun" might be found in tearing around the desert countryside in machines. Nowhere in the Constitution or in public law is there set down the right to ruin the public domain for the fun of it. What the desert has to offer us—and to those who will follow us—is much too valuable to be victimized by careless enthusiasms whose powers of destruction far outweigh their transient recreational appeal. In this desert context—as in most environmental frameworks—we have a clear choice, and when we get down to the hard question of making that choice, it might be useful to remember these words from Revelations (Chapter Nine, Verse 4): "And it was commanded them that they should not hurt the grass of the earth, neither any green thing, neither any tree. . . ."

The desert gives us much of space and wonder, but what do we give in return? The debris from a civilization that has consumed but a fraction of the desert's own lifespan? The "improvements" of a society hurrying to an unknown destination? Is it true that we can only enter this wild country like Visigoths to loot it or mark it with our failures?



GLOSSARY (Continued)

vapor-recovery system 1. a system in which hydrocarbon vapors evaporating from gasoline storage tanks are recaptured instead of being emitted as pollutants when gasoline is transferred from truck to filling station tank or from pump to individual car. 2. "Balance vapor-recovery systems" use a sealed nozzle and hose to transfer the fumes from the tank being filled to the tank being emptied, and capture about 70 percent of the vapors. 3. "Vacuum-assist" systems employ fans to draw the fumes either into a refrigeration coil that condenses the fumes into liquid gasoline, or into a catalyst that oxidizes them, thereby capturing 90-100 percent of the fumes. 4. **OIL INDUSTRY** a technology (i.e. fans, hoses and refrigerators) that has not been installed and therefore is not "available."

oxides of nitrogen / nitric oxide (NO) nitrogen dioxide (NO₂), and nitrogen trioxide (NO₃); all three gases contribute to formation of smog and pose serious health problems themselves. They are formed by the high-temperature combustion of atmospheric nitrogen, as that which occurs in internal-combustion engines. Early emission-control devices, which reduced hydrocarbons and carbon monoxide, often increased oxides of nitrogen.

ozone / a chemical compound formed of three oxygen atoms (O₃); the component of photochemical oxidants (smog) that causes eye irritation. The national air-quality standard for photochemical oxidant is .08 parts per million of ozone, even though ozone is only one component of smog.

stratified-charge engine 1. a modified internal-combustion engine in which combustion occurs in two stages rather than one. 2. an engine developed by the Honda Corporation that already meets the statutory emission standards. 3. an engine which Detroit says it will not have ready for use until 1980.

transportation-control plan / a plan designed to reduce reliance on private auto traffic in cities where auto-pollution problems are so serious that even the new auto-emission controls would not enable the city to meet the primary standards by 1975. Typical elements in transportation control plans include installing emission-control devices on old cars, encouraging mass transit, and discouraging new, auto-related facilities.

NRDC v. EPA / a case brought against

EPA by the Natural Resources Defense Council in which the courts required EPA to implement the transportation-control provisions of the Clean Air Act according to the timetable established by the Act. This decision was the basis for subsequent EPA actions in promulgating transportation controls.

interim emission standards / automobile-emission standards set by the administrator of EPA when it granted one-year extensions to the auto industry on the statutory emission standards; standards extended through the model year 1977 by the Stand-by Emergency Energy Act.

U.S. v. AMA / a court suit brought by the Justice Department which charged that the Automobile Manufacturers Association and the Big 3 conspired throughout the 1950's to suppress development of emission-control equipment. The suit was settled by a consent decree in which the manufacturers agreed to cease the arrangement by which the suppression was alleged to have occurred and to resume competition for development of emission-control systems, but in which they did not admit any guilt.

good-faith-effort requirement / a provision of the Clean Air Act that states that automobile companies cannot receive extensions of the original 1975 emission requirements unless EPA finds that they have made a "good-faith effort" to meet the original deadlines. In granting Chrysler Corporation such an extension, EPA stated that no such effort had actually been made, but that EPA would "find" such an effort for legal purposes because it did not want to shut down Chrysler for its failure to observe the law.

catalytic converter / a device attached to the exhaust pipe of an automobile that employs platinum or certain other substances to speed up the reaction by which carbon monoxide (CO) is turned into carbon dioxide, and hydrocarbons (HC) into carbon dioxide and water.

Emergency Energy Bill 1. A bill passed by Congress during the energy panic of December, 1973, that was designed to give the President the power to ration gasoline in the spring of 1974, and to institute other energy-conservation measures. 2. a bill containing substantial limitations on EPA's ability to order transportation-control plans that would encourage mass-transit use and thereby save energy. 3. A bill permitting the auto industry to delay installing catalytic converters on some of their 1975 mod-

els, thus foregoing a 10-percent gain in fuel economy.

Stand-by Emergency Energy Bill / legislation introduced in the Congress after the President vetoed the Emergency Energy Bill, following the Arab oil embargo, and after it became clear that gasoline rationing would not be needed. Provisions for energy conservation were removed from the bill in committee.

Ninety-third Congress / the session of Congress ending on January 1, 1975, which must renew or extend the Clean Air Act. The 93rd was the "energy-crisis" Congress, which was under heavy pressure to weaken environmental-protection laws. The Nixon Administration has asked the 93rd to amend the Clean Air Act in the following ways: by weakening and delaying the automobile-emission standards, particularly those for oxides of nitrogen; by granting delays of up to ten years in the deadlines for achieving air-quality standards in cities that have had transportation-control plans promulgated; and by authorizing long-term fuel switching from oil or natural gas to coal, even if violations of air-quality standards are involved. In addition, some agencies within the Administration wish to authorize the use of intermittent controls in place of continuous controls, and would like to repeal the provisions of the Clean Air Act that prohibit significant deterioration.

The National Clean Air Coalition 1. a coalition of citizens' groups, including the Sierra Club, the American Public Health Association, the League of Women Voters, and many others, who are trying to convince the 93rd Congress to extend and strengthen the Clean Air Act instead of weakening it. In addition to opposing the Administration and industry amendments, the coalition asks for prompt promulgation of air-quality standards for suspended sulphates, fine particulates, for effective transportation and complex-source regulations, for implementation of the court decisions on significant deterioration, and for requiring the auto companies to comply with presently set emission standards on schedule. SEE 93RD CONGRESS 2. a coalition that provides information to those who write to: National Clean Air Coalition, 1609 Connecticut Avenue, NW, Washington, D.C.

Carl Pope is a consultant to the Sierra Club's conservation department. He worked formerly for Zero Population Growth.

Nuclear Safety

The Margin of Ultimate Error

ON JANUARY 13, 1974, the Sierra Club Board of Directors passed an historic resolution favoring a *conditional* moratorium on the further development and operation of nuclear reactors, one with profound implications for future Club policy. The resolution reads as follows:

"The Sierra Club opposes the licensing, construction and operation of new nuclear reactors utilizing the fission process pending:

(a) development of adequate national and global policies to curb energy over-use and unnecessary economic growth;

(b) resolution of the significant safety problems inherent in reactor operation, disposal of spent fuels, and possible diversion of nuclear materials capable of use in weapons manufacture; and

(c) the establishment of adequate regulatory machinery to guarantee adherence to the foregoing conditions."

The heart of the resolution is paragraph (b), which addresses the complex issue of nuclear safety, a problem that has as much to do with inadequate social institutions for managing nuclear technology as it does with the technology itself.

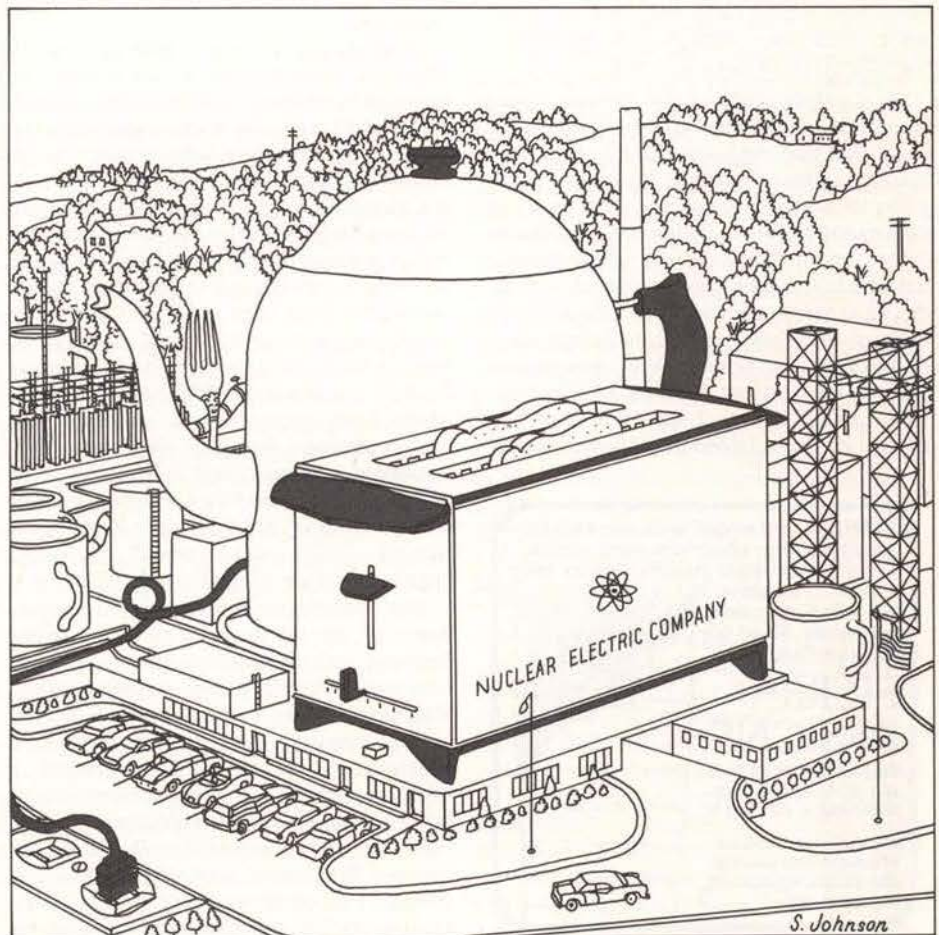
We are faced with a novel situation: because of the long lives of many radioactive materials (thousands of years in the case of plutonium, one of the byproducts of nuclear fission), a nuclear accident, unlike conventional disasters—war, famine, plague, flood—is not something we will be able to survive one moment and forget the next. This being the case, it is audacious for any group of technocrats—whether it is the Atomic Energy Commission (AEC), the nuclear industry, or the university community—to specify an acceptable level of risk. Acceptable to whom? Acceptable compared to what?

The public is being asked to risk the consequences of a nuclear accident without any means of deciding for itself whether the risk is worth taking or whether more sensible alternatives exist. At the present time, we must rely largely on the nuclear establishment for the information on which decisions must be made. Furthermore, even if all the information were available, no formal mechanism exists whereby the pub-

lic can express its views, other than through costly, time-consuming, ad hoc procedures such as litigation in the courts and testimony before Congress. In effect, the nuclear establishment has decided for the rest of us what constitutes an acceptable level of risk and has demanded that we accept its judgment, as reflected in their reactor designs. This judgment is based largely on paper calculations whose assumptions and conclusions are, at the very least, open to debate. At the present time, such debate is actively discouraged. And the issues include not merely the question of the safe operation of nuclear power plants, but the problems of safely storing nuclear wastes and keeping

dangerous nuclear fuels from falling into the hands of men who might misuse them. Such questions must be thrown open to public debate.

The Sierra Club's January resolution calls for a moratorium on the further proliferation of nuclear power plants until these issues and others like them have been resolved. The Club believes that current plans for deploying 1,000 nuclear reactors by the year 2000 is premature, but it also realizes that a nuclear moratorium would result in increased pressures to exploit fossil fuels. The Club and the general public will have to evaluate carefully the available alternatives, weighing nuclear risk with the



prospects of further environmental degradation as a result of an increased demand for fossil fuels. But this is extraordinarily difficult to do so long as the AEC and its allies in the nuclear industry hold a monopoly on relevant technical information and a virtual stranglehold on the decision-making process. Therefore:

- The Sierra Club plans to review carefully the present institutions and procedures governing our nuclear-energy policy in order to encourage reforms that would permit the public to decide for itself whether safety problems can or have been resolved, and what constitutes an acceptable level of risk.
- Information essential to this decision must be widely and effectively disseminated.
- States must be given opportunities to verify independently adequate standards on the siting and regulation of nuclear power plants within their borders.
- Authority for regulating nuclear power plants must not reside in the same bureaucracy charged with promoting those plants.
- The present method of insuring nuclear power plants against the possibility of disaster must be reformed. The federal government should not provide insurance at artificially low rates. Such rates do not encourage the nuclear industry to put forth their best efforts toward solving nuclear-safety problems. Instead, insuring nuclear power plants should be left to private corporations, whose rates will tend to reflect more accurately—though not perfectly—the magnitude of risks involved.

As a consequence of the January board resolution, the Sierra Club itself plans also to inquire into the substantive questions of nuclear safety. For one thing, the Club plans to organize an independent team of experts to review the mammoth Rasmussen report on nuclear safety, a governmental study that the AEC has sponsored. One of the most serious flaws in our present institutional framework is that no independent bodies exist to review crucial government studies, and private funding for such reviews is difficult to obtain. We must rely instead on the opinions of the very agencies

who have the most at stake in the outcome of such studies, an unhealthy situation for our society.

In addition to reviewing the Rasmussen report, the Sierra Club may want to reconsider the emphasis of its energy programs in the light of the board resolution on atomic energy. Most of the Club's past efforts have been devoted to the environmental problems associated with the exploitation and utilization of fossil fuels. Now it is likely that a part of our resources will be applied as well to the problems of

nuclear energy. Just how much effort is thus redirected, and into what specific channels, ultimately will depend on the related activities of other public-interest groups and the relative significance and urgency of the various environmental issues at hand. In any event, it is certain that the accelerating quest for energy in the years ahead will entail considerable pressures on the environment. It is important that the Sierra Club consider its future course carefully and base its positions on knowledge and principle rather than on emotion.

Sid Mogler

Waste Not, Want Not: Recycle

AMERICANS HAVE CONSUMED and disposed of more natural resources, energy, and land than all other civilizations in the history of the world—and, for the most part, continue to do so with alarming nonchalance. Yet some Americans now understand that as we enter a new age of increasing shortages of raw materials, we cannot continue to produce enormous amounts of trash—not only because “every litter bit hurts,” but because we can no longer afford to throw away today what may prove to be essential tomorrow.

Solid waste recycling is essential, and in order to work it must be supported and financed by national, state, and local governments. Although the many community recycling projects around the nation provide admirable examples, such local efforts cannot alone do the enormous job that must be done if we are to get out from under the pile of garbage that threatens to overwhelm us. So far, steps toward recycling the throw-away ethic have been small, but encouraging. Oregonians took the first such step by passing their 1972 bottle bill (See Nancie Fadeley's article in the May, 1974 *Bulletin*), which bans nonreturnable soft-drink and beer containers. Recently, the Sierra Club testified at congressional hearings in favor of Oregon Senator Mark Hatfield's Nonreturnable Beverage Container Prohibition Act (S. 2062), which would, in effect, “nationalize” the Oregon bottle bill.

The same interests that opposed the passage of the bottle bill in Oregon—the brewers, soft drinksters, grocers, and glass and metal manufacturers—are now opposing passage of the national bottle bill. They are repeating the same dire predictions in Washington, D.C., that they uttered in Oregon, namely, that banning unreturnable bottles would raise prices, eliminate jobs, cut sales, and increase litter. But these objections have now been thoroughly discredited by a recently released report on the Oregon bottle bill prepared by Oregon

State University. Based on industry figures, the OSU report shows that:

- The bottle bill has created a net total of 365 new jobs, with an annual payroll of \$1.6 million.
- Beverage prices have not increased significantly when compared to those in states without such a law.
- Total beer and soft-drink sales have increased.
- There has been a whopping 92-percent reduction in the number of cans and bottles found along roadsides.

A national bottle bill would not only reduce litter along highways and in natural and recreational areas, but also strongly reduce the waste of materials and energy now associated with the manufacture of beverage containers. These savings would be significant: on the average, each one-way container that ends up in the garbage represents an energy equivalent of more than three ounces of gasoline lost. Experts have estimated that a national conversion to returnable soda and beer containers would result in a net energy savings of 244 trillion BTU's of energy each year, the equivalent of 42 million barrels of oil.

We use 15 percent of our total domestic production of aluminum for cans and other containers every year, as well as vast amounts of imported tin and other costly metals. Only a small fraction of these scarce metals is ever recycled; most ends up on the roadside or as “sanitary landfill” in canyons, ravines, and on shores. Legislation that requires deposits on such containers would—because of its self-enforcing quality (someone is going to claim that refund)—greatly reduce our wasteful consumption of these resources. The precedent is irresistible: if we can recycle cans and bottles, then why not go one step farther and begin to reclaim vast amounts of resources and energy from our trash heaps? Researchers project that systematic recycling of household solid wastes could provide 7 percent of

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Moreover, vast amounts of energy in the form of natural gas and oil products can be produced from sewage and solid wastes (wet garbage) left after glass and metals have been sorted out. Landfill sites and sewage-treatment plants are bountiful and ever-present sources of methane. Pacific Gas and Electric Company and the Stanford Research Institute, both in California, recently have done extensive research and development work on the "pyrolysis" process, whereby refuse is heated under pressure in an oxygen-free system in order to produce natural gas (methane) and oil. They conclude that by 1977, nine pyrolysis plants could produce ten percent of the San Francisco Bay Area's electricity from the 10,000 tons of garbage collected daily in that region.

Although still somewhat more expensive than conventionally produced domestic natural gas and oil, pyrolytic energy products look better and better as fuel prices continue to increase and as supplies grow scarcer. When considering these costs we must also take into account the short- and long-term costs of disposing of our garbage in the conventional manner. The long-term savings in land, resources, and money that would result from methane conversion programs and solid waste recycling would more than compensate for any short-term increased costs. The chance to turn a sow's ear into a silk purse so rarely presents itself that we would be foolish to pass it up. The growing sentiment in favor of container-control legislation and resource-recovery programs suggests that we are not about to.

Tom Lucas

WASHINGTON REPORT

Brock Evans

Of Dark Paths, Dead Ends, and Lights in the Labyrinth

MANY PEOPLE think the most important action on legislation occurs on the floor of the Senate or House of Representatives, where the fate of a bill may hang on great debates, dramatic amendments, and tense votes. Such moments do occur, but not often. Floor action is the *final* step in the legislative process—seldom the most important one. Significant action on a bill comes usually long before—in committees and subcommittees, where members listen to testimony and participate in the crucial markup sessions that determine the final shape of legislation. Because members of Congress are so busy (they really are), and because they must vote on so many complex issues, they rely for guidance on the work of committees other than their own. Unless an issue is extremely controversial, a bill will generally not see much in the way of floor debate.

The strip-mining bill, which is likely to reach the floor of the House sometime this June, is controversial and will occasion many amendments and much debate. As it is, the bill is too weak. We will try to strengthen it, but here, as with most legislation, it may be that the crucial battles have already been fought. The history of the strip-mine bill illustrates a fundamental characteristic of our federal legislative system: namely, it is designed so that bills *do not* pass. Legislation is easy to stop, but very difficult to get through the maze of procedure.

In early 1971, freshman congressman Ken Hechler (D-West Virginia) introduced his first piece of legislation, which called for a phase-out of *all* strip-mining. At the same time, other strip-mining bills were also introduced, most of them regulatory rather than prohibitive. All these bills were referred to the House Interior Committee's Subcommittee on Mines and Mining, which did not even open hearings until the fall of 1971. After much pushing and shoving, the subcommittee finally reported the bill to the full committee in March, 1972, a year after it was first introduced.

Despite the strenuous opposition of former Congressman Wayne Aspinall, who was then chairman of the Interior Committee, the committee reported out a fairly strong strip-mining bill in September, 1972, containing, among other things, a ban on mountain-top strip mining. Aspinall was so upset at having been overridden in his own committee that he began a series of maneu-

vers designed to delay or kill action on the bill.

First, he ordered a special session of the full committee, even though it had already voted final passage of the bill. Here, he succeeded in removing the ban on mountain-top strip mining. But still unsatisfied with the bill, he instructed the staff person who was to write the official report on the bill to take a trip to San Francisco instead, which delayed the report past the filing deadline. As a result, it could not get a ruling from the Rules Committee to permit full debate on the floor of the House.

Aspinall's second step was to stall some more. As the 92nd Congress entered its last days in December of 1972, and January of 1973, the bill had still not been brought to the floor. Excuse after excuse was given, including the unlikely explanation, "It got lost at the printers." When the bill finally did come up before the full House, it did so under a special procedure known as "suspension of the rules," which meant that no amendments were possible. Aspinall also succeeded in getting the bill placed on the bottom of the list, which made consideration unlikely. But at the end of the 92nd Congress, a second suspension calendar was adopted, and the strip-mining bill was finally considered under this procedure.

Even though Aspinall opposed the bill (the first bill from his committee he had ever opposed!), it passed overwhelmingly. But too late. For in the Senate, a similar, but much weaker, strip-mining bill, which had been reported out of the Senate Interior Committee after only five minutes of debate, was killed. So there was no strip-mining legislation in the 92nd Congress. The whole process would have to start again in 1973, with the new Congress. Once again Congressman Heckler introduced his phase-out bill, and once again a series of merely regulatory bills were introduced.

On the Senate side, progress was quick. The senators went right to work and reported a strong and responsible bill out of committee by October 1973. But in the House, it was a different story.

First, there was a bitter jurisdictional dispute between Representative Morris Udall (D-Arizona), chairman of the Interior Committee's subcommittee on environment, and Representative Patsy Mink (D-Hawaii), the new chairman of the Mining Subcommittee, both of whom claimed jurisdiction over the legislation. After sev-

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EDITORIAL

Kent Gill

Values, Vision, and Vocation

TODAY'S SIERRA CLUB projects a vision for tomorrow—a day when humans will live in harmony with their earthly home; when people will see that their tenure requires careful stewardship of that precious asset, land; when technology will help restore, rather than upset, the balance in man's relationship with nature.

Working diligently toward that vision is now a principal responsibility of the Sierra Club. To this end we have chosen political means, reflecting our optimism that change in a free society can be accomplished through orderly administrative and legislative processes. We have sought legal means to redress grievances against the land and to mandate performance according to the law. These strategies for reaching immediate goals assume healthy political institutions and skillful advocacy of our views.

They also assume a citizenry that understands the environmental dilemma, that appreciates unpoisoned air and water and the glory of an unspoiled natural landscape, that comes to demand a sane environmental policy. Building toward such public attitudes is central to a long-range Sierra Club program. So we must project our vision to the people as well as to the policy makers.

Even now, the Sierra Club can work to stimulate a new environmental ethic, to touch the consciences of people, to modify their behavior as resource users. But this new ethic will encounter major obstacles—historic attitudes about property, the inexhaustibility of resources, and the propriety of profit; vested economic interests; and short-sighted values of a burn-it-up, throw-away society.

Our long-term efforts toward a new ethic might take two directions. On the one hand, we can seek to develop a detailed view of this new society, seeking out the predictive efforts of scholarship and hard research. We can honor the speculations of futuristic thinkers. On the other, we can utilize every available means to reach out to people, to render the inchoate and dimly-felt into concrete, dramatic, coherent forms.

We have some of the tools already at hand. Sierra Club books have demonstrated a persuasive power, reaching out far beyond the original purchasers of over a million volumes. The Club's films, though limited in number, carry significant environmental messages, through organizational bookings and television showings. The Earth Day model suggests the importance of widespread popular involvement. Outings demonstrate a way to a deeply-felt love of the land.

The possibility of an upcoming Sierra Club TV special opens up an important direction for public enlightenment. We are reminded that John Muir's campaigns of 100 years ago reached a receptive public through magazine pages, an avenue still available and effective in a very different time. So these means of public information need to be fully utilized, in a carefully-orchestrated way, as means for inculcating a new environmental ethic.

Education, construed broadly as an examination and evaluation of alternatives, is another necessary means for Sierra Club efforts. Our vision for a better new day needs to be so clearly drawn and presented that it can compete in the marketplace of ideas, not as an idle, utopian dream, but as a realistic, reasonable alternative—as a choice that permits an extended human term on earth.

eral weeks of wrangling, a compromise was reached whereby both subcommittees would jointly mark up the bill. But then the problem was which of the several strip-mining bills to use as the starting point for the mark-up process. At first, the most likely choice was a bill prepared by the Pennsylvania Department of Natural Resources and sponsored by Representative John Saylor (D—Pennsylvania). But when the time came to vote on which bill to use, Saylor did not show up to offer his bill. An ardent environmentalist in every other area, Saylor ap-

parently had sided with the coal interests on this issue. He did not really want his bill considered.

With Saylor's bill out of the running, it was up to the staff itself to prepare a whole new bill combining various elements of the several bills that had already been introduced. This caused another four-month delay. Finally, the subcommittee began to mark up the new bill in the summer of 1973, and by November had reported out H.R. 11500, a fairly strong regulatory bill containing some excellent provisions.

But the delays were not over. H.R. 11500 did not come before the full committee until the last day of February, 1974. The cause for this new delay dated back to the mark-up sessions of the previous summer, when supporters of the coal industry constantly resorted to procedural tactics in order to delay the bill. The price of avoiding further delays was to agree in advance not to take the legislation up until the next session of Congress, which would begin in January, 1974.

During this reprieve, Representative Craig Hosmer (D—California), the primary spokesman for the coal industry on the Interior Committee, wanted time to work out a substitute bill with the Administration and the coal interests, both of whom hoped that the cold winter might stimulate enough of an "energy crunch" to make passage of a weak bill much easier the following spring.

Finally, on February 27, 1974, the coal interests and their supporters felt they were ready. For the previous month, they had mounted one of the heaviest lobbying campaigns ever seen by members of the Interior Committee. One environmentalist estimated they had spent at least a half-million dollars flying in teams of executives from all over the country, urging chambers of commerce to write, and contacting the committee members directly.

Hosmer's substitute bill lost by a narrow 21-19 margin, a vote that was the high-water mark of the coal industry's attempt to weaken the strip-mining legislation. When this effort failed, it fell back on delaying tactics. Well over 100 amendments were offered during the long and bitter mark-up sessions, which lasted until mid-May, 1974. Most of Hosmer's barrage of industry-supported amendments were defeated, but enough remained so that at the end of the mark up the bill was substantially weaker than it had been. Its major flaws are an absence of regulations on mountain-top mining, and water and revegetation requirements that are meaningless insofar as the great coal fields of the West are concerned.

Representatives Patsy Mink and John Seiberling (D—Ohio) were the real heroes of the environmental cause, struggling valiantly to hold on to the essential provisions of the bill. Hosmer's chief ally on the Interior Committee, Representative Sam Steiger (R—Arizona), used every available tactic to gut the bill. But the most curious role was played by Morris Udall, who seemed to some observers to be playing both sides. Calling himself an environmental champion, he usually seemed to cave in at the critical junctures, always in the name of "reasonable compromise."

Sometimes, his actions were in the open, as when he opposed the "written-consent-only" amendment, which would have prevented the coal industry from taking a landowner's property without his consent. During debate on this amendment, he said, "These people will get their land back any-

how in three to five years after it has been strip-mined, so let's go ahead . . .," a remark that even drew a rebuke from Representative William Ketchum (R—California), who is a strong supporter of the coal industry. Despite Udall's opposition, the written-consent provision is now in the bill.

At other times, Udall's activities were behind the scenes. When the crucial Seiberling amendment, which would have made deep mining competitive with strip mining by imposing a \$2.50 tax on each ton of strip-mined coal, came up for a vote, Udall instructed his staff to draft a weaker amendment. But he did not offer the amendment himself! Not wishing to be branded an anti-environmentalist, he gave the amendment to Representative James Jones (D—Oklahoma) to offer instead. The "Jones-Udall Amendment" passed as a substitute to the

Seiberling Amendment in one of the most damaging episodes in the entire mark-up session.

So now, after three-and-a-half years of delays, the House of Representatives just might pass a strip-mining bill—the first federal legislation on strip mining. But we cannot be sure at this point. The impeachment process may yet interfere; Congress may adjourn for the fall campaign before action is taken; Representative Hosmer and his allies may yet succeed in further delaying the bill, say, in the Rules Committee.

So what does this history tell us? That there is only one formula for success—strong pressure endlessly applied. We must go back again and again and again to our congressmen. There is no other way. Happily, it often works in the end.

NEWS VIEW

Sierra Club directors issue comprehensive new wildlife policy

THE SIERRA CLUB Board of Directors, meeting in Claremont, California, on May 4 and 5, adopted new policies on wildlife, land ownership and air pollution, as well as resolutions on a new Columbian national park, the United Nations Population Year 1974, supersonic transport, beverage containers, Grand Canyon National Park, and amendments to the Geothermal Steam Act of 1970 that would exclude wilderness and related areas.

The Sierra Club Board of Directors also resolved that nonprofit organizations, such as ecology clubs, scout troops, colleges, garden clubs, park boards and conservation commissions, who wish to support the Club and receive all publications normally sent to members may become non-voting donors called "Friends of the Sierra Club" with an annual contribution of at least \$25.

The Club's new wildlife policy is strongly ecological in its approach to wildlife conservation, emphasizing the importance of maintaining "diverse non-degraded ecosystems" in which wildlife can thrive and affirming the principle that "The better wildlife can be maintained in all its abundance and diversity, the better the habitat for all life on earth . . ."

The board called for measures to counteract trends that contribute to the alteration and elimination of natural habitats, which the directors called ". . . the single greatest threat to the continued well-being of healthy and diverse wildlife populations." Such measures would include land-use planning, attention to wildlife values affected by development projects, habitat restoration and

acquisition, and adequate funding for these and other programs.

The new policy statement also *advocates*:

- Management policies that minimize human interference with wildlife populations and their habitats.
- Educational programs to encourage "a sense of stewardship for the land and its wildlife."
- "Effective and efficient enforcement of protective laws and regulations."
- Encouragement of wildlife within urban areas by maintaining, as far as possible, natural ecosystems within and around our cities.
- Predator control directed toward specific problem animals.
- International cooperation "to ensure that wildlife is managed in all countries in a manner consistent with the positions herein advocated."

The new wildlife policy *opposes*:

- Removing wildlife from native habitats and introducing it into alien habitats wherever this introduction "may adversely affect any ecosystem," including the native wildlife it supports.
- Commercial exploitation of wildlife populations that "are more valuable for esthetic purposes, that should be protected in sanctuaries for purposes of scientific study, and in those cases where adequate biological knowledge is absent, or regulation is ineffective or absent."
- Capture by zoos or their agents of species that could be bred in captivity, or of threatened or endangered species, unless capture

is the only alternative to ensure the species survival.

- Removal of wildlife from their native habitats for sale or use as pets.

Alaska oil to Japan the truth at last

Jack B. Robertson, regional administrator of the Federal Energy Office, admitted in a recent interview that much of the Alaskan North Slope oil will go to Japan, just as conservationists charged last year during the congressional battle over the trans-Alaska pipeline. The Nixon Administration and the oil companies steadfastly denied the charge, claiming that all the Alaskan oil would be consumed in the United States.

Larry E. Moss, associate conservation director of the Sierra Club, charged after Robertson's comment that "This admission . . . confirms our version of the story presented to Congress last year. The oil interests and the Administration obviously misled Congress on this issue. And this admission that a great deal of Alaskan oil will be consumed in Japan raises questions about the energy shortage which we are supposedly facing during the next ten years. Why should we degrade sections of the



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Club elects new officers

Kent Gill was elected Sierra Club president last month at the annual organizational meeting of the Board of Directors, which was held in Claremont, California. Gill is a former mayor of Davis, California, where he now teaches school. He was elected to the board in 1973.

Also named to the executive committee were Vice President Claire Dedrick of Menlo Park, California; Secretary William Futrell of Tuscaloosa, Alabama; Treasurer Paul Swatek of Somerville, Massachusetts; and Fifth Officer Holway R. Jones of Eugene, Oregon.

Incumbent members re-elected to the board were Claire Dedrick and June Vivant. New members are Richard Cellarius of Olympia, Washington; Lowell Smith of Arlington, Virginia; and Theodore Snyder of Greensboro, South Carolina.

Annual awards bestowed

At the Sierra Club's annual banquet, held this year in Claremont, California, John Oakes, editorial-page editor of the *New York Times*, was presented with the Club's John Muir Award in recognition of "his outstanding leadership, in clearly and consistently calling for protection of the nation's environment. He has given the ideals of John Muir a voice in today's world that commands attention and respect and gives heart to environmentalists everywhere."

Other awards included: the William E. Colby Award to Alfred Forsyth of New York "for his extraordinary contributions

to conservation and the development of the Sierra Club in the eastern U.S. and Canada"; the Walter A. Starr Award to Lewis Clark of Alameda, California, for "maintaining continuity of service in the Club's best tradition"; and the Ansel Adams Award for Conservation Photography to Bruce Barnbaum of Los Angeles.

Ruth Bradley of Berkeley, California, was awarded a certificate of appreciation for chairing the Honors and Awards Committee. Special Achievement Awards went to George Shipway of Upland, California; Theodore Snyder of Greenville, South Carolina; Ann Brown of Stanford, California; and John Broeker of Minnetonka, Minnesota.

New Club land policy reassesses traditional view of property rights

The Sierra Club Board of Directors adopted a new policy on land ownership that calls for a "positive *new balance* between the rights of real property owners and those of the society as a whole." The entire policy follows verbatim:

"Land is a fundamental resource. Its wise use is essential for the well-being of present and future generations. The Sierra Club believes that ownership and use of private land must conform to this concept, and not to the view that land is simply a commodity. The Sierra Club recognizes that private ownership of land has always had a high value in American society. Private real property rights have never been absolute. These rights have always been tempered to reflect an equitable balance between the rights of the individual and those of his neighbors. This balance between the desires and responsibilities of the individual has resulted in certain accepted restrictions on the individual use of private property.

"The legal formulation of such restriction has evolved over time, based largely on the doctrine of nuisance and the overriding need to protect the health, safety, and welfare of the general public. Americans have traditionally supported justifiable restrictions on the use of private property, for the benefit of society as a whole.

"In recent decades, powerful new forces have developed within American society. These forces reflect changing human needs and economic conditions. Among the larger forces are rapid population growth, increased leisure time, growing affluence, vast expansion of urbanized areas, accelerated use of natural resources, and the increasing public desire for environmental quality. The Sierra Club believes it is imperative that the American people, in response to these forces, seek a positive *new balance* between the rights of real property owners and those of the society as a whole.

This balance must result from the inclusion of important new factors in the development of a more contemporary equity between the rights of the individual and those of society.

"Among these new factors are: (1) the concept that property owners are only short-term guardians of a valuable non-renewable resource; (2) the concept of land stewardship, that property owners have a responsibility to use land wisely, so that they may pass it on to future generations with minimum impairment; (3) the short- and long-term environmental and social impacts of proposed land uses, including their duration and reversibility, and future options remaining; (4) the recognition that much of the value imputed to real property is the result of public decisions and investments and of the personal expectations of the owner, over and above the specific resources and intrinsic qualities of the land itself; and (5) the short- and long-term public costs associated with private land development, particularly the substantial economic subsidies which the public may pay for the development of private land. This new balance between private and public rights in the ownership of real property must be developed within the constitutional framework of due process and equal protection. Standards and regulations must be administered through procedures that are fair, open and equitable to all concerned."

Club wins new trial in Tongass forest suit

The Sierra Club has won a new trial in its four-year battle to block a Forest Service timber sale giving Champion International a charter to clearcut over one million acres of the Tongass National Forest of Alaska within the next 50 years. The timber harvest, scheduled for western Admiralty Island, Stephens Passage, and Yakutat, prime habitat for the Alaska brown bear and nesting grounds for a major part of the remaining population of the American bald eagle, represents the single largest act of wilderness destruction ever proposed by the Forest Service.

Champion International has already negotiated agreements to sell its first 15 years' worth of pulp and timber production of Alaskan spruce and hemlock—the finest old-growth softwood available in the world—to Japan. In a 1971 trial before the District Court of Alaska, the court found that an "overwhelming commitment" of the forest had been made to timber-harvest objectives, but ruled against the Club on the grounds that the Forest Service had given due consideration to other multiple uses.

The district court decision against the Sierra Club was under appeal when the Club learned of an expert study commissioned by Champion International and

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entitled, "Implications for Wildlife of the 1968 Juneau Timber Sale." The report to Champion officials stated that the level of timber removal planned for southeast Alaska "is unrealistic by present-day standards of ecological acceptability." Field studies undertaken in preparing the report reveal the impending loss of critical scenic and ecological sites, shoreline timber, key deer winter range, wildlife habitat, estuary borders, eagle nests, and other non-timber resources.

The court of appeals agreed that the wildlife report should be considered by the trial court and remanded the case to the lower court so that it might entertain a motion of a new trial. The Club responded by moving for a new trial, and, in a ruling on May 6, the U.S. District Court in Alaska granted the motion. Sierra Club Legal Defense Fund attorney James Moorman expressed confidence that the Club would establish at the new trial, scheduled to begin

Continued on page 39

REGIONAL REPS REPORT

Northern Plains: Hearing Without Listening

UNDER THE DIRECTION and chairmanship of Montana's Lee Metcalf, the Senate Interior Subcommittee on Minerals, Materials and Fuels has just concluded a set of hearings on the Northern Great Plains Resources Program (NGPRP), coal impact statements, the BLM's Energy Minerals Allocation Recommendation System, and the impact of water and land uses on the agricultural and environmental interests of the Northern Plains coal development.

In his opening remarks at the first hearing on March 13, Senator Metcalf stated that, "the subcommittee is concerned about the possibility that the current energy situation will lead to premature decisions to proceed with large-scale coal leasing when the impacts of such action are not fully understood. We are particularly concerned that the issuance of leases would, for all practical purposes, commit the land, water, and air resources of the area to developments and new communities without adequate consideration of other energy alternatives and environmental, social, and economic impacts."

Government testimony from the participants in NGPRP, Interior, Agriculture and EPA expressed similar concern, but with an obvious lack of commitment by Agriculture and Interior to assess their own operations with an eye toward developing a responsible organization to cope with the multitude of decisions coming up. The Interior Department,

for example, has committed itself to several studies and ongoing programs without a clear picture of what each group is doing. Conflicts between the programs had not even been addressed, much less resolved, up to the time of the hearings.

The NGPRP, a field-oriented study, has the support of the states, citizens, and organizations in the Northern Plains, while BLM's Energy Minerals Allocation Recommendation System continues to be a Washington-based and somewhat secret study to determine lease sites, reclamation potential, and the rate at which federal coal should enter the market.

The material submitted for the record by BLM is strewn with generalizations, assurances, and statements, all so far as we can determine, unfounded in fact. But even more objectionable is the study's basic assumption that people and land are expendable in the Northern Plains. BLM has been quick to admonish us: "At this time, we need the courage to put aside needless fears, and to seek rational solutions which are now within our reach. If the changes involved would prove of vast benefit to the entire nation, then the national welfare should be the overriding and primary goal."

Among the government agencies, EPA led in stressing the importance of continuing the NGPRP for at least another year. It has "identified several areas where research must continue past the date of the June interim report in order to make a fair assessment of the impact of coal development on the Northern Great Plains, and we will continue our share of this research effort for as long as is necessary."

Among the Sierra Club witnesses at Senator Metcalf's hearings was Bruce Terris, attorney for the Club in its NEPA suit covering coal development in the plains states. He pointed out that of all the studies

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and programs, "only the NGPRP even purports to be considering coal development in the entire region, that it will be producing only an interim report in June of this year, that studies of numerous important subjects will be substantially incomplete, and that no regional plan will be produced. Nevertheless, the federal government will be making major decisions on the basis of this interim report; indeed, it is already making these decisions today before the report is even finished."

Field hearings were well attended in Wyoming and Montana in mid-April and great concern was expressed about all aspects of mining, water use, population increases and regional planning. Aside from the large utilities and a minority of ranchers who stand to profit a great deal from mining their lands, industry representation was poor. The coal companies took the lowest profile of all. At last report, it may be Senator Metcalf who will again be representing the interests and concerns of the area. He has addressed a letter to Secretary Rogers C. B. Morton indicating the overwhelming support NGPRP received at the hearings and his personal support for its continuation. Environmentalists are indeed indebted to the Senator for his leadership on mining legislation and regional programs, such as NGPRP, which are vital to the country's future.

Laney Hicks

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**NEW SIERRA CLUB
STAFF APPOINTMENTS**

Over the past few months, there have been a number of new staff appointments and departmental changes in the Club. For the membership's convenience, some of the most important of those additions and changes are listed below.

**CONSERVATION
DEPARTMENT**

LARRY E. MOSS, Southern California Representative since 1971, has now become the Associate Conservation Director in San Francisco.



Larry E. Moss

ROBERT R. CURRY has been appointed Director of the Sierra Club Research Program. Until recently he has been Professor of Environmental Geology at the University of Montana.

STEVEN ANDERSON, a Ph.D. candidate in economics at the University of California at Berkeley, will assist Robert R. Curry in the Sierra Club Research Program.

ROBERT RUTOMOELLER has been appointed Director of the Club's Solid Waste Study Project. He is former chairman of the San Francisco Bay Chapter.

CARL POPE, former Washington lobbyist for Zero Population Growth, is now National Air Quality Consultant to the Club in San Francisco.

DOUGLAS W. SCOTT, formerly the Coordinator of Special Projects for The Wilderness Society and News Editor of *The Living Wilderness*, has become the Sierra Club's Northwest Representative in Seattle.

MARY ANN ERIKSEN, of Claremont, California, has been appointed the Club's Southern California Representative in replacement of Larry E. Moss.

WILLIAM GINSBERG, formerly Counsel and Director of Research for the New York State Temporary Commission on the Powers of Local Government, is now Urban Consultant to the Sierra Club in New York City.

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WASHINGTON OFFICE

CHARLES M. CLUSEN, former Assistant Conservation Director, is now a representative of the Club in its Washington, D.C., office.

LEE LANE, who recently worked with the Coalition to Tax Pollution, has joined the Washington, D.C., staff.

RHEA COHEN has joined the Washington office as Assistant to the Director, Brock Evans. She has been an active volunteer in the Potomac Chapter.

LEGAL DEFENSE FUND

JOHN HOFFMAN has been appointed the new Executive Director of the Fund in place of James Moorman, who asked to be reassigned to working as a trial attorney for the Fund.

MICHAEL SHERWOOD has joined the Fund in replacement of Barry Fisher, who has resigned.

EARL BLAUNER, formerly an assistant counsel for the Bank of America, has become the Club's Legal Coordinator.

SIERRA CLUB BOOKS

JON BECKMANN, formerly with Barre Publishers of Barre, Massachusetts, has become the new Editor-in-Chief of Sierra Club Books, replacing John G. Mitchell.

FRED E. HILL, recently connected with Little, Brown, has been chosen as the Marketing Director for Sierra Club Books. Both he and Beckmann will be working out of the Club office in San Francisco.

**NEW BOOKS IN
THE WILLIAM E. COLBY
MEMORIAL LIBRARY**

In this issue we present a list of new book titles received by the Sierra Club Library that may be of interest to our membership. As time, space, and circumstance permit, we will offer similar lists in future issues of the Bulletin.

ENVIRONMENTAL TITLES

DAMMING THE WEST: RALPH NADER'S STUDY GROUP REPORT ON THE BUREAU OF RECLAMATION by Richard L. Berkman and W. Kip Viscusi (*Grossman Publishers, New York, 1973. 272 pp., biblio., \$7.95, \$2.50 paperback*)

DISASTER BY OIL. OIL SPILLS: WHY THEY HAPPEN, WHAT THEY DO, HOW WE CAN END THEM by Jeffrey Potter (*Macmillan, New York, 1973. 715 pp., biblio., illus., \$7.95*)

ECONOMICS OF ENVIRONMENTAL IMPROVEMENT by Donald T. Savage (*Houghton Mifflin, Boston, 1974. 210 pp., biblio.*)

ENERGY AND THE FUTURE by Allen L. Hammond (*American Association for the Advancement of Science, Washington, 1973. 184 pp., biblio., \$3.95 paperback*)

ENVIRONMENTAL POLLUTION AND MENTAL HEALTH by John S. Williams, Jr. with a foreword by Rene Dubos (*Information Resources Press, Washington, 1973. 136 pp., biblio.*)

ENVIRONMENTAL QUALITY AND WATER DEVELOPMENT edited by Charles R. Goldman, James McEvoy III and Peter J. Richerson (*W. H. Freeman, San Francisco, 1973. 510 pp., illus., biblio., \$17.50*)

INTERNATIONAL LAW OF POLLUTION by James Barros and Douglas M. Johnson (*Free Press, Macmillan, New York, 1974. 276 pp., biblio., \$14.95*). A collection of research materials pertaining to international environmental agreements and judicial decisions.

THE ENDURING GIANTS by Joseph H. Engbeck, Jr. (*University Extension, University of California, Berkeley, 1973. 120 pp., biblio.*) About the giant Sequoias, their natural history and the movement to protect them.

EXPLORING ENERGY CHOICES: A PRELIMINARY REPORT OF THE FORD FOUNDATION'S ENERGY POLICY PROJECT (*Energy Policy Project, P.O. Box 23212, Washington, D.C. 20024, 1974. 81 pp., biblio., \$7.75 soft cover*)

FOCAL POINTS: A GLOBAL FOOD STRATEGY by Georg Borgstrom (*Macmillan, New York, 1973. 320 pp., illus., biblio., \$8.95*)

HUMAN ECOLOGY: PROBLEMS AND SOLUTIONS by Paul R. Ehrlich, Ann H. Ehrlich and John P. Holdren (*W. H. Freeman, San Francisco, 1973. 304 pp., biblio., \$4.75 paperback*)

THE MONOPOLY MAKERS: RALPH NADER'S STUDY GROUP REPORT ON REGULATION AND COMPETITION edited by Mark J. Green (*Grossman Publishers, New York, 1973. 400 pp., biblio., \$8.95, \$3.50 paperback*)

NEPA IN THE COURTS: A LEGAL ANALYSIS OF THE NATIONAL ENVIRONMENTAL POLICY ACT by Frederick R. Anderson (*Resources for the Future, Washington, Distributed by Johns Hopkins University Press, Baltimore, 1973. 324 pp., \$6.95 paperback*)

NOISE POLLUTION by Donald F. Anthrop. (*Lexington Books, D. C. Heath & Company, Lexington, Mass., 1973. 159 pp., biblio., \$12.50*)

NORTH SEA OIL AND GAS: IMPLICATIONS FOR FUTURE UNITED STATES DEVELOPMENT by Irvin L. White (*University of Oklahoma Press, Norman, Okla., 1973. 176 pp., biblio., \$2.95*)

NUCLEAR THEFT: RISKS AND SAFEGUARDS by Mason Wilrick and Theodore B. Taylor. (*Ballinger, Cambridge, 1974. 255 pp., biblio., \$13.50, \$4.95 paperback*) A report to the Energy Policy Project of the Ford Foundation.

REPRESENTATIVE GOVERNMENT AND ENVIRONMENTAL MANAGEMENT by Edwin T. Haefele (*Resources for the Future, Washington, Distributed by Johns Hopkins University Press, Baltimore, 1973. 188 pp., \$8.95*)

THE SALMON: THEIR FIGHT FOR SURVIVAL by Anthony Netboy (*Houghton Mifflin, Boston, 1974. 613 pp., illus., biblio., \$15.00*)

THE TAKING ISSUE: AN ANALYSIS OF THE CONSTITUTIONAL LIMITS OF LAND-USE CONTROL. Prepared for the U.S. Council on Environmental Quality by Fred Bosselman (*U.S. Government Printing Office, Washington, D.C., 1973. 329 pp., biblio., \$2.35 paperback*)

THE TITANIC EFFECT: PLANNING FOR THE UNTHINKABLE by Kenneth E. F. Watt (*Sinauer Associates, Stamford, Conn., 1974. 268 pp., biblio., \$3.95 paperback*) How to stabilize the U.S. economy by recognizing ecological limits and planning intelligently.

TOWARD A STEADY-STATE ECONOMY edited by Herman E. Daly (*W. H. Freeman, San Francisco, 1973. 332 pp., biblio.*)

**MOUNTAINEERING
& OTHER SPECIAL TITLES**

DWELLERS AT THE SOURCE: SOUTHWESTERN INDIAN PHOTOGRAPHS OF A. C. VROMAN, 1895-1904 by William Webb and Robert A. Weinstein (*Grossman Publishers, New York, 1973. 213 pp., illus., \$25.00*)

THE VERTICAL WORLD OF YOSEMITE: A COLLECTION OF WRITINGS AND PHOTOGRAPHS ON ROCK CLIMBING IN YOSEMITE edited by Galen A. Rowell (*Wilderness Press, Berkeley, 1974. 207 pp., illus., \$16.85*)

SIERRA CLUB ORAL HISTORIES—TRANSCRIPTS OF INTERVIEWS WITH THE FOLLOWING:

- Francis P. Farquhar*: Sierra Club Mountaineer and Editor;
- Joel Hildebrand*: Sierra Club Leader and Ski Mountaineer;
- Bestor Robinson*: Thoughts on Conservation and the Sierra Club;
- James E. Rother*: The Sierra Club in the Early 1900's. Inquiries for additional copies of these transcripts should be directed to: Dr. Susan Schrepfer, 2296 Vineyard Road, Novato, California 94947.

1975 FOREIGN OUTINGS

The Sierra Club offers members a very wide variety of outings abroad, all far removed from It's-Tuesday-We-Must-Be-In-Antwerp. Next year's selection ranges from fiery desert to glacial ice, from walking in equatorial forests to walking in rural Britain, with adventures by boat, bicycle and scuba to fill the gaps. You may easily forget the day of the week, but you will never forget the places you visit.



New Zealand

- **601—A WINTER TRIP TO JAPAN**
January 25-February 22. Leader, Tony Look, 411 Los Ninos Way, Los Altos, CA 94022

Winter in Japan offers snow and ice festivals, superb powder snow and a countryside unmarred by tourists. We will spend several days at famous winter spas like Zao. Several activity choices include visiting small villages, resting in a Japanese inn with a warm bath, downhill skiing or a cross-country ski course, or the excitement of just being a spectator. To reduce the total cost, traveling together is required; cost is approximately \$1,650 round trip from San Francisco.

- **606—NEW ZEALAND BOATING ADVENTURE**
February 1-March 4. Leader, Ann Dwyer, 125 Upland Road, Kentfield, CA 94904

Ours will be a people to people trip of New Zealand as we travel by boat, car, train, plane and ferry, plus several kayak river runs (beginners welcome). We will go the extremes of both islands, the sub-tropical north of North Island to the far end of South Island including Stewart Island (not too far from Antarctica). Then off to Fiji for an interesting comparison; staying a few days on an outer island in a native thatched hut. Cost will be approximately \$900 plus air fare.

- **GALAPAGOS ISLANDS, ECUADOR**
(607) February 16-March 8 and (622) July 27-August 16. Coordinator, Howard Mitchell, 65 Hillside Ave., San Anselmo, CA 94960

The unusual and unique plant and animal life of these islands led Darwin to formulate his ORIGIN OF SPECIES. We shall see marine and land iguanas, tortoises and birds unique to each island. Excursions and overnight hikes are planned to volcanoes, rain forests and scenic spots. Not included in the trip itself, but interesting, would be a one week excursion to visit Machu-Picchu or Bora-Bora Indians and jungle in Colombia after the trip. Estimated cost \$1,100, plus air fare.

- **605—KENYA GAME VIEWING**
March 1-28. Leader, Bill Nordstrom, 2775 SW Sherwood Dr., Portland, OR 97201

This fine itinerary, starting and ending in Nairobi, will include visits to the game-rich areas of Amboseli and the Mara Masai, the Rift Valley lakes including Lake Baringo, the Cherangani Hills, Mount Elgon, the Samburu country, and the foothills of Mount Kenya. A quick trip to Tanzania while near its border may be possible subject to conditions. Cost approximately \$1,400, plus air fare.

- **608—JAMAICA BASE CAMP**
March 6-20. Leader, Dick Barton, 616 Walton Ave., Mamaroneck, N.Y. 10543

Spend two weeks in rural Jamaica, camped on the north shore far removed from large cities. The nearest tiny village is two miles away with friendly villagers still living much as their ancestors. We will relax on the beach, swim the warm Caribbean waters or explore. Many special excursions are planned: to Dunn's River Falls, rafting on the Rio Grande, visiting Brimmer Hall Plantation. Tents and camping equipment are provided. Cost is about \$270, plus air fare.

- **600—MALAYSIA DUGOUT/KNAPSACK**
April 1-May 1. Leader, Tris Coffin, 500 Tamalpais Ave., Mill Valley, CA 94941

Bangkok to Singapore, a month on the Malaysian Peninsula, and offshore islands in the South China Sea. After riding a classical Siamese train, we change to dugout canoes, then knapsack the humid trails of a hardwood forest and climb the peninsula's highest peak (7,100 feet). This will require good physical condition and humor. Additional attractions: fine birding, sighting large animals, snorkeling, hammock sleeping. Price approximately \$900, plus air fare.

- **612—TRISULI/GATLANG TREK, NEPAL**
April 5-May 4. Leader, Al Schmitz, 2901 Holyrood Dr., Oakland, CA 94611

Two weeks of moderate hiking with a naturalist north of Kathmandu in the Trisuli and Gatlang valleys, separated by a 12,500-foot pass. The route includes many primitive and seldom-visited Thangam villages. Rhododendrons are in full bloom and the trek dates cover the spring bird migration. See SCB October, 1970. We will also spend four days in tented camps at Tiger Tops. Cost, from Kathmandu, about \$1,200.

- **610—ARUN VALLEY TREK, NEPAL**
April 19-May 18. Leader, Peter von Mertens, 2 Sacramento St., #3, Cambridge, MA 02138

The Arun Valley lies at 7,500 feet in Eastern Nepal, nestled between the massifs of Makalu and Kanchenjunga. The valley is geographically older than the Himalayas and its many life forms, from snow leopards and rhododendrons to peacocks and sal trees, have maintained their identity, isolated in the valley. This is sparsely populated, deeply forested, country. A 25-day trek, which will have its own naturalist. Cost, from Kathmandu, about \$1,400.

- **616 A & B—SCOTLAND**
- **617 A & B—ENGLAND**
- **618—ARCTIC CIRCLE**
Late May-June. Leader (Scotland—A & Arctic Circle), John Ricker, 2950 N. 7th St., Phoenix, AZ 85014.

Two weeks walking in the Highlands and far north of Scotland, and two weeks walking along the coast of Devon and Cornwall in England and Wales can be combined or either can be followed by three weeks hiking north of the Arctic Circle visiting the Lofoten Islands of Norway, the North Cape for midsummer day, Lapland and Sweden. Travel will be by air, train, mini bus and boat; accommodations will be at inns, hostels and farmhouses. Dates, itineraries, additional leaders and prices will be available in the fall of '74. A \$50 deposit is required for each trip. Coordinator, Wayne Woodruff, P.O. Box 614, Livermore, CA 94550.

Write for the Trip Supplement for the specific outing which interests you, to Sierra Club Outings, 1050 Mills Tower, San Francisco, CA 94104. It will be sent as soon as it becomes available, which could be as long as several months from now. Send 50¢ for each supplement requested **beyond the first five.**

• **625—DOMINICAN REPUBLIC/ECUADOR**
June 18-July 19. Leader, H. Stewart Kimball,
19 Owl Hill Rd., Orinda, CA 94563

A 30-day moderately strenuous hiking-camping trip in traditional Sierra Club form in the mountains and semitropical forests of the island of Hispaniola in the Dominican Republic where we climb the highest peak (10,000 feet) and then to the highlands of Ecuador (10,000 to 13,000 feet). In Ecuador three areas will be visited, the lakes north of Quito and the Indian pueblo of Otavalo, the valleys around Cotopaxi the highest active volcano in the world, and a three day hike along the Inca trail south of Quito. Intervals between hiking portions to visit and relax in the major cities. Cost not yet available.

• **620—COLOMBIA-PERU/**
ARCHEOLOGICAL

June 21-July 29. Leader, Howard Mitchell,
65 Hillside Ave., San Anselmo, CA 94960

In five weeks we will hike, travel by bus, boat and dugout canoe to explore both famous and little known archeological sites, camping on Pacific beaches, mountain tops and in villages. We will visit Pueblito, San Augustine, Toro Muerte petroglyphs, Sillustani Tower, Tiahuanaco, Cuzco, Pisac, Ollantaytambo. We will hike to Machu-Picchu, fly over the famous Nazca lines, visit old kingdom sites in the desert, see the vicuna refuge and the floating reed islands and walk in remote Indian villages. Cost about \$1,100, plus air fare.

• **621—KENYA: NORTHERN FRONTIER**
July 19-August 15. Leader, Ross Miles,
18 Farm Rd., Los Altos, CA 94022

Like a big sweep through Kenya, this itinerary stretches from the Tanzania border to Lake Rudolf and includes delightful camps in the Mararal area and at Paradise Lake in Marsabit National Park. It will offer a great variety of experiences through the variety of scenery, meeting various kinds of natives and seeing unusual game. Cost approximately \$1,400 plus air fare.

• **615—ISRAEL AND THE SINAI**
Three or four weeks in July/August. Leader,
Ron Eber, 930 Darien Way, San Francisco,
CA 94127

This unusual trip will emphasize Israel's nature reserves. Highlights will include the headwaters of the Jordan at Tel Dan, the Sea of Galilee, old and new forests on Mt. Carmel, the Judean Desert, the Dead Sea with some travel in the Negev. Diving in the Red Sea will be available. We will visit the sites of Meggido, Jericho and other ancient cities. Easy hiking with travel by bus; 4-wheel drive vehicles in the Sinai. Cost is not yet available.

• **630—WALKING IN NORWAY**
Late August. Leader, Raleigh Ellisen,
1431 Milvia St., Berkeley, CA 94709

The rolling Hardanger Plateau and the rugged Jotunheimen—"Home of the Giants"—will be the site of this three-week walking trip in Norway. Hiking days will be long and most nights will be spent in huts where we can meet and share mountain experiences

with friendly Norwegian hikers. From Bergen we go by train to Finse, hike around the Hardanger Glacier, and then head north to the Jotunheimen where our trip climaxes with a crossing of the Smorstabreen Glacier. Cost will be about \$550 from Bergen.

• **632—RWANDA AND ZAIRE, EAST AFRICA**

September 7-October 3. Leader, Al Schmitz,
2901 Holyrood Dr., Oakland, CA 94611

Suggested as a fine outing possibility by George B. Schaller, this outing will be scouted this fall. There are plans to include a visit to a gorilla research station, walks and climbs in the delightful volcano country straddling the border of Rwanda and Zaire (formerly the Congo Republic), and a hike into the Ruwenzori Mountains from the Zaire side. Trip cost is not yet available.

• **635—ANNAPURNA CIRCLE TREK, NEPAL**

September 27-October 30. Contact Doug
McClellan, 88 Ridge Rd., Fairfax, CA 94930

We will circle the massifs of Annapurna Himal, Lamjung Himal, and Ganesh Himal. This strenuous 25-day trek goes north from Pokhara up the river gorge of the Kali Gandaki at 10,000 feet, lying between the peaks of Dhaulagiri and Annapurna Himal. When north of Annapurna we turn east to reach Mukthinath, cross Nisango La at 15,000 feet and return to Pokhara through the beautiful Marsyandi Valley. Should snows block the passes above Mukthinath, we will visit the French Base Camp, with optional strenuous day hikes. Cost about \$1,300 from Kathmandu.

• **640—KANCHENJUNGA TREK, NEPAL**
October 25-November 30. Leader, Doug
McClellan, 88 Ridge Rd., Fairfax, CA 94930

Kanchenjunga lies in the extreme northeast corner of Nepal and forms, together with Everest, the long ridges encircling the steep Arun Valley. This strenuous 30-day trek will explore dense forests of cedar, spruce, hemlock and bamboo and visit villages lying above 8,000 feet. These ridges form a north-south barrier and so have a diversified flora and fauna, from snow leopards and brown bear to sal trees. The ridges above 14,000 feet offer magnificent views. Cost about \$1,400 from Kathmandu.

• **647—ANGEL FALLS, VENEZUELA**
November 8-21. Leader, Ted Snyder,
2 Whitsett Street, Greenville, S.C. 29601

The Gran Sabana of Venezuela is a territory of broad grass plains punctuated by spectacular buttes with sheer walls of pink roaraima sandstone. From one of these, Auyan-Tepu, plunges the world's highest waterfall, Angel Falls. On arrival at the home of "Jungle Rudy" Truffino, we will divide into two sections. While one group travels to the falls in dugout canoes, the other will take day hikes. On return of the first section, their rolls will be reversed. Round trip cost from Miami, Florida, approximately \$1,000.

• **603—DARJEELING/SIKKIM/BHUTAN**
Mid-November to mid-December. Leader,
Al Schmitz, 2901 Holyrood Dr., Oakland,
CA 94611

Starting with a delightful 10-day trek along one of the great ridges near Darjeeling and in view of the Kanchenjunga range, the outing will include a visit by jeep to Gangtok in Sikkim and, we hope, a visit of about a week to Bhutan, long closed to tourist entry. The time of visit is the best for mountain viewing; the air should be cool and crisp. The trek is one of the easiest. Darjeeling and Kalimpong will be much enjoyed at this time of year. Trip cost is not yet determined.

MEXICAN BOAT TRIPS

• **324—LA PAZ BOAT TRIP, MEXICO**
February 3-14. Leader, Jim Dodds, 2013
Skycrest Dr., #1, Walnut Creek, CA 94595

Spend February days in shirtsleeves on remote beaches in the Sea of Cortez. Our transport will be via Grand Banks cruisers, eight to the boat, with Mexican crews; we will camp and eat on the beaches. Layover days offer an opportunity for swimming, fishing, beach-combing, snorkeling, exploring, practicing Spanish. Cost will be about \$500 from La Paz.

• **325—SEA OF CORTEZ LEISURE TRIP**
April 18-27. Leader, Monroe Agee, 13750
Rivulet Rd., San Jose, CA 95124

This cruise is an adventure in sea life, designed to meet the requirements of both the physically active and lazier ones. We start at San Felipe, on the west side of Baja California and continue along the coast to La Paz. Along the way we will visit exotic islands and observe the abundant sea life of whales, dolphins, frigate birds, boobies and pelicans as they go about their undisturbed way. Cost will be approximately \$575 round trip from San Diego.

• **PUERTO VALLARTA BOAT TRIP**
(326) May 5-17 and (328) November 3-15.
Leader, Ellis Rother, 903 Sunset Dr., San
Carlos, CA 94070

After two full days for shopping in Puerto Vallarta, Mexico, we will embark on native fishing pangas to float along a hundred tropical miles of sparkling ocean, teeming with bird and fish life. We sleep and eat on vast moonlit beaches and visit remote fishing villages. Ten days of escape—hiking, swimming, surfing, snorkeling, or just lazing away the time. For the active or inactive, within the abilities of any healthy person. Cost will be about \$500 from Los Angeles, about \$460 from San Antonio and about \$350 from Puerto Vallarta.

FOREIGN UNDERWATER

• **680—GALAPAGOS ISLANDS, ECUADOR**
April 5-26. Leader, Ann Gladwin, 260-C
Calle Marguerita, Los Gatos, CA 95030

Pioneered in the summer of 1973, this trip adds a new dimension to the Galapagos experience: a look into a marine environment as rich and unusual as the islands themselves. Until now few scientists and almost no non-professionals have been able to observe the fish and mammals, many endemic, that abound here. Our specially equipped ketch makes possible both land and scuba exploration. April is the ideal time. For certified divers. Cost is about \$1,450, plus air fare.

• **683—GRAND CAYMAN, B.W.I.**
June 15-26. Leader, Kent Schellenger,
248-C Calle Marguerita, Los Gatos, CA 95030

For the third summer we return to our small resort on the edge of the Caribbean. Beginning and certified scuba divers will find the shallow reef just offshore a beautiful place to learn and refresh diving skills. While novices earn their certification, veterans can visit the awe-inspiring "Wall of Cayman" that has helped make Cayman a mecca for divers. Leaders are NAUI instructors; one is a marine biologist. Cost is about \$570, plus air fare; \$390 for non-divers.

• **685—GRAND CAYMAN/REEF BIOLOGY**
June 27-July 8. Leader, Steve Webster,
Box 293, La Honda, CA 94020

For certified divers, this trip offers a college level course in marine biology for credit, if desired. Trip members

may take part in any or all of the illustrated lectures and underwater field trips, or just enjoy unsurpassed diving on the lovely and prolific "Little Dropoff" or the deeper reef with its arches, tunnels, and vertical face. Trip leader is a Ph.D. marine biologist. Cost about \$570, plus air fare; \$390 for non-divers.

- **686—GALAPAGOS ISLANDS, ECUADOR**
August 16-September 6. Leader, Lou Barr,
Box 361, Auke Bay, Alaska 99821

Since the days of Spanish explorers, the fascination of the Galapagos has lured scientists and photographers. On land colorful birds and giant tortoises are well known. Under the sea, unusual fish, huge mantas, playful sea lions, and the amazing marine iguanas are for

the diver only to see. Trip leader is a marine biologist with research experience in the Galapagos. For certified divers; cost is about \$1,450, plus air fare.

DOMESTIC UNDERWATER

- **316—VIRGIN ISLANDS**
July 10-21. Leader, Bob Sextro, 260-C
Calle Marguerita, Los Gatos, CA 95030

Learn-to-scuba-dive is the theme of this Caribbean vacation, but snorkelers and certified divers are welcome too. Beginning divers will enjoy a rather strenuous but rewarding course leading to certification. All of us will see colorful tropical fish, corals and sponge, and a sunken ship. We stay alone in a small hotel over-

looking the sea, and prepare our own meals. Approximate cost is \$500, plus air fare; an additional \$175 for use of scuba.

- **317—VIRGIN ISLANDS**
July 22-August 2. Leader, Ann Gladwin,
260-C Calle Marguerita, Los Gatos,
CA 95030

Introduced in the summer of 1973, this trip for snorkelers and certified divers (no scuba course) offers leisure or activity as preferred, with an opportunity to see both U.S. and British islands on land as well as undersea. As on all trips, a marine biologist will help us see and understand much we might otherwise miss. Approximate cost is \$500, plus air fare; an additional \$175 for scuba.

You Can Still Enjoy the Wilderness This Summer!

1974 TRIPS

As this month's issue goes to the printer more than 80% of the places on all 1974 Wilderness Outings have been reserved, and many trips are completely filled.

But hundreds of places are still open on other outings, and with prompt action you can get one for yourself or for your family. Each of the trips listed below has several vacancies available for members who want to have a wilderness experience this year.



Breakfast, Sierra High-Light

Trip Number	Date	Res. Deposit	Total Cost	Leader	
BASE CAMPS					
40	Little Squam Lake, New Hampshire	Aug. 10-17	25	85	Richard Dudley
42	Iron Mountain Alpine Camp, Inyo Forest, Sierra	Aug. 18-30	25	175	Bob Miller
43	Lake Elaine, Beartooth Primitive Area, Montana	Aug. 18-30	25	205	Steve Thompson
44	Death Valley Christmas Camp, California	Dec. 21-30	25	145	Ray Des Camp
BURRO					
63	Tully Hole, Inyo Forest, Sierra	July 21-30	25	130	Ron Gilmer
64	Humphreys Basin, Sierra	Aug. 1-10	25	130	Jack McClure
67	Army Pass to Cottonwood Pass, Sierra	Aug. 18-31	25	190	Ted Bradfield
FAMILY CANOE					
128	Klamath River Teen Trip, Northern California	Aug. 18-24	25	*	Louise Gulick

*Total cost \$350 for two parents and one child; \$80 each additional child.

FAMILY KNAPSACK

134	Susquehannock Trail System, Pennsylvania	Aug. 17-24	25	**	Nan & Dave Porterfield
136	Cloud Canyon, Kings Canyon Park, Sierra	Aug. 24-Sept. 2	25	***	Carol & Howard Dienger

**Total cost \$270 for two parents and one child; \$55 each additional child.

***Total cost \$250 for two parents and one child; \$75 each additional child.

1974 FOREIGN TRIPS*

352	Rural Japan	July 13-Aug. 16	50	1215	Carl Denison
358	La Belle France, South Central Alps	Aug. 27-Sept. 11	50	495	de Tarnowsky & Clark
359	East Africa, Kenya's Mountains and Coast	Sept. 7-Oct. 2	50	1450	Al Schmitz
360	Rural Japan	Sept. 14-Oct. 18	50	1215	Tony Look
363	Nepal, Jumla Trek	Sept. 25-Oct. 29	50	1300	Harry Reeves
378	Africa, Central Sahara Camel Expedition	Nov. 25-Dec. 18	50	1225	Al Schmitz
380	Guatemala, Bicycle and Hiking	Dec. 13-Jan. 5	50	640	Harry Finch

*Per person deposit; total cost does not include air fare.

HAWAII*

141	Hawaii, The Big Island	July 15-24	25	450	Walt Weyman
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*Per person deposit; includes air fare to Hawaii. Children under 12 \$355; Hawaiian residents \$170. Changed from Educational; price reduced from \$570.

HIGH-LIGHT

157	Minarets-Ritter-Banner, Sierra	Sept. 2-15	25	285	John Edginton
158	Rush Creek-McGee Pass, Sierra	Sept. 16-26	25	240	George Hall
159	Pine Valley Mountains, Utah	Sept. 21-28	25	185	Allen Malmquist
160	Lava Fields, Sonora, Mexico	Dec. 27-Jan. 1	25	110	John Ricker

KNAPSACK

212	Mount Solomons, Kings Canyon Park, Sierra	Aug. 17-24	25	70	Michael Sakarias
137	Buena Vista Crest Leisure, Yosemite Park, Sierra*	Aug. 24-31	25	75	Marion & Bob Berges
221	Snowbird Creek, Nantahala Forest, North Carolina	Sept. 29-Oct. 5	25	100	Pete Bengston
222	Gila Wilderness, New Mexico	Sept. 29-Oct. 4	25	90	Mike Kelley
223	Little Colorado River, Arizona	Oct. 6-12	25	110	Nancy Wahl
224	North Bass Trail, Grand Canyon, Arizona	Oct. 12-18	25	80	Jim DeVeny
226	Boucher Trail-Bright Angel, Grand Canyon, Arizona	Dec. 27-Jan. 1	25	75	Lester Olin

*New leisure trip.

MENTALLY RETARDED ADULT KNAPSACK

248	Mt. Zirkel Wilderness, Colorado	Aug. 4-9	25	90	Joie Hartman
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TRAIL MAINTENANCE PROJECTS

276	Storm Creek, Clearwater Forest, Idaho	Aug. 19-29	25	50	Don Mitchell
278	Lightning Creek, North Cascades, Washington	Aug. 2-12	25	50	Bill Reeve

CLEAN-UP PROJECTS

289	High Sierra National Forest Knapsack, Sierra	July 10-20	25	50	Malcolm Smith
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UNDERWATER EXPLORATION*

383	Virgin Islands	July 11-22	50	485†	Kent Schellenger
356	American and Western Samoa	Aug. 19-Sept. 2	50	640	Ann Gladwin

*Per person deposit. †\$160 additional fee for scuba divers.

RIVER RAFT

259	Middle Fork Salmon River, Idaho	July 10-15	25	345	George Roush
262	Middle Fork Salmon River, Idaho	Aug. 1-6	25	345	Hunter Owens
266	"River of No Return," Main Salmon, Idaho	Aug. 16-21	25	315	Tris Coffin

CANOE KAYAK

76	Willamette River, Oregon	July 14-21	25	150	Frankie Strathairn
77	Petawawa River, Ontario, Canada	July 20-27	25	135	D. Brooks & G. R. Roberts
78	Kipawa Reserve Exploration, Quebec, Canada	Aug. 4-12	25	130	Dick Williams
81	Rio Grande Canyons, Texas	Oct. 19-26	25	95	John Baker
82	Boquillas Canyon Canoe-Knapsack, Texas	Nov. 24-30	25	80	Don Walden

BOAT TRIPS

373	Puerto Vallarta, Mexico	Nov. 4-16	50*	**	Ellis Rother
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*Per person deposit.

**\$495 from Los Angeles, \$455 from San Antonio, \$350 members joining in Puerto Vallarta.

RESERVATIONS ON SIERRA CLUB TRIPS

Reservation Information

Our trips are open to Sierra Club members, applicants for membership and members of organizations granting reciprocal privileges. Children under 12 need not be members. You may apply for membership by including the membership application and fee with your outing application.

Reservations are generally accepted in order received; however, some trips require the leader's acceptance of each applicant. If this requirement applies, it will be noted in the BULLETIN write-up or in the trip supplement.

One reservation form may be used by an individual or by a family to apply for each trip. Here "family" means parent(s) and their children under 21. Other family members must submit separate applications and deposits.

Mail to the Sierra Club Outing Department address listed below. Please do not include with dues or book orders.

Payments, Cancellations, Refunds and Transfers

Generally, everyone pays the same price for a trip. Children are not entitled to a reduced price except on special family outings as noted in this BULLETIN. If you must cancel a confirmed reservation or a space on the waiting list, please let us hear from you promptly.

NORTH-AMERICAN TRIPS

Send in \$25 with each family or individual reservation application. This reservation deposit is applied to the total trip price and with few exceptions is non-refundable. Some trips may require a larger deposit; check the BULLETIN for this information.

Balance of the trip price is due 90 days before the beginning of each trip. You will be billed before the due date. If payment is not made on time, your reservation may be cancelled.

Refunds following cancellation of a confirmed reservation (less the non-refundable deposit) are made as follows:

100% up to 60 days before the trip begins; and 90% during the 60-day period before the trip begins. Refunds are based on the date notice of cancellation is received by the outing office. No refund will be made if you leave during the trip.

If you have a confirmed reservation and wish to transfer to another trip, a \$25 transfer fee will be charged unless your reservation application is still pending the leader's acceptance or if you are on a waiting list.

FOREIGN TRIPS

There are no "family" reservations on foreign outings, so send in \$50 per person with your reservation application. This reservation deposit is applied to the total price and with few exceptions is non-refundable. An additional payment of \$200 or more is due 6 months before the trip begins.

Balance of the trip price is due 90 days prior to trip departure. You will be billed before the due date. If payment is not made on time, your reservation may be cancelled.

Refunds following cancellation of a confirmed reservation (less the \$50 per person non-refundable reservation deposit) are made, as follows: 100% of any payment up to 6 months before the trip begins or if you cancel within 6 months of trip departure and the vacancy created is filled from the waiting list. If no replacement is available, costs and overhead will be deducted from the total payment before refund is made. Refunds are based on the date notice of cancellation is received by the outing office.

Transfer of a confirmed reservation from a foreign trip is treated as a cancellation. Refunds are made under the cancellation policy stated above.

FULL REFUND

Refund of the reservation deposit and all payments only will be made under the following conditions: 1) if a vacancy does not occur or if a person cancels off the waiting list; 2) if a reservation is not accepted or 3) if the Sierra Club must cancel a trip.

MAIL TO: SIERRA CLUB OUTING DEPT. — P.O. BOX 7959 RINCON ANNEX, SAN FRANCISCO, CA. 94120

MEMBERSHIP NO. (CHECK BULLETIN LABEL)			Trip number	Trip name	Departure date
Print Name:	FIRST	LAST	DEPOSIT ENCLOSED	(Leave blank)	No. of reservations requested
	Mr.		\$		
	Mrs.				
	Ms.				
Mailing Address			If you have already received the trip supplement, please check. <input type="checkbox"/>		
City	State	Zip Code	Residence telephone (area code)	Business telephone (area code)	
PLEASE PRINT <u>YOUR</u> NAME AND THE NAMES OF ALL FAMILY MEMBERS GOING ON THIS OUTING			Age	Relationship	Membership No.
1.					How many national trips (not chapter) have you gone on?
2.					
3.					
4.					
5.					
6.					

COAST (Continued)

farms, crew bases, and refineries — would have a catastrophic effect on our endangered wetlands, on air and water quality, on esthetic and recreational uses of the coasts, and on the very economic basis of coastal communities.

In the face of such pressures, the administration has consistently placed the burden of controlling these on-shore impacts directly on the states. However, it has also refused to fund fully the Coastal Zone Management Act to provide that opportunity. For over a year it withheld all funds from the program. Only late last fall, under intense pressure from Congress, did the administration release any money. And this amount, \$12 million, is woefully inadequate to the task.

Aggressive public cooperation and participation will be required at all stages in the development and implementation processes. There are many crucial stages in the program development where the public must interact. For example, selection of the agency charged to develop, coordinate, and implement state management programs may determine the entire thrust of the program itself. Strong public input is also essential to ensure the development of desirable goals or objectives for the state programs. Without the participation of environmental organizations at this stage, the more traditional forces of other special-interest groups will sidetrack the main goals of the planning effort.

The development and administration of a management program will require competent scientific and technical advice. For example, a strong effort must be made to identify the problems and conflicts, as well as the re-

sources, uses, and benefits of each state's coastal zone. Without proper identification, the state plans would not be comprehensive and would not be adequate to deal with all potential conflicts.

The process should include a well-organized research program. The management program itself must be based on the best available knowledge, but should also recognize the gaps and weaknesses in that knowledge. The assistance and scrutiny of concerned citizens will be essential to ensure a soundly based program.

In all cases, the place for most effective public input is at the state level during the management-program development process. It is here that the choice of boundaries of the coastal zone, of permissible and priority uses, and of geographic areas of particular

concern can best be influenced. Because the federal approval will be based on the adequacy of the process, rather than on specific substantive decisions, a delay of public involvement until this stage would be costly.

We can certainly expect confrontations to occur during the implementation of the act. The traditional conflicts and rivalries that already occur in a separate but frequent fashion, will be combined into one large battle. But we cannot let this discourage the states from the legislative and administrative tasks that lie ahead. There is a special importance tied to the success or failure of this act. We are all looking to it to lead the way and prove that we can come up with methods to control the uses of land for the benefit of all citizens, not just for those seeking a quick profit.

SPREAD (Continued)

Dispersed City. The urban fringe is characterized by low-density uses of land such as drive-in theaters, golf courses, and junk yards. It often seems that a Sunday drive to the country never succeeds in getting away from the influence of Dispersed City. The futility of trying to buy a home near the "country" would seem to be obvious, yet this remains the aim of many people.

There are fewer freeways, roads, and parking facilities for the government to construct and maintain in Compact City, and utility lines are shorter. These items should make a sizable difference in taxes, but in fact one of the advantages of living in the suburbs is lower taxes. The suburbanite is frequently able to escape the cost of the programs needed by the disadvantaged in the central city, even though his substantial income originated in the economic productivity of the city. The middle and upper classes leave the inner city to the poor when they abandon it themselves, and leave as well a tax burden on those who cannot escape and who cannot pay taxes to support needed programs, some even necessary to accommodate the commuting suburbanites. No wonder cities are in a financial crisis! If costs were shared equitably, a very different pattern of taxation would appear, and lower taxes would provide a substantial incentive for high-density residential developments.

Even so, in the development of a

given piece of land the cost of dwellings built at high density will be significantly less than at low density. The price of land is increasing much faster than construction costs, to the point where the cost of land, expressed as a percentage of the purchase price of a new home, has doubled since World War II. This has been a major factor in the decision of developers to build condominiums, and the rapid appreciation in their resale values is the first substantial indication that an era of higher density may finally be replacing the decades since World War II, when the detached single-family home was the rule for all who could afford it.

We have tried to have the economic advantages of the city as well as the pastoral beauty and quiet of the country, and in the process we have achieved neither urban nor rural values. Instead, we have created in Dispersed City a watered-down version of both. A truly urban city, with high density and diversity, can be enjoyable, interesting, convenient, and economical, especially if it is surrounded by truly rural countryside. In addition, high density designs conserve both resources and energy. As shortages continue to become a way of life it is likely that we will begin to move away from our traditional low-density subdivisions. Those that already exist will probably be with us for some time, but it makes no sense to continue to provide more when all indicators are that they will become less and less appropriate for the future.

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NEWS VIEW (Continued)

on August 12, 1974, that the Forest Service is violating the Multiple Use-Sustained Yield Act.

Board affirms guidelines on air pollution control

Responding to massive industry attacks on the basic premises of the 1970 Clean Air Act Amendments now being reassessed by Congress, the Sierra Club directors affirmed nine guidelines for air-pollution-control legislation.

The Club guidelines are summarized as follows:

(1) The primary, public health standards established by the Clean Air Act should be achieved at the earliest possible date.

(2) Where scientific evidence exists that present ambient air standards are inadequate to fully protect the public health and welfare against possible damage from air pollution, or where it appears that standards for additional pollutants, additional time periods, or use of new measuring techniques would more fully protect the public health and welfare, the Environmental Protection Agency should promptly promulgate such new standards, time periods or measuring techniques (particularly new standards for suspended sulphates, fine particulates, and allowances for synergistic effects, and re-assessment of whether present nitrogen oxides standards are stringent enough).

(3) The Sierra Club urges a massive expansion of federal air-pollution research, particularly increased monitoring of air-pollution levels in both polluted and clean-air regions.

(4) The Club opposes auto industry efforts to extend statutory deadlines for achieving emission standards for carbon monoxide and hydrocarbons, and other efforts to weaken nitrogen oxides standards.

(5) The Club reaffirms its support for phasing out leaded gasoline.

(6) Cities unable to achieve the 1977 deadline for auto pollution clean-up should be given year-by-year extensions, but only after they have implemented all feasible transportation controls, and should be required to channel future growth into non-auto transit.

(7) The Club opposes efforts to roll back emission standards for stationary sources except for some short-term deadline extensions for a few specific sources in a manner

fully protecting the primary air standards and ensuring expeditious achievement of secondary standards. Coal conversions violating any air-quality standards should not be authorized.

(8) Not only should all pollution control agencies recognize that repeated industry attempts to delay implementation of new emission-control technology are irresponsible and that firm adherence to statutory and regulatory deadlines and standards have proved necessary for obtaining installation of necessary control equipment, but also carefully drafted emission charges should be imposed to provide additional incentives for the development of new control techniques.

(9) The Sierra Club urges EPA to adopt effective uniform and comprehensive regulations to protect clean-air regions against significant deterioration of air quality. Pollution must be controlled at the source, not by the dispersal of sources. Such a policy will help spur new and innovative pollution-control techniques and processes.

Overton Park Victory—no highway will be built

Environmentalists in Tennessee won the last round in what has become a classic highway-parkland confrontation: the five-year battle to bar an interstate freeway through Memphis, Tennessee's Overton Park.

An appeals court ruled that the burden of choosing alternate routes does not lie with the U.S. Transportation Secretary, as was argued by the state transportation department, and thus left standing the secretary's 1973 decision that the highway cannot be built through the park.

In 1969, the U.S. Transportation Secretary had approved the routing of a six-to-eight-lane extension of I-40 through Memphis—a planning decision that called for bisecting the 342-acre urban park and decimating its mature oak-hickory forest. In public hearings that year, the Interior Department warned that "Regardless of what type of surface design is followed, there won't be much in the way of a wooded park left in Overton Park."

Citizens to Preserve Overton Park, the Sierra Club, and others began legal proceedings that took them through three trials at the district-court level, two hearings at the appellate level, and one before the Supreme Court.

Conservationists based their case on Section 4F of the 1966 Department of Transportation Act, which says, "The Secretary of Transportation shall not approve any program or project which requires the use of any publicly owned land from a public park" unless there is no feasible and prudent alternative.

The Supreme Court, ruling that "protection of parkland was to be given paramount

importance," ordered the district court to review the administrative record to determine if the secretary had considered alternate routes.

The district court held that alternatives had not been considered, and set aside the 1969 approval. The case was remanded to the secretary, who held new hearings and decided in January, 1973, to deny the Tennessee highway proposal.

Board affirms Club stand on Grand Canyon issue

At the May board meeting, Sierra Club directors reaffirmed the Club's policy that the Grand Canyon National Park should be expanded to include *all* public lands of park quality in the Grand Canyon region. It proposed the following solution for the problem of providing lands for the Havasupai Indians, who have long dwelt in the region:

"To provide an expanded land base for the Havasupai Tribe," the directors said, "the Sierra Club supports the use of federal funds for the acquisition of private ranch lands of greater economic value to the Havasupai Indians than the existing permit holdings they now exercise within Grand Canyon National Park and Kaibab National Forest.

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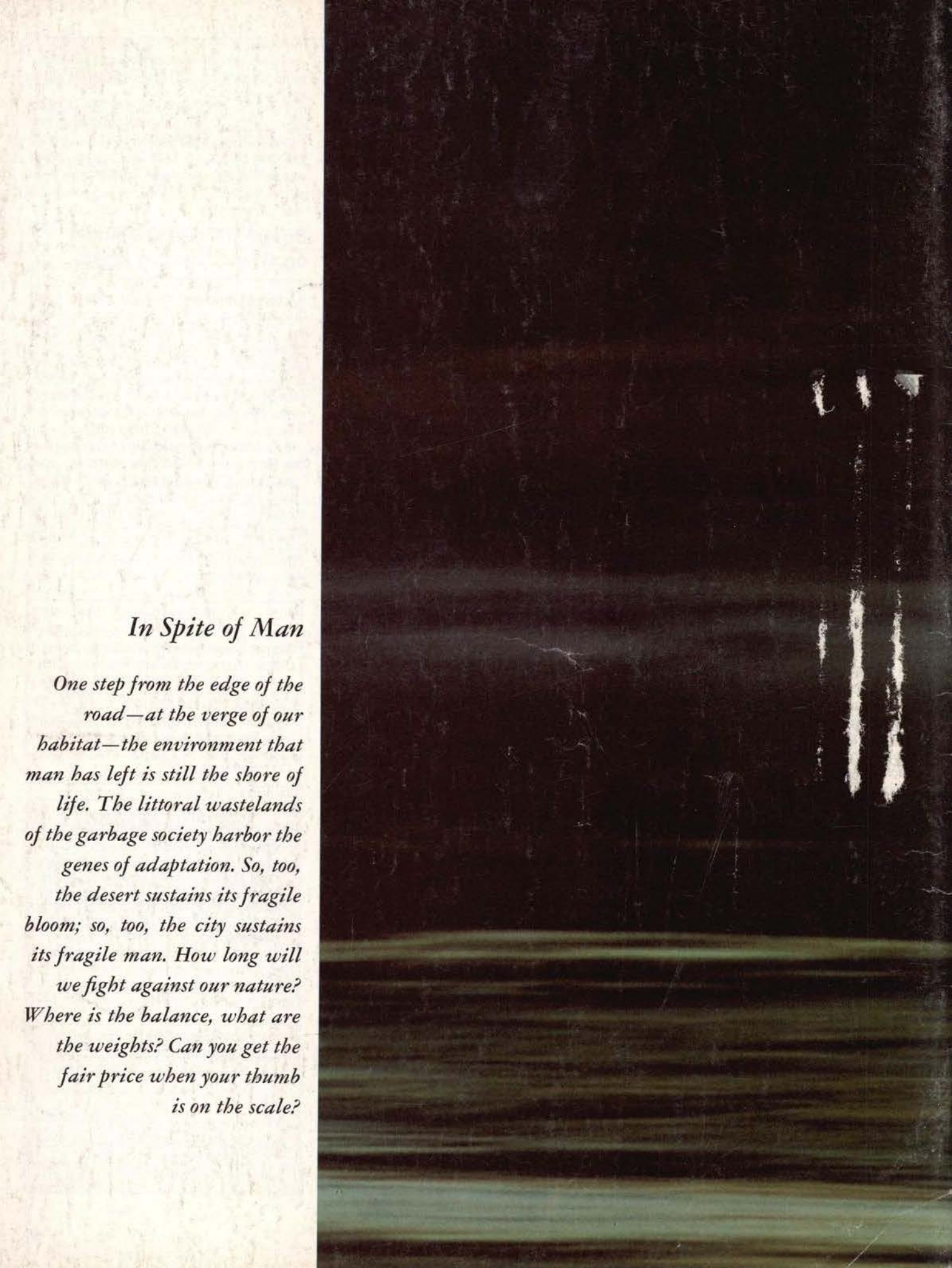
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