

a special report
to the nation



The Race For Inner Space

U.S. DEPARTMENT OF THE INTERIOR, STEWART L. UDALL, SECRETARY

S 304032

a special report to the nation on:

The Race for Inner Space



*Prepared by: THE UNITED STATES DEPARTMENT OF THE INTERIOR
Office of the Secretary • Division of Information*

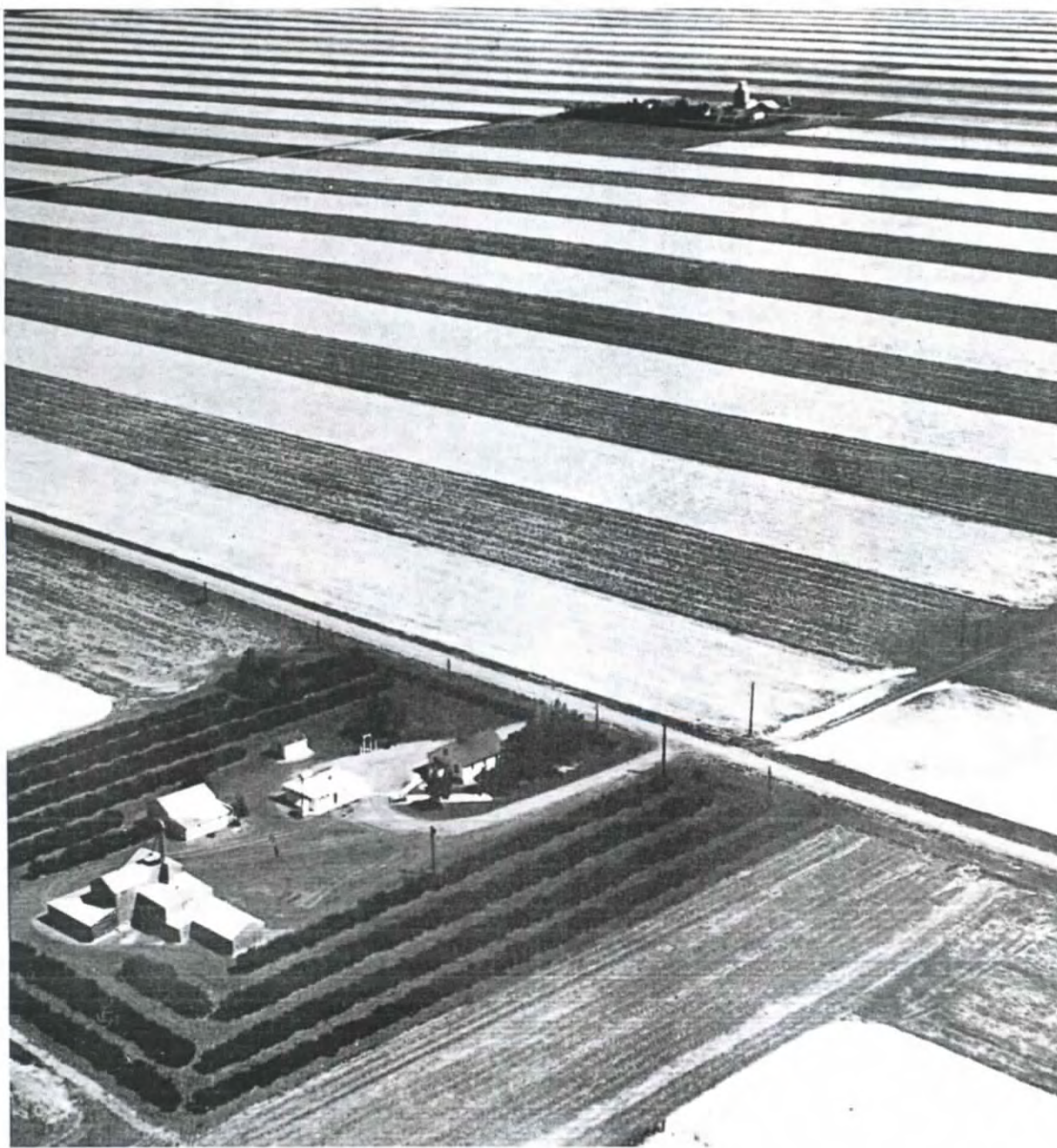




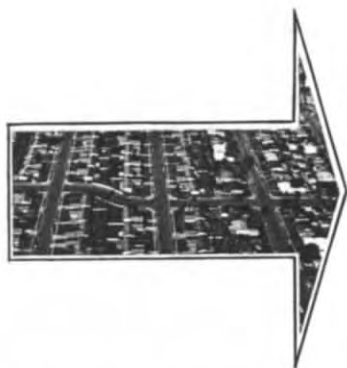


CONTENTS

Page	
5	Introduction
9	Lignite to Lizards
23	Birth of a Bureau
29	Our Overcrowded Parks
37	Build a Better Water Trap
43	On Behalf of Our Fellow Creatures
49	To Harness the Seas
51	466 Million Acres in the Bank
57	Recreation on the Reservations
58	Repairing the Land
63	Our Island Paradises
65	Understanding Our Land
69	The Future Depends
70	Appendix



In the three hundred years since European man landed on North America, he has greatly altered the face of the land. There are few areas left where his heavy hand is not apparent.



Introduction

One of the most absorbing enterprises of our time is the first tentative probing of earthlings into seemingly limitless outer space. Compared to the drama and glamor of this project, the race for inner space—the preservation of balance and sanity and solitude on our own planet—seems at first glance to be far less alluring.

In terms of fanfare, headlines, and expenditure, the wise development of resources and room for a steadily growing population has taken a back seat.

How many persons will leave this world during the next century to establish residence elsewhere in space we cannot know. But we do have a fair idea of how many people will be sharing this earth a century hence, and we can predict with a modicum of accuracy what will be their condition if we fail to turn our zeal and ingenuity to exploring the capabilities of the inner space which most of us will have to continue to occupy.

Our destiny depends more on the use of the space we now have than upon the acquisition of real estate on other planets. It depends upon the use we make of the outer crust of this earth and the atmosphere which wraps it.

Department's Responsibilities Basic

The Department of the Interior, because of its basic natural resource responsibilities, is committed to a vision which looks beyond the superficial question "What can science do?" and makes a deeper, more fundamental query:

"What kind of a country do you want America to be?"

Science can provide the answers which will enable America to move ahead at a greatly accelerated rate. But if, when we "get there," we find only a shambles, it will then be too late to ask "What was the use of all that speed?"

The time to wonder and worry about what



Where is "inner space?"

In the heart of a leaf?

At the end of a dock?

this country will look like 25 years from now is today. And the attempt to take a clear look grows increasingly difficult because of mounting pressure from competing points of view. Our rivers for instance, belong to *all* the people. But agriculture, power, recreation, navigation, commercial fisheries—all these interests and more—must find ways of accommodating their special needs to the overall needs of the Nation.

Man Alters Face of Land

In the three hundred years since European man landed on North America, he has greatly altered the face of the land. There are few areas left where his heavy hand is not apparent. Many of the changes have lowered the quality of the land and most of these changes, unfortunately, are irreversible.



At first the problem of providing food, fiber, timber and other raw materials kept man closely related to the land. Today, specialized technology has cut the old intimate ties. Where farming was once a way of life, it is now an industry—one in which fewer and fewer individuals are engaged and almost entirely in a mechanized manner.

The shift of our Nation from a predominantly rural to an urban population has made a sinister sandwich of much of our land, buttering our soil with concrete and asphalt, piling people on people, and then hanging a pall of polluted air over all. Still, in spite of the voluntary switch to urbanity, people continue to seek the relaxation, the refreshment, and the "re-creation" which they find in land and water. Lately this search has developed into a \$20 billion annual recreation industry.

At a campground?



Under a branch?

On a scenic roadway?



We are assured by many technologists that shortages of space, food and essential raw materials are illusory. The proper application of scientific processes, we are told, can easily meet the needs of a population three times greater than present. It is still fair to ask what kind of world it will be—well fed but incredibly crowded?

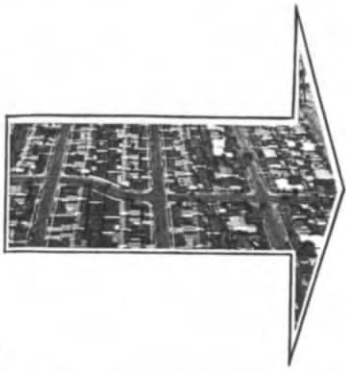
With economists confidently predicting a Gross National Product of at least one trillion 72 billion dollars by 1980 it is fair again to ask—what will such affluence mean if, in the process of achieving this goal, we destroy most of the values that make for human well-being?

The nationwide race for inner space has its corollary inside each individual. This is the "inner space" concept that involves emotional balance and spiritual equilibrium. Americans have traditionally sought these things through

their religious institutions and through close contact with the natural environment which challenged and nurtured them.

While the pace of civilization has stepped up dizzily, the progress of natural phenomena has maintained its age-old beat. The metronome of the heavens continues to wheel this planet at the same speed around the sun—the tides come and go at the call of a constant moon—the trees leaf and the sap rises under the steady baton of the seasons.

Something of this solid, elemental march—of seas and seasons and stars—communicates itself to the harried, hurried human being when he is able to find the time and the opportunity for outdoor leisure experiences. If these opportunities are to be a part of tomorrow's America, we must act to save them today.



Conservation . . . a land conscience that has meaning for the future.



Lignite to Lizards

In fiscal '63 the full force of the Presidency, the Administration, and Interior Department executive leadership was thrown into winning the race for inner space.

President Kennedy set the tone for his preservation-of-environment program when he delivered his historic Conservation message to the Congress in 1962, defining the relationships between man and the resources on which he depends. He reviewed his Administration's major conservation achievements and advanced new specifics toward which all America could work. Many of these had been accomplished before his death.

At the Department of the Interior the approach varied. But whether it was acquisition of wetlands for waterfowl habitat or drafting a Land and Water Conservation Fund Bill, the ultimate objective was improved total environment. Today offers both man's need and man's opportunity. Tomorrow the choice may have been stripped down to need only.

Agriculture-Interior Cooperate

To remove all possible roadblocks to the Administration's outdoor recreation program, Secretary of the Interior Stewart L. Udall and



(Below) A network of parkways and scenic roads would provide enjoyment for millions of travelers each year. This lovely view shows the Blue Ridge Parkway in the Virginia-North Carolina Doughton Park area.



(Left) The North Cascades Mountain area in Washington State has an impressive variety of recreation, timber, power and other resource-based potential. Its future uses and management are under study.

Secretary of Agriculture Orville L. Freeman announced a sweeping agreement between the two departments, which ushered in "a new era of cooperation" [1].¹

Out of the new harmony many conservation and recreation gains were born, including:

(1) Joint proposals for establishment of two National Recreation areas in California [2] and Utah [3], a National Seashore in Oregon [4], plus a whole group of special studies on other outstanding recreational areas [5].

(2) Formation of the President's Recreation Advisory Council, composed of the Secretaries of the Interior, Agriculture, Defense, Commerce and Health, Education and Welfare, plus the Administrator of the Housing and Home Finance Agency, to improve interagency coordination in national recreation policies.

(3) Establishment by the Council of guidelines for National Recreation Areas—a brand new category of Federal lands, requiring Congressional approval and which would embrace lands possessing above average natural endowment but less significance than the unique scenic and historic National Parks and National Forests. Spaciousness (not less than 20,000 acres of land and water surface), high carrying ca-

¹ Numbers in brackets refer to citations in Appendix.

Flaming Gorge National Recreation Area, proposed in the Agriculture-Interior agreement, is located in Utah and Wyoming. The pictured area is Cart Creek Bridge.

capacity (located and designed to serve large numbers of people), and interstate use (opportunities significant enough to attract interstate recreation seekers from outside the normal service region) were the main criteria.

(4) Presidential announcement in June 1963 that the Department of the Interior and the Tennessee Valley Authority had reached an agreement which would make possible development of the Between-the-Lakes region [6] in Kentucky and Tennessee as "a Demonstration National Recreation Area."

Development of the 170,000 acres lying between TVA's Kentucky Reservoir on the Tennessee River and the Army Corps of Engineers' Barkley Reservoir across the divide on the Cumberland River will show how an area with limited timber, agricultural and industrial resources can be converted into a recreational asset which will stimulate regional economic growth. In addition, it will provide guidelines for acquisition, development and operation of other outdoor recreation areas.

(5) Launching, at the Council's direction, of a task force representing the Bureau of Public Roads, National Park Service, Forest Service and Bureau of Outdoor Recreation, on a study to determine the feasibility of a national system of scenic roads and parkways. A report is ex-



pected in time for Presidential recommendations to Congress in early 1964.

Passamaquoddy Project Supported

At the end of fiscal '63, the tide came in, figuratively as well as literally, at Passamaquoddy, Maine. Ever since 1922, studies aimed at harnessing the peculiar sun-moon-tide effects of gravity in the Bay of Fundy had been sputtering along. After weighing the report of a special study committee of Interior technicians, on July 16 the Secretary urged early authorization for the U.S. Army Corps of Engineers to build the structures necessary to harness the tides at Passamaquoddy Bay, just off the Bay of Fundy, and a companion Upper St. John River hydroelectric power development. The Secretary further recommended that the Department of the Interior be authorized to market the great blocks of urgently needed electric energy they will create. The President, in accepting the report, instructed the Departments of Interior and State and the Corps of Engineers to "accelerate their work."

The tide- and river-taming project as now proposed would permit addition to the National Park System of the famed Allagash River region. Other river barriers would have inundated, for virtually its entire 100-mile length, the white water Allagash, which links a series of major lakes in a wild river setting flanked by vast areas of great north wood spruce and fir—forest giants that once blanketed much of the eastern seaboard.

A massive cooperative project for developing all the water resources of the Lower Colorado River was proposed by the Department of the Interior and submitted in late August, 1963, to the governors of Arizona, California, Nevada, New Mexico, and Utah.

The Pacific Southwest Water Plan, [7] the most comprehensive water resource development project ever proposed in the Western United States, will be financed in general accord with the investment and repayment principles applied to the other great Reclamation works in the past. It involves a \$1.9 billion self-amortizing program and will be the basis

. . . the inrush to the cities . . .



for far-reaching legislative proposals in 1964, following extensive consultation with officials of the five states involved in the plan.

New Conservation Ethic Cited

In speeches and articles during fiscal '63 Interior spokesmen attempted to lay the groundwork for a whole new conservation ethic. Ironically, the very successes of science have presented a new set of problems in this decade. It began with the inrush to the cities at the onset of World War II, and intensified with each



. . . a lopsided performance . . .

. . . waste products that befoul the land . . .

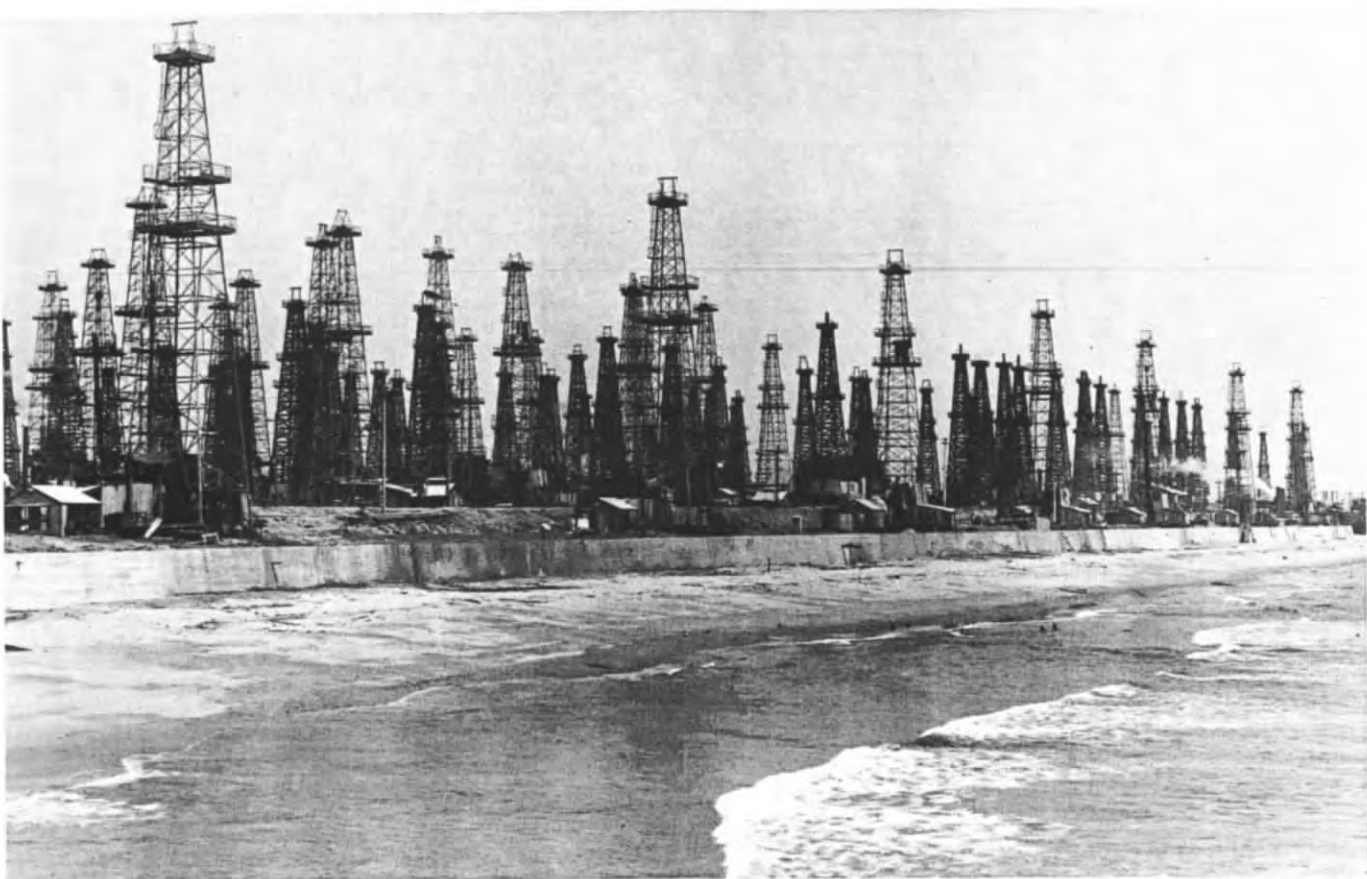
new advance of technology. Our accomplishments in minerals and energy, in electronics and aircraft, in autos and agriculture have lifted us to new heights of affluence, but in the process we have lost ground in the attempt to provide a habitat that will, each day, renew the meaning of the human enterprise.

A lopsided performance has allowed us to exercise dominion over the atom and to invade outer space, but we have sadly neglected the inner space that is our home.

We can produce a wide range of goods and machines, but our manipulations have multiplied waste products that befoul the land, and



. . . diminish the quality of resources . . .



have introduced frightening new forms of erosion that diminish the quality of indispensable resources and even imperil human health.

The hazards appear on every hand; many new machines and processes corrupt the very air and water; in what Rachel Carson has called "an age of poisons," an indiscriminate use of pesticides threatens both men and wildlife; and the omnipresent symbol of the age, the auto, in satisfying our incessant demand for more mobility, has added to the congestion and unpleasantness of both cities and countrysides.

Conservation Program Erratic

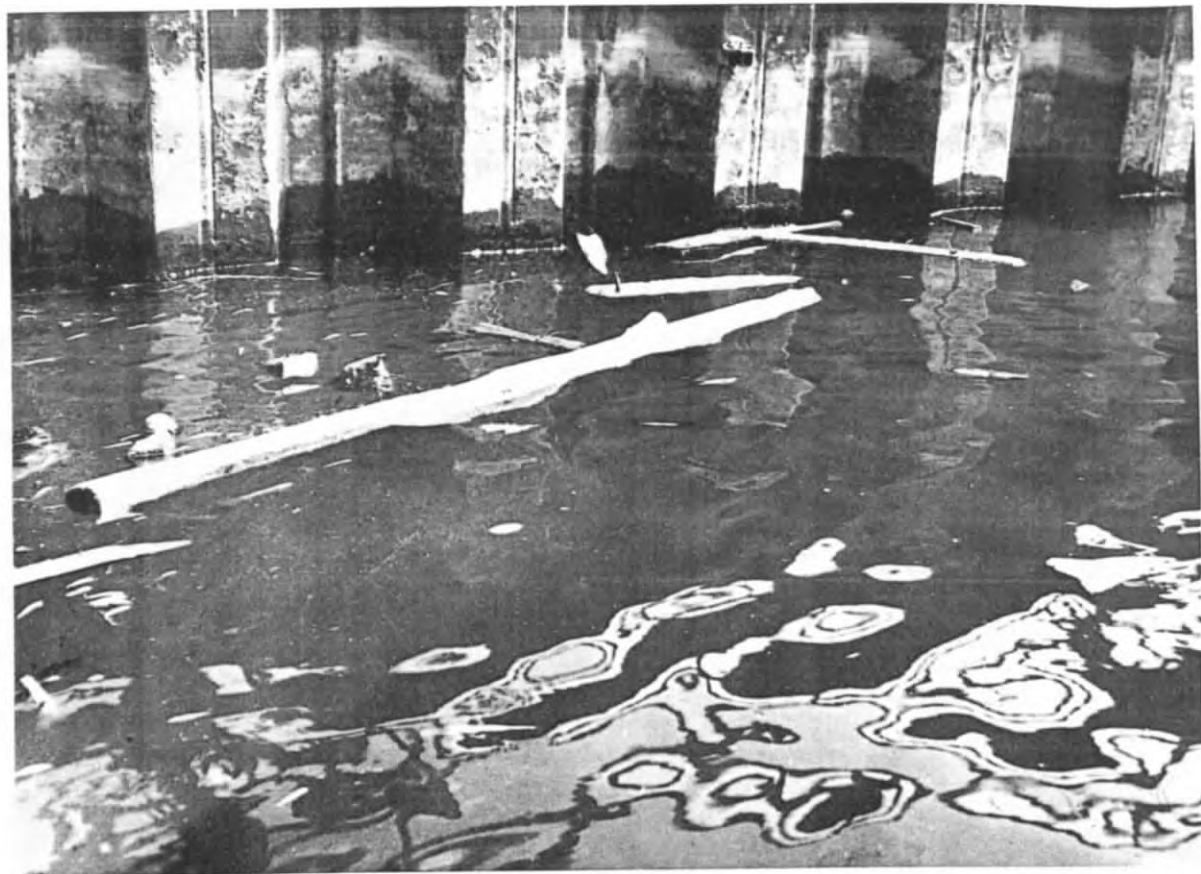
Countless illustrations attest to the erratic progress of conservation. With the passing of each year, neglect has piled new problems on

the Nation's doorstep. Some brilliant successes encourage a false sense of well-being, but our massive ability to overpower the natural world also multiplied immeasurably our capacity to damage those resources that make up the total environment.

Our water husbandry methods typify these failures. At the same time that our requirements for fresh water were doubling, our national sloth more than doubled our water pollution. We now are faced with the need to spend six billion dollars and build 10,000 treatment plants to clean it up.

Wilderness is a vital part of the new conservation ethic. In the postwar period, unfortunately, most Americans took their out-of-doors for granted. It was a fact that pressures were growing each year to despoil our few remaining wilderness areas; Americans accus-

. . . and even imperil human health . . .



tomed to outdoor recreation as a way of life, with access to public areas for hunting, fishing, hiking and swimming, found their opportunities narrowing by the month.

The status we give our wilderness and near-wilderness areas will measure the degree of our reverence for the land. If our stewardship fails, even our small scraps of wilderness will have to be rationed as to visitors, to preserve their wilderness quality—the rest of our outdoor experience may have to come from packed amusement parks, shoulder to shoulder beaches, and table-to-table picnic grounds.

Optimum Development Needed

What America must have is an optimum development of resources that will allow us to

pluck the fruit of science without harming the trees of life.

We have developed a whole new generation of sedentary, city-bound citizens, wheedled by spectatorship and the air-conditioned advantages of glassed-in living into acquiescing to the diminution of the spaciousness, the freshness, the green splendor of the American earth.

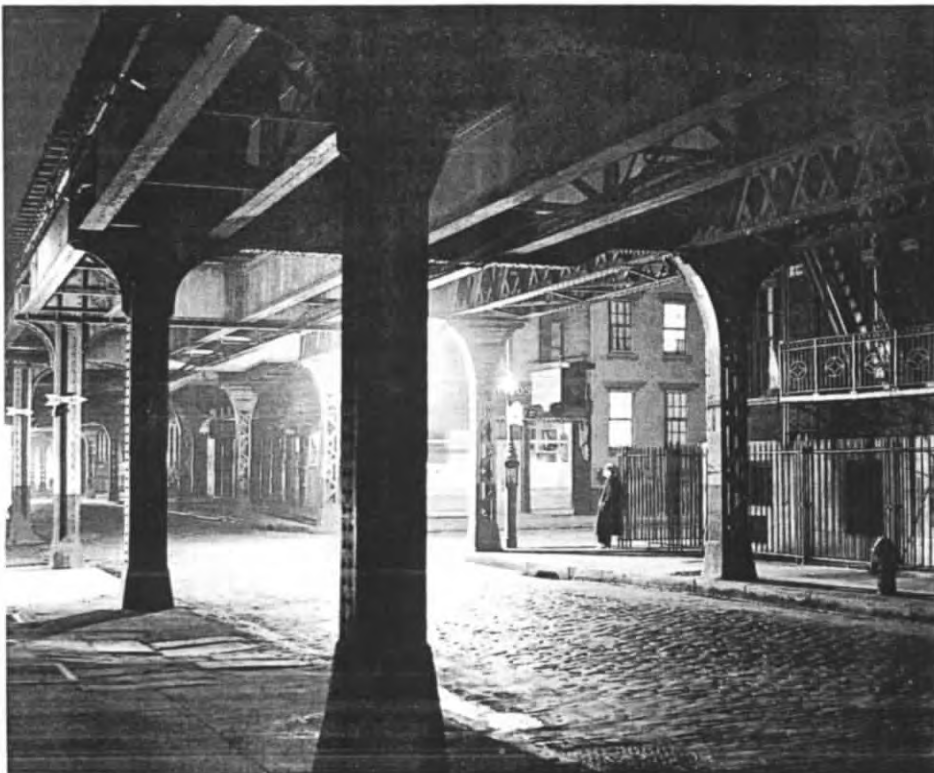
The dead myth of superabundance has been superseded by the myth of scientific supremacy. This is the myth which rests on the mistaken assumption that scientists can fix everything tomorrow. Instead of relying on this myth, we must require a day in and day out effort by business, by government and by vigorous volunteer movements to preserve the beauty and bounty of the American earth.

The fruits of such concerted effort will be to harness the tides of Passamaquoddy, inter-

. . . an incredible array . . .



*. . . wastelands where human
needs are ignored . . .*



*. . . abundance and blight have
marched hand in hand . . .*



connect the electric power systems of whole regions, economically extract fresh water from the seas, turn vast oil shale beds into oil, and at the same time allow us to preserve the beauty of our earth's surface, to provide pleasure and true re-creation on the "inner space" surface of the planet we call home.

Heritage Is Jeopardized

Americans are the inheritors of a spacious, virgin continent and it is our relationship with the American earth that is being altered by the quiet crisis—our birthright of fresh landscapes and far horizons.

Unless we are to betray our heritage consciously, we must make an all-out effort now to acquire the public lands which present and future generations need. Only prompt action will save prime park and forest and shoreline and other recreation lands before they are preempted by other uses or priced beyond the public purse.

The Land and Water Conservation Fund [8] proposed by President Kennedy may mark a turning point in conservation history. If the States are to provide leadership before it is too late, if the few remaining spacious seashores are to be preserved for all of the people, if wildlife values are to be permanently protected, and our National Park, Forest and Wildlife Refuge systems are to be rounded out by the addition of the remaining suitable lands, the task must begin immediately and be finished within the next three decades.

Littering Creates Problem

It is an alarming fact that Americans are becoming the litter champions of the world, aided by industries that produce an incredible array of boxes, bottles, cans, gadgets, gewgaws and a thousand varieties of paper products. If current trends continue unchecked, in another generation a trash pile or piece of junk will be within a stone's throw of any person standing anywhere on the American continent.

While our countrysides are shrinking, our cities too often are wastelands, where human needs are ignored and unsolved problems are

accumulating. As these cities have sprawled outward into the countryside, abundance and blight have marched hand in hand.

Longterm Gains Necessary

The front line of conservation today extends from minerals to mallards, from salmon to soils, from wilderness to water, from lignite to lizards—and most of our major problems will not be resolved until resource inter-relationships are evaluated with an eye to longterm gains and values.

An urgent need exists today for a study of the “ecology of man,” to determine the ideal relationship between human population and the land. We are heading for a standing-room-only environment. The amount of open space available per person is decreasing at a faster rate than the population increases. Eventually people will be piled on top of each other. They will have no alternative.

The conservation concept is ultimately something of the mind—a search for balance and order, a quest for new values, a striving for a land conscience that has meaning for the future.

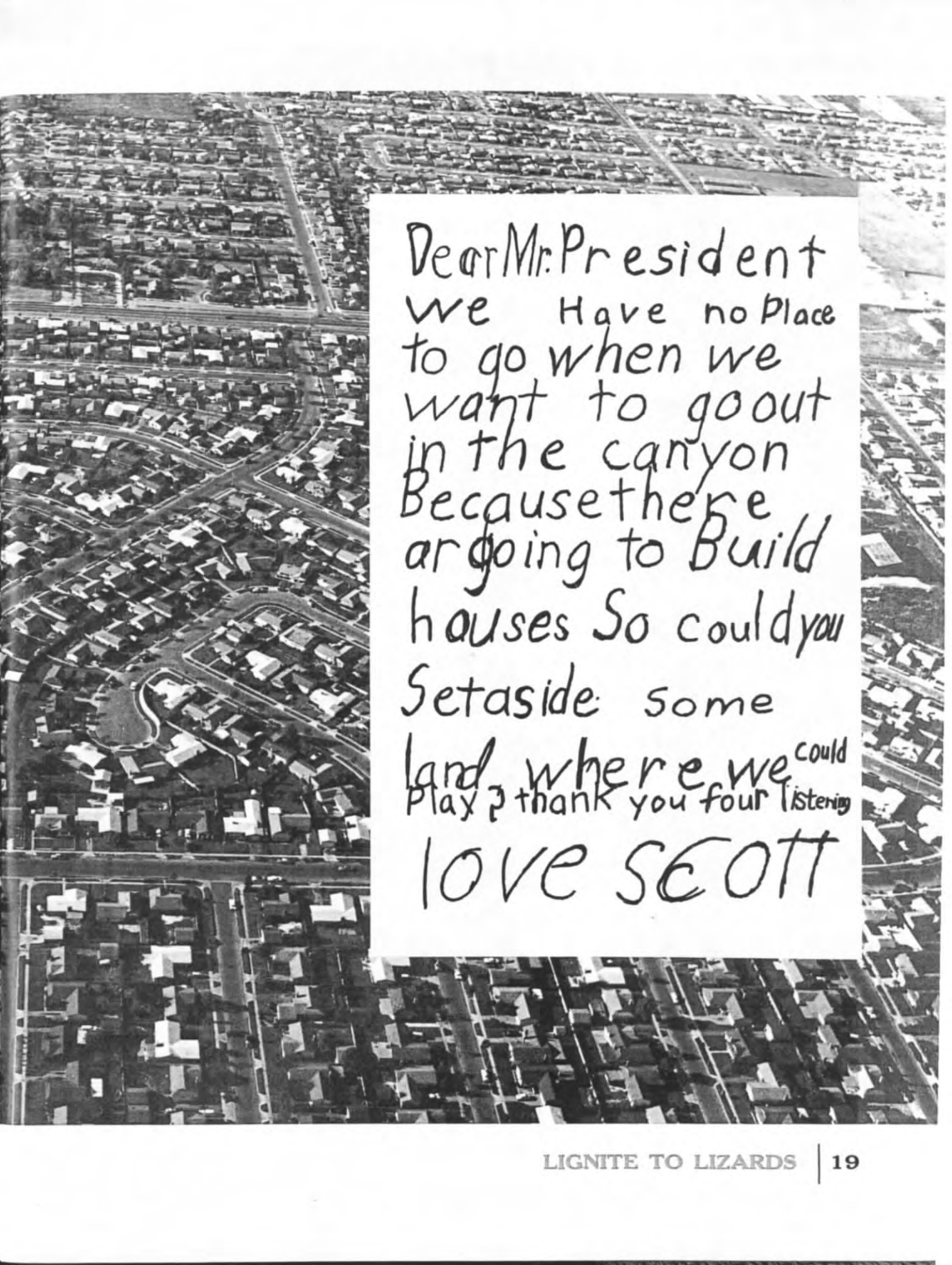
The Case of Scott Turner

Out in California, a small boy had his personal search for balance and order interrupted, and the resulting correspondence made front page news from coast to coast. In November, 1962, Scott Turner, aged 7, went out to hunt lizards in “his” canyon, only to find that the previously open land was now occupied by a field restricted to organized play. The next canyon over was disappearing under home construction.

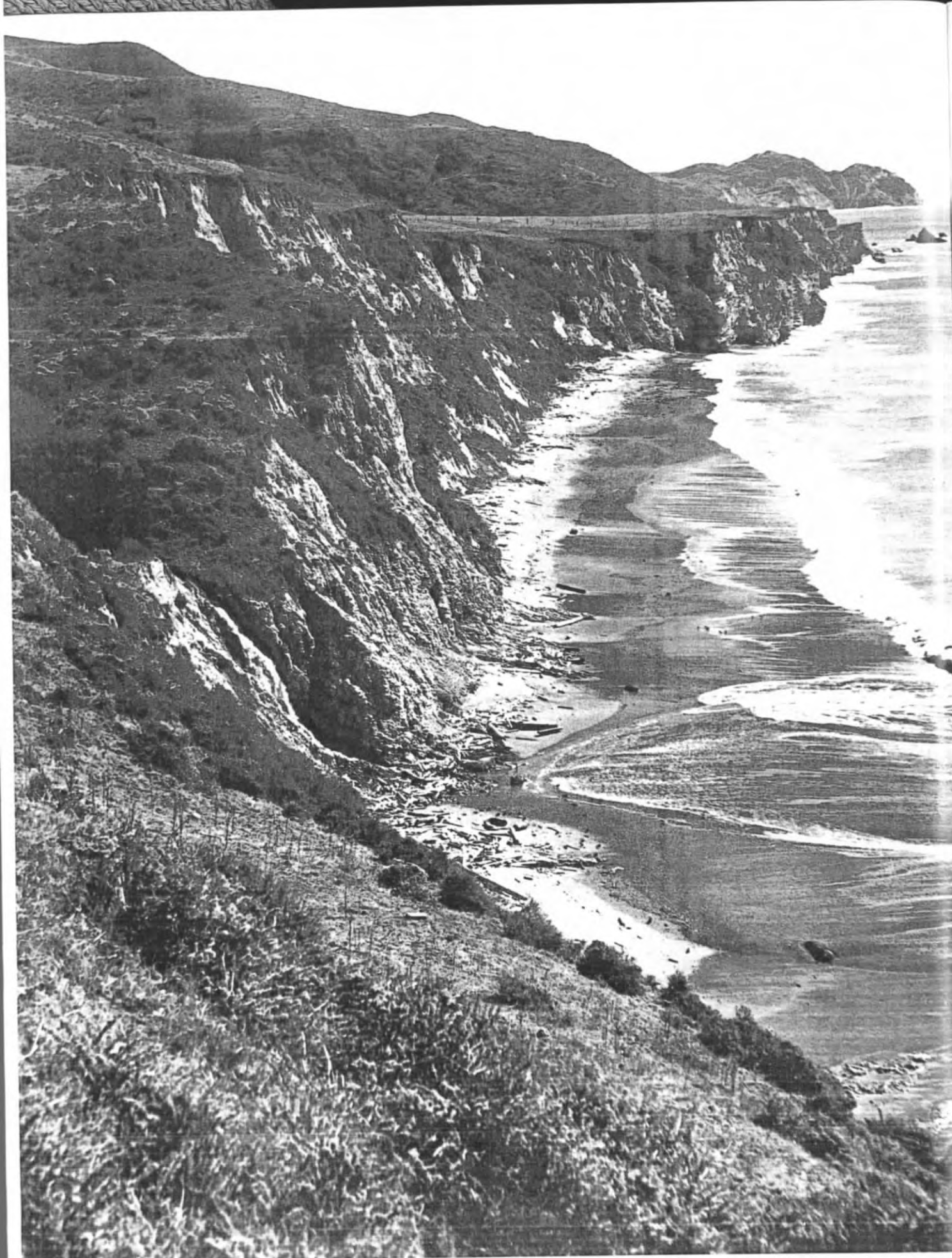
In complete defeat, anger and frustration, he ran home, demanded paper and pencil and put a determined hand to a letter of protest to the President.

*. . . a personal search for
balance and order . . .*





Dear Mr. President
We Have no Place
to go when we
want to go out
in the canyon
Because there
are going to Build
houses So could you
Set aside some
land where we ^{could}
Play? thank you for listening
LOVE SCOTT





“Dear Scott . . . We are trying as hard as we can, President Kennedy and I, to do just what you asked—‘to set aside some land’ where you can play—not in groups with supervision, but just roaming around by yourself and finding out how you relate to the earth and the sky . . .”

Scott’s letter and Interior’s reply on behalf of the President received a blaze of attention—column upon column of newsprint testified to the effect that the Nation was in sympathy with one little boy’s search for inner space.

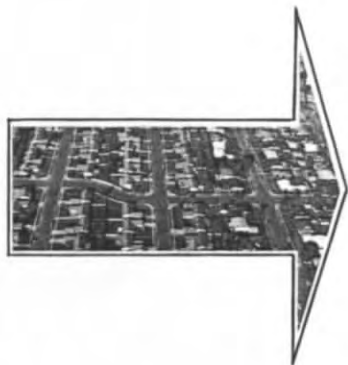
As the race for inner space goes into the stretch, the United States has the opportunity to set an example of how to plan the best relationship of human beings to their environment. We should give solemn attention to the matter of developing the optimum man-land ratio—the ratio which would result not only in the highest and best use of the land, but the highest and best development of free men.

The act authorizing establishment of Point Reyes National Seashore was signed by President Kennedy on September 13, 1962. The first national seashore on the Pacific, this 70 miles of shore offer roaming room to youngsters like Scott.





Preservation-of-environment came into sharp focus with . . .



Birth of a Bureau

The Administration's preservation-of-environment program came into sharp focus at Interior this year through the Bureau of Outdoor Recreation, which completed its first full fiscal year of operation on June 30, 1963.

The organic act, defining the Bureau's basic

responsibilities, was signed into law by the late President Kennedy on May 28, 1963. In its preamble, the act expresses Congressional concern that "future generations be assured adequate outdoor recreation resources" and urges "all levels of government and private interests" to



take "prompt and coordinated action" in the direction of this goal.

National Planning Essential

President Kennedy's signature on this law marked the beginning of a new era of government recognition of its responsibilities for coordinated, effective nationwide planning, acquisition, and development of outdoor recreational resources.

Not only does the Bureau of Outdoor Recreation provide this coordination, it is classifying the Nation's outdoor recreation resources, fitting the varied and various pieces into a systematic and comprehensive nationwide recreation plan, and acting as a research and consulting resource for the States, their political subdivisions and the private sector.

The Bureau, which numbered 135 employees at the close of fiscal '63, performed a number of specific assignments for the Cabinet-level Recreation Advisory Council, investigated and made recommendations concerning potential recreation areas, appeared before appropriate committees of Congress in support of legisla-

tion setting forth certain basic Federal responsibilities in outdoor recreation and in support of the Land and Water Conservation Fund bill,* initiated limited operations in six small field offices, and cooperated with Federal, State, local and private agencies to promote outdoor recreation opportunities.

Land and Water Conservation Bill Supported

The Land and Water Conservation Fund bill, regarded as a keystone for effective State and Federal action in the field of outdoor recreation, was recommended by President Kennedy, introduced in both Houses of the 88th Congress in February 1963, and given hearings by the Senate and House Interior and Insular Affairs Committee. The measure reflects closely recommendations of the Outdoor Recreation Resources Review Commission. Because the States play the key role under the proposed program, the bill places special emphasis on State activities.

With more than 90 percent of all Americans

*See chart, appendix page 74



(Left) If our wild rivers and unspoiled forests disappear, so will the fun and fellowship of pack trips like this.



(Right) Even the littlest ladies find cooking fun when it's done in the out of doors.

(Below) A snapping campfire, a sprinkling of stars, and voices raised in song—these are the ingredients of one incomparable kind of happy human experience.



participating in outdoor recreation activities (when scenic driving is included) the race for inner space has taken on desperate overtones. Passage of the Land and Water Conservation Fund bill would provide significant assistance at a crucial time in helping to acquire the remaining outdoor recreation resources. Such action would not only serve today's pleasure needs—it would keep faith with generations yet unborn.

During its first complete year of operation the Bureau of Outdoor Recreation established a working relationship with those agencies and interagency groups responsible for the planning or development of water and related land resources. Tentative agreement with the Public Health Service, Soil Conservation Service, Federal Power Commission and the Corps of Engineers defined the type and scope of services which the Bureau would provide these agencies in the development of river basin plans.

Recreation Planning Coordinated

Within the Department, an agreement was made dividing responsibility for recreation planning at Bureau of Reclamation projects between the Bureau of Outdoor Recreation and the National Park Service. The Bureau of Outdoor Recreation also worked out a review agreement regarding applications for recreation lands under the Recreation and Public Purposes Act.

A Division of Research within the Bureau was created and cosponsored the first National Conference on Outdoor Recreation Research at the University of Michigan, Ann Arbor. The May 6-8 meeting was attended by 170 local, State and national educators, research personnel and outdoor recreation officials and was addressed by both Secretaries Udall and Freeman. The first conference of its kind in the Nation's history, it contributed significantly to understanding of recreation research.

In April 1963, the Bureau of Outdoor Recreation recommended National Seashore status for Assateague Island, one of the last remain-

ing undeveloped stretches of shoreline on the Middle Atlantic seaboard [9].

New Areas Studied

Studies are underway on the North Cascades Mountain area [10] in Washington and the Pictured Rocks area in Michigan [11] with the idea of working out recommended solutions for the various conflicting interests.

Snow and wax and hickory slats spell winter fun on a cold, sunny day in the Wasatch Mountains of Utah.



The Bureau began a comprehensive review of outdoor recreation literature and laid plans for a clearing house and abstracting service for persons doing outdoor recreation research.

Consulting and advisory services, performed on a cooperative basis with State and local agencies, were broadened and projects were carried out all over the United States.

Numerous planning and survey studies on a national scale were made singly and in cooperation with other agencies of Government, such as the Army and the Department of Health, Education and Welfare. The Bureau also developed guidelines for statewide recreation planning and procedures for nationwide recreation planning.



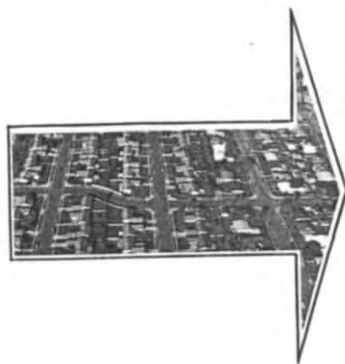
Deer tracks on "Baltimore Boulevard," Assateague Island. This strip of land, off the coast of Maryland and Virginia, offers one of the last remaining opportunities to acquire a major Atlantic seashore for public use. More than 33 million people live within a 250-mile radius. This street, laid out by a private developer in 1955, is presently covered by two feet of sand in some places.





*Time was running out in 1963
at Yosemite—just one of . . .*

Our Overcrowded Parks





Shoulder to shoulder and bumper to bumper, Americans crowd in to enjoy their national parks.

The quiet beauty of St. Mary Lake in Glacier National Park, Montana, illustrates one of the greatest gifts our park system gives to Americans—a sense of peace and a reverence for the land.

By 1970, 214 million Americans will be competing for the inner space of our Nation, according to estimates from the Census Bureau. These Americans, flexing their economic muscles, will press for their place in the outdoor parklands of this country, and Federal, State and local parks will have to bear the main burden.

The least this Nation can do, . . . before our land patterns become unalterably fixed, is to preserve the few remaining extensive areas of natural open space . . . now, while there is still time.

As the Nation's "anchor man" in the inner space race, the Department of the Interior is confronted with vigorous and paradoxical competition in the guise of "progress." Bulldozers



can clear paths for smooth ribbons of concrete and asphalt, mould shopping centers and push suburbia farther out into our green countryside. But they can also unbalance clear streams and irrevocably alter wooded hills, quiet lakes and wilderness.

Park Program Enters New Phase

The National Park Service, a leader in the management of public recreational resources and with a major responsibility under specific law to the people of the Nation, added a dynamic new dimension in fiscal '63 to its long range requirements program.

This "long look" program, which began with Mission 66, entered a new phase during the past



year, with the assignment of a six-man task force to chart the future course of both the National Park Service and the Park System it administers.

The critical need for expanded outdoor recreation opportunities and mounting pressures on the Nation's resources made imperative a comprehensive plan for the Park Service and the Park System of tomorrow.

The completed long range plan, to be released in the fall, will form the framework within which shorter range programs can be mounted to meet constantly changing conditions imposed by natural growth and need.

The plan will consist of long range objectives and guidelines for the management, use and development of a well-rounded and evenly dis-

tributed National Park System. It also will strengthen the Service's role in a nationwide outdoor recreation program.

Public Use Gaining

The foremost challenge to the Nation's park system is the impact of increasing public use. Impressive as the 88 million visits recorded in 1962 may be, an even more significant and dramatic statistic was the one-billionth visitor to the national parks (on August 22, 1962) since the first recorded visit in 1904. And while it took some 58 years to reach the first billionth visit, the second billionth is expected only 11 years in the future.

To prepare for the mounting mass exodus to the out-of-doors, the plan will propose a nationwide network of parks, parkways and recreation areas, designed and located so that all segments of our population for years to come will be provided with adequate outdoor facilities near their homes, for frequent day and weekend use. Specific sites for consideration as parks, parkways and recreation areas in each of the 50 States will be recommended. The sites will range from local to State and National significance.

Nowhere has the need for preserving natural, open space for recreation use been more dramatically evident than along the Nation's lake and sea shores. Here, almost every desirable area has been preempted. A prime example is the proposed Indiana Dunes National Lakeshore, where the bulldozer continues to deprive Chicagoans of needed recreation opportunities.

Because an important part of the Service's Mission 66 is preservation of outstanding seashores, the authorization in fiscal '63 of national seashores at Padre Island, Texas, and Point Reyes, California, was a significant milestone.

Seashore Welcomes Users

Point Reyes National Seashore, 30 miles northwest of San Francisco, will consist of some 53,000 acres—of which 26,000 constitute a pastoral zone where present forms of ranching and dairy farming will continue under private ownership. The area will serve one of the most heavily populated and fastest-growing regions

(Right) A beach is for fun, and this sandy skirt to a sparkling stream has its full complement of funlovers. Yosemite Falls is in the background.



Angel Arch in the Needles country of the proposed Canyonlands National Park suggests a weary little cherub leaning against one of the spectacular red sandstone bridges.

The new Grant Village development in Yellowstone National Park features this boat ramp area, in addition to a complete new campground.



in the Nation. Opportunities such as fishing, boating, nature walks, camping, hunting (where permitted), swimming and hiking will be available.

Padre Island National Seashore, on the south Texas coast of the Gulf of Mexico between Corpus Christi and Port Isabel, is accessible to millions in a 500-mile radius. It consists of some 80 miles of a 117-mile offshore bar, varying in width from less than one-eighth mile to about three miles.

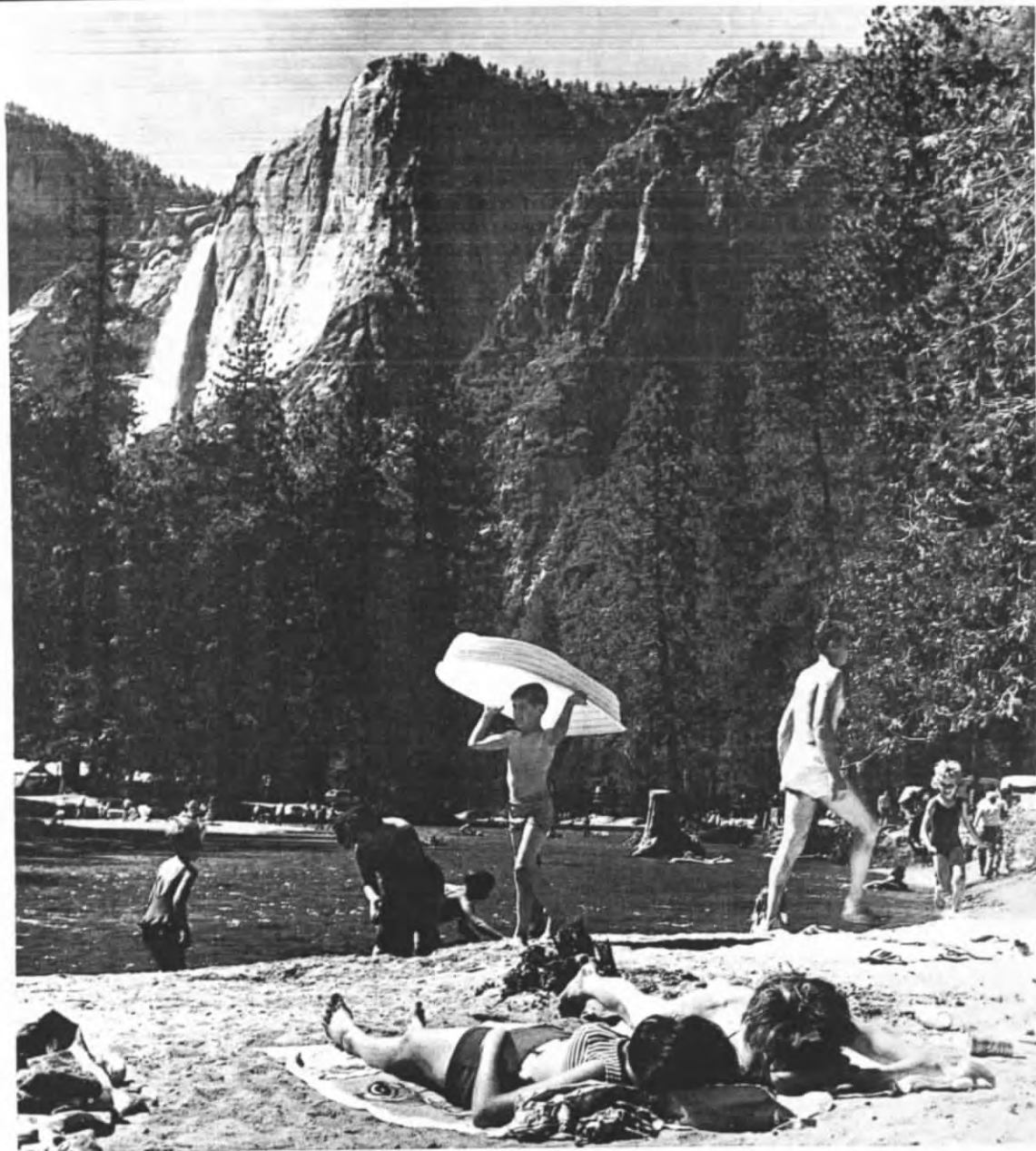
When adequate land is acquired for efficient administration (in the case also both of Point Reyes and Padre Island) the National Park

Service will develop appropriate programs and facilities for swimming, boating, hiking, camping and, again where permitted, hunting.

New Park Areas Proposed

Thirty-seven areas for proposed future parks have been thoroughly considered by the National Park Service and show excellent promise of receiving widespread public support [12].

Of these proposed areas, at least 23 lend themselves to increasing recreation opportunities and are readily accessible to large metropolitan complexes.



An example is Tocks Island National Recreation Area in New Jersey, and Pennsylvania, within a 100-mile radius of 30 million persons—15 percent of the Nation's population. Assateague Island National Seashore is easily reached by residents of Washington, D.C. and Baltimore. Channel Islands National Seashore is within boating distance of southern California's burgeoning population; Sleeping Bear Dunes National Lakeshore is an easy day's drive from more than 20 million people, and Fire Island National Seashore [13] could meet the outdoor recreation needs of the Nation's largest city and most of New England.

Field investigations of approximately 48 areas throughout the country—suggested as possible national park, historic site, or recreation area status—were conducted. These areas included such important sites as Alleghany Parkway in Maryland, Virginia, West Virginia and Kentucky; Voyageurs National Park, Minnesota; Great Salt Lake, Utah; Guadalupe Mountains, Texas; Caverns of Mystery, California; and Ozark Region of Illinois.

Specific area reports were completed on 16 nationally significant areas, ranging in location from Essex County, Vermont, to the Wood Tikchik Area in Alaska.

Under a \$64,000 grant from the National Geographic Society, the National Park Service is conducting a year-long ecological survey of the coast redwood region in California, leading to a broad program of conservation. The research will concentrate on the Bull Creek groves, some 200 miles northwest of San Francisco, and the Del Norte groves near the Oregon border. The program to preserve the giant redwoods will be conducted with California authorities.

A study also is underway to determine the possibility of establishing park areas on the island of Kauai in Hawaii.

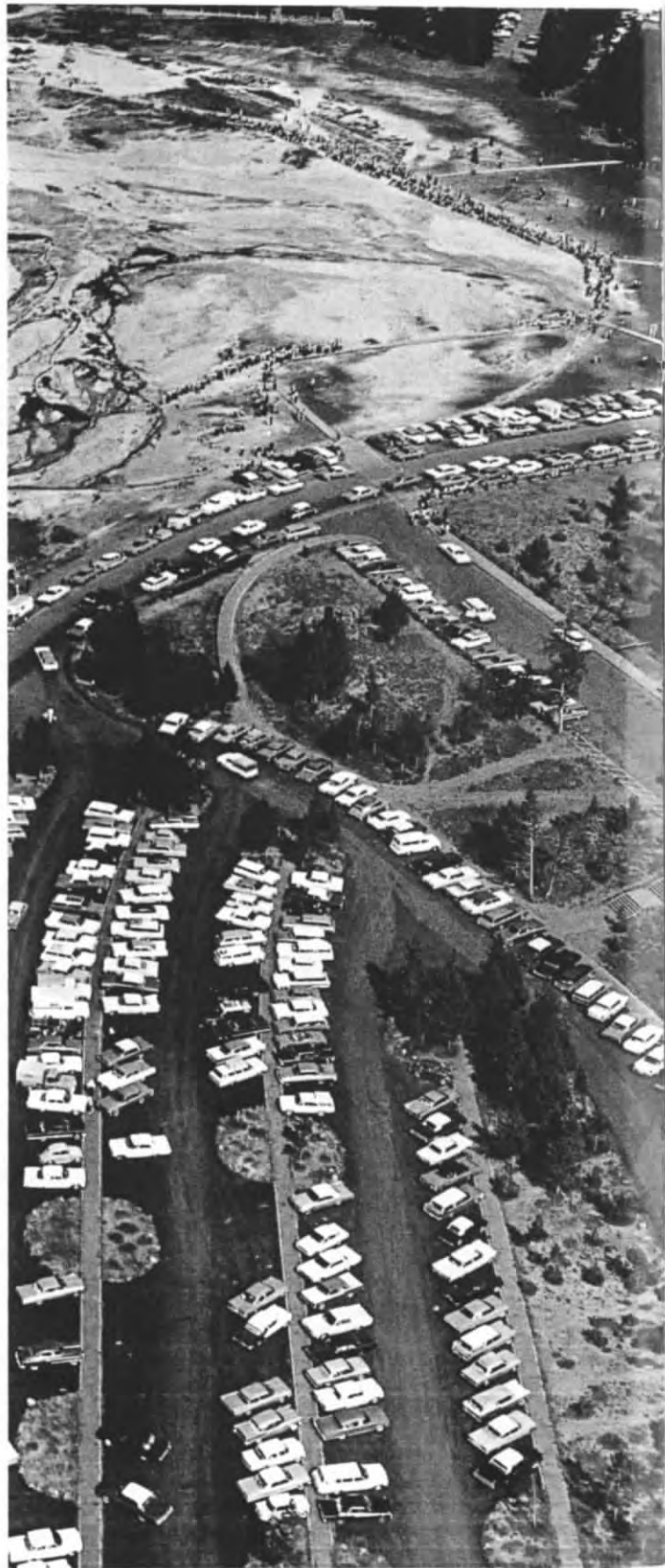
Because of the Department's program of Accelerated Public Works, millions of Americans found greatly improved accommodations in outdoor areas administered by the National Park Service.

As Mission 66 approached the eighth year of its 10-year program, a review of facilities, activities and important developments showed the following:

Camping: A total of 6,106,030 camp-use days another record high—in 69 units of the National Park System during 1962—up 14 percent over the 1961 total. A stepped-up construction program accounted for more than 1,000 additional camp sites, bringing the number available for public use to more than 25,000. Construction in 30 additional units is underway.

Congress has recognized the growing need for these facilities. The Department of the Interior's fiscal '63 request for the Service of \$3,288,900 for camping and picnicking facilities was met by a Congressional appropriation of \$6 million.

Trailer Travel: To meet the sharp rise in popularity of trailer camping, the Service has added more accommodations in virtually all areas. Trailer villages with utility connections—operated by concessioners for fixed fees—are now located at Grand Canyon National Park, Arizona, and Grand Teton National Park in Wyoming. Several have been constructed at Lake Mead National Park Recreation Area, Arizona-Nevada, and plans call for another at Prince William Forest Park, Virginia.



Lines of cars and lines of people. Even with expanding facilities, our national parks present some of the frustrations of city life, with jam-ups at the park entrances and long queues of hungry visitors before the snackbars and restaurants.



Hunting: The Leopold Committee, directed by Interior in the Spring of 1962 to re-examine the National Park Service's wildlife management program, recommended several sweeping changes, one of which concerned recreational hunting. They reported:

"... some of the new (national recreation) areas . . . will offer substantial hunting opportunity for a variety of game species. This opportunity should be developed with skill, imagination, and (we hopefully suggest) enthusiasm." Recreational hunting opportunities, the report said, represent a valid use for National Recreation Areas and "should be provided by the Service."

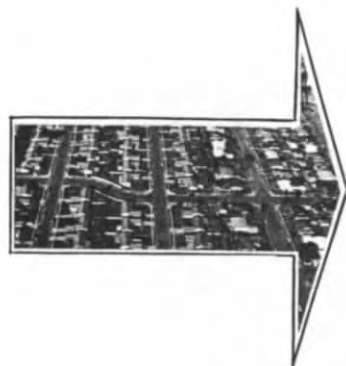
Fish and Wildlife Service data reveals that in 1962 13,754,363 hunters paid for licenses in the 50 States. Gross cost to hunters totaled \$63,983,798.

Fishing: Fishing did even better than hunting in the statistics area. A total of 19,403,465 persons in 50 States bought one or more sport fishing licenses, costing \$54,163,163. Sport fishing is offered in 40 units of the National Park System. Special emphasis has been put on preservation of high quality fishing for wild trout. Where natural spawning is either limited or lacking, fish are maintained by a stocking program.

This spring, millions of game fish were planted in Lake Powell (Glen Canyon National Recreation Area) under a program planned by Interior's Fish and Wildlife Service and the State Fish and Game Departments of Arizona and Utah. Opening of Lake Powell to fishing is planned for 1964. The filling of Lake Powell also heralds the beginning of boating and other water sports. Temporary boat ramps have been built by the National Park Service at Wahreap Recreation Area, located about five miles from Glen Canyon Dam.

Existing activities and facilities.—Each year the National Park Service strengthens existing activities and adds new ones to its more than 190 areas. An inventory of current activities follows:

ACTIVITIES	AREAS	ACTIVITIES	AREAS
Camping (25,253 sites)-----	69	Mountain climbing--	20
Swimming -----	22	Picnic areas-----	100
Fishing -----	40	Museums -----	112
Hunting -----	6	Nature trails-----	86
Boating -----	27	Ski trails-----	7
Hiking -----	78	Ski tow-----	7
Horseback riding---	33	Boat facilities-----	18
Guided tours-----	84	Boat ramps-----	14
Water sports-----	12	Boat rentals-----	12
Winter sports-----	9	Bath houses-----	11
		Playgrounds -----	3



Transmission towers strung with high voltage lines wheel power away from Davis Dam, Arizona, to help light the Southwest, while fishermen, boaters, and water skiers find Lake Mohave, above the dam, a recreation paradise.

The trickle of visitors tends to grow to a steady stream when you . . .

Build A Better Water Trap...



Like Topsy, recreation on Reclamation projects throughout the West up to recent years "just grewed." With better transportation and more leisure time, the public is visiting Reclamation-built lakes in ever growing swarms.

In the early days of the Reclamation program, little thought was given to project visitors and no funds were authorized to provide facilities for them. A dam was built to regulate river flow and to provide irrigation water. The

possibility of people's traveling to the often virtually inaccessible site for recreation purposes—or any purpose other than project operation and maintenance—simply did not figure in the dam builders' plans.

But once a river was plugged by a dam and water began to fill up the valley behind it, the public beat a path through the wilderness to the rim, to look at the expanse of impounded water and the works of the dam itself, and soon

to use the water and shoreline for fishing, camping, and other recreational activities especially valued in the water-starved West.

Millions Use Reclamation Areas

What was an unplanned, incidental by-product of Reclamation has ripened into a major fruit of the program. The trickle of visitors grew to a steady stream. Nature and sports enthusiasts required transportation, accommodations, and other services. By 1962, they accounted for 27 million visitor-days during the year.

Recreation benefits, while not subject to the same monetary yardstick as irrigation or electric power, have made their own secondary contributions to the Nation. Who can measure the thrill of glimpsing the majestic Sierra scenery surrounding Shasta Dam, the thrill of landing a "big one" from the cold waters of Lake Mead, the contentment of camping beneath the stars high in the Rocky Mountains near Shadow Mountain and Granby Reservoirs, or the excitement of skimming over Lake Franklin D. Roosevelt on water skis? Who can put a price tag on the health and serenity resulting from days spent in the outdoors? Who can gauge the value of increased job efficiency, improved family relationships, contributions to community welfare that are engendered by vacations in nature's wonderlands? Outdoor recreation can truly be a "re-creation" of the soul, the body, and the mind; and it is in response to the ever deepening need for such "re-creation" that the Bureau of Reclamation is developing its recreation program.

Tourism Brings Prosperity

Of course, there are benefits from recreation that *can* be measured in dollars. Tourism, fostered by recreation activities, brings prosperity in its wake just as surely as do agriculture and industry. In the vicinity of a Reclamation recreation area we find tourist business booming, with hotels and motels, restaurants, transportation facilities, service stations, and retail stores sharing in the bonanza. So,



though the recreation benefits of the Reclamation program are legally "nonreimbursable," there is no doubt that, through accelerated business and increased tax payments, they more than compensate the Treasury for some \$6 million in Federal funds which are included in the \$50 million total investment in recreation facilities on Reclamation projects to date.

It was not until authorization of the Colorado River Storage Project in 1956 that recreation was included as one of the multiple purposes of a major, basin-wide Reclamation project. Now



(Above and left) By truck and by plane, rainbow trout are planted in the clear, cold waters of the once-muddy Colorado River, above and below Glen Canyon Dam. The torpedo bomber flies low over Lake Powell to drop 167,000 fingerling trout above the dam. A truck pours 6,000 8-inch trout into the river below the dam.

(Below) Tents, trailers, and picnic tables testify to the quality of the outdoor recreation at North Marina campground on Lake Roosevelt near Coulee Dam on the Columbia River in Washington.



that the sprawling, gigantic development is taking shape along our last truly turbulent river to be tamed, recreation is playing a leading role. When the long-range water resources project is finished, the entire 1,270-mile length of the Colorado in the United States will be the spine of a spectacular American playground for millions of sun-worshippers, nature lovers, fishermen, and water sports enthusiasts. Already Lake Mead Recreational Area surrounding Hoover and Davis Dams is a world-renowned magnet for visitors.

For the upper reaches of the river and its tributaries, varied facilities are programmed to extend the playground up as far as Colorado, Wyoming, and northern Utah. Extensive planting of fish in Lake Powell and in Navajo, Flaming Gorge and Blue Mesa Reservoirs will make these anglers' meccas. Lake Powell, now backing up behind Glen Canyon Dam, will be 186 miles long when filled. The lake and surrounding land have been declared a National Recreation Area and will be administered by the National Park Service, as are many other



major Bureau recreation sites. It will feature not only exceptional fishing, but also ample camping areas, boat ramps, marinas, and equipment stores. One of the highlights will be several water-borne marinas and a floating ramp in the narrows of Aztec Canyon below Rainbow Bridge. From here, it will be an easy hike to view this natural marvel that has heretofore been the exclusive province only of those hardy few who could make their way on foot or horseback through miles of rough country.

Public Facilities Provided

Flaming Gorge and Navajo Reservoirs also will have their boat ramps, campgrounds, picnic areas, beaches, fishing accommodations, and water sports facilities, and at Blue Mesa there will be, in addition, a big game management area and fish hatchery.

All along the Upper Colorado similar recreation areas are emerging or are on the drawing boards as plans proceed to harness the mighty Colorado to provide not only food and fiber, but also water-oriented fun for Americans living or visiting in the West. This preliminary recreation development is being financed with funds authorized by Congress in recognition of the great recreation potential of the Colorado River Storage Project, but further development





Winter or summer, in the water or on it, people and water add up to fun. Swimmers enjoy the coolness of Lake Mead beneath a hot desert sun on the Nevada-Arizona border behind Hoover Dam. Red Willow Dam in Nebraska on the Missouri River provides a young family with a frozen playground. Snack Dock at Folsom Lake State Park in the California Central Valley project hums like a beehive with boating activity.

by governmental and private interests is anticipated.

One of Reclamation's most perplexing problems in meeting recreation demands is the inadequacy of facilities on projects which were constructed without any provision for this function. The Bureau is now stressing expansion and modernization of the rather haphazard recreational development that has grown up on its older projects. A good example is the recently initiated program for Elephant Butte and Caballo Reservoirs on the Rio Grande Project in New Mexico.

Older Projects Important

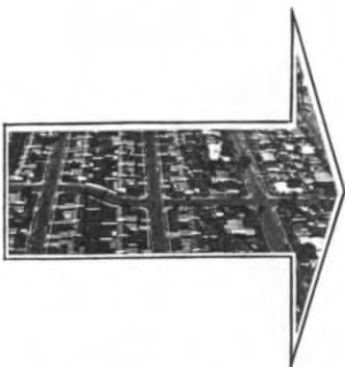
Caballo has virtually no public-use facilities, yet 62,000 recreation seekers visited it in 1962. At Elephant Butte the limited facilities built before 1936, when 13,000 visitor-days were reported, were called upon in 1962 to accommodate 1,270,000 visitors. Improvements for these two projects now having been authorized at a cost not to exceed \$607,000. Advance planning and surveying have begun with construction scheduled for early fall. Such updating of facilities on older projects is high on the priority list for Bureau planning in its efforts to meet the ever-swelling public demand.

The self-guided tour program at leading Reclamation dams is being expanded by the

Bureau. These tours, such as those now available at Grande Coulee, Shasta and Hungry Horse Dams, are proving very popular, and they have the double advantage of low cost and high enjoyment value. More and more visitors are evincing interest in the actual physical works of the dams and powerplants as well as in the sports the impoundments make possible. The self-guided tour may be taken at the visitor's leisure and convenience, with the opportunity to spend as much time as he likes on the attractions of his own choice.

With recreation now recognized as a major function of Reclamation development, and with the demand for it snowballing beyond all expectation, the Bureau of Reclamation is utilizing every possible square foot of water and land for this purpose. One innovation is the use of stilling basins for gigantic swimming pools, as at Cachuma Dam in California. Another is the new Bureau-designed split level dual outlet system being incorporated in Whiskeytown Dam to control the temperature of water releases in order to improve conditions for fish spawning.

Applying the same imagination to its recreation program as it does to its other Reclamation programs, the Bureau is striving to provide "hyacinths for the soul," as well as bread and water for the body, of America.



We must stem the advancing sheet of chemicals and concrete . . .

On Behalf of Our Fellow



Creatures



As the race for inner space in America moves rapidly into the crucial backstretch, the country's fish and wildlife resources still lag far behind. So far, these resources have fought a losing battle to maintain themselves in the face of man's relentless competition for their space.

The abundance of fish and wildlife species in America once was a source of amazement to the rest of the world. Some 127 million acres of marshland habitat supported a staggering continental waterfowl population and seemingly unlimited beaver, mink, muskrat and other aquatic wildlife. Drainage of these teeming lands started early and has continued until well over 100 million acres have been preempted for other uses.

The huge sea mink, the 30-foot Stellar sea cow, the Labrador duck, great auk and heath hen—all have long since disappeared. The buffalo, trumpeter swan, sea otter, prairie chicken and whooping crane exist only in limited numbers.

Today, America's fish and wildlife are facing the greatest challenge to their survival they have yet had to meet. The advancing sheet of concrete and chemicals is proving more lethal than the great continental glacier that did such a thorough job of extermination 10,000 years ago.

The Department of the Interior, custodian of nearly 29 million acres of marshlands, upland game lands and big game areas, is constantly seeking to protect suitable habitat for threatened wildlife and fish species. In 1961 the Congress passed the Loan Fund Act to speed purchase of wetlands, and during the past year the first funds appropriated under this Act—\$7 million—became available. Last year the Migratory Bird Conservation Commission approved nine new national refuges totaling 85,600 of additional acreage.

Wildlife Preservation Challenging

The maintenance of wild animal populations under present conditions presents one of today's greatest challenges to wildlife conservation.



Wildlife refuges are for people, too. Anglers here enjoy their sport in the recreation area of Upper Souris National Wildlife Refuge in North Dakota.

Not only the numbers of animals, but the species composition is important. The Department must play a balancing role in dealing with the rare whooping crane, which sets the pulses of bird lovers to pounding, the mallard and deer who are the hunter's quarry, and the mouse and starling, banes of the farmer's existence. Department biologists are constantly seeking ways to rehabilitate declining species, sustain game species and hold in check nuisance plants and animals.

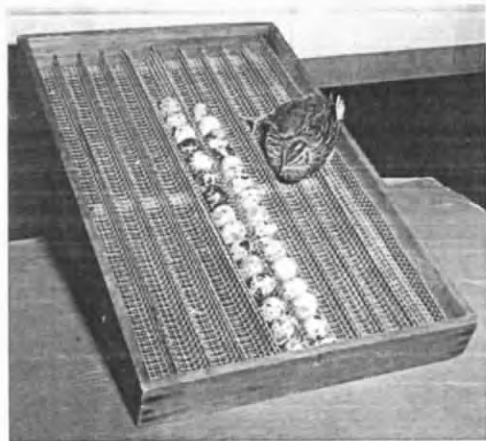
Propagation experiments with rare species, bird banding and survey records as a guideline to hunting regulations, research in controlling water- and space-consuming weeds, introduction of foreign game species into barren areas, management of timber harvests to encourage food plants for forest game—all are among the

Department's efforts to put all available space to work in anticipation of the demands of a recreation-oriented future generation.

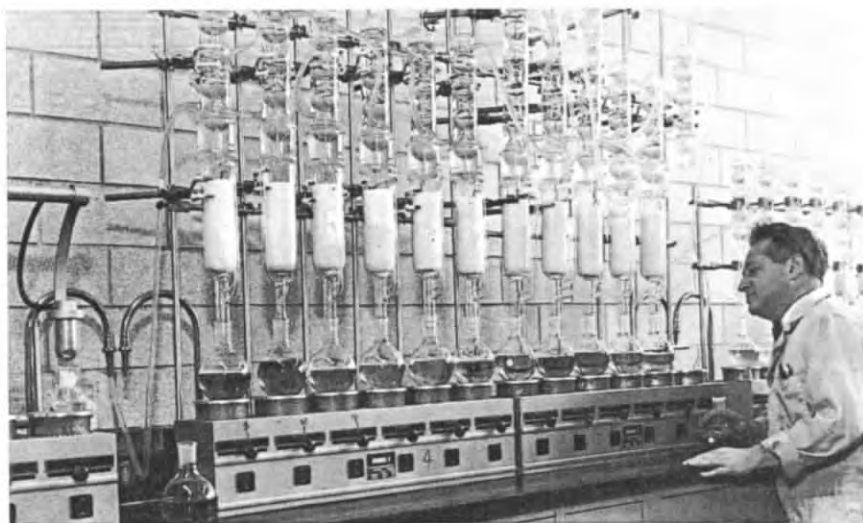
The effects of the annual spraying of 45 million acres of our land with highly toxic chemicals has recently come to the Nation's attention. Control of grasshoppers, gypsy moths, hemlock loopers and other pests is obviously essential. But safer methods must be found if the cost to American fish and wildlife is not to be beyond the limits of national thrift.

Pesticides Laboratory Opens

The biological research laboratory at Patuxent, Maryland, the Federal Government's first laboratory dedicated to the study of pesticides



The Coturnix quail lays twice her weight in eggs each month and matures in less than 80 days, making her species invaluable as a research animal in the pesticide studies now underway at Patuxent Wildlife Research Center. Some of the laboratory research equipment is shown below.



and wildlife, is the Department's latest step in this direction. Earlier research by Fish and Wildlife Service scientists showed a definite relation between the use of broad-spectrum chlorinated-hydrocarbon insecticides and some herbicides in the loss of wildlife and reduced production and vitality of the young. Pending legislation in the Congress looks toward more adequate control; meanwhile not just wildlife, but human life hangs in the balance.

A great measure of America's outdoor recreation is based on fish and wildlife. Sport fishing today provides recreation for a fifth of the population. One in every nine Americans finds his sport in hunting, and an estimated 70 million nonhunters and nonanglers find their enjoyment of fish and wildlife in the gentler pursuits of birdwatching, photography and nature study.

The philosophy of the Department is the same as that emphasized by the present Administration—that Americans should enjoy their fish and wildlife resources to the fullest possible extent compatible with the continued existence of those sometimes fragile resources.

Public Works Program Helps Cause

More than 200 Department-approved projects under the Accelerated Public Works Program in 35 States and Puerto Rico are creating better fish and game habitat and thus increasing the opportunities for public enjoyment. Included in the physical improvement program are 4,000 new acres of fishing waters in 29 public lakes, 630 miles of access roads and trails to fishing



Surf fishing will double in a generation—if there is space enough along our ocean shores. Marine anglers try their luck on Pea Island National Wildlife Refuge, within the Cape Hatteras National Seashore Recreation Area.



waters, and hiking trails to scenic areas, 290 boat launching ramps and numerous tables, fireplaces, camping sites, water and sanitary facilities.

Angling is expected to increase 40 to 50 percent in this country by 1976. To maintain present-day angler luck (1.4 pounds of sport fish a day) will necessitate an overall 25 percent increase in fish taken from existing waters. This increase must be in addition to anticipated progress in pollution abatement, provision of more public access facilities and construction of five million additional acres of reservoirs in the next 13 years.

The two most rapidly expanding outdoor

recreation frontiers are reservoirs and coastal marine waters, and Departmental research is concerned with acquiring information on marine game fish and maintaining fish populations in manmade lakes.

Federal areas must contribute a sizable part of the sport fishing opportunities needed to meet the increasing interest, and Department specialists are providing technical advice in the management of fishery resources in the lakes, ponds and streams of 239 military installations and other Federal areas and 39 Indian reservations. The program provided three million man-days of recreational fishing in 1962.

Hunting provides outdoor recreation for millions of Americans every year. A Wyoming game preserve is the setting for this outdoor fun, shared with man's best friend.



On September 28, 1962, Congress authorized the Secretary of the Interior to develop and manage national wildlife refuges, game ranges, national fish hatcheries and other conservation areas for "appropriate or secondary use for public recreation," wherever such use is compatible with the primary purposes of the areas. In line with this directive, the Department has opened a portion of many national wildlife refuges and game ranges to public hunting and fishing.

The National Fisheries Center and Aquarium for the Nation's Capital moved closer to reality during the year, and eventually will provide

one of the world's foremost research centers for the study of aquatic biology.

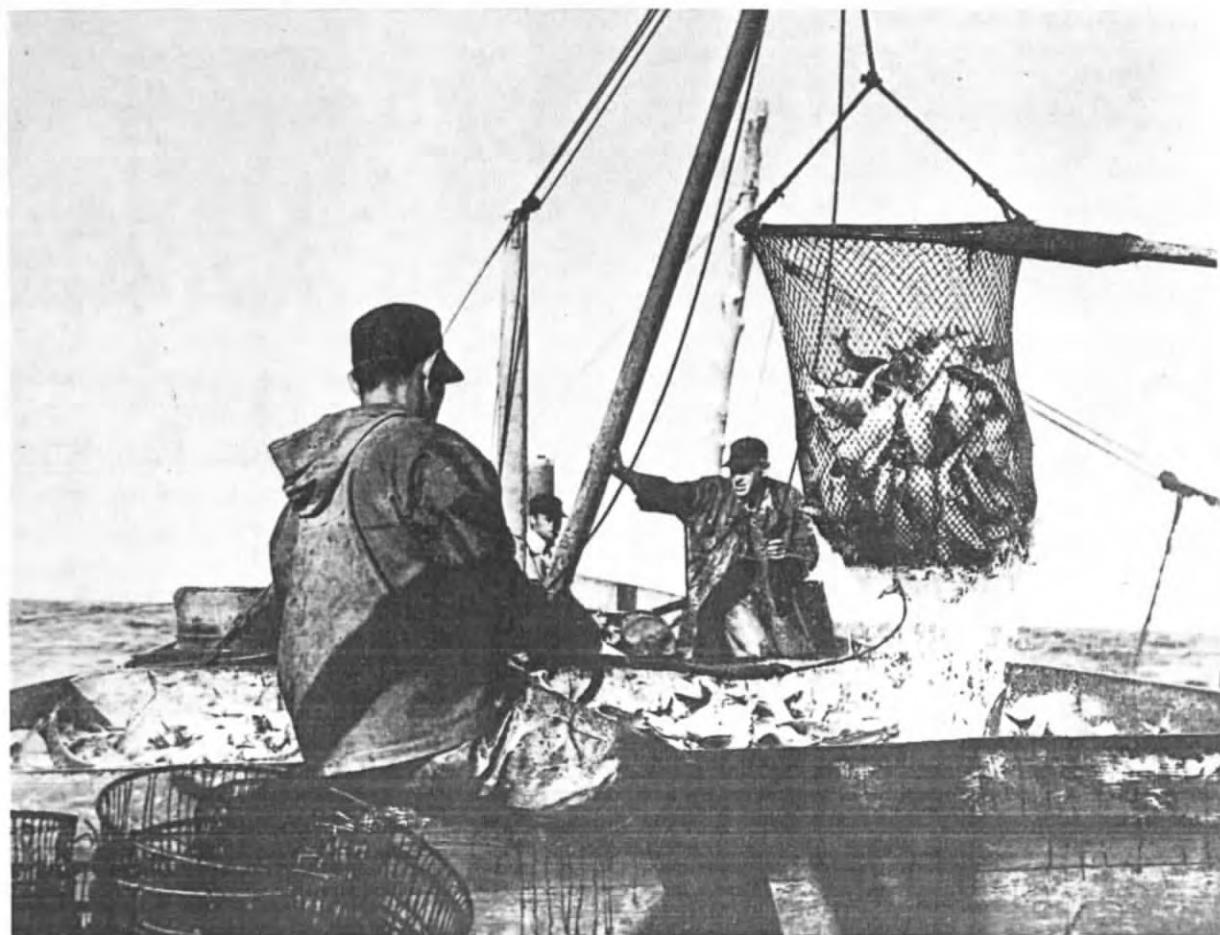
Thousands of projects—Federal, State, and private—affecting tens of thousands of miles of streams and millions of acres of land are either under construction or scheduled for early starts.

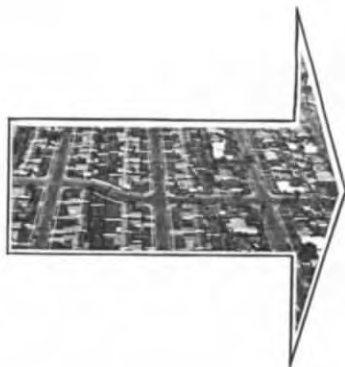
The increasing consideration to fish and wildlife and related recreation is largely due to the new standards for water development plans, approved by the President in May 1962 and to the joint reservoir land acquisition policy adopted by the Department of the Interior and the Army in February 1962.



The splendid salmon is one of the Northwest's great sport fish, as well as the basis for a solid industry.

A power-winch-operated dip net scoops tuna from the pocket of a pound net and loads them on the boat.





To Harness the Seas

. . . so that the land and its inhabitants may prosper . . .

Many of the important commercial fish, such as salmon, tuna, striped bass, croakers and sea trout, are eagerly sought by sportsmen, making the work of the Bureau of Commercial Fisheries of interest to the one in every five Americans who turns to the rod and reel for his outdoor recreation.

The abundance of marine life is subject to two general kinds of phenomena—manmade factors, such as pollution and engineering works, and natural factors, such as temperature, salinity, currents or storms. The changes in both categories can be gradual, or they may be sudden and catastrophic. Both types of variation must be understood if maximum recreational enjoyment from fishery resources is to be realized.

An example of the progress being made in understanding the vagaries of nature can be found in the air-ocean temperature studies now underway. It has long been known that ocean currents act as thermostats to minimize changes in air temperature. Department scientists are now finding that changes in ocean circulation and coastal climate may be determined by atmospheric conditions far removed in space and time. Unusually cold or warm winters reflect and presage great changes in the ocean—changes which bear on fishing success at some date in the still distant future.

Fishing Research Advances

The Department's Bureau of Commercial Fisheries has made substantial contributions to

knowledge of these matters—knowledge that can be used to increase the sports anglers' enjoyment.

The fishing devotee who hauls in his huge salmon from the back of a cruising yacht owes a great deal to the Bureau biologists who studied the habits of these fish and recommended successful ladder systems to pass the migrating fish upstream over dams. Methods for guiding young salmon safely past man-made obstacles have been found and successfully applied.

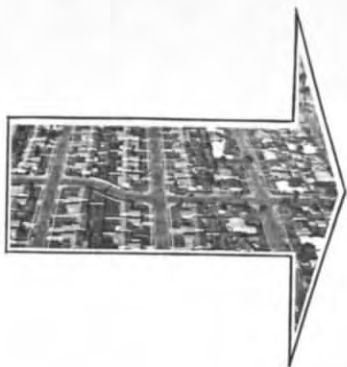
Fishermen, swimmers, boaters—anyone who finds his recreation on or near water—will benefit from the Department's new estuarine research program, aimed at finding new answers for dealing with pollution and studying the effects of pollution on such valuable sports fish as croakers, sea trout and weakfish.

Resources Are Mapped

Coastal anglers will find it easier to net the mighty tuna and salmon as a result of the Bureau's systematic mapping of the country's coast fishery resources. The same kind of mapping is contemplated for the Great Lakes.

The Bureau of Commercial Fisheries is alert to the demand for total usage, brought about by the mounting world population and the decreasing open areas left on the land. Its research personnel are constantly aware of the need for harnessing the bounty of the oceans so that the land and its inhabitants may continue to prosper.





466 Million Acres in the Bank

The race is on between preservation and abuse.

Good management of our public lands makes it possible for a large percentage of larger game animals, like these blacktail deer, to find forage. But litterbugging, such as is depicted below, is the kind of abuse to which public lands are too often subjected.



Airborne fighters drop by parachute onto a lightning-caused forest blaze 35 miles north of the Arctic Circle. These BLM-employed smokejumpers will be followed by World War II B-25 bombers with a fire-retarding mixture of borate and water, to coat trees and underbrush with mudlike slurry.



History has long shown that men will go where the riches lie—be they scenic splendor, tumbling waters, deep soil, tall grass, glittering mineral gold or the green gold of the forests.

The 466 million acres of Federal land administered by the Bureau of Land Management in the 12 Western States include some of the most spectacular desert, mountain, and canyon scenery in the country. Millions of people now hunt and fish every year on these lands. Others camp and picnic, hike, ride, water-ski, and enjoy the land in other ways. In 1962 more than 15 million recreation visits were made to BLM lands.

Yet because of the lack of even minimum sanitation and protection facilities on the bulk of this land, most of these visitors are unintentionally abusing the land and water resources, leaving litter, creating fire hazards, and accelerating erosion.

Better Accommodations Required

In most of the BLM areas frequented by occasional visitors, there are no garbage and trash receptacles, no toilets, no water wells, no stone fireplaces, no planned parking areas. Thus,

the public is using the lands without the facilities necessary to protect those lands against soil erosion, water pollution, wildfire, insect infestation and other damage to the resources. Some of these areas are in the watersheds which supply municipal and industrial water to towns and major cities.

In some cases lack of identification of best land use and of proper planning has led to inconsistent land use and ill-considered disposition.

The race is on between preservation and abuse of the public lands. The Department is carrying out certain programs, and proposing others, to make sure that preservation, not abuse, wins this race.

Under the authority of the Oregon and California Revested Lands Act, some 50 campgrounds and picnic areas have been built in Western Oregon since 1958. The funds for developing these campgrounds are part of the income from timber sales on these O&C lands.

Access Routes Provided

The 1963 Accelerated Public Works program provided \$1,399,000 to construct minimum ac-



Spring on BLM lands near Ely, Nev., has brought this mother a problem of "lamb management"—one for which the youngsters seem to find her satisfactorily and completely equipped.

cess and protective facilities on 49 sites in economically depressed counties of eight States. Mineral leasing, land sales, and other dispositions on the public lands provide the funds for this program.

The O&C and Accelerated Public Works projects are only a pilot effort—a demonstration of the kind of guardianship which could be provided all the public lands.

Land Available for Public Agencies

The Outdoor Recreation Resources Review Commission has emphasized that meeting the recreational needs of the American people is fundamentally the responsibility of State and local governments. In inviting this responsibility these local agencies receive the fullest cooperation from the Department.

Under the Recreation and Public Purposes Act of 1954, States and local governments are encouraged to acquire tracts of public domain land for recreation and other public purposes. The purchase price to public agencies for lands for recreation, education, and public health purposes was lowered in 1961 to \$2.50 per acre;



Two sturdy hikers pause to read a sign on the Mineral Ridge Scenic Area trail near Coeur d'Alene, Idaho. Accelerated Public Works in 1963 made this trail possible.



(Top left) Wild Horse Range in south-central Nevada, one of the most novel refuges in the world, was established in December 1962 by the Bureau of Land Management and the U.S. Air Force. The 435,000-acre range contains descendants of the famous mustangs renowned in folk lore of the Old West, who roam neglected corners of the Nellis Air Force Bombing Range.

the lease-rental was lowered to 25 cents per acre per year. The land is made available only when a definite plan of utilization and schedule of development is submitted. The Department's low sale and rental charges for these lands encourage communities to expand their recreation programs and to devote available funds to providing facilities needed by the public. During the past two years 133 patents totaling 11,277 acres have been issued under the Act and 142 leases totaling 90,000 acres have been put in effect.

Some examples of high recreational value lands transferred under the Recreation and Public Purposes Act are Angel Island, San Francisco Bay; Dead Horse Point, Utah; Imperial Hot Spa, California; Smith Rocks State Park, Oregon; and Grand Lake Park, Colorado.

Federal-State Cooperation Grows

To stimulate even greater use of this method of State-Federal cooperation in the development of public recreation, the Department has published a comprehensive brochure which explains to prospective applicants the opportunities and the procedures for these land transfers.

To plan for future development, the Department is now inventorying and evaluating the recreation and wildlife resources of the public lands. The inventory will categorize BLM recreational lands as most suitable to one of several purposes.

Wildlife is a basic part of recreation on BLM lands. Improvement and preservation of wildlife and its habitat are fundamental to the

Bureau's program to ensure the best care and management of the public domain. In certain States, BLM lands probably support as much hunting and fishing as any other category of Federally-owned lands. Under proper management, these activities can safely be increased.

Designation of certain areas for planned cooperative development is a key move to save public recreation areas for future use. In California, 14 land management areas totaling 810,570 acres of public lands have been identified as suitable for management by the Bureau of Land Management in cooperation with the State of California. These areas abound in wildlife resources. Other similar cooperative recreation designations in California and other States are under consideration.

Demonstration Areas Proposed

The Department is developing plans for special intensive management in certain areas of scenic, wildlife, and other natural resources on a demonstration basis. These special areas include King Range, Cow Mountain and Owens Valley, in California, Deschutes River in Oregon, and the Canyonlands buffer zone in Utah. Now before Congress are proposals that the public domain lands in the central portion of the magnificent Canyonlands region in Utah be given national park status. Public domain lands are included in legislation to create the Oregon Dunes National Seashore and the Whiskeytown-Shasta-Trinity National Recreation Area. Other outstanding scenic and recreation assets on the public lands are under study for special consideration and protection.

(Bottom left) The scenic and recreational possibilities of BLM lands are shown in this view taken along the Oregon-Idaho State line near the beginning of Oregon's Jourdan Valley.



This new road (above) on the Navajo Reservation near Kayenta, Ariz., has opened a rapid route from the southwest to southern Utah and Colorado. It is used principally by hunters, fishermen, campers, and tourists. Below, left, the Blackfeet near Billings, Mont., are gearing their recreation efforts to winter fun, as shown here at the Bridger Ski Bowl Area. Below, right, anglers find reel enjoyment on the shores of Eagle Lake on the Mescalero Reservation near Gallup, N. Mex.





Recreation on the Reservations

. . . key factor in developing an expanding, broadly based economy.

Some of the richest recreation potential in America lies on land reserved for America's original proprietors. From the beginning, many Indian reservation lands were marginal, their boundaries tending to shift, shrink or disappear altogether under the impact of external pressures. The expanding cattle industry demanded more grazing lands—oil and hard mineral interests moved in—and the Indians moved over.

By the 1930's, the descendents of the continent's original inhabitants were poverty-stricken landlords of some 52 million acres of largely undeveloped land, a wilderness area of lakes, rivers, timberland, mountains and desert.

Project Creates Recreation Outlets

The 1930's were depression years for other Americans as well. Their curtailed vacation plans were answered in part by the 414 million-cubic-yard concrete dam which Bureau of Reclamation engineers had placed in the Colorado River, creating Lake Mead Recreational Area. The National Park Service added 46 major recreation areas and witnessed during the decade the greatest upswing of visits in its existence. The vast TVA recreational complex came into being. State parks entered the era of their greatest growth. The inner space race was born in the thirties—but it was born to an uncertain world.

The war and lean years of material goods that followed slowed the race. But by the 1950's, the unprecedented demands for outdoor recreation was unmistakably clear. In the early

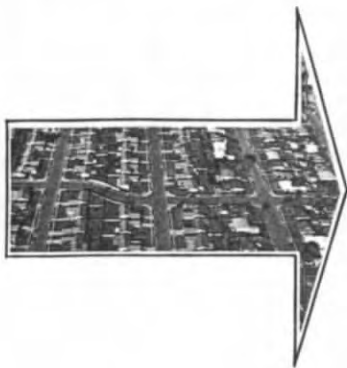
years of the current decade, it became apparent that past predictions of outdoor recreation needs were far too conservative.

As a result of these trends, the once-marginal Indian reservation lands have become the greatest unexploited tourism and outdoor recreation resource in the Nation—with 742,000 acres of lakes, 7,400 miles of rivers and streams, 13 million acres of timberland, hundreds of square miles of scenic mountains and desert. There are now about 100,000 miles of roads on Indian reservations in 22 States. The Bureau of Indian Affairs has constructed and authorized \$235,544 worth of tourist feasibility studies for the Indians on 18 reservations.

Indian Reservations Beckon Tourists

Once again Indian reservations are feeling external pressures—but this time the pressure is coming from hunters, fishermen, campers and tourists.

The descendants of the original settlers of this Nation propose to build an expanding, broadly-based economy which will include serving America's growing recreational needs. Americans are flocking to Indian-owned lakes, streams, fishing and hunting preserves, and the Indians are in the tourist business on an impressively growing scale. The future growth of tourism on Indian lands will provide employment and commercial revenue for the Indian owners of the reservation resources which the United States holds in trust; and in return, the resources will contribute importantly to meeting the outdoor recreation needs of a growing and increasingly mobile population.



Repairing the Land



Coal mine fires, like the one being fought here, can ruin land that could be used for outdoor recreation. Since 1949, projects conducted by the Department's Bureau of Mines have resulted in control of 117 such fires in inactive coal deposits burning under both public and private lands.

. . . the problem ran the gamut from acid to fire to water.



Bureau of Mines research is providing estimates of future water needs for mineral industries and charting methods for more effective conservation. This huge open pit copper mine near Bisbee, Ariz., requires large quantities of water for the extracting and processing of the ores.

The phenomenal success of American industry is one of the principal reasons for our growing need for outdoor recreation resources. A relatively small labor input—on the basis of our highly developed industrial technology—can supply the material and service needs of our population, leaving us both a high standard of living and a constantly increasing proportion of leisure time. This time must be put to healthful, constructive use if we are to remain a vigorous and progressive Nation.

It is the wise use of our mineral resources, which supply the hundreds of millions of tons of essential raw materials needed by American industry, which makes possible our increasing leisure and our rising living standard. Failure to make wise use of our minerals might well cancel out the whole problem of recreational needs for a depressed future generation.

Stripped Lands Restored

The demands of mineral conservation and those of outdoor recreation are beginning to bridge what seemed an insuperable chasm. Once, strip-mined melted mountains, choked streams and scarred the land that had yielded its mineral riches. Today, the Bureau of Mines is engaged in restoring one of these strip-mined lands to its original natural beauty. This pilot project, part of the Administration's Accelerated Public Works Program and being conducted in close cooperation with the Commonwealth of Pennsylvania, is designed to provide information on furthering the economic restoration of strip-mined lands in many areas of the United States.

This joint Federal-State experiment is providing a realistic model for the Nation to show how land devastated by savage extraction of valuable minerals can be reclaimed—how soil erosion and stream pollution can be mini-



Before North Dakota's Garrison Dam (a Bureau of Reclamation project) was built, this heavy equipment moved in and "rescued" an 11-foot-thick seam of lignite, 750,000 tons, which would have been under water and inaccessible if the dam had been completed before its removal.

mized—how areas of natural beauty can be restored to help supply our growing demands for healthful outdoor recreation.

We know already that some strip-mined surfaces can be reconstituted to provide land that is better and more valuable than it was before it was mined. What we must still learn is how such rehabilitation can be accomplished simultaneously with mining and at a cost that will permit continuing high employment and the fullest possible use of mineral resources.

Strip mines, underground mines and the processing plants that transfer their raw wealth into the essentials of everyday life are often the source of pollutants that foul the atmosphere and render our streams and rivers unfit for recreational use. Bureau of Mines programs aimed at controlling this kind of pollution are constantly being carried on. Smoke that once darkened the skies over steel mills, fumes that poisoned the air around oil refineries, exhaust gases issuing from tailpipes of cars—all have been greatly reduced over the years and all continue to be the object of Bureau research.

Science does not yet fully understand the processes that culminate in the formation of acid mine water. However, under the cooperative program inaugurated last year by the Bureau and the Coal Industry Advisory Committee of the Ohio River Valley Sanitation Commission, a vigorous research effort is being made. This joint study, involving intensive laboratory research, is seeking understanding of how acid water is formed and how it can be controlled.

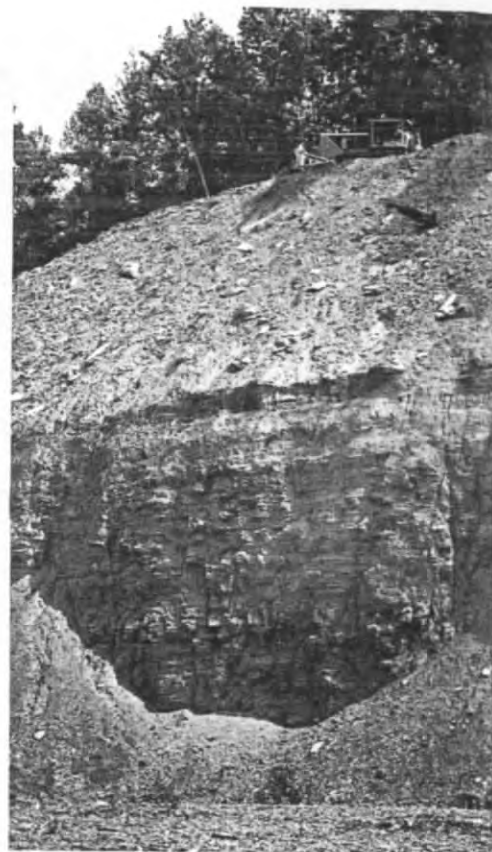
A Bureau of Mines motion picture, "Copper, the Oldest Modern Metal," produced under sponsorship of Phelps Dodge Corporation, received the Diploma of Honor at the International Exhibition of Documentary Films, Venice, and first prize at the International Exhibition of Scientific Didactic Film, University of Padua, in the chemistry category.

Water Needs Examined

Bureau engineers also are engaged in exhaustive studies to determine the precise amount and quality of water required for mining and



The charming woody scene above lies in a forested area which until 8 years ago was being stripmined. Now a part of Wayne National Forest in Ohio, it shows how such land can be rehabilitated. At right, a 10-foot-high bulldozer works to reclaim a stripmine in the Bureau of Mines' El Campton project, Pennsylvania.



processing mineral products. This research, by yielding accurate knowledge on today's water needs, can furnish a basis for estimating future requirements and can help indicate areas where conflicting demands are likely to develop.

Construction of reservoirs and dams usually provides swimming, boating, fishing and other forms of outdoor recreation, often near urban centers where they are most needed. The Bureau of Mines, acting as consulting engineer and mineral economist, sends its experts to proposed sites to advise construction agencies on related mineral potentials. Knowledge concerning mineral reserves that might be inundated or otherwise made inaccessible as a result of construction enables those responsible for planning to judge whether a dam or reservoir—and any recreational facilities that might be associated with such a project—would be worth the resulting loss in mineral values.

The benefits of Bureau of Mines programs in efforts to conserve recreational resources probably are seen most readily in the work that has been carried forward by the Bureau con-

tinuously since 1949 on controlling fires in inactive coal deposits.

In the years since such work began, the Bureau has cooperated with State and local governments and with private interests in projects that have controlled 115 fires in inactive coal deposits and have saved more than 300 million tons of coal from destruction. Many of these projects have been conducted in or near populated areas, where noxious gases, ground subsidence, and other hazards posed by the fires threatened life and property. However, others—particularly those carried out on public and private lands in the West—have helped to safeguard many acres of valuable range and forest lands, much of it with outdoor recreation potential.

During fiscal '63, the Bureau of Mines completed control projects on eight coal fires and work progressed on six others. Nevertheless, much remains to be done. At the last count, there were 227 such fires buring out of control in various part of the United States. Every one of them constitutes a menace to our land and its people.



Sailing and scuba diving in the Virgin Islands are made more enjoyable by the incredibly crystal-clear water.

Unspoiled beaches, sparkling water, waving palms, make of the territories . . .



Our Island Paradises

The beautiful tropic island territories and possessions of the United States offer increasing opportunities for the recreation-seekers of our growing population.

The pace, progress and stages of development differ from territory to territory, but each has something to offer in the expanding field of tourism.

The Virgin Islands provide a highly developed set of opportunities for the enjoyment of those who can race to tropical oases from wintry United States cities. Local government there has intensified tourist promotion, and recent developments, such as the new International Airport at St. Croix and the lengthening of St. Thomas air strips to accommodate turbo-prop planes, have enhanced the Islands' attractiveness to tourists. Virgin Islands National Park, Buck Island Reef National Monument, Limpricht Park in Christiansted and Cramer Park on St. Croix have been improved recently, and work is underway to deepen the Charlotte Amalie Harbor on St. Thomas.

Island Tourism Gains

American Samoa, still basically agricultural, is becoming increasingly tourist-conscious. Pan America's new 9,000-foot jet air strip and its rerouting of Honolulu to Sidney jets via Pago Pago has brought this strikingly scenic island area within easy range of many more

visitors. In the effort to make the islands accessible and attractive, the government of American Samoa has engaged in an extensive road paving program, including the building of an 11-mile scenic highway. Also a government project is a 60-room hotel at Goat Island, slated for completion early in 1964. Construction of a luxury tourist hotel is the first project planned by the recently formed Samoan Development Corporation.

In Guam, security requirements affecting the tourist economy were lifted in 1962, and the way is now open to develop another island playground. Unfortunately, two highly destructive typhoons struck Guam and parts of the Trust Territory last year, and most efforts since have been toward salvage and repair of the stricken communities.

Unspoiled white sand beaches make the Virgin Islands one of the most nearly perfect outdoor paradises to be found anywhere in the world.

The widely scattered island group of the Trust Territory must await better interisland transport before tourism can become an important factor in the economy. Micronesians are being encouraged to build and operate boats, docks, and airstrips to service visitors.

Two major concerns are guiding the development of all the territories—first, the safeguarding of the natural resources, and second, the provision of recreation facilities available to persons of all economic levels.





Six feet down through "inner space" to a million years ago . . .

Understanding Our Land

Americans enjoy their outdoor recreation in forms as varied as nature and ingenuity permit. The challenge in an increasingly crowded world is to make the greatest use of the areas available to us.

One of the most rewarding "uses" to which a recreation area can be put is the process of understanding it. By seeing the wonders of our natural environment through the eyes of knowledge, by being able to trace the forces that shaped the ways of land and water, we add a new dimension of enjoyment to our experience.

Through its various geologic, hydrologic and mapping projects, the Geological Survey contributes just this backdrop of understanding

which makes scenic America so much more meaningful to the eye of the beholder.

Public Understanding Sought

Geologic and hydrologic reports prepared for the layman, popular articles and informal talks—all are undertaken by Survey with the idea of broadening public understanding of the land and water environment.

Popular geologic accounts of Glacier National Park in Montana, Yosemite Valley in California, the Great Smoky Mountains in North Carolina and Tennessee and the Carlsbad Caverns in New Mexico are examples of the way in which Geological Survey is adding to citizen enjoyment of the out-of-doors.

The geological history of Washington, D.C., and other major U.S. cities is under review. In the District, for instance, six feet down through "inner space" can bring the observer back millions of years.

Rockhounding is the favorite outdoor sport of many Americans, and a 399-page volume recently prepared by Geological Survey ("Minerals of Colorado") is adding to the knowledge and enjoyment with which many an amateur mineral collector is pursuing his specimens. The bulletin is currently in its second printing.

Films and Reports Popular

The award-winning Geological Survey film, "Eruption of Kilauea, 1959-60", has won acclaim not only for its vivid recording of a spectacular eruption but also for its lucid explanation of volcanic processes in simple terms.

Two chapters for a book on Owens Valley and its neighboring mountains were prepared by Survey geologists and published by the Sierra Club. Popular accounts now being prepared include reports on the geology of the Philmont (Boy Scout) Ranch in New Mexico, the Black Canyon of the Gunnison, Colorado, and the Northern Cascades in Washington. The aim is always to tell the geologic story in accurate, yet simple terms.

Program to Enrich Knowledge

For the future, Geological Survey is planning a two-part program to enrich popular knowledge and appreciation of geologic processes in general, of the role they play in shaping our national landscape and its vast latent wealth of mineral, fuel, and water resources, and specifically of the rocks and geologic history of individual regions of the United States.

Part I of this program consists of a considerable expansion of the effort devoted to the writing of popular accounts, and the inauguration of a series of popular leaflets and pamphlets covering a wide variety of topics, such as volcanoes, earthquakes, tektites, and geologic maps. This part of the program already is underway.

Part II of the program, still in the tentative



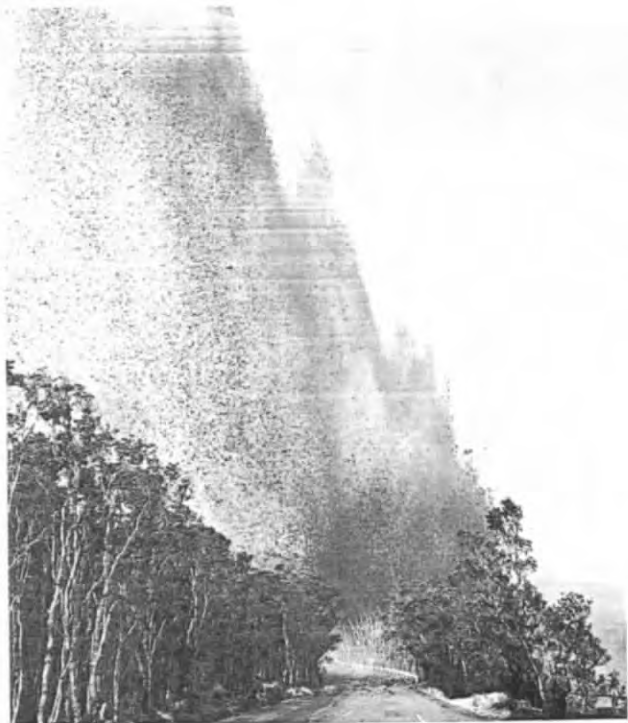
Seldom does the earth give up its secrets in such spectacular fashion. Here, in Hawaii's Volcano National Park, the 1959-60 eruption of Kilauea Iki afforded Geological Survey the chance to measure and probe and learn—and film a prizewinning movie at the same time.

stage, would be a popular series of geologic structure of individual geologic provinces of the United States, such as the Southern Appalachians, the Colorado Plateaus, and the Northern Rockies.

The Survey provides basic and interpretive data on water quality which is of prime importance in recreational use of water, as well as industrial and household use.

Water Quality Important

Impairment of water quality is the chief limitation on use of water for recreational purposes.



This does not mean that recreational water should necessarily be clear and without taste, color or odor. Such a stream may be unsuitable for propagation of aquatic life. Small aquatic plants and animals serve as food for fish, and keep the water live and clean for swimming.

Suspended sediment is one of the most common pollutants to spoil recreation water. Sport fish have difficulty seeing through cloudy water and cannot locate their food. Where sunlight cannot penetrate, the amount of oxygen in the water is reduced. Reduction of oxygen ad-

versely affects fish and other water animals and plants. Stream bottoms, and banks covered with sediment will not support biological growth.

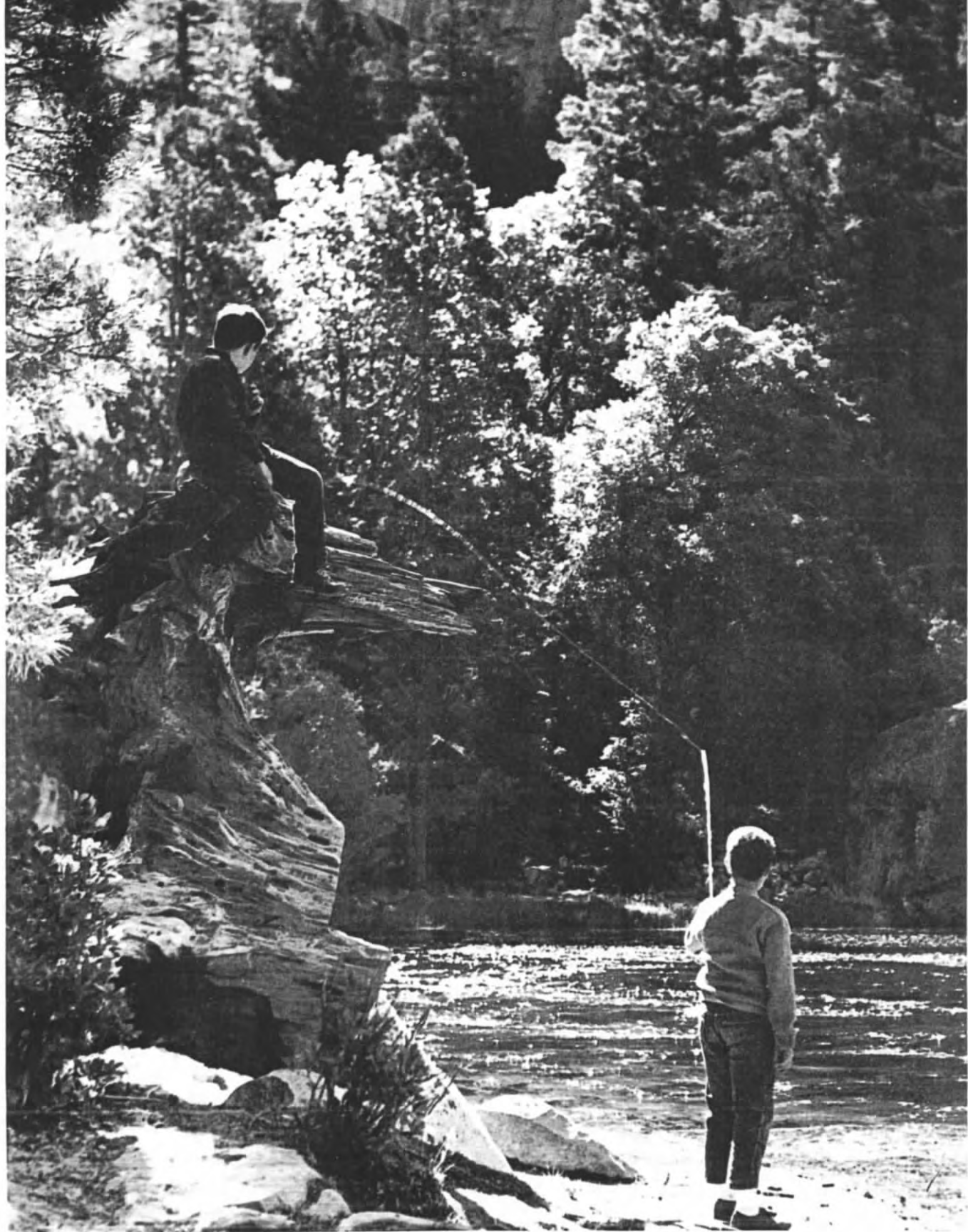
Prominent among the many water quality studies of the survey is basic research into the influence of biological processes on the chemistry of fresh, unpolluted waters. This research will provide a better understanding of the interaction between natural chemistry and biological environment. Indirectly this research could affect swimming and fishing.

Measurements Constantly Underway

The Survey maintains a network of more than 1,300 stations for measurement of chemical quality, sediment, temperature, or any combination of these. A substantial amount of information obtained from Survey studies is used directly in evaluating the recreational potential of water resources.

Modern topographic maps, essential tools for the planners and engineers, and a source of information and pleasure for the visitor—are being developed by the National Topographic Mapping Program, the Geological Survey's Topographic Division. New maps, covering National Parks, Monuments, and Wildlife areas in six States were authorized last year. Specifically requested by Interior's National Park Service is a map of Badlands National Monument, South Dakota, and a new map of Yosemite National Park, California. New topographic quadrangle maps have been authorized for Assateague Island, Maryland; Bad River Indian Reservation area, Wisconsin; and the Pictured Rocks area, Alger County, Michigan, on request of the Bureau of Outdoor Recreation. The Okefenokee Swamp National Wildlife Refuge will be shown on new quadrangle maps requested by the Bureau of Sport Fisheries and Wildlife.

These maps will join a rapidly growing collection of similar publications which have helped the experienced outdoor enthusiast enjoy new frontiers, and the conventional traveler understand a little more of our still unspoiled countryside.





The Future Depends

. . . only greatness will answer the challenge . . .

The highest form of national thrift, which we call conservation, stands at a crucial point today. The choice of directions is clear; which specific route we will choose is not so apparent. Each day calls for a new decision in a continuing effort where one day's gain can mean only that—never the ultimate victory.

When our forward motion is matched against the mounting pressures from population, pollution, and the intensifying battle for elbow room on the surface of this planet, our seeming gains fall short even of "holding our own." Like the Red Queen in "Through the Looking Glass," we must run at top speed just to stand still. The countryside is slipping away from us so fast that a breakneck effort to keep up is needed if we are not to fall forever behind.

Leadership Provided

The Johnson Administration, like the Kennedy Administration before it, has assumed an all-out leadership role. Overall studies, plans, projects and proposals have been pouring out of government agencies at all levels, representing local, State, National, and combinations of these levels in approach, always with the public's benefit, refreshment and enjoyment as their common objective. Leadership is present in abundance; but in a democratic society such as ours, even so vital a measure as conservation must have its adherents. If Ameri-

cans are willing to watch their streams become choked with waste, their brooks bubbling with detergent backwash, their cities hung with palls of polluted air, their forests denuded, their public lands washed away, their last natural areas and the wildlife they support disappearing forever, then surely this shall be. If, on the other hand, they prefer to act as responsible stewards of a land they hold only in trust for continuing generations, they must first learn, and then be heard. For most of the major conservation proposals depend upon the legislative stamp of approval; and citizen interest and concern constitute the ultimate trigger which activates the legislative machinery.

Citizens Unite Behind Efforts

Today there are citizen groups all over the country whose programs already are in accord with the highest principles of conservation. But awareness and action on the part of increasing numbers of Americans is still urgently needed to bring our national effort abreast of our national need.

Opportunities lost today are almost without exception gone forever. The conservation clock is ticking too fast to be turned back. The need today is to forget small differences and join our efforts on behalf of great gains. For only greatness will answer the conservation challenge of the Sixties.

APPENDIX 5

A five-man group, appointed by the Secretaries of Interior and Agriculture, will report back to the Secretaries on a nationwide system of wild rivers and streams, identifying the portions highest in outdoor recreation potential.

APPENDIX 6

Shorelines of the two lakes are only 6 to 12 miles apart for a distance of some 40 miles above each dam. The narrow strip they enclose is made up of wooded slopes rising up to 300 feet above the reservoirs on either side.

The area will include new waterfowl wintering grounds, to be developed in cooperation with the Bureau of Sport Fisheries and Wildlife and for management of upland game, including improvement of public hunting.

President Kennedy noted that the Between-the-Lakes area is within 200 miles of nearly 10 million people and thus merits high priority on the densely populated area basis.

TVA will start the project early in fiscal '64 and will administer it for an estimated 10 years—the period required to complete the demonstration. Arrangement for permanent administration will be made at the end of the demonstration period.

APPENDIX 7

Key features of the initial phase of the Pacific Southwest Water program include:

1. Construction of Bridge Canyon and Marble Canyon dams in Arizona on the Lower Colorado River with transmission and other related facilities.
2. Enlargement of the California State Water Project aqueduct to provide incremental capacity for the aqueduct now under construction by the State of California to permit delivery of an additional 1,200,000 acre-feet (391 billion gallons) per year to southern California.
3. Construction of the multimillion dollar Central Arizona Project which will facilitate diversion of 1,200,000 acre-feet (391 billion gallons) annually from Lake Havasu on the Colorado River. The project would include some 400 miles of aqueducts with required pumping and regulating facilities to deliver water into the Phoenix and Tucson areas.
4. Authorization of a 50 million gallon per day (45,000 acre-feet per year) water desalting installation—the largest plant of its kind in the world—on the seacoast in southern California, plus intensified studies of the feasibility of additional plants.
5. Construction of the first stage of the Southern Nevada Water Supply Project to provide up to 90,000 acre-feet (29.3 billion gallons) of water annually by 1968 for the Boulder City, Henderson, and Las Vegas areas.
6. Stepped-up development of the Dixie Project in southwestern Utah to provide about 60,000 acre-feet (19.6 billion gallons) of water annually, starting in 1970, for irrigation, municipal, and industrial use.

Appendix

APPENDIX 1

The agreement provided specifically for:

1. Mutual recognition for the distinctive administrative functions of the Forest Service and the National Park Service.
2. No disturbance of jurisdictional responsibility among the agencies of the two Departments managing and developing lands for public recreation except for existing Administration proposals, proposals covered by the agreement, or routine boundary adjustments.
3. No unilateral new proposals to change the status of lands under the jurisdiction of the other Department. Joint studies will be the rule.
4. Each Department, with the support and cooperation of the other, will endeavor fully to develop and effectively to manage recreation lands now under its administration.

APPENDIX 2

The proposed Whiskeytown-Shasta-Trinity National Recreation Area, comprising about 280,000 acres, would consist of three noncontiguous units surrounding Whiskeytown, Shasta, Trinity, and Lewiston reservoirs constructed by the Bureau of Reclamation as part of the Central Valley Reclamation project. Portions of the area around Shasta Lake and the Trinity-Lewiston Reservoirs lie within the boundaries of Shasta-Trinity National Forest and would be administered by the Forest Service. The scenery is breathtaking and the water sports will include excellent lake and stream fishing and boating.

APPENDIX 3

Flaming Gorge consists of 160,000 acres on Green River in northeastern Utah and adjacent areas in Wyoming. It is upstream from the Bureau of Reclamation dam under construction at Flaming Gorge in Ashley National Forest. An interdepartmental agreement would place the 40,000 acres which lie within the National Forest boundaries under Forest Service administration.

APPENDIX 4

The Proposed Oregon Dunes National Seashore, 35,000 acres of towering white dunes and Douglas fir, has been almost entirely under the protection and management of the Forest Service.

7. Construction of the Hooker Dam Project in New Mexico (part of the Central Arizona Project) with completion by 1974 to control and regulate erratic storm and winter season runoff, to stabilize flows for downstream agriculture, and for industrial and municipal water uses in the Silver City and Tyrone areas.

8. Expansion and construction of the Indian irrigation project facilities by 1970 on the Colorado River Reservation in Arizona and California; the Fort Mohave Reservation in Arizona, California, and Nevada; and the Chemehuevi Reservation in California.

9. Water salvage and ground-water recovery programs along the main stream of the Colorado to conserve river flows now being consumed for nonbeneficial purposes and water now being lost to the underground.

10. Initiation of concurrent programs of fish and wildlife enhancement, outdoor recreation, and other functions relating to water-development projects.

APPENDIX 8

Under provisions of the Fund, States and the Federal Government would share about \$180 million annually over a 10-year period. The larger share would go to the States on grants-in-aid basis. As introduced, the bill provided that the Fund would receive \$50 to \$60 million annually from an automobile conservation sticker good for admission to all Federal recreation lands; \$10 million from special camping, picnic and swimming fees at improved Federal areas; \$30 million from allocation of the existing four-cent tax on marine pleasure craft fuels; and \$50 million from the sale of surplus Federal property.

A portion of the revenues would be paid annually to the Treasury to help offset recreation costs at Federal water projects.

The bill also provided for repayable annual advance appropriations to the Fund, averaging \$60 million. This appropriation would begin with the third year of a 10-year program.

States would receive approximately 70 percent of the Fund, with the Federal Government taking the remaining 30 percent. Apportionment of the States' share would be on the following basis: one-fifth divided equally among all States; three-fifths divided according to each State's proportion of the national population; and one-fifth according to need at the discretion of the Secretary of the Interior.

APPENDIX 9

Early action, before Assateague is pre-empted for other uses, was stressed in the report. More than 33 million people live within a 250-mile radius of the Island and it is estimated that more than three million visitors could be expected annually in the initial period following its establishment.

The report recommends that the Island, a barrier reef, be managed for maximum public recreation, with a balance between high and low density use to be encouraged. The north portion of the Island would be developed by

Maryland as a state park. Chincoteague National Wildlife Refuge in the southern portion of the Island also would retain its identity.

The 33-mile-long island, with its wide, gently-sloping clean sand beach offers unexcelled opportunities for swimming, surfing, fishing, skin diving, water skiing, boating and other popular beach activities. The marshes on the bay side provide superb habitat for a large variety of shorebirds and water fowl.

APPENDIX 10

The North Cascades Mountains Study team, also a joint Interior-Agriculture project, has initiated a series of resource substudies, to provide factual basis for recommendations in the areas of (1) regional economy, (2) water and power, (3) recreation, (4) timber, (5) minerals and geology, (6) fish and wildlife, and (7) forage. The North Cascades in Washington, containing some of the most rugged and majestic scenery in the nation, have long been the subject of conflicting proposals for development by outdoor, commercial and other interest groups. No report is expected before December 1964.

APPENDIX 11

A study of establishment of a Pictured Rocks National Lakeshore in Michigan, based on a revised proposal by Senator Philip A. Hart of Michigan, was ordered by Secretary Udall and is now underway in the Bureau of Outdoor Recreation. The proposal would provide for commercial as well as recreational use of the area, would protect tenure of landowners and would provide for commercial forestry on private lands in the area under management guidance of the Forest Service.

APPENDIX 12

Allagash National River, Maine; Allegheny Portage Railroad National Historic Site, and Johnstown Flood Memorial, Pennsylvania; Assateague National Seashore, Maryland-Virginia; Bighorn Canyon National Recreation Area, Montana-Wyoming; Boston National Historic Sites, Massachusetts; Buffalo National River, Arkansas; Canyonlands National Park, Utah; Channel Islands National Seashore, California; Chesapeake and Ohio National Historical Park, Maryland; Congaree Swamp National Monument, South Carolina; Fire Island National Seashore, New York; Flaming Gorge National Recreation Area, Utah-Wyoming; Florissant Fossil Beds National Monument, Colorado; Fort Bowie National Historic Site, Arizona; Fort Larned National Historic Site, Kansas; Fort Union Trading Post National Historic Site, North Dakota-Montana; Fossil Butte National Monument, Wyoming; Golden Spike National Historic Site, Utah; Great Basin National Park, Nevada; Great Falls Park, Virginia; Hubbell Trading Post National Historic Site, Arizona;

Ice Age National Scientific Reserve, Wisconsin; Indiana Dunes National Lakeshore, Indiana; Longfellow National Historic Site, Massachusetts; Mount Clare Station National Historic Site, Maryland; Oregon Dunes National Seashore, Oregon; Ozark National River, Missouri; Pecos National Monument, New Mexico; Pictured Rocks National Lakeshore, Michigan; Poverty Point National Monument, Louisiana; Prairie National Park Kansas; Saint Gaudens National Historic Site, New Hampshire; Sleeping Bear Dunes National Lakeshore, Michigan; Tocks Island National Recreation Area, New Jersey-Pennsylvania; Valle Grande National Park, New Mexico; and Whiskeytown-Shasta-Trinity National Recreation Area, California.

APPENDIX 13

Secretary Udall issued a statement in June 1963 urging Congressional approval of legislation to establish a new Fire Island National Seashore, to help serve the recreational needs of the New York metropolitan complex.

More than 16 million people live within a 100-mile radius of the proposed Seashore, and Secretary Udall stated:

“Nowhere else in the country is there a greater need by so many people for additional outdoor recreation opportunities that can be supplied in abundance and variety.”

APPENDIX 14

Primehook Refuge in Delaware, Teppenish Refuge in Washington, Lake Nettie in North Dakota, Pahrangat in Nevada, Willamette in Oregon, Oconee in Georgia, Sudbury in Massachusetts, Lake Woodruff in Florida and Pungo in North Carolina.

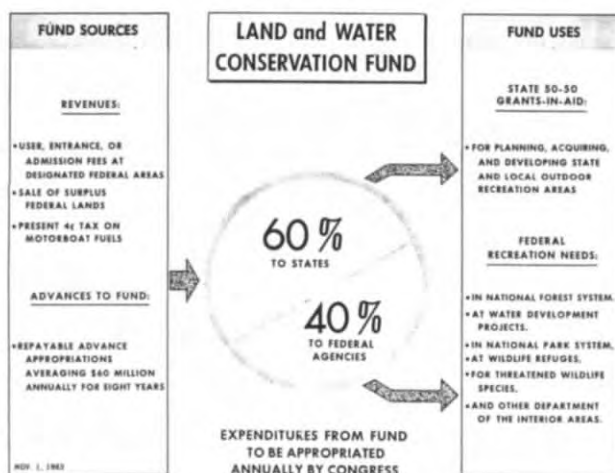


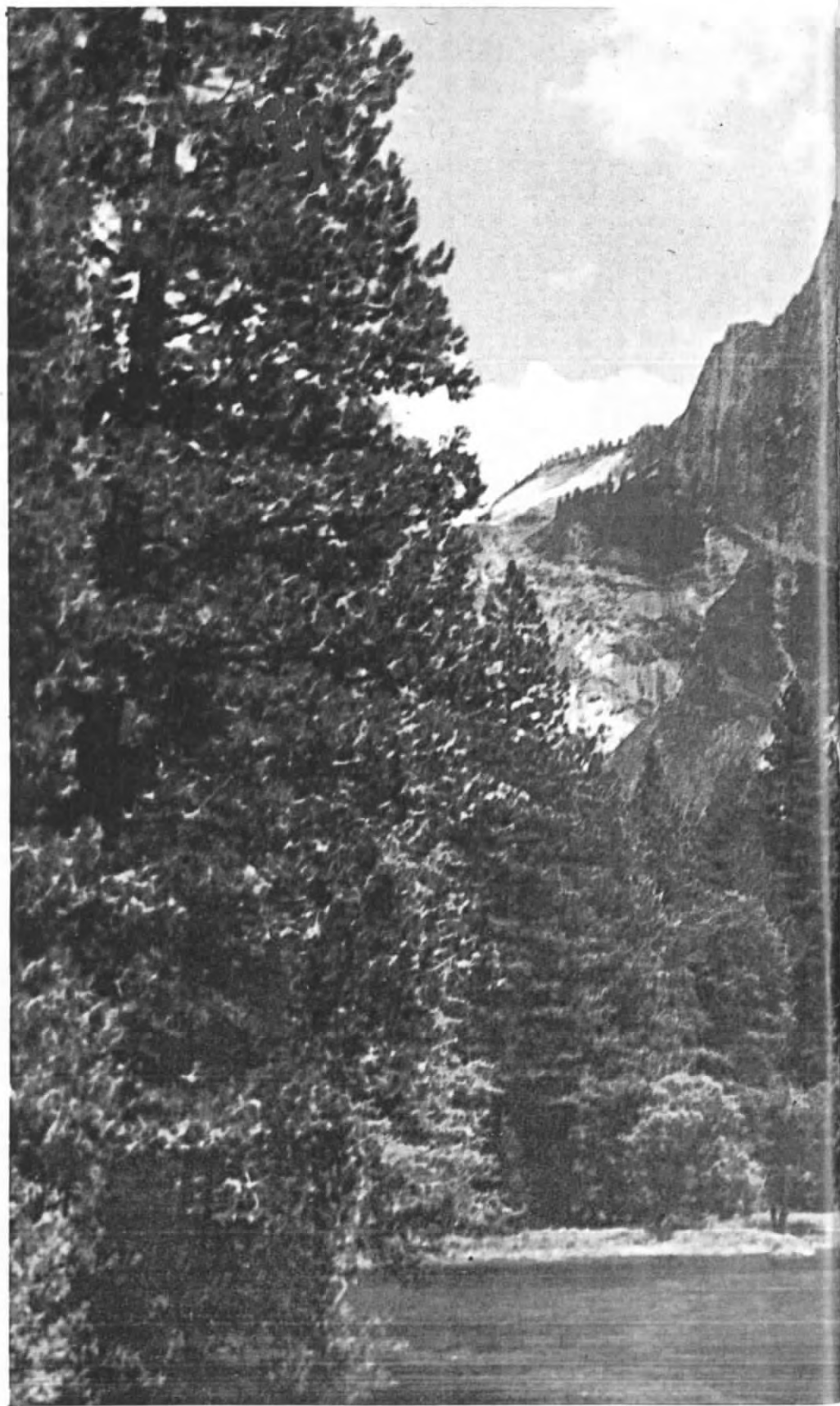
Photo Credits

The Department of the Interior gratefully acknowledges the cooperation of the following organizations in supplying illustrations for this publication:

Los Angeles County Air Pollution Control District, p. 12; USDA photograph (upper right), p. 13; Cleveland (Ohio) Plain Dealer, p. 15; American Heritage, Herbert Loebel, p. 17; U.S. Forest Service, cover, title page, and p. 75, and (upper right), p. 25 and p. 61; Bill Browning, Montana Chamber of Commerce, pp. 22, 23, 24, and (lower right) 25; reprinted from June 3, 1963, issue of *Electrical World*, copyright 1963, McGraw-Hill Publishing Co., Inc., all rights reserved (lower left), p. 40; Jim Yoakum, p. 50.

Mount Jefferson from the Deschutes National Forest, Oregon.







For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 - Price 55 cents

U.S. GOVERNMENT PRINTING OFFICE: 1964 O-713-113

The Race For Inner Space

U.S. DEPARTMENT OF THE INTERIOR
STEWART L. UDALL, SECRETARY

In its assigned function as the Nation's principal natural resource agency, the Department of the Interior bears a special obligation to assure that our expendable resources are conserved, that renewable resources are managed to produce optimum yields, and that all resources contribute their full measure to the progress, prosperity, and security of America, now and in the future.

