

NATIONAL PARKS *Magazine*



Bloom of the strawberry cactus in
Big Bend National Park, trans-Pecos Texas

April 1966

The North Cascades*

An Editorial

A GRAND OPPORTUNITY LIES BEFORE the Nation to launch an unprecedented program of environmental protection in the Pacific Northwest.

The report of the North Cascades Study Team blazes a new trail for interdepartmental cooperation, even though the conclusions were far from unanimous.

The report can and should initiate a comprehensive planning approach to the resources problems of the region.

One of the goals of planning should be the protection of ample areas of untouched Wilderness for human appreciation and enjoyment.

On this assumption, the entire North Cascades Primitive Area should be preserved in perpetuity as a Wilderness Area, without roads, without mechanical intrusion of any kind, *not* excepting tramways and helicopters, without logging, and with the speediest possible exclusion of mining.

The area east of Ross Lake would presumably remain under Forest Service administration; the area west of Ross Lake might be placed under the administration of either the Forest Service or Park Service; in the latter case it would become part of a magnificent new national park, but must not be opened up to roads, facilities, or mechanical intrusion; it would exclude hunting.

A number of marginal areas around this new Wilderness Area, where Wilderness protection should be the dominant consideration, should be added.

The developed portions of the Mount Baker Recreation Area, in our considered judgment, should be excluded from any proposed national park. Heavy pressures exist in many places for the invasion of the national park

system by mechanical ski tows and similar facilities; if such structures were imported by way of Mount Baker, they could easily spread through the system.

The Glacier Peak Wilderness Area can conceivably be protected as such with considerable desirable enlargement, either under Forest Service or Park Service management. The essential thing is that it should be preserved as Wilderness.

Between the present North Cascades Primitive Area and the present Glacier Peak Wilderness Area, and between Lake Chelan and Ross Lake, lies a stretch of mountain country within which both recreational facilities and Wilderness could be protected.

If a trans-mountain road must be constructed through this portion of the Cascades, it should cross in the vicinity of Rainy Pass, not Harts Pass, and should not follow the upper portions of Ruby Creek.

There is no reason why a highway, in and of itself, should disqualify the areas on either side for wilderness area classification.

Subject to a rapid phasing out of mining and exclusion of hunting, this region in itself would make a very sizable national park. Reasonable access and facility areas comparable to those in other national parks, but more restricted than in the crowded national parks, would be established.

Surrounding the Glacier Peak Wilderness Area there should be a very extensive buffer zone within which the cutting of timber would be restricted either to salvage logging or to ecological forestry practices.

The boundaries of such a buffer zone might be roughly those which have been proposed by the North Cascades Conservation Council as a recreation area.

A large Wilderness Area should be established comprising the Alpine Lakes Wilderness and the Enchantment Wilderness.

The proposed Mt. Aix Wilderness Area should certainly be established, but the Cougar Lakes Limited Area, which lies between the proposed Wilderness Area and Mt. Rainier National Park, should also be protected as Wilderness, including the Fish Lake, Bumping Lake, Bumping River watershed. Whether the Cougar Lakes area is protected as Forest Service Wilderness or as Park Service Wilderness and included in Mt. Rainier Park is relatively unimportant.

During the period when these questions are being finally decided, the Forest Service ought to have the decency to refrain from the development of roads and mass recreational facilities in areas being discussed as potential Wilderness Areas.

In our judgment, the best way for the Forest Service to wreck its public relations in the Pacific Northwest is for it to push ahead relentlessly with development, whether for crowd recreation or timber, in these proposed Wilderness Areas.

Many people are troubled by a suggestion that there is a link between the proposals advanced by Regional Director Overly of the Bureau of Outdoor Recreation regarding Olympic National Park and the proposals of the North Cascades Study Team. It has been suggested that the price of a North Cascades National Park might be the surrender of the Bogachiel-Calawah rain forest and other valuable areas of Olympic National Park.

We have made clear in a letter protesting to the Secretary of the Interior that the boundary adjustments recommended in the Overly report are intolerable. The continued and consistently renewed harassment of Olympic National Park needs to be ended forthwith.

The Overly report should be dropped in the wastebasket, and its acceptance, in part or in whole, should be no part of any plan for the protection of the North Cascades. —A.W.S.

* This editorial is essentially a condensation of testimony on the North Cascades and a letter about Olympic Park submitted on invitation at hearings of the Committee on Interior and Insular Affairs of the Senate of the United States on February 11 and 12, 1966, at Seattle, Washington.



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Front cover photograph courtesy National Park Service: M. Woodbridge Williams

In that great horseshoe of the Rio Grande which forms the southernmost portion of arid trans-Pecos Texas lies Big Bend National Park, incorporated into the national park system in 1935 to protect not only a wealth of desert and mountain scenery but a surprisingly large assortment of plant and animal life, a tiny percentage of which is either unique to the Big Bend country or to the United States as a whole. Here many of the animals and plants of Old Mexico's high plateau and desert country mingle with those of higher latitudes. It is, perhaps, the wide variety of park plants which particularly attracts the attention of visitors; and among the showiest of plants-abloom is one of the four species of *Opuntia* cacti that inhabit lower elevations of the Big Bend—*Echinocereus stramineus*, otherwise known as the pitaya, or strawberry cactus.

The Association and the Magazine

The National Parks Association is a completely independent, private, non-profit, public-service organization, educational and scientific in character, with over 32,000 members throughout the United States and abroad. It was established in 1919 by Stephen T. Mather, the first Director of the National Park Service. It publishes the monthly *National Parks Magazine*, received by all members.

The responsibilities of the Association relate primarily to the protection of the great national parks and monuments of America, in which it endeavors to cooperate with the Service, while functioning also as a constructive critic; and secondarily to the protection and restoration of the natural environment generally.

Dues are \$6.50 annual, \$10.50 supporting, \$20 sustaining, \$35 contributing, \$200 life with no further dues, and \$1000 patron with no further dues. Contributions and bequests are also needed. Dues in excess of \$6.50 and contributions are deductible for Federal taxable income, and gifts and bequests are deductible for Federal gift and estate tax purposes. As an organization receiving such gifts, the Association is precluded by law and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals.

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Photograph by the author

An intensive study of Arizona's Organ Pipe Cactus Monument and Cabeza Prieta Game Range preceded recommendations for a Sonoran Desert National Park. At left, a Park Service inspection party investigates a portion of the game range in early 1965.

A Sonoran Desert National Park

By Weldon F. Heald

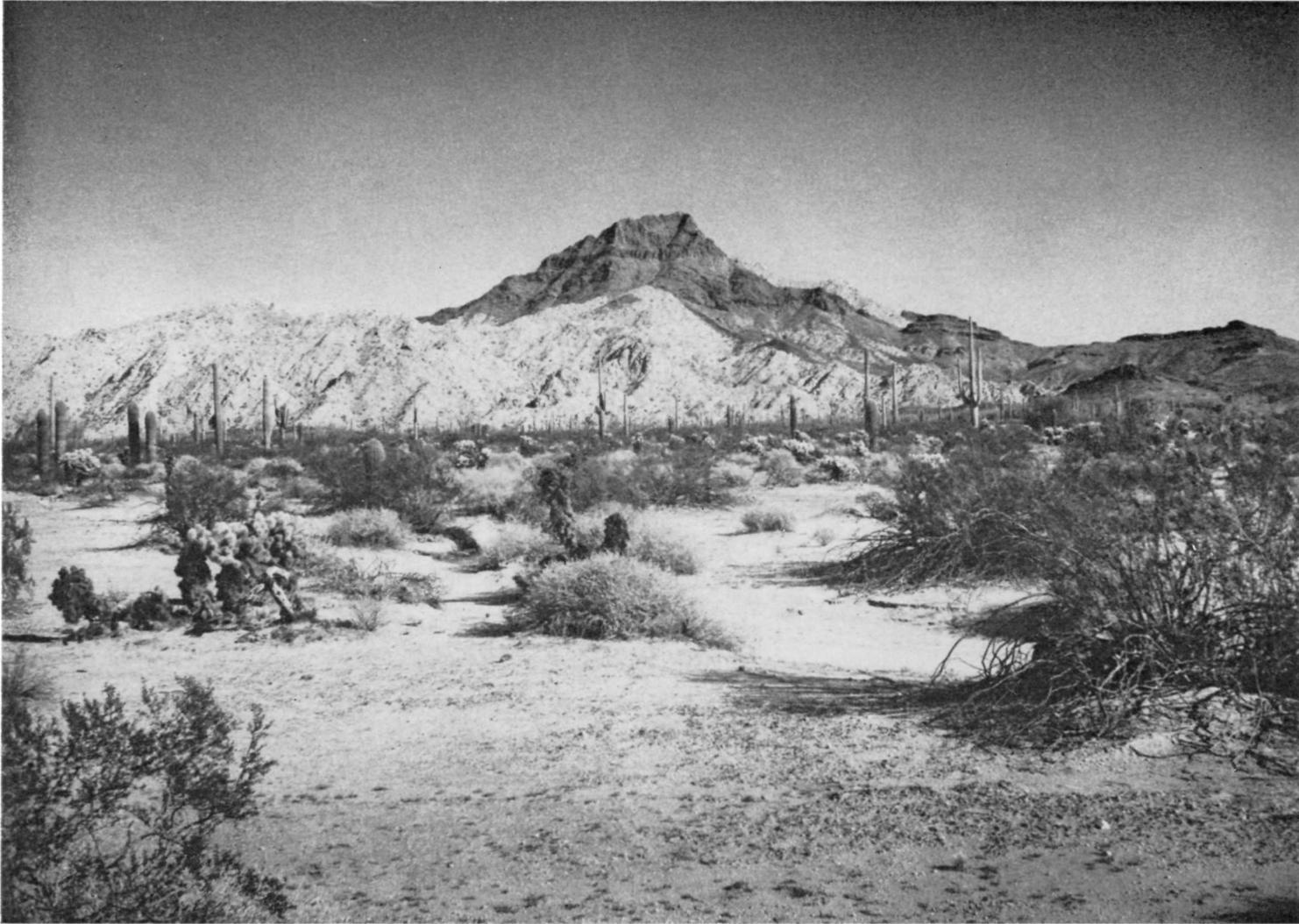
DURING OCTOBER OF 1965, the attention of the conservation world was focused on a proposal by Representative Morris K. Udall of Arizona for the establishment of a Sonoran Desert National Park in the State of Arizona. The new park would combine the existing Organ Pipe Cactus National Monument and the adjoining Cabeza Prieta Game Range into a 1,242,500-acre preserve which would be the seventh largest unit in our national park system.

The proposal was the direct result of recommendations made last year by a National Park Service inspection team after a ground and air survey of the region. However, the idea of such a park is not new, and Congressman Udall stated that the purpose of his bill was to acquaint the public with the proposal and to stimulate discussion.

The four members of the National Park Service team submitted a detailed report to the Secretary of the Interior describing the region. They unanimously agreed that its biological, geological, historic, educational and scenic values are of outstanding significance and that recreational possibilities are great; steps should be taken to preserve the

area in its natural state and make it available for the use and enjoyment of the American people. They also concurred in the belief that adequate protection with visitor use might best be achieved under National Park Service administration. Except for requisite developed centers and roadways, the proposed park in its entirety would be maintained as desert wilderness. If the Mexican Government officially set aside and preserved the great craters, cones and lava fields of the Pinacate region, immediately to the south, the combination would be a magnificent international park unduplicated anywhere else in the world. In early January of the current year, the National Park Service released a formal proposal for establishment of the Sonoran Desert Park in the United States.

Located in the southwestern corner of Arizona, Organ Pipe Cactus National Monument and the Cabeza Prieta Game Range occupy the heart of a stark and arid realm which represents the last sizable expanse of undisturbed Sonoran Desert remaining in the United States. One of the most distinctive and unusual biotic provinces on the con-



Photograph by the author

A splendid representation of Sonoran Desert plant life creates a foreground for Cabeza Prieta Peak in the Cabeza Prieta Game Range. Crystalline rocks of this mountain range are capped with remnants of lava flows.

continent, the Sonoran Desert spreads northward from the vicinity of Guaymas, Mexico, on the Gulf of California, five hundred miles to beyond Phoenix, Arizona, and is three hundred miles across at its widest point. Named after the Mexican State of Sonora, the whole region is extremely dry and searing hot in summer, but enjoys one of the world's pleasantest climates from November to April, and the sun shines the year round eighty percent of all daylight hours. But perhaps most remarkable are the complex, delicately balanced ecological communities, and probably no other desert on earth can match the Sonoran Desert's variety and abundance of plant and animal life.

Description of the region

The monument and contiguous game range extend along the Mexican border for a distance of ninety miles and vary in width from twelve to forty miles. The former, on the east, has an area of 328,691 acres. It was created by Presidential proclamation in 1937 to protect and preserve particularly fine examples of Sonoran Desert vegetation, wild-

life and scenery. It is, in fact, a veritable natural botanical garden and zoo which exhibits a biological cross-section of the entire region.

Besides the giant saguaro cactus, special symbol of the Sonoran Desert, the monument contains two other species of columnar cactus—the organ pipe and senita—which are fairly common in Mexico but extremely rare north of the international border. Altogether more than 400 species of plants, representing some 75 families, have been listed in the monument, and the fauna includes 34 species of mammals, over 128 species of birds, 16 of reptiles, and one rare fish.

Adjoining the monument on the west and north, the Cabeza Prieta Game Range has an area larger than the State of Rhode Island without a single permanent inhabitant. Its size is more than 1,340 square miles, or about 860,000 acres. No roads passable with standard cars traverse its wide-sweeping, empty valleys and rugged mountains, and the few faint traces of man's past activities are swallowed up in the immensity of the primitive wilderness.



Weldon F. Heald, widely known Southwestern outdoorsman and conservation writer, was a member of the National Park Service study team that recommended a Sonoran Desert Park.

Furthermore, at the present time all trespass is forbidden and visitors must obtain permits to enter.

Administered by the Bureau of Sport Fisheries and Wildlife in the Department of the Interior, the game range was established in 1939 primarily for the protection of desert bighorn sheep, and all hunting is prohibited. It also provides a refuge for a remnant population of pronghorn antelope; the collared peccary, a wild pig locally called javelina; Gambel's quail; and white-winged dove. Travel is severely restricted, as Cabeza Prieta is within a military aerial target range. Although there is no air-to-ground

Majestic and desolate, the Ajo Range in existing Organ Pipe Cactus National Monument is typical of the long, narrow mountains that stripe the classic basin-and-range province of American Southwest.

«

firing, occasional stray shells and falling targets are considered to be potential dangers.

The topography of the two areas is an almost perfect example of basin-and-range geological structures, with evidences of tremendous former volcanic activity. From the eastern boundary of the monument to just beyond the western end of Cabeza Prieta, seven mountain ranges roughly parallel each other in a northwest-to-southeast direction. Between them are six valleys, in places so wide as to resemble nearly level plains. There are also groups of low hills and isolated buttes scattered here and there. Due to the extreme aridity drainage water does not reach the Pacific except after occasional brief storms, but collects and evaporates in shallow intermittent lakes called playas. Most of these have no outlets and are usually dry expanses of hard-packed sand, silt or alkali.

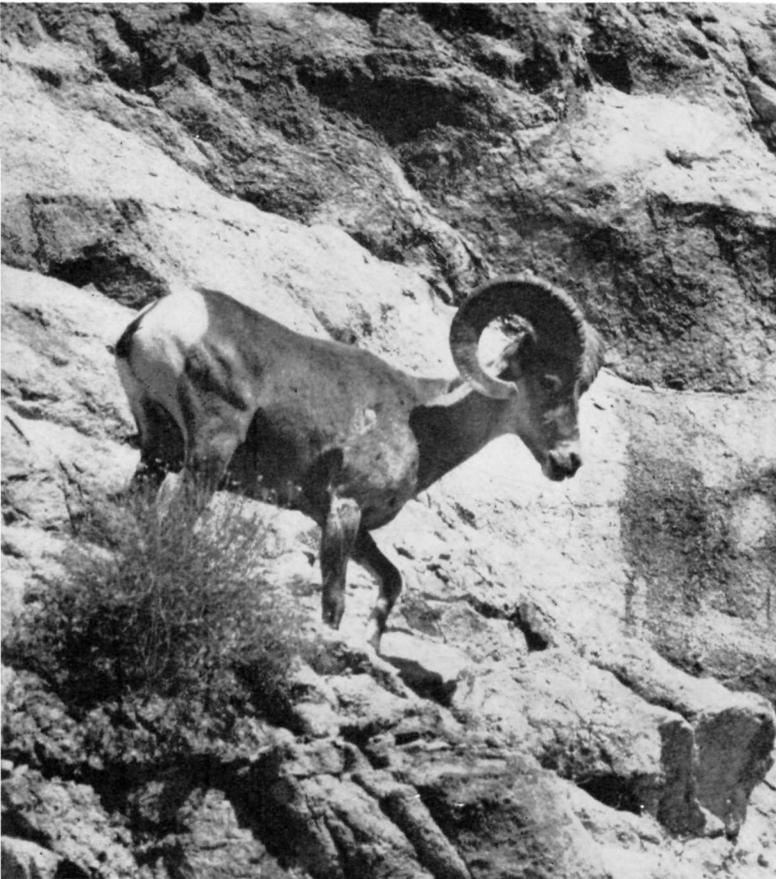
The mountain ranges are the most prominent aspect of

Vegetation of the Sonoran Desert, such as that in Organ Pipe Cactus National Monument shown below, presents a fascinating study in the conservation of water and defense against extremes of temperature.

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Photographs at left and below by the author





Courtesy Bureau of Sport Fisheries and Wildlife: Norman Simmons

A full-grown bighorn ram, one of a band of some 300 desert bighorns protected in the Fish and Wildlife Service's huge Cabeza Prieta Game Range. The range, plus a smaller area adjacent to its western extremity, would be added to existing Organ Pipe Cactus National Monument to create a Sonoran Desert National Park, as shown in the maps on opposite page.

every view, in spite of the fact that they occupy a relatively small percentage of the total area. Their length varies from fifteen to more than forty miles, but they are seldom more than two miles wide, and rise abruptly from the valleys to single linear crests of peaks and notches which vary little in altitude for considerable distances. Steep, plunging canyons gouge the mountains' barren flanks, while cliffs and knife-edge ridges are common. Moreover, the mountains are surprisingly impressive considering their moderate altitudes. Highest is Ajo Peak, 4770 feet, on the eastern boundary of the monument. Westward, summit elevations decrease to around 3000 feet; but as the valley floors have altitudes of 600 to 1000 feet, precipitous escarpments of 2000 feet are numerous. Without trees or noticeable vegetation to give the mountains scale, the impression is that they are twice as high as is actually the case. Color, too, gives them interest and variety, and they glow with white, gray, yellow, sepia, brown and chocolate in the brilliant Southwestern sunshine. Especially striking is Cabeza Prieta Peak. Meaning "Dark Head" in Spanish, this white granite mountain with a brown lava cap gives the game range its name.

Average annual precipitation varies from around eight inches in the monument to three and a half or four inches at the western end of the game range, and summer temperatures may rise as high as 130° F. in the lower sun-heated canyons. Winter daytime temperatures range between 60° and 70° F. There are no permanent streams, only a couple of reliable springs, and the playas have been dry for many years. Wells in a dozen places supply limited amounts of water, mostly by means of windmills.

However, since prehistoric times both men and animals have taken advantage of the so-called *tinajas*, translated into English as "tanks." These are natural rock basins in the mountain canyons, scooped out by centuries of violent but infrequent summer cloudbursts. Most of them retain some water all year. The tanks were first used by the Indians and have been life-savers to white travelers for nearly four hundred years. The Bureau of Sport Fisheries and Wildlife has deepened several mountain tanks by constructing dams at their lower ends, and has excavated artificial tanks in the vicinity of valley washes which provide drinking water for wildlife and resting places for aquatic birds.

Relics of the Sand Papagos

This corner of present Arizona was in times past the home of a few families of Indians known as the Sand Papagos. They were probably the ancestors of the modern Papagos whose huge, 2,775,000-acre reservation is the second largest in the country, stretching from the eastern boundary of Organ Pipe National Monument to within a few miles of Tucson. These primitive people eked out a bare living in the harsh desert environment by hunting sheep and gathering such other food as they could find—mainly cactus fruit and mesquite beans. A well-worn trail, still visible in many places, crosses Cabeza Prieta Game Range. This was an Indian trade route from the Gulf of California to the interior. Seashells were a particularly popular item of barter with these people, and were eagerly sought by inland tribes. Along the trail are the remains of campsites and stone shelters, as well as metates, pictographs

and various other artifacts of a long-gone Indian culture.

First known white man to enter the region was the Spanish explorer Melchior Diaz, who crossed a part of the modern game range in 1540 on his way to the Colorado River. A century and a half later the country was often traversed by the famed Jesuit missionary priest Father Eusebio Kino, who was one of the Southwest's outstanding explorers and an emissary of European civilization to the region's native population. He is credited with the discovery that California was not an island, and made the first maps of Pimeria Alta, the name then applied to southern Arizona and northern Sonora.

In 1774 the indomitable Franciscan Padre Francisco Garces and Captain Juan Bautista de Anza passed through the southern portion of what is now the monument and game range. Then, two years later, they repeated the journey accompanied by more than two hundred colonists for the founding of San Francisco. Their route came to be known as *El Camino del Diablo*, or "The Devil's Highway," because of the great number of humans and animals who perished from fatigue, hunger and thirst. Many gold seekers bound for California followed this hellish track westward in the late 1840's and the 1850's, and it is said that at least four hundred died along the way.

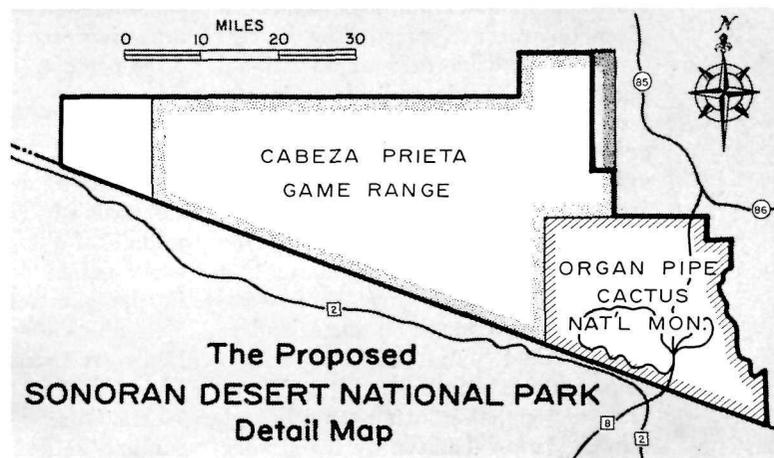
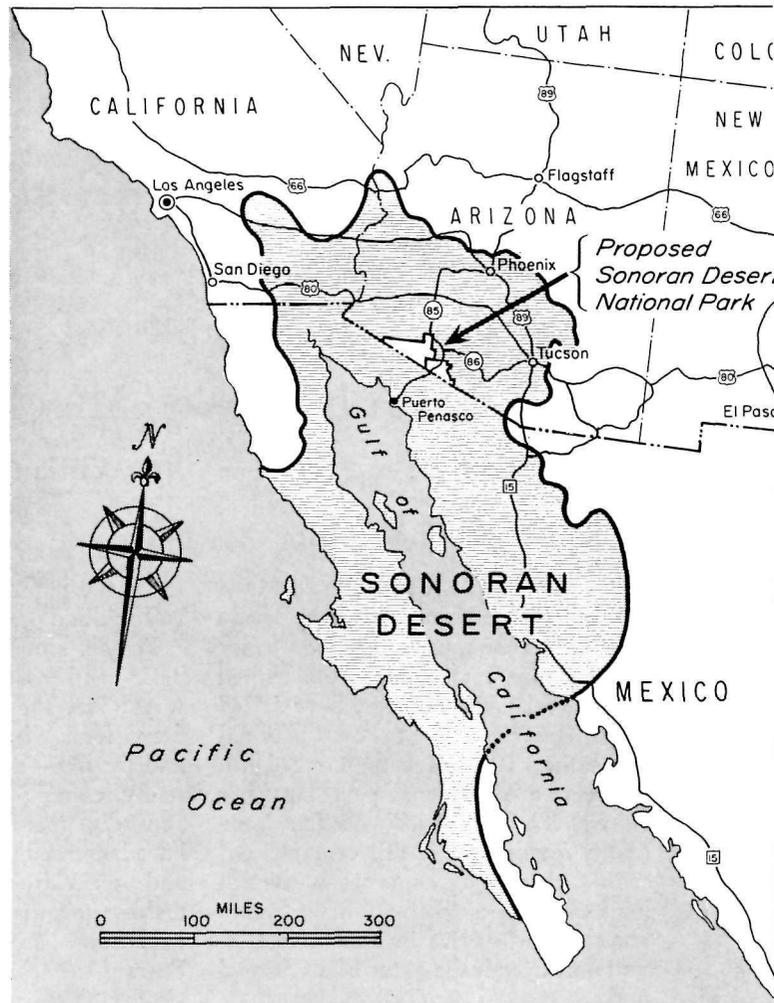
A Land Still Primitive

But in spite of its early exploration, the country was too inhospitable to invite settlement, and it remained largely an unpopulated desert. However, the whole region has been thoroughly prospected for minerals for more than two centuries. No rich strikes were ever made and no mine is now operating commercially within the boundaries of the proposed national park. No section of the United States has had such a long recorded history, yet remained so remote, sparsely settled and little known. This contributes greatly to its attraction and should be taken into consideration in any decisions regarding its future status.

Human inspiration, education and recreation are the area's foremost potential resources, and undoubtedly the development of these intangible values would also produce the most economic benefits to the region and the nation. The Sonoran Desert National Park might well be one of our leading outdoor recreational, educational and scientific reserves. Within easy driving distance are some ten million people in Southern California, as well as a million and a half more around Phoenix and Tucson.

But the creation of such a park depends on many factors; the principal stumbling block would seem to be the present use of the Cabeza Prieta Game Range by the military. In fact, Congressman Udall's proposal defers establishment of the park until the land is released by the Department of Defense. Opposition to the proposal, too, has been surprisingly strong, particularly by sportsmen who have their eyes trained on the three hundred or so sheep of the game range. Although the range is not a significant hunting area, and never has been, many call the park proposal a land grab by a bureaucratic government department. Some object to the idea because of fears that a park easily accessible to the public would create pressures for overdevelopment by roads and non-conforming visitor facilities. Up to now the voices of dissent have been loud and vociferous.

But in any case, the game range, under its joint use for wildlife and military purposes to the exclusion of the public, is being afforded a high degree of protection. Its ecological integrity and natural condition are almost perfectly preserved. This is indeed fortunate, because its status constitutes a kind of "deep freeze" which will keep the area intact, to be considered for national park purposes if and when military use is terminated or modified. ■



Maps by Federal Graphics



Yosemite's campgrounds overflow . . .



Yellowstone's lines grow longer . . .

PARKS—OR MORE PEOPLE?

By William H. Draper, Jr.

TWENTY YEARS AGO THERE WAS A little less than one-sixth of an acre of national park land for every man, woman and child in the United States. Today, although we have added 4,000 square miles to our national parks, there is now less than one-eighth of an acre of national park land per citizen. The ratio will decline inexorably for the rest of this century, and soon the day may come when we will have to make a reservation five years ahead even to drive in a massive traffic jam through the gates of a national park.

Although much publicity has been given to overdevelopment, the biggest threat to our wilderness areas, national parks, and scenic splendors is not four-lane highways or power projects or housing developments. They are only symptoms of the real pressure on our irreplaceable natural resources: the pressure of people. At the end of the 19th Century, the good-old-days that figure on our Christmas cards—and paradoxically enough on our calendars—the United States had a population of seventy-five million. In 1966 we have a population just over 195 million and in less than twenty years, when we reach George Orwell's nightmare of

1984, the population may well exceed 260 million.

People put pressure on national parks and natural resources in two ways: first, the demand for basic facilities—food, housing, transportation and the like—encroaches on lands currently contiguous to national parks. Secondly, many more Americans will have increased leisure time to use parks and outdoor recreational facilities, making overuse and destruction of wilderness areas almost inevitable. From 1953 to 1959, for instance, the United States population grew by ten percent, but visits to outdoor recreation areas increased by one hundred forty-three percent.

The Alarming Facts

Stewart L. Udall, Secretary of the Interior, stated the matter with appalling emphasis when he suggested that by the middle of the next century “. . . for every person who now hopes to camp in the summertime on the floor of Yosemite Valley, there will be . . . nine. For every present hiker down the John Muir Trail along the spine of the Sierra, there will be nine. For every tin can and bottle and carton that now litters park and wilderness trails, there

will be nine. For every hundred people on the beach at Drakes Bay, there will be at least 900 and conceivably several times that many. Here we have, in dramatic and depressing terms, the geography of rising population.”

In all candor, however, we must admit that the problems of human population growth today go far beyond recreational crowding. In fact, overpopulation jeopardizes the existence of civilization as we know it.

To put the issue in broader perspective, it took the human race about one million years—until 1850—to reach a world population of one billion. The second billion was added in about 80 years—by 1930. The third billion arrived in about thirty years—by 1960—and in another twenty years or less—before 1980—world population will have jumped to four billion. There are now many countries where almost half the population is under fifteen years of age, as in Mexico and Brazil.

The first man to worry about population, as everyone knows, was Thomas R. Malthus, an Eighteenth Century clergyman. He bluntly asserted, “First, that food is necessary to the existence of man. Secondly, that the passion between sexes is necessary and will re-



and the quality of the national park experience is eroded by ever-increasing concentrations of humanity. Photographs courtesy National Park Service

“... soon . . . we will have to make a reservation five years ahead even to drive in a massive traffic jam through the gates of a national park . . .”

main nearly in its present state . . .” and finally, therefore, “that the power of population is infinitely greater than the power in the earth to produce subsistence for man.” Only the multiplication of misery, hardship, and famine can check the multiplication of man, Malthus concluded.

Until the middle of the Twentieth Century the gloomy prophet found few supporters. The Industrial Revolution and the settlement of the American continent saved Europe from overpopulation, but famine, pestilence, and hardship continued to restrain population growth elsewhere.

Today the situation is changing. Public health advances have lowered the death rates around the world. Surplus food, largely from the United States, has temporarily sustained those who would otherwise have starved; and man has multiplied in proportions never before known on earth. This proliferation has taken place fastest in the underdeveloped nations, where the impact of modernization has been compressed into two decades.

The urgent population problems in these countries first came to my attention in 1958, when I was appointed by President Eisenhower to head a Com-

mission to study and report on United States foreign assistance programs overseas. The longer the Commission looked at the economic development problems in such countries as India, Pakistan, Turkey, Egypt, and Brazil, the more convinced it became that neither food production nor over-all economic development could keep pace with populations that would double within a single generation. The Committee recommended appropriate assistance and research to individual countries “in the formulation of practical programs to meet the serious challenges posed by the rapidly expanding population.”

A Political Hot Potato

Unfortunately, what we regarded as a necessary common-sense approach to an overwhelming problem immediately became a political hot potato. There was opposition from religious organizations in the United States and hesitation on the part of our government officials to support a program which appeared to involve areas of domestic conflict. Very little was done and the population of the world continued to multiply.

Today, seven years later, public at-

titudes toward population growth and the kind of practical programs which are necessary to deal with it have changed dramatically. Eight out of ten persons in the United States today favor making birth control information available to anyone who wants it, according to a Gallup poll of August, 1965. And, more than six out of ten Catholics expect the Roman Catholic Church to alter its present opposition to certain specific birth control methods, such as hormone pills. Now thoughtful men of all nations, and from all religious backgrounds, look at their changing environment with deepest concern. They realize that even the apparently limitless resources of science cannot raise the quality of life for the majority of the earth's inhabitants unless population growth rates are quickly checked.

The vital element of food, for instance, is simply not keeping pace with the vital force of population growth. The United States Department of Agriculture, the United Nations Food and Agricultural Agency, the World Health Organization, the United Nations Economic Commission for Asia and the Far East, and many other national and international agencies document the

tragic fact that world food production is increasing by only one percent a year, while world population is increasing by at least two percent a year. We now hear the tragic report that half the world's people—and two-thirds of the world's children—go to bed at night hungry. In many developing countries seventy percent of the children suffer from malnutrition which, even for those who survive, impairs physical growth and in the words of a committee of the National Academy of Sciences "probably causes irreversible mental and emotional damage." India, the second most populous nation in the world, faces the prospect of real famine this fall. Partly because of population growth, partly because of a serious drought, Indian farmers are again pulling their belts a notch tighter. One was recently quoted in the *New York Times* as saying "We may have to eat one meal a day instead of two, but we'll make it." Many observers are not so optimistic. Predictions are for mass starvation in India this year.

Overpopulation and Values

In the United States, population growth will not outrun food production for some time to come, even though our vast grain surpluses—a major political problem of the last decade—have been cut in half by overseas needs. But here, no less than in the developing nations of the world, we face social problems and the hard choice of priorities forced upon us by a rate of population growth which is nearly twice that of Western Europe. Beyond the mere fact of increase—a baby born about every second, or three times as many national park users in the next generation—we must consider where the increase has the greatest impact. In the United States, population growth is unevenly distributed, for instance, among income groups. Families with incomes under \$3,000 are more than twice as likely to have six children as families with higher incomes. Yet, families with incomes under \$3,000 are severely handicapped in preparing their offspring for a productive life.

Population growth—and increased migration from farm to city—have created one of our major environmental challenges, the so-called "urban problem." The composition of our cities has shifted radically since World

War II as middle income urbanites moved away from the city to raise their three and four children in the spaciousness of the suburbs. At the same time lower income rural families, both white and non-white, filled the inner cities. The newcomers brought higher birth rates which are characteristic of all rural families, but most did not find the space or economic opportunity in the cities to give their offspring a good start in a complex life. As a result, poverty and public welfare have become a way of life for many urban families. First and second generation school dropouts are unable to find jobs in an automated economy, unable to pay their share of taxes to support needed remedial programs, and in the long run, even unable to contribute to the basic community services—police, firemen, public transportation, recreation, and sanitation—necessary to the very survival of the city as an economic unit.

Although there is some dispute as to which is cause and which is effect, the fact remains that in the United States today the large family is often the impoverished family. A recent study of poverty conducted by the Welfare Council of Metropolitan Chicago concluded that "members of large families (six or more persons) constitute some thirty percent of the poor, contributing a disproportionate share to the poverty sector." The latest poverty indices place more than fifteen million children under eighteen years of age in the poverty classification. What hope do these youngsters have to meet the stresses of Twentieth Century United States life effectively? The odds are against them.

In the classic study "Unravelling Juvenile Delinquency" by the sociologists Sheldon and Eleanor Glueck, delinquent boys were found to come from larger families than non-delinquents. Although all the boys studied came from families which were closely matched in income, ethnic background,

intelligence, and community living conditions, the average number of children in the families of the delinquents was 6.8 and in those of the non-delinquents, 5.9. "In relation to size of family," the Gluecks concluded, "it is reasonable to conclude that crowding of the home meant increased competition on the part of the children for parental attention, more likelihood of emotional strain, tension, friction, and loss of privacy with resulting sexual and other emotional trauma."

Big Families Produce Rejects

Another index, those rejected by Selective Service Boards for mental performance below sixth grade level, showed that 47 percent of these rejects come from families with six or more children even though these families contain only eleven percent of all children in the nation.

Both in the United States, where we can all see the problems and pressures of population growth at first-hand, and in a country like India where we may find it difficult to imagine the idea of twelve million new mouths to feed each year, there is one element in common: in both countries there can be only one acceptable answer to the population problem. That answer is not hardship, poverty, famine, or disease. It is public acceptance and support of voluntary birth control and family planning programs.

Only through massive birth control programs can every couple in the world learn about family planning and be able to limit the number of their offspring to meet their own ability to feed and care for them, and educate them for a healthy and productive life. This is the only long-term solution acceptable to free nations and free individuals today. But as Richard N. Gardner, former Assistant Secretary of State, said at the recent White House Conference on International Cooperation, "This may be the last generation which has the opportunity to cope with the problem on the basis of free choice."

This is the responsibility which must be faced, for even if we could do the impossible—multiply bread for all the world's hungry, care for all the world's needy, and educate all the world's ignorant in the present generation—we would only bequeath our children an impossible task in the next generation.

General Draper, former Under Secretary of the Army, has served three American Presidents in the study of military and population problems overseas. He is now Vice-Chairman of Planned Parenthood/World Population, and National Chairman of the Population Crisis Committee in Washington, D. C.



Photograph courtesy Food and Agriculture Organization

Starving youngsters lie on crowded streets of East Pakistan city in one of that nation's more recent famines.

Private organizations like International Planned Parenthood, the Population Council, the Ford Foundation, and the Rockefeller Institute have made a start in providing family planning knowledge and techniques to those who wish to use them; within their limited resources, they have done a superb job. Since Margaret Sanger was sent to jail half a century ago for opening a private birth control clinic in Brooklyn, New York, much progress has been made in research and in clinical services.

However, the only way to reach the millions and millions of women in the United States and overseas who do not know how to limit the size of their families is to mobilize the interest and facilities of the governments of the world. Governments must recognize their own great responsibility. In this country, the goal for the next year or two should be the addition of birth control facilities to every tax-supported hospital and health clinic throughout the fifty States. This movement has gotten under way recently and is fast becoming a tidal wave. Only in this way can the underprivileged twenty percent of our population gain access to the in-

formation and facilities which the rest of the population can afford from their family doctor. This is a human right which should not be denied.

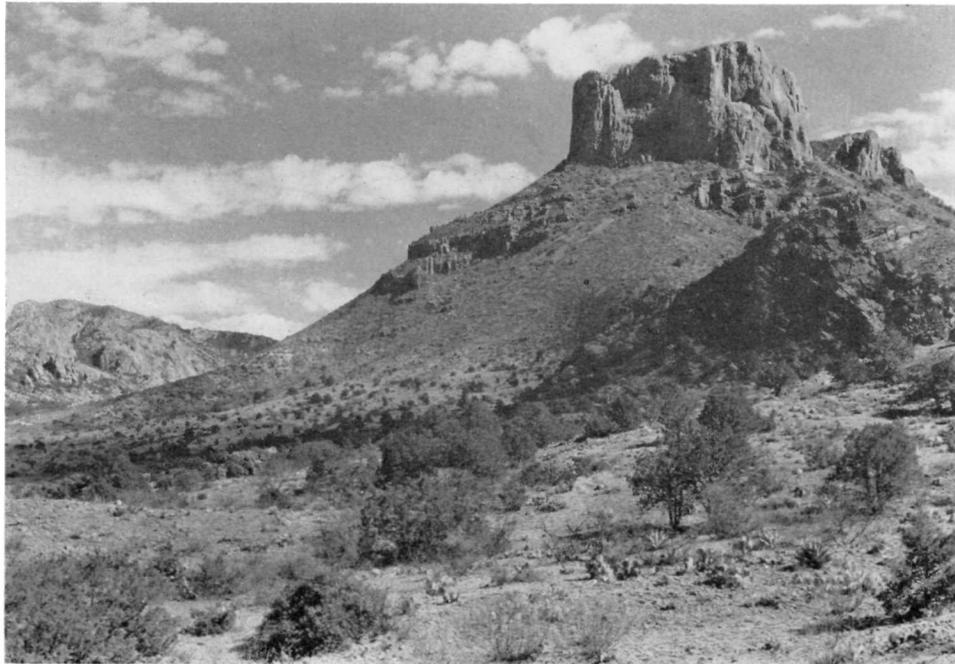
Abroad, our aid activities must likewise stress more vigorously the problems caused by excessive rates of population growth. David Bell, who directs the Agency for International Development, is trying to clear the way for greatly expanded assistance to countries requesting help, but trained doctors and administrators are still in short supply. The necessary sense of urgency is also lacking. Since this is a problem that faces all of us—the United States and every other country—everyone in the United States who understands the problem needs to assist, and to petition our government to take a more active part. Private organizations and foundations, and individuals, will all have to contribute their time, their money, their help, their thoughts, and their ideas.

In this new crusade for humanity we cannot, nor can our government, leave it any longer to the birds and the bees—and certainly not to the rabbits. Victor Hugo wrote: "More powerful than

the tread of mighty armies is the idea whose moment has arrived." The moment for this idea to sweep our country and the world has now arrived. Those who understand the true implications of the population explosion and recognize it must be curbed to save the human race, must act now. Unless the present excessive rate of world population growth can be slowed down to a rate that can be reasonably absorbed, our children will suffer grave consequences, and our grandchildren may well find life on this planet intolerable. Like cancer cells multiplying in the human body, human fertility will, unless slowed down, destroy our present-day civilization just as surely as would a nuclear conflict.

A new Manhattan Project is needed—not to build another atomic bomb which might destroy the world—but to defuse the population bomb with knowledge and demographic understanding, so that mankind does not multiply itself into oblivion.

Otherwise, I feel that Thomas Malthus, long ago the discredited prophet of doom, may yet prove to have been right. ■



National Park Service: George A. Grant

Casa Grande, scenic and botanic landmark in Big Bend National Park.

Big Bend and the Botanist

By Eleanor E. Gamer

IN TEXAS, THE LAND RISES FROM SEA-level on the Gulf Coast to elevations of about nine thousand feet in the mountains of the western portion of the State. Over that distance the vegetation changes from a kind generally typical of the southern states through zones of grassland, semi-desert, true desert, and coniferous forest. Each of these zones is limited by altitude and rainfall. A second series of plant zones, limited by latitude, crosses Texas from north to south, and is expressed in flora ranging in type from that of the Rocky Mountain alpine regions to that of the Chihuahuan desert of northern Mexico. In the center of these changing and overlapping bands of plant life lies Big Bend National Park.

Big Bend's establishment in 1944 set aside 1117 square miles of mountain, canyon and desert country which is notable not only for its fascinating geological features but for the wide variety of flora to be found within its boundaries; the park provides both a homeland and an extremity of range for more than eight hundred species of plants.

In the park, the Chisos Mountains impress themselves first upon the visitor. A great volcanic dome of dissected rhyolite and tuffs, the Chisos rise from the desert floor to 7835-foot Emory Peak. Only on the upper slopes of Emory Peak are found the aspen, native of high altitudes or latitudes. Here it is at the southern limit of its

range. Mixed with the aspen on northern slopes above 6000 feet are the Douglas fir, also at its southern limit, and the Western yellow pine.

Below the highest peaks is found a grouping of plants common to the highlands of the Southwest, the pinyon-juniper woodland. Giving their names to the association are the pinyon pine and alligator and drooping juniper, which are both common to Mexico but not to the United States. Also present is the one-seed juniper, native to Utah, Colorado, Arizona, New Mexico; and the Arizona cypress, another visitor from Mexico—a fine, tall tree found only in the Boot Spring area of the park.

At this elevation (5000-8000 feet)

are also found the oaks. Emory oak of the Southwest desert highlands; Gambel oak, another four-state native found in the park on the top of Casa Grande; and the chinkapin oak, which comes into the park from the eastern forests where it has a vast range extending from southern Maine to northern Florida and west to the Great Plains. Its occurrence in Big Bend represents an extreme southwesterly limit.

The Chisos Mountains receive fifteen to twenty inches of rainfall a year, and some snow in winter. This amount of moisture permits a rather thick growth of understory plants not characteristic of surrounding desert areas. Sub-montane shrubs form a "chaparral" on dry,

rocky slopes, and beneath the oak forest. Here we find the mountain mahogany, desert ceanothus, several sumacs, sagebrush, and Texas madrone, all of which range well into Mexico; the madrone in the park marks one of the few appearances of the plant in the United States; another such limited appearance is made in the park by a species of serviceberry which is native to Mexico.

Beneath this "chaparral" cover are found herbs and grasses in great numbers. The Mexican native zinnia is here along with other Compositae; there are six species of the cliff-brake fern, and in moist corners grow the Southern maidenhair, *Woodsia mexi-*

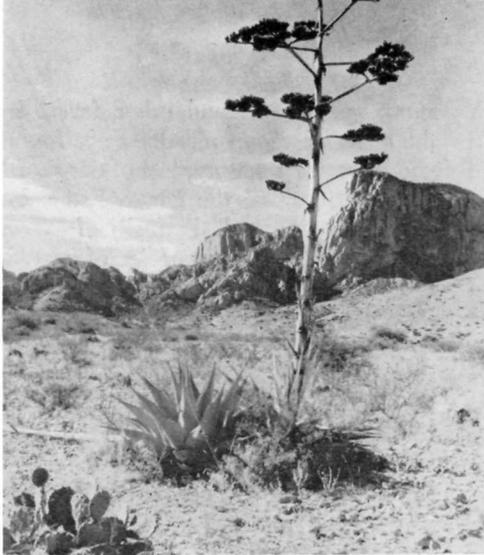
cana, spleenwort, and other ferns. In the open mountain meadows are found good forage grasses typical of the short-grass country of the Llano Estacado, the high "Staked Plains" of West Texas. Here are four species of needlegrass, three of bentgrass, and two of bluegrass, and in moist areas near springs or along stream-filled canyons grow sedges, bunchmoss, rushes, and the grape holly.

Among the "strangers" of the high altitudes in the park should be mentioned a Mexican species of the ironwood, or hophornbeam, among trees; and, among other plants, the four-o'clock, found only on the top of Casa Grande; *Aquilegia longissima*, a Mexi-

Along the Rio Grande grow the cottonwood, desert willow, hackberry, Texas black walnut, ash, and many another plant of the river bottom habitat. The photograph looks into Big Bend Park from Boquillas in Mexico.

National Park Service: George A. Grant





Two agaves, or century plants, near the mouth of Green Gulch in the Chisos Mountains of Big Bend Park. Agave grows for 10-15 years, sends up flower stalk, produces flowers and seeds, and dies.

National Park Service: Natt N. Dodge

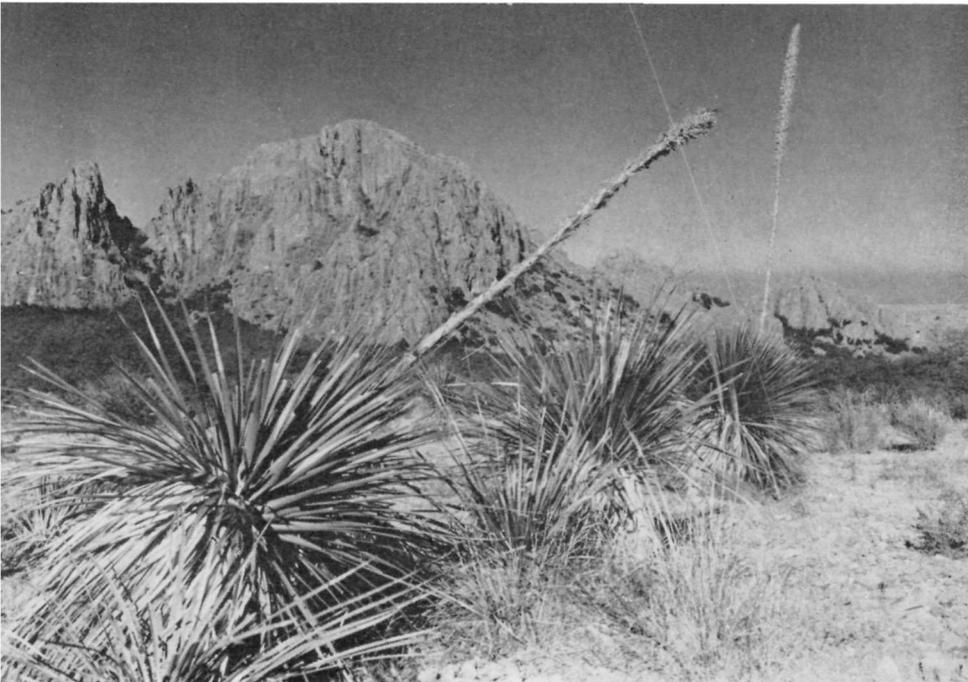
National Park Service: Natt N. Dodge



One of the rare species of trees to be found in the park is the weeping or drooping juniper, seen in the picture at the right.

Sotol plants near the mouth of Green Gulch in the Chisos Mountains.

National Park Service: Natt N. Dodge



can species occurring in the United States in only one county in Texas outside the park; bittercress, which also appears outside of Mexico only in the park, as likewise the bromeliad *Hectia scariosa*.

Moving down into the foothills and talus slopes of the mountains there appear plants of a more truly desert adaptation. From 6000 feet to the desert floor we find loose, sandy soil of the markedly light color of eroded limestones. Rainfall is drastically reduced, forcing plants to space themselves out so that competition will be reduced. It is in this area that we find the typical desert plants, adapted to their situation by the development of storage tissues or by the assumption of a dwarfed form. Conspicuous among the storage-tissue plants are the yuccas, agaves, and cacti, most species of which range from the desert floor high into the mountains. At high altitudes are found *Yucca baccata* and *Y. carnerosana*; the great century plant, which often attains a height of fifteen feet; and *Agave chisosensis*, a native of the park. Of the cacti, the hedgehog and strawberry cacti are found in the mountains along with several species of *Mammillaria* and *Opuntia*, notably the prickly pear and the cholla. At lower elevations are found the Mexican sotol, beargrass, and the magnificent, tree-like members of the yucca tribe, *Yucca elata* and *Y. thompsoniana*, and the Spanish dagger, which grows in such abundance that a large section of the desert floor of the park is named "Dagger Flat" from the quantity of yucca it supports. These three are all found in Mexico, as is the *Agave lechuguilla*, a small agave so prolific on the desert floor that it often impedes walking. Also more noticeable on the desert floor because of the wider spacing of plants there, are the varieties of cacti. One of the prickly pears, *Opuntia macrocentra*, is of a beautiful lavender color and its blossoms are brilliant orange. This particular species is limited to the area of the park. The night-blooming cereus is occasionally seen.

Foremost among the non-succulents of the desert floor is the creosote bush, whose tiny, dark-green leaves are coated with a sticky, highly aromatic substance from which the plant takes its name. Its small, brilliant yellow flowers make it an attractive shrub, and

it thrives in this environment as do nine species of acacia, notably the cat-claw, and a number of other Leguminosae which tolerate desert conditions. Mesquite and the tornillo screwbean are abundant, but one also finds four species of mimosa, the Texas redbud, three species of senna, three species of locoweed, and the Texas bluebonnet.

Some of the desert plants are of particular interest because of their severely limited range. On talus slopes in the park is a sedum whose northern limit lies within the park. Around seep-springs, in highly saline soils, are found the saltbush and seepweed; sand-verbena occurs only near Glen Springs; the spiderwort grows only in the shade provided by other plants; Mormon tea is native only to the deserts of Texas and Arizona. An interesting member of the spurge family is the candelilla, *Euphorbia antisyphilitica*, whose species name indicates its old-time use. Today it provides wax for candlemaking in Mexico. In the park there are also eight species of club-mosses; some of the club-mosses are known as "resurrection plants" because of their ability to withstand long periods of drought by becoming dormant. When the dry balls of vegetative tissue are moistened they become green and resume growth. The crown-of-thorns, or allthorn, also appears here, as does the ocotillo, whose slender canes are edged with spines around which grow clusters of tiny leaves. The flowers are borne on the tips of the canes, and are brilliant scarlet in color. There is a handsome stand of them along the road to Santa Elena Canyon.

Plants of the Desert Floor

The desert floor is not without its herbs and grasses. Blooming here are the fairy duster, the paper daisy, dock, *Mimulus glabratus*, *Penstemon fendleri*, asters, gilia, phlox, and many others. The typical grass is *Hilaria mutica*, a good range grass which grows on rocky slopes and low gravelly hills.

One plant mentioned above, the mesquite, although not of major importance in the park, where it is limited to spots where water is available, is, nevertheless, of great importance in the range country of the Southwest. Moving north from the Chihuahuan Desert of Mexico, this small tree has become a dominant in areas where



formerly the short range grasses prevailed. Its presence changes the entire ecology of a region. Anchored and fed by an enormous taproot, this little tree manages to withstand climatic conditions that would successfully inhibit the growth of any other tree. Leafy and tall enough to shade out desirable range grasses, it has spread from Mexico throughout the southwestern States and is to be found from Kansas to California along with its associates from below the border, the Mexican hackberry, the soapberry, Mexican buckeye, and the coyotillo. In their wake come the prickly pear, the creosote bush, the prickly poppy, and shade-tolerant species of grasses not suitable for grazing, transforming a rangeland into a desert. Many of the affected States now have mesquite-eradication programs in an attempt to recover their valuable forage grasslands.

In Big Bend, the Rio Grande drops from 2200 feet at the mouth of Santa Elena Canyon to 1800 feet in Boquillas Canyon where it leaves the park. Along its course, and up its tributaries, is

found a group of plants whose ecological niche is that of riverbottom land. Here we find the big cottonwoods of a species known only to the valley of the Rio Grande, *Populus palmeri*, and several species of willows (*Salix sp.*) of which *S. nigra* is also native to the Rio Grande. Other trees include hackberry, ash, and the desert willow. The Texas black walnut grows on limy soils along the stream borders. Near Boquillas are the common cattails, and along the river's edge we find reeds and bulrushes. There is even one species of pondweed present in park streams.

Because of the situation of Big Bend National Park and its widely differing altitudes, temperatures, and rainfall, we find within the park an unusual assortment of ecological niches, close together and yet separate, in which plant life from North, South, East, and West all find a congenial home. To this wealth of flora must be added those species of plants for whom the peculiar features of the park make possible an existence. This national preservation is, indeed, a botanist's paradise. ■

Report on Present Status of a New Simple Low-Cost Coal Sewage Treatment

By Ellery R. Fosdick
Consulting Engineer
National Parks Association

Within the past few years there has been increasing concern for the more adequate treatment of waste water, both municipal and industrial. Advanced waste treatment will be increasingly necessary to reduce the pollution in both surface and ground water and to assist in meeting the increasing needs for clean water. A number of promising methods for advanced waste treatment (third stage or tertiary treatment that follows conventional primary and secondary treatment) are known and are currently being investigated; one of the most promising of these is the coal sewage treatment, based on the principle of adsorption.

Introduction

THE REMOVAL OF OBJECTIONABLE algae-producing phosphorus as well as other dissolved contaminants and of suspended solids from sewage at a low cost can be achieved by treating it with pulverized coal used as a filter and adsorbent. This process has the double advantage of employing coal, that is readily available in most parts of the United States, as the major element in the process, after which the coal-sewage solids mixture can be burned in the normal way in industrial plants or elsewhere, since it retains its value as a fuel.

This is a new relatively simple sewage treatment, rather than merely an improvement of an old one, and can be used in lieu of the conventional complicated combined primary filtration-settling and secondary bio-oxidation treatment used at present. It is, in effect, a simple sewage filter that not only removes suspended material but also dissolved contaminants.

This new process has a number of important advantages over the conventional treatment now used:

1. The treatment plant will be sim-

pler and easier to construct, operate, and maintain.

2. The cost of constructing and maintaining the treatment plant will be less.

3. The cost of operating the treatment plant will be less even with simple disposal by incineration of the coal-sewage solids mixture without a credit obtainable by burning this mixture in an individual plant.

4. The time required for the treatment of sewage will be less, which reduces the size of the holding tanks required and accordingly the land area needed.

5. Most of the phosphates (a nutrient used by algae) are removed whereas the conventional treatment process has only a slight effect upon them.

6. No nitrates (a nutrient used by algae) are produced from nitrogen compounds by the process as is the case with conventional treatment.

7. The removal of BOD (biochemical oxygen demand), COD (chemical oxygen demand) and SS (suspended solids) is as good or better than by conventional treatment.

8. The removal of ABS (detergents)

is high whereas in conventional treatment it is low.

9. The effective treatment of various difficult industrial wastes such as from paper mills, slaughterhouses, and others by this process is promising.

The development of this process has been sponsored by the Office of Coal Research, United States Department of the Interior, under a \$617,000 contract with the Rand Development Corporation of Cleveland, Ohio. A test rig in which the process was developed has been operated at the Cleveland Easterly Sewage Plant, the Washington, D.C., Municipal Water Pollution Control Plant, and at a coal mine near Cadiz, Ohio. A pilot plant now being designed will be constructed and placed in operation at the Cleveland Easterly Sewage Plant starting in the latter part of 1966, for the purpose of obtaining cost data and operating experience which can be scaled up for larger plants.

Description of Treatment

This coal-sewage treatment is expected to be a one-step operation, in which both filtration and adsorption take place in a single bed of pulverized

coal as contrasted with the several different complicated steps in the conventional primary and secondary treatment requiring careful control and highly trained operating personnel. The simplicity of the coal-sewage treatment will make it attractive to small cities and towns which cannot afford expensive complicated treatment plants, as well as to large metropolitan areas which must reduce their discharge of pollution. A schematic diagram of the coal-sewage treatment is shown in the figure at right, which also gives the effective rates of removing various materials based upon the limited data obtained with the test rig at Cleveland.

Pulverized coal used by the process must have a particle size within certain limits that have been found to be desirable. This requires the classification of the pulverized coal to remove sizes outside the desired range, which is one of the problems that must be solved to make the process feasible for a treatment plant. This represents a new area of research since little work has been done so far in classifying pulverized coal within limits of this sort, for although a large quantity of coal is pulverized for use in steam boilers it is not classified. Most ranks of coal can be used by this process, but there is some variation in the adsorption efficiency although the effectiveness as a filter is the same.

Approximately five tons of coal are required per million gallons of sewage treated. This represents a new potential market for coal, if the cities and towns now without sewage treatment or with inadequate treatment were to adopt the process. A useful market for much of the coal-sewage solids mixture seems assured, however, particularly since it is readily transported by pipeline. Revenue from the sale of the mixture could be credited against the cost of sewage treatment to reduce its net cost.

Possible new uses for the coal-sewage solids mixture are as a fuel in the tertiary treatment of a portion of sewage treatment plant effluent or in desalination plants. A ready market for the mixture should also be available in many areas by burning it in electric generating plants. For example, the coal needed for the treatment of 100 million gallons a day of sewage would be sufficient for only about thirty kilowatts of electric power at a normal sys-

Mr. Fosdick, a Washington State University engineering graduate with 42 years of experience in the water, power, light and nuclear fields, has done work in most of our States and in many foreign countries. For the past 10 years he has been an engineering consultant with headquarters in Washington, D.C.; he is a member of the American Institute of Consulting Engineers and Fellow and Member for Life, Institute of Electrical and Electronic Engineers.

tem load factor. This is but a very small part of the power required for a city with this amount of sewage. Air pollution is not substituted for surface water pollution by this process, since conventional treatment plants often incinerate their waste and if the coal-sewage solids mixture is burned in industrial plants it will displace other fuel normally burned in the plants.

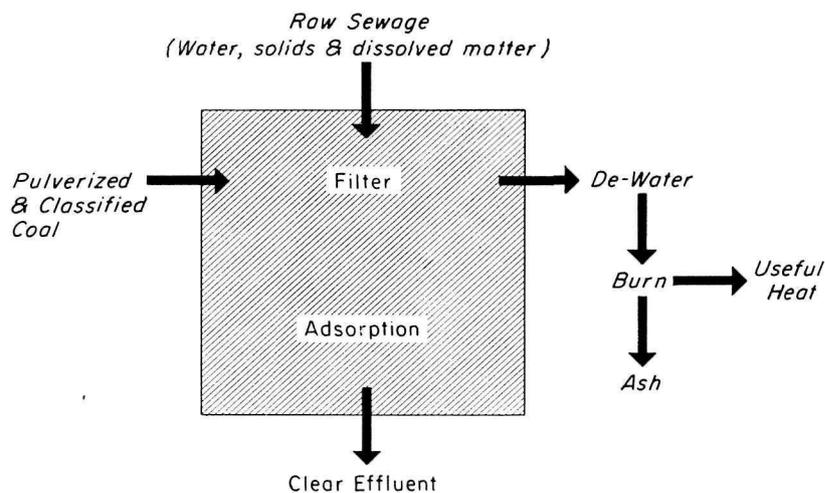
The new coal-sewage treatment is a simple, more effective and less expensive way of removing contaminants from waste water.

Data obtained from the design, construction and operation of the pilot plant now planned at the Cleveland

Easterly Sewage Plant is needed at the earliest practicable date so this will be available for use by others.

Planning is starting now or will be started in the near future on a large number of new or improved sewage treatment plants that must be constructed during the next few years to reduce pollution of surface water as required under the Federal Water Pollution Control Act of 1965. It is desirable that the planners of the new or improved sewage treatment plants have the opportunity of considering this less costly coal-sewage treatment which removes more contaminants than the conventional process. ■

COAL SEWAGE TREATMENT Schematic Diagram



MATERIAL REMOVED	PERCENT REMOVED	
	Rand Development Corporation	Office of Coal Research
Biochemical oxygen demand (BOD)	70-90	91
Chemical oxygen demand (COD)	70-90	80
Phosphate	80-100	60-95
Alkyl Benzene Sulfonate (ABS or Detergent)	80-95	85
Suspended solids (SS)	95-100	95

News and Commentary

Everglades Emergency Plan

An emergency plan to supply fresh water to drought-stricken Everglades National Park in Florida has been instituted by the United States Army Corps of Engineers with initial construction of necessary facilities to begin this spring. The plan, which according to the Technical Liaison Office of the Chief of Engineers is to "protect the Park and nearby urban areas pending permanent solution of the Southern Florida water problem," involves reconstruction of a network of canals to divert water from Lake Okechobee to the park and nearby water conservation areas serving Greater Miami. Existing canals and borrow pits will be used, creating a network of water channels some eighty-five miles long, including a new canal and "water-retaining levee" extending about ten miles along the east boundary of the park. These will be used to move water to areas in the park considered in critical need. Extensive pumping will be necessary to move the water, say the Engineers, because Florida land is too flat to allow water to flow fast enough by gravity. Up to a thousand cubic feet of water per second will be moved into the park as required.

The water conveyance system will reportedly become part of a permanent plan for providing water to Southern Florida. Twenty percent of the construction costs of some \$3.5 million will be shared by the State of Florida and the Central and Southern Florida Flood Control District. The plan will take about a year to complete.

Huston Thompson

During February the conservation world lost one of its elder statesmen and the National Parks Association a long-time trustee in the death of Mr. Huston Thompson, of Washington, D.C. Mr. Thompson was a lawyer by profession, having received his A.B. from Princeton University, and his LL.D. from George Washington University in 1922; over the years he had variously been Assistant Attorney General of Colorado, Special Assistant to the United States Attorney General, Assistant United States Attorney General, and for a number of years chairman of the Federal Trade Commission.

Mr. Thompson once told the National Parks Association that he had "taken an active interest in parks and forestry from the time of President Theodore Roosevelt and Stephen Mather," and that he had in-

spected all but two of the then-existing national parks with Mather, with whom he worked on many National Parks Association committees in the organization's early days. "The outdoors has been my hobby," he once remarked. Mr. Thompson was born in Lewisburg, Pennsylvania, in 1875.

Developers Eye Santa Cruz

The five primitive islands of San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara, nestled in Santa Barbara Channel in Southern California, comprise what some conservationists call "one of the nation's greatest prospective national parks." The largest of the islands is Santa Cruz, which has 62,000 acres of undeveloped land, important archeological remains, and rare flowering plants and animal life. It is upon this island that subdividers wish to build an extensive housing development with shopping centers, homes, and hillside apartments. While the owner of the east end of the island proceeds with his request for a change in the Santa Barbara County General Plan to permit the residential-commercial project, the Department of the Interior has announced plans to prepare data for submission of a Channel Islands National Park proposal. Santa Barbara and Anacapa Islands are presently protected as the Channel Islands National Monument; Santa Rosa is privately owned; and San Miguel is under the control of the United States Navy.

National Humane Center

The late Dr. Albert Schweitzer once remarked, "If I am to expect others to respect my life, then I must respect the other life I see, no matter how strange it may seem to mine." With these thoughts the Humane Society of the United States has begun construction of its National Humane Education Center on a 160-acre tract of land in Waterford, Virginia, just forty miles from Washington, D. C. The Center, which is to serve as a "model humane classroom for the entire country," will include a shelter for dogs, cats, and other small animals; a farmyard and shelter for large animals; an education and administration building with offices, classrooms, a library, exhibit hall and auditorium; living quarters for students, educators, and humanitarians; a guest house; a meeting place; tenant house; and a wildlife area of some 1000 acres. The land upon which the Center is being built has been donated by humanitarians;

and the Center itself will be funded by donations.

The purposes of the Center will be mainly educational as well as protective. It will become "an instrument for insight into teaching humane treatment of animals so that respect for other life may be learned." Its five major programs are to raise the status of humane education in the nation's classrooms; create model animal shelters; improve the abilities of shelter workers; create a model humane education program for children; and provide facilities for academic research into the humane movement. More information about the Center may be obtained from Burton M. Parks, Vice President, The Humane Society of the United States, 1145 19th Street, Washington, D.C. 20036.

Working in the Field

Eighty high school, college, and graduate men and women will be accepted for work and study programs in seven National Park Service areas in this summer's Student Conservation Program. Qualified participants will assist the Service in Acadia, Grand Teton, Great Smoky Mountains, Zion, and Olympic National Parks; Cedar Breaks National Monument; and the Sagamore Hill National Historic Site. Educational field experiences are part of the program, with payments of up to \$750 awarded to college seniors and graduate students working on independent study projects. For further information write to the Student Conservation Association, Inc., Sagamore Hill National Historic Site, Mtd. Rt., Box #304, Oyster Bay, New York 11711.

New Conservation Group

A new conservation organization composed of Northern Virginia residents has recently been formed to "inform Northern Virginia citizens of the need for the acquisition, preservation, and wise use of parks, historic resources and open spaces." Headed by former Chairman of the Fairfax County Board of Supervisors William H. Moss, the new organization will be officially known as the Northern Virginia Conservation Council, and will have as its first task the encouragement of support for the park and open space programs of Northern Virginia.

The Council will not substitute for existing conservation groups; it will seek to act as a collective voice for all Northern Virginia residents in conservation matters. Representatives of existing conservation organizations and prominent professional conservationists will be asked to serve on the Council's Advisory Board. Vice President of the new group is Mrs. Minerva Andrews, former president

of the League of Women Voters; Mrs. Elizabeth Hartwell, a naturalist influential in the fight to preserve Fairfax County's Mason Neck as a possible wildlife sanctuary, is secretary; and Walter O. Hanson, an officer in the Izaak Walton League, is treasurer.

Tax on Children?

World overpopulation is rapidly becoming humanity's most pressing problem, and the only way to solve it may be to place a legal limit on family size. Dr. Robert C. North, professor of political science at Stanford University, explained at a recent symposium on population that prevention of the birth of unwanted children may not be enough to solve the population problem; it may also be necessary to "prevent the birth of deeply wanted, even longed-for children."

Dr. North predicted that a so-called "child tax" will soon be adopted by some nations as a way to force families to limit the numbers of their offspring.

Ecology Study Opportunity

Boys with an interest in and aptitude for the study of science have an opportunity to study ecology in the field this summer under a staff of experts at the University of Nevada, on the eastern edge of the Sierra Nevada in Reno. From June 12 to July 24 qualified secondary school students may participate in a special program run by the Desert Research Institute and sponsored by the National Science Foundation, designed to stimulate scientific talent in gifted boys. Each student will have an opportunity to conduct individual research, visit with outstanding scientists, learn desert and mountain survival, study the ecology of desert, mountain, rangeland and aquatic environments, and camp and hike in the beautiful Sierra Nevada area. Total cost for the program is \$273. For further information contact Dr. Richard G. Miller, Desert Research Institute, University of Nevada, Reno, Nevada.

The Vanishing Grizzly

When the repeating rifle was first put into the hands of the natives of Canada, reports the Alaska Conservation Society, the fate of the barren-ground grizzly bear became uncertain. Hunters and trappers began widespread killing of the bear, and although some protection was given the species in the form of a short closed season, the killing continued and the bears became scarce. In 1964, because bears were still "being sighted," all legal protection of grizzlies was eliminated, despite protests by the Canadian Wildlife Service, Canadian Audubon Society, and the Canadian Wildlife Federation.

Not many more than 500 grizzlies are now left in Canada's vast arctic and subarctic regions, according to a biologist of the Canadian Wildlife Service, and many conservationists fear that the species may be doomed. The animals reproduce slowly, and mortality by hunters and natural causes is great. In the United States, these large mammals are considered endangered, and according to the report on Rare and Endangered Fish and Wildlife of the United States, compiled by the Committee on Rare and Endangered Wildlife Species of the Department of the Interior, the animals are declining because of "continuous persecution with guns, traps, dogs and poisons; sport hunting; killing as predator and menace to livestock; cultivation and development of land (which has) eliminated much habitat of this wilderness species." Small populations of grizzlies are found in Yellowstone and Glacier National Parks, and as one means of protection for the species, the report suggests extending a complete protection zone for the bears at least fifty miles from the boundaries of the parks.

World's Oldest Tree Is Found and Felled

The recently revealed destruction of an ancient bristlecone pine in the high country of eastern Nevada's Humboldt National Forest has, we think, reflected discredit on the caliber of Forest Service management there. Felling of the tree took place in the summer of 1964 in a small stand of bristlecones on the northeast face of Wheeler Peak, in the Wheeler Peak Scenic Area of the national forest; destruction of the tree was carried out in the name of a study of distribution pattern of age limit in the bristlecone pine. Although not classed as rare, the bristlecone is severely restricted in habitat, occurring in scattered high-country stands in a number of the western States; it is a

Making Yourself Heard

If you feel that both the cutting of bristlecone pines and the removal by the public of bristlecone remains in the Humboldt National Forest ought to be stopped, you can send your views to:

Mr. Edward P. Cliff, Chief of the Forest Service, Washington, D.C.; Mr. Floyd Iverson, Regional Forester, Region 4, Forest Service Building, Ogden, Utah; or Mr. Robert Rowen, Supervisor, Humboldt National Forest, Elko, Nevada.

plant of the greatest esthetic beauty and scientific interest.

The tree in question proved on examination to be approximately 4900 years old—the oldest tree of any species known to the present time. Conservationists are asking why it was necessary to destroy the specimen when the non-destructive technique of coring for tree age, developed a number of years ago by Dr. Edmund Schulman of the University of Arizona, would apparently have served the purpose equally well. They are further concerned over a management policy in the Humboldt Forest which has permitted the public to remove dead and windthrown bristlecone pine remains for decorative purposes; such remnants not only possess great esthetic value—especially in a terrain that has been studied for national park potential—but, utilized non-destructively, are of great scientific importance in extending bristlecone pine dates into an even more distant past.

McKinley Park Addition?

A proposed enlargement of Alaska's Mount McKinley National Park for development of tourist facilities like campgrounds, parking lots and concessions has drawn sharp criticism from area mining interests. The addition to the park would include 9118 acres adjacent to the park boundary north of Wonder Lake. Miners insist that they would be hampered by Park Service restrictions on road-building and construction. However, at a recent meeting in Fairbanks, most persons interested in the area stated that they would like to see the park enlarged to afford more protection to wildlife. The meeting was called under auspices of the Bureau of Land Management, which has jurisdiction over the tract in question.

In any event, the Park Service has asked the Bureau to place the acreage in a "protective withdrawal" status to prevent it from passing into private or State ownership pending some final decision on the proposed park enlargement.

Help for the Eagle

The bald eagle, which is hailed by Americans as their beloved symbol of democracy and killed by them at the same time, is receiving further Federal protection in a seemingly fruitless effort to save the birds from extinction. The species is steadily declining in the contiguous 48 States except in Florida's Everglades National Park; with drought conditions in the park at an emergency level for all wildlife, it is difficult to be optimistic about the eagle's fate even in that protected area. The additional protection afforded the large, hawk-like birds

(Continued on page 22)

has come in the form of a recent order by Secretary of the Interior Stewart L. Udall to close off eagle nesting sites in all national wildlife refuges to help safeguard the birds from disturbance during the

nesting season. Timber-cutting will not be permitted within one-half mile of trees containing bald eagle nests, and potential nesting sites will be preserved. Representatives of the Bureau of Sport Fisheries and Wildlife—the Federal agency which administers the nation's wildlife refuges—will even try to stabilize old trees with eagle nests in them if the trees appear likely to be blown down during storms. The Bureau has listed the bald eagle as a species that is "rare" and "generally decreasing."

THE CONSERVATION DOCKET

The CONSERVATION DOCKET for March noted that the Cape Lookout National Seashore on the Outer Banks of North Carolina was well on its way to authorization with 1965 passage by the Senate and recent favorable report by House committee. Since then S. 251 has been passed by the House, and with two minor amendments adjusted between House and Senate, awaits only Presidential signature at the time of this writing (March 1) to become public law. The new seashore continues down the North Carolina Outer Banks from the most southerly island of existing Cape Hatteras Seashore, Ocracoke, to Cape Lookout adjacent to the city of Beaufort on the North Carolina mainland. It will encompass about 16,000 acres of dune, marshland and tidal flat, including Portsmouth Island and Core and Shackleford Banks; readers possessing copies of the September, 1964, issue of *National Parks Magazine* will find therein a general article on the new seashore with a description of its scenery and natural and human history.

The early months of the new year have seen the introduction of many bills to create a Redwood National Park in California. Most recently, the Administration's bills for such a park were introduced into the House (H. R. 13009, 13010 and 13011, Clausen, Burton and Olson) and in the Senate (S. 2962, Kuchel). The Administration would create a 43,392-acre Redwood Park by addition of 25,000 acres to existing Jedediah Smith and Del Norte Coast Redwoods State Parks, plus a separate strip along Redwood Creek south of Prairie Creek Redwoods State Park in Humboldt County. However, the Senate bill had barely been introduced before Senator Metcalf, for himself and 14 co-sponsors, introduced an amendment to the Administration bill that would establish a 90,000-acre park in the Redwood Creek and Prairie Creek Valleys of Humboldt County farther south—essentially an expansion of the National Park Service's Plan A of a year ago. The Metcalf amendment would establish a park similar to that already proposed (separately) in the House by Congressmen Colahan, Saylor, and at least 27 other Members.

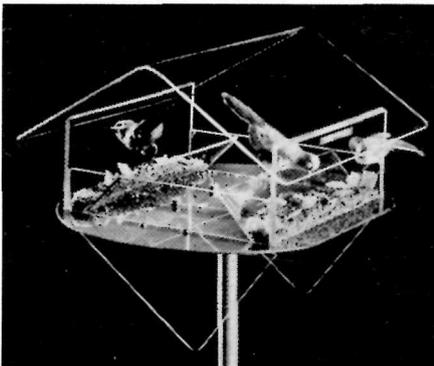
In the executive branch of the government, the President has recently requested Congressional approval of a plan to transfer the newly created Federal Water Pollution Control Administration to the Interior Department from the Department of Health, Education, and Welfare. Economies stemming from efficiencies in organization and elimination of duplicate efforts were among the reasons given for the request.

Reviews

BUILDING IN THE PEAK. Peak Park Planning Board, Aldern House, Bakewell, Derbyshire, England, 1964.

The Peak District National Park was designated by the National Parks Board to protect and enhance a choice expanse of relatively unspoiled rural English

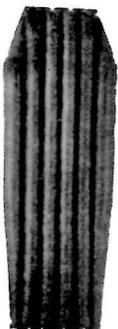
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NPA Trustee Honored

Mr. Joshua Evans, Jr., for many years a trustee of the National Parks Association, was the recent recipient of the Distinguished Service Award of the Washington Chapter of the American Institute of Banking. Mr. Evans, prominent Washington banker and long-time civic leader, was one of the three original trustees of the American Institute of Banking upon its organization in 1906; at the age of 89 he is still active in his profession.

The Islandia Proposal

Silent except for the calls of birds, the swish of marine life and an occasional splash as a rare crocodile slithers into still waters, the northernmost coral reefs along our Atlantic coast have so far escaped the impact of civilization. The area is considered by conservationists as worthy of Federal protection, and to accomplish this purpose the National Park Service recently issued a preliminary report calling for establishment of a Coral Reefs-Islandia National Monument at the north end of the Florida Keys.

The monument would be located some twenty-five miles southeast across Biscayne Bay from Miami. The lower and shoreline areas are clothed by dense stands of mangrove, and the rare hog palm, *Pseudophoenix vinifera*, grows only on these islands. Over 250 varieties of marine fishes, several species of sea turtles and many rare birds make their homes on the islands.

Three alternative plans for preservation of the area have been proposed by the Park Service; one of the plans, calling for a 220,000-acre monument, would include the John Pennekamp Coral Reef State Park—with the permission of the State of Florida—and would extend the boundaries of the monument to the mainland in order to control pollutants which may enter Biscayne Bay and thus upset underwater ecology. The report draws attention to the fragile nature of the area, and anticipates the necessity of careful control of visitor use to prevent impairment of natural features.



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landscape. The park consists of 542 square miles of gently rolling lands and precipitous uplands at the southern end of the mountainous "spine" of northern England. Its location between the expanding urban centers of Sheffield on the east and Manchester to the west makes extreme pressure for development inevitable. One might pause to consider that, in spite of the pressure of the thousands of people who make their homes and livings within the park as farmers, merchants, and commuters, the park—perhaps landscape preservation zone is a better term—retains nearly all the tranquil, rustic appearance associated with seventeenth and eighteenth century agricultural life.

"How do they do it?" is a frequent question. *Building in the Peak* is a booklet which provides a partial answer.

American park enthusiasts should remember that the task of providing protection to unique associations of flora and fauna in the United Kingdom falls on The Nature Conservancy. The English National Parks Commission is concerned solely with the maintenance, enhancement, and development for public enjoyment of representative English landscapes. The tool is scrupulous and imaginative use of normal statutory control of the land-use. Little or no public ownership is involved in the management of the ten designated national parks.

The English experience is instructive. Not, of course, in relation to our own concepts of national parks, where public ownership and management are cornerstones of policy, but rather in suggesting new tools and strategies to meet the ever-growing problems of open space and esthetics in whole regions where possibility of public acquisition of land is minimal. Some regions are subject to immediate urban pressures; others are further removed from urban centers, but are undergoing honky-tonk development in pursuit of the tourist dollar. Consideration of such regions—the Eastern Shore of the Chesapeake Bay for instance—might well include the character and quality of the architecture which is an integral part of the landscape scene, as well as patterns of land use. As the opening sentence in *Building in the Peak* observes:

"Britain's great geological diversity is the key to the growth of regional character in architecture, for there is a vitally important relationship between landscape and building."

Building in the Peak gets down to the hard core of English national park administration. It is, in fact, a handbook of some 35 pages. In quick fashion the District Planning Board and its Planning Officer, John Foster, take the reader

through the evolution of regional architecture and its relation to the landscapes of the park, recent building trends, the guidelines for future construction. The whole is related to the ideals of the National Parks Act of 1949 in a foreword by Lord Strang, Chairman of the National Parks Commission, and an introduction by Alderman N. Gratton, Chairman of the Peak District Planning Board. Suggestions are given for siting, design, and materials, including specifics for painting, handling of surroundings, and construction detail.

The publication is well done, with two color plates and many excellent black and white pictures beautifully illustrating the points made in the text. Treatment is brisk—the introduction by Mr. Gratton is a single page long, conversational, and remarkably complete. As such, the volume is an excellent primer in the art of dealing with buildings as a part of a living landscape.

—William J. Hart

*Consultant in Land Use Planning,
I.U.C.N.*

THE CUSTER WOLF: BIOGRAPHY OF AN AMERICAN RENEGADE. By Roger Caras. Little, Brown and Company, 34 Beacon Street, Boston, Massachusetts 02106. 1966. 175 pages, illustrated. \$4.95.

The sharp, well-trained senses of a wolf contribute largely to its standing as a glorious animal; appreciation of these senses makes some humans gloriously aware of the natural world vibrating around them. Roger Caras is deeply involved—both intellectually and emotionally—with wolves, and in writing about them he deftly interweaves hypothesis and fact and emerges with a book which may well turn out to be one the finest animal stories published this year.

In reconstructing the life of the fabled white Custer Wolf, Mr. Caras does not polish nature's world to a rosy hue; he describes the matter-of-fact and often brutal life of a wolf with great regard for the impact—both good and bad—which the wolf creates among its fellow creatures. The reader never forgets, however, that the impact is all in nature's design. Other wildlife and plants are factually described in their proper habitats, and from these descriptions, as they affect the wolves' life, the reader learns much of the complex inter-relationships of a natural biotic community. There is only one truly destructive animal in the story: the human, traditional enemy of the wolf.

Throughout the throbbing intensity of the fast, rich life led by all wild animals, the shadow of man, now forever cut off by civilization from the ways of nature,

lurks like an evil portent. As the other animals are born, live, consume and enrich and then die to enrich again, man is seen by Mr. Caras as a clever but misunderstanding outcast in the story.

The legend of the Custer Wolf was formed by man's imagination, fed by his stupidity, and given immortality by the blood of the many innocents slain in the name of "predator control." There are few who extoll the predator; fewer still who would take the time to explain to human killers the worth of a predator in terms that most humans could understand. Roger Caras has a deep understanding of wolves. The reader will almost certainly experience a similar understanding after reading his excellent book.

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