

NATIONAL PARKS *Magazine*



Glacier Peak, in the Glacier Peak Wilderness
of Washington State, from Image Lake on Miner's Ridge

January 1968

The Long Battle for the Potomac

ALMOST THREE YEARS HAVE PASSED since the President of the United States asked the Secretary of the Interior to develop a Model Program for the Potomac River Basin for his consideration.

The Secretary submitted an Interim Report to the President two years ago; the Army transmitted an almost identical Interim Report to Congress soon afterward.

The Army now intends, so we understand, to transmit its Interim Report again, or a Semi-final or Final Report, accompanied by its old report, this January.

The Model Program requested by the President has not yet been presented; the Army apparently does not intend to wait for the President.

We are entering upon a new chapter in the struggle for the protection of the Potomac River Basin against destructive impoundments; a brief review and forecast are in order.

THE OLD ARMY REPORT (1963) recommended 16 major dams on the Potomac and its tributaries, mainly for pollution abatement.

A powerful group of farm, labor, conservation and citizens organizations, representing perhaps 7½ million people throughout the United States, combined to oppose the Army Program.

The protest was carried to the President, and the assignment to the Secretary followed.

The Army-type reservoirs were opposed because they would flood out farms, homes, businesses, and communities throughout the basin, would destroy croplands, wildlife, forests, and ecologies everywhere, and would have deep drawdowns of water levels, defacing the localities.

The Army-type reservoirs represented an outmoded approach to pollution. Even then, a new framework for pollution prevention was evolving. New statutes were emerging which would result in local and state programs under Federal standards; the new Water Pollution Control Administration would supplant the Public Health Service; the American people were incensed, and it was clear that pollution would soon be stopped at source everywhere.

The water-supply features of the Army program were also outmoded. The fresh-water estuary of the Potomac was available for the supplemental needs of the Washington Metropolitan Area. Grudgingly, the Army acknowledged these facts by preparing stand-by plans to use the estuary during the summer of 1966; and grudgingly again, in presentations at Little Cacapon State Park in the fall of 1967.

The authority of the Soil Conservation Service to construct small impoundments throughout the basin for local water supply purposes had been expanded. Local control over the initiation of projects and the use of water could best be maintained by this system. Opponents of the Army-type dams had advocated development of a network of headwater impoundments from the beginning.

The network of watershed structures would also bring destructive floods under adequate control. The Army-type reservoirs were not needed for flood prevention. The op-

ponents of the Army program had always advocated a headwaters network for flood control.

THE ARMY EMBELLISHED ITS PROGRAM with supposed recreational benefits. The calculations were dubious in the extreme. At best, they comprised only certain tangible economic returns; the intangibles were always ignored. The existing stream valleys with their wealth of recreational opportunity, their woods, wildlife and scenery, were never given adequate weight against the mechanical recreation supposedly offered by big reservoirs.

A new statutory structure has been developed in the field of recreation as well as pollution. The Land and Water Conservation Fund has been established; the States are compiling recreation programs subject to reasonable Federal standards; grants, loans, and technical assistance are available. This is the realistic approach to cooperative recreational planning which has emerged in recent years; the recreation agencies, not the Army, should be entrusted with this work.

THE INTERIM REPORT ON THE POTOMAC advanced by the Secretary of the Interior in January of 1966 did not reach to the heart of the problem; it was a weak attempt at compromise, where completely new approaches were needed. Three major dams in the middle basin were advocated: Town Creek, Little Cacapon, and Sideling Hill Creek; their purpose, water supply for Washington, though the estuary was available.

Land pre-emption by the Army for the big dam at Seneca near Washington was accepted; later it would be assumed by Interior; but the truth was not faced that Seneca will never be needed, and would be highly destructive to the Metropolis. The authorized Bloomington Reservoir was accepted as a foregone conclusion.

The Advisory Committee on the Potomac, established by the Governors of the Basin States after prolonged inaction by the Secretary, endorsed the Interior Interim Report and recommended two additional reservoirs, North Mountain and Savage River II. Thereafter, however, it plunged into the drafting of a proposed Interstate Compact on the Potomac, presented to the public in the autumn of 1967.

The Army Engineers, not to be outdone, presented their own Interim Report on the Potomac in the summer of 1966; it was essentially an endorsement of the Interior Interim Report, 1966. The two together may usefully be referred to as the Army-Interior Interim Reports, 1966. The Army transmitted its Interim Report to Congress, with its old report attached, despite the instructions of the President that plans for the Potomac should be submitted to him through the Secretary of the Interior; it was contended that the submission was not official.

A passing episode, which helped the situation not at all, was the creation of a Water Policy Council to coordinate the operations of the construction bureaus. The Council got to work busily to set up mixed State-Federal Commissions in its own image, avoiding, however, the Potomac. The

(continued on page 23)



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The Long Battle for the Potomac Three Archeological Monuments of Northern New Mexico	Eleanor E. Gamer	4
Scenic Easements and City Life	Arthur A. Davis	10
A Wilderness Plan		
for Mammoth Cave National Park		14
Confessions of a Summer Ranger	Johns H. Harrington	17
News and Commentary		20
Reviews		21
The Conservation Docket		22

Front cover photograph by Bruce J. Nelson

The vast Glacier Peak Wilderness in the Washington Cascades is one of the showplaces of the Forest Service's wilderness system, and is closely linked with the even greater protective and recreational complex currently seen for the Cascades just to the north—the North Cascades group of parks, recreation areas and designated wilderness. But in Glacier Peak Wilderness Americans are once again squarely faced with the old question of utility versus beauty; of the tangible versus the intangible. On Miners Ridge is a deposit of copper ore large enough to warrant an open-pit mining and milling operation, for which plans are in progress. Open-pit mining and natural values are wholly incompatible, and conservationists, not denying the importance of copper in the economy, are urging use of alternative sources of ore to protect Glacier Peak and its wilderness.

The Association will move to its new headquarters at 1701 18th Street, N.W., Washington, D.C. 20009, as of February 1, 1968, and all communications thereafter should be sent to that address.

The Association and the Magazine

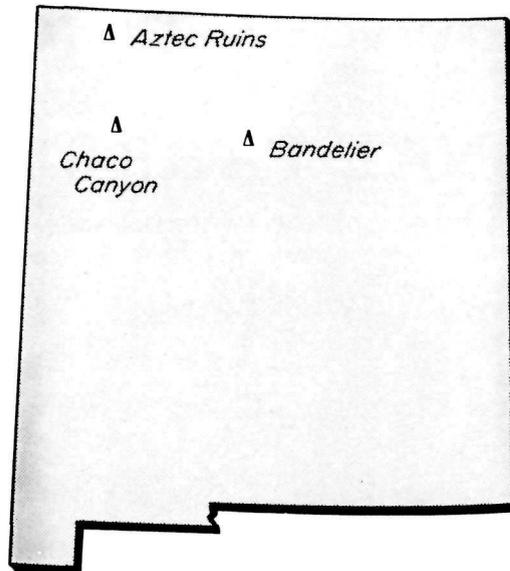
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The responsibilities of the Association relate primarily to the protection of the great national parks and monuments of America, in which it endeavors to cooperate with the Service, while functioning also as a constructive critic; and secondarily to 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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THREE ARCHEOLOGICAL MONUMENTS OF

COMING UPON THE AMERICAN SOUTHWESTERN DESERT is, for most people, an experience which evokes deep emotional response. To some it is a barren, desolate place that stirs up unreasoning fears and revulsion. To others, the beauty of color, clarity of line, majesty of spatial relationships, the light and shadow, are a source of endless delight and fascination. Everyone, however, at some time or other begins to wonder how anyone could live in it, and why anyone would try to wrest a living from such uncooperative soil in such a capricious climate. I read recently (in an article by Robert M. Coates in the *New Yorker* of June 17, 1967) a statement that "the reason the Indians are concentrated in the Southwest is that the land there was so unproductive that no white man wanted it." While it may be true that the Indians have not been turned off this land for that reason, it must be remembered that many of the Indian tribes now living in the desert have lived there since a time so long ago that no white man had even imagined the existence of the land mass we now call the American continent.

Today there is good evidence that the southwestern desert has been populated since glacial times. While our northern States were covered by the most recent great ice sheets, the lands to the south were cool and green. Rainfall was heavy; streams and lakes abounded; vegetation was rich, and animal life was plentiful. The presence of men, who took advantage of these fertile hunting grounds, is known by the stone weapons, campfire sites, and other evidence of their occupation in conjunction with the bones of the extinct mammals on which they preyed.

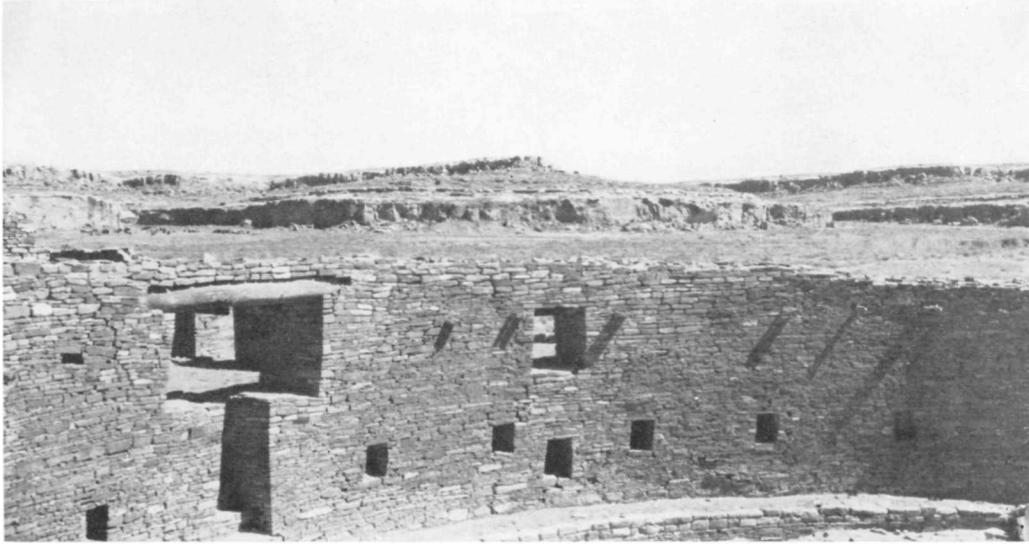
With the most recent retreat of the great glaciers, however, climatic change began. A general warming trend and a shift of rainfall patterns began to dry out the land. Vegetation was reduced and, with the lack of forage, game

animals became increasingly scarce. But for the men living in this area the problems of adaptation to the changing environment had to be faced not in terms of years but rather in terms of generations. Hence there was no exodus, but only a very gradual change to a mode of life better suited to the new conditions.

Cultural history began in the Southwest around 6000 to 5000 B.C. with a parent-culture, the Cochise, which was marked by a gradual shift from the hunting and gathering patterns of post-glacial times to the use of wild grains as the basis of subsistence. As desert soils tend to be unusually fertile when well-watered because of their mineral content, they are capable of high productivity. Once they have become acquainted with agricultural techniques, a people who desire the stability made possible by surplus production would tend to settle along permanent rivers of some size. This has been the pattern followed by the Indians of the Southwest. We do not know exactly when the desert tribes first began to cultivate maize, but by 1000 B.C. the southernmost groups were farming along major watercourses, and were building pit-houses and storage bins for the excess grain.

In the first thousand years of the Christian era, a new group moved into the north of the area and took up residence along the San Juan River. These were the Anasazi, who seem to have moved from northern Utah. They brought with them their own type of corn; the art of basketry, for which they are famous; fur blankets, sandals, and the domesticated dog. They, too, built pit-houses and lined them with stone slabs.

It is among these people that we see the rise of the village. At first a simple grouping of pit-houses, the village became, at the hands of the Anasazi, a collection of rectangular, masonry structures with the circular pattern



The Great Kiva of Casa Rinconada

Michael Gamer photograph

NORTHERN NEW MEXICO

By Eleanor E. Gamer

of the pit-house retained in the kiva, which we presume to have been used for religious purposes.

Between 1000 A.D. and 1300 A.D. the Anasazi began to build multi-storied structures of masonry which were, in effect, large villages housed in a single structure of many rooms—the forerunners of the modern pueblo, or apartment house.

THERE SEEM TO BE a number of factors relating to this gradual shift from small village units to large pueblos. The small village unit probably had its origin in groups of intimately related families who tilled the river-watered plots in areas contiguous to the village. The discovery of irrigation techniques, however, made wide-spacing of agricultural lands unnecessary; in fact, uneconomical and inefficient. This, plus the fact that food surplus was an incentive to predation by other, less-favorably situated people, led to the amalgamation of many of these family groups into large units adjacent to irrigated fields, and capable of adequate defense against intruders. It is interesting to note that the social pattern of the village was maintained after this kind of amalgamation took place. It has been observed that, in the great pueblos, the ratio of living units to kivas remains the same as in the village. We may assume that each village group retained its identity within the larger group and formed the basis of the clan structure, each original village unit retaining its own name, religious ceremonies, and even totems.

The two finest examples of the so-called Great Pueblo Period are in Chaco Canyon and in the Mesa Verde. Both of these sites show evidence of long occupation. Both have pit-house villages, simple pueblos capable of housing only a few families, and great, complex masonry structures that indicate the height of culture the Anasazi people attained.



Five-story wall of Pueblo Bonita

Carlton Gamer photograph



Great Kiva of Chetro Kettle Pueblo in Chaco Canyon.

Carlton Gamer photograph

Today Chaco Canyon is virtually dry, but at one time it must have held a stream of some size, a tributary of the San Juan to the north. River-bottom lands are extensive, and along side canyons and mesa tops there must have been a considerable forest, as the timbers used in the buildings of Chaco Canyon show no evidence of long transportation. Beside innumerable small village units, there are twelve large ruins on the canyon floor and four on the mesa tops. It is not thought that all these units were inhabited at one time, but probably successively from the eighth to the 12th centuries A.D. Casa Rinconada, a pit-house village dating from about 700 A.D., contains 28 stone-lined pit-rooms and seven kivas. It probably housed 50 people. Nearby is the Great Kiva, the largest yet excavated in the Southwest. It is 63 feet in diameter and is of the finest masonry work, having a double wall on its north side which holds small ceremonial rooms, and a large, rectangular room connected to the kiva by a stair. The pattern of the Great Kiva is typical of Chacoan kiva architecture.

The finest structure, however, is the Pueblo Bonita, which covers an area of three acres and contains over 800 rooms and 32 kivas. It is thought that it must have held 1200 people. The individual rooms are large and the ceilings are high when compared with most pueblo architecture. The outer walls are several feet in thickness, and consist of a fill of large, undressed stones and mortar faced on each side with finely-dressed stone. They are often ornamented by the inclusion of rows of stones of contrasting shape and color. The walls are pierced by windows and, toward the inner court, by large, rectangular doorways. Doorways set into corners and leading into inner rooms are common. The entire D-shaped structure is of one story where it abuts the central court, but rises, tier after tier, to a height of

five stories at the rear. The straight bar of the D consists of a protective double wall divided into small rooms, possibly used for storage.

There is no agreement as to the causes for the abandonment of this great building. Probably there were many. Certainly deforestation must have been a factor, as it would have laid the surrounding mesas open to severe erosion. Over-use of the rather restricted crop-land could also have caused a gradual depletion of the soil and reduced productivity. I think, however, that the building of these great, fort-like structures with their protective, outer walls suggests that these people were not without enemies to harass them. Whatever the reasons, the people of Chaco Canyon gradually drifted away and sought homes elsewhere. The great pueblos are thought to have been deserted by 1130 A.D.

ABOUT SIXTY-FIVE MILES TO THE NORTH on the Animas River, also a tributary of the San Juan, lies the town of Aztec. Here, first mentioned by Escalante in 1775, lie the ruins of another great pueblo built originally in the Chacoan tradition around 1100 A.D. Following the pattern of the Pueblo Bonita, Aztec is built in a modified D-shape around a central court. Like its predecessor, Aztec's rooms are large, averaging 10 by 12 feet, and nine feet in height. There are windows cut through the outer walls, which are not so thick as those of Pueblo Bonita; there are the ample, rectangular, lintelled doorways; and the corner doorways we associate with the Chacoan pattern. The original masonry was excellent; not so fine perhaps, as that of the late Chacoan pueblos, but still delicately worked and incorporating decorative elements, as is evident in the fine band of green sandstone that undulates across the entire western wall of the pueblo. The building rose from a single story



Aztec Ruins from corner of the central court.

Carlton Gamer photograph

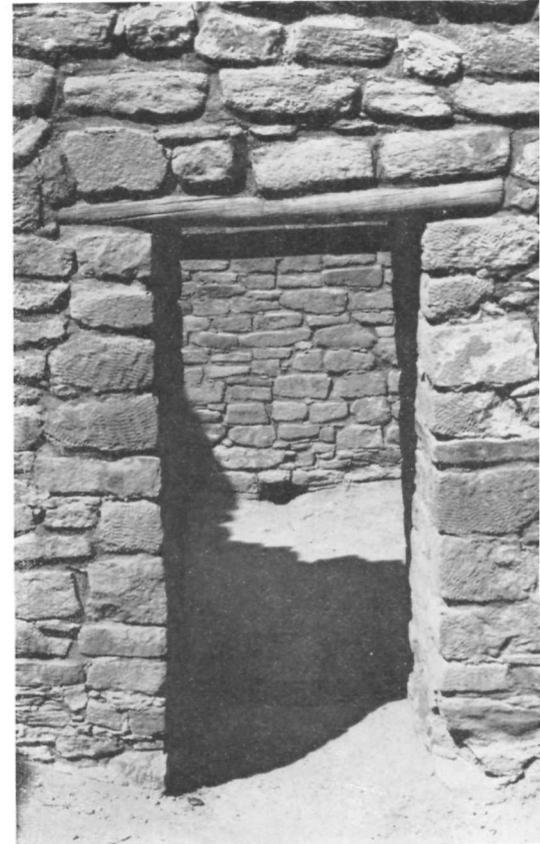
on the central court to three stories at the rear. It contained about 500 rooms and probably held a population of about a thousand.

In the central court lies a great kiva modelled after that at the Casa Rinconada, but here the double walls enclosing small ceremonial chambers extend entirely around the kiva. There is a rectangular room at the north with a stair into the kiva just as in Chaco. This kiva has been carefully restored, so that today one can see all the elements of the structure and its fittings quite easily.

Aztec also had a protective wall, a double wall of small rooms closing off the central court. Here, however, this wall is fashioned of rough river-boulders cemented together with clay. It would seem to be a late addition, perhaps made necessary, after some years of occupation, by the appearance of hostile neighbors.

It is of particular interest that the ruin at Aztec shows definite evidence of occupation by two distinct peoples at two different times. Tree-ring dating has established the original construction to have been between 1110 A.D. and 1124 A.D. After this date the pueblo seems to have been deserted for about a hundred years. The second period of building dates between 1225 A.D. and 1260 A.D., and is apparently the work of emigrants from the Mesa Verde area.

Because of the rougher quality of building materials and the limitations imposed by the use of cave-sites, Mesa Verde architecture differs from the Chacoan in the use of larger, more rough-hewn sandstone blocks, single walls of no great thickness, smaller rooms with lower ceilings, and doorways greatly reduced in size, or modified into a T, or keyhole, shape. The people who moved into Aztec after 1225 A.D. remodelled it after their own style, often using building materials taken from older parts of the pueblo.



*A lintelled doorway
at Aztec Ruins*

Carlton Gamer photograph



Protective double wall of small storage rooms at Aztec Ruins

Carlton Gamer photograph



Wall with decorative green sandstone band at Aztec Ruins.

Carlton Gamer photograph



Mesa Verdean keyhole doorway in rebuilt wall at Aztec Ruins. Note Chacoan masonry on rear wall of room.

Carlton Gamer photograph

They sealed off many rooms, reduced the size of others, and rebuilt doorways in their own particular fashion. They also re-roofed the great kiva with a crib-work of timbers familiar to them. Again, we have no way of determining what caused their final exodus.

It is strange, however, that there are only six burials within the pueblo dating from the Chaco period, while 149 have been found there of the Mesa Verdeans. Earlier burials were carefully arranged, but the later burials, consisting mainly of women and children, seem haphazard and hurried. Possibly the pueblo was attacked by disease or by hostile tribes. Obviously a time came when they felt it necessary to move on.

BY THE END OF THE THIRTEENTH CENTURY, most of the population of the San Juan River basin had moved on. From dendrochronology we know that the years between 1276 A.D. and 1299 A.D. were years of severe and persistent drought. This may have been a deciding factor in the general migration towards the south and east. It is possible, too, that the hard conditions fostered hostility between tribes attempting to lay claim to permanent water supplies. It was during these years that many of the modern pueblos along the Rio Grande, and the Hopi and Zuni Mesas, were first inhabited.

One of the more spectacular examples of this Regressive Pueblo Period is that on the Pajarito Plateau north and west of Santa Fe. Here, a small group took up residence in a fortress-like canyon which boasted a small but permanent stream, El Rito de los Frijoles. It is difficult to believe that a people descended from the creators of Chaco, Mesa Verde, and Aztec could possibly have been satisfied with their own labors on the tiny pueblo of Tyuonyi. The pueblo itself is roughly circular, and held about 250 rooms. There were three small kivas within the central court, and a large kiva at some distance from the pueblo. All are constructed of river-boulders and roughly shaped stones hacked from the tuff cliffs that enclose the canyon. There



Ruins of the Pueblo of Tyuonyi.

Carlton Gamer photograph

has been no attempt at true masonry; the stones are just stuck together with clay. One gets the feeling that the builders were not particularly concerned with beauty or permanence.

Another interesting feature of Tyuonyi that leads one even more surely to favor the theory that this site was chosen for defense, is the great number of cave-dwellings the narrow valley contains. The valley walls are cut through a stratum of friable tuff from which tiny caves have been hollowed. Many of these caves are high above the valley floor and represent a second- or third-story room of a house built out from the face of the cliff. One of these houses has been reconstructed. Many of the caves, however, are accessible only by ladder. Some have multiple adjoining rooms, and in many the decorative plaster still remains. The floors seem to have been dyed a dark red, and have been stone-rubbed to a high polish. The walls are a lighter shade of red half way up, and white above. They are much blackened by cook-fires. There seems to have been some effort to decorate these cave-rooms with painted designs; an interesting development, as it was in this area that some of the first colored-glaze pottery was made.

Once more, there is no certainty as to why this canyon was abandoned, which it was after about 300 years. In a fascinating novel, recently republished, Adolph F. A. Bandelier has told a highly plausible tale of these people and of their desertion of their home. Based upon his fine research in the area, *The Delight Makers* is a charming and instructive book, one well worth reading before a visit to this last outpost of pre-historic pueblo life.

There is a legend told by the old men of the modern pueblo of Cochiti that places their ancestors on the Pajarito Plateau in the vicinity of Tyuonyi. Perhaps the migrations of this ancient people from Siberia into the New World, to the glacier-edge which became a desert, and on to the banks of the Rio Grande have temporarily, at least, come to an end. ■



*Multi-roomed cave-house
at Tyuonyi Pueblo*

*Carlton Gamer
photograph*

SCENIC EASEMENTS

and

CITY LIFE

By Arthur A. Davis

This article is the slightly condensed text of an address by Mr. Davis, Director of the Land and Facilities Development Administration of the Department of Housing and Urban Development, to the Real Property Committee of the Federal Bar Association, at San Francisco, July 28, 1967.

WITH THE CONTINUED DEDICATION OF LAND TO URBAN uses at unprecedented rates, a continued trend toward urbanization on the part of our people, and sweeping new technologies that will come into full operation before the turn of the century, the use and ownership of our urban land base becomes an increasingly difficult legal, social, fiscal, and economic problem. As lawyers, you will be most comfortable in confronting the legal implications of urban land use. However, I shall rely with confidence on your broader interest in matters of public policy, government action and private investment decisions. For it is in the context of these collective concerns that innovative and effective means for dealing with problems of land use and ownership—and resource allocation generally—need to be fashioned.

This forum is particularly concerned with exploring new means for acquiring public rights in land involving less-than-fee simple acquisition of the property. We are interested in this concept because of its possibilities for securing certain public benefits: (1) cost efficiency—we pay for what we use; (2) flexibility—we buy only what we need; (3) local fiscal requirements—we keep land on the tax rolls, and essentially in private hands. But before considering the usefulness of less-than-fee techniques for securing these benefits, we need first to examine carefully the purposes for which the land, or rights in land, are being acquired. For the use of various techniques for land use control must reflect the goals which the controls seek to serve. They should recognize the distinctive characteristics of the functions performed by the land involved. As examples, consider the following six types of land areas.

1. Land that has potential for active and passive

recreation, within easy reach of each urban resident at the proper scale of the neighborhood, community, and region.

2. Lands having scenic or historic assets which give identity and beauty to neighborhoods, communities, and entire regions.

3. Lands that are critical to preserving the even and ordered pace of the hydrologic cycle, buffering extremes of flood and drought.

4. Lands which break up, ventilate, or give form to surrounding urban developments, or help separate incompatible or contrasting land uses.

5. Lands that are dangerous or undesirable for urban development.

6. In a few cases, lands which fill key economic functions such as production of special agriculture products.

The primary policy implications involved in protecting these kinds of areas is clearly illustrated in the San Francisco Bay Region. A plan for the Region suggests the need for protecting 865 thousand acres of open space lands by the year 1990, or about 18 percent of the total land area. At present there are some 335 thousand acres of open space lands set aside, about half of which are owned by the water company. If the remaining needed land could be purchased at an average cost of \$2,000 per acre, the total bill for acquisition of this land in fee would exceed one billion dollars. Desirable as this program may be, such large scale public acquisition seems unlikely to be attained with foreseeable financial resources.

Multiply the San Francisco Bay Area by comparable situations all over the country, and the problem comes sharply into focus—at a magnification past belief and, more to the point, beyond reach of any reasonable combination of public and private pocketbooks. If a solution is to be found, it seems to us clear that land use regulation, and public acquisition of less-than-fee simple title, will be major ingredients in the formula.

Zoning a Fragile Instrument

The long-standing workhorse of urban land use control has been zoning by local governments. On the whole, zoning has been a useful device, and one which nobody would seriously recommend discarding. Yet, it is a frail and impermanent instrument. When economic pressures on land begin to rise, zoning becomes increasingly less secure. Land sales often take their most dramatic escalations in anticipation of potential zoning for a higher density of land use; in general, the expectations are so well assured that land values never de-escalate again.

Local governing bodies faced with rezoning applications must necessarily be acutely aware of the economic values represented. Higher densities and higher values often mean

higher taxes and more revenues for the locality. Land use plans can crumble under such economic pressures and few zoning boards can withstand rising economic pressures indefinitely. In short, the usefulness of zoning is limited both economically and geographically.

One obvious alternative to local zoning is some form of areawide or statewide exercise of zoning powers. Hawaii has it now. More recently, Connecticut established flood plain zoning on a statewide basis for major river systems. Other States, including California, are studying forms of rural land use zoning by state authority.

Zoning at the state level can help protect certain areas and values. Perhaps such zoning is a feasible mechanism for controlling land use in the vicinity of major airports and jet aviation facilities. It may also have utility in the protection of resource-oriented values—watersheds, flood plains, and larger areas geologically unfit for development.

But the zoning power alone can hardly be relied upon to create stable patterns of urban land use, no matter what level of government employs it. Zoning has its uses—but for our purposes it must be regarded as a supplemental tool, rather than primary machinery.

Less-than-fee acquisition techniques may hold a larger promise. A good deal has been said about them in the last few years—unfortunately, much of it is either blindly negative or overly optimistic. References have been made to the fact that easements may cost 90 percent of the fee, and hence concluded by definition as “not worth it.” One major Federal agency has a rule of thumb that it never buys less than full title if the costs run over 50 percent of the fee.

Some park and recreation executives have discarded less-than-fee techniques because they feel intuitively that without ownership there is no adequate control. Others argue simply that purchases of less-than-the-fee are just plain “too much trouble.”

We are not discouraged by this kind of talk. For one thing, much of it is speculative—there has actually been only limited experience with such techniques. There are few cases to draw conclusions from; none that can make long-term prediction very secure. The evidence is inconclusive.

But even if the high costs in relationship to fee purchases hold up—though they may now be high only because they are so rare—if the average open space budget could be expanded by the 10 to 25 percent saved, the total program effort could be increased by an important fraction. And at no added cost. At the same time, the land would stay on the tax rolls where it can continue to carry part of the tax load, and, more importantly, where it does not draw fire from those opposed to further expansion in public land ownership.

“The continued trend to urbanization has made the use and ownership of urban land an increasingly difficult legal, social, fiscal and economic problem complex. In future, we must devise a bolder, more inventive strategy for acquiring public areas needed to better serve urban America.”

—Arthur A. Davis

The administrators' reluctance to consider purchases of less-than-fee needs to be overcome both in the planning process and in our programming. For example, in HUD's open space program, of more than 980 Federal grants involving more than \$126 million for the acquisition of some 237,000 acres over the past six years, not one grant involved a bona fide less-than-fee purchase, such as a scenic easement.

Thoughts on Life Estates

We have had limited experience with the use of life estate provisions which permit people to live on the land even though title has passed into public ownership. We support this practice because it takes much of the sting out of public acquisition, and can ease what otherwise could involve real hardships for dislocated people. We think, however, that these provisions should not be limited to situations where the present land owners are octogenarians and will obviously be only short term beneficiaries of the arrangement. Why not plan life estates that will extend 20, 30 or more years? And why not life estates involving more than single families in an acquisition area?

One of the problems in the area of easements is the problem of the validity of negative easements. I am generally aware that there are some valid and interesting legal arguments about negative easements, but I will leave them to you lawyers. I am hopeful that you can finally lay the issues to rest, for as a program administrator, I see negative easements as offering one of the really exciting opportunities for more effective and efficient guidance of land use. They can help prevent incompatible land uses indefinitely, and compensate the land owner for whatever loss he has sustained. In the meantime, the land stays on the tax rolls, in private ownership, being productively used, and at the same time satisfying important public objectives.

There remains the problem of providing better public understanding of the desirability of public investments in negative easements. We need to convince people (including bureaucrats and lawyers) that is not always necessary for land to be wholly owned by the public to warrant public expenditures. Where we propose to use the area for intensive public outdoor recreation, fee title is usually most practicable. The land is to be entered upon and used, and management and law enforcement considerations almost require full public ownership. But this is not the case if the public benefit is to protect a view, restrict development, or control land uses. Legal constraints on the acquisition of such easements should be removed by appropriate state or local legislative proposals. At the same time, you might explore the possibility of a combined approach involving both a negative easement and some form of public right.

One of the real handicaps to more widespread use of easements is the paucity of legal instruments, precedents, and case law. We even lack standard language that might be used for acquiring various types of easements. If I want to draw up a will, or sell my house or my car, I can go to any good stationery store and buy a set of standard legal forms to meet my needs. In all likelihood my lawyer will rely heavily upon published formats available in his library, or upon a file of language he has developed over the years to meet similar needs. There is no comparable expertise or

conventional wisdom available for easements. Without it, both buyers and sellers have a poor understanding of what is being bought and sold, and are understandably mistrustful. Here is an opportunity for you to ply your craft to the public benefit. We need to devise new terms, new language, and new devices to bring to easements the same common understandings and sense of security we now feel with regard to sale contracts.

Part of any aggressive program of preserving open space for public purposes is an active effort to secure donations of fee or less-than-fee interest in land. The Federal government, working with a private foundation, was successful in encouraging donations of scenic easements near Piscataway Creek, opposite Mount Vernon, near Washington, D. C. The easements were subject to a clause whereby they would revert to the owner if the government did not buy adjacent parkland within five years. Such donations have been altogether too rare; their potential has hardly been tapped.

The Regional Plan Association reported that one-third of the open space land in the New York City urban area was privately donated to public bodies. I suspect that this has not happened in other urban regions simply because less effort has gone into convincing large property owners that donation is desirable. The work of such organizations as the Open Space Action Committee in New York is impressive. The Committee helps arrange property so that the owner can make a fair return on part of the property, with the remainder donated for public open space. This approach is particularly effective when combined with tax incentives, such as the ordinances being drafted in Montgomery County, Maryland, which will permit a sliding scale of property tax reductions, depending on the nature of the donation. Other arrangements could be mentioned: lease-option purchases, subdivision regulations, more effective tax schedules in urbanizing counties, etc. All bear more work, more use, more testing.

I wonder, too, if we have given sufficient thought to costs and benefits of applying land acquisition concepts developed for center city urban renewal to the developing portions of our urban areas?

Aim of 1961 Legislation

The original open space land legislation in 1961 contemplated grants for shaping the direction and timing of urban growth. Under terms of the proposal, it would have been possible for public bodies to acquire lands and sell them for private development, or for other public uses. This technique is used widely in Europe. A proposed Federal program for loans to state land development agencies to build new communities has been proposed several times, but has never caught fire in Congress. HUD does administer a modest advance acquisition of land program that covers the interest cost for five years of money borrowed to buy land for public facilities in advance of construction. The first grant under this program was made to San Diego to purchase the site of a municipal reservoir.

There are many variations of these ideas. Several years ago, Marion Clawson proposed Suburban Development Districts which would be special public bodies with power to purchase all of the land within a district, and sell it back for uses specified in a comprehensive plan. Represented on

the body would be the major property owners to be affected by this action, balanced by public members. In the *Plan for the Valleys* developed for the Worthington and Green Spring Valleys north of Baltimore, a private real estate syndicate was proposed, to be comprised of the property owners in the area. The syndicate would own the land, and take profits from selling it for high density development on the plateaus to compensate for the loss of keeping scenic slopes and valleys in low density open space use. Thus, open space land would be preserved at little cost to the public.

A simple arrangement, requiring no elaborate devices, is the case of a public body simply buying land it wants to protect, and selling or leasing it back subject to certain restrictions. This probably would be even more effective and less costly than an easement, particularly if the land were held as surrounding prices rose. A variant of this is in common use by the Army Corps of Engineers which issues long-term leases for agricultural use of reservoir lands subject to overflow. Such land purchase and resale of lease-back proposals can recognize the importance of positive efforts to shape development, as well as to protect open space values.

Mrs. Ann Strong has proposed another form of land use controls—so-called compensable regulations. These are analogous to a form of easement, but tied closely to zoning and the regulatory process. Mrs. Strong has in mind control of land uses through regulations with provisions for compensating the land owner at the time he sells his property, with the compensation making up the difference between normal market price and the depressing effect of the regulation. This proposal would permit the public owner to take advantage of the long-term economic impact of controls for shaping and guiding urban growth. It seems likely, for instance, that in the long run land use controls over a substantial area would strengthen land values, rather than depress them. There may be a temporary loss or slowdown in price escalation as the land use controls go into effect and communities' goals are realized. But the long-term effect may be to reverse any depressing price effect and increase land values. I cannot argue that prices go as high as they might in the absence of controls, but we do know that land values increase in residential communities strongly protected by restrictive covenants. Certainly there is insufficient evidence to warrant the generally negative attitudes often expressed about the effect of such controls on land prices.

I want to return to the major reason for exploring the uses of less-than-fee techniques, namely, the promise they hold for acquiring urban lands for a variety of public purposes at minimum cost, and with maximum flexibility. For it is clear that the present practice of buying what land we need will be inadequate to meet even minimum future requirements. In fact, I doubt that we are really doing much now in the way of acquisition which can accurately be described as present investment for meeting future needs. In the case of recreation and parks, the areas acquired today are being developed today—or tomorrow, at the latest. Land acquisitions for the purpose of preserving scenic and conservation values in or near urban areas are rare indeed. The truth of the matter is that today



Photograph courtesy Mount Vernon Ladies' Association

To prevent unsightly intrusions on the Potomac River shoreline opposite historic Mount Vernon in Virginia south of Washington, D.C., the Federal Government, working with a private foundation, was successful in encouraging donations of scenic easements in the Piscataway Creek area, seen across the Potomac in the photograph above.

we are falling behind, not forging ahead.

The basic reason why this is so is the scarcity of public dollars—local, State, or Federal—that can be allocated to amenity considerations. The need for other public facilities and services is too compelling—parks and recreation are disadvantaged in competing for scarce public dollars with schools and hospitals and roads and water and sewer systems.

But another reason why local officials are cautious about investments in park, conservation, recreation, scenic, and historic areas is the enormous difficulty involved in making the “right” choice. Land costs are high, dollars few—what to do? Buy a small, intensively used area, now, before it is developed for a shopping center? Buy flood plain lands before they are developed for incompatible use? Buy lands farther out, before the inevitable price escalation begins? Buy an historic site before its identity is lost to make way for yet another subdivision? The shopping list is too long for the budget.

It seems to me that here is where the use of less-than-fee techniques can be most helpful. They can provide choices, keep opportunities open, help give public officials the tools they need for making investment decisions as shrewdly and accurately as the private developer. A five-year option

presently is unheard of: I wonder whether it might not be worth the cost in terms of keeping alternatives open, as well as pegging the price. My point is that the “buy it or lose it” approach can only continue the present trend—lost it. * * *

Your profession—indeed, your association—can make an invaluable contribution. You can help work out the difficult technical and legal problem of evaluating negative easements for purposes of appraisal and taxation. You can help draft innovative state legislation with respect to zoning and the purchase of easements and similar rights. Perhaps most importantly, you can constitute yourselves as a clearing-house of information, expertise, and experience in the field; in effect, providing both a focal point and a catalyst for legal work in this important and nearly unexplored area.

I think it would be work well-rewarded. For the problems of our cities are very much related to their land and water resource base. Metropolitan areas comprised of decaying center cities and ticky-tacky suburbs proliferating in haste and disorder need not be the highest community organization our society can achieve. It is past time to develop a bolder, more inventive strategy for acquiring those public areas needed to better serve urban America. ■



A Wilderness Plan for Mammoth Cave National Park and the Surrounding Region

Synopsis of a presentation prepared by the National Parks Association
in anticipation of public hearings by the National Park Service on
establishment of wilderness areas within Mammoth Cave National Park

MAMMOTH CAVE NATIONAL PARK, in the so-called "cave country" of south-central Kentucky, includes both the largest and the third largest known cave systems in the world, and it is believed that a third great cave system may also exist there. Dynamically, a cave is a fragile phenomenon, easily damaged by man-imposed changes and poorly conceived development within the operating area of the forces which created it; and caves are particularly susceptible to damage by human over-visitation and over-use. Already, at Mammoth Cave, areas open to mass visitation have lost many of their original pristine qualities. Barring a change in the course of management at Mammoth Cave, future visitors will take away with them the flavor of the big-city subway trip rather than that of a real cave experience.

In the great parks, protection should be the first consideration, with public use tailored to the needs of protection. Development of high-standard roads and resort facilities leads to overcrowding and damage to natural features; most of the overcrowding in Mammoth Cave Park is related directly to the automobile.

The best long-term management tools with which to minimize the protection-use conflict, ever a more serious problem in the parks, is the inclusion of maximum park acreages in Wilderness and the adoption of the National Parks

Plate 1 opposite shows Mammoth Cave National Park and the National Parks Association's detailed plan for park wildernesses. Also shown on Plate 1 are the public access sites in the immediate vicinity of the park on the Nolin Reservoir, administered by the Corps of Engineers. Inset shows the more distant recreation region surrounding the park, with its complex of water-oriented state parks, other state parks, state and national forests, national historical site, and network of roads, completed or under construction.

Association's concept of regional planning for the parks, by which recreational pressures can be redirected in part from the parks to the much larger surrounding recreation regions (inset, map opposite, for the region around Mammoth Cave National Park.)

In viewing Mammoth Cave for Wilderness purposes, it must be recognized that the area is unique among those parks so far reviewed in that it represents two different worlds with their Wilderness opportunities: the above-ground world, and the below-ground world. In formulating its plan for Wilderness at Mammoth Cave Park, the Association recognizes and supports the more detailed recommendations of the National Speleological Society relative to the entire park.

All of Mammoth Cave National Park, with the exceptions noted below, should be placed in Wilderness status. (Plate 1, opposite.) Exceptions are:

Mammoth Cave Ridge, which has a mass recreation resort center on its surface, with large blacktop parking lots, visitor center, hotels, cabins, camping area and other developments.

Maple Spring Ranger Station, within a loop road enclosing about 200 acres in the northern part of the park; also the Wilkins and Temple Hill Cemeteries and their access roads in the northern and western parts of the park; access to the cemeteries is currently mandatory.

Two areas on the north and south-western sides of the park which may serve as future visitor reception and visitor access areas respectively.

The access ribbon to the Great Onyx Job Corps Center. It is most unfortunate that Flint Ridge was the site selected for the Center; concentration of 300 persons in the area and use of heavy earth-moving equipment can only be called a great mistake. The surface of Flint Ridge should be as-

sisted in returning to a wilderness condition as soon as possible.

Plate 1 shows the manner in which the balance of Mammoth Cave Park's surface terrain would be divided into wilderness areas.

The Underground World

In almost all areas of the park south of the Green River there are important underground features. Flint Ridge, a large area to the north and northeast of the Mammoth Cave Section, has the longest cave system in the world, so far as presently known; some of the system remains unexplored. Directly south of the Mammoth Cave visitor complex is Jim Lee Ridge, and to its west Joppa Ridge, constituting a region of karst (limestone solution formations) believed to cover a third major cave system, still undetermined. Until underground conditions here have been fully surveyed, the whole area should be kept free of major disturbance. The areas under Flint and Jim Lee Ridges should be classified as Wilderness, and additional Wilderness should be preserved in the vicinity of Joppa Ridge as the extent of the suspected cave system there becomes known (Plate 2, page 16.)

Extensive surface and subsurface development to accommodate heavy visitation at Mammoth Cave Ridge make it unsuited for underground Wilderness. At the present time, however, only about seven miles of the 40 miles of cave passages in the Mammoth Cave system are heavily used. The remaining passageways can be developed at differing levels of use to display a full range of cave features; in them, visitors may attain the true cave experience, one in which there would be no walkways and where light would be furnished only by handtorch.

Integral to the maintenance of a natural cave system are the surface condi-

tions above, including the entire drainage area. Artificial changes in the flow of springs, or the seepage of pollutants such as oily liquids and detergents, must be avoided, for these can be destructive to the cave formations. The major source of water for the cave system of Flint Ridge was the percolation from surface springs that have been capped to provide culinary water for the lodge, campgrounds, and the Job Corps Center. Arrangements must be made for a water supply from outside the park so the flow of the springs can be released to restore the natural balance of moisture below the surface; the cave formations depend on such a balance.

Looking at the recreation region surrounding the park, one sees a wealth of opportunity for alternative public recreational targets, especially those based on water areas. Most im-

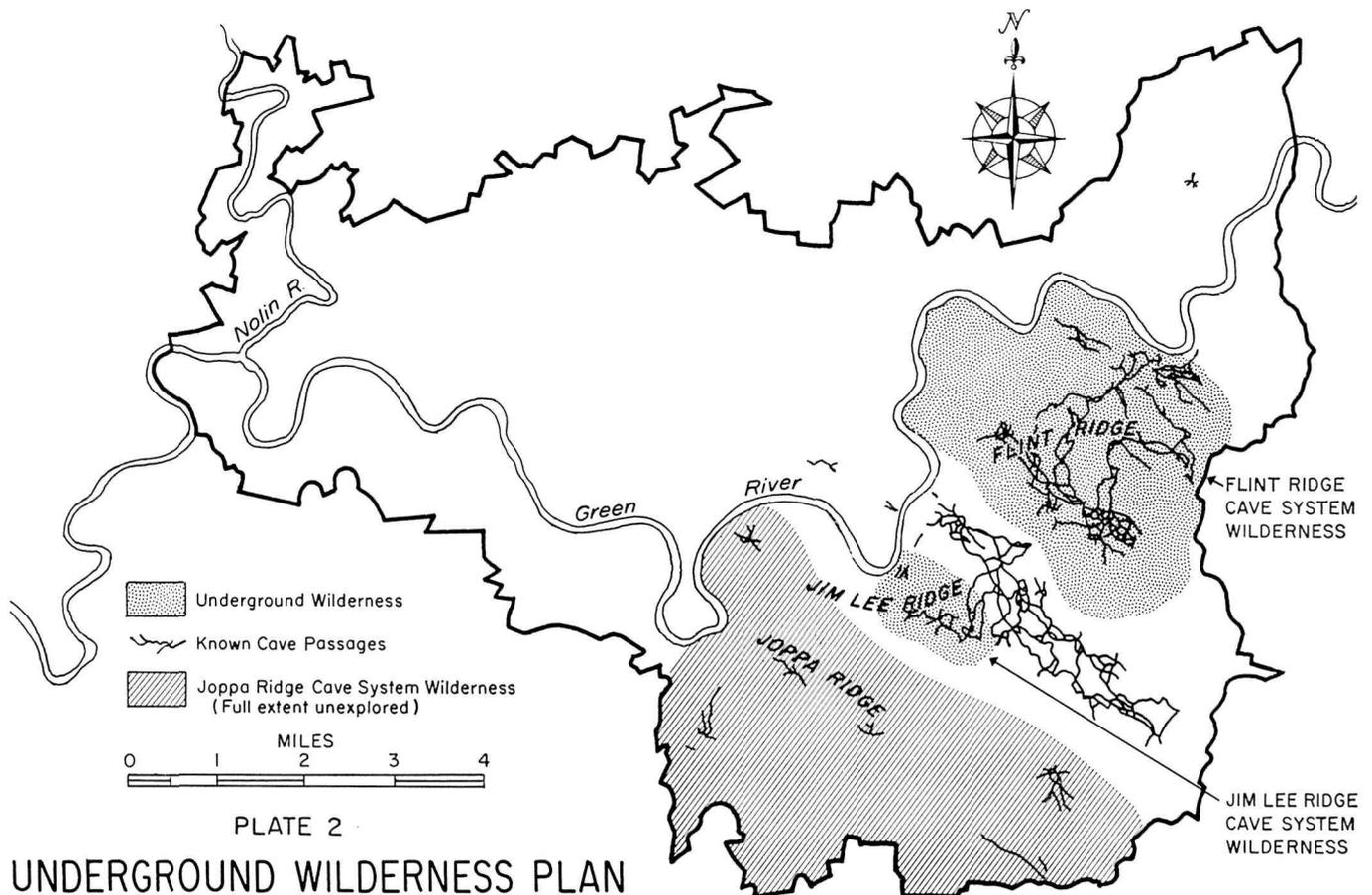
A limited number of copies of the complete text of this Mammoth Cave Park Wilderness Plan are available for free distribution on request.

portant water-based regional facility will be the Nolin Reservoir, administered by the Army Engineers, at which development is just beginning, and whose facilities should be considered in the light of an integrated recreation management unit in which the Engineers and the Park Service would coordinate plans. Within the region, information concerning outdoor recreational opportunities, and a campground reservation system, could be established. "Port of entry" facilities should be established on each interstate highway to provide information on outdoor recreational opportunities and to

operate the campground referral and reservation system. The State of Kentucky already operates a center of this sort at Shepherdsville.

The "cave country" offers a great opportunity for cooperation among governmental agencies of all levels, and among governmental and private interests, in regard to public outdoor recreation outside of the park. If the private recreation sector is to compete with public recreation areas and facilities, the State must encourage the esthetic and orderly development of high-quality commercial establishments maintaining the highest levels of customer service. State involvement must extend beyond mere highway construction programs; for the State is necessarily concerned with the entire range of policies and programs which contribute to the economic viability and stability of its people. ■

NPA's proposal for Wilderness in the underground world of Mammoth Cave National Park is shown below. There is good scientific reason to believe that there may be a major cave system under Joppa Ridge, shaded diagonally; until underground conditions there have been fully surveyed, the whole area of the Ridge should be maintained free of major disturbance.



**UNDERGROUND WILDERNESS PLAN
FOR MAMMOTH CAVE NATIONAL PARK**

Federal Graphics,

CONFESSIONS OF A SUMMER RANGER

BY JOHNS H. HARRINGTON

I WANT MY MONEY BACK! the woman tourist cried, as she pulled her car up to the check station at the east exit to the Grand Canyon National Park.

"For what, ma'm?" asked the nattily-dressed ranger.

"Why, I want you to return the admission fee which I had to pay when I drove through the park. Besides, I've already seen it. So I should get a refund."

As incredible as it may seem, rangers at Grand Canyon and other na-

tional parks and monuments meet some strange people, and have to deal with an amazing variety of problems. The comments of guests regarding our nation's greatest natural wonders are occasionally unexpected, too. For example, during a summer as a ranger-naturalist at Grand Canyon National Park, I noted that one of the favorite topics of conversation was the origin of the canyon. Such remarks as these were overheard:

"You can't fool me. Water didn't make that big hole."

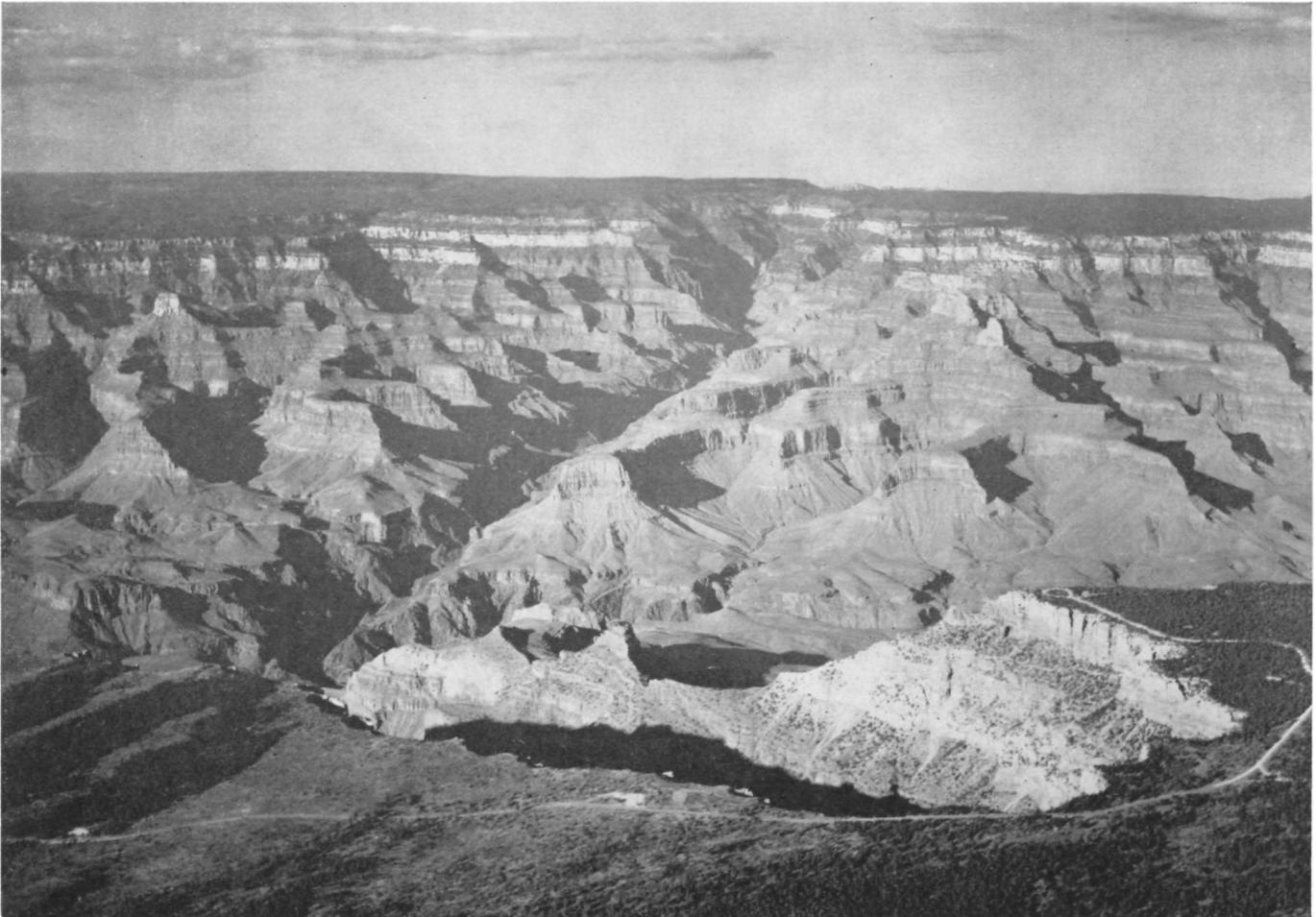
"This canyon must have been a big cave that fell in."

Then there was the tourist who asked, "Does the canyon fill up with snow in the winter time?" The canyon is *only* a mile deep and twelve miles wide.

For many reasons, working as a "summer ranger" was a unique opportunity. For one thing, most people are appreciative of our natural wonders and of the outstanding work of the National Park Service. For another, these parks represent one of our na-

The Grand Canyon of the Colorado River: it never fills with snow during the winter, and it does not represent the remains of a big cave that collapsed.

Fred Harvey Studio photograph: Virgil Gipson





National Park Service photograph

National park exhibits of plant and animal life or human and natural history sometimes bring some remarkable reactions from park visitors. Above, a garden of native plants at Yavapai Observation Station in Grand Canyon Park.

tion's greatest resources, and even an assignment as a summer ranger provides an opportunity to be a small part of a great heritage. Another advantage in such an assignment is that it enables the summer ranger to look through the other end of the telescope—in other words, while visitors in the national park are examining what it has to offer, there is a chance to look back at the visitors.

During the summer assignment my job was to present lectures at the Wayside Museum of Archeology, located between Grand Canyon Village on the South Rim and the east exit to the park at Desert View. On display in the exhibit cases at the museum were bowls and pots, stone and bone tools, arrowheads and spearpoints, and other clues left by the canyon's less recent visitors.

Much to my surprise, however, many of the guests at the museum were most fascinated by the white crystals on glass dishes placed with the various exhibits.

"Those are moth crystals," I would often have to explain. "They are used in the cases for the same reason that you put them in your closets at home."

There was a variety of other comment and question as well. One sight-seer observed, with the inevitable

"You can't fool me" introduction, that he could tell that the tiny models of prehistoric camels and mammoths in one of the cases were not actually life-size.

Another looked at some bonafide ancient pottery that was roughly eight hundred years old and said: "That's a joke. Anyone can tell that jar wasn't painted so long ago." Yet the piece, like hundreds of others that have been uncovered, actually did have the original decoration. Its approximate age also had been well established.

Rangers as Generic Types

The ranger is also a kind of specimen himself, a fact which I can verify after being treated with curiosity, respect, disdain, sarcasm, and amorousness; and after being called honey-bunch, darling, and trooper.

"Mom," asked a small boy as he gave his mother the proverbial jab in the ribs, "is he a Boy Scout?" After his mother, with a pained expression, tried to quiet the sprite, he added, "Mom, there are a lot of them, ain't there? They're like the cowhands."

As I stood by a door a well-dressed lady chortled, "The first thing you see when you come in here is an old skull." Naturally, there was some question as

to whether she meant me or the head of a long-departed American Indian that resided in a specimen case.

One night when I was relating some of the conversation for the day to the district ranger and a ranger stationed at Desert View, they reported a few incidents of their own. For example, one motorist demanded to know whether he would still be asked to pay the same admission fee if he entered the park from the south, which would have involved practically a day's additional driving. Another tourist was reassured that his quarter-tank of fuel would last him until he reached Cameron, the nearest town after leaving the east exit on the South Rim. He reflected for a minute, and then shot back suspiciously, "Well, if I don't, I'll be too far away to walk back and bawl you out, won't I?"

The bachelor's quarters for rangers at Desert View were near one of the public camps in the park, and the occupants never knew what to expect next. Their retreat was alternately mistaken for a women's restroom, a museum, and a grocery store.

Nor did the Indians at the little settlement near my post at Wayside Museum wholly escape comments by visitors. The Hopi had a habit of sing-

ing in the evening purely for their own enjoyment, which brought such observations as:

"Are those college boys practicing yells?"

"What are those Indians hollering about?"

Some of the travelers through the park asked me whether the Indians on the Navajo Reservation nearby lived in the vicinity of the road so that tourists could see them, and one person even inquired whether it was true that their jewelry was made in New York.

Being a ranger, however, is not all laughs. During my summer assignment I discovered that a few guests were downright unpleasant, even though the majority of visitors were courteous and thoughtful. Once, for instance, a motorist bought a booklet on the natural wonders of the park and, after scanning it, tore it up into little pieces in front of a trash can. At Grand Canyon, I picked up more discarded cigarettes, food wrappers, and facial tissue than I ever did when in the Army. Only a ranger can tell you what it is like to extract tissue from a cactus; yet some thoughtless visitors distribute it along every roadway.

Some Youthful Impressions

Another headache, as any museum custodian or store keeper will agree, were fingerprints on showcases. I tried to keep the glass scrupulously clean at Wayside Museum, but parents would let their youngsters—while I was in the very act of polishing the glass—rub their hands all over the cases.

One day several boys hiked down Bright Angel Trail from Grand Canyon Village to rip up an exhibit at a way-station by the Colorado River. The glass covering the case was broken and the specimens torn up and scattered along the trail. It required several rangers a day just to carry a new piece of glass by hand the 5000 vertical feet to the bottom of the canyon.

On another occasion a man wrote his name on rocks along one of the trails all the way to the Colorado River. On the next day, however, the culprit was found and persuaded to retrace his steps and remove all the marks.

One visitor, at least, was probably sorry he broke a rule, even though he did not live to regret it fully. This was

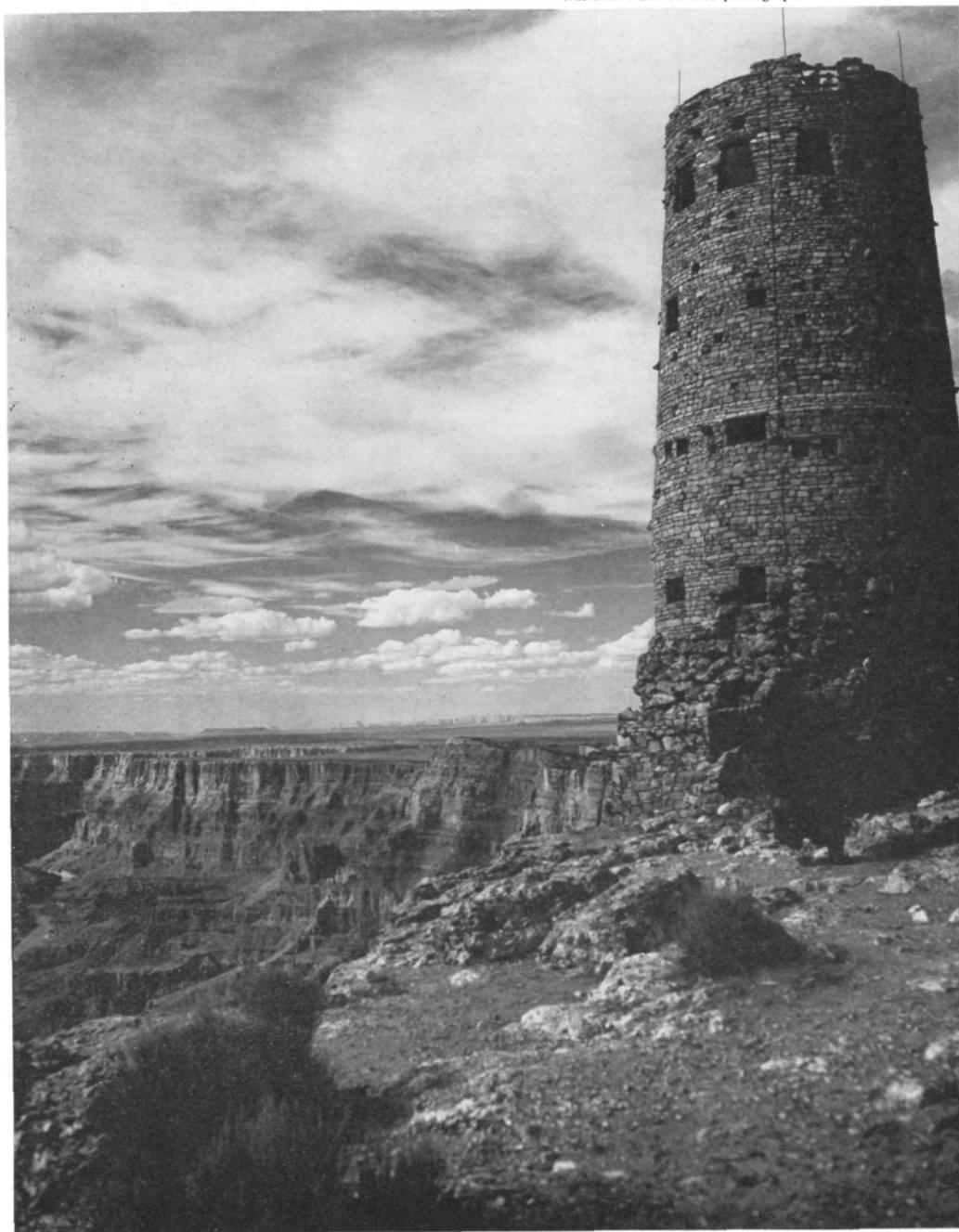
a man who disregarded a warning sign, stepped over a guard rail to the brink of the canyon, and then lost his footing. During the days that followed, other visitors in the park may not have realized that they were receiving less service. But they were "short-changed," nevertheless, for it took a crew of men 72 hours to recover the body.

Yes, as I look back on the memorable summer as a ranger-naturalist.

I can recall many incidents, both humorous and sad. But there is one thing of which I am certain: most visitors appreciate the grandeur of our national parks and their value to our Nation. Most of them, too, would join in conveying this admonition to the guests who will follow them in years to come: "Let no one say, and say it to your shame, that all was beauty here until you came." ■

Desert View Watchtower in Grand Canyon Park, where one may look out over the territory of the Southwest's less recent settlers: do the Navajos live near the roads so that tourists can see them?

National Park Service photograph



News and Commentary

Interior Secretary Opposes Cape Hatteras Project

Secretary of the Interior Stewart L. Udall has recently taken a position of present opposition to a proposed Corps of Engineers project for construction of a ship channel in Pamlico Sound, lying between the Outer Banks of North Carolina and the mainland, which would allow large-ship access to a Texas Gulf Sulphur Company phosphate mining operation near Aurora, North Carolina. Nearly all of the State's Outer Banks are included in Cape Hatteras National Seashore and the newer Cape Lookout National Seashore adjacent to the south. The shallow waters of the Sound, connected to the Atlantic by natural inlets separating the various Banks, sustain a tremendous fish and wildlife population, both resident and migratory.

The Engineers are studying seven alternative routes from the mouth of the Pamlico River to the open Atlantic, all based on inlets through the Banks. The magnitude of the dredging operation involved is indicated by the 120 million to 233 million cubic yards of spoil that would be removed from channel areas; the spoil disposal easement sites would cover areas of 19,800 acres to 35,300 acres, depending on the particular plan adopted. There would also be numerous jetties and breakwater structures to stabilize the inlet chosen; all inlets but one under study are within Hatteras or Cape Lookout seashores.

Secretary Udall has said that the Department of the Interior will oppose construction of such a channel until adequate studies of its impact on the natural resources of the affected region are made. He has indicated his understanding that the Engineers might request authorization of the project before an adequate study could be accomplished.

This Association has supported the Secretary in his views on the matter, and through President A. W. Smith has publicly commended Mr. Udall for his stand. Mr. Smith indicated that it is vitally important in the interests of the American people that studies be made in connection with projects of this kind, particularly transportation projects not vital to the nation, before development occurs. "I feel sure that your approach in this matter will have the strong support of conservation and other organizations interested in the public welfare," he said. The Association's views were also called to the attention of the Department of Transportation.

Conservationists who might want to assure the Secretary of their support for his position on the project may do so by writing: Honorable Stewart L. Udall, Secretary of the Interior, Washington, D. C. 20240.

PLLRC Receives Extension

The deadline for the report of the Public Land Law Review Commission has been extended by 18 months. The results of the Commission's intensive examination of laws, policies and procedures affecting the public lands is now due June 30, 1970. The provisions of two related authorities, the Classification and Multiple Use Act and the Public Sales Act, have also been extended.

Proposed Park Areas and Natural Landmarks

The most recent meeting of the Secretary of the Interior's National Parks Advisory Board, held in Washington during early November, produced recommendations for five new Park Service areas and the addition of 28 new sites to the Service's excellent program for registry of natural American landmarks.

The Board recommended establishment of the Buffalo National River in Arkansas, discussed in a book review beginning on the next page, and the following historic sites: Andersonville, the widely known Civil War military prison in Georgia; Longfellow, house of Henry W. Longfellow in Massachusetts; Bunker Hill, of American Revolution fame, in Massachusetts; and Savannah, scene of the Siege of Savannah during the Revolution.

Sites recommended for inclusion in the National Registry of Natural Landmarks were: Aniakchak Crater, Alaska; Bogoslof Island, Alaska; Mount Veniaminof, Alaska; Shishaldin Volcano, Alaska; Barringer Meteor Crater, Arizona; Tufa Pinnacles, California; Reed Wilderness Seashore Sanctuary, Florida; White Pine Hollow Preserve, Iowa; Mount Katahdin, Maine; Warren Woods Natural Area, Michigan; Troy Meadows, New Jersey; Deer Lick Nature Sanctuary, New York; Ellenville Fault Ice Caves, New York; Fossil Coral Reef, New York; Mendon Ponds Park, New York; Clear Fork Gorge, Ohio; Holden Natural Areas, Ohio; Kelleys Island, Ohio; Tinkers Creek Gorge, Ohio; Cook Forest, Pennsylvania; Hickory Run Boulder Field, Pennsylvania; Presque Isle, Pennsylvania; Snyder-Middleswarth Natural Area, Pennsylvania; Fort Randall Eagle Roost, South Dakota; Snake Butte, South Dakota; Lake Willoughby Natural Area, Vermont; and Ridges Sanctuary, Wisconsin.

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Whooping Crane Arrivals

The Fish and Wildlife Service reports that, as of late November, 47 whooping cranes had arrived at the Aransas National Wildlife Refuge on the South Texas coast from Wood Buffalo Park, nesting grounds in far-northern Canada. This is the highest number of returnees to be counted since the whooping crane

CALVERT  SCHOOL

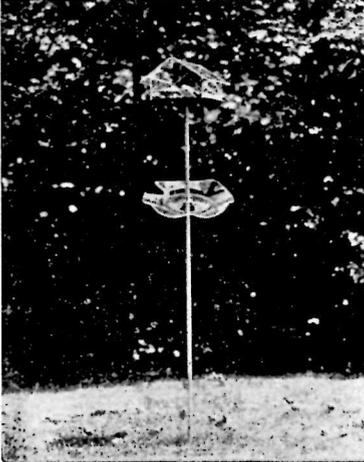
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revival program commenced. At this writing there is also the possibility of further addition to the Aransas flock, as only 38 of the 47 birds noted were older whoopers who had gone north in the spring, leaving five older birds yet to be accounted for.

In addition to the 47 wild birds at Aransas, there are presently five young and seven older whoopers in captivity in zoos and at the F & WS Endangered Wildlife Research Station near Laurel, Maryland.

Reviews

SURFACE MINING AND OUR ENVIRONMENT. Published by U. S. Department of the Interior. 1967. 124 pages illustrated in color. Available from the Superintendent of Documents, U. S. Government Printing Office, Washington D. C. 20402. \$2.00.

In September of the year just past the Department of the Interior published a handsome large-format volume, profusely illustrated with color photographs, maps, diagrams and tables, under title of *Surface Mining and Our Environment*. This is the report to the Secretary of the Interior, and through him to the President, of the Secretary's Strip and Surface Mine Study Policy Committee, assembled by Mr. Udall under directive of the Appalachian Regional Development Act of 1965. The Committee and its study teams consisted of many technical and advisory persons from Interior and many of the other Governmental bureaus, all working under the immediate direction of Interior's Assistant Secretary for Mineral Resources, J. Cordell Moore. The objective of the Policy Committee: to formulate "a long-range, comprehensive program for reclamation and rehabilitation of strip and surface mining areas in the United States, and for the policies under which the program should be conducted."

The report is a clear and straightforward account of the art (if it may be so termed) of surface and strip mining and its importance in the national economy; what it has done and is doing to the natural environment; what is being done both privately and governmentally to repair, or enforce the repair of, environmental damage; and Committee recommendations as to procedures it thinks will be necessary as the future brings surface and strip mining to a yet vaster scale.

No detailed account of the recommendations can be given here, as they cover five 8 $\frac{3}{4}$ " x 12" pages; but, in summary, they fall into four main categories: prevention of future damage, repair of past damage, research and investigation, and the desirable elements for administration of a comprehensive national surface-mined land conservation program.

As might be imagined, a substantial portion of the report looks at coal strip mining, since that activity produces nearly half the total current disturbance to the American environment from surface mining. Coal is followed by sand and gravel (26%), stone quarrying (8%), gold and phosphate rock (6% each), and iron (5%), while a number of lesser recovery activities complete the picture.

There are few references to a vast potential source of further environmental disturbance—disaster might not be too strong a word barring strict ground rules—in the more distant future; the large-scale oil-shale strip mining possibilities of several of the Western States. This omission is probably warranted on the grounds that rapidly developing technology may yet obviate the need for oil-shale strip mining on that day when the enormous resource becomes economically vital. Much study of the oil-shale problem has been going on in the Department of the Interior, and the subject has already been canvassed in a very preliminary way by a Secretarial commission (which produced some sharply differing opinions as to future procedure). It is quite likely that oil shale is a fit topic to be handled separately, as public and private thinking in the matter crystallizes.

This book was put together and printed in a tasteful modern style by the Government Printing Office for the Department of the Interior. It is here commended to the thoughtful attention of all conservationists and students of natural resource husbandry. —P.M.T.

THE BUFFALO RIVER COUNTRY. By Kenneth L. Smith. The Ozark Society, Hot Springs, Arkansas. 1967. 176 pages, with 112 black and white photos, 28 color photos, 8 maps and 3 drawings. In paper. (continued on page 22)

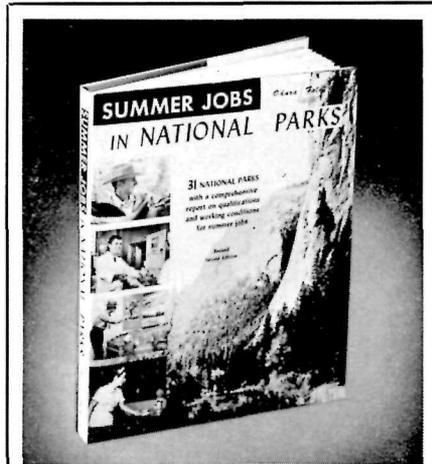
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The Buffalo is the last major free-flowing stream in the Arkansas Ozarks, and one of the most scenic in the entire southeastern United States. However, the Corps of Engineers has seen the Buffalo as the locale for dam-building; when its plans were revealed, those who knew the river raised strong objections. The National Park Service made a study and reported very favorably on the natural values, and proposed that the Buffalo be made a National River. The Corps then tabled its plans, and it looked as if the river would remain a natural stream. Then an apparent change in the mind of Governor Winthrop Rockefeller gave the Corps a chance to revive the dam-building proposal, and the dispute is alive once again.

Kenneth L. Smith first visited the Buffalo River when he was a student at the University of Arkansas. He became deeply interested in it and wrote a number of feature articles for newspapers. When the issue of dam versus free-flowing river became crucial, it was felt that the story of the area should be told in book form for the general public. Smith took leave from his employment with the National Park Service for six months of field study. He traveled 6000 miles, took nearly 3000 pictures, and interviewed many residents of the watershed. With this background he returned to his employment and produced the manuscript for the book during his free time.

The Buffalo River Country is a story of a river and its people. It deals with the geophysical features, the sociological development and the ecological complex. Caves are explored, old cabins investigated, the flora and fauna described and the enjoyment of visitors portrayed. There is sympathetic understanding of the people who live in the region.

The first part of the book describes a series of float-trips down the entire Buffalo. One can take this work as an accurate guide for planning an expedition to his liking. It includes places to "put in" and to "come out." Things to be observed and difficulties to be encountered are cited. Those who bring to the reading an experience in river-boating can enjoy the trip vicariously. Any nature enthusiast will find the book an interesting description of the outdoors. The reader comes to feel that the Buffalo is *his* river, too, and will hope that there will always be a river there to enjoy. Author and producer both have accomplished their objective, which is to create a better understanding and a love of the Buffalo.

The second part of the volume is a study in depth of the watershed, including its scenic, historic and economic features. Many will be surprised to learn of the archeological discoveries which have been made in the caves of this terrain. The story of the devastation wrought by the early settlers, with prosperity and then decline as natural resources were exhausted, is traced. There are also observations on the way in which the land is recovering, with the implied conclusion that better days lie ahead if man lives with, rather than conflicting with, the regimen of nature.

In seeking a better system of land use, the author presents an effective case for the kind of regional planning that the National Parks Association has been advocating for several years. In summary, these are the things which the author believes ought to be accomplished in the Buffalo River region:

Good roads, but of the right kind and in the right places.

Flash-flood control, achieved by watershed management. This means ground-cover and small headwaters impoundments of the Soil Conservation Service type.

Areas of exceptional beauty recognized and protected.

Steps taken to protect Indian archeological sites.

The adequate protection and supervision of wild caves.

Recognition and protection of the best of the white pioneer relics.

The conclusion of the author of this book is that the only real hope for wise use of the Buffalo River watershed lies in Federal establishment of a Buffalo National River.

—Walter S. Boardman

THE CONSERVATION DOCKET

Early last November the Senate passed S. 1321, authorizing establishment of a North Cascades National Park in the Washington Cascade Range, two national recreation areas adjacent to the park, a new Wilderness east of the park, and an addition to the existing Glacier Peak Wilderness Area south of the park. Land involved in the proposed new units are: national park, 504,500 acres; Ross Lake National Recreation Area, 105,000 acres; Lake Chelan National Recreation Area, 62,000 acres; Pasayten Wilderness (remainder of the former North Cascades Primitive Area) 520,000 acres; addition to the existing Glacier Peak Wilderness, 10,000 acres in the Suiattle and White Chuck rivers corridors.

Also early in November the Senate passed S. 2515, a measure which would create a Redwood National Park in the coast redwood country of northern California. The national

park, of not more than 64,000 acres in the Mill, Redwood and Lost Man creeks watersheds of Humboldt and Del Norte counties, would include three existing state redwoods parks plus additional prime redwoods lands. To reimburse California for the redwoods park the bill would authorize swapping of redwood-Douglas fir lands in the Forest Service's Northern Redwoods Purchase Unit for redwood lands owned by lumber companies within the proposed park boundaries. A number of Senators objected strongly to this provision as setting an undesirable precedent; most conservation organizations have also opposed this feature. The sum of \$100 million was provided in S. 2515 for redwood land purchase and the acquisition of two small parcels of 5 acres each outside park boundaries for administrative sites.

On November 21 the President signed into law the Air Quality Act of 1967 authorizing a three-year, \$428 million program to combat air pollution, \$125 million of which would go toward an expanded Federal program of pollution research. The law gives the Secretary of the Department of Health, Education and Welfare wide emergency powers to deal with situations where grave health hazards are judged to impend, as, for example, a severe city smog condition. The President spoke highly of the new law during the signing procedure, but warned at the same time that it offered no "magic wand to wave and cleanse our skies."

The Interior Department has endorsed legislation authorizing establishment of a 105,000-acre Biscayne National Monument off the Florida mainland south of Miami, consisting of about 4000 acres of land in the upper Florida Keys and about 101,000 acres of adjoining bay and ocean. The legislation provides also that the Secretary of the Interior would make available a strip of land and water not more than 1760 yards wide through the monument for construction of a channel as an access to a mainland port "should economic and other conditions warrant such a port."

A recent decision of the U. S. District Court for the Middle District of Tennessee has upheld the Federal Government's right to condemn land for recreation uses at water resources development projects. (United States v. 965.71 Acres of Land).

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The Long Battle for the Potomac

(continued from page 2)

goals of its planning have not been defined, and the usual all-out pyramid-building will doubtless be recommended. The Army itself is working industriously on large regional programs, such as that for the Northeastern States.

Meanwhile, the Secretary had asked the American Institute of Architects to establish a committee to prepare a plan for the Potomac as a model for beauty and recreation. Much confusion ensued as to whether the Architects' Plan or the Interior Interim Report was the Model Program the President asked for; but the Model Program, which would necessarily concern itself with large structures, had yet to be drafted.

The Architects' Report broke open the issue of the environmental protection of the Potomac. It was preceded by a plan for a Potomac Valley Park, developed by a Sub-Task Force appointed by the Secretary. However meritorious in their purposes of environmental protection, these plans encountered bitter opposition as a result of their emphasis on fee-simple acquisition of land by eminent domain, whereas a focus on the acquisition of covenants running with the land, supported by minimal easements, might have been broadly acceptable.

Meanwhile, the old proposal for the establishment of a C & O Canal National Historical Park, around which much of the controversy on the Potomac had evolved, was hopelessly stalled. The canal lands, it appeared, would be put into the Potomac Valley Park. The threat of submergence beneath the Seneca Reservoir would remain. The one measure of security for the park, the construction of an intake in the estuary, was not provided for.

MANY OF THE PEOPLE AND ORGANIZATIONS who opposed the Army Programs have reasoned that a modernized Interstate Compact on the Potomac might protect them against the big Army projects. The draft Compact for the Potomac was doubtless a result of such assumptions. But as it emerges, the document would set up a mightily powerful new layer of Government without providing the necessary protection. It is quite unlikely that it will have widespread approval.

The proponents of a Model Program for the Potomac have organized; for our part, we merely report the event. A Citizens Permanent Conference on the Potomac has been established, speaking essentially for the people who combined to oppose the Army Engineers Report, 1963. It will meet at Winchester, Virginia on January 19, 1968 and has announced that it will settle down to a long campaign to protect the Potomac Basin and get a Model Program going.

This Association has commissioned a prominent engineer, completely independently, to prepare a definitive technical study of the potential of the fresh water estuary as a supplemental water-supply source for the Metropolis. It will deal with both engineering and water quality issues. It will show that Washington can be guaranteed a high-quality and inexhaustible supply of municipal water permanently by the intake system at a cost of about \$9 million, as contrasted with some \$400 million for the dams the

Army has proposed. The estuarial intake is the keystone of a good water management plan for the Potomac River Basin.

THE MAIN ELEMENTS of a Model Program for the Potomac have been clear enough from the beginning: a supplemental intake in the estuary for Washington; small water-supply reservoirs throughout the basin where needed; a vigorous program for the complete prevention of pollution; a small-structure network to reduce flood damage; the preservation of the existing natural world, as contrasted with impoundments, for recreation; a program for the environmental protection of the Basin based on covenants running with the land, supported by minimal easements, not sweeping fee simple acquisitions by eminent domain; and the complete abandonment of all Army-type dam projects for the Basin.

A new national approach, as well as a new regional program, is needed in these matters. The root trouble is that planning has been entrusted to a construction agency, certainly not only on the Potomac, and that such agencies are not qualified for planning. We trust that the new National Water Commission, hopefully soon to be appointed by the President, will be composed of generalists with mature viewpoints on broad public policy in the water resources management field, not specialists tied to construction. The ultimate solution may lie in establishing a permanent Commission of this type, with programming and review authority over all the operating bureaus.

Meanwhile, however, a true model program for the Potomac, which would set an example for the nation and the world, would have the enthusiastic support of that powerful public opinion which has resisted the Army program, thus far and probably for a long time to come, successfully.

—A.W.S.

You Can Help the President!

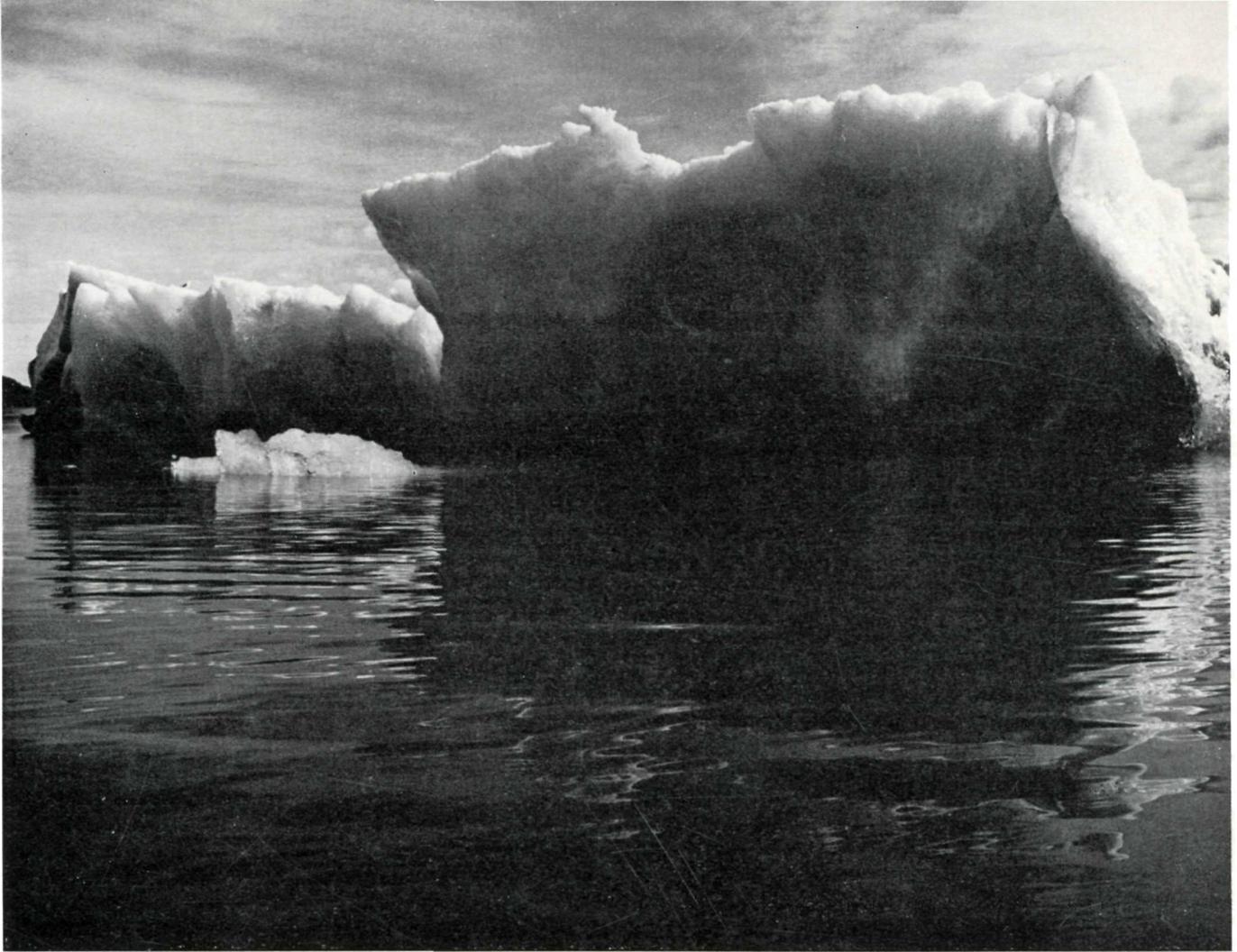
The President of the United States may soon have to take direct charge of one of the most important conservation projects he has ever recommended, a Model Program for the Potomac River Basin.

The main argument of the editorial on these pages is that the keystone of any such program will be a supplemental municipal water-supply intake for Washington in the fresh-water estuary of the Potomac in the heart of the city.

Once such an intake has been constructed, the big reservoirs proposed by the Army Engineers for the Potomac, which will flood out farms, homes, businesses, wildlife, woodlands, and communities throughout the basin, and have deep drawdowns of water levels, defacing the localities, will be completely unnecessary.

People who favor a Model Program for the Potomac, as contrasted with the outmoded plans of the Army Engineers, can help by writing to the President, The White House, Washington, D.C., and urging him to include a supplemental water intake in the estuary as part of his Model Program for the Potomac.

Single copies of the engineering study commissioned by the National Parks Association on the estuarial intake discussed above are available for public distribution without charge.



Photograph by Charles V. Janda

At low tide, icebergs cover hundreds of acres of flats in the northern reaches of Glacier Bay on the Alaskan coast.

THE VAST EXPANSE OF Glacier Bay National Monument spreads over more than two million acres of truly wild seacoast and mountain country on the southeast coast of Alaska; terrain that is outstanding in its cold scenery, its geological interest, its flora and fauna. Historically there has been prospecting in the monument; but in recent months the Secretary of the Interior's Advisory Board on National Parks, Historic Sites, Buildings and Monuments has suggested that prospecting and mining might be closed out completely, looking toward eventual national park status for the monument.

As the nation's leading private conservation organization concerned primarily with the welfare of the national park system, the National Parks Association follows and examines suggestions of this nature closely. You can assist the Association in this work in any of several ways: by contributing to its general funds over and above regular dues; by remembering the Association in your will; or by helping to secure new Association members. All dues over and above basic annual dues, and all contributions, are deductible for Federal income taxation; gifts and bequests are deductible for Federal gift and estate tax purposes.

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