NATIONAL PARKS *Magazine*

November 1960

The Cliff Palace
Mesa Verde
National Park

The Editorial Page

The Cities Choke

PATHETIC OR TRAGIC, as you will, each loss of another bit of open space, of trees and flowers, of birds, in the center of a crowded city block, injures many people.

It happened to us recently when the Zoning Commission of the District of Columbia extended the high-apartment zone on our street back to the rear of the lots.

We had enjoyed the tall oaks, red in autumn; the flashy jays; the towhees exploring garden paths. We had been grateful for the breezes that found their way to our windows in the subtropical summers of the District. Now these joys are doomed, and will be replaced by the blank walls of a ten-story "luxury" apartment.

The rationalization is that "strip zoning," permitting high densities along the street—but not all the way to the rear—is outmoded. "Modern zoning," it seems, always allows all the land to be filled.

We beg to differ. The first requirement of modern city planning and good zoning, considering the present-day problem of urban congestion, is to protect and enlarge the open spaces in and around our big cities. The back yards are particularly important.

The escapees of our prison cities are swarming over the land these days, commuting into the countryside, crowding into the national forests and the national parks. Many would prefer open spaces at home if they could find them.

We publish at the bottom of this page a map showing how one supercity has failed to cope with its problem. Two-thirds of downtown Los Angeles is now devoted to streets and parking lots. Retail business is being driven out. Had half of this space been devoted to grass and trees, and concentrations of traffic thus been forestalled, there would have been room for business and customers both.

Our own little problem was not unusual. The decision was typical of thousands every year which are choking our cities. It was a bad decision, lacking in foresight, uninformed as to human need. One day enough people will understand, and these policies will be changed. ◆

Who Pays for Our Parks and Monuments?

"THE PEOPLE IN THE Washington area seem to just hunt around for ways to get into the federal treasury, but the rest of the country has to pay for it."

These were the words of a member of the House Interior and Insular Affairs Committee, in explaining why he had objected not long ago to reporting from committee the Senate-passed Chesapeake and Ohio National Historical Park bill earlier in the summer.

In using the word "Washington," the Congressman was, of course, referring to the District of Columbia. His words seem to imply in no subtle fashion that the only beneficiaries of the proposed C & O Canal Park would be the inhabitants of the Federal District. In following such a line of reasoning, one might conclude that Acadia National Park was established solely for the enjoyment of the people of Maine, and that Yosemite's magnificent scenery was preserved primarily for Californians. One might also conclude that public projects of any sort—reclamation in Texas, or power in Idaho, for examples—might be viewed as nothing but ways of getting into the federal treasury, since the rest of the country would certainly bear a large part of the costs.

While the people of the Federal District are voteless, they are hardly taxless. However, in connection with the proposed C & O Canal park, the real point is this: if the establishment of a new national park, monument, or recreational area may be balked on the grounds that "the rest of the country has to pay for it," the prospect for such sorely needed areas seems dim indeed. ◆

One-third of the land in the Los Angeles, California, metropolitan area is given over to vehicular transportation facilities, while two-thirds of the downtown city is devoted to freeways, streets, and off-street parking, as shown in map below. Map is by courtesy of the magazine *Going Places*.

Protection Within National Parks a Means to an End

"Enjoyment without impairment is a fundamental requirement in the use and administration of the national parks. Preservation of the compositions of nature is a basic principle in the protection of the resources. Protection, while an absolute requirement, is not an end in itself, but a means to an end. It is requisite to the kind and quality of enjoyment contemplated in the establishment and perpetuation of the parks by the Nation."—*From an address by Director of the National Park Service Conrad L. Wirth to the Fifth World Forestry Congress in Seattle, Washington, September 7, 1960.* ◆

NATIONAL PARKS MAGAZINE

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Paul M. Tilden, Editor

Contents

THE COVER FOR NOVEMBER

Mesa Verde, unique among our national parks as having been established primarily for the protection of the relics of American antiquity, consists of some fifty thousand acres of canyon-gashed mesa land in the dry country of southwestern Colorado. Within the limits of the park are countless hundreds of cliff dwelling, pit house and pueblo ruins—mementos of an early people of the southwest—most of which are as yet unexcavated. Largest among the cliff dwellings is the Cliff Palace, situated in an eastern spur of Cliff Canyon, which contained more than two hundred rooms and twenty-three kivas.

A National Park Service photograph by George A. Grant

THE NATIONAL PARKS AND YOU

Few people realize that ever since the first national parks and monuments were established, various commercial interests have been trying to invade them for personal gain. The national parks and monuments were not intended for such purposes. They are established as inviolate nature sanctuaries to preserve permanently outstanding examples of the once primeval continent, with no marring of landscapes except for reasonable access by road and trail, and facilities for visitor comfort. The Association, since its founding in 1919, has worked to create an ever-growing informed public on this matter in defense of the parks.

The Board of Trustees urges you to help protect this magnificent national heritage by joining forces with the Association now. As a member you will be kept informed, through NATIONAL PARKS MAGAZINE, on current threats and other park matters.

Dues are $5 annual, $8 supporting, $15 sustaining, $25 contributing, $150 life with no further dues, and $1000 patron with no further dues. Bequests, too, are needed to help carry on this park protection work. Dues and contributions are deductible from your federal taxable income, and bequests are deductible for federal estate tax purposes. As an organization receiving such gifts, the Association is precluded by relevant laws and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals. Send your check today, or write for further information, to the National Parks Association, 1300 New Hampshire Avenue, N.W., Washington 6. D.C.

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A superb national forest area is to be found in Oregon's

WALLOWAS

By William O. Douglas

WHENEVER I SLEEP OUT in the Wallowas, I keep one ear cocked for the midnight sounds of the porcupine. They often come to camp in the dead of night to chew on saddles, reins, or bridles which can be reached tiptoe.

The porcupine is a mammal whose young is born in late May or early June. It shuns the dense conifer forest and seeks out the more open areas. In the summer it feeds primarily on herbs and bushes. In the winter its food is primarily tree-gathered. It is fond of pine needles and pine bark, especially the ponderosa. It strips the bark, eating almost exclusively the cambium and phloem layers. This is, in large part, its winter food. Such girdling causes the tree to die. In some areas of the Pacific West the porcupine's depredations, particularly of ponderosa pine, have been so severe that programs of reforestation have been defeated. A porcupine will girdle even the smallest tree, for it needs only a pine that is one inch in diameter to have a winter feast.

These awkward, waddling animals are so slow on foot they can be killed with a club. To dogs, however, they present a formidable array of quills. There are some 30,000 on each porcupine. Each quill is detachable, and the porcupine uses its tail to drive them into the face of an attacking animal. The coyote, too, can be a victim of the porcupine. But age-old experience has taught it to be cautious, and its innate cunning has led it to devise clever ways of dealing with this opponent.

The coyote's littering months are in late spring—April and May. By July the parents are giving them their first lessons in catching game. They start with mice, rats, and rabbits. The lessons also include the porcupine, as I learned one July day as I headed up the Minam River.

Wheel and Hub

The Wallowas (which lie in Oregon at the corner where that State touches Washington and Idaho) are shaped like a huge wagon wheel, Eagle Cap being the hub and the Lostine and Minam rivers being two of the spokes. The North Minam Meadows is near the headwaters of the North Fork of the Minam River. It is where the grass is lush, the red fir magnificent, the rainbow trout brilliant. The late Roy Schaeffer, my companion along many wilderness trails, lived on the Lostine. The quickest route from his place to the North Minam Meadows is cross-country over a tumble of granite ridges. But this July the snow still lay in deep drifts along the high trail. So Roy and I took the long way around, going to the mouth of the Minam Canyon and then traveling horseback up that open, hospitable canyon where pine, fir, and tamarack flourish. We had not gone far when we saw the remains of a porcupine freshly killed and many signs of coyote tracks circling the corpse. We had just missed a seminar on how a coyote kills a porcupine. Roy, drawing on his experiences, filled in the details.

A coyote circled this porcupine, going round and round. The pups sat on a ledge watching the performance. The mother circled first one way then another, and then back again. Once in a while she would pretend to charge the porcupine. But she took pains to keep out of range of his quills. How long these tactics of badgering the porcupine went on we do not know. Roy said a coyote sometimes circled, charged, retreated, and then circled again for several hours. The game was to get the porcupine angry enough to stand up on its hind legs. Then the soft underbelly would be exposed. The coyote was patient and persistent, waiting until the porcupine reared. In that instant the coyote charged, and its sharp teeth sank into the porcupine's belly. A neat peeling back of the skin followed, and

William O. Douglas, Associate Justice of the Supreme Court of the United States, needs little by way of introduction to the large majority of our readers. Aside from his high juridical position, he is universally known as a man of keen and practical interest in the fields of conservation and preservation. This article of personal experience and observation in one of our great national forests—the Wallowa of Oregon—has been excerpted from a chapter of Justice Douglas' book MY WILDERNESS, which is to be published by Doubleday and Company, Inc., and which is copyright, 1960, by William O. Douglas. It appears on these pages by kind permission.

then the pups were called in for the feast.

Place of the Coyote

Roy and I talked of the coyote and its place in nature's scheme of things. The coyote is despised by sheepmen, whose flocks graze the Wallowas. I recalled John Muir's saying: "They are beautiful animals, and, although cursed of man, are loved of God. Their sole fault is that they are fond of mutton." Roy despised the coyote for its depredations on deer.

The coyote takes a few fawns but is seldom a match for mature deer except when snow is on the ground. Even then, the deer can usually make a getaway. But when the crust that comes in dead of winter is heavy enough to hold up a coyote but too light for a deer, the coyotes make their deer kills.

Government men once used the venomous 1080 (wartime code for sodium fluoro-acetate) in the Wallowas to control the coyote. It killed that animal, but it also killed all the others that took the same bait or that ate off the carcass of one who had. Birds as well as rodents were destroyed. Nature's nice balance was upset. Today that balance has been largely restored. Cougars, coyotes, and men take their annual harvest of deer and elk. But the population of these animals is on an upward trend, though the hunters are also increasing. Only about fifty percent of people hunting deer with rifles make a kill. In the case of elk, the percentage is about fifteen.

One who travels the canyons of the Wallowas in summer will see many deer. The elk, too, are abundant, but by late June they are high under the snow fields. Summer forage is in good supply. The only problem is with winter forage. Deer in eastern Oregon have known disastrous winters. There have been some notorious "crashes" in deer population, due to starvation. But as this is written the delicate balance is being well-maintained—thanks, in part, to the coyote.

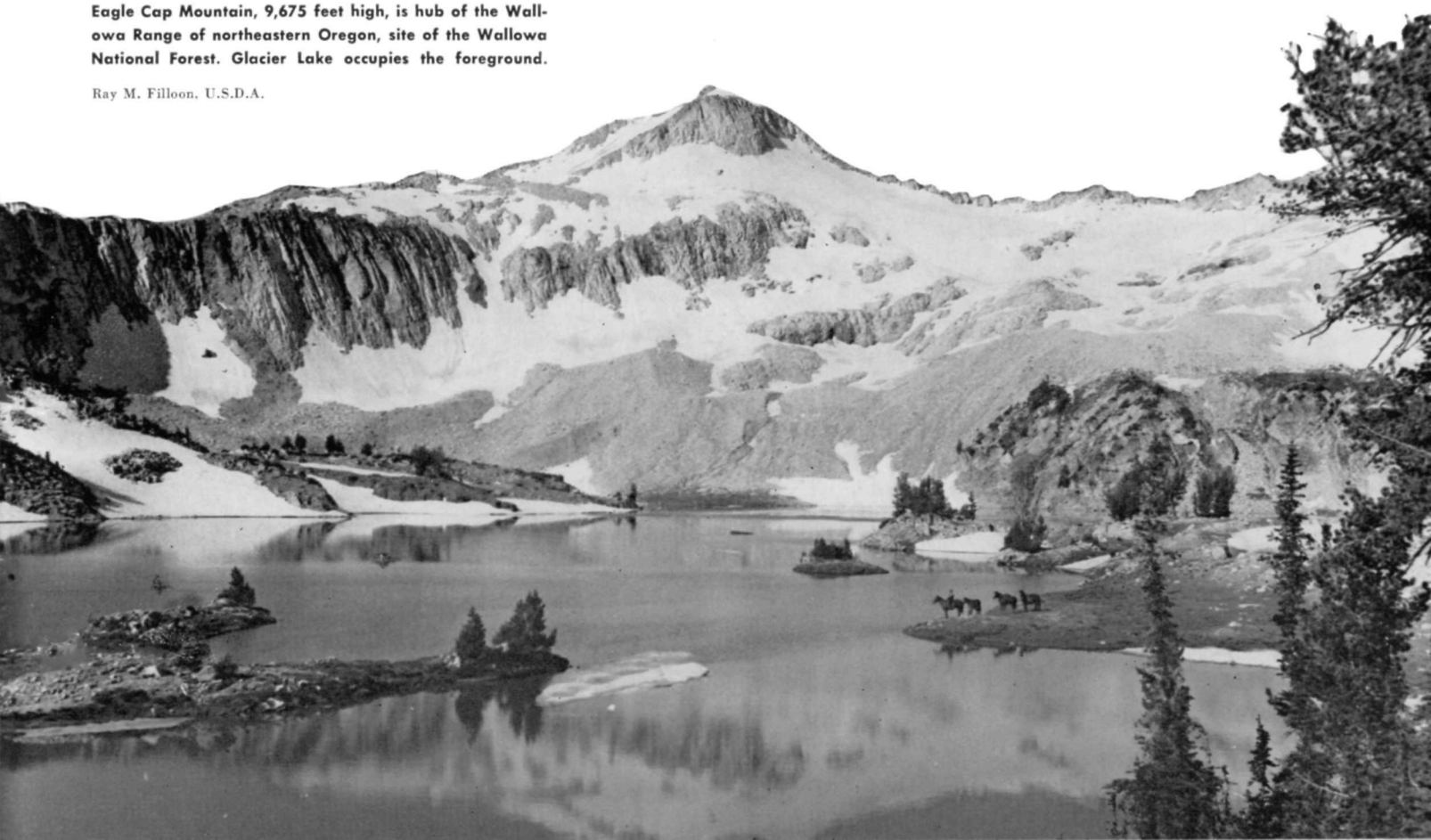
Granite and Lava

This trail up the Minam winds over forty miles through a canyon that is never more than a half mile wide. The central core of the Wallowas and their main ridges are granite. But much of the Minam is lava rock. Several layers can be seen on the canyon walls that rise two thousand feet above the river. The lava sometimes makes out into bald buttes, sometimes into cliffs flanked by grassy slopes. There is timber to the top; it is the richest and most prized in the valley. Yellow-bellied ponderosa pines are ancient monarchs. The red fir, thinly scattered, is usually a magnificent specimen. White pine is also a patriarch. Some stretches of this canyon are like a park. The understory in the lower reaches is the evergreen—kinnikinnick—that covers the ground like a mat. Bracken, snowberry, blackberries, currants, and blueberries are scattered. Willow, alder, and hawthorn grow close to the river. In June this canyon is ablaze with wild flowers. By late July even the wild roses and wild strawberries have passed, and the lupine is in pod. But the gay cinquefoil is in bloom. Purple thistle and white clover fringe the trail. There are patches of the lovely catchfly that opens by day and closes by night. And the ocean spray, our most abundant flowering shrub in the West, leaves touches of white on the hillsides. Higher up the slopes is the snow brush that fills the canyon with its fragrant perfume in June.

When one has traveled fifteen miles or more up the canyon, the tamaracks appear. Blueberries, snowberries, and bracken grow thicker. But the most conspicuous ground cover then is the

Eagle Cap Mountain, 9,675 feet high, is hub of the Wallowa Range of northeastern Oregon, site of the Wallowa National Forest. Glacier Lake occupies the foreground.

Ray M. Filloon, U.S.D.A.



dainty twinflower—the favorite plant of the great Linnaeus. This woody vine is an evergreen that sends up slender stems, a couple of inches high, from which two tiny pink bells are suspended. Their fragrance is haunting; they are delicate creations to find in forests of towering trees and huge granite boulders sitting on lava rock. Another delicate creation often grows with the twinflower. This is the coolwort foam flower, whose tiny white flowers circle a tall stem that stands a foot above the forest floor. There are also wild geranium in bloom in July, and once when I stopped for lunch by a cold tributary of the Minam River, I discovered that I had two bright companions. They were sego lilies—white petals gracefully cupped and wearing a purplish pit above the sepal.

Clearest of Waters

The river itself is as charming as any of the beauties that surround it. The water is cold and clear, and every half mile or so a tumbling tributary feeds it. The water seems clearer than any American stream I know. A chemical analysis might disprove my boast. It may be that the bright granite rocks and the gleaming white sand which make up the river bed give the water its unusual clarity. I do know from years of camping there that the Minam offers the most delicate fishing of any mountain stream we have. The cold water is ideal for rainbow trout, and three-foot salmon come all the way from the Pacific to spawn there in July. One has to use great care to catch these fish. The only sure way is to fish upstream, touching a pool or the calm water below a riffle once or twice with a fly and then moving on. My favorite site for camping is Granite Crossing, some twenty-three miles up the river. There is a small falls near there, and the late Blaine Hallock taught me how to fish it. The time was dawn; the fly was dry. The cast was just below white water. The first cast always brought a twelve- or fourteen-inch rainbow to net. Then Blaine would leave the water and rest under a fir tree for five minutes by his watch. The next cast in the same spot always brought another rainbow. Then he would rest five minutes, and so on. The rest periods gave the pool a chance to settle down and get over its excitement. Those who whip the Minam never have luck. This stream offers the most delicate of all fishing I know.

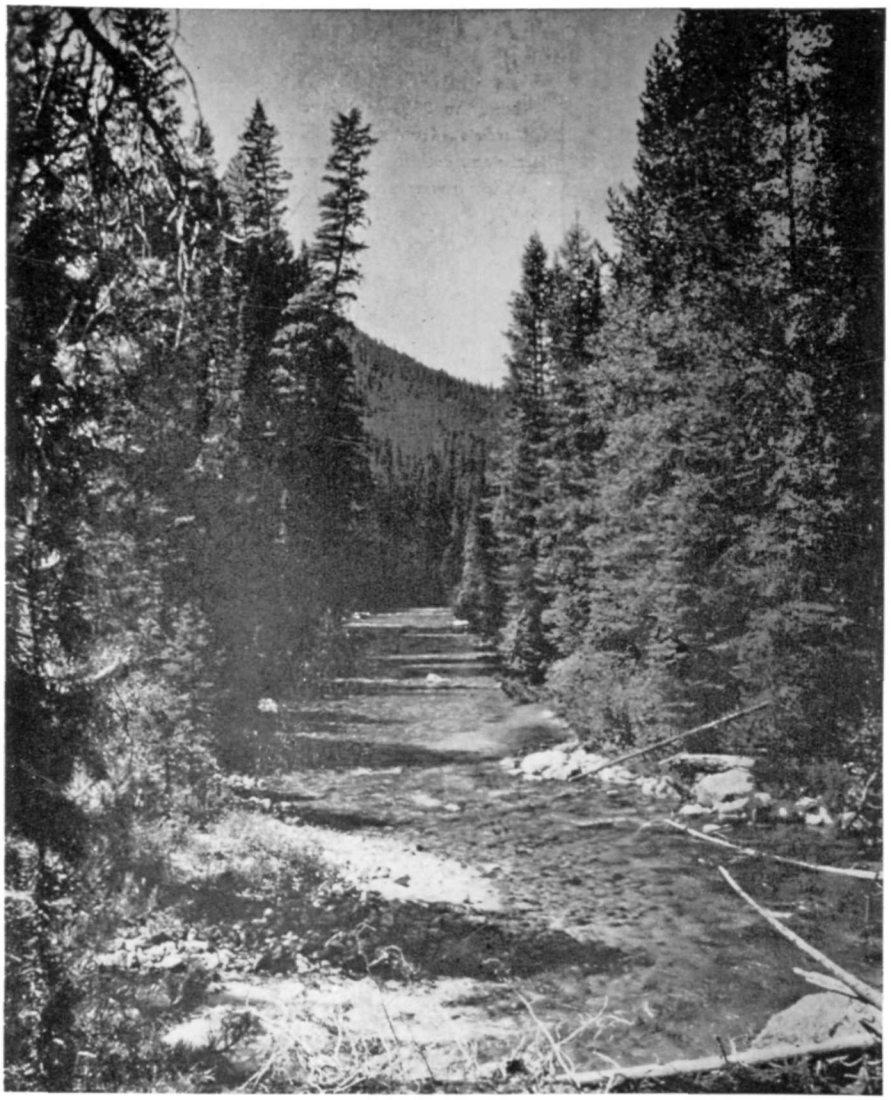
The Minam is a valley more fragrant with balsam than any I know. When I walk it or ride it horseback I breathe deep, for the essence of pine and fir is in the air. This fragrance may have some relation to temperature and humidity. The air is dry; the days are warm. The lava rock overhead collects and retains heat; and the valley is just under the 4000-foot level. The fragrance may be due to other causes which I do not know. My experience is not unique; all who travel the canyon talk about it. And on my last trip there I learned that this priceless pine and fir are in jeopardy. I stayed with Red Higgins, who has a spacious ranch near the fifteen-mile post. I learned that night that the Forest Service plans to let lumber operators cut some twenty miles of the Minam River Canyon. Much of the Wallowas are a wilderness area. But its boundaries follow mostly the contours of the high country. The rich tongues of forested lands that stretch up the canyons are outside the wilderness areas. They are left outside on purpose, so that lumber mills may move in. Indeed, what is within or without a wilderness area is determined by the fiat of the Secretary of Agriculture on the recommendation of the Chief Forester. Neither of these men is elected by the people; each is beyond the electoral will. Moreover, "the law" under which they act is a set of regulations which they themselves drew. They can revise those regulations at will.

Resolving the Questions

Acts of Congress can be repealed or revised on a vote of those whom the people have chosen to be their representatives. But the question whether new land shall be put in a wilderness or whether land presently included should be taken out or, in truth, whether we shall have any wilderness areas at all, is resolved exclusively within the hierarchy of a federal bureaucracy. A Forest Service man with wilderness values paramount in his thinking will protect these sanctuaries and add to them. One who at heart is closer in tune with lumber and mining interests will narrow these corridors and let commercial interests have their way. Whether we have more or less wilderness area depends therefore on the chancy circumstance as to what men reach the top in the federal bureaucracy. Great issues of social security, power dams, reclamation, soil conservation, price controls, quotas for farmers, and the like are debated in Congress. Yet the issue of whether the people will be left a rich wilderness area or a dust bowl of stumps, serviced by roads, is left to the whim or caprice of a bureaucrat. If the Minam is to be ravished, if roads are to pierce this wilderness, the people should decide it after fair debate. It is their inheritance that is at stake. God made it, and it is among the loveliest of His creations. If it is to be protected, changes in the basic law governing national forests must be made. These sanctuaries need the mantle of protection that only an Act of Congress can give them.

This is what we said at Red Higgins' ranch as the sun set over the western ridge and started the sundial moving up the opposite canyon wall. A kingfisher cried noisily as it streaked across the water. Two grosbeaks whirled and turned in the air as they dived on insects. The soft murmur of the river was drowned out when a cool wind swept up the canyon and made the conifers sing. Then the clear voice of the willow thrush came floating from a cottonwood—*vee-ur, vee-ur, veer, veer.* All this was music sweeter by far than screeching saws cutting through trees, the crash of timbers, or the roar of automobile traffic in this wilderness sanctuary.

The top country of the Wallowas also has its special claims. The granite ridges are knife-edged. The talus slopes are so numerous that the traveler has to pick with care his route to the top. Above 5000 feet the alpine fir is the dominant tree. They march in stately fashion up the canyon walls, skirting rockslides and granite cliffs. Some Engelmann's spruce march with them but when the tree line is passed at 9000 feet, the last tree seen is the whitebark pine. Ancient patriarchs, long dead, mark some ridges. For decades on end they stand erect even after life has passed. The live ones are bent, gnarled and dwarfed. Snow is not off these ridges for more than three months each year. Winters are severe,



William O. Douglas

Many of the canyons of the Wallowas, heavily clad with fragrant pine and fir, lie outside the wilderness area and are subject to lumber operations. One such canyon is that of the Minam River, a portion of which is shown in the photograph above. This stretch is included in the Forest Service's proposal for logging.

and the icy blasts that whirl across these mountains are great levelers. Only the whitebark pine survives, the one tree of our western mountains that seems to thrive on adversity.

Ridges Overgrazed

Those high ridges once had grass, knee-high. Reckless sheepmen and easygoing rangers of the Forest Service allowed them to be denuded by overgrazing. Now they are mostly coarse sand. When I see these barren ridges I remember John Muir's saying, "When sheep advance, flowers, vegetation, grass, soil, plenty, and petry vanish." Tiny saxifrage are slowly taking hold. Mats of white and pink phlox are expanding. Yellow pincushions—the *cushion eriogonum*—dot some of the blank places. Occasionally the bright snow buttercup is there to lift the heart.

When the snow first goes off the lake basins and the bunch grass is beginning to recover from the great weight of the snow, there are wonders to behold. The pink heather and the cerise paintbrush are among the first to bloom. The tiny blue alpine speedwell —excellent for salads—seems positively gay. Then is the time when some drab meadows are brought to life by a dark, dark blue penstemon. Labrador tea blooms early. And perhaps the choicest reward of all is the monkey flower—rich purplish-red and a noble bouquet for any lake's edge.

There are over a hundred lakes in the Wallowas. Probably all have not yet been discovered. Some are not yet named. Each has a distinct personality.

Some, like New Deal, rest in treeless basins. Mud Lake is a tiny pocket on a steep slope. Cheval is a deep hole at the end of a great talus slope—large enough to accommodate only one party. Douglas is rimmed by granite spires. Bumble, Patsie, and Tombstone are like ponds in friendly pastures. Diamond, Frances, and Lee have the look of wells without bottoms and icy water that chills to the marrow. Green, Minam, and Crescent are rich with algae. Blue and Chimney show clayish bottoms and have a sterile look. Hobo has golden trout. Long—noted for rainbows—is a wide expanse that shows whitecaps on windy days. Swamp—filled with golden trout—lies in a large basin, rimmed by slopes that show countless rockslides and decorated by some of the loveliest whitebark pine I know.

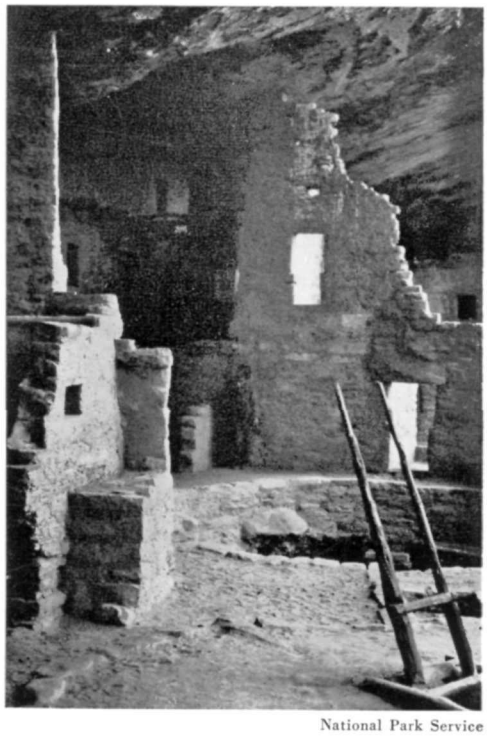
A Favorite Lake

But my favorite of all is Steamboat, out of which the North Fork of the Minam rises. It is rimmed by talus slopes and by granite walls highly polished by glaciers. Alpine fir has taken hold in many spots. Whitebark pine and Engelmann's spruce compete for second place. A meadow of ten or twenty acres fills one end of this basin. The lake occupies the rest, creating the impression that it rests in a large saucer that is about to spill over at one end. Polished-granite ledges run at a gentle slope into the sapphire-blue water, where Eastern brook trout live. This is a fly fisherman's paradise. High benches are ablaze with the tiny purple bush penstemon. The lake's edge is gay with the pinkish waxy flowers of the pyrola. My camp is not in the meadows but in a small cluster of conifers at the opposite end. An ice-cold stream hardly a foot wide runs on the edge of these trees. It has a white, sandy bottom and is excellent refrigeration for food. One sits on top of the world at Steamboat Lake. The nights are crisp; the dawn is fresh with dew. This is a world unto itself, untouched by civilization, unspoiled by man. ■

Photograph by the Author

From the 8000-foot level of Mesa Verde's fortress-like walls, the plateau country below may be seen rolling away toward the horizon.

One of the heavily visited ruins of Mesa Verde National Park is Spruce Tree House, shown below.



National Park Service

People of the Mesa Verde

By Robert B. McCoy

LIKE SOME DARK HULKING monster, Colorado's Mesa Verde dominates the vast, high-rising plateau around it. From outside, the giant monolith appears to be a towering fortress of rude, naked stone. It is a sight to see and to remember, for it is like nothing else on this continent.

The Mesa Verde has looked grim and forbidding for millennia—the monuments of time wear away but slowly. When man first appeared on the plateau's primeval horizon, he may have lifted awed eyes to the sight, and envisioned a great altar to some strange and incomprehensible god. But after the passing of countless seasons, after the passing of elders for a thousand generations, some of the bolder ventured close and remained unharmed.

Perhaps, too, in the course of events, men climbed the awesome heights to find a veritable paradise. The mountain that from the outside seemed as solid as the earth itself concealed a land that time had forgotten. From side to side and from end to end it was crisscrossed with deep canyons, mighty ridges, and scores of verdant valleys. In the cloudland at the top rose a forest teeming with game and abundant with water. The deep, dark canyons and cool, sheltered waterholes formed natural traps for the bison, the deer, the elk and the pig.

It may be speculated that men lived around the mountain for generations, at peace with each other and sharing its secret bounty. They learned to cultivate the earth, to raise corn and squash; they learned to weave fibers into textiles and to make fine baskets from reeds. Meat was plentiful, and the men were good hunters. Shelter meant a few skins laced together and thrown over a wicker frame. It could be said that this was the First Millennium—and it might also be said that it was to be the last.

In the Old World the She-Wolf was

Mr. McCoy, a past contributor to the pages of *National Parks Magazine*, is managing editor of J. B. Lippincott's Educational Book Division. He is the author of many western outdoor articles.

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still suckling Romulus and Remus, perhaps, when the enemy first appeared in the plateau country around Mesa Verde. To the south the sun was burning away the water and the forests, and a desert was growing where before had spread a vast and beautiful hunting ground. The nomadic spear-throwing hunters moved north with the desert, intruding on the farmlands and the hunting grounds of the plateau people.

For a while, the groups mingled more or less, the restless ones infringing more and more on the harmony of the farmer group. Name-calling turned to stone-throwing, perhaps, and stone-throwing to spear-throwing. The intruders from the south became invaders, and began to fight with the natives. Farmers became warriors, and defended their fields and homes. Peace vanished forever, and strife became the natural state of man in the shadow of the Mesa Verde.

Retreat to the Mesa

It does not take long to tell of this, for the story of many centuries has been compressed into a few words. In the end, the invaders proved stronger than the farmers. There came the time when the sheer weight of the enemy's numbers drove the defenders from the plateau onto the mesa to live. They climbed the great mountain at about the time of Christ, and there they stayed for some twelve centuries. The narrow trails to the top were easily defended. In the cloud-hung heights, the mesa people flourished and prospered, and enjoyed a certain security from the invaders on the plateau.

Archeologists call these people of the period A.D. 1 to 400 "the Basketmakers," for their outstanding craft was the weaving of beautiful baskets. They did not know such attributes of survival as houses, the bow and arrow, or enduring pottery. They lived in shallow caves that are common in this area. In the floors of the caves they built roofed pits for storage of corn and squash. They knew the use of the *atlatl*, that dart-throwing stick used by primitive peoples for hunting and for warfare.

At about the beginning of the sixth century, the mesa-top Basketmakers discovered the art of pottery manufacture. Somehow, too, they learned how to build roofed dwellings. Whether spontaneously or through contact with roving Indians from other areas, the atlatl gave way to the bow and arrow. Historians believe that around A.D. 750 the basket-making of the mesa people came to be the lesser of their cultural characteristics; scholars mark this as the end of the Modified Basketmaker Period and the beginning of the Developmental Pueblo Period.

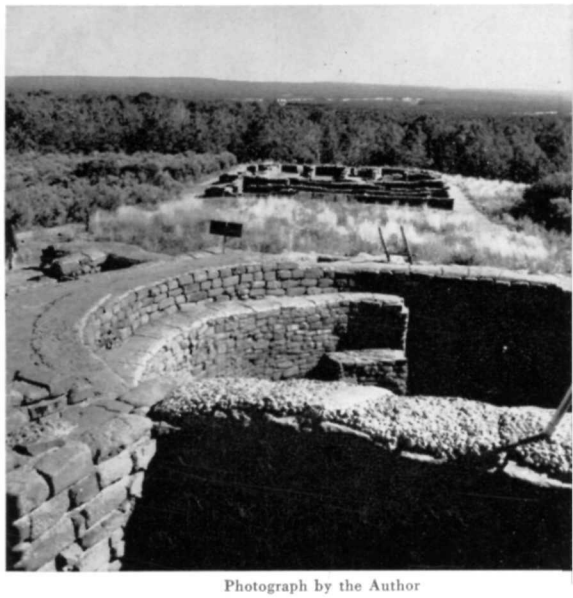
Development of Buildings

Now the mesa people began to experiment with building. Many types of house walls were tried—adobe, adobe and poles, stone slabs topped with adobe, adobe and stones, and finally, true coursed masonry. The houses were joined together to form compact clusters around open courts. In the courts were pit houses that grew deeper and finally developed into ceremonial rooms. In today's pueblos, these pit rooms are called *kivas*.

Turkey-feather blankets and robes appeared, as did the weaving of cotton textiles. During the Basketmaker period a soft-woven cradle had been used, and babies' heads developed normally. But in the latter years of the Developmental Pueblo Period, mothers adopted a cradle made of wood. As a result, children's heads were flattened in back, and this deformity became a tribal characteristic of the Mesa Verde people.

These were years of peace, expansion and progress. Innumerable farming villages dotted the mesa top, the population increased steadily, and the arts and crafts showed constant improvement.

The Classic Pueblo Period from A.D. 1100 to 1300 marked the climax of the Pueblo culture in the Mesa Verde. Arts and crafts reached the peak of their development. Houses were built of fine horizontal masonry, of well-shaped stones laid in adobe mortar. Most of the walls were smoothly plastered, and designs painted on them in red, yellow, black and white. Villages ranged in size from a few rooms and a single kiva to great terraced structures with as many as two hundred rooms and more than a score of kivas.

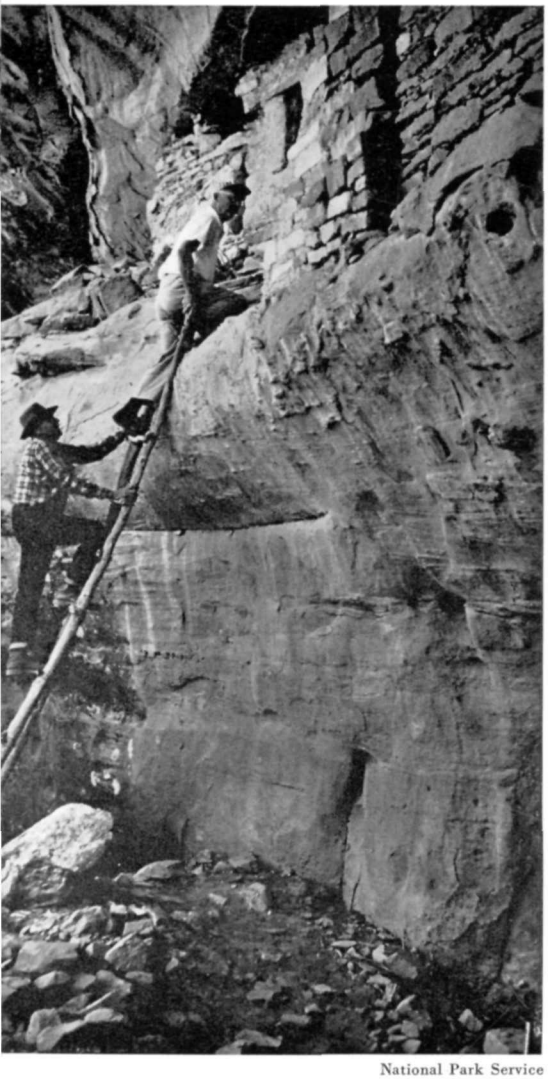


Photograph by the Author

A mesa-top kiva is in the foreground above, with a village complex beyond. The stones below trace an unexcavated village complex.

Photograph by the Author

The pottery was well-shaped, carefully fired and elaborately decorated with geometrical and animal figures. The finely woven cotton cloth was often decorated with designs woven in color. For personal adornment, there was a profusion of jewelry made of



National Park Service

Investigating the Mug House ruin of Mesa Verde are Park Service archeologist James A. Lancaster and Melville B. Grosvenor, National Geographic Society's president.

turquoise and other brightly-colored stones.

A rigid social structure developed, and a highly ritualistic religion evolved. All had gone well for centuries. But all good things come to an end, and in the fullness of time, the enemy on the plateau grew warlike and crafty enough to breach the mesa defenses. In the Old World, the Crusades were just beginning as the mesa-top people retreated to the immense, defensible caves eroded from the towering cliffs of the Mesa Verde.

Being resourceful and industrious, these people transferred their flourishing culture with scarcely an interruption, and began building new cities in the caves. Safe again from both the elements and the enemy, the habitation complexes rose story by story from cave floors to their roofs. This is called the Classic Pueblo Period, which produced such spectacular structures as the Cliff Palace, Square Tower House, Spruce Tree House, Long House, Far View House, and scores of others—some even yet unknown and unexplored. All these are under the guardianship of our National Park Service, preserved for the present and future in Mesa Verde National Park.

The end of the cliff dwellers came eventually, and inexorably. Scientists have determined by counting tree rings that a great drought descended on the Mesa Verde and surrounding country in the year 1276. For two dozen years the dry blight persisted. Year after year crops failed, and the water supply diminished and dwindled. As the fourteenth century dawned, the cliff dwellers gave up; they packed their belongings and left the Mesa Verde forever.

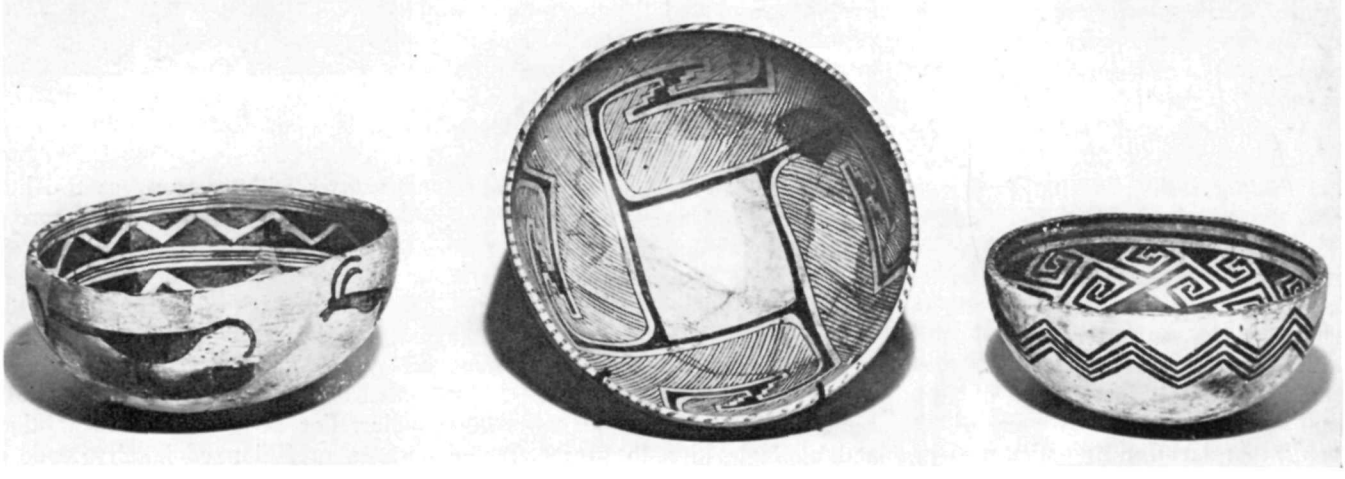
Cities Fall to Ruin

The voices of people vanished, and the marvelous cities lay silent and dead through the passing seasons. Wood crumbled to dust. Roofs collapsed. Walls tumbled before gusty winds. Wildlife prowled the walls and courts, and denned in the empty rooms and rubbish-filled echoing kivas. Airborne seeds took prying root, and walls shattered anew during each growing season. Trees sprouted, grew to maturity, and fell crashing in old age to rest with the rubbish of ruin. The rains returned, and water seeped through the stones to loosen overhanging ledges and massive boulders. Thus ends the human story of the Mesa Verde, as it has been reconstructed from its ruins.

The things that scientists and scholars do not know is sometimes as interesting as those they do know. Since the aborigines of the Americas, and particularly those of North America, left no trace of a written language, their story can only be pieced together by deduction and reconstruction. They left artifacts, they left buildings, they left a few cadavers to disintegrate in the soil or desiccate in the preserving climate, but all of these bits put together provide only a partial picture of American prehistory. ■

The pottery specimens below, used by the prehistoric cliff-dwellers of Mesa Verde, are elaborately ornamented with animal and geometrical patterns.

National Park Service



Now is the time for construction of

A Framework for Wilderness Research

By Joseph L. Fisher

IN THE SPRING OF 1868, John Muir came to California. "All the world was before me and every day was a holiday," he wrote later, "so it did not seem important to which one of the world's wildernesses I first should wander."

He arrived in San Francisco, and asked a stranger the quickest way to get out of town. When the man asked where he wanted to go, Muir replied: "To any place that is wild." The stranger directed him to the Oakland ferry, implying that beyond Oakland all was wilderness.

Our choices of wildernesses in which to wander have greatly narrowed since then. Except for Alaska, perhaps only a few wilderness areas of any real size remain in this country, although fortunately numerous smaller tracts are available.

We have now reached a stage where wilderness has to be developed in the sense that government, or private agencies or persons, must do something—frequently promulgate regulations, or invest money—if we are to have wilderness areas. To date, it seems, State and national legislators and other policy-makers have had to proceed as best they could, unaided by conclusions from well-directed research, dealing with wilderness largely on the basis of intuition and sentiment, their sense of historical development, the pressure of private interest groups, and more recently the conservation lobby.

The mainstays of wilderness policy, such as they are, seem to be aspects of national and occasionally State park or forest policy, or game or wildfowl preservation. In other instances, wilderness policy seems to be the unintended result of large reservations of land for military purposes, or increasing reluctance to grant patents for land not at all suitable for private use. As yet, there seems to be no set of underlying and consistent principles upon which a national wilderness policy could be based. This will be possible only after considerably more research has been done. Good policy can be developed from facts, sound analyses, and the drawing of valid conclusions.

In the United States, wildland amounts to 1663 million acres, seventy-three percent of the total. Subtracting commercial forest land, and land used for grazing of domestic animals, wilderness area comes to about 492.1 million acres, or twenty-two percent of the nation's total land area.

Research Value Established

The value of research for the non-wilderness portion of all wildland is already well established in government, the universities, and increasingly among private owners and operators. But research on wilderness, the wilder portions of wildland which are not being used presently, which will not be used in the near future for commercial timber production or grazing —has been relatively neglected.

Many people regard research—objective, tough-minded research in the social and psychological sciences as well as the natural sciences—an inappropriate means for getting at the question of the value of wilderness and the conditions for its preservation and use. Wilderness values, they affirm, are essentially intangible, incapable of clas-

A wilderness waterfall: Leconte Creek in the Great Smokies, by Thompsons Studio, Knoxville.

sification and measurement, and impossible to compare with the value of other uses. I cannot agree with this contention.

It is true that wildland in the purest of wild conditions, lying beyond present or likely future use, is of little interest and does not seem to offer much research challenge. But in our times almost any tract of land on earth, however remote, may come into some limited use before long.

When the wilderness is used by, or for, people—however slight the use may be—or when there is a good prospect of such use, such land begins to take on value. I am thinking not only of value in the direct commercial sense, say of the park concession, but mean to include value for hunting, recreation, photography, natural science, and the like.

Wilderness for Itself

There is an interesting exception to the notion that wilderness has no value apart from present or potential usefulness to man. That is the value some, perhaps many, would see in having in the world wild areas in the purest sense completely and forever unused—simply for having them. There may be a psychological benefit, a sense of steadiness and attachment, to earth, nature, and ecological design which derives from a person's knowing that wilderness will persist somewhere and that he is absolutely committed to its preservation. The stories of Ozymandias and King Midas teach us to be humble before the awesome power of nature, the undeniable wind, sands, and tide.

Despite this elusive but important aspect, I wish to proceed from the assertion that wilderness has little value or research interest apart from present or potential use by people. This is true, of course, of other natural resources, none of which is significant because of the pristine resource itself, but rather because in the totality of man's culture it fills a need.

The precise characteristics of wilderness obviously are not those of oil, uranium, fresh water, or topsoil. But like them it is a material aspect of the environment having present or potential value to people who do or may use it. Wilderness carries with it many values that cannot be measured directly in dollars, although statistics can be gathered which indicate or at least hint at its economic value. But so do many other resources, though perhaps in lesser degree.

Granting that wilderness is an economic resource and has value because of use, the question arises: how much of what kinds of uses can it have and still be wilderness? One could say that it remains wilderness as use increases until it is no longer regarded as wilderness. But what then? So regarded by whom? A particular person? The government? A wilderness association? The Bureau of Standards? The Park Service? Or Webster's New International Dictionary?

Standard for Wilderness

What is called for here is an objective standard, or standards, for wilderness or classes of wilderness. These standards might run in terms of density of use and users by different types, degree of physical disturbance of the natural environment compatible with preservation of ecological processes and systems, allowable degree of alteration of esthetic qualities, visual and psychological, and perhaps others.

An adaptation of the idea of "carrying-capacity" as developed in regard to rangeland seems promising. Both the persons and the land should probably be differentiated: the persons by different types of users such as hunters, campers, and artists, with or without pack horses, and the land by acres of forests, desert, mountains, seashore, and marsh.

My first suggestion for intensified research on the wilderness is to explore how use standards can be arrived at. How much use by what kinds of users can wilderness environments tolerate without losing those ecological, psychological, and esthetic characteristics that make them wild? In what kinds of places and to what extent can wilderness use be compatible with other uses of wildland either simultaneously or sequentially?

Along with research into wilderness standards should go two other kinds of study. One is to inventory existing and potential wilderness. The other is to estimate present and future demand and use for wilderness. Future estimates should extend at least to the year 2000, and farther, in a general way.

Wilderness in the northwest: Mt. Gould, in Glacier National Park. A photo by Hileman.

Historical trends offer perhaps the surest guide to future use. Rates of past use, insofar as this picture can be pieced together, may be related to projections of future population, income, leisure time, transportation facilities, and other factors more or less measurable statistically, with allowance for other factors such as increased urbanization.

What might the demand for wilderness be in this country in 2000? Dr. Marion Clawson believes that demand for outdoor recreation in general may be ten times larger in 2000 than in 1950. Such a rate of growth in demand would be in line with postwar increases in use of national and State parks and forests, and other types of recreation areas. The demand for wilderness recreation may go up in pace. Potential demand, of course, will not be realized unless more areas are designated and made available with proper protection.

Wilderness Reserves Limited

Although wilderness areas remain in this country, some of them (mostly in Alaska) quite large, the reserve is limited and under increasing pressures. In the two years before the war I worked in Alaska; the marvelous wilderness areas I visited seemed unlimited in extent and virtually unused. Now, with a much larger population and widespread use of small float and ski planes, this has changed noticeably. A clearer wilderness policy for Alaska is needed. In the older States, particularly in the West but also in the South and East, reservation of additional forest and other lands for wilderness may be called for. Possibilities for reclaiming wilderness from areas that have already been used for other purposes should also be examined.

Estimates of future supply and demand of wilderness have to be based on assumed standards or levels of use. If the permitted standard for a tract of wilderness, for example, is assumed to be 100 man-days of use per year per square mile (this is made up out of whole cloth) and the tract now is being used at the rate of 20 man-days per year per square mile, then there is room for a fivefold increase in use. If the permitted use level is doubled, a tenfold increase becomes allowable.

But the same standard may not apply to all wilderness. For example, the standard might vary with area, with minimum distance from the center to the nearest point on the perimeter, with topography, with number of fresh water sources, and with wildlife population. Furthermore, the standard might vary for the same tract, depending on the kind and level of protection and management—for example, with hunting regulations and the strictness of their enforcement; with fire regulations; with number and condition of trails, and with kinds of transportation vehicles permitted. The compatibility of dual or even multiple use of certain wilderness areas should not be overlooked. Estimates of supply and demand are impossible without at least assumptions about such standards. Most likely several sets of supply and demand estimates will have to be made on the basis of alternative assumptions about standards.

Framework for Research

What I am suggesting is a framework for research on wilderness as a natural resource. The framework has three principal members, each interrelated with the others: demand for wilderness; supply of wilderness, and standards of use. Within this framework, I believe, most of the more specialized research on wilderness can be accomodated in such a way that interrelationships can be seen and a greater sense of order and purpose introduced. The framework I have suggested may not be the only good one, but it is one that can draw natural scientists together with social scientists in an effort to give shape and definition to a new and exciting field of research.

An awareness that wilderness is fast diminishing is spreading rapidly among the American public. Wilderness policy is being shaped, and administration will not be far behind. But more research underpinning is needed. Such underpinning must be imaginatively conceived, competently carried out, broadly integrated, and the results must be made available in attractive form and timely manner to the policy-makers and administrators who now are facing decisions and actions which may determine for a long time to come the place of wilderness in American life. ■

This article has been condensed from an address by Dr. Fisher before a conference of the University of California Wildland Research Center at Yosemite Valley during October, 1959. Dr. Fisher is a writer and consultant on the economic problems of resource development and regional growth; he is the president and executive director of Resources for the Future, Inc., of Washington, D. C.

Northeast wilderness: Tamarack bog in the Adirondacks. A photograph by P. M. Tilden.

In the Field with the S.C.P.

A Report from Cedar Breaks National Monument

The National Parks Association's Student Conservation Program is a voluntary work and conservation education program for qualified high school, college and graduate students in which the participants, while receiving no monetary reward, gather conservation experience while they assist national park personnel with routine duties.

Frank Jensen

A five-o'clock check on the weather instruments ends a day's field work at Cedar Breaks National Monument.

THE National Parks Association's Student Conservation program expanded its fourth year with participants at Cedar Breaks National Monument in Utah. The efforts of Francis R. Oberhansley, superintendent of Zion National Park and Cedar Breaks, and Elizabeth Cushman Titus, SCP consultant, made expansion into this new area possible. SCP members Miss Peggy Thompson of New Canaan, Connecticut, and Miss Margot Schmidt of Big Bend National Park, Texas, spent two months at Cedar Breaks working with management assistant John H. Davis and ranger naturalist Morris Buhanan in various activities.

Using an alternating work schedule of museum duty and field duty, the SCP girls worked with the public in the museum learning about the geology, history and biology of the area through actual field work.

When on museum duty, Miss Thompson and Miss Schmidt were in charge of the Zion-Bryce Natural History Association book sales and distribution of Cedar Breaks folders. In their public contact work they gave information and answered questions. By giving ten-minute talks about Point Supreme for bus tours, the girls gained experience in public speaking. Lowering the flag, closing the museum, and recording campground attendance concluded their museum activities of the day.

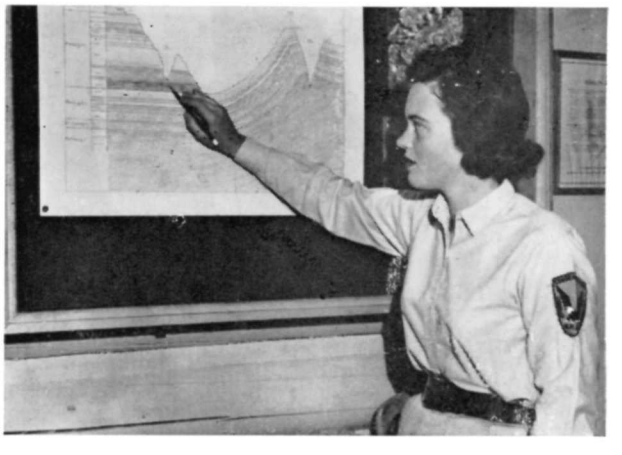
Field duty days began at 8 a.m. with the opening of the monument museum. After raising the flag, starting the generator, opening the book counter, sweeping, washing the windows and exhibit cases, and recording the previous night's campground report, the girls devoted the rest of the field day to an assortment of other duties. They did typing and filing, made reports, counted the number of people in cars to determine new travel ratios, collected plants and tree foliage for exhibit, and measured and laid out trails. A five-o'clock recording of the weather completed the field day.

Miss Thompson and Miss Schmidt lived in one of the area's new efficiency apartments and did their own cooking. They were given a liberal allowance for groceries; and both agreed that the housekeeping was a valuable experience. On their days off, the girls went hiking, a favorite pastime, or spent their days on field trips to Zion, Bryce, and the North Rim of the Grand Canyon. One of the highlights of the summer's activity was a trip into Grand Canyon on the Kaibab Trail.

As a result of the SCP assistance, the museum at Cedar Breaks was open ten hours a day, seven days a week, and the ranger and ranger naturalist were relieved of museum duty and some office duty. Public contact at Cedar Breaks museum showed an increase of forty percent as a result of the Student Conservation Program. ◆

Margot Schmidt, on museum duty, takes charge of the sale of books.

Peggy Thompson interprets a geological map for Monument visitors.



Your National Parks Association at Work

A letter to Secretary of the Interior Fred A. Seaton concerning the Glen Canyon Dam and the legal obligation for the protection of Rainbow Bridge National Monument

On September 28, Anthony Wayne Smith, executive secretary of the National Parks Association, sent to Secretary of the Interior Fred A. Seaton the following letter outlining the position and the views of the Association in regard to protection for Rainbow Bridge National Monument against encroachment from the waters of Lake Powell, to be created by the construction of the Glen Canyon Dam. *National Parks Magazine* has in the past carried numerous articles and notices of the threat to Rainbow Bridge National Monument—a threat that culminated during the past summer in the refusal of the 86th Congress to appropriate any funds for protection of the monument.

Secretary Smith's letter to Mr. Seaton is here printed in full.

The Honorable Fred A. Seaton
Secretary of the Interior
Washington 25, D. C.

Dear Mr. Secretary:

Early this year you announced your view that structures should be built to protect Rainbow Bridge National Monument. This Association commended your stand at that time, being of a similar opinion.

There is, in our judgment, a legal obligation upon you to take adequate protective measures to preclude impairment of the monument. This obligation rests on at least three factors:

(1) The established national policy that no dam or reservoir shall be within any national park or monument;

(2) The declaration of intention by Congress to the same effect contained in the Upper Colorado River Act;

(3) The specific mandate also contained in that Act that the Secretary shall take adequate protective measures to preclude impairment.

The history of the national policy is well known to you. It might be said to have originated as a result of the destruction of Hetch Hetchy Valley in Yosemite National Park with the construction of the O'Shaughnessy Dam. Public opinion was aroused by the desolation of the Valley, and subsequent attempts at similar intrusions have always been repelled.

The history of the declaration of intention is also known to you, turning around the threatened construction of Echo Park Dam in Dinosaur National Monument. Conservationists withdrew their opposition to the Upper Colorado River Act on receiving assurances by proponents that the declaration would be included.

Intention of Congress

One important thing about the declaration is its bearing on the interpretation of the mandate to the Secretary which is also contained in the Act. The declaration states that Congress intends that no dam or reservoir constructed under the Act shall be within any national park or monument.

In our view, this means that the protective measures required by the special mandate must be such as to prevent any portion of Lake Powell, the reservoir to be impounded by Glen Canyon Dam, from rising into the Monument. In our opinion also, such protective measures must prevent aggradation of channels and the deposition of debris within the Monument.

It is apparent that your choices have been severely limited in this matter by the national policy, the declaration of intention, and the specific mandate, all requiring protection, on the one hand, and, on the other, the recent denial of specific appropriations and restrictions on the use of current general appropriations by Congress.

It would appear to us that you are now obligated as a matter of law to plan and direct the construction of the Glen Canyon Dam, and in particular the hydropower intakes, in such manner as to stabilize Lake Powell at levels which will prevent it from rising into or otherwise impairing the Monument.

There is a growing conviction among conservationists, and it is the position of this Association, that you should take appropriate action toward this end at the earliest possible moment.

Differences of opinion have existed for some time as to whether the downstream protective works should be constructed at site B or at the lower site C. Your stand on this question in your public statement early this year did not seem to preclude consideration of site C.

Problem Needs Analysis

We believe, after careful inquiry, that a further and more public analysis of this problem should be made. Pending such an analysis, it would be imperative, in our judgement, to limit the height of the reservoir to the elevation of site C.

There is much to be said for stabilizing Lake Powell permanently at the elevation of site C. It is more important in this case to store water with the lowest possible loss from evaporation than to produce hydro-electric power, considering the other sources of power, and therefore the level of the lake should be kept low. There may not be enough water anyway to fill the lake to its presently proposed capacity much of the time, if at all. Storage provided above the elevation of site C will be occasional and minimal, and will not produce prime power. It might even be best to lower the height of Glen Canyon Dam, thus saving construction costs on the dam and making protective works at Rainbow Bridge Monument unnecessary. In retrospect, the dam should have been planned for the lower elevation at the beginning; it is still not too late.

We have made inquiries into the probable time schedules for the completion of the dam, the filling of the reservoir, and the construction of protective works, if such should be determined upon. We are apprehensive that the time for protection may prove too short, and would urge that the necessary alterations in construction plans be made at once to permit the lake level to be reduced.

We have long been satisfied of your profound commitment to the protection of the national parks and monuments. We think that our proposals are essential to the protection of the park system and in the interests of the entire nation. We hope and believe that you may agree with us.

Cordially yours,
Anthony Wayne Smith
Executive Secretary

Additional "NPA at Work" items will be found on page 19 of this issue.

Conservation News Briefs

Forest Service Establishes Glacier Peak Wilderness Area

On September 7th, Secretary of Agriculture Ezra T. Benson designated 458,505 acres of the Wenatchee and Mount Baker National Forests in the North Cascades of Washington State as the Glacier Peak Wilderness area, to be managed in as nearly a natural condition as possible by the United States Forest Service. Secretary Benson's decision was made after a study which indicated that wilderness values were predominant in the area, and after a review of testimony presented at public hearings in Bellingham and Wenatchee, Washington, during October of 1959.

The area set aside as wilderness was far less than had been urged by the National Parks Association in its testimony at the Bellingham hearings of October 13, 1959. The Association at that time recommended as a minimum objective the 800,000-acre proposal made by the U.S. Forest Service in 1939. However, some of the highly objectionable, unprotected "corridors" toward the heart of the new wilderness area, present in the Forest Service's 1959 proposal, have been wholly or partly eliminated. Among these are the Suiattle River, Phelps Creek and Agnes Creek projections, the first two of which nearly bisected the recent Forest Service proposed area.

Within the newly created area, there will be no roads—other than access roads to private property—no timber harvesting, and no commercial development. Trails for foot or horse travel will be provided.

Soil Conservationists Elect

At the fifteenth annual meeting of the Soil Conservation Society of America, held during the latter part of August at Ontario Agricultural College, Guelph, Ontario, it was announced that Walter C. Gumbel, of Fairmont, West Virginia, had been elected president of the society. Mr. Gumbel will take office January 1, 1961, succeeding Elmer L. Sauer, of Urbana, Illinois. Mr. Gumbel has been editor of the Society's *Journal of Soil and Water Conservation* for the past ten years. He is also chairman of the organization's Water Resources Management and Program Development Committees.

State Park Visitation Sets a Record

Two hundred fifty-five million persons visited the State Parks and related areas of the United States during the year 1959—some eighteen million more than in the previous year, and more than double the number of ten years ago. These are the figures revealed by the National Park Service's *State Park Statistics—1959*, released during the month of August. More than a hundred million visitations were contributed to this total by the well-developed State park systems of New York, California, Pennsylvania, Michigan, Ohio, and Oregon. The year brought ninety-eight additional park areas into the State systems, raising the total acreage of the combined areas to 5,680,909. Individual units now number 2433, the survey reports.

Park Service Interpretation Goes Under Water

A growing interest in life under water, recently demonstrated by the establishment of the Key Largo Coral Reef Preserve off the Florida Coast (October *National Parks Magazine*) has led to an expanded program of interpretation in the National Park Service. Self-guiding swimming trails dotted with coral forests and colorful fish have been marked for experienced swimmers at Trunk Bay in the Virgin Islands National Park. At Cabrillo National Monument, California, winter visitors on the steep slopes of Point Loma may observe gray whales as they swim toward their Gulf of California calving grounds. The Park Service is now developing boat tours, seashore strolls, and underwater viewing devices for more effective interpretation of the marine life of areas like Everglades and Virgin Islands National Parks.

Great Salt Lake Hearings

Senator Frank E. Moss of Utah will conduct public hearings on his bill to establish Great Salt Lake National Park on November 10 in the Federal Building in Salt Lake City, and on November 12 in the Federal Building in Ogden, Utah. On November 11, State and local officials will take a helicoper inspection tour of the proposed park area which includes Fremont Island, Antelope Island, and the Eastern Shore of the Great Salt Lake.

Crane Migration Logged

Fish and Wildlife Service personnel from Montana and North Dakota to Texas have been alerted by the Department of the Interior to help log the progress of the whooping cranes in their southward migration this year, it has been revealed. The Department is also soliciting the aid of State and private conservation agencies and individuals in the task, which is designed to better protect the birds in flight and to give migration information for the future.

Great Swamp Wildlife Refuge

C. R. Gutermuth, Secretary of the North American Wildlife Foundation, has recently announced that a tract of 1000 acres in the Great Swamp area of New Jersey is being conveyed to the federal government by the Foundation. The area, which lies at the headwaters of the Passaic River less than thirty miles from New York City, will be administered by the U. S. Fish and Wildlife Service as a unit of the national wildlife refuge system.

Great Swamp, a natural area of timbered knolls, woody swamps, broad meadows, pools and bogs, is one of the few remaining specimens of unspoiled wetland areas in the country. Its proximity to the densely populated New York area has moved the New York Port Authority to consider it as a site for a jet airport (see July *National Parks Magazine*, p. 16). A current investigation of the New York Port Authority by the State of New Jersey will probably include an examination of this proposal.

A Report on the 1960 Sessions of the I.U.C.N.

By Horace M. Albright

Horace M. Albright, former director of the National Park Service and a trustee of the National Parks Association, was an observer at the recent meetings of the International Union for the Conservation of Nature and Natural Resources in Warsaw and Cracow, Poland.

DURING EARLY SUMMER OF 1960, the cities of Warsaw and Cracow, Poland, were hosts to the biennial meetings of the International Union for the Conservation of Nature and Natural Resources. It was the Union's Seventh General Assembly, and its Eighth Technical Meeting.

During the course of the Assembly there were excursions to the Bialowieza National Park, on the Polish-U.S.S.R. border, and to the Tatra and Pieniny parks on the Czechoslovakian-Polish border. Actually, all three reserves are international in character, because the U.S.S.R. and Czechoslovakia administer their adjoining holdings as parks. Poland and Czechoslovakia have arrangements whereby their nationals may cross boundary lines and enjoy the neighboring reserves for limited periods of time. The U.S.S.R., however, keeps its border closed. At the end of the Assembly's formal program there were two other extensive trips available which were enjoyed by some of the visitors.

There were nearly two hundred delegates, observers and representatives of conservation organizations registered for the meetings, a figure that does not include the wives of many of those attending. Thirty-two countries were represented; but each country of the British Commonwealth of Nations was counted as a separate nation, even though, in some cases, they had not attained independence. Communist China was not represented. There were thirty-six Americans registered, including ladies accompanying their husbands and fathers. The National Park Service, National Forest Service, Fish and Wildlife Service, and Soil Conservation Service of our country were represented by high officials.

The program was carefully prepared by the Union's staff, and successfully executed by its presiding officers, some of whom were Americans. There were adequate facilities for the simultaneous translation of addresses and discussions into several languages, conveyed by way of earphone apparatus. The program offered opportunities for discussion of resource conservation in almost all parts of the world. There was strong emphasis on the establishment and protection of national parks and other nature preserves; on wildlife; and on research concerning problems relating to natural areas and their features. Great concern was expressed for the safety of the magnificent parks of the Congo, which were even then endangered by the conflicts arising from the early grant of independence to the native peoples of the Congo. [October's issue of *National Parks Magazine* carried a short account of these parks and their cultural and scientific importance, contributed by Dr. Harold J. Coolidge, another member of the NPA's board of trustees who was present at the IUCN meetings. Editor.]

Horace M. Albright

Technical problems considered related to the impact of man and modern technological development on nature and natural resources; the management of grazing wild animals in temperate zones and its relation to land use; and the ecological effects of biological and chemical control of undesirable plants and animals.

The visitors were received by Polish officials and conservationists most hospitably, were cordially entertained, and were given every opportunity to see Warsaw, Cracow and many villages, as well as parks, forests, farms and historic sites. In the Bialowieza Park delegates saw European bison, parts of a group of 150, which is the largest remaining herd of the species in the world.

Most of the delegates, the writer feels, were convinced that the Polish people are deeply interested in their country and its natural resources; and that they greatly appreciated the opportunity to play host to the meetings of the Union. They seem to like Americans and America. As for myself, and I am sure that I speak for others, I was tremendously impressed with the importance of the International Union as an agency for developing and spreading sound resource conservation principles around the world, and as a vital force that can be brought effectively into alliance with the United Nations, or other agencies, that strive to better the lot of all peoples.

While I was not a delegate to the Union's Assembly—merely an observer—I was proud to be referred to as a member of the board of trustees of the National Parks Association. ◆

DATES AND PLACES

Great Salt Lake National Park Hearings, November 10, Salt Lake City and November 12, Ogden, Utah.

Society of American Foresters, November 13-16, Sheraton-Park Hotel, Washington, D. C.

Gulf and Caribbean Fisheries Institute, November 14-18, Miami Beach, Florida.

International Oceanographic Foundation Award Dinner, November 16, Deauville Hotel, Miami Beach, Florida.

National Conference on Water Pollution, December 12-14, Washington, D. C.

The Editor's

Bookshelf

PLANET EARTH: by Karl Stumpff. Translated from the German by Philip Wayne. The University of Michigan Press, Ann Arbor, Michigan. 1959. Illustrated in black and white. 191 pages in hard cover, $5.00.

This volume is an addition to the University of Michigan Press's "Ann Arbor Science Library," which, in the publisher's words, presents "readable and authoritative introductions to the world about us written by leading scientists especially for the general reader."

This small volume by Dr. Stumpff (a professor of astronomy at Göttingen University) is essentially a discussion of the earth and its structure, its place in the solar system and the cosmos, the forces that regulate and affect it, and some of the ways by which men measure these forces. It is non-technical in its approach, with a merciful minimum of mathematical formulas and scientific jargon, and the translator has done a most creditable job of rendering the original into simple and enjoyable English, a little reminiscent of the precise and delightful writings of the late Sir James Jeans.

There are one or two potholes along an otherwise smooth road to an understanding of our earth and its celestial place which perhaps might be called a matter of personal interpretation. The reviewer objects to phrases like: "Isaac Newton . . . discovered the laws of gravitation." He prefers to think that Isaac Newton investigated and propounded the laws of gravitation. A Folsom man, witnessing a comrade hurtling down the face of a cliff after a misstep, might also be credited with the "discovery" of a gravitational law, although any deductions therefrom would doubtless have been of a selfish nature. The book is highly entertaining and instructive.—*P.M.T.*

RIVER WORLD, Wild Life of the Mississippi: by Virginia S. Eifert. Dodd, Mead & Company, New York, 1960. 264 pp. $4.00.

Huckleberry Finn might have known the Mississippi pretty well by the time he came to the end of his journey on the raft, but it is doubtful that he knew that river as well as Virginia Eifert. Huck Finn knew the people of the river, those who lived on or off the river, and who made it a part of their lives. Virginia Eifert tells of another aspect of the river, the wild life which does not depend on the river so much as it lives in partnership with it.

The author's story of the mayflies is one that could not be told without the river. They live out their larval stage at the bottom of the river feeding on the water plants. When the Mayfly nymph comes to the surface of the river he is not finished with it. Although his new wings carry him to the willows on the shore where he swims in the fog of thousands of other Mayflies, he returns to the river for his mating dance, the dance that ends in death for the Mayfly. But the perch and the shad feed well the night of the dance.

This story of the Mississippi moves with the river from its elusive source to its well-known mouth, from its shifting banks of peculiarly sticky mud to its mussel-laden bottom. Its characters are many. There is the river birch, "a strawberry blonde, a witch of a tree." There is the female cowbird who slips her large mottled eggs into the nest of warbler eggs. There is the seven-to-nine-foot alligator gar, the biggest and perhaps the hungriest of fish still living in the fresh waters of America—a real river monster. We cannot say this is simply a story of the river, because it is of many things, yet, many things make the Mississippi what it is.—*A.D.V.*

THE FIRST COMERS, Indians of America's Dawn: by Alice Marriott. Longmans, Green and Co., Inc. New York, 1960. 246 pp. Illus. $4.50.

The prehistoric Anasazi, Indians who lived in the southwest area from the Mesa Verde in Colorado to the Casas Grandes in Chihuahua, Mexico, left a culture that is more familiar to us than most of their contemporaries did. Author Marriott ascribes this familiarity with the Anasazi past to the fact that their living descendants have changed very little since the invasion of the white man. Modern Anasazi, the men of the Hopi villages, are "walking human fossils," a living past.

This guidebook to learning about the first comers in North America is a combination of many things in the field of archeology: a definition of archeology; a history of prehistoric peoples; a glossary of words like "artifact," "Carbon 14," "dendrochronology," "races of mankind;" archeology as a livelihood; archeology as a hobby; State Antiquity Laws; and a bibliography for those who want even more.

For those who have wondered why and how digging big holes can be absorbing industry, this book tells how to find the answer.—*A.D.V.*

A Quick Glance at . . .

PESTS, PESTICIDES, AND PEOPLE: by Albert C. Worrell. American Forestry Association, Washington, D. C., 1960. 41 pp. Free of charge from the Conservation Foundation, 30 East 40th Street, New York 16, New York—an extensive essay dealing with broad social factors connected with the rapidly increasing use of pesticides. Discusses need for criteria in evaluating benefits of pesticide use in light of possible destructive consequences to valuable animals and plant life.

GUIDE TO THE APPALACHIAN TRAIL—SUSQUEHANNA RIVER TO THE SHENANDOAH NATIONAL PARK (Fifth Edition). Potomac Appalachian Trail Club, 1916 Sunderland Place, N.W., Washington, D. C., 1960. 284 pp. $2—Second volume of three which cover the Appalachian trail from the Susquehanna River in Pennsylvania to the Virginia-Tennessee line.

CIRCUIT HIKES IN SHENANDOAH NATIONAL PARK. Potomac Appalachian Trail Club, 1916 Sunderland Place N.W., Washington 6, D.C. 48 pp. 35¢—Detailed data on twenty scenic one-day hikes in Shenandoah. Maps.

Your NPA at Work

Association Insists on Rainbow Protection

Responding to an invitation to comment, received from Representative Stewart L. Udall of Arizona, the Association has stated its firm opposition to policies which would permit any part of the waters of Lake Powell, soon to form behind Glen Canyon Dam, to rise into Rainbow Bridge National Monument.

Congressman Udall had made a field trip into the Monument earlier and reported to Representative Wayne N. Aspinall, Chairman of the House Committee on Interior and Insular Affairs.

He stated that he had come to the firm conclusion that, considering the undesirable effects of the construction of protective works, the Lake should be allowed to rise into the Monument "as the lesser of evils."

In reply, the Association's Executive Secretary Smith commented that "we find ourselves compelled to disagree with your analysis, not only on the question of park impairment, but in respect to national policy and legislative history."

Referring to the national policy of protection, the declaration of intention, and the mandate to the Secretary of the Interior, dealt with in the letter to Secretary Seaton, reprinted elsewhere in this issue, he continued: "In our opinion as a scientific organization, the Monument would be impaired by permitting the waters of the reservoir to rise into the Monument.

"Moreover, there can be no question about the conflict between such submergence and the declaration of intention.

"Nor can there by any question about the conflict between such submergence and the established national policy of protection for the national parks and monuments.

"To permit any part of the reservoir to rise into the Monument would impair the Monument, violate the declaration of intention, and violate the national policy for protection.

"Any violation of the national policy for protection is an invitation to repeated violations and may well lead to the destruction of the policy."

In conclusion, Mr. Smith said: "Please allow us to commend you again for the deep concern you have shown with this problem and to thank you for affording us this opportunity to express our views."

NPA Goes on Record in Hetch Hetchy Hearings

In mid-September, the Department of Interior held public hearings in San Francisco to take testimony in the matter of the City of San Francisco's application for a change in the location of a right of way for a proposed tunnel aqueduct authorized by the Raker Act of 1913. The tunnel aqueduct, originally planned as part of the Canyon Power Project (see a general article on the subject in *National Parks Magazine* for August, 1960, and further background information under "Your NPA at Work," June, 1960) would connect O'Shaughnessy Dam in Yosemite National Park's Hetch Hetchy Valley with the Early Intake in the Stanislaus National Forest.

Present at the hearings in behalf of the National Parks Association was Mr. Fred Gunsky, of Mill Valley, California, member of the Association's Yosemite Program Group.

The National Parks Association has taken the position that the City of San Francisco has forfeited any remaining rights to the use of Hetch Hetchy waters for power purposes by reason of noncompliance with the terms of the Raker Act, which stipulated that there should be no three-year period without development work at Hetch Hetchy by the City.

In an October 13 letter to Mr. Dyer Justice Taylor, Special Hearing Officer (submitted under permission to file further documentary material), NPA Executive Secretary Anthony Wayne Smith commented as follows:

"Even a cursory examination of the evidence . . . reveals many periods since the passage of the Raker Act during which activity on the right-of-way was nominal or trivial.

"The further intrusion of water storage or water power facilities into the Hetch Hetchy Valley," said Mr. Smith, "can be regarded only as an unwarranted intensification and aggravation of an incompatible and non-conforming use."

Secretary Smith said that the Association was not satisfied, on the record, that there have been sufficient assurances of stream flow maintenance in the Tuolumne River at levels sought by the National Park Service, the Forest Service, and the California Department of Fish and Game; and urged that, before a decision is rendered, a stipulation protecting the public interest in this respect should be entered on the record.

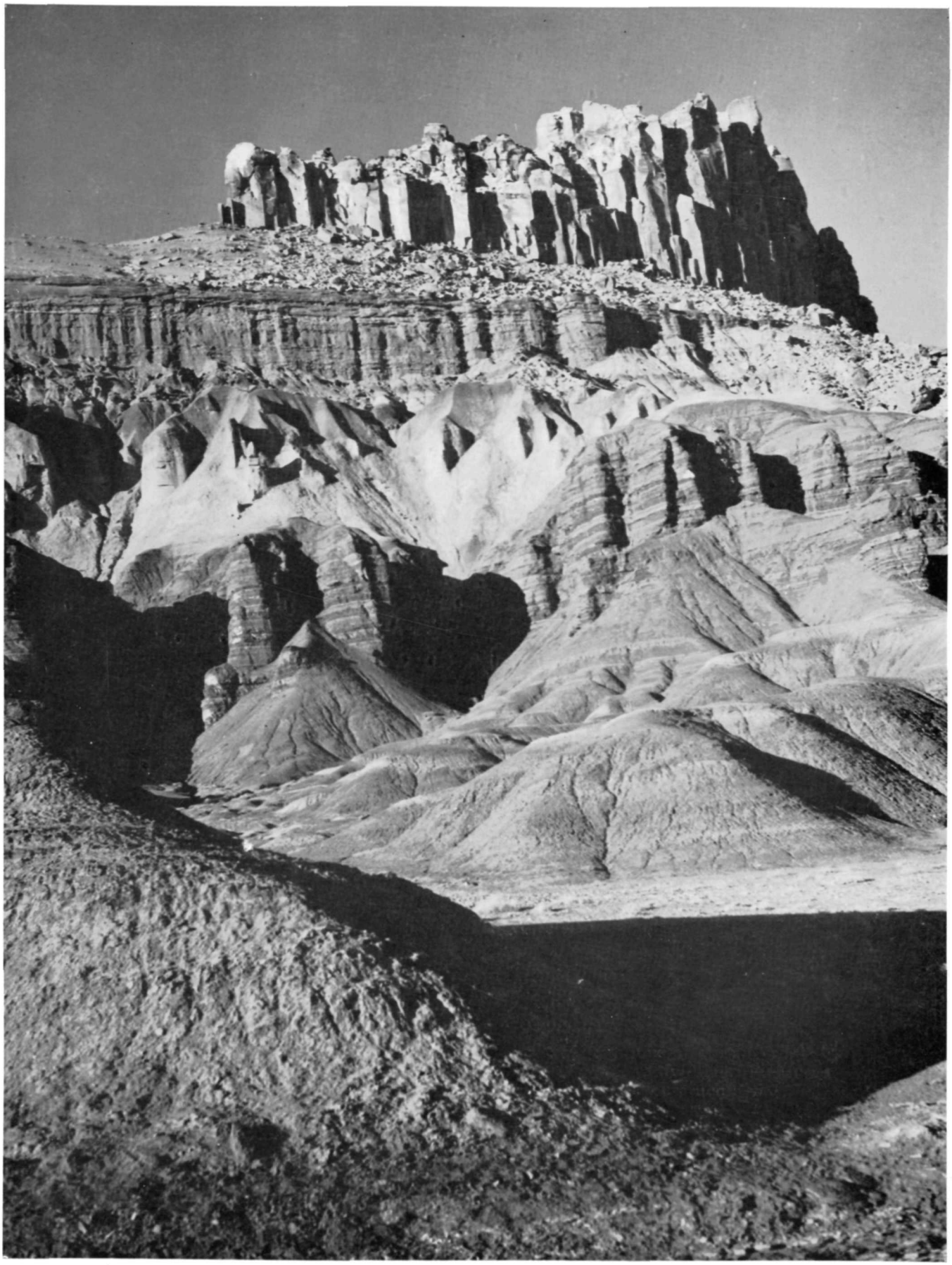
In summary, Mr. Smith recommended that the Secretary of the Interior declare a forfeiture of all parts of the Canyon power system not now completed.

THE ROYAL SEASON

When the wind no longer wraps me
In a silken veil of gray
But pushes hard with giant fists
On its determined way,
I know that winter lies ahead.

But threatening as it seems,
The wind-chime sound of frozen limbs
Beribbons all my dreams.
Green-lace summer shadows
Once emblazoned by the fall,
Sleep in snowy swansdown now
To wait for winter's call.
Tasselled heralds blow in gusts
To sweep the sun away
As robes of satin-ice enfold
The patchwork winter day.

—Anita De Vivo



The Castle, Capitol Reef National Monument

Photography by Weldon F. Heald