Two Conservationists Look at Alaska's Mount McKinley National Park

NATIONAL PARKS Magazine



Mount McKinley, in Mount McKinley National Park, Alaska, as seen across the Thorofare River from the vicinity of the Eielson Visitor Center Special Insert: the Leopold Report on Hunting in the Parks

April 1963

The Editorial Page

War Clouds Over the Colorado

T^N HIS ARGUMENT BEFORE THE FEDeral Power Commission on February 15 in the Marble Canyon Case, Solicitor Frank J. Barry of the Department of the Interior may have touched off a series of 100-megaton political explosions along the stretch of the Colorado River between Glen Canyon dam and Lake Mead.

His attack on the testimony which had been given by Park Service Director Conrad L. Wirth under subpoena by the National Parks Association in January, 1962, was completely uncalled for; it could hardly have been made without consultation with the Secretary of the Interior.

Director Wirth had testified as to the facts of the damage which would be done to Grand Canyon National Park and Monument by the proposed Kanab Creek diversion; likewise as to the facts of the public position taken in the past by former Secretaries of the Interior, affording protection to Grand Canyon against dams and reservoirs; the Solicitor declared that the Director had exceeded his authority and had testified as to present Department policy; the record proves otherwise.

The Department is apparently taking the position that the old protective policies must yield to what it describes as the full development of the river for power and irrigation purposes.

There can be little doubt that the entire conservation movement will unite to protect Grand Canyon National Park and Monument against (a) the diversion of any of the water of the river out of the Park or Monument, (b) the flooding of any part of the Park or Monument by dams built below the Park, or (c) any dams whatsoever in the Park. The Federal Power Act forbids such impairment of the Park or Monument at present. The protective clauses of the National Parks Act forbid it. The century-old Federal policy of park protection forbids it. The common sense and protective impulses of the American people forbid it. We strongly recommend to the Secretary, the Solicitor, and the various agencies interested in the further development of the Colorado, that they had best not try it.

This Association neither endorsed nor opposed the issuance of the license sought from the Federal Power Commission by the Arizona Power Authority for the Marble Canyon dam above Grand Canyon. We intervened in the proceedings to oppose the Kanab Creek diversion, which would take ninetytwo percent of the water of the river out of the Canyon through the Park. and presented the facts and history of the established park protection policy. Construction of the Marble Canyon dam as proposed by Arizona would almost certainly preclude the diversion. The parties favoring the diversion have opposed the license. Legislation for a moratorium on all licenses in the region is now pending in the Senate; a voluntary moratorium by the Commission for the balance of this year seems likely.

Great questions of basic public policy are involved: whether this nation should continue to subsidize bringing new agricultural land into production while it is trying to shift 50 million acres of existing cropland into other uses; whether we should accelerate the development of our remaining hydroelectric power potentials at a time when fission and perhaps even fusion seem destined to take over; and whether we are prepared to sacrifice much of our remaining Western canyon country to questionable development projects.

Perhaps the voluntary moratorium should be made permanent; if the developers overplay their hand, this could well be the outcome. -A.W.S.

Mount McKinley Park and Its Future

 $A^{\rm SERIES}$ OF THREE ARTICLES—TWO in this issue and one in the May number of the Magazine—have been designed to acquaint our readership with the nation's farthest-north na-

tional park; McKinley, in the southcentral portion of our newest State. This preservation has in time past been under the least developmental pressure of any major unit of its classification, because of relatively isolated position. It has perhaps most nearly answered the description of a true wilderness preservation, of sufficient size to constitute a scenic and ecological entity.

Now the State of Alaska has outgrown its territorial designation; the impetus of Statehood and increasing accessibility by highway and airway look toward rapid development of the State's resources in the fairly immediate future. Resource development will, of course, mean increasing pressures for "development" of Mount McKinley Park; indeed, the first stirrings in this direction have already made themselves felt. How far, and in what direction, changes in the character of this wilderness preservation may proceed will depend in large measure on development policies of the National Park Service. Conservationists have found that plans already formulated-and indeed partly executed-have proved most disturbing.

The first two articles of this series examine the Park itself; the third will look into the National Park Service's provisions for its immediate future. --P.M.T.

Coexistence at Home

IN THE MIDST OF A MULTITUDE OF alarums and excursions, foreign and domestic, it is welcome to receive at least a hint of a permanent settlement of the half-century-old conflict between the Agriculture and Interior Departments over their responsibilities in the management of natural resources.

We are happy to learn that the President's Cabinet-level Recreation Advisory Council has brought about an agreement between the two departments for, among many other things, *(continued on page 21)*



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Front Cover Photograph by Darwin Lambert

Mount McKinley National Park, in south-central Alaska, is a preservation of nearly two millions of acres of sub-Arctic terrain still largely unmodified by the artifices of man. In the cover illustration of this issue the photographer has captured not only Mount McKinley, highest mountain peak of the North American continent at more than 20,000 feet, but also something of the essence and flavor of the lower Arctic-the somber tundra, the gravel-choked. shifting bed of a typical glacially-fed stream, and withal the spirit of our most northerly national park system preservation, still essentially a true wilderness.

The Association and the Magazine

The National Parks Association is a completely independent, private, non-profit, publicservice organization, educational and scientific in character, with over 26,000 members throughout the United States and abroad. It was established in 1919 by Stephen T. Mather, the first Director of the National Park Service. It publishes the monthly *National* Parks Magazine, received by all members.

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

Dues are \$5 annual, \$8 supporting, \$15 sustaining, \$25 contributing, \$150 life with no further dues, and \$1000 patron with no further dues. Contributions and bequests are also needed. Dues in excess of \$5 and contributions are deductible from federal taxable income, and bequests are deductible for federal 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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Mount McKinley: Wilderness Park of the North Country

W E HAD LEFT THE CAR AT THE end of the road down below. I shall never forget our experience My brother and his wife wanted to show me something near Wonder Lake and we walked up the slope before us. At this time Adolph was making a special study of the grizzly bear. As we came out on the high ridge a grizzly was right there, wandering off through the dwarf birch shrubbery. We watched him as he went ambling along in bear fashion; a good view of a grizzly. He had evidently been seeking the blueberries, ripe now and

that day. The bear having disappeared in the distance, we looked at the scene before us, across the wide valley below, to the pure white Denali and the neighboring snowy peaks of the Alaska Range rising high on the horizon. There were some clouds, which always give character to a scene. To be on that ridgetop, to look at what was before us! Can one describe such a scene and such an environment to wander about in? There are not words.

ence on the North American continent.

There were other experiences, close at hand. We became engrossed with the plants, which were now in fruit and acquiring the colors of autumn on their leaves. On this ridgetop many were low-growing, very close to the ground -bearberry, lowbush cranberry, Canadian dogwood, and others. And all had berries, to help feed the indigenous fauna-and what feed!

Wandering about among all that colorful plant life, we all seemed to go off in different directions. I went on to sought by many of the wild creatures— and I shall not try. I can only say a still higher ridge and lay down to and by human Alaskans, too. It was that in my opinion this is the greatest relax and to soak in the natural beauty August and the first autumn colors scene, and the greatest scenic experi- of this far-northern preservation.

Wonder Lake, close to the northern boundary of the park, reflects the shadows of Mount McKinley and the lesser peaks of the Alaska Range. This photograph was taken from a high ridge above the Wonder Lake Ranger Station, and looks nearly south across a vortion of the lake and its surrounding sub-arctic terrain.



While lying there I caught a movement off to one side. I looked carefully and there, from behind a grove of small trees, emerged a caribou. It disappeared behind some bushes, then came again into the open. I watched it until it disappeared behind another hill. Truly this was a living landscape. and as I lay there I felt that I was part of it.

On the hilltop I found myself thinking of many things. Freedom! That bear and that caribou were not restricted in any sense-they could go where they pleased in this big country. The plants, too, were in their natural environment, unhampered by any strictures imposed by man. And I, too, enjoved this kind of natural freedom, able to watch Denali rising there on the horizon. What a place from which to gaze at it, the top of a ridge that belonged in the scene!

The day before I had undertaken a long walk from the other end of Wonder Lake. There I had seen ducks in the little ponds, walked along the road for several miles, stopped here and there at other little ponds to see the birds and the plants and signs showing where several other animals had been, moose and beaver and others. At one place a caribou had crossed the road. Where was he going? Did he know? But the caribou are far wanderers in the Arctic; they are always going somewhere.

I came to the ranger cabin on a hill. The rangers, Stenmark and Larsen, were not at home, but I had a good visit with their wives! I was impressed with what they said, good ideas on subjects that should concern us all. As I continued on, another ranger, Guilmette, caught up with me and took me to Wonder Lake campground. Three campers were getting ready for the night.

Here were two young women who had come from New England. They had never camped out before in their lives. Mr. Guilmette offered to help

them put up their tent, but they refused his kind offer. They said they wanted the experience themselves. I admired the spirit of those girls, who wanted to learn by doing, who wanted to have the camping experience complete.

At this camp the ranger introduced me to a family-a man and his wife and a grown daughter-from Anchorage. This was one of the highlights of my visit, for is it not inspiring to talk with people whose ethics, philosophy, is on an honest and high level?

During those many weeks in Mount McKinley National Park I went into the high country among the mountain peaks, enjoyed the feel of the country among the mountain sheep, the grizzly, the caribou. And as I often walked along the road over Sable and Polychrome Passes, so many people driving by over that simple road would wave their hands and smile at me, or would stop and talk about the animals they had seen, and where they had seen them. One day I was taking pictures of a caribou and when I walked back to the road a woman there spoke to me. I could see she had a warm feeling for the caribou and understood animal behavior.

Another aspect of life in this park impressed me. Charles Travers was a ranger stationed at Toklat River. One day we found his wife and two little daughters hiking in the back country a strictly commercial project, and in and later we saw the paintings Mrs. Travers was making. During a few days of vacation from his regular duties Charlie and another ranger went down the Toklat River on a raft. Two others, in their time off, made a trip back into the high mountains. Some others made a trip down the Nenana River in some kind of craft. The fact that these employees had the impulse to indulge in those esthetic experiences pleased me greatly. They not only met are projecting the reconstruction farthe visitors but they themselves wanted ther out. "Well," someone will say,



Experiences in the Park

to have the same contact with nature. And thereby they had a better understanding of what a national park is for and what it can give the visitor.

I was impressed by the simplicity of the Igloo campground. The outhouses were hidden away in the woods. There were no elaborate electrical appliances-the campers were on their own, no other "conveniences," The campers themselves built a simple little crossing of Igloo Creek, planks laid over rocks protruding above the water. Here in this part of McKinley Park nature in all its glory ruled, for anyone to see and experience.

The other side of the picture of Mount McKinley National Park is that of the prevailing enthusiasm for what the bulldozer can do: the speedwaybuilding craze that has come over this continent has begun to penetrate Alaska also. To show to what extremes modern technology can go, there was once a proposal to build a scientific station of some kind on top of Denali. to be serviced by airplane. We have been struggling for years against the building of a tramway up to the top of Mount San Jacinto in California. As one commercially-minded witness said: "We want a cut on the tourist dollar!'

Another commercial engineering outfit visited Jackson Hole. in Grand Teton Park, and proposed to build a cable tramway across Jenny Lake and up to the top of the Grand Tetona national park. These were all rejected, but it all shows the direction in which the dollar and "comfort" can take us, a step at a time. Now the Bureau of Public Roads is invading Mount McKinley National Park. The old McKinley Park-Wonder Lake gravel road is under construction as a speedway in the park as far as Mount Eielson. The bulldozer is at work in that part of the park, and surveyors

"What of it? There is a road already. Why not make it straight and modern in every way?"

One administrator said: "Just look at the scenery you can view from this wide road!"

Would not that scenery be available from a simple road? And what does a slick speedway do to the viewer? After all, the human race, some part of it at least, is becoming more sensitive. The difference in philosophy I am trying to express is given in an article in *Appalachia*, quoted from "Decadence," by C. E. M. Joad: I might mention, too, one of the signs. In one place, in front of a mass of trees, the first line on the top of a sign says "Drunken Forest." The spruce trees are standing there on a slope, slanted in all directions because of a landslide. But why apply a cheap kind of humor to a natural phenomenon that we should respect and wonder about?

Just recently my friend Marjorie Butler of California wrote in a letter: "Man and his environment are inseparable and if he wants to understand himself he *must* understand his natural



Photograph by Olaus J. Murie

During the past several years the Park Service has been engaged in reconstruction of the McKinley Park highway between McKinley Park and Wonder Lake, a distance of some 88 miles. (See map, page 9.) About 34 miles of this road work has already been accomplished and the cutting and filling, which can be seen for miles in places, has been a subject for criticism. Scale of the cuts in the photograph above may be judged by comparison with the automobile.

"The view which you see from the top of a mountain which you have ascended by a mountain railway is literally different from that which you see if you climb the same mountain in the sweat of your brow, or if it is maintained, as I suppose it might be, that the view is the same, then I must insist that the experience of seeing it is different, different and in the second case, richer and better."

I think this expresses what I mean by seeing a Mount McKinley Park view from a car on a broad speedway. environment, not merely gaze upon one he creates and projects for and from himself."

These people are aware of the problem we have before us. In his "Conservation Ethic" Aldo Leopold wrote, and this is referred to in the Nature Bulletin No. 701 of the Forest Preserve District, near Chicago: "To promote perception is the only true creative part of recreational engineering. . . . Recreational development is a job not of building roads into the lovely country, but of building receptivity into the still unlovely human mind."

And as Robert Mann says in this publication, referring to Leopold: "Therefore, he reasoned, a principal function of administration of recreational areas is to improve the quality of public use."

Some people, everywhere in the world, are working to improve this human perceptivity. This is an example, from *Forest and Bird*, a magazine published in Wellington, New Zealand:

"Our engineers build fine roads but not all roads should be dedicated to speed. No remaining roadside gem should be mutilated without very good reason, and certainly road works within national parks and reserves call for consultation with botanists with knowledge not possessed by the average engineer."

On the Spot Views

And what do certain engineers say? I stopped to talk with the surveyors who were putting out the flags to guide the bulldozer. They were simply following orders. One day I was talking with one of them and he made the remark: "Maybe I am in the wrong kind of work. I would like to be in conservation work, maybe with the Fish and Wildlife Service. Is there an opening there?"

One man on the survey crew said that the ponderous concrete bridges were unsuitable for the park and that pole bridges would be more in keeping with the country. A bridge-builder expressed this same thought, and said that the pole bridge would last fifty or sixty years. The new Savage River concrete bridge is already buckling and will probably need major repair before long. A road surveyor declared that most of the personnel dealing with the road-building think the standards far more than desirable.

And what does some of the visiting public say? A gentleman from Indiana said that he liked the old road, and hoped that the road construction now going on could be stopped. A California tourist decried the new construction; he said that when the high-speed highway is finished he would no longer care to visit McKinley. A visitor pulling a trailer stated that the old road was just right for this area. A couple from Anchorage think the new road is a major mistake and deplored "the Eielson monstrosity" and the "sign-boards."

I have quoted above from several periodicals. What can we learn about the philosophy of appropriate quality? At random I would like to refer to one more quotation.

In his book, *More Lives Than One*, Joseph Wood Krutch says:

"Quite recently a sizable minority in the United States has taken a new interest in conservation and the national parks. It is also supporting the proposal to create wilderness areas which it is hoped may preserve segments of the great continent our ancestors inherited in something near to that pristine condition which is disappearing from the national parks as more and more 'recreational facilities' tend to turn them into what is less a natural area than an amusement park."

The Author's 1952 Visit

In 1952 I visited Mount McKinley Park and was so favorably impressed. In an article in the *Sierra Club Bulletin* for October, 1955, "Return to Denali," I said: "I had a comfortable feeling on this road. The moss, blueberry bushes and dwarf birch came close to the edge. We were not frightening the landscape away from us, as we seem to do on carefully manicured highways. Here, I thought, is a national park that has survived some thirty years in the condition envisioned by its founders."

For years some money-politicians have been urging a road from Wonder Lake over to Mount McKinley—in which case that beautiful scene would be shattered by a line of cars. They have also urged a big hotel at Wonder Lake, right in front of the high mountain and looking down on Wonder Lake.

Some people everywhere, including some in Alaska, are beginning to be more sensitive to beauty, and this movement is growing. The Park Service, instead of being concerned merely with numbers of visitors, with mass recreation as we know it today, could take the lead, in a subtle way, to help that portion of our population which cares to elevate and carry on the sentiment that established the first national park in the world. We pray that we do not forget that humble beginning. There should be a poet's grace even in road building.



Many visitors and even some of the road construction crew feel, according to the author, that reconstruction of the Mount McKinley road is converting it into an over-wide speedway, with long straight stretches (above, near Savage River), longradius curves, and excessive cutting and filling through headlands. The Eielson Visitor Center (below) which commands a view of Mount McKinley across the Thorofare River (front cover, this issue) has been characterized as a "monstrosity."



7

Mysteries of Mount McKinley

By Darwin Lambert

Photographs by Charles J. Ott

HE FIRST HINT THAT AN ICE-covered mountain hidden in the vastness of Alaska might be North America's highest was given by a prospector only sixty-seven years ago. The first white men set foot on its lower slopes in 1902. James Wickersham, adventurous judge who traversed much of Alaska by dog team, led the first effort to climb the mountain, but was stopped by its sheer north face. In 1910 two Alaskan sourdoughs -equipped mostly with self-confidence -conquered the 19,470-foot North Peak, considering it the summit; and in 1913 Archdeacon Hudson Stuck and Harry Karstens led the first climb of the true summit of Mount McKinley, which towers to an elevation of 20.320 feet.

Charles Sheldon, hunter and naturalist, came to the McKinley wilderness in 1906 to study the Dall sheep. Finding the terrain teeming with life and possessing other outstanding qualities, he launched a campaign which culminated in 1917 with the establishment of Mount McKinley National Park by Act of Congress—a vast preservation of more than 3000 square miles.

Since 1923 visitors have been able to reach the park without hiking in —first by way of the Alaska Railroad, gradually with more and more convenience by air, and since 1957 by the Denali Highway, which is still a graveled road. The park is visited annually now by about 18,000 people, and with pending completion of a shorter highway from Fairbanks—later to connect with Anchorage—the annual count could soon reach a hundred thousand.

The mountain may be seen from

hundreds of miles away. Eyes frequently turn to it on clear days in the growing cities of Anchorage and Fairbanks. As have many others, my wife and I first saw it from the University of Alaska Museum, where the skyline is sketched on a window. It was a continuing glow on the horizon, like a cloud after sunset.

We lost it during a full day of driving, but it reappeared some seventy airline miles away as we approached the park on the Denali Highway, just enough massive whiteness and jagged ridge-lines showing through the clouds to convince us it was really there. From the campground near park headquarters it was again hidden, but in the dawn, as we drove westward, it rose again above intervening mountains. glowingly white in a blue sky, appearing, disappearing, appearing again, until from thirty miles away its sheer bulk occupied a third of the viewing glass of our camera. Clouds were being created halfway up, threatening to hide it; so we walked around a tundra lake to use water for photographic reflections while there was time. When we reached Wonder Lake, closest point accessible by car. clouds hid two-thirds of the lofty mass, and by suppertime old Denali-"the high one, home of the sun" in Indian language-was curtained, although light continued for hours on lesser peaks.

Once you have seen the great moun-

Darwin Lambert, newspaperman and conservationist, is editor of *The Daily Alaska Empire* in Juneau, the capital city of the State. tain, it remains the focus of your Mount McKinley National Park experience. Far from the road, distant even after difficult hikes, it nevertheless dominates, visible like a ghost from another planet or lost in mist and storm. You marvel at stories of successful climbs—several were made in 1962 —but you do not approach the glacial ways or the dangerous slopes above 7000 feet—not without long and costly preparations and weeks to spend. It is enough to know the mountain is there.

Recent climbing expeditions have been air-supported to save time and energy. Best approach on foot is via Muldrow Glacier near McGonagall Pass, already more than a dozen miles from highway or regular trail—sixteen airline miles and a week's strenuous effort from the summit, even with the best of luck and weather. Where the mountain is not guarded by extensive "valley glaciers," it is nearly vertical. Avalanches and icefalls are continual threats.

The largest glaciers are on the southern side of the Alaska Range, where moisture from the Pacific is heavy. They reach in a vast "no-man'sland" far beyond the park boundary, carving unknown shapes to be unveiled in an uncertain future. Man makes his approach on the dryer north side, but even here Muldrow Glacier extends thirty-five miles from between the two high peaks to a point overlooked by the Eielson Visitor Center on the park road—an awesome natural exhibit, its lower reaches dark with rocks and vegetation broken by jumbled ice thrust upward during a forward surge that took place during the past decade.



The Mount McKinley National Park visitor's usual introduction to this great Alaska wilderness preservation is by way of McKinley Park Station near the Nenana River, which forms the eastern boundary of the park. The photograph above, taken near McKinley Park Station, shows a portion of the terrain in that vicinity. Park lands are to the right of the river; non-park lands are to the left. The mountains in the background are the Pyramids.

From the snouts of glaciers pour streams gray with silt which form braided rivers with gravel bars between channels, possible to cross on foot at times, but capable of becoming torrents that separate unwary hikers from road and trail. Nature at McKinley is powerfully—sometimes dangerously wild, and caution here is never mistaken for timidity. Attempts to climb the mountain require authorization from the park superintendent, and in some areas visitors are confined to the highway to avoid arousing the resident Toklat grizzlies.

Mount McKinley National Park provides an opportunity to observe large wild animals unequalled in any preservations in the world, save perhaps some of the African parks. Visitors may sometimes leave before the moody mountain emerges from its clouds, but the wildlife experience consistently rewards them. Eight-hour bus tours leave McKinley Park Hotel very early each morning in summer, and passengers typically report seeing moose, grizzlies, Dall sheep, and often wolf, caribou and other mammal species.

Persons who do not join these tours are advised to imitate them. Field glasses are, of course, helpful. We broke camp at 2:30 a.m., and were ahead of the bus most of the sixty-six miles to the Eielson Visitor Center. We drove slowly, with frequent stops to search forests, tundra and rocky slopes.

Our special fortune that morning was the sighting of Dall sheep, several groups of a dozen or more. We watched lambs playing, and one ram with slender, curved horns clearly visible to the naked eye stood fifteen minutes on a cliff, staring back at us. These wild, white sheep frequent the low Outside Range, feeding on windswept, grassy slopes in winter and bearing young in the shelter of rock formations in May. When lambs are able to travel, the sheep leave the Outside Range and cross the valley traversed by the road to feed in lower parts of the main Alaska Range. We saw them on both sides of the road in late July.

The Alaska moose is the largest of the deer family, and bulls may weigh as much as 1500 pounds with an antler spread of more than five feet. The big mammals live in the spruce forest, but are often seen in summer feeding on the tundra. They cool off and discourage biting insects by taking to the water. Their main food is willow, but they may sometimes be seen in lakes or ponds with heads submerged, or standing with mouths full of waterplants, chins dripping.

We learned patience in our search for Toklat grizzlies. The sightseeing bus parked beside us at one of the overlooks, and passengers reported seeing grizzlies, some near enough to photograph. But, although we strained our eyes on patches of ripening berries in endless reaches of tundra, we could not be sure that distant bumps were anything but bushes or boulders. We camped at Wonder Lake until "old weather-maker McKinley" worked up a drenching rain. Then, driving back toward park headquarters, we stopped on Sable Pass (advised by Dr. Adolph Murie, who was continuing his wildlife studies there) and found the right bumps—a blond mother and two blond cubs asleep in the rain! As we watched, the cubs awakened and began to nurse, and it came home to us that the creatures of the wild live constantly in

The Teklanika River, in the eastern section of Mount McKinley Park, is a typical glacial stream, fed by the ice and snow of the Alaska Range in the distant background.



Insert 4-63 Report of the Advisory Board on Wildlife Management

Editorial Comment on the Leopold Report

In this issue we reprint, immediately after submission, as of March 4, 1963, the long-anticipated report on Wildlife Management in the National Parks prepared by the Advisory Board on Wildlife Management, appointed last spring by Interior Secretary Udall, and composed of Dr. A. Starker Leopold, chairman; Dr. Stanley A. Cain; Dr. Clarence Cottam; Dr. Ira N. Gabrielson; and Mr. Thomas L. Kimball.

We are gratified that the recommendations support the century-old policy of management of wildlife populations in the national parks and monuments by professional park personnel, and not by means of recreational hunting. As our readers are aware, this Association has led the fight for the defense of this traditional policy throughout the conflict which has raged against it during the last three years.

Not only are the recommendations applicable to all existing national parks and monuments, but they extend to all new national parks and monuments as well. The national park system, says the report, cannot be operated under two sets of ground rules.

The report notes that where hunting has been well established in areas considered for inclusion in new national parks and monuments, it may as a matter of political expedience be necessary to exclude them from the park and manage them as national recreation areas; we comment only that perhaps such land might best be preserved in some cases as wilderness or primitive areas, protected against roads, but open to hunting. The proposal is essentially in harmony with this Association's insistence that all new parks and monuments of full national park caliber should be managed on the no-hunting principle.

The proposals with respect to national recreation areas are well formulated. We interpret them as retaining single-handed control over hunting by the National Park Service, but as permitting hunting in accordance with State regulations at times and places within these areas which will minimize conflict with other protective and recreational uses. This is the pattern which has been emerging in the National Seashores and with which this Association has concurred.

And yet, gratifying as these conclusions undoubtedly are to this Association, the method by which the report approaches its problem is its most striking feature.

This nation has been cursed throughout its recent history by a pseudo-pragmatism in its political and economic life which has denied the desirability, even the possibility, of the formulation of social goals. The Leopold report begins with a declaration of goals, followed by an analysis of policy, succeeded in turn by a discussion of methods.

Central to the theory of the report is the following proposition:

"As a primary goal, we would recommend that the biotic

associations within each park be maintained, or where necessary, recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man."

This is not a philosophy of non-interference, because all the parks, no matter how large, and certainly the small ones, have a history of interference, and are subject to continuous pressures from the proximate environment, which make their present equilibria artificial.

The report cites examples: the absence of antelope on Antelope Flats in Grand Teton National Park; the dangerous growth of understory in the Sequoia groves of the Sierra, threatening catastrophic fire.

The conservation and non-impairment clauses of the National Parks Act, cited in the first paragraph of the report, most emphatically do not require, nor indeed do they permit, a non-interference policy where the forces of civilization have produced or are producing a degeneration of the original natural scene.

A readjustment of National Park Service policy in harmony with the basic theory of the National Parks Act and the central proposition of the Leopold report is a thing devoutly to be desired.

It may be stimulating to reflect upon the implications of such a restorative policy. Quite clearly, the wildlife populations of the parks must be reduced to and held within the carrying capacity of the land; indeed, where they have exceeded this capacity in the past, they must be reduced below ultimate capacity in order to permit full regeneration. There is reason to believe that management of ungulates in Zion, Acadia, and perhaps elsewhere, should be intensified immediately; laxity in the past helped arouse the recent conflict, and must not continue. Incongruous facilities, such as golf courses, ski lifts, and motorboat marinas, as the report notes, should go. Above all, the road building should be curbed, and if too many tourists crowd the roads, visitation must be limited.

The Secretary's Advisory Board has rendered a signal public service in undertaking this vital study and submitting these cogent conclusions and recommendations. All segments of the conservation movement, hunters and protectionists alike, may now hope to avoid a deepening and destructive conflict. This report should settle the problem of hunting in the national parks and permit conservationists to get on with all the other vital business for which they are responsible.

On the basis of the official policy statements of this Association, formulated and disseminated over the years, we are happy to endorse the report, and to urge the Secretary of the Interior to approve it and make provision for its implementation.

> ANTHONY WAYNE SMITH Executive Secretary and General Counsel

Report of the Advisory Board on Wildlife Management (The Leopold Report)

Historical

IN THE CONGRESSIONAL ACT OF 1916 which created the National Park Service, preservation of native animal life was clearly specified as one of the purposes of the parks. A frequently quoted passage of the Act states ". . . which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

In implementing this Act, the newly formed Park Service developed a philosophy of wildlife *protection*, which in that era was indeed the most obvious and immediate need in wildlife conservation. Thus the parks were established as refuges, the animal populations were protected from hunting and their habitats were protected from wildfire. For a time predators were controlled to protect the "good" animals from the "bad" ones, but this endeavor mercifully ceased in the 1930's. On the whole, there was little major change in the Park Service practice of wildlife managment during the first 40 years of its existence.

During the same era, the concept of wildlife management evolved rapidly among other agencies and groups concerned with the production of wildlife for recreational hunting. It is now an accepted truism that maintenance of suitable habitat is the key to sustaining animal populations, and that protection, though it is important, is not of itself a substitute for habitat.

Moreover, habitat is not a fixed or stable entity that can be set aside and preserved behind a fence, like a cliff dwelling or a petrified tree. Biotic communities change through natural stages of succession. They can be changed deliberately through manipulation of plant and animal populations. In recent years the National Park Service has broadened its concept of wildlife conservation to provide for purposeful management of plant and animal communities as an essential step in preserving wildlife resources ". . . unimpaired for the enjoyment of future generations." In a few parks active manipulation of habitat is being tested, as for example in the Everglades where controlled burning is now used experimentally to maintain the open glades and piney woods with their interesting animal and plant life. Excess populations of grazing ungulates are being controlled in a number of parks to preserve the forage plants on which the animals depend. The question already has been posed-how far should the National Park Service go in utilizing the tools of management to maintain wildlife populations?

The Concept of Park Management

The present report proposes to discuss wildlife management in the national parks in terms of three questions which shift emphasis progressively from the general to the specific:

1) What should be the goals of wildlife management in the national parks?

2) What general policies of management are best adapted to achieve the pre-determined goals?

3) What are some of the *methods* suitable for on-the-ground implementation of the policies?

It is acknowledged that this Advisory Board was requested by the Secretary of the Interior to consider particularly one of the methods of management, namely, the procedure of removing excess ungulates from some of the parks. We feel that this specific question can only be viewed objectively in the light of goals and operational policies, and our report is framed accordingly. In speaking of national parks we refer to the whole system of parks and monuments: national recreation areas are discussed briefly near the end of the report.

As a prelude to presenting our thoughts on the goals, policies, and methods of managing wildlife in the parks of the United States we wish to guote in full a brief report on "Management of National Parks and Equivalent Areas" which was formulated by a committee of the First World Conference on National Parks that convened in Seattle in July, 1962. The committee consisted of 15 members of the Conference, representing eight nations; the chairman was François Bourlière of France. In our judgment this report suggests a firm basis for park management. The statement of the committee follows:

"1. Management is defined as any activity directed toward achieveing or maintaining a given condition in plant and/or animal populations and/or habitats in accordance with the conservation plan for the area. A prior definition of the purposes and objectives of each park is assumed.

Management may involve active manipulation of the plant and animal communities, or protection from modification or external influences.

2. Few of the world's parks are large enough to be in fact selfregulatory ecological units: rather, most are ecological islands subject to direct or indirect modification by activities and conditions in the surrounding areas. These influences may involve such factors as immigration and/or emigration of animal and plant life, changes in the fire regime, and alterations in the surface or subsurface water.

3. There is no need for active modification to maintain large examples of the relatively stable "climax" communities which under protection perpetuate themselves indefinitely. Examples of such communities include large tracts of undisturbed rain-forest, tropical mountain paramos, and Arctic tundra.

4. However, most biotic communities are in a constant state of change due to natural or man-caused processes of ecological succession. In these "successional" communities it is necessary to manage the habitat to achieve or stabilize it at a desired stage. For example, fire is an essential management tool to maintain East African open savanna or American prairie.

5. Where animal populations get out of balance with their habitat and threaten the continued existence of a desired environment, population control becomes essential. This principle applies, for example, in situations where ungulate populations have exceeded the carrying capacity of their habitat through loss of predators, immigration from surrounding areas, or compression of normal migratory patterns. Specific examples include excess populations of elephants in some African parks and of ungulates in some mountain parks.

6. The need for management, the feasibility of management methods, and evaluation of results must be based upon current and continuing scientific research. Both the research and management itself should be undertaken only by qualified personnel. Research, management planning, and execution must take into account, and if necessary regulate, the human uses for which the park is intended.

7. Management based on scientific research is, therefore, not only desirable but often essential to maintain some biotic communities in accordance with the conservation plan of a national park or equivalent area."

The Goal of Park Management in the United States

Item 1 in the report just quoted specifies that "a prior definition of the purposes and objectives of each park is assumed." In other words, the goal must first be defined.

As a primary goal, we would recommend that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man. A national park should represent a vignette of primitive America.

The implications of this seemingly simple aspiration are stupendous. Many of our national parks-in fact most of them -went through periods of indiscriminate logging, burning, livestock grazing, hunting and predator control. Then they entered the park system and shifted abruptly to a regime of equally unnatural protection from lightning fires, from insect outbreaks, absence of natural controls of ungulates, and in some areas elimination of normal fluctuations in water levels. Exotic vertebrates, insects, plants, and plant diseases have inadvertently been introduced. And of course lastly there is the factor of human use-of roads and trampling and camp grounds and pack stock. The resultant biotic associations in many of our parks are artifacts, pure and simple. They represent a complex ecologic history but they do not necessarily represent primitive America.

Restoring the primitive scene is not done easily nor can it be done completely. Some species are extinct. Given time, an eastern hardwood forest can be regrown to maturity but the chestnut will be missing and so will the roar of pigeon wings. The colorful drapanid finches are not to be heard again in the lowland forests of Hawaii, nor will the jack-hammer of the ivory-bill ring in southern swamps. The wolf and grizzly bear cannot readily be reintroduced into ranching communities, and the factor of human use of the parks is subject only to regulation, not elimination. Exotic plants, animals, and diseases are here to stay. All these limitations we fully realize. Yet, if the

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goal cannot be fully achieved it can be approached. A reasonsimple formula of protection may be exactly what is needed to able illusion of primitive America could be recreated, using maintain such climax associations as arctic-alpine heath, the the utmost in skill, judgment, and ecologic sensitivity. This in rain forests of Olympic peninsula, or the Joshua trees and our opinion should be the objective of every national park and saguaros of southwestern deserts. On the other hand, grasslands, savannas, aspen, and other successional shrub and tree monument. associations may call for very different treatment. Reluctance To illustrate the goal more specifically, let us cite some cases. to undertake biotic management can never lead to a realistic A visitor entering Grand Teton National Park from the south drives across Antelope Flats. But there are no antelope. No presentation of primitive America, much of which supported successional communities that were maintained by fires, floods. one seems to be asking the question-why aren't there? If hurricanes, and other natural forces.

the mountain men who gathered here in rendezvous fed their squaws on antelope, a 20th century tourist at least should be able to see a band of these animals. Finding out what aspect of the range needs rectifying, and doing so, would appear to be a primary function of park management.

When the forty-niners poured over the Sierra Nevada into California, those that kept diaries spoke almost to a man of the wide-spaced columns of mature trees that grew on the lower western slope in gigantic magnificence. The ground was a grass parkland, in springtime carpeted with wildflowers. Deer and bears were abundant. Today much of the west slope is a dog-hair thicket of young pines, white fir, incense cedar. and mature brush-a direct function of overprotection from natural ground fires. Within the four national parks-Lassen. Yosemite, Sequoia, and Kings Canyon-the thickets are even more impenetrable than elsewhere. Not only is this accumulation of fuel dangerous to the giant sequoias and other mature trees but the animal life is meager, wildflowers are sparse, and to some at least the vegetative tangle is depressing, not uplifting. Is it possible that the primitive open forest could be restored, at least on a local scale? And if so, how? We cannot offer an answer. But we are posing a question to which there should be an answer of immense concern to the National Park Service.

The scarcity of bighorn sheep in the Sierra Nevada reproad systems must be rigidly prescribed as to extent and design. resents another type of management problem. Though they Roadless wilderness areas should be permanently zoned. The have been effectively protected for nearly half a century, there goal, we repeat, is to maintain or create the mood of wild are fewer than 400 bighorns in the Sierra. Two-thirds of them America. We are speaking here of restoring wildlife to enare found in summer along the crest which lies within the hance this mood, but the whole effect can be lost if the parks eastern border of Sequoia and Kings Canvon National Parks. are overdeveloped for motorized travel. If too many tourists Obviously, there is some shortcoming of habitat that precludes crowd the roadways, then we should ration the tourists rather further increase in the population. The high country is still than expand the roadways. recovering slowly from the devastation of early domestic sheep Additionally in this connection, it seems incongruous that grazing so graphically described by John Muir. But the present limitation may not be in the high summer range at all but there should exist in the national parks mass recreation facilities such as golf courses, ski lifts, motorboat marinas, and rather along the eastern slope of the Sierra where the bighorns winter on lands in the jurisdiction of the Forest Service. These other extraneous developments which completely contradict the management goal. We urge the National Park Service to areas are grazed in summer by domestic livestock and large numbers of mule deer, and it is possible that such competitive reverse its policy of permitting these non-conforming uses. and to liquidate them as expeditiously as possible (painful as use is adversely affecting the bighorns. It would seem to us that the National Park Service might well take the lead in this will be to concessionaires). Above all other policies, the studying this problem and in formulating cooperative managemaintenance of naturalness should prevail. ment plans with other agencies even though the management Another major policy matter concerns the research which problem lies outside the park boundary. The goal, after all, is must form the basis for all management programs. The agency to restore the Sierra bighorn. If restoration is achieved in the best fitted to study park management problems is the National Sequoia-Kings Canyon region, there might follow a program of Park Service itself. Much help and guidance can be obtained re-introduction and restoration of bighorns in Yosemite and from ecologic research conducted by other agencies, but the Lassen National Parks, and Lava Beds National Monument. objectives of park management are so different from those of within which areas this magnificent native animal is presently state fish and game departments, the Forest Service, etc., as to extinct. We hope that these examples clarify what we mean demand highly skilled studies of a very specialized nature. Management without knowledge would be a dangerous policy by the goal of park management. indeed. Most of the research now conducted by the National **Policies of Park Management** Park Service is oriented largely to interpretive functions rather The major policy change which we would recommend to the than to management. We urge the expansion of the research National Park Service is that it recognize the enormous comactivity in the Service to prepare for future management and plexity of ecologic communities and the diversity of managerestoration programs. As models of the type of investigation ment procedures required to preserve them. The traditional, that should be greatly accelerated we cite some of the recent

A second statement of policy that we would reiterate-and this one conforms with present Park Service standards-is that management be limited to native plants and animals. Exotics have intruded into nearly all of the parks but they need not be encouraged, even those that have interest or ecologic values of their own. Restoration of antelope in Jackson Hole, for example, should be done by managing native forage plants, not by planting crested wheat grass or plots of irrigated alfalfa. Gambel quail in a desert wash should be observed in the shade of a mesquite, not a tamarisk. A visitor who climbs a volcano in Hawaii ought to see mamane trees and silverswords, not goats.

Carrying this point further, observable artificiality in any form must be minimized and obscured in every possible way. Wildlife should not be displayed in fenced enclosures: this is the function of a zoo, not a national park. In the same category is artificial feeding of wildlife. Fed bears become bums, and dangerous. Fed elk deplete natural ranges. Forage relationships in wild animals should be natural. Management may at times call for the use of the tractor, chain-saw, rifle, or flamethrower but the signs and sounds of such activity should be hidden from visitors insofar as possible. In this regard, perhaps the most dangerous tool of all is the roadgrader. Although the American public demands automotive access to the parks. studies of elk in Yellowstone and of bighorn sheep in Death Valley. Additionally, however, there are needed equally critical appraisals of ecologic relationships in various plant associations and of many lesser organisms such as azaleas, lupines, chipmunks, towhees, and other non-economic species.

In consonance with the above policy statements, it follows logically that every phase of management itself be under the full jurisdiction of biologically trained personnel of the Park Service. This applies not only to habitat manipulation but to all facets of regulating animal populations. Reducing the numbers of elk in Yellowstone or of goats on Haleakala Crater is part of an overall scheme to preserve or restore a natural biotic scene. The purpose is single-minded. We cannot endorse the view that responsibility for removing excess game animals be shared with State fish and game departments whose primary interest would be to capitalize on the recreational value of the public hunting that could thus be supplied. Such a proposal imputes a multiple use concept of park management which was never intended, which is not legally permitted, nor for which can we find any impelling justification today.

Purely from the standpoint of how best to achieve the goal of park management, as here defined, unilateral administration directed to a single objective is obviously superior to divided responsibility in which secondary goals, such as recreational hunting, are introduced. Additionally, uncontrolled public hunting might well operate in opposition to the goal, by removing roadside animals and frightening the survivors, to the end that public viewing of wildlife would be materially impaired. In one national park, namely Grand Teton, public hunting was specified by Congress as the method to be used in controlling elk. Extended trial suggests this to be an awkward administrative tool at best.

Since this whole matter is of particular current interest it will be elaborated in a subsequent section on methods.

Methods of Habitat Management

It is obviously impossible to mention in this brief report all the possible techniques that might be used by the National Park Service in manipulating plant and animal populations. We can, however, single out a few examples. In so doing, it should be kept in mind that the total area of any one park, or of the parks collectively, that may be managed intensively is a very modest part indeed. This is so for two reasons. First, critical areas which may determine animal abundance are often a small fraction of total range. One deer study on the west slope of the Sierra Nevada, for example, showed that important winter range, which could be manipulated to support the deer, constituted less than two percent of the year-long herd range. Roadside areas that might be managed to display a more varied and natural flora and fauna can be rather narrow strips. Intensive management, in short, need not be extensive to be effective. Secondly, manipulation of vegetation is often exorbitantly expensive. Especially will this be true when the objective is to manage "invisibly"-that is, to conceal the signs of management. Controlled burning is the only method that may have extensive application.

The first step in park management is historical research, to ascertain as accurately as possible what plants and animals and biotic associations existed originally in each locality. Much of this has been done already.

A second step should be ecologic research on plant-animal relationships leading to formulation of a management hypothesis.

Next should come small-scale experimentation to test the hypothesis in practice. Experimental plots can be situated out of sight of roads and visitor centers.

Lastly, application of tested management methods can be

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undertaken on critical areas.

By this process of study and pre-testing, mistakes can be minimized. Likewise, public groups vitally interested in park management can be shown the results of research and testing before general application, thereby eliminating possible misunderstanding and friction.

Some management methods now in use by the National Park Service seem to us potentially dangerous. For example, we wish to raise a serious question about the mass application of insecticides in the control of forest insects. Such application may (or may not) be justified in commercial timber stands, but in a national park the ecologic impact can have unanticipated effects on the biotic community that might defeat the overall management objective. It would seem wise to curtail this activity, at least until research and small-scale testing have been conducted.

Of the various methods of manipulating vegetation, the controlled use of fire is the most "natural" and much the cheapest and easiest to apply. Unfortunately, however, forest and chaparral areas that have been completely protected from fire for long periods may require careful advance treatment before even the first experimental blaze is set. Trees and mature brush may have to be cut, piled, and burned before a creeping ground fire can be risked. Once fuel is reduced, periodic burning can be conducted safely and at low expense. On the other hand, some situations may call for a hot burn. On Isle Royale, moose range is created by periodic holocausts that open the forest canopy. Maintenance of the moose population is surely one goal of management of Isle Royale.

Other situations may call for the use of the bulldozer, the disc harrow, or the spring-tooth harrow to initiate desirable changes in plant succession. Buffalo wallows on the American prairie were the propagation sites of a host of native flowers and forbs that fed the antelope and the prairie chicken. In the absence of the great herds, wallows can be simulated.

Artificial reintroduction of rare native plants is often feasible. Overgrazing in years past led to local extermination of many delicate perennials such as some of the orchids. Where these are not reappearing naturally they can be transplanted or cultured in a nursery. A native plant, however, small and inconspicuous, is as much a part of the biota as a redwood tree or a forage species for elk.

In essence, we are calling for a set of ecologic skills unknown in this country today. Americans have shown a great capacity for degrading and fragmenting native biotas. So far we have not exercised much imagination or ingenuity in rebuilding damaged biotas. It will not be done by passive protection alone.

Control of Animal Populations

Good park management requires that ungulate populations be reduced to the level that the range will carry in good health and without impairment to the soil, the vegetation, or to habitats of other animals. This problem is worldwide in scope, and includes non-park as well as park lands. Balance may be achieved in several ways.

(a) Natural predation. Insofar as possible, control through natural predation should be encouraged. Predators are now protected in the parks of the United States, although unfortunately they were not in the early years and the wolf, grizzly bear, and mountain lion became extinct in many of the national parks. Even today populations of large predators, where they still occur in the parks, are kept below optimal level by programs of predator control applied outside the park boundaries. Although the National Park Service has attempted to negotiate with control agencies of federal and local governments for the maintenance of buffer zones around the parks where predators are not subject to systematic control, these negotiations have been only partially successful. The effort to protect large predators in and around the parks should be greatly intensified. At the same time, it must be recognized that predation alone can seldom be relied upon to control ungulate numbers, particularly the larger species such as bison, moose, elk, and deer; additional artificial controls frequently are called for.

(b) Trapping and transplanting. Traditionally in the past the National Park Service has attempted to dispose of excess ungulates by trapping and transplanting. Since 1892, for example, Yellowstone National Park alone has supplied 10.478 elk for restocking purposes. Many of the elk ranges in the western United States have been restocked from this source. Thousands of deer and lesser numbers of antelope, bighorns, mountain goats, and bison also have been moved from the parks. This program is fully justified so long as breeding stocks are needed. However, most big game ranges of the United States are essentially filled to carrying capacity, and the cost of a continuing program of trapping and transplanting cannot be sustained solely on the basis of controlling populations within the parks. Trapping and handling of a big game animal usually costs from \$50 to \$150 and in some situations much more. Since annual surpluses will be produced indefinitely into the future, it is patently impossible to look upon trapping as a practical plan for disposal.

(c) Shooting excess animals that migrate outside the parks. Many park herds are migratory and can be controlled by public hunting outside the park boundaries. Especially is this true in mountain parks which usually consist largely of summer game range with relatively little winter range. Effective application of this form of control frequently calls for special regulations, since migration usually occurs after normal hunting dates. Most of the Western States have cooperated with the National Park Service in scheduling late hunts for the specific purpose of reducing park game herds, and in fact most excess game produced in the parks is so utilized. This is by far the best and the most widely applied method of controlling park populations of ungulates. The only danger is that migratory habits may be eliminated from a herd by differential removal, which would favor survival of non-migratory individuals. With care to preserve, not eliminate, migratory traditions, this plan of control will continue to be the major form of herd regulation in national parks.

(d) Control by shooting within the parks. Where other methods of control are inapplicable or impractical, excess park ungulates must be removed by killing. As stated above in the discussion of park policy, it is the unanimous recommendation of this Board that such shooting be conducted by competent personnel, under the sole jurisdiction of the National Park Service, and for the sole purpose of animal removal, not recreational hunting. If the magnitude of a given removal program requires the services of additional shooters beyond regular Park Service personnel, the selection, employment, training. deputization, and supervision of such additional personnel should be entirely the responsibility of the National Park Service. Only in this manner can the primary goal of wildlife management in the parks be realized. A limited number of expert riflemen, properly equipped and working under centralized direction, can selectively cull a herd with a minimum of disturbance to the surviving animals or to the environment. General public hunting by comparison is often non-selective and grossly disturbing.

Moreover, the numbers of game animals that must be removed annually from the parks by shooting is so small in relation to normally hunted populations outside the parks as to constitute a minor contribution to the public bag, even if it

were so utilized. All of these points can be illustrated in the example of the north Yellowstone elk population which has been a focal point of argument about possible public hunting in the national parks.

(e) The case of Yellowstone. Elk summer in all parts of Yellowstone Park and migrate out in nearly all directions, where they are subject to hunting on adjoining public and private lands. One herd, the so-called Northern Elk Herd. moves only to the vicinity of the park border where it may winter largely inside or outside the park, depending on the severity of the winter. This herd was estimated to number 35,000 animals in 1914 which was far in excess of the carrying capacity of the range. Following a massive die-off in 1919-20 the herd has steadily decreased. Over a period of 27 years, the National Park Service removed 8,825 animals by shooting and 5,765 by live-trapping; concurrently, hunters took 40,745 elk from this herd outside the park. Yet the range continued to deteriorate. In the winter of 1961-62 there were approximately 10,000 elk in the herd and the carrying capacity of the winter range was estimated at 5,000. So the National Park Service at last undertook a definitive reduction program, killing 4.283 elk by shooting, which along with 850 animals removed in other ways (hunting outside the park, trapping, winter kill) brought the herd down to 5.725 as censused from helicopter. The carcasses of the elk were carefully processed and distributed to Indian communities throughout Montana and Wyoming: so they were well used. The point at issue is whether this same reduction could or should have been accomplished by public hunting.

In autumn during normal hunting season the elk are widely scattered through rough inaccessible mountains in the park. Comparable areas, well stocked with elk, are heavily hunted in adjoining national forests. Applying the kill statistics from the forests to the park, a kill of 200-400 elk might be achieved if most of the available pack stock in the area were used to transport hunters within the park. Autumn hunting could not have accomplished the necessary reduction.

In mid-winter when deep snow and bitter cold forced the elk into lower country along the north border of the park, the National Park Service undertook its reduction program. With snow vehicles, trucks, and helicopters they accomplished the unpleasant job in temperatures that went as low as -40° F. Public hunting was out of the question. Thus, in the case most bitterly argued in the press and in legislative halls, reduction of the herd by recreational hunting would have been a practical impossibility, even if it had been in full conformance with park management objectives.

From now on, the annual removal from this herd may be in the neighborhood of 1,000 to 1,800 head. By January 31, 1963, removals had totaled 1,300 (300 shot outside the park by hunters, 600 trapped and shipped, and 406 killed by park rangers). Continued special hunts in Montana and other forms of removal will yield the desired reduction by spring. The required yearly maintenance kill is not a large operation when one considers that approximately 100,000 head of big game are taken annually by hunters in Wyoming and Montana.

(f) Game control in other parks. In 1961-62, excluding Yellowstone elk, there were approximately 870 native animals transplanted and 827 killed on 18 national parks and monuments. Additionally, about 2,500 feral goats, pigs and burros were removed from three areas. Animal control in the park system as a whole is still a small operation. It should be emphasized, however, that removal programs have not in the past been adequate to control ungulates in many of the parks. Future removals will have to be larger and in many cases repeated annually. Better management of wildlife habitat will naturally

produce larger annual surpluses. But the scope of this phase of established parks. It would seem awkward indeed to operate of park operation will never be such as to constitute a large a national park system under two sets of ground rules. On the facet of management. On the whole, reductions will be small other hand, portions of several proposed parks are so firmly in relation to game harvests outside the parks. For example, established as traditional hunting grounds that impending closure of hunting may preclude public acceptance of park from 50 to 200 deer a year are removed from a problem area in Seguoia National Park; the deer kill in California is 75,000 status. In such cases it may be necessary to designate core areas as national parks in every sense of the word, establishing and should be much larger. In Rocky Mountain National Park protective buffer zones in the form of national recreation areas 59 elk were removed in 1961-62 and the trim should perhaps be 100 per year in the future; Colorado kills over 10,000 elk where hunting is permitted. Perhaps only through comproper year on open hunting ranges. In part, this relates to the mises of this sort will the park system be rounded out. small area of the national park system, which constitutes only Summary 3.9 percent of the public domain; hunting ranges under the The goal of managing the national parks and monuments jurisdiction of the Forest Service and Bureau of Land Manshould be to preserve, or where necessary to recreate, the agement make up approximately 70 percent.

In summary, control of animal populations in the national parks would appear to us to be an integral part of park management, best handled by the National Park Service itself. In this manner excess ungulates have been controlled in the national parks of Canada since 1943, and the same principle is being applied in the parks of many African countries. Selection of personnel to do the shooting likewise is a function of the Park Service. In most small operations this would logically mean skilled rangers. In larger removal programs, there might be included additional personnel, selected from the general public, hired and deputized by the Service or otherwise engaged, but with a view to accomplishing a task, under strict supervision and solely for the protection of park values. Examples of some potentially large removal programs where expanded crews may be needed are mule deer populations on plateaus fringing Dinosaur National Monument and Zion National Park (west side), and white-tailed deer in Acadia National Park.

Wildlife Management on National Recreation Areas

By precedent and logic, the management of wildlife re-Most ungulate populations within the parks migrate seasonally outside the park boundaries where excess numbers can sources on the national recreation areas can be viewed in a be removed by public hunting. In such circumstances the Navery different light than in the park system proper. National tional Park Service should work closely with State fish and recreation areas are by definition multiple use in character as regards allowable types of recreation. Wildlife management game departments and other interested agencies in conducting the research required for management and in devising cocan be incorporated into the operational plans of these areas with public hunting as one objective. Obviously, hunting must operative management programs. be regulated in time and place to minimize conflict with other Excess game that does not leave a park must be removed. uses, but it would be a mistake for the National Park Service Trapping and transplanting has not proven to be a practical to be unduly restrictive of legitimate hunting in these areas. method of control, though it is an appropriate source of breed-Most of the existing national recreation areas are federal holding stock as needed elsewhere. ings surrounding large water impoundments; there is little Direct removal by killing is the most economical and efpotentiality for hunting. Three national seashore recreational fective way of regulating ungulates within a park. Game reareas on the East Coast (Hatteras, Cape Cod, and Padre moval by shooting should be conducted under the complete Island) offer limited waterfowl shooting. But some of the new jurisdiction of qualified park personnel and solely for the purareas being acquired or proposed for acquisition will offer pose of reducing animals to preserve park values. Recreational substantial hunting opportunity for a variety of game species. hunting is an inappropriate and non-conforming use of the This opportunity should be developed with skill, imagination. national parks and monuments. and (we would hopefully suggest) with enthusiasm. Most game reduction programs can best be accomplished by

On these areas as elsewhere, the key to wildlife abundance is regular park employees. But as removal programs increase a favorable habitat. The skills and techniques of habitat in size and scope, as well may happen under better wildlife manipulation applicable to parks are equally applicable on the management, the National Park Service may find it adrecreation areas. The regulation of hunting, on such areas as vantageous to employ or otherwise engage additional shooters are deemed appropriate to open for such use, should be in from the general public. No objection to this procedure is accord with prevailing State regulations. foreseen so long as the selection, training, and supervision of shooting crews is under rigid control of the Service and the New National Parks culling operation is made to conform to primary park goals.

A number of new national parks are under consideration. Recreational hunting is a valid and potentially important One of the critical issues in the establishment of new parks use of national recreation areas, which are also under juriswill be the manner in which the wildlife resources are to be diction of the National Park Service. Full development of handled. It is our recommendation that the basic objectives hunting opportunities on these areas should be provided by and operating procedures of new parks be identical with those the Service. + + +

ecologic scene as viewed by the first European visitors. As part of this scene, native species of wild animals should be present in maximum variety and reasonable abundance. Protection alone, which has been the core of Park Service wildlife policy. is not adequate to achieve this goal. Habitat manipulation is helpful and often essential to restore or maintain animal numbers. Likewise, populations of the animals themselves must sometimes be regulated to prevent habitat damage; this is especially true of ungulates.

Active management aimed at restoration of natural communities of plants and animals demands skills and knowledge not now in existence. A greatly expanded research program, oriented to management needs, must be developed within the National Park Service itself. Both research and the application of management methods should be in the hands of skilled park personnel.

Insofar as possible, animal populations should be regulated by predation and other natural means. However, predation cannot be relied upon to control the populations of the larger ungulates, which sometimes must be reduced artificially.

Sand The VI

nature's weather. Grizzlies may be anywhere in the park except on ice-covered heights, but they live mostly among the low bushes and other plants of the tundra which provide the bulk of their food.

A week before our visit, seven thousand barren-ground caribou migrated through the park, following their traditional trails to summer feeding grounds. Many visitors photographed them at close range. Too late for the great herds, we saw our caribou near Wonder Lake where a few usually are to be found. These great deer, "nomads of the North," are at home on arctic and sub-arctic tundra but constantly move to fresh feeding grounds, sometimes over long distances.

Thirty-five species of mammals live in the park, but birds mostly come and go with the seasons. The jaeger arrives in warm weather from its winter home near Japan, and other species, too, come from great distances. Gulls around Eielson Visitor Center sought scraps from lunches when we were there. Ptarmigan, Canada jays, magpies, and chickadees, however, remain through the frigid winters. More than 120 species of birds nest in the park, and in season their varied songs enliven forest and tundra. Ducks, geese and loons, eagles, hawks and owls, terns and plovers are also present.

Basic to animal life, as well as to the character of the scenery, is the variety of plant life which somehow flourishes in the harsh, sub-arctic climate. There were more trees and shrubs than we expected to find (thirty species of willows alone) and hundreds of flowering plants, many of them showy and many of which quickly develop berries. There are tiny azaleas, Alaska's much-loved forget-me-nots, pinks, varieties of wild peas, prominent blue lupine, wild roses, great fireweeds (so prevalent in much of Alaska) which brighten gravel bars and roadsides.

Tundra and Forest

The tundra—really two kinds, the lower, wet tundra, and the higher, dryer tundra—is a study in itself, with countless surprises for those who will

A scene from Polychrome Pass, a colorful area of intrusive rocks whose bright hues contrast sharply with the sedimentary rock-series of the surrounding countryside.





Largest mammal of Mount McKinley Park is the Alaska moose, a dweller of the spruce forests which may now and then wander out into the tundra country in search of food. Moose in the photograph at the left are both males; they may attain weights of up to 1500 pounds and sport antlers spreading to five feet or more.

Another sturdy park inhabitant is the Toklat grizzly bear, predominantly an animal of the open tundra where plants and plant-roots form a substantial part of its diet, in season. The Toklat grizzly is not particular as to its menu, however, and will on occasion dig out mice, squirrels and marmots; or engage in futile pursuit of the Dall sheep and the caribou.



examine it closely. Great stretches of earth are covered with living carpets into which your feet sink to the ankles, or deeper. Colorful lichens and mosses are beautiful, and some varieties of lichens provide food for wildlife, especially for the caribou.

Forests, seemingly large as you explore them, are but small parts of the vast McKinley landscape. Permafrost underlies much of the land, restricting the growth of trees, although some brave the shallow soil with spreading roots. Whole sections of forest—where ground support is slight, or where soil has slipped on permafrost—are sometimes slanted at unusual angles. White spruce grows along rivers and up sheltered slopes to timberline, which is at 3000 feet here. Scrawny black spruce grows in low, wetter areas, and cottonwoods are found in occasional groves near rivers where permafrost is absent. Concentrations of willows, aspen, alder and white birch are usually near streams. Frost in late August brings brilliant color not only to deciduous forests and groves but out on the tundra, where dwarf birch is prominent and many smaller plants turn red, yellow or orange.

We walked in the rain from Wonder Lake to places beyond the road. The plant-matted ground was like a sponge, and although we were in raingear we were soon wet. Occasionally the clouds lifted a little, and we could see across

* * *

McKinley River to the rocky foot-range and McGonagall Pass, beyond which, we knew, was Muldrow Glacier, moving slowly down from the summit of North America. We could not see the great mountain, yet we knew it was there. We did not see moose, or bear, or caribou, or wolf, yet we knew they were near.

This wilderness, we felt, would sing and glow within us as long as we lived, compounded of majestic and infinite mysteries—forces that thrust a great rock mass toward the sky, clouds and wind and grinding ice, wild creatures great and small, and delicate, persistent, miraculous plants. We felt this great park must be protected and cherished as long as the human race continues upon the earth.



Pieces of the Puzzle

By Stanton G. Ernst

To THOSE OF US FOLLOWING REcent press reports, it has been apparent that the reactions of responsible conservationists to Rachel Carson's *Silent Spring* have been widely diverse, running the gamut from cautious condemnation to vociferous support. Most often, those who have cried "alarmist" have asked for a wait-andsee period, in which they hope to find additional evidence of pesticide dangers and damage on which to base a final judgment. *Silent Spring* has been likened to an intriguing puzzle, with

the hint of the total picture there, but with key pieces still missing!

It is not my intent to debate *Silent Spring*, for it has been done repeatedly by far wiser heads; suffice it to say that few will challenge the value of Miss Carson's work in alerting the public to a most serious potential threat to our ecology and personal well-being. It is now incumbent on our science to rather quickly fit together the missing puzzle pieces, either in support of the *Silent Spring* contentions or in provision of irrefutable negating evidence in support of current pesticide practices.

Since 1960, the Park Naturalist Staff at the Brookside Nature Center, in Wheaton, Maryland, has been aware of substantial numbers of Eastern ringneck snakes, *Diadophis punctatus*, resident in the museum area, with daily summer-month sightings on walkways, forest trails, in and about stone foundations, and quite frequently in both cellar and storage garage. Visitors quite often carry these colorful reptiles into the museum for staff identification, and

A recent experience with the pesticide chlordane at the Brookside Nature Center in Wheaton, Maryland, suggests that the widespread use of surface and subsurface pesticides in the control of ants, beetles, termites, and other insects may become a limiting factor in the abundance of certain insect-eating snakes, such as Diadophis punctatus—the Eastern ringneck—shown below.



it is probably the most common snake in the 500-acre Wheaton Regional Park. In part, we attribute this to the wide variety of natural foods present, since our observations indicate that these animals feed extensively on insects, tiny red-backed salamanders, and newly-hatched toads.

In May of 1962, the foundation of the Brookside Nature Center became infested with several species of ants, mining in the sandy soils, and it was further noted that carpenter ants were present in the building basement. Treatment was immediate, using heavy applications of 6% chlordane dust in and about the building foundations, and in nearby flagstone patios and gardens. In total, some twenty-five pounds of this material was utilized over about two acres in the area of the museum.

Within seventy-two hours the staff and visitors found seven ringneck snakes in terminal agony, writhing in exposed places and easily picked up. The death throes were uniform, twisting in place and exposing first back and then belly, with mouths agape in each instance. A careful search also Mr. Ernst is a park naturalist with the Maryland-National Capital Park and Planning Commission. He is also editor of the Association of Interpretive Naturalists' *Newsletter*.

revealed three dead worm snakes, *Carphophis amoenus*, in the same general area. Following a heavy rainstorm, which further distributed the residual dust, a careful search of the treated area showed an almost complete absence of living animals, with the exception of a few winged insects. All of the ringneck snakes died within two hours of recovery. Subsequently the staff force-fed captive ringnecks with meal-worms dusted with 6% chlordane, with similar results.

We are not suggesting that these experiences are adequate to formulate any conclusions with respect to chlordane and pesticide poisoning in reptiles, since no controls were established and the sampling is far too meager. But we do strongly suggest that we may have discovered a small but vital piece of the pesticide puzzle, and we were greatly impressed with the rapidity and completeness of the sterilization of our new-found "study area." Soil and terrestrial animals—prey and predator alike—were apparently destroyed or quickly departed from an untenable environment. Of little economic importance in the overall scheme of things, this poisoning served well, nevertheless, in pointing out the dangers inherent in the indiscriminate use of any pesticide.

Although our experience at Brookside was far less dramatic than the recent Green River fish poisoning (National Parks Magazine, January, 1963), we offer it in evidence of probable pesticide poisoning in animals not listed to date on the victim list, hoping that such observations will help in bringing the whole picture into focus. It is also to be hoped that it will not take another "Green River" to demonstrate the growing seriousness of shotapplications of gun commercial poisons.

The Editorial Page (continued from page 2)

a joint study of all resource potentials of the Federal lands of the Northern Cascade Mountains of Washington to determine what policies of management may best serve the national interests.

This Association has been advocating this kind of approach to the Northern Cascades problem for several years. Whether and to what extent some of the present National Forest lands in the Northern Cascades should become a national park has appeared to us for some time to be in considerable measure a White House problem. It has been a question of having an overall national policy and coordination of the programs of two major Federal agencies. Prospective parks, present and prospective wilderness and primitive areas, multiple-use recreational areas, possible buffer zones around protected areas, and the improvement of timber-cutting practices in the national forests are all involved. This is a challenge to the constructive planning of natural resources use; we hope that the planning will be done with an opportunity for full public participation, because we are getting a little tired of bureaucratic secrecy in these matters.

The Council visualizes the establishment of a number of national recreation areas, mainly around large reservoirs, which will be administered by either the Forest Service or the Park Service as may best fit with present land administration or be agreed upon. Criteria will be established by the Council for their selection and establishment; it behooves conservationists to follow the adoption of these criteria closely; opportunity should be provided for adequate public hearings.

Agreement has also been reached on an Oregon Dunes National Seashore, to comprise 35,000 acres along the central Oregon coast. This land has for the most part been in the National Forest system, but would now be administered by the National Park Service under national recreation area criteria. This is another step forward. -A.W.S.

News Briefs from the Conservation World

Mammals of McKinley Park

In conjunction with the articles on Mount McKinley Park in this issue of the Magazine it is well worth mentioning a splendid guide to the mammals of that wilderness preservation recently off the press. It is titled Mammals of Mount Mc-Kinley National Park, Alaska, with a text by biologist Adolph Murie, sketches by brother-biologist Olaus Murie, and photographs by Charles J. Ott. It is a 56-page volume bound in heavy paper, published in cooperation with the National Park Service by the Mount McKinley Natural History Association. One need not dwell on the authoritative nature of the workthe author's name is guarantee of thatbut the charming manner in which natural history lore is woven through the descriptions and habits of the park mammals qualifies this book as outstanding science and literature both. It is a matter for regret that the printer has not done full justice to Charles Ott's wildlife and scenic pictures, for this photographer is among the top men in wildlife photography today-some would say he is at the top. In considering the printing of parks natural history association publications, however, it must be kept in mind that these organizations, as other non-profit groups in the conservation field, are seldom in a position to be reckless with publication money.

The book is priced at 75¢ the copy, and inquiries should be addressed to the Mount McKinley Natural History Association, McKinley Park, Alaska.

Society Makes Awards to American Conservationists

During January the American Scenic and Historic Preservation Society, of New York City—national society for the protection of natural scenery and historic



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Mayor Robert F. Wagner of New York City was recipient of the American Scenic Historic Preservation and Medal awarded to elected officials at various governmental levels. To David E. Finley of Washington, D. C., went the George McAneny Historic Preservation Medal in recognition of his public service in the world of art; and Richard H. Pough of Pelham, N.Y., received the Horace Marden Albright Scenic Preservation Medal for his untiring efforts in behalf of natural resource preservation.

The Society also makes yearly awards of the Cornelius Amory Puglsev medals for noteworthy service in preservation and development of parks and recreation areas. In this field the gold medal went to Freeman Tilden of Warner, New Hampshire, author and long-time collaborator with the National Park Service. for his writings and work in the field of national and State park interpretation. Recipient of the silver Pugsley medal for outstanding contributions in park and recreation area work at the State level was Sidney S. Kennedy of Washington, D. C., now chief of the Division of Cooperative Services in the recently created Bureau of Outdoor Recreation, and formerly head of the National Park Service's Branch of State Cooperation. The bronze medal for work at the city level went to Elo J. Urbanovsky, head of the Department of Horticulture and Park Management of Texas Technological College, in Lubbock.

Regulations on Golden Eagle Are Tightened

Enabling legislation signed into law by President Kennedy last October led to the December publication of proposed regulations for the protection of the golden and bald eagles by the Interior Department's Bureau of Sport Fisheries and Wildlife, the agency responsible for enforcing Federal wildlife laws.

Under the proposed regulations, the Secretary of the Interior could issue permits for the capture of bald or golden eagles alive, to collect their nests or eggs, or to kill the birds and possess and transport carcasses, skins, or mounted specimens for scientific or exhibition purposes of public museums, scientific societies or zoological parks when such activities are compatible with the preservation of eagle populations.

As proposed, the Secretary could also

issue permits for killing bald or golden eagles if it was determined that the presence of the birds had led to the substantial injury of wildlife, agricultural, or other interest in any particular area under United States jurisdiction.

A the request of the Governor of any State, the Secretary would be required to authorize the taking of golden eagles for the seasonal protection of livestock for such time and in such areas as he considers necessary.

Under no conditions would a bald eagle be taken without first obtaining a permit from the Secretary of the Interior.

The proposed regulations would allow permits to be issued to Indians for taking bald or golden eagles for religious purposes when it has been determined that such capturing or killing is compatible with preservation of eagle populations. Live birds or feathers or other parts of dead birds taken under such a permit would become the property of the permittee. No birds or their parts covered by such permits would be transferable except that they may be handed down from generation to generation in accordance with tribal customs.

Under the December regulations, airplanes could be used for the taking of golden eagles by persons authorized to do so. The opposition which this provision engendered in January was so strong that the final version of the ruling prohibits the use of airplanes at any time for such purposes. The only other changes in the regulations authorized by the Secretary of Interior, Stewart L. Udall, February 1, was a rewording of the rules pertaining to the information required in applications for permits to take bald and golden eagles for religious purposes of Indians.



THE CONSERVATION DOCKET CF 10

Ozark National Rivers. S. 16 (Symington and Long). A new designation would be given to this much disputed area in Missouri. Closer to the Scenic Riverway bill than to the National Monument bill of past sessions, the present legislation would permit the owners of improved property to retain the right of use and occupancy of their land for noncommercial residential purposes either until their death or the death of their survivors. Provisions are made for compensating the counties sustaining tax losses due to governmental acquisition; hunting and fishing would be permitted under the laws of Missouri. A seven-member Ozark National River Commission would function for ten years as advisor to the Secretary of Interior on the proper development of the rivers.

National Policy on Conservation, Development, and Utilization of Natural Resources. S. 57 (McGee). Calls for a Presidential message delivered before the Congress not later than January 20 of each year dealing with the nation's resources. A Council of Resources and Conservation Advisers. in the Executive Office of the President, and appointed by him, would assist and advise the President in the preparation of his message, as well as recommend national conservation policy with the assistance of representatives of industry, agriculture, labor, conservation, State and local governments, and other groups.

Colorado River Storage Project Act Amendment. S. 333 (Moss). The 1956 act authorizing the Secretary of the Interior to construct, operate and maintain the Colorado River storage project and participating projects would be amended by striking out the provision that "as part of the Glen Canyon Unit the Secretary of the Interior shall take adequate protective measures to preclude impairment of the Rainbow Bridge National Monument" and the provision "It is the intention of Congress that no dam or reservoir constructed under the authorization of this Act shall be within any national park or monument.'

Federal Programs Using Pesticides or Other Chemicals. H. R. 2857 (Dingell). Requires officers and agencies of the Federal Government to consult with the United States Fish and Wildlife Service and the State agencies involved before initiating or contributing to large-scale programs involving the use of chemical insecticides, herbicides, fungicides, rodenticides, or other methods for the purpose of eradicating or controlling any animal or plant pest. Failure to take such action is to be reported to the Congress.

Youth Conservation Corps. S. 1 (Humphrey and others), H. R. 1 (Blatnik) and H. R. 1890 (Perkins). The Perkins bill is identical to the Senate bill which failed to pass the Senate last session, and is the version upon which the Education and Labor Committee of the House based subcommittee hearings during February, H. R. 1890 calls for a smaller corps and a less formally organized administrative program than the Blatnik legislation.

Water Research. S. 2 (Anderson and others). A Water Resources Service would be established to administer water research programs in the land-grant colleges, other institutions of higher learning, State water resources research institutes, private foundations and private firms.

Parks, Playgrounds, or Other Recreational Facilities. S. 9 (Williams). Would amend title I of the Housing Act of 1949 to provide that "if, in the public interest, any land to be acquired in connection with an urban renewal project should be used in whole or in part as a site for a park, playground, or other public recreational facility, and such use is in accordance with the urban renewal plan for such project, the site shall be made available without cost to (with the approval of the governing body of) the locality in which the project is undertaken;"

Guadalupe Peak and El Capitan National Park. H. R. 3100 (Pool). Would require the Secretary of Interior to submit a study on the feasibility of establishing a national park of about fifty square miles on the northwestern border of Texas within two years of passage.

C & O Canal National Historical Park. S. 77 (Beall). An old favorite appears once again. Passage by the House of this legislation, calling for a maximum protected area of fifteen thousand acres along the Chesapeake and Ohio Canal, is highly uncertain.



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THE STATE PARKS: THEIR MEANING IN AMERICAN LIFE. By Freeman Tilden. Alfred A. Knopf, New York. 1962. With a foreword by Conrad L. Wirth. xvi + 496 pages and index. Illustrated. \$5.50.

Write brief essays on seventy-five State parks and monuments scattered over the United States-essays that never get monotonous or repetitive but that do, individually and all together, give the reader some conception of the extent and variety of the State park systems that have now been put together by most of the fifty States. Supplement these with one hundred and eleven charmingly written and perceptive "thumbnail sketches" of that many additional areas. And lead the whole thing off with forty-four pages of discussion of State park fundamentals that is the distillation of much reading and of many hours of discussion with men and women who have influenced or are influencing the extension and the development of State parks.

What the paragraph describes, very inadequately, is The State Parks: Their Meaning in American Life, by Freeman Tilden, a fit companion volume for his The National Parks: What They Mean to You and Me, the classic volume dealing with the superlative natural areas of the national park system. Like the earlier book, The State Parks is a production of Alfred A. Knopf, Inc.; and that means, as always, that it is a handsome, beautifully-made book. The frontispiece is a picture, in full color, of Mount Katahdin, in Maine's Baxter State Park; scattered through the book are five 16-page "signatures" of black-and-white illustrations. These reveal to the eye, as the text does to the mind, the magnificent variety of natural and historic scenes so fortunately included in the State parks.

In me the book evoked nostalgia right at the start. "On a day in January 1921," reads the first sentence of the first chapter, "about two hundred conservationists met in Des Moines, Iowa, at the invitation of Governor W. L. Harding of that State." The governor, as Tilden does not say, addressed the assemblage as "experts"; he then defined an expert as "an ordinary man away from home," probably as apt a characterization of most of the group as any could have been; for State park experts in 1921 were few and far between. I was one of them; so was Arthur Carhart; and there are probably not more than two or three other survivors today of those "about two hundred conservationists."

Probably few "old hands" of the State park movement would agree one hundred percent with all of Tilden's observations in those introductory chapters; difference of opinion and healthy argument have been characteristics of State park people as long as I can remember, and have lent interest to participation in the movement. I do not propose here to take issue with him, however. But I want to voice two not overwhelmingly important criticisms. One stems from what seems to me too brief treatment-a short mention on page 44 and a footnote on page 195-of the establishment, development, and transfer to the States of the Recreation Demonstration Areas-nearly 220,000 acres all told. The park systems of nineteen States benefited from this huge transfer of land. What few people realize today is that the lands for these "RDA's" were carefully selected by the National Park Service jointly with the State park authorities; all phases of development were also jointly agreed upon; and, in accordance with assurances given the States at the outset of the program, the Service sought and obtained from Congress the necessary authority to make the transfers. Nine of the areas given special treatment in The State Parks were either partly or wholly Recreational Demonstration Areas.

Tilden supplies some fine characterizations of such great names as Robert Moses, Richard Lieber, Major Welch, Governor Baxter, Albert M. Turner, Sam Boardman, Peter Norbeck, and othersno small accomplishment since he was personally acquainted with so few of them. And, of course, there is some limit, for a book such as this, to the number of persons to whom, or to whose accomplishments, attention can be drawn. Yet it seems too bad to omit such persons as Charles Eliot, of Trustees of Public Reservations fame; John Nolen, who made what was probably the first State park survey, for Wisconsin; Herbert Maier, who influenced State park architecture more than any other dozen men;

Jim Evans, the shrewd, far-sighted, mordant engineer who served so long and effectively under Robert Moses—an art in itself—as New York Director of State Parks; Ed Secrest, the forester responsible for establishment of some of Ohio's finest parks; Mrs. Henry Frankel, one of the most effective leaders in State park history, who left so important an imprint on Iowa's State parks. These names occur to me immediately. I am sure there are others of comparable distinction.

The State Parks is a great book, just the same; the best thing that has happened to State parks in a long, long time. —S. Herbert Evison

SPECIAL NOTICE

Readers of this Magazine may wish to bring the Leopold Report, Wildlife Management in the National Parks (printed in this issue as a special insert) to the attention of others who might be interested in national park problems. Additional copies of the Report may be obtained at 10ϕ each, postpaid, from:

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NATIONAL PARKS MAGAZINE

Your National Parks Association at Work

The Youth Employment Act

On February 18, the House General Subcommittee on Education of the Education and Labor Committee held public hearings in Washington on H. R. 1890 (Perkins, Kentucky) on the so-called Youth Employment Act designed to help alleviate unemployment among urban youth in America and at the same time to accomplish conservation work on the nation's public lands, including the national parks and forests.

Upon invitation, Paul M. Tilden, assistant to the executive secretary of the National Parks Association and editor of *National Parks Magazine*, told the subcommittee that the amount of work which needs to be done in the national parks, forests, wildlife refuges, and on the land reserve is always in excess of funds available to the permanent staffs of the responsible agencies. Tilden said that he welcomed the proposal that ways and means be worked out whereby under-

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To NPA Members:

You have until May 1 (not March 1) to take advantage of the special offer accompanying the Sierra Club book catalog, recently distributed but unavoidably delayed. We will allow a 10% discount on purchases of \$25 or more if payment accompanies order. This includes Eliot Porter's new Glen Canyon book, *The Place No One Knew*.

We are sorry the catalog was delayed.

Bruce Kilgore, Sierra Club Mills Tower San Francisco 4, Calif. employed and unemployed youth be given an opportunity to go out into the public lands and undertake needed conservation activities, being suitably compensated.

He suggested, however, that there might be some advantage in the provisions of Congressman Blatnik's bill for essentially the same purpose (H. R. 1)establishing an interdepartmental committee to channel the necessary interdepartmental consultation, in view of the number of land-administering agencies involved by the bill.

Tilden also pointed out that there are places in both national parks and national forests where terrain, plants, and animals should be left completely untouched, and that there could be, in such places, such a thing as overdevelopment. Proper supervision and discipline among the youths would always have to be maintained, he said, especially where there were geological, scenic or biological resources to be protected.

At hearings on S, I (an identical Senate bill) a week later, before the Senate Subcommittee on Employment and Manpower of the Labor and Public Welfare Committee, Tilden, upon invitation, made the same general points in regard to the bill.

A Land and Water Conservation Fund

During early March the Senate Committee on Interior and Insular Affairs held Washington hearings on a bill to establish a land and water conservation fund, S. 859. The bill would in general provide Federal funds for acquisition of land and water recreational areas and would also provide Federal assistance to States for planning, acquisition and development of recreational areas.

On invitation, Paul Tilden, assistant to NPA's executive secretary, told the Committee of the Association's interest in preservation of sufficient open spaces to meet the nation's coming needs for outdoor recreation. He noted, however, that one of the problems of paramount importance in respect to the national parks and forests is the need for acquisition of inholdings; he told the committee that in his opinion there was much to be said for dropping the grants to States pending acquisition of park and forest inholdings. If State grants are to be made, Tilden said, they should not be unduly large, and the contemplated division of funds under the bill-60% to States, and 40% to Federal needsseemed to him to be excessive.

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High dams in the river valleys of the East convert placid farmland scenes like the one above, in Mason County, West Virginia, into vast impoundments, bordered in dry seasons by debris and baked mud flats.

HILE THE PRIMARY responsibilities of the National Parks Association lie in the field of national park and monument protection, the Association also is deeply concerned with conservation matters like the proper planning and development of river basins. It looks with disfavor, for example, upon high dams in river valleys of the East—anachronistic structures which wipe out vast areas of rich agricultural, forest and recreational lands. Such dams convert rural scenes like that above into vast impoundments surrounded in time of drought by wide halos of dried mud and debris. Where regulation of rivers is necessary for flood control purposes, the Association feels it is best accomplished by small storage basins of the watershed management type. You may assist the Association in this facet of its conservation work by helping to secure new members: by providing friends with gift memberships; or by contribution to the general funds of the Association over and above regular membership. There is a coupon on page twenty-five of this month's Magazine for the purpose.

National Parks Association

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