NATIONAL PARKS *Magazine*

A summer storm outlines Mitten Buttes
in the Monument Valley Navajo Tribal Park

August 1966

Oil Shale and the Public Lands

A CONSERVATION ISSUE WHICH HAS laid dormant for a number of decades, but which now looms large on the national scene, concerns the eventual management of public lands which are underlain by oil shale—organic-rich shale, to use the more precise phrase of the specialist. The general question is whether oil shale lands ought to be leased soon for development or held in reserve against the inevitable dwindling of mineral fuel resources.

To follow the issue intelligently one ought to have some background information on the nature and magnitude of the resource and the conservation problems that could stem from its development.

The term "oil shale" is a little misleading, since the rock in question does not yield oil as such. Oil can be obtained by destructive distillation of the organic matter trapped in the oil-shale formations at the time they were deposited—the relics of aquatic plants and animals which were the inhabitants of lakes, stagnant streams, and shallow marine basins during a past geologic age. Thus, instead of using the term "oil" in discussing the organic-rich sedimentary rocks the geologist prefers the term "oil equivalent."

Organic-rich shales are widely distributed about the world, and have been the basis for small-scale oil conversion industries in regions where natural petroleum is scarce or expensive to import. In the eastern part of this country such organic-rich shales were worked for oil to some extent before the great petroleum discoveries of the mid-nineteenth century.

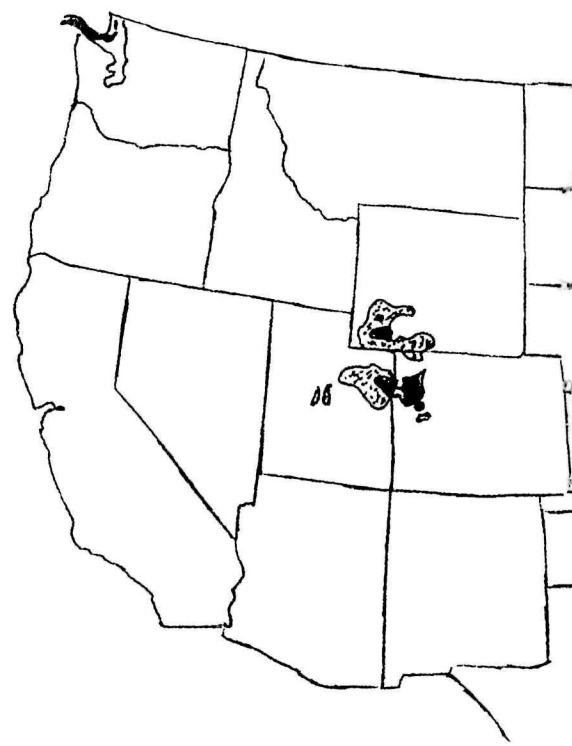
Today, conservationists and many other Americans are looking at some 16,000 square miles of terrain in Colorado, Wyoming and Utah which are underlain by the Green River Formation, originally deposited largely as fine sediments on lake bottoms during the Eocene Epoch—relatively recently, as geologists reckon time. Within four Eocene basin terrains in these States—the Piceance in Colorado, Green River and Washakie in Wyoming, and Uinta in Utah—there is an oil potential estimated by the U. S. Geological Survey at some two thousand billion barrels, of which only a part, perhaps about a third of total, could be recovered under present-day technology. Possible extensions of the known resources in these basins alone could double their total oil-equivalent reserves. Figures like these easily account for the current interest in Western oil-shale lands.

Some 85 percent of the organic-rich shales of the four Eocene basins lies within public lands, including a small percentage of lands held by private individuals as unpatented oil-shale placer-mining claims filed before the Mineral Leasing Act of 1920, which removed the oil-shale lands from location under placer-mining law and made them subject to lease. In 1930, President Herbert Hoover withdrew the oil-shale lands completely from leasing, and they have so continued to the present day.

In the past few years there has been a steady buildup of pressure on the Interior Department for opening up the oil-shale lands for lease and private development. In the spring of 1964 the Secretary of the Interior appointed a committee of seven well-known Americans to study the many problems of oil-shale development on the public lands. "If the national interest is to be served," Secretary Udall said in appointing the committee, ". . . the major public policy questions need to be identified and evaluated at the onset." The Oil Shale Advisory Board thus created (from which one member resigned early and did not sign its report) submitted an interim report in early 1965, but beyond general agreement that "orderly development of a competitive oil shale industry would provide future sources of oil of much benefit to the country," the committee arrived on dead center, with three members favoring oil-shale land leasing immediately and three opposed.

And thus the matter stands at the the date of this writing. The conservation questions connected with the beneficiation of this vast national treasure of potential energy would appear to need answers before a decision is made, rather than afterwards. Among the questions that readily come to mind are: the impact of strip mining of shale on the natural scene and on vegetation and wildlife; water pollution attendant on strip mining; soil erosion by both wind and water in a relatively arid country; the disposition of immense amounts of waste rock and spent shale from processing plants; and the potential air pollution of the distillation plants themselves.

The conservation problems connected with the utilization of this vast underground treasure seem nearly as monumental as the resource itself. —*P.M.T.*



Shown on the map are the locations of the four basins in Colorado, Wyoming and Utah which contain a vast resource of organic-rich shale, part of which is thought to be exploitable under present-day technology. Solid black areas are known high-grade deposits; stippled areas are marginal or submarginal at present time. Sketch by J. Williams, based on a U. S. Geological Survey drawing.

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Front cover photograph by O. F. Oldendorph

Lying like a multicolored quilt over the ancient core rocks of the American Southwest is a vast assemblage of sedimentary formations—sandstones, mudstones, shales and conglomerates—which were deposited during the medieval days of the earth's geologic history. In many places ensuing long ages of wind, water, frost and chemical action have eaten into this bright blanket to create especially fascinating patterns of erosion. Within one such area in northeastern Arizona the Navajo Indian Tribe has established a great scenic preservation (article, page 4).

The Association and the Magazine

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

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

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

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MONUMENT VALLEY

A Navajo Tribal Park

Above, the visitor center in Monument Valley Navajo Tribal Park. Here visitors are checked in by Navajo park rangers. Navajo arts and crafts are displayed and a glassed-in observatory at the rear of the building overlooks Monument Valley.

By

O. F. Oldendorph

Photographs by the author

ABOUT TEN YEARS AGO the paved highway ended a little northeast of Tuba City, Arizona. Seventy miles farther, the corduroyed road, barely discernible under drifted sand if the wind had been blowing, passed the little trading post town of Kayenta. Kayenta boasted that its post office was the most remote in the United States; the farthest from a railroad. After another twenty miles the same road provided a somewhat distant view of Monument Valley at the Arizona-Utah boundary line. Twenty miles farther, in Utah, the road crossed the San Juan River on a rickety single-lane bridge at Mexican Hat.

If the visitor who braved these Navajo Reservation roads wanted a closer look at the Southwest's most spectacular red-rock scenery, he left the bumpy "highway" near the Arizona-Utah line and tried his luck on the sandy trails of Monument Valley. It was strictly four-wheel-drive country, but the spectacle of the Mitten Buttes, the Totem Pole, rippled sand dunes traversed by Navajo sheep, and the picturesque hogans of the Navajos, who lived in this desert fairyland, made the trip worthwhile for adventurous individuals equipped with the proper fortitude and vehicles.

Today that rough-surfaced, sand-clogged road from Tuba City to Kayenta has been replaced by smooth blacktop, and an enlarged Kayenta boasts new luxury motels. Cars whiz past the Monument Valley turn-off at sixty-five miles an hour and, at Mexican Hat, cross the San Juan on a sturdy new bridge. Monument Valley's scenery, which Americans saw as background for many Western movies but thought too fantastic to be real, has now been made accessible.

The Navajo Tribal Council wisely understood the appeal of Monument Valley's red-rock buttes and pinnacles to the

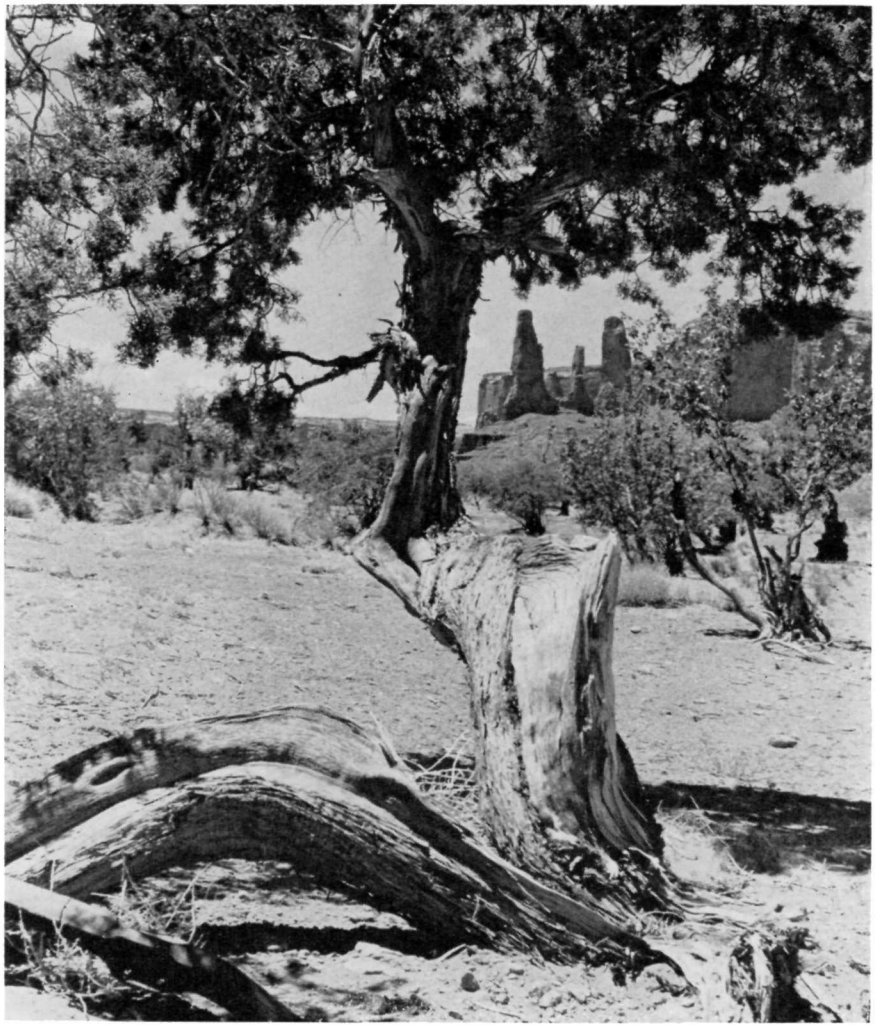
vacationing American public. Monument Valley was set aside as a Navajo Tribal Park and was dedicated to that purpose in May of 1960. A modern visitor center was built about four miles from the black-topped highway; the access road from the highway was graded and widened. A mile from the visitor center, a campground with shelters, tables, and fireplaces was located so that it overlooked the Valley below. The roads in the Valley were graded and marked with directional arrows and signs. Fourteen miles of road were made usable to ordinary passenger automobiles so that all the major landscape features may now be reached with ease.

Cars entering the Valley must pass the visitor center, where the party is registered. A fee of fifty cents per person is charged, which entitles a visit to the Valley and use of the campground. A uniformed Navajo Ranger issues a windshield sticker receipt, explains the map of the Valley, the park rules, and courteously answers questions. The visitor center also houses a display of outstanding Navajo handicrafts; silver and turquoise, rugs, leather work and other handsomely executed pieces.

The road into Monument Valley drops down a hill from the visitor center and traverses the Valley floor. The red sand is dotted with dark-green juniper trees which are rough, contorted old veterans. In spring, cactus blossoms add a dash of red or brilliant pink while the scale-like bloom of Mormon tea converts these shrubs to balls of yellow, laced by the green, twiggy structure of the plant. The blossoms of low-lying clumps of rosemary mint contribute bits of pale blue, and spires of white flowers rise from the clusters of dagger-tipped yucca leaves. The whole scene is backdropped by the monuments, tall and majestic.

Some of the buttes have been given descriptive names. The red stone of Mitten Buttes (one left hand and one right hand, each with a "thumb" spire) towers perhaps a thousand feet above the Valley floor. High on the edge of Thunderbird Mesa the silhouette of a huge eagle, executed in the red rock by the elements, watches over the Valley. Other buttes, all towering many hundreds of feet skyward, carry such names as Spear Head Mesa and Rain God Mesa; and two, Merrick and Mitchell Buttes, are named for white prospectors who discovered silver in the Valley in the latter 1800's. Their success was short lived—they were struck down, presumably by Navajos of the area who resented the white men's intrusion and their plan for exploiting the mineral wealth of the Valley.

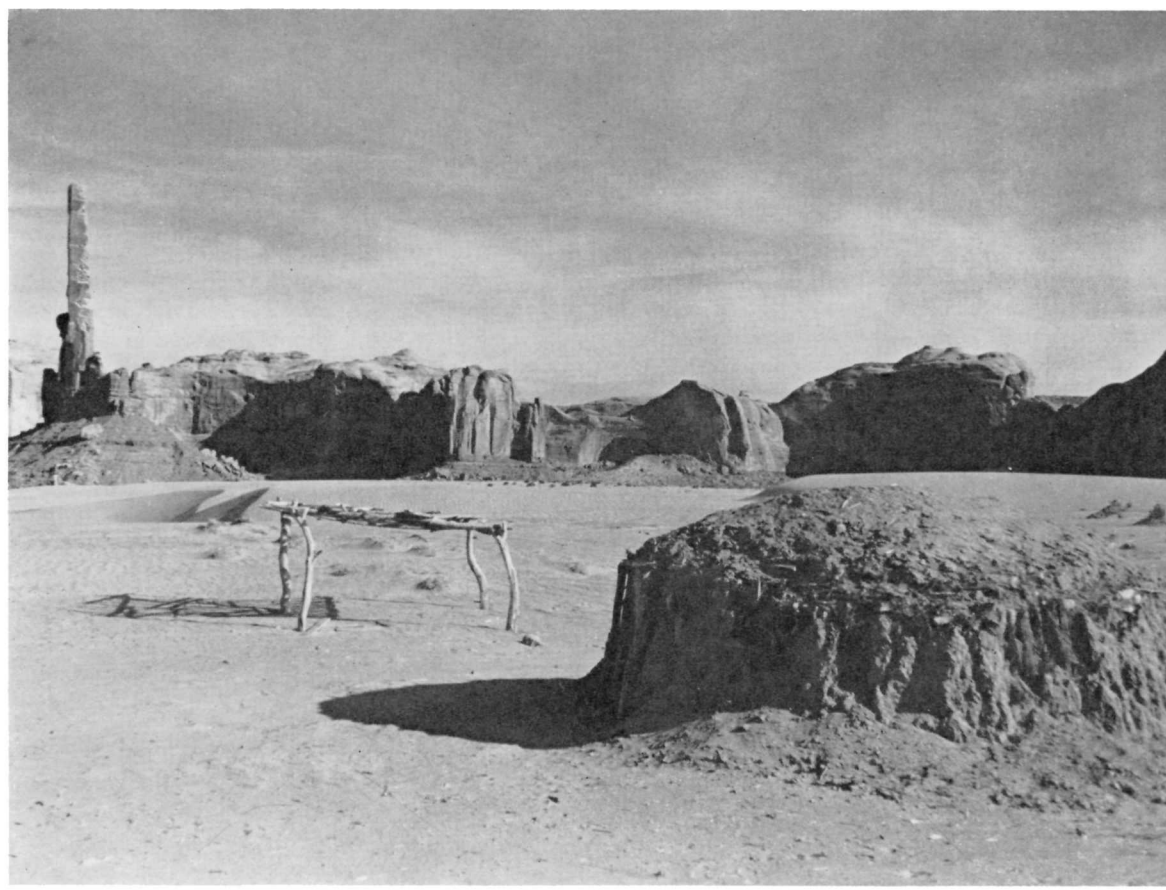
Below, the Totem Pole and the Yei Biche. The Totem Pole is the tallest spire and stands alone. Line of pinnacles to the left is the Yei Biche, named after the line of dancers which is part of Navajo Indian ceremonials.



The Three Sisters of Monument Valley are framed in the photograph at left by a contorted old juniper. Because of its fragrance, juniper wood is unsurpassed as a fuel for campfires but, in Monument Valley, there is scarcely enough to supply the fuel needs of the Navajos. Visitors to park must bring their fuel supplies.

Despite the aridity of the Monument Valley region there is considerable plant life to be seen and photographed. Below, the white bloom of the yucca makes a startling contrast with the bright red sandstone buttes of the background and the brilliant blue of the sky.

Dwellings of the Navajos are known as hogans. Hogans are constructed of juniper logs and brush and are covered with earth. Snug and warm in the winter, they are cool in summer. Often a stove, made from a cut-down oil drum, occupies the center of the hogan and a smokepipe rises through the top of the dwelling. The door always faces to the east. Because the hogans are a center of spiritual and religious life, they are more than just a "home," and an abandoned hogan must not be desecrated.



At the deepest penetration into Monument Valley the road dead-ends near the Totem Pole, a tall, thin spire of red rock that soars above the talus of its base. Behind it is a series of shorter spires, the *Yei Bechi*, named for the similarity of their line-like arrangement to the line of *Yei Bechi* dancers who are part of Navajo ceremonies. The foreground consists of finely powdered red-orange sand, windblown into rippled dunes which, in the late afternoon, are striped with wavy shadows cast by the low-hanging sun. This is indeed an enchanted spot. The immensity of the country dwarfing the height of the red-rock buttes, the all-pervading silence, and the breeze that ever changes the sand ripple-patterns all contribute to the spell. Unfortunately the breeze sometimes becomes a bit zesty, and can give rise to stinging, blinding clouds of red sand. On such days the Valley is best observed from the glassed observatory at the visitor center.

Thoughtful visitors will want to know a little about the creation of the Valley, which lies along the eastern edge of Douglas Mesa, part of the Colorado Plateau. Perhaps sixty million years ago a general uplift of the region produced a widespread network of cracks through the thick beds of massive sedimentary rocks that underlay more recent deposits. Through the millenniums since, erosion has removed most of the surface deposits to expose the massive layers and at the same time to enlarge their cracks into gullies and canyons. As the canyons grew in depth and width, the rock masses between them became smaller and more serrated, and it is these remnants, carved from the extensive deposits of Permian and Triassic sediments, that today form the towers, turrets, buttes and mesas of the Valley.

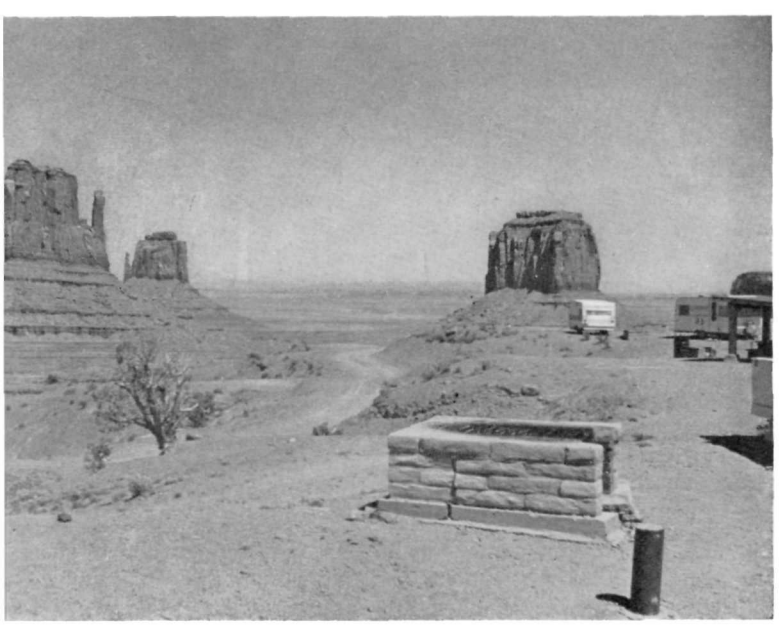
Monument Valley has long been home to Navajo families, and its dedication as a Tribal Park did not alter that arrangement. Certain rules of the park are designed to protect the privacy and welfare of the people who live in the Valley. Firewood, for instance, is scarce and visitors must bring their own, or do without. Also, certain roads which lead to Navajo hogans are posted "No Road" where

they intersect the established visitor's route. This allows the people some respite from the curious white man. Hogans must not be entered by visitors, nor should the people be photographed without consent. These rules, spelled out in the descriptive folder provided upon entrance to the park, are made to enforce that which should be dictated by common courtesy.

A dozen or so Navajo families reside in the Valley during the summer months. They keep sizable flocks of sheep and goats that manage to pick a living from the sparse vegetation. The sight of a flock of sheep being herded down the slopes of a rippled sand dune, with the Totem Pole in the background, is an experience which enraptures tourist photographers. The tips which are customarily paid to the Navajos for consenting to be photographed, and for staging such pictures, undoubtedly make a significant cash contribution to their income. During the winter months the people usually move their flocks from the Valley for the better grazing which is afforded by higher ground.

The old-style Navajo dwellings, or hogans, fit into the Valley scene. They belong. Shaped like squat beehives, always with the door facing the direction of the new day, and plastered all over with the sandy red clay of the Valley, they are hardly noticeable from a moderate distance. By contrast, on a recent visit to Monument Valley, at least two small houses, built square and with peaked roofs like white men's houses, were observed. Covered with tarpaper, they were a discordant note. The old ways are best in the Navajo red-rock country.

In the view below a portion of the Monument Valley campground is seen with Mitten Buttes at the left and the graded road to the Valley floor in center. Each campsite includes a shelter, table, bench and fireplace. Units of this sort have been erected along many of the roads in the Navajo Reservation. Water is usually not available. All water used at the visitor center in Monument Valley is trucked from Kayenta, about twenty miles away. The rangers encourage visitors to supply their own water but will share their own supply if necessary.



Antiquities within the park are carefully protected—a philosophy which, in fact, extends to the entire Reservation. Early Pueblo ruins exist within the park, though none are visible from the established routes for visitors. The Navajos are equally insistent, however, that abandoned hogans must not be violated. At least one such old Navajo dwelling in Monument Valley had an official placard affixed to it which noted that antiquities must not be disturbed. Under the placard was the hand-lettered message "Do Not Enter."

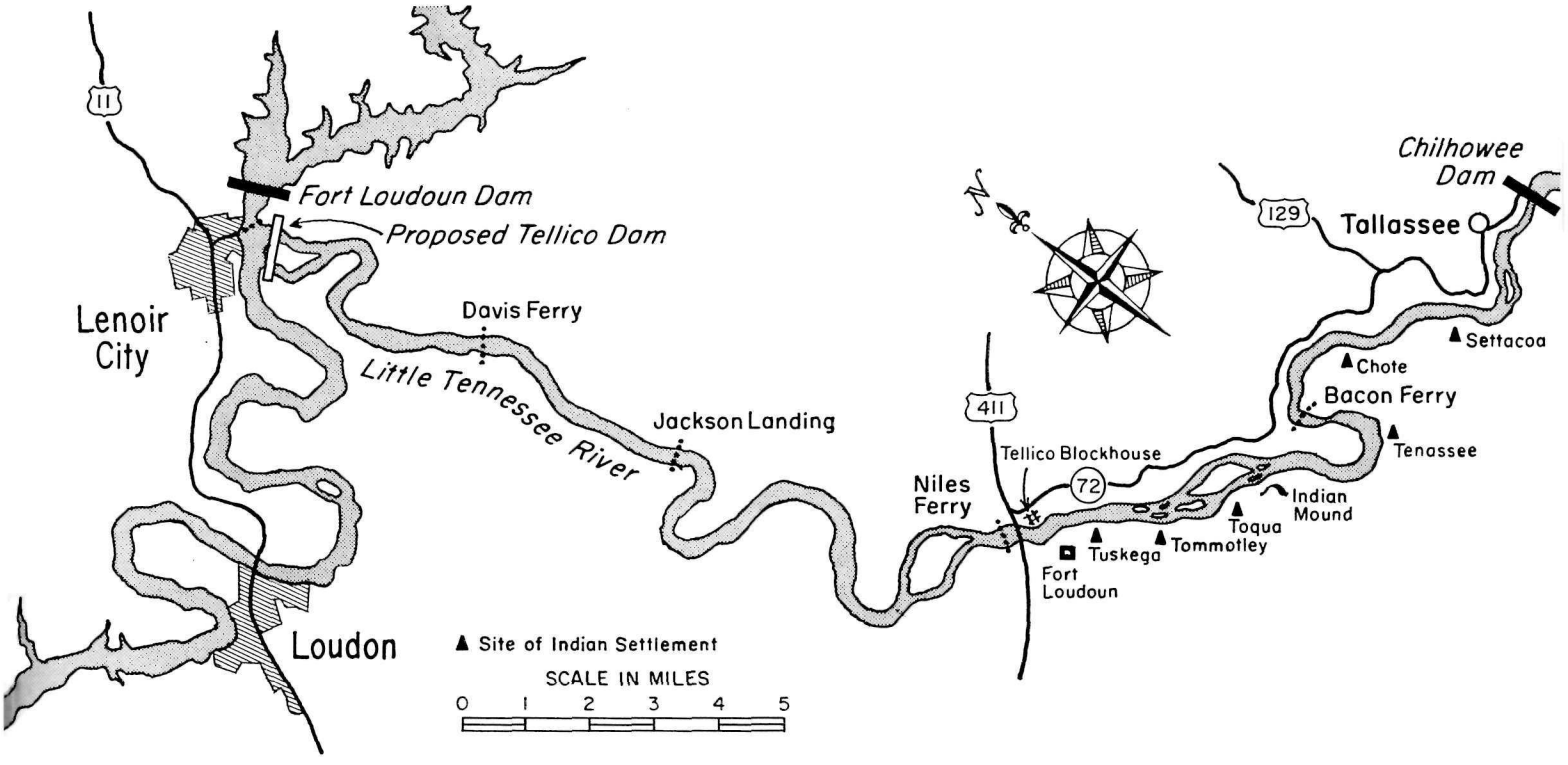
Many Visitors Enjoy the Park

The popularity of Monument Valley Tribal Park is adequately demonstrated by the number of entries in the visitor's log. During the year ending 1 May, 1965, over 24,300 admissions were paid. Most of these people toured the Valley in their own cars, but more than 3700 visited as patrons of the day-long sight-seeing trips conducted by nearby commercial operators.

Other Reservation areas have also been designated as Tribal Parks. These include Tsegi Canyon, Window Rock, Kinlichee Ruins and the Little Colorado Gorge, to mention four. In addition, campsites have been established along many of the Reservation roads. Typical campsites consist of one or two table-fireplace-shelter units, and are of the same general design as those seen in the Monument Valley campground. The objectives of the Navajo Department of Parks and Recreation are quite similar to those of the National Park Service—to protect, preserve, and interpret the scenic, scientific and historical areas within the boundaries of the Navajo Reservation. Policies and operating procedures are determined by a five-member Navajo Parks Commission.

The patrol and care of the parks and their visitors are handled very professionally by the uniformed park rangers, all of whom are Navajo men. Rangers must possess a high-school diploma as a minimum requirement. Some have had college training, and many are veterans of the Armed Forces. All are required to pass a rigorous qualifying examination and each periodically attends training courses in law enforcement, fish and game management, public relations, first aid, rescue operations, and related matters. The Reservation as a whole is patrolled by the Tribal Police Department, but the park ranger detachment is completely separate from the police organization.

The Navajo people, even in the twentieth-century Southwest, represent a culture different from the white man's. It is a culture rich in its own values, traditions, beliefs and superstitions, which do not necessarily agree with those of the white man. That culture is as much a part of America as is the awe-inspiring country in which the Navajo people live. In making the scenic areas of their Reservation attractive to the white man, and in preserving the antiquities of the Reservation, they are performing a great service to present and future generations of all Americans. It is gratifying indeed to find that they are doing the job so well. In return, visitors—especially those new to the Indian Country—should remember that in every sense of the word they are guests of the Navajo people. ■



The Little Tennessee River rises in the mountains of North Carolina and Georgia and joins the Big Tennessee at Lenoir City, Tennessee. Along its course there are already four dams and reservoirs. The map above shows the last remaining reach of free-flowing river (a little more than 33 miles) on the Little Tennessee, which would be inundated, along with a wealth of early American history, by the pool of the proposed Tellico dam near the river's confluence with the Tennessee.

Sounds of a River

By Kay Bacon Hultquist

THE SOUNDS OF A RIVER ARE TIMEless, sounds that are silenced only when a river is stilled. We wanted to hear these sounds while there was still time—for the shadow of a proposed dam, silencer of the sounds of a river, was falling across the valley of the Little Tennessee River.

The Tennessee Valley Authority's request for $42,500,000 to build the proposed Tellico dam at the mouth of the Little Tennessee River was rejected by Congress in 1965, but was again included in the Federal budget for 1966. Public hearings were held in Washington during May, at which both proponents and representatives of the opposition to the dam were heard; among those presenting their views on the future of the river was John Lackey, president and chief spokesman for the determined group which has been spearheading the opposition to the dam—the Association for the Preservation of the Little Tennessee River.

In a recent development, there has been a proposal which would include the Little Tennessee among sixteen rivers which would be frozen against development for a period of three years while a Federal study of the best uses is made.

Wispy sheets of mist still hung over the cold waters of the river as we dropped life preservers, lunch and fishing gear into our aluminum canoe on

a Saturday in early May and pushed off from "Hoss" Holt's Chilhowee Shoals Landing, less than a mile below the Aluminum Company of America's Chilhowee Dam. My husband, Charlie, and I were planning to float and paddle down thirteen miles of the thirty-three-mile stretch to the mouth of the river.

Fishing boats were dotted across and down the river as far as we could see. The Tennessee Game and Fish Commission gives several reasons for the unique quality of this tailwater stream —the annual temperature range from 45° to 65°; dissolved oxygen at saturation level; a minimum of turbidity; and an abundance of aquatic food. The fishermen just say, "The rainbow and brown trout grow mighty big here." The potential of the productive but undeveloped "Little T", in the heart of the Great Smoky Mountains National Park —Cherokee National Forest—Foothills Parkway region, has been estimated at $5 million annually.

Photograph by the author

From the river the outline of an ancient Indian mound is silhouetted against the sky.

Fast-Water Boating

The rushing sound of the white-capped ripples ahead gave us our first moments of excitement. At this point we were going somewhat faster than the average three-mile-an-hour speed of the river, and through the clear water we could see rocks speeding by barely a foot below the surface. Paddling furiously toward a point that appeared to be the best passage, we barely missed a submerged rock, and in a moment the shoals were behind us.

We rounded the bend and the river was ours—or so it seemed. Ahead, five great concrete piers of an old logging railroad bridge stepped across the river, solid reminders of a transient era. Heading for the fifteen-foot gap between two of the piers, we shot past them and gained new respect for the swiftness of the river.

Just beyond the old railroad bed the slow-moving waters of a played-out Citico Creek empty into the river. The Indian town of Settacoa had once spread out across the fertile valley on either side of the creek. This was the first of several Cherokee townsites that we were to see along the river, sites which will be inundated if the dam is built. No signs of the settlement remain but, fortunately, no jarring modern development prevents the imagination from readily recalling the past.

When His Majesty's young lieutenant, Henry Timberlake, was sent down from Virginia to read and interpret to the Overhill Cherokees the terms of the 1761 peace treaty between the English and the Cherokee Nation, he spent the winter of 1762 among them. Fortunately, he was a keen observer and a hand with the pen, because his Memoirs reveal a great deal about the life of the Cherokees living along the Little Tennessee River at that time. We used his map of the river (the Tennessee it was called then) as often as we did the detailed quadrangle maps of the U. S. Geological Survey.

The savage sound of the recently-hostile Indians of Settacoa that greeted Timberlake as he approached their town must have chilled this staunch emissary of peace ". . . . a body of between three and four hundred Indians" approached him, he recorded. ". . . . Cheulah, the headman . . . . danced around violently, accompanied by drumbeats and the yelling of the mob," then "waving his sword over my head, struck it into the ground, about two inches from my left foot." A short discourse followed, and it was with relief that Timberlake learned from his interpreter that it was "only to bid me a hearty welcome."

Thoughts of the past vanished as we looked back and for the first time could see the complete panorama of smoky-blue mountains forming a distant backdrop for the blue ribbon of river cutting through the spring-green valleys and dark-green of the forested foothills. With compass and map we picked out the pyramidal tip of Big Fodderstack, a 4336-foot peak that stands out only a little above the 4000-foot ridges that follow and spread out from the North Carolina-Tennessee state line. The rugged mountain mass is now within the borders of the appropriately-named Cherokee National Forest.

Into Quiet Waters

Now the river broadened and deepened, and we drifted slowly in a rare and peaceful world. "The sound of silence," the sound of the river in its quiet mood, was a welcome sound.

A big rosy sandstone bluff on the right overlooked the wide expanse of bottomland that extended for more than a mile on the opposite bank to the site of Chote, the capital of the Cherokee nation at the time when the English came to fortify the valley. Kanagatucko, or Old Hop, Principal Chief of Chote, was then Emperor of the Cherokees.

We tried to picture just where the Town House had stood. When Timberlake, through his interpreter, had read the terms of peace to the headman of each town assembled here in the Town House of Chote, and the pipe of peace was smoked to show their satisfaction, Chief Ostenaco rose and said, "The bloody tomahawke, so long lifted against our brethren the English, must now be buried deep, deep in the ground, never to be raised again. . . ." The sound of oratory was a sound dear to the heart of the Cherokee.

The thin black line of a cable appeared above the water in the distance, and we knew we were approaching Bacon Ferry landing. Indian "burdeners" and traders crossed the river at this spot for a hundred years. Early in the 1700's, traders from Charleston began coming into the Cherokee country, bringing tools, guns, and clothing in trade for Indian furs. How they crossed the river we could only guess, but we

wondered how many guns (worth 35 skins); calico petticoats (at 14 skins, they must have been highly prized by the Cherokee women); and axes (at 5 skins each) might have gone to rest in the rocky bottom as a result of some inevitable mishap.

In later days a ferry plyed its way back and forth, and only recently did the last raft-like ferry, guided by a small motorboat, make its final crossing. We could see it hauled up on the landing, settled down to an apparent fate of decay and disuse.

Beyond the old ferry landing we noticed the 27-mile marker as we began to round the horseshoe of Bacon Bend, the Great Bend of the Cherokees. The curve to the right seemed to have no end, and by the time we had reached the 24-mile marker at the far tip of the horseshoe, we had done a complete about-face.

Time for Luncheon

The sun was as high as it gets in early May, and suddenly it seemed a long time since breakfast. We began to look for a good place to stretch our legs and eat lunch along the banks. The Black Angus cattle grazing in the lush green fields on the right looked up curiously and sauntered down to guard a watering place that would have made an excellent landing.

The fertile pastures of this farm encircled the Great Bend—pastureland that is tangible evidence of the $3 million annual farm income of this valley. The impounded river would cover 14,400 acres of this rich bottomland, along with the Hiwassee Land Company's million-dollar Rose Island Nursery and Seed Orchard, Tennessee's only industrial tree nursery—a high price to pay for the nebulous profits of industrial development based on the utilization of barge shipments. It is upon this development that TVA rests its case for the dam. And yet, according to an economic study of the nearby Knoxville area, "nothing significant in the way of local industry has developed based on water shipments either inbound or outbound."

Our third attempt to head in for a landing was successful, and I caught a protruding branch and pulled us onto the soft muddy bank. As we ate our lunch on the grassy edge of a newly-plowed field, the cheery flute-like tones of a meadowlark and the piccolo-notes of a bob-white serenaded us. We could hear, too, the steady chugging of a tractor at the far end of the field—a sound that was fitting and good in this place. Looking at our copy of Timberlake's map, I saw that this was the site of the Indian town of Tenassee, which gave its name to the river and the State.

Floral Color Spots

The bluffs rising abruptly a hundred feet above us on our left contrasted with the grassy pastureland of the opposite bank, and we paddled close to identify the little bits of bright color that could be seen at a distance. Pocketed in mossy niches, a veritable rock garden of Indian pink, wild azalea, bright-eyed violets, and pale dainty bluets greeted us. Feathery circlets of maidenhair fern dangled towards the water.

The sound of the river became more insistent as the tip of an island appeared and we could hear the river rushing past. This was one of several small islands clustered around the largest island in this part of the river, Calloway Island. As we passed the open cultivated expanse of Calloway Island, we saw on our left the outline of an ancient Indian mound standing out against the sky in the midst of the wide, flat stretch of bottomland that was once the site of the Cherokee village of Toqua.

Archeologists T. M. N. Lewis and Madeline Kneberg, formerly of the

Many Americans think that a segment of the Little Tennessee should be saved for its scenic, historic and recreational values.

Tennessee Game & Fish Commission photograph: Robert Moore

University of Tennessee, who made extensive investigations of the "tribes that slumber" in the Tennessee Valley, tell us that this was a ceremonial mound of the early Creeks who preceded the Cherokees in this area, being probably as early as 4000 B. C. The swish of a spear and the tap, tap, tap of chipping tools were sounds that mingled with the sound of the river here 6000 years ago.

The little Cherokee Indian boys that played around the village must have climbed this curious mound and dug into the surface of its flattened top, looking for relics of their unknown predecessors.

Following a path to the base of the grass-covered mound, we, too, climbed the twenty-odd feet to the top. Standing atop the mound and looking across the wide sweep of land below, we sensed the feeling of inner height or stature that it must have imparted to those mound-builders of the dim past.

The river became narrower as we passed the islands crowded around the foot of Calloway Island. We were surrounded by a symphony of song—the chirps and trills of birds hidden in the leafy branches of the sycamores and slippery elms that stood along the banks. We almost missed the comical performance of startled little ducklings water-skiing to safety before us, so quickly did it happen. Beyond the islands we passed the site of Tommotley, and saw traces of the path which joined it with Tuskega and all of the Indian towns along the river.

Birth of Sequoyah

The Indian boy, Sequoyah, was born in Tuskega around the year 1770, in sight of the rocky ruins of the fort which had been burned by his people fifteen years before. Sequoyah must have been keenly aware of the sounds of the river, because his ear was attuned to the sounds of the speech of his people. Though he had never learned to read any language, he devised a symbol for each of the 86 syllabary sounds of the Cherokee language, with the incredible result that almost the entire Cherokee nation learned to read their own language in the space of two or three months.

They say that the sun never sets on the Union Jack, but it is a little surprising to find one flying in Monroe County, on the banks of the Little Tennessee. We caught our first glimpse of the flag as we paddled down the mile-long stretch of river above the fort. The long line of wooden poles, their pointed tops rising fifteen feet above a dry moat, stand out against the green of the grassy hillside and interior of the fort. As Great Britain's southwestern outpost in the French and Indian War, the fort was an important factor in England's victory over France on this continent. Because of its exceptional value in commemorating and illustrating one chapter in the history of our country, the fort is now registered by the National Park Service as a National Historic Site. If the Tellico dam is built, the fort, partly diked and accessible only by a bridge, would be completely out of its historical and meaningful context.

Just beyond the massive gates which guarded the entrance to the fort is a convenient canoe landing, and we nosed our canoe into the bank under a venerable oak. Following the nature trail through the rich woodland on the north side of the fortification, past a pleasant picnic area, we entered the museum. The artifacts, relics, and maps of the interesting exhibits came to life as we related them to the sights we had seen on the river that day.

Following the self-guiding path around the fort we saw the restored powder house, and the foundations of the soldiers' quarters and of the "State House," where Attakullakulla, the staunchest friend of the English, and other prominent Cherokee chiefs were frequently received. We looked down into the dark depths of the rock-lined well that helped keep the besieged garrison alive for four months. Gradually, the story of the fort unfolded—a story of friendly relations with the Indians turning to hostility, of siege, surrender, and brutal massacre; a fascinating and gruesome story.

The muddy waters of Nine Mile Creek flow into the Little Tennessee opposite and just a little below Fort Loudoun landing. Many an Indian must have slipped his dugout into the narrow mouth of the creek, as we did our canoe, and clambered up the hillside to the Tellico Blockhouse. Thirty years after the demise of Fort Loudoun, the newly-appointed governor of the Territory South of the Ohio River, William Blount, decided that a trading center should be built on the edge of Indian territory to control the trade with the Cherokees. Too much horse-stealing and unscrupulous trading had been going on.

Mrs. Hultquist, who with her husband is co-author of several regional editions of the *Vacation Campgrounds* guidebooks, is a resident of Maryville, Tennessee, and writes about the Little Tennessee River with a background of personal experience.

An Archeological Dig

We looked down at the squared stones of the solid nine-foot walls and the hard-packed clay floor of the cellar. Careful research and painstaking excavation by two amateur archeologists, Richard Myers and Jim Polhemus, brought this almost-forgotten center of Indian trade to light and has added a page or two to the story of this historic site.

Brass buttons from regimental uniforms had lain for 150 years in the loose dirt fill around the rocks that had been dumped into the cellar hole, and pieces of fine English-made china found bear testimony to the accounts of the not-too-austere life of the soldiers stationed there for a period of about sixteen years.

As we started down the hillside, we looked once more at the magnificent panorama of mountain, valley, and river that could soon disappear as we rounded a bend in the river.

Shadows lengthened and the coolness of the river was reflected by wooded bluffs as we approached the giant concrete pilings of the Niles Ferry Bridge. At five o'clock we lifted our canoe out of the water at the landing under the Highway 411 bridge, loaded it on the top of our waiting car, and stowed away paddles, gear, and fish—three big rainbow and a brown trout. Heading back across the bridge, we drove up Highway 72 to the station wagon we had parked at Chilhowee Shoals eight hours and thirteen miles before.

We had heard the sounds of the river—sounds of the past, and sounds of the present. And we could only hope that there would be sounds of the river in the future. ■

NATIONAL PARKS ASSOCIATION
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Insert 8-66
Statement of the President and General Counsel at Wilderness Hearings on Great Smoky Mountains National Park

WILDERNESS IN THE SMOKIES

Statements submitted by Anthony Wayne Smith, President and General Counsel of the National Parks Association, at hearings on wilderness protection in Great Smoky Mountains National Park held by the National Park Service at Gatlinburg, Tennessee on June 13, 1966 (Part I), and Bryson City, North Carolina on June 15, 1966 (Part II).

Part I

MY NAME IS ANTHONY WAYNE SMITH. I am President and General Counsel of the National Parks Association, 1300 New Hampshire Avenue, N.W., Washington, D. C.

I appreciate the opportunity to participate in these hearings. If satisfactory to the Hearing Officer, I would like to break my statement into two parts, one for delivery here in Gatlinburg, the other for presentation at Bryson City.

THESE HEARINGS by the National Park Service on wilderness in Great Smoky Mountains National Park are of basic importance to the entire national park system.

The very life of the great national parks of America as this nation has known and loved them for a century is at stake. All of the big parks, beginning with Yellowstone in 1871, were established or confirmed by the American people as a whole, acting through their elected representatives in Congress.

It was the voice of the American people which spoke in the creation of these parks, and that voice will speak again in their protection.

The mandate laid down by the American people in all of these decisions was that the wild country comprised in each of these parks was to be protected in its natural condition, subject to compatible access.

It was the natural conditions which were to be preserved first; access to the area was to be compatible with such protection.

The parks are for people, as the crowd-recreation promoters never tire of saying; but the parks were created by the people in order that the plants, animals, streams, rocks, mountains, and scenery they contain should be preserved for their aesthetic, scientific, and cultural values in the interest of all the people; access, in type and quantity, must necessarily be compatible with these values, else the will of the people shall be defeated.

THE LAW OF THE LAND, in the National Park Service Act, in the acts creating the individual parks, in collateral statutes like the Federal Power Act, in a host of regulations having the effect of law, supported by a century of administrative practice, characterizes the great primeval national parks of America primarily as wilderness parks.

The Wilderness Act was not needed to imprint this quality of wilderness on the primeval parks of America. Rightly administered, however, it could add an additional statutory safeguard for wilderness in the parks. It is ostensibly for the purpose of the preparation of suitable plans for the permanent protection of wilderness in Great Smoky Mountains National Park, capable of implementation by administrative action or a new Wilderness Act for the park, that these hearings have been called.

It will be a tragic thing if the planning which has been undertaken by the National Park Service in anticipation of possible recommendations to the Secretary of the Interior and the President of the United States for wilderness protection here should become the vehicle for the dismemberment of Great Smoky Mountains National Park into relatively small wilderness areas on the one hand and heavy-duty visitation areas on the other.

There is plenty of room in the great region comprised by the park, the surrounding national forests, the adjacent Indian lands, the broad reaches of the territory of the Tennessee Valley Authority, and the vast private land holdings outside the public lands, for the accommodation of the great crowds which rightfully seek to escape from their prison cities every summer to enjoy the outdoor experience.

THE PLANS which have been laid before us here for the protection of wilderness in Great Smokies Park do not provide that protection.

Less than half of the park is to be classified as wilderness, whereas, pursuant to established policy, practically the entire park is properly to be regarded as wilderness, with minor facility areas; facilities, whether camp grounds, trailer courts, lodges, roads, or comparable installations, should be located mainly outside the park.

Corridors of occupied country are established by the plan presented to us here along the highways; whereas the wilderness areas should begin at the roadside; if one wilderness area is created to the right, and another to the left of the road, there is no conflict in the definition of wilderness as a roadless area; true, no road can thereafter be placed in either of those wilderness areas, and this is precisely what is desired.

The relatively small wilderness areas proposed have no connections, one with another; this is ecologically unsound, and will result in biological changes in the direction of sub-species in time; it can also result in the elimination of particular species from specific areas, for want of migration space. It is imperative that wilderness in the parks be made continuous, both within each park, and with wilderness in the national forests.

The failure to include adequate over-all territory is revealed by the tentative subordinate plan included in the master plan for the park, pursuant to which most of the park not classified as wilderness would be classified as primitive or unique under the categories of the Bureau of Outdoor Recreation. Such classification is tantamount to the admission that all this vast additional territory should be preserved as roadless, hence as wilderness in the sense defined by the Wilderness Act. Why is this additional country to be classified as primitive, meaning wilderness, but not be given official status as wilderness?

THE NATIONAL PARKS ASSOCIATION endorses the position taken by the Great Smoky Mountains Hiking Club, the Wilderness Society, and other conservation organizations, for the enlargement of the proposed wilderness areas in the park.

The wilderness classification should be at least as large as recommended by the Club. It should comprise, in addition, all areas classified as primitive and unique, pursuant to the ten-

tative component plans in the master plan for the park; this enlarges wilderness considerably beyond the proposals of the Club. We would go farther and bring the boundaries of wilderness out to the boundaries of the park on all sides; there is no reason for a fringe of unprotected country around the edges of the park.

There are to be a number of facility areas within the park, according to the tentative components of the master plan, and some of these may be desirable; Clingmans Dome is obviously one such area, where the passage of time has made restoration impossible. Centers of this kind could be retained or established along the existing park roads system; they could serve as high lookouts for visitors by automobile and as take-off points for travel by trail into the wilderness country. They should be restricted in size and should not be long, roadside zones; they should be classified as the so-called general outdoor recreation or natural environment areas under the BOR classifications. The boundaries of the wilderness areas should be brought down precisely to the boundaries of these enclaves.

The Cade's Cove Historical Area should, of course, be left out of any wilderness area; the purpose served here is quite different. The master plan indicates, however, that a large area of primitive classification adjacent to the Cade's Cove Historical Area has been omitted from the wilderness area; it should be incorporated into the wilderness area.

THE PLACE FOR heavy-duty recreational access in the Great Smokies-TVA region is outside the national park. Compatible access can easily be provided into the wild country of the park from private resorts or public facilities outside the park. Private enterprise operating private resorts outside the public lands is entitled to guarantees in terms of permanent park plans that the National Park Service will not enter into competition for mass-recreation business by locating facilities inside the park. This is a right, in our judgment, which the private recreation and vacation businesses are entitled to get from the Government; we propose to support them in such endeavors.

The place for mass-recreation facilities on the west side of the park is at Gatlinburg and communities north and west of Gatlinburg. The place for such facilities on the east side of the park is at Bryson City and points west and south of the park. In these broad reaches of mountain country northwest and southeast of Great Smoky Mountains National Park there is space in vast abundance to receive the multitude of visitors who are entitled to enjoy the finest outdoor life this continent can provide.

Within the great national forests which surround the park there is room for a large number of the camp grounds, and even the trailer camps, which are the objectives of many visitors who travel by automobile. The national forests, save for their statutory wilderness areas (and in the West the primitive areas) are subject to timber harvest. Cutting is done, for the most part, or should be done, on a perpetual-yield basis, preferably by individual-tree selection, on short-cycle and long-rotation; such methods, followed with consideration for ecological values, can leave the soil, streams, wildlife, sub-story and canopy practically intact.

Such management requires a well-planned system of access roads for harvest; such roads will also provide access for visitation. The location of camp grounds can be changed as cutting cycles require. This is multiple-use in the legitimate sense of the word, and should be incorporated in comprehensive plans for the protection and enjoyment of the region.

We are dealing here with something much more fundamental than getting the U. S. Forest Service to provide more camp grounds in the national forests. The problem is to avoid any increase in facilities within the national parks, to avoid facilities in the wilderness areas of the national forests entirely, and to locate suitable camping facilities in the multiple-use areas in the national forests instead, and to an even larger extent outside the public lands entirely.

Incidentally, some of the studies of the planning for the park report that consideration is being given to a network of helicopter landings throughout the park, including the wilderness areas. The conservation organizations have already registered their firm protest with the Service against such facilities in the proposed new North Cascades Park in the Pacific Northwest; we were given reassurances that such facilities would not be introduced elsewhere in the system; this was not accepted as satisfactory.

Are we to anticipate that in fact the helicopter idea will be introduced elsewhere? The wilderness and primitive areas are primarily areas protected against mechanical intrusion. The noise of the machines, whether planes or helicopters, shatters the wilderness environment and experience. It is precisely the experience of entering the wild country on foot and camping out there undisturbed by machines which is so eagerly sought after by a large and growing number of people all over this Nation.

Such are the general outlines of the comprehensive planning policies which we consider essential if the natural country in our parks and forests is to be protected as such while abundant opportunities for healthful outdoor recreation are provided for all the people of America.

A WORD AS TO THE PROCEDURE in these hearings: the information given the public has been completely inadequate. We are supplied with a map of the proposed wilderness areas; the criteria, if any, which were used in establishing these areas, have not been revealed. The master plan, available only at Government offices, and not mentioned in the announcements, shows that administrative protection would be extended to additional areas as primitive or unique; why not as wilderness? The public has not been advised of the proposed administrative classifications; no maps are available for distribution. Such procedure prevents proper public participation in hearings of this kind; it deprives the public of proper information on the operation of the system.

Not only is the information on Park Service plans inadequate, but the plans for the surrounding public lands, while they may exist, have not been brought to the attention of the participating public, and the information they contain, if any, looking toward comprehensive regional planning, has not been distributed. The American people are entitled, in hearings of this kind, to have laid before them (without having to dig them out) all plans or related information which may have been developed by the National Park Service, the Bureau of Outdoor Recreation, the Bureau of Indian Affairs, the Tennessee Valley Authority, the U. S. Forest Service, the Soil Conservation Service, the Bureau of Public Roads, and other agencies.

With the permission of the Hearing Officer I would like to interrupt my statement here and complete it in Bryson City.

Part II

ON MONDAY I outlined the comprehensive regional planning approach which the National Parks Association has advocated for the protection of wilderness in the parks on the one hand, and on the other the provision of adequate mass recreation facilities elsewhere on public lands and on private lands outside the wilderness.

I would like to deal here mainly with the great opportunities which exist for cooperation between private enterprise in the

tourist, recreation, and vacation businesses, and the public land management agencies, if such a comprehensive regional planning policy is adopted.

This country around Bryson City is rich indeed in potentials for the development of such privately-owned and privately-operated vacation businesses if it stands resolute guard over the wilderness country which lies above it in Great Smoky Mountains National Park.

There are many places in the United States where the public can drive for pleasure through beautiful but semi-civilized country. If automobile recreation were the only thing that Bryson City and the vicinity had to offer, it could not hope for any great increase in tourist and vacation trade in the years ahead. The real drawing card here is the great backdrop of wild mountains which makes this region unique and famous.

There is a powerfully growing sentiment throughout America, with which I happen to be closely in touch as Executive Officer of the National Parks Association, for the preservation of large areas of roadless natural country for the enjoyment and appreciation of the great numbers of people who wish to enter such country on foot, or in the West, on horseback.

These great numbers of people desire to escape from the noise, congestion, and traffic of the big cities, to find quietude, solitude, relaxation, and re-creation, in the regenerative sense of the word, in the kind of natural country which characterized this continent when first explored.

This is a highly civilized objective. It is not restricted to a mere handful of people with a peculiar point of view. It is rapidly becoming the dominant thought in outdoor recreation throughout this land. The difficulty is that such recreation requires great quantities of open space, of untouched mountain and forest country; if we are to have enough country of this kind for the great numbers of people who are now demanding it, we must protect what we have with resolution.

The Bryson City-Great Smokies region is a little like the world-famous Grand Teton National Park in the West. Grand Teton Park, like Great Smoky Mountains, was made possible in large part by the generosity of John D. Rockefeller, Jr., who contributed the necessary preliminary land and money. At Grand Teton you have the high mountains and the beautiful valleys between them which are accessible by foot and horseback; it would be possible, although difficult, from an engineering point of view, to run roads up these valleys, but this would destroy the very attraction which brings great numbers of people to the flat open country below the mountains. There in that open country are Grand Teton Lodge, one of the largest hotels in the park system, and numerous privately owned and operated resorts, riding establishments, and mountain-climbing schools.

The situation here is quite similar. The great magnet for travelers will be the unspoiled wilderness of Great Smoky Mountains National Park, available by the existing park roads system and a network of trails which will be used intensively by great numbers of people who wish to escape the traffic. If this wilderness is destroyed or injured by ugly cuts in the mountainsides, fills in the valleys, and persistent slides, the attracting power of this country for visitors will be gravely impaired. If the wilderness is protected against the traffic, the recreational country outside the park will profit immensely.

A GREAT NETWORK of parkways, beginning with the Blue Ridge Parkway, will soon provide circumferential circulation and recreational access all the way around Great Smoky Mountains National Park. These parkways and highways will connect the communities like Bryson City which lie east and south of the park. Within these communities we visualize the growth of the finest kind of privately owned and operated vacation resorts situated on private land, stimulating the economic life of the entire area. Here you will have the golf courses, riding academies, swimming pools, lounges, motels and hotels, which are so eagerly sought after by large segments of the traveling public.

The one thing that is needed for the prosperous development of such privately owned resorts is a guarantee by the National Park Service and the other land-management agencies of the Federal and State governments that competitive mass-recreational facilities and road systems will not be developed within the national parks, or the wilderness areas of the national forests.

This is not to say that a reasonable development of suitable camp grounds within the multiple-use areas of the national forests should not occur; on the contrary, I recommended such development in my statement in Gatlinburg; but beyond this the provision of facilities on the public lands should not go. The great weight of mass-recreational development should be reserved for private enterprise outside the public lands.

AGAINST THE BACKGROUND of such considerations, if I were an elected public official in Bryson City or Swain County, I would seek to obtain from the Bureau of Public Roads in the U. S. Department of Commerce and from the Bureau of Outdoor Recreation in the Department of the Interior, and from the comparable State agencies as well, the preparation of a comprehensive highway plan for this region which would not include either a highway along the north shores of Fontana Reservoir or a second trans-mountain highway through Great Smoky Mountains National Park, but which would provide instead for a parkway from Bryson City to Fontana Village through the mountain country south of Fontana Reservoir and for other desirable and necessary parkway and highway construction in the vicinity of Bryson City.

Quite frankly, as such a local official, I would seek to drive the hardest possible bargain with the big Federal money-dispensing agencies to get the roads needed outside the park, and to get the new State parks and other recreational facilities which could be financed with the help of the Land and Water Conservation Fund, and to get all possible assistance from the Federal agencies which aid private enterprise in the development of private recreational projects.

SPECIFICALLY, then, as to the contents of a comprehensive plan for the Great Smokies-TVA Region: I have dealt with wilderness protection and with multiple-use recreation areas in the national forests in my statement in Gatlinburg. Turning to the question of roads, there is already a network of parkways and highways surrounding the park. It is these roads which should accommodate the heavy traffic, commercial and recreational. This is not a question of having big road development inside and outside the park; it is a question of substituting such development outside the park in place of such development inside the park.

The National Parks Association, and we believe nearly all conservationists, are opposed to any further highway construction around the northern shores of Fontana Reservoir, and we are equally opposed to the construction of a second trans-mountain road. It is folly to suppose that by building these roads the traffic problems on the existing trans-mountain road will be eased in the slightest; on the contrary, the destructive concourse of vehicles through the park will be intensified.

IT IS ARGUED that the old agreement between the Tennessee Valley Authority and Swain County requires construction of the Fontana Road or in the alternative, by a new agreement, a new trans-mountain road.

We are not novices in the study of government. I have been engaged in such study on a professional basis for over 35 years; the Association has functioned in such work for some 47 years. The Federal Government is busy pouring great sums of public money into the region around Great Smoky Mountains National Park through the Bureau of Public Roads, the

Bureau of Outdoor Recreation, and otherwise; as a practical governmental matter, realistic understandings are constantly reached by the Federal, State, and local authorities in deciding upon the allocation of such funds.

Rational planning for the park and the surrounding region requires that the old agreement, if in fact it be applicable at this date, be renegotiated as part of a broad cooperation among governmental units. We have no sympathy whatsoever for the contention that the Federal Government is permanently bound by these arrangements.

A FURTHER WORD about roads and highways in the park: the notion of a motor trail is a contradiction in terms. A trail is a place where a man can walk, feel the ground soft under his feet, not the blacktop; smell the woods, not the fumes of cars; and hear the birds, not the motors. Most park visitors, if given a little encouragement to leave their cars, will do so, and walk the short length of a good nature trail with keen interest. Nature trails, not motor trails, are what the park needs, and what, in our judgment, most visitors want when they go to a park. The motor trail notion should be dropped. Where access roads for automobiles are built, they should be limited in number, and should be dead-end roads, to discourage use by fast through traffic, uninterested in what the park really has to offer.

The Tennessee Valley Authority has been accustomed to publicize the grand recreational opportunities it affords on its reservoirs; we have no doubt that in some places these pronouncements are justified, though we think that there has been a studied practice of overlooking the devastating effect of the deep drawdowns at the upper reaches of the reservoirs. But TVA should be required to make good on these offerings to the extent that they have reality in them; it is on the big reservoirs of TVA that many of the mass recreation facilities of this region should be located. More and better facilities should be constructed at points on the reservoirs where good access can be had and where the drawdowns do not mar the country beyond acceptability. And TVA could also be asked to regulate the use of the waters of the reservoirs in such manner as to minimize drawdowns during the so-called recreation season, June to September.

Let us take the recreational facilities of Fontana Reservoir as an example. The TVA should be required to manage flood control and hydro-electric power production here in such manner as to minimize drawdowns during times of heavy recreational visitation. Relatively attractive shorelines would then be available along which boating facilities could be provided; the reservoir would be ideal for large motorboats and sailboats. Facilities should be provided at landing sites for the accommodation, convenience, and comfort of visitors; visitor centers, museums, small auditoriums, and educational facilities could be located there. Trails should take off into the high country of the park from these points. High-quality water access by electrically-powered motor launches, operated by private resort owners or concessionaires, would bring the holiday crowds from Bryson City and Fontana Village to the landing points along the shorelines.

A similar method of access by land from privately-owned vacation resorts outside the public lands up to the wilderness areas in the park and forests might be by quiet, comfortable, well-designed coaches, preferably electrically driven, operated by the private resorts or private concessionaires, which would take people to points where they could reach picnic sites and camp grounds, high overlooks, and relatively remote places within the parks and adjacent to wilderness areas.

THESE PROPOSALS for comprehensive planning have had much lip service. They have encountered no serious criticism, but on the contrary much approval, in the National Park Service, the Bureau of Outdoor Recreation, and the Department of the Interior. But now, when it comes to planning for the permanent protection of wilderness in the parks, the proposals are ignored as completely as if they had never been made.

The plans before us for wilderness classification within Great Smoky Mountains National Park are based on park-wide consideration only. They do not purport to be a part of a more comprehensive regional plan. In brief, the planners recommend that Great Smoky Mountains National Park, as such, and doubtless as an example, be dismembered into relatively small wilderness areas and relatively large tracts of land which will be protected only by primitive or unique area classification, of an administrative nature, or not at all.

In our considered judgment, the public agencies which are undertaking or permitting such small-scale intra-park planning for park wilderness are derelict in their duty to the American nation. It is quite possible that the responsibility in the last analysis lies with the Recreation Advisory Council, of which at present the Secretary of Agriculture is Chairman; but the Secretary of the Interior is also a member of that Council.

What is called for here is that the responsible agencies of the Federal government be brought together, either through the Recreation Advisory Council or otherwise, to develop a comprehensive plan for the TVA-Great Smokies Region, *before*, not *after*, recommendations have been prepared by the Secretary of the Interior for the consideration of the President of the United States.

As a bare minimum in the region in question, the Park Service, the Bureau of Outdoor Recreation, the Forest Service, the Soil Conservation Service, the Bureau of Indian Affairs, the Tennessee Valley Authority, and the Bureau of Public Roads would have to be covered and bound by such plans and should be required to participate in the planning process. The state governments should also be included in the planning process.

Through the considerable number of bureaus which are now empowered by law to extend aid to private enterprise for recreational purposes, private enterprise engaged in the recreation and vacation business in the region should also be brought into the planning process.

And last but not least, those private, non-profit, public-service organizations, educational and scientific in character, which have shouldered so much of the burden for the protection of the national park system over the years, must be included in the planning process if it is to be effective.

It seems to us to be unfortunate that administrative responsibilities of this kind should be unloaded at this time in history on the White House. True, the Recreation Advisory Council is advisory to the President; the Bureau of Outdoor Recreation provides the staff for the Recreation Advisory Council; in what may be an unfortunate conflict of responsibility, the Bureau of Outdoor Recreation is also responsible to the Secretary of the Interior.

It would be a helpful thing for the Nation, and it would prevent the imposition of additional tasks on an over-burdened President, if the Secretaries of Agriculture, Interior, and Commerce, and the Chairman of the TVA, whether through the Recreation Advisory Council or otherwise, were to collaborate in the development of a comprehensive plan for the protection and enjoyment of the TVA-Great Smokies Region by and for the people of the United States.

But one thing is sure: the dismemberment of the Great Smoky Mountains National Park as provided for in the plans before us here for discussion was not contemplated by the Wilderness Act; nor by the protective tradition which has characterized National Park Service administration for a century; nor by the people of the United States, who have a right to have the park protected in its natural condition, which was the purpose of its establishment. ◆

The white-tailed deer, among other mammals, finds the climax stage of wetlands (in which a swamp, for example, is invaded by trees and other woody plants) ideal terrain in which to "yard up" for food and shelter during the winter.

Courtesy Michigan Conservation Department

Wetlands: Stepchild of Land Use

By Frank G. Ashbrook

In the July number of this Magazine there was an article which told how swamps and marshes—our so-called "wetlands"—came into existence. No doubt we could live without wetlands, but we could live a better and fuller life if we were cognizant of their importance and real value in our land economy.

The word "wetland" cannot be found in the dictionary. It is a coined term, and a rather vague and ambiguous one. In the public mind, wetlands can mean potholes, swamps, marshes, lagoons, bayous, canals, or other water areas of like general nature.

The dictionary does, however, define pothole as a "deep hole," "a pit." In conservation circles a pothole is usually thought of as a shallow-water area perhaps two feet deep and about an acre in size on a watershed draining a certain number of acres. But it is not necessary to split hairs. Perhaps a more reasonable and conservative definition of wetlands would designate those areas that are too wet to till for intensive agricultural use, but which are potentially reclaimable for agricultural or industrial development.

However, the wild creatures inhabiting such areas do not seem to care what we humans call them. These lands are focal points for all kinds of wildlife, and because this is so, every owner of wetland should make a special effort to develop as many acres as possible for wildlife use and increase.

Sometimes conservationists think that selling wildlife values of wetlands to Americans should not be such a difficult job. Is it not common knowledge that ducks, muskrats and beavers use our marshes and swamps for family homes, for shelter, and for food? And do not many species of both small and big game utilize wetlands to satisfy seasonal needs?

Users of Wetlands

Our biologists, working on the national wetland inventory, have compiled a list of at least fifty fur and game species that utilize wetlands. Oddly enough, wooded swamps, although generally low in waterfowl value, are used by more species of resident game animals than any other type of wetlands. But selling wildlife utility to our farmers, landowners, and the general public has indeed been a difficult task.

As far back as 1920 E. W. Nelson, former chief of the Biological Survey (now the Fish and Wildlife Service in the Department of the Interior), had presented a program for managing wildlife on lakes and marshes, a program as timely today as when it was proposed. ". . . . The mistaken idea is prevalent that the drainage of almost any area is a benefit to the community. Under proper conditions 'water-farming' of many lakes and ponds and of swamp or marsh areas will yield a distinctly larger return than would the same area drained and used for agriculture. Under intelligent management these areas will yield abundant and varied returns to the community.

"The results of recent investigations show that wild fowl fly across country in all directions from their main congregating places, thus showing that hunters should take a keen interest in the proposed conservation of water areas in all other states as well as their own. Once a general policy is established for the maintenance of water areas suitable for wild fowl resorts, sportsmen may feel assured that a goodly amount of wild fowl hunting will be possible for a long period in the future. Such a result, however, will not

come without earnest effort on the part of the sportsmen working with the state fish and game commissioners. The Biological Survey desires to make itself useful in helping bring about this next great conservation project for the maintenance of our wild fowl and vigorous and health-giving out-of-doors sports."

When Chief Nelson presented his plan more than forty years ago, measures for counteracting resource impairment were insufficient and applied by too few people. This same situation is prevalent today. The people of the United States do not yet realize that the protection and wise use of wildlife are of vital concern to them. They are not yet convinced that we must either safeguard the natural resource base or resign ourselves to progressively lower standards of living.

It seems that we are slow to profit from advice and the experience of others. We were not sufficiently farsighted at the time to wholeheartedly implement the recommendations made by Nelson; however, it was his work and pleas for wild fowl that helped pave the way for the national wildlife refuge program of today.

Some thirty years ago a succession of dry summers, with searing winds which made the term "Dust Bowl" famous, brought the wild duck population of North America to an all-time low. It was a wind, said J. N. "Ding" Darling, "that almost blew no one any good," but which eventually resulted in a water shortage crisis. Out of this crisis and Darling's persistence under the most frustrating circumstances, the world's largest system of wildlife refuges finally came into being.

Darling always thought prophecies dangerous, but said "the refuges and safeguards which resulted from those early difficult days have insured most of the species of wild ducks and geese and many other migratory birds permanently against extinction."

A Wetlands Survey

In more recent years great concern over loss of wetlands has been expressed by conservationists and sportsmen interested in the welfare of waterfowl. The rapid depletion of wetlands prompted the National Wildlife Federation to conduct, in 1955, a national wetlands inventory.

A report, *Wetlands of the United States: Their Extent and Their Value to Water Fowl and Other Wildlife*, was published in July, 1956. It climaxed a two-year inventory and specialized study of America's wetlands. While this was not the first inventory of the nation's wetlands, it was the first such inventory designed to delineate the wildlife value of wetlands and to set the wildlife resource in proper perspective with other resources in a balanced land-use pattern. The inventory has been utilized extensively because it points out relative values of different types of wetlands to wild animals in general, and to waterfowl in particular.

In the regular process of Government business, however, saving and acquiring wetlands for wildlife becomes a herculean task. For the wheels of government move slowly, particularly where conservation of wildlife is concerned. The funds available for this gigantic project are insufficient and, in government, money cannot be obtained fast enough to catch up with acquisition needs. Then there are other hurdles to negotiate—meetings with the Migratory Bird Conservation Committee, hearings before the Bureau of the Budget and the Congressional committees, changes in administration, reorganization, and a thousand and one things which require more time than seems available. Nevertheless, public support for saving wetlands is still forthcoming.

"The aim of Government policy today," says Samuel H. Ordway, Jr., "seems to be to satisfy the largest possible number of competing demands. Emphasis is on opening up, making available, encouraging use. . . . A major change in emphasis is needed. Henceforward, we the people should insist on policies that preserve and increase the productivity of our resource base."

Need for Cooperation

Within the past decade there has been an increased awareness on the part of the game and fish administrators, but very little on the part of the public, that the preservation of aquatic habitats must be a cooperative endeavor. Because of limited funds and personnel, fish and wildlife agencies could never hope to do an adequate job by themselves. They need the help of other land-use agencies whose primary responsibilities lie outside the fish and game field. Cooperative planning with

In the picture below, a Canada goose is shown making use of a muskrat house as a nesting site. Marsh is part of Blackwater National Wildlife Refuge in Maryland.

Courtesy Fish and Wildlife Service: Herbert L. Dozier

these agencies can go far in preserving and improving conditions for wetlands-inhabiting wildlife through provision for proper attention to habitat needs.

Units of government, State and Federal, should play an increasingly important role in guiding and determining the uses to be made of undeveloped lands, including wetlands. In many instances, wildlife must be a byproduct of more essential land and water uses; in others, wildlife production should be the primary objective land use. In any case, advance planning must be done before it is too late.

But the private landowners hold the key to the situation, for it is they who possess the greatest total acreage of wetlands in the United States. Therefore it becomes an obligation on the part of every wetland owner to retain and develop, insofar as it is possible, such land for wildlife production, not only because these lands are naturally best suited for the purpose, but because in the majority of cases this land is more productive and more profitable for wildlife than for crop growing.

Research, practical experience and observation have shown that wildlife management, farm management, forest management, soil conservation, and other land uses can live together harmoniously for effective and lasting benefit. Gifford Pinchot called this "multiple use." But wild animals are a product of the land, and in spite of much loose talk about multiple use in land management, the production of *one* crop or the engaging in *one* activity usually dominates.

Frank Ashbrook, author of numerous articles on wildlife conservation topics, is a retired Fish and Wildlife Service official. He now makes his home in Riverside, California.

Maximum production implies multiple use, yet we must recognize that all values are not equal and therefore the most important value must receive first consideration. In the case of wetlands, priority should, it would seem, be given to wildlife.

The wetland problem, then, is partly one of harmonious adjustment between man and wildlife. Agriculture is, of course, a vital industry, but if wildlife, and especially waterfowl, is to be retained as a source of relaxation and pleasure for millions of people—or even for its own sake—we must not only retain our wetlands but develop them to a much greater productivity than they now enjoy. Cooperation must replace conflict. It is not a question of choosing between agriculture and wildlife; both are needed, and to solve the wetland problem each interest will have to do some adjusting.

Solving the problem of wrong uses of wetlands is of vital importance to all of us. It is a tremendous problem and unless landowners realize their obligations to themselves and to society it may remain unresolved.

The conservation and development of wetlands for wildlife has not yet become a popular movement in the sociological sense. Surely there have been voices raised in protest against wholesale elimination of wetlands, but each day more marshes, swamps and potholes are drained, and the remnants of wetlands decrease at a high rate.

There is great need for a cooperative effort that will make wetlands for wildlife production an inherent part of our land-use and soil conservation programs, for recognizing not only the "rights" of individual landowners but also the "rights" of wildlife and those who feel that wetlands wildlife is a legitimate part of the American scene.■

North of the line of farthest advance of the Wisconsin ice sheet in the plains country of America, there are myriad "potholes" of varying sizes which afford prime breeding grounds for waterfowl. Countless numbers of these have been drained for the plow, although they might have been saved for wildlife purposes just as profitably.

Courtesy Fish and Wildlife Service: Rex Gary Schmidt

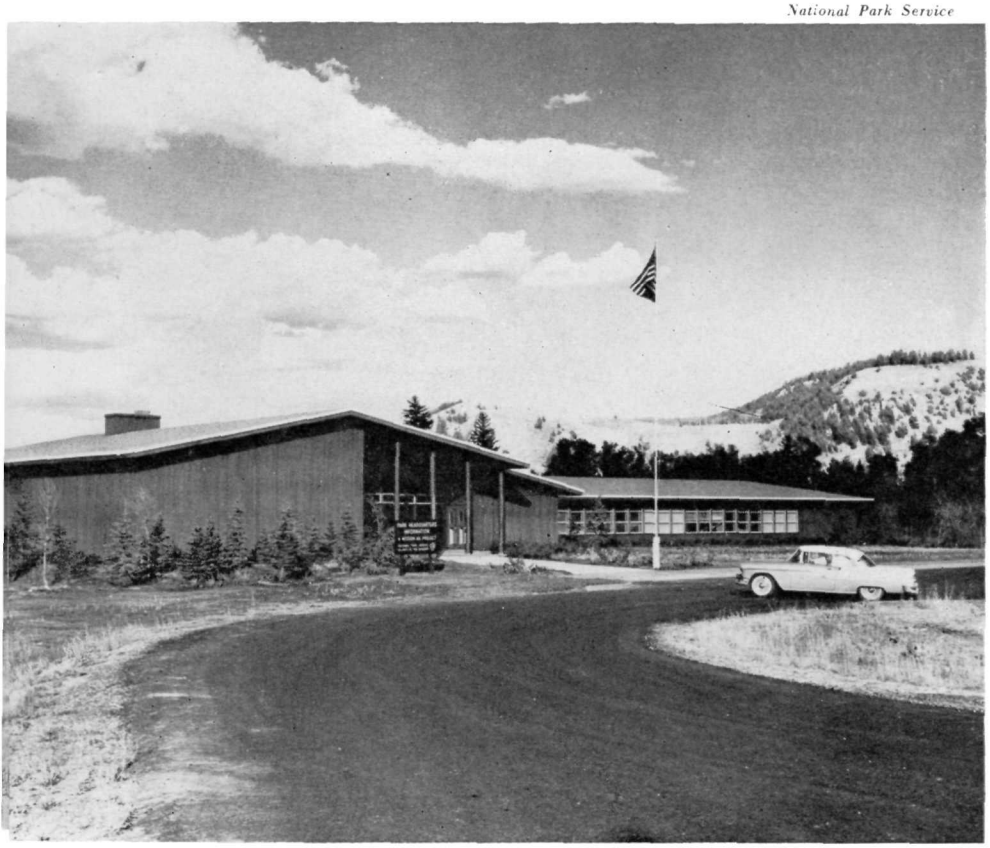
THE EXPERTS LOOK AT WATER IN THE NATIONAL PARKS

By William J. Schneider

A VISITOR TO A NATIONAL PARK IS quite likely to see water in one form or another. Perhaps he is most likely to see it as a drinking fountain at a visitor center, as he casually accepts the refreshment of a cool drink on a warm day. Perhaps he sees it as a clear, swift stream tumbling over rock riffles as it winds through majestic forests. Perhaps it is a river of ice, a glacier advancing and retreating at what to him is an imperceptible rate. To the casual observer, water in its various forms is an accepted part of the national parks. However, to the hydrologist—the water scientist—it is a vital resource that must be managed properly if it is to assuage both the physical and esthetic needs of man. This proper management can only come from intelligent knowledge and understanding of the resource itself—the water. Obtaining this knowledge and understanding is a prime responsibility of the Water Resources Division of the U. S. Geological Survey.

Water supplies for park headquarters and visitor centers like those at Grand Teton National Park in Wyoming, shown below, are often developed on the basis of data obtained by the U. S. Geological Survey.

National Park Service



Some of the Geological Survey's water-related activities are conducted in the national parks. One of the important activities of the Geological Survey is to furnish information and data on the availability of water for use at visitor centers and accommodations areas in the national parks. Currently the Geological Survey is conducting studies to locate and develop water for public use in many areas of the national park system, including Cape Hatteras National Seashore in North Carolina, Dinosaur National Monument in Utah, Yosemite National Park in California, and Virgin Islands National Park. All these programs are conducted cooperatively with the National Park Service. Test wells are being drilled in many of these parks to locate suitable sources of water necessary for orderly development of National Park Service facilities. In most cases, the test wells are being drilled under the technical supervision of ground-water experts of the Geological Survey.

In addition to locating water supplies, the Geological Survey is conducting over-all water resource appraisals of national parks at the request of the

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Publication of this article is authorized by the Director, U. S. Geological Survey. Mr. Schneider is Staff Hydrologist with the Water Resources Division of the Survey.

National Park Service. Such over-all studies are needed as guides to proper planning of park development. Perhaps of particular interest are the appraisals of the Virgin Islands National Park and the Cape Hatteras National Seashore. In each of these reserves there is a limited amount of fresh water available which is replenished by rainfall. Overdevelopment of this freshwater supply will result in contamination of the supply by salt water from the ocean. Thus, in these two areas, the appraisal studies are aimed at determining the amount of fresh water that can safely be developed. Such studies have been completed for many national parks, and similar studies are contemplated for other parks.

The Geological Survey also conducts research studies in the national parks. "Bench mark" stations have been established on streams in national parks to measure streamflow in natural environments, as a base for determining changes in other streams which are affected by the cultural developments of man. The movements and melting of glaciers are being studied to increase our knowledge of past floods and droughts and to provide greater understanding of the relations between water and the total environment.

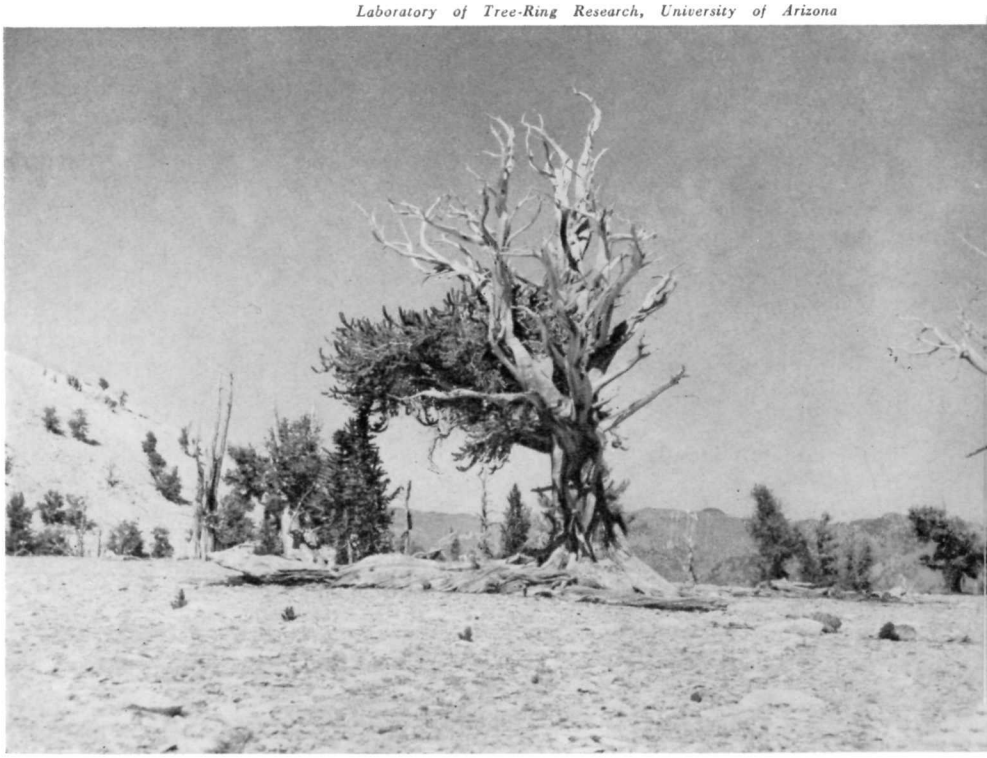
In the Everglades National Park in Florida, hydrologic and hydrobiologic studies are being conducted to meet an urgent need for data. Water problems and a recent drought have brought about a critical situation that threatens the unique wildlife population of the area. Here, a combination of standard hydrologic investigations coupled with pioneer research efforts are being conducted jointly by the Geological Survey and the National Park Service.

This article has described briefly the water-oriented work of the Geological Survey in the national parks. In a series of coming articles, some of the current projects will be described in greater detail. ■

U.S. Geological Survey: J. H. Hartwell

Water levels and streamflow, as well as other hydrologic data, are measured at sites in the national parks. Shown at left is an automatic data recording installation in a remote area of Everglades Park.

Laboratory of Tree-Ring Research, University of Arizona



Long-term hydrologic regimens can sometimes be interpreted from rates of growth of trees. Shown at right is a bristlecone pine growing in the White Mountains of California. Age of the tree is estimated at 1000 to 1500 years.

Photograph by the author

"Finally . . . he waded out into the flooded terrain . . ."

Animal Release in Everglades National Park

By Gale K. Zimmer

THE TERM "MOUNTAIN LION" IS seldom used in the Everglades. There are no mountains here—only the flat open prairies and lush water courses—and so we call them panthers. And here, more than in other parts of the nation, these big mammals are extremely rare.

The panther population of Everglades National Park gets a boost now and then from Bill and Lester Piper of Bonita Springs, Florida. The Pipers own what might be termed a private zoo called Everglades Wonder Gardens. A good cross-section of south Florida wildlife is displayed at the zoo, but space is limited, and to avoid overcrowding, the Pipers give excess native animals to Everglades National Park. In the past donations have included panther, bear, crocodiles and turtles. The most recent group was composed of one black bear, a big crusty crocodile and three young female panthers.

Bear are also rare animals in Everglades park. The eastern black bear is a native of the Everglades area, but it is not present in abundance now and efforts to reintroduce the species have met with little success. Bears are curious creatures and insist on "visiting" inhabitants of communities surrounding Everglades National Park. Not long ago a park bear helped himself to honey from a nearby farmer's hives and was shot. A second bear wandered into Florida City and met a similar fate. Another went begging to a hunter's camp near the park and became a hunter's trophy. When bears are scarce, it is difficult to maintain the population unless local residents are willing to take the time and effort necessary to live-trap, not shoot, the animals.

Crocodiles, too, are rare park animals. Everglades is at the northern limit of the American crocodile's range. Once in a while a crocodile is encountered in the salt water areas of the park—Florida Bay, West Lake, Madeira Bay, or Crocodile Point—but they are not even as abundant as the now-rare alligators. There are probably more crocodiles at the Piper zoo than in the park. The American crocodile reaches about the same size as an alligator and has a similar mild disposition. Any help these interesting animals can get from augmented numbers should be provided. And, in conjunction with the National Park Service's policy of maintaining natural fauna and reintroducing once-native but vanishing species, help will be provided.

Panthers also have problems in the park. They are wide-ranging in their quest for food and occasionally they, like the bear, wander into man's domain. The results are seldom beneficial to the panthers.

The number of panthers in Everglades park is unknown. The large mammals are elusive, and quiet as they go about hunting their prey of deer, rodents, rabbits, raccoons and other small mammals. Panthers have been sighted in the park in the Royal Palm, Mangrove, and Cape Sable areas. The hammocks and bayheads of the gladeland provide ideal cover for panthers; the mangrove forest is also favored habitat. Over half the panther observation records for the park indicate sightings of young rather than full-size animals. This may indicate a good rate of reproduction among park panthers. It may also mean that like a number of animals in and near the tropics, a smaller size adult panther is common in the park. The panthers at the Piper zoo are small when compared to those of the West. Observation records also indicate that many of the park panthers are dark; some records even say "black." At least part of the answer as to whether or not black panthers can be found in Everglades Park can be answered by the Pipers. Their panthers are darker than the average tawny-colored panther. Thus, if one of their

dark, released panthers is sighted on a park road and is silhouetted against the sun, he is very likely to appear as black in color to the observer.

The five animals to be released from Everglades Wonder Gardens were trucked in cages to areas within the park where they would be most likely to find suitable food and habitat. For a while it looked as though the bear might climb into the cab of the truck rather than take to the glades. Finally he left his cage, flopped off the truck and waded out into the flooded terrain. As he walked, his feet got stuck in the mud, and he very deliberately pulled each one up as he put the next one down.

The crocodile had not enjoyed his trip on the truck, and took some time getting his bearings on the pond bank. Then he slipped into the somewhat salty water of his new home.

The panthers maintained their impressive feline dignity throughout the trip. The most spirited of the nine-month-old panthers was released first. She bounded out of the cage, took one look at the five humans present, and ran for open country. Her energetic splashings in the flooded glades could still be heard after she disappeared. We also heard the screechings of a group of startled crows she aroused. The second panther was more dubious. She looked out at freedom, then back at her companion in the cage, then out again. Finally she came forth, and stalked down the road. Soon she left the road and waded out into the grass toward a distant hammock. These animals, which were born in captivity, had known only a smooth cement floor—no knee-deep water, no sawgrass, no pinnacle rock underfoot.

It took considerable jiggling of her cage to get the third panther out. As she slowly stalked off after her sister, she kept a wary eye on the people present. All the panthers stopped for a long drink once they were in the grass. Although they seemed a bit puzzled by the water, they accepted it with no obvious discomfort. It is hoped that the panthers—and their heretofore captive neighbors—will fare well in Everglades National Park. ■

"She looked out at freedom, then back at her companion in the cage . . ."

Photograph by Robert Haugen.

News and Commentary

Opening of Canal 111 Is Delayed for Study

In the July magazine we summarized the correspondence between the Association and the Corps of Engineers, up to that date, concerning the efforts of conservationists and the National Park Service to delay the opening of Canal 111 in Southwest Dade County, Florida, until measures had been taken to prevent the possible intrusion of seawater into parts of Everglades National Park.

Late in June the Park Service notified the Association that the Corps had agreed to defer for the present removal of the "plug" of earth at U. S. Route 1 near tidewater. National Park Service Director George B. Hartzog, Jr., sent the following letter to NPA President Anthony Wayne Smith:

"As you know, Secretary of the Interior Udall wrote to Secretary of the Army Resor requesting that the small section of Canal 111 of the Central and Southern Florida Flood Control Project near U. S. Highway 1 remain unexcavated until means could be found to protect Everglades National Park, Florida, from possible salt water intrusion up the canal.

"We are pleased to inform you that the Secretary of the Army has acceded to Mr. Udall's request. Mr. Alfred Fitt, Special Assistant (Civil Functions) to the Secretary of the Army in a letter dated May 24 stated that removal of the unexcavated portion of the canal has been deferred pending further study of the problem and discussion with personnel of the National Park Service.

"We are expecting further communications from the Corps of Engineers directly in the near future."

No Games in Banff Park

During late spring the National Parks Association joined a number of Canadian conservation organizations and interested individuals in requesting that the 1972 Olympic Winter Games not be held in Canada's Banff National Park. In correspondence with the International Olympic Committee the Association made clear its belief in the importance of the Olympic Games; but it also made clear its belief that national parks were not suitable sites for the Games. It pointed out the large amount of development that would be necessary in Banff Park to handle the crowds, and the accompanying impact on the natural scene, along with the possibility of permanent overcrowding. "The national parks in the United States and Canada have been a model for the entire world," the Association said. "Other countries have learned from North Americans to think of parks as preserves and not as crowd resorts."

More recently, the Association has learned that the 1972 Winter Olympics will not be held in Banff National Park.

Golden Eagle Permits

A complete list of Federal recreation areas where Operation Golden Eagle entrance permits are valid for admission is now available for general distribution. The list takes the form of a 16-page tabloid-form publication, compiled by the Bureau of Outdoor Recreation in cooperation with Federal land administration agencies concerned in the Golden Eagle program. The publication lists Federal recreation areas alphabetically by States. Shown with each agency's designated list of areas are the period of fee collection, whether the annual $7 Golden Passport and one-day permits are valid for entry, and the cost of 30-day permits where applicable.

Persons wishing copies of the *Directory of Federal Recreation Areas Requiring Entrance and User Charges* may obtain them free from the Federal agencies which sell the $7 permits (listed on the outside back cover of *National Parks Magazine* for May); from American Automobile Association offices, from many States, or from Operation Golden Eagle, P. O. Box 7763, Washington, D.C. 20044. All funds from sale of the $7 permits go to the Land and Water Conservation Fund, which was designed to help provide Americans with new parks, wildlife refuges, and other outdoor recreational and protective areas.

Three-Way Agreement Possible Parkland Threat

During recent weeks the National Park Service, District of Columbia Department of Highways and Traffic, and Virginia Highway Commission issued a statement of agreement in regard to a number of projects in a freeway program a-building in and around the nation's capital. Among the items agreed on was a new Potomac River bridge connecting Virginia and the District at the so-called Three Sisters Islands site, which would bring a major highway directly toward the southern end of Glover-Archbold Park in the northwest part of the city. The park was given to the District by the Glover and Archbold families with the understanding that it would be kept as parkland; some readers of the Magazine will recall that when the District planned a four-lane expressway through the park several years ago con-

servationists, led by this Association, compelled abandonment of the plan. In our opinion the new three-way agreement again poses a serious threat to Glover-Archbold Park.

Interior Department Asks New Wildlife Laws

The Department of the Interior has asked Congress to consider a Department amendment to the Criminal Code extending additional Federal protection to wildlife. The amendment adds a provision to existing Federal laws which would make it an offense to transport in interstate traffic reptiles, amphibians, mollusks, and crustacea taken in violation of State, Federal, or foreign law. It is now a crime to transport wild mammals and birds under these circumstances. The Department amendment to the law would protect the now-endangered American alligator from poachers, who capture the reptiles and sell their hides to manufacturers of expensive shoes and handbags.

Other amendments suggested by the Department would extend additional protection of wildlife to all Federal areas administered for wildlife conservation; define wildlife to mean *all* classes of wild animals; prohibit violation of regulations set by agencies responsible for wildlife areas concerning littering, automobiles, or disorderly conduct; and allow Department employees to arrest persons violating regulations and to search for and seize any property used or possessed illegally.

Whooping Crane Arrivals

The Texas Parks and Wildlife Department reports that it has been advised by the Canadian Wildlife Service that aerial surveys of the nesting grounds of the whooping crane in northern Canada have revealed five nests and at least three young birds. Fourty-four whoopers flew north to Canada's Wood Buffalo Park area during the past spring from their wintering grounds at the Aransas National Wildlife Refuge on the coast of Texas, so that as of the time of this report, at least, there were probably 47 of the rare big birds in existence in the wild condition. There are a few others in captivity.

Federal Assistance for Recreation Projects

Individuals and public and private organizations seeking Federal aid for outdoor recreation projects will find a complete catalog of all major U.S. technical and financial assistance programs in a newly revised publication being issued by the Department of the Interior. *Federal Assistance In Outdoor Recreation* lists provisions of more than fifty programs which provide help to individuals, associations, States and their political subdivisions in planning, operating, or maintaining outdoor recreation projects.

The booklet, pocket-size, contains eighty-three pages and is available for thirty-five cents from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. It was compiled by the Bureau of Outdoor Recreation, Department of the Interior, and it describes matching grants for States, counties, cities, and other units of government, such as those available under the Land and Water Conservation Fund and the Open-Space Programs. It also lists sources of Federal loans for individuals, associations, and small towns wishing to install recreation enterprises, as well as detailed information on many other Federal programs. The booklet is a companion publication to *Private Assistance In Outdoor Recreation*, shortly to be published by the Bureau of Outdoor Recreation.

Further In Regard To C & O Canal Hunting

Twice in the past several months the Association has had occasion to protest to the Park Service over statements made by the Superintendent of the C & O Canal National Monument in regard to possible public hunting in parts of the monument (May, pp. 24-25, June, p. 20). Most recently, President Anthony Wayne Smith of the Association was in receipt of a letter from Assistant Director Howard W. Baker which, it may be hoped, will lay the matter at rest. Mr. Baker's letter stated in part that: "On May 10, we wrote the Superintendent to the effect that as a national monument, the C & O Canal is not eligible for consideration of hunting activity. . . . Superintendent McClanahan understands the policy applicable to public hunting in the national monument. He has been advised to discuss his views with us and obtain approval to avoid presentation of public statements which are not in keeping with policy."

Comment on the Cougar

The Association has received several good and interesting letters concerning Ferris Weddle's cougar article in the May magazine. Mr. Gerald Thorne, nematologist with the College of Agriculture and Biological Sciences at South Dakota State University, made a comment of particular interest, based on personal experience, in amplification of the cougar's role in nature as an ecological balance-wheel. Mr. Thorne outlined the history of ponderosa pine regeneration in the Uintah Range of Utah over the period 1915-1940,

(continued on page 26)

noting that, after the practical extermination of the cougar in those mountains by government and private trappers, excess numbers of porcupines resulted in a forest of "scrubby remnants" rather than the expected stand of 20- to 30-foot *Pinus ponderosa*.

"Should you again have occasion to publish about our friend, give him credit for making it possible for millions of trees in our original forests to become established and grow to normal maturity," Mr. Thorne wrote. "Let us hope that in the future he will be allowed to 'come back' with adequate protection and take over this very necessary job."

Underground Power Transmission Research Program Recommended

Secretary of the Interior Stewart L. Udall has recently submitted a recommendation to President Johnson for a five-year, $30 million research and development program designed to advance the technology of placing high-voltage (138 kilovolts and over) transmission lines underground. The proposed R & D program stems from President Johnson's instructions to Cabinet members to review recommendations of the 1965 White House Conference on Natural Beauty for possible Federal implementation. The cost of placing high-voltage lines underground currently runs from 5 to 25 times higher than construction of overhead transmission facilities, according to the Federal Power Commission; but the Secretary indicated his belief that the program might result in reduction of undergrounding costs by as much as 25 percent. The program would enlist the aid and support of all segments of the power industry and allied manufacturing interests. The Secretary's report also recommended creation of another advisory board consisting of municipal planners, conservationists, and other consultants to establish beautification goals relating to undergrounding of transmission lines and to establish criteria for measuring economic values affected by overhead transmission.

Rules for Public Land Designations Are Proposed

Regulations to establish standards for identifying and naming special use areas managed by the Bureau of Land Management have been proposed for public review and comment, according to Secretary of the Interior Stewart L. Udall. The regulations supplement classification and multiple use rules issued by the Secretary in 1965. They are designed to permit area designations of withdrawn lands, classified for retention under the Classification and Multiple Use Act of 1964, and lands given special status by acts of Congress.

The Department said the proposed regulations would authorize the designation of "recreation lands," "recreation sites," and "resource conservation areas." The "recreation lands" will be larger tracts containing one or more of the following types: high-density areas for intensive public use; general outdoor recreation areas for a variety of public uses; natural environment areas for recreation in combination with other uses; outstanding natural areas meriting special care and protective management; primitive areas undisturbed by commercial use and without mechanized transportation; and historical or cultural sites meriting special care and management. The "recreation sites" will be small tracts usually involving construction and maintenance of public facilities. The "resource conservation areas" will consist of smaller tracts managed for multiple use and sustained yield conservation.

The proposed designations incorporate the outdoor recreation resources classification system developed by the Bureau of Outdoor Recreation.

Extinction for Whales?

Those great mammals of the ocean, the whales, are quickly disappearing, and in an attempt to save them for commercial purposes the major whaling nations met recently to strengthen agreements to conserve whale stocks. Restrictions imposed on whaling by the International Whaling Commission last year were largely ignored; as a result, many species are so reduced in population that some scientists fear they cannot reproduce fast enough to save themselves from extinction.

Last year's restrictions on whaling were aimed at reducing the annual catch by one-third. But the maximum catch was set at a level far above that which oceanographers calculate as the "sustainable yield," or maximum catch that can be made without endangering future whale stocks.

It is hoped that the sixteen major whaling nations—of which Japan, Norway, and the Soviet Union still send fleets to the already depleted Antarctic—can agree on sounder conservation measures. Blue whales, sei whales, humpback whales, and even sperm whales are declining, and the Department of the Interior, in its report *Rare and Endangered Fish and Wildlife of the United States*, lists the bowhead whale, Pacific right whale, and Atlantic right whale as "endangered." The reason for their status is given as "extreme exploitation by whalers."

THE CONSERVATION DOCKET

SHORTLY BEFORE THIS INSTALMENT OF THE Conservation Docket was written (June 23) the House of Representatives passed H. R. 698, a bill authorizing a Guadalupe Mountains National Park of 77,582 acres in the Guadalupe Mountains of trans-Pecos Texas. The bill was passed with several committee amendments, most important of which dealt with the problem of the possible mineral estate on or under park lands. There is a companion bill in the Senate on which the Senate Subcommittee on National Parks and Recreation held public hearings about a year ago. Establishment of this park was recommended by the President in two of his recent messages on natural beauty.

With the President's signature on May 31, Public Law 89-438 has established the Mount Rogers National Recreation Area of some 154,000 acres in southwestern Virginia's Blue Ridge Mountains. All lands of the recreation area lie within the boundaries of the Jefferson National Forest; the unit will be managed by the U. S. Forest Service. Prime feature is Mount Rogers, highest peak in Virginia, and a number of lesser peaks, plus a fairly rich assortment of plant and animal life.

Two bills touching on the national park system have recently been introduced into the Senate. S. 3172 would establish a Trinity National Historic Site in New Mexico within the White Sands Missile Range to preserve land and paraphernalia associated with detonation of the first nuclear device, while S. 3474 would authorize establishment of a Lincoln Homestead National Recreation Area at the site of the proposed Lincoln Reservoir on Embarrass River in Coles County, Illinois. Both bills to the Committee on Interior and Insular Affairs.

In the House, H. R. 15067 was recently introduced to authorize the Secretary of the Interior to make a feasibility study of a possible Connecticut River National Recreation Area in Connecticut, Massachusetts, Vermont and New Hampshire. The Secretary would be instructed to study the Connecticut from its source (at Third Connecticut Lake, north of Pittsburgh in northern New Hampshire) to its mouth on Connecticut's Long Island Sound shores. The Secretary would submit his findings within two years from passage of the Act to the President, and the President would submit recommendations to Congress. To Interior and Insular Affairs Committee.

H.R. 15001, introduced during mid-May, continues the flow of bills which would in general amend the Fish and Wildlife Coordination Act to provide adequate notice and opportunity for the Secretary of the Interior and State fish and game agencies to conduct studies on the effects of projects licensed by Federal agencies on fish and wildlife resources. Most of the bills of this nature introduced over the past several months have had their roots in the controversy over the proposed Consolidated Edison pumped-storage hydropower project at Storm King Mountain in the Hudson Highlands. Referred to the Committee on Merchant Marine and Fisheries.

Reviews

THE WORLD OF THE GREAT HORNED OWL. By G. Ronald Austing and John B. Holt. Edited by John Terres, Jr. J. B. Lippincott Company, East Washington Square, Philadelphia, Pa., 1966. 158 pages. $4.95.

G. Ronald Austing, who demonstrated artful photography in his first book, *The World Of The Red-Tailed Hawk*, has now joined forces with another Ohio park ranger to add a new, informative, and superbly illustrated wildlife book to the naturalist's library. This volume, *The World Of The Great Horned Owl*, is divided into four sections, each of which describes the appearance and activities of the predatory great horned owl in the four seasons of the year. There is also a general chapter on "The Owl Itself," and one on the relationships between "Owls and Man," as well as a short summary of great horned owl subspecies.

The team of Austing and Holt has captured the spirit of this powerful bird through masterful photographs and lively text. The great horned owl makes an interesting topic for discussion; as a nocturnal predator the owl has always been an object of mystery—and sometimes awe—to most laymen.

The owls mate for life. Using old hawk, crow, or squirrel nests in either dense woodland or open country, they raise a brood of two or three owlets who mature slowly and require close parental care. When mature the great horned owl measures from 18-25 inches in length and sometimes has a wingspread of over four feet. The bird is classified as a "general feeder," which to the authors means that it is "large enough, strong enough, and fast enough to capture just about any animal it fancies as prey." The great horned owl usually fancies rabbits, squirrels, skunks, rats, mice, large and small birds, snakes, fish and insects. It is a determined hunter, and will roost silently in a tree near a clearing or at the edge of a road until "The slightest movement or sound will bring it down in a swift, shallow dive, striking its intended prey with the full impact of its body and binding its victim in a viselike grip. So powerful is its clutch that practically nothing short of its own death will cause it to release its hold."

Despite the owl's normally fierce nature both Austing and Holt have rescued sick and injured owls and cared for them until they could return to the wild. Others have also kept owls in captivity; one captive owl attained an age of 68 years, a feat which could be duplicated by others of its species if it were not for the ravages of man.

The authors note that "Owls, through history, have been victims of ignorance and misunderstanding." They end their book with a plea for the protection of these fascinating birds.

FREE FOR THE EATING. By Bradford Angier. Stackpole Books, Harrisburg, Pa. 191 pages, with directory. Illustrated, hard cover. $4.95. NATURE AND THE CAMPER. By Mary and A. William Hood. Lane Magazine and Book Company, Willow Road at Middlefield Road, Menlo Park, California 94025. 157 pages. $1.95.

Small books make fine vacation companions, especially if you are camping and the books offer practical tips on the out-of-doors. Few outdoorsmen are more practical than Bradford Angier, who has lived in and written about the wilderness for many years. In his book *Free for the Eating*, Mr. Angier describes a hundred common wild plants and tells how to recognize them; harvest them; prepare them; and enjoy them as wilderness feasts. Wild fruits, greens, roots and tubers, nuts and even potential beverages brewed from plants are discussed. Excellent illustrations, some of which are supplied by the New York State College of Agriculture at Cornell University, help the reader identify edible plants. The book is useful for persons planning to spend any length of time in the wilderness, for safety-minded hikers or campers wishing to learn how to avoid starvation in case they become lost in the forest, or for those who desire something different in the way of food.

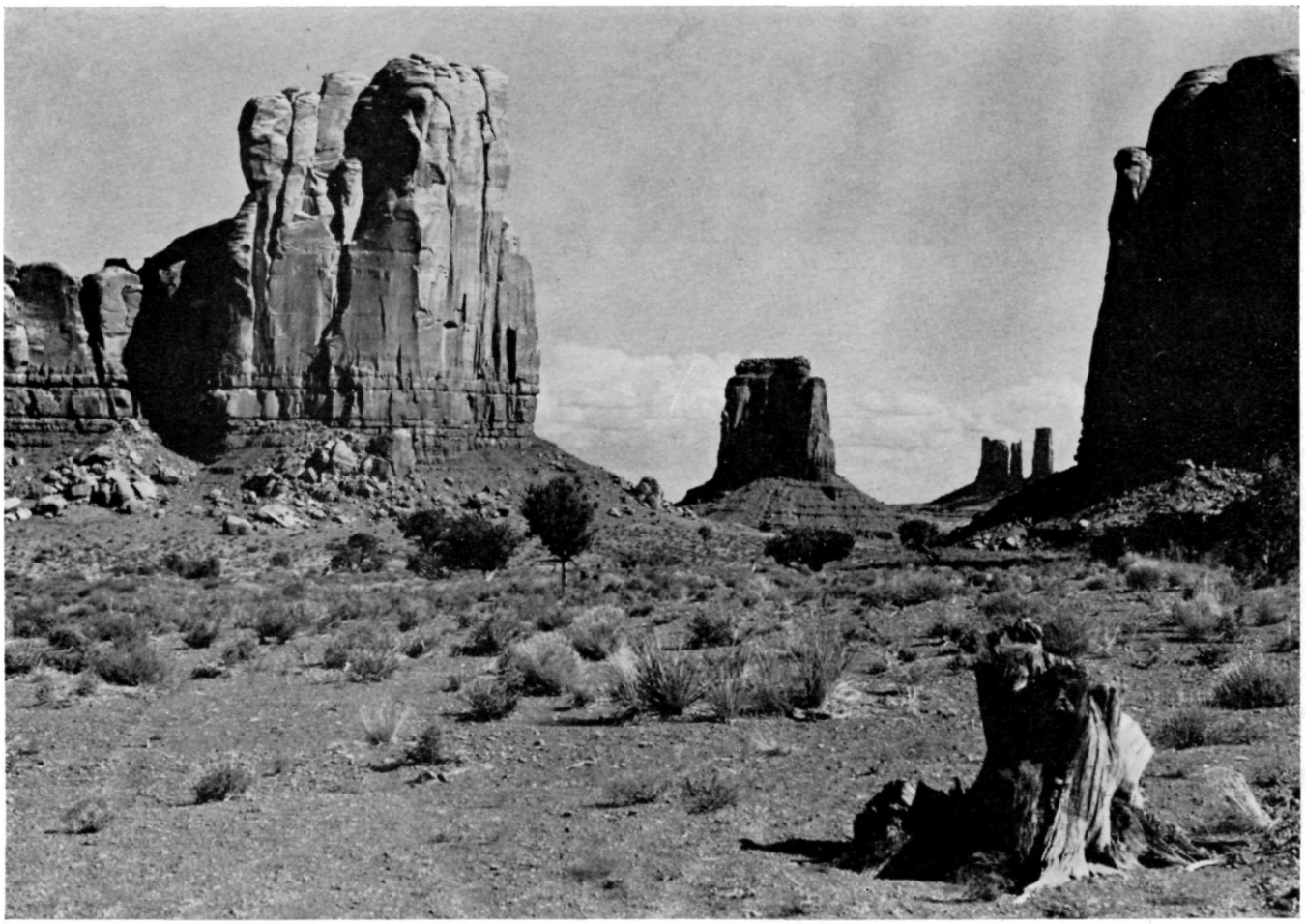
Another book that discusses plants—as well as many other aspects of the wilderness—is Mary and A. William Hood's *Nature and the Camper*. This illustrated paperback can be classified as a reference or guidebook for beginning campers and hikers who may want to familiarize themselves with the basic hazards of outdoor life before embarking on a wilderness trip. The book discusses animals of the forest and seashore and tells the reader which are to be avoided and why; plants that can cause illness or irritation; and discusses clothing; travel; campsites; first aid, and natural disasters. The book is intended primarily for those who plan to travel in the Southwestern deserts or on the Pacific Slope.

THE COMPLETE GUIDE TO FAMILY CAMPING. By Bill Riviere. Doubleday & Company, Inc., 277 Park Avenue, New York, N.Y. 10017. 224 pages, illustrated. Hard cover. $4.50.

Planning a successful family camping trip includes everything from selecting the proper footwear to educating the children on how to avoid poison ivy. This well-written guide is a big help with such countless little chores, and offers sound advice on tents, campers' furnishings of all kinds, camping techniques, selection of sites, cooking, safety rules, weather warnings, and other practical aspects of camping. It includes an appendix of campground guides and family camping organizations.

THE ALASKA EARTHQUAKE, MARCH 27, 1964: EFFECTS ON COMMUNITIES. By Wallace R. Hansen. Geological Survey Professional Paper 542-A. 1965. U. S. Government Printing Office, Washington, D.C. 20402. 68 pages in large format with photographs, diagrams and maps. $1.75 postpaid.

A professional geologist analyzes the effects of perhaps the greatest earthquake of recorded history, with particular reference to its effects on the city of Anchorage. This volume will interest the serious student of general natural history as well as the professional earth-scientist.



Photograph by O. F. Oldendorph

Botanically, Monument Valley is an eastern extension of the Great Basin Desert, and is characterized by such hardy shrubs as sagebrush, shadscale saltbrush, juniper, yucca, and prickly-pear cactus.

ALONG THE EASTERN EDGE of Douglas Mesa in the storied Four Corners country of the Southwest, where the state lines of Utah, Colorado, Arizona and New Mexico arrive at a common point, a wonderful series of rock formations marches along a branch of Oljeto Wash, whose runoff waters wander north to join the turbulent San Juan, tributary of the Colorado River. These are the pinnacles and towers of Monument Valley, deep within the Navajo Indian lands of northeastern Arizona and southeastern Utah, a country still relatively remote despite our ever-expanding webwork of roads. Here the Navajo has established a park of his own for the protection of a bit of primitive America.

THOUGH THE National Parks Association's primary interest lies with the units of the national park system, it also takes an active interest in other comparable reserves, and in general conservation matters. You can assist the Association in its general aims in any of several ways: by contributing to the Association's general funds over and above regular dues; by remembering the Association in your will; or by helping secure new Association members. All dues over and above basic annual dues, and all contributions, are deductible for Federal income taxation, and gifts and bequests are deductible for Federal gift and estate tax purposes.

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1300 New Hampshire Avenue, N.W. Washington, D.C. 20036