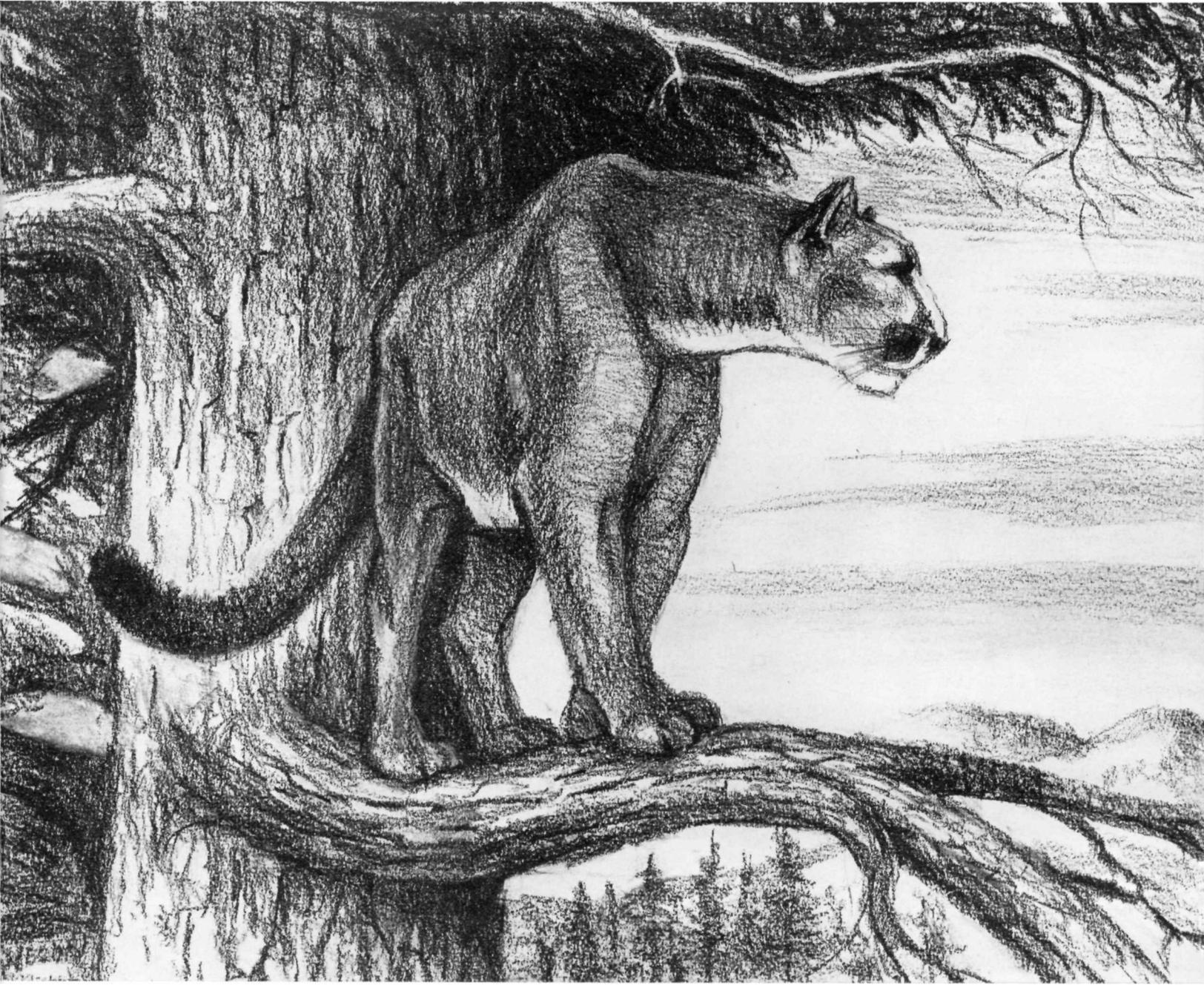


NATIONAL PARKS *Magazine*



Cougar, or mountain lion: valuable predator with a tragic past and an uncertain future.

May 1966

The Editorial Page

Hunting in Parks

SUGGESTIONS FOR OPENING ONE OR ANOTHER of the national parks and monuments to public hunting have been commonplace over the years, but there is novelty, at least, in hearing such proposals made by park superintendents themselves. Thus, conservationists were recently surprised and irritated when the superintendent of the C & O Canal National Monument came forth with a plan which, if we understand it correctly, would set aside certain parts of the historic preservation for public hunting.

This plan appears to have been justified by the superintendent on the grounds that C & O Canal Monument management ought to conform with the pattern of management suggested for a long reach of the river and its immediate environment by the recent interim report on the Potomac, which indicated that a composite Federal-State-local park permitting hunting "in areas where it is deemed suitable" ought to be established eventually. The superintendent seemed to think that hunting in the monument would not interfere with other enjoyment of the preserve because hunting takes place late in the year.

We will not venture to predict the manner in which the Potomac River and its bordering lands may be protected in the future, but we will hazard the guess that park protectionists and many other Americans will stoutly resist any attempt to throw the C & O Canal Monument open to public hunting as long as it is classified as a national monument. No doubt they would agree also with the position of the National Parks Association—further discussed on a newspaper of this issue—that any change in the status of the monument designed to evade the restrictions of long-established national policy in regard to hunting in the parks would be wholly unacceptable as establishing a very bad precedent for the entire park system.

The superintendent's contention that hunting in the monument would not interfere with other uses of the area

because of its late-season nature seems to miss the target completely. We have the impression that the prohibition of hunting in the national parks and monuments is based on considerations that go somewhat beyond the question of inconvenience or possible danger to non-hunting visitors. The mere fact of lesser visitation during late fall is not really very important in the general philosophy of national park management; in some units of the park system there is practically no visitation during certain months, but these units are not then thrown open to public hunting.

The fact is that Americans have been persuaded for many years that there should be some places in the country where they could see, study, photograph and generally enjoy our native wildlife as it plays its natural part in the life-scheme, unafraid and as nearly undisturbed as possible. Beyond this, the mere knowledge that birds, mammals and other life forms are present and protected suffices some park visitors. Many hunters themselves have agreed with these thoughts, and from time to time sportsmen's organizations have made valuable contributions both in the special field of preservation and the more general field of conservation.

We think it is rather remarkable that conservationists should be called upon to help defend a unit of the national park system from its own superintendent.

—P.M.T.

Airports in Parks

DURING THE PAST SEVERAL YEARS this Association has had occasion to protest to the Interior Department the construction of airports in or close to national park system units. Correspondence in the matter has been far from satisfactory, and from time to time the Interior Department has indicated its approval of new or enlarged airports in the parks; most recently, in Grand Teton and Glacier.

Various reasons have been assigned to the need for such construction—protection and administration, fire

control and boundary patrol work, medical assistance, and so forth—but it has usually appeared that the underlying purpose of the new airport construction has been facilitation of visitor access.

It is tiresome to hear the Department of the Interior and the Park Service talk about overcrowded park facilities and then endorse plans that must inevitably lead to further overcrowding. It is wearisome to hear pleas of poverty in regard to needed park and monument inholdings, and then to hear the virtues of expensive new landing strips and airport facilities.

Some months ago the National Parks Association referred to airports in the national parks as the "attractive nuisances" of the legal profession. There seems to be nothing in the latest proposals that would require a revision in Association thinking.

—P.M.T.

The California-Oregon Exchange

Our further delvings into the proposed land exchange between Point Reyes Seashore and southwest Oregon confirm us in the criticism we expressed on this page recently.

We wish to make just one correction: we said that the Oregon State Director of the Bureau of Land Management listed all BLM lands in Oregon as exchangeable, whereas he listed all BLM lands in specified townships which had been requested by the applicant.

As we said, he did not classify these lands for retention or exchange as directed; the result was to explode the exchange; no disciplinary action was taken.

What is needed is to set up an orderly administrative system to implement the land-exchange laws.

—P.M.T.



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The Editorial Page	2
The Cougar in Our National Parks and Monuments	<i>Ferris Weddle</i> 4
Salmon: River of No Return	<i>Neal M. Rahm</i> 8
The Elephant Tree	<i>O. L. Oldendorph</i> 11
Report of President and General Counsel	I-IV
Rock Gardens of the Wilderness	<i>Frances Morton</i> 17
Don't Tame the Wild-Flowing Feather	<i>Dewey Anderson</i> 18
Path Through The Mist Forest	<i>Marie B. Mellinger</i> 21
News and Commentary	23
The Conservation Docket	26
Book Reviews	27

Front cover drawing by Merv Dameron

The term "predator" has many connotations: to bounty hunters, trappers, some commercial interests and various control agencies it is an animal which ought to be destroyed; to scientists it is a meat-eating species of wildlife; and to many conservationists a predator is a much-maligned creature, usually unjustly persecuted by man. The American mountain lion—or cougar—is such an animal. It has been eliminated from many areas of its former range, often with dire consequences to prey species and the wilderness we belatedly seek to preserve. Most remaining cougars now dwell within the boundaries of our national parks and monuments, where they function as essential members of the natural biotic community, adding a touch of mystery to the charm of the great preserves.

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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NATIONAL PARKS ASSOCIATION, 1300 NEW HAMPSHIRE AVENUE, N. W.,
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THE COUGAR

In Our National Parks and Monuments

By Ferris Weddle

IN MARCH, 1963, A WELL-KNOWN panel of conservationists, working as Secretary of the Interior Stewart L. Udall's Advisory Board on Wildlife Management, said in their report *Wildlife Management in the National Parks* that "A national park should represent a vignette of primitive America." And even as when the first white men pioneered the West, no animals symbolize "primitive America" better today than our large predators: the gray wolf, the grizzly bear, and the mountain lion.

But even in the national parks and monuments of the West, these mammals are currently among our vanishing species. Outside of Alaska, the wolf and the grizzly bear are touching the fringes of extinction in the United States. The population of each is probably under a thousand animals.

Perhaps the most majestic and mysterious of our predators, the cougar—or puma, mountain lion, or panther—has survived three hundred years of persecution mainly because of its secrecy and shyness; its choice of remote habitat shared with its principal prey, the deer; the establishment of a system of national parks, monuments, and wildlife refuges; and possibly most importantly the wide-ranging distribution of *Felis concolor* and its many geographical races. With an accepted range extending from northern British Columbia to Patagonia in South America, no New World mammal has a wider distribution and greater climatic adaptability than the cougar.

According to the 1963 *Wildlife Inventory for National Parks, Monuments*

and *Recreation Areas*, the cougar occurs in eighteen national parks; in nineteen monuments; and in four recreation areas. All of these occurrences are in the West except for Everglades National Park in Florida, where about ten of the large mammals are believed to be present.

Counting the Cougars

An entirely accurate census of cougars is impossible; population figures must be estimates based on sight and sign reports, bounty records, and on kill or capture records. Such estimates for the parks and monuments merely make the animal "common," "infrequent," or "rare."

Present indications are that Olympic in Washington has the largest cougar population among national parks, although the cougar population for the State as a whole has declined noticeably. Other reserved areas where the cougar is "fairly common" are Big Bend, Glacier, Grand Canyon, Rocky Mountain, and Sequoia-Kings Canyon National Parks; Chiricahua and Great Sand Dunes National Monuments; and the Glen Canyon Recreation Area. Cougars have also been reported in South Dakota's Wind Cave National Monument and Badlands National Monument; and in North Dakota's Theodore Roosevelt National Memorial Park. The cougar population is critical in these States, but neither State offers any protection for the big cats. And in these States, as elsewhere, the cougar is still fighting for survival.

Mountain lions, or cougars, are

large, tawny cats with thick, long tails. Adult females can be five to seven feet in length and weigh from eighty to 130 pounds; adult males average six to eight feet in length and weigh from 120 to 200 pounds. The animals have few natural enemies. Rate of reproduction is low, two or three spotted kittens being born at three-year intervals. The young mature at about two years, and begin their carefully learned and perfected methods of hunting. Principal prey is deer; the cougar weeds out diseased and less competent individuals of a population, thus unconsciously creating a healthy and well-formed deer herd within its hunting range.

Only under extremely rare circumstances will cougars attack humans. The animals prefer to flee rather than chance a face-to-face encounter with man, although there have been reports of cougars following humans out of sheer curiosity. One naturalist reports that "In these cases the animal often has made no effort at concealment but has followed the person quite openly. Despite this boldness it seems there is no sinister motive, merely a naive and surprising curiosity on the part of the big cat as to what kind of creature man is."

Since the first pioneers pushed back the forests and tamed the American wilderness, the cougar and many other predators have been viewed as mammalian villains. When President Theodore Roosevelt visited Yellowstone National Park in April, 1903, he noted that "In the Park the cougar is at present their (the elk's) only animal foe. The cou-

gars were preying on nothing but elk in the Yellowstone Valley. . . . As the elk were evidently too numerous for the feed, I do not think the cougars were doing any damage." Nevertheless, predator control programs were then going on in the park, and they continued during the next twenty-seven years. Roosevelt's hunting companions, John Goff, "Buffalo" Jones, and "Uncle Jim" Owens, helped to exterminate both wolves and cougars from Yellowstone and made severe inroads on populations of smaller predators. Apparently Roosevelt did not object to this extermination. A cougar in Yellowstone is rare today and the wolf's song is heard no more.

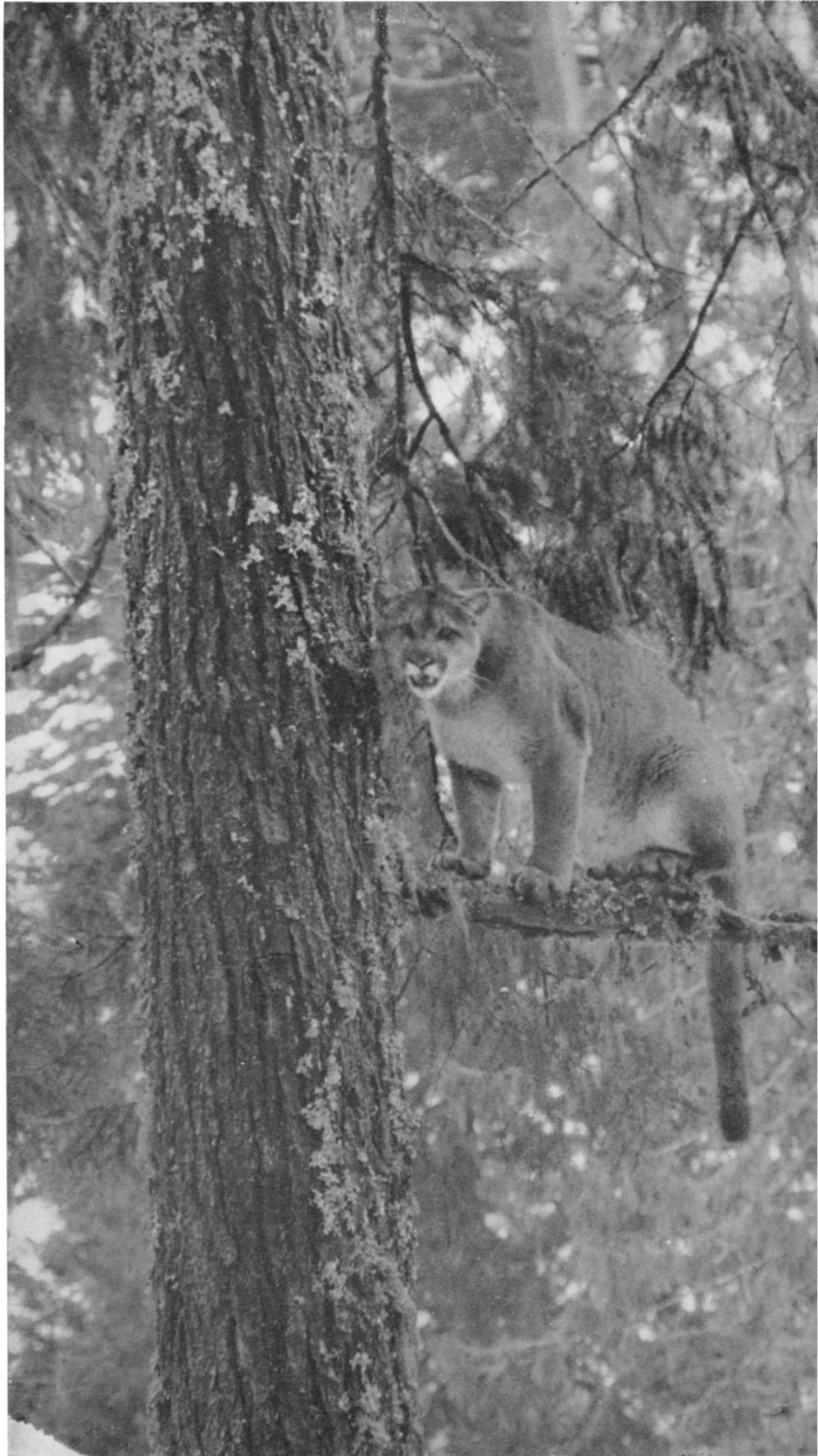
Elk Outrun Range

The history of Yellowstone's self-destroying elk population is well known; absence of natural predators finally led to the forced shooting of almost 5,000 elk there during the winter of 1961-1962. No less well known is the history of the mule deer on the Kaibab Plateau in Arizona where, in 1913, Roosevelt went on his last cougar hunt.

On the Plateau and adjacent areas 800 cougars and almost 6,000 lesser predators were killed in a twenty-year period. With complete protection and extensive predator control the mule deer population mushroomed into lethal figures. Nature then enforced control with massive winter die-offs, malnutrition and disease—but Nature has not yet had time to rebuild a depleted range.

The Yellowstone, the Kaibab, and numerous other park and non-park areas provided some bitter lessons which have been largely ignored except by the National Park Service. During the early 1930's the Service formulated several new policies, two of which were to have far-reaching effects on wildlife. One of these specified that hoofed animals—the ungulates—would not be allowed to exceed the carrying capacity of their ranges. The other new policy stated: "No native predator shall be destroyed to protect another park animal on which it normally preys, unless

The cougar is not a long-distance runner and quickly climbs the nearest tree when pursued by dogs. The big cat also uses low-hanging limbs as cover when hunting its prey. A photograph by Olaus J. Murie.





Colorado Game and Fish Department: Domenick

A Colorado cougar, as much at home on the open plains as in the forest, prowls in search of food.

that animal is in immediate danger of extermination, and then the predator shall be killed only if it is not also a vanishing form.”

This belated recognition of a park's true preservation purpose could not save Yellowstone's cougars and wolves, but it was a deterrent force in our contradictory wildlife management policies at the Federal level. For, by this time, the Branch of Predator and Rodent Control, which had begun operations in 1915 under the old United States Biological Survey, was already a thriving bureaucratic entity. With traps, rifles, dog packs, poisons and professional hunters-trappers, the Bureau soon became a strong force in the destruction of American predators. States, counties, stockmen's organizations and sportsmen groups reinforced the work of the Bureau, especially with the added inducement of predator bounties. As did the eastern states in earlier years, at one time or another all of the western states placed bounties on wolves, coyotes, bobcats and cougars—and smaller mammals, as well as birds and reptiles. Today only Arizona places a bounty on the cougar; but dozens of

other animals are still under bounty in other States.

Predator control programs outside the parks have had an impact on the management of national parks and monuments. National Park Service biologist Lowell Sumner, in his book *Birds and Mammals of the Sierra Nevada*, says that “disappearance of the mountain lions has been in part the cause of severely destructive increases in the number of deer in many western states. Some national parks and monuments too small to preserve lions within their boundaries have suffered from this type of biological unbalance, particularly Zion, Grand Canyon, and Glacier National Parks and Lava Beds National Monument.”

Predators

Parts of California's national parks and monuments, where biologist Sumner has closely studied the effects of “too many deer,” provide good examples of the way in which lions, and other predators, can aid in the management of ungulates if permitted to do so. For example, in the Barton's Flat area, a winter range adjacent to Kings

Canyon National Park, deer were beginning to damage both the winter range and the park summer range. The National Park Service, the National Forest Service, and the California Fish and Game Department initiated special “either-sex” deer hunts. The hunts were successful in removing surplus deer, but during approximately two and a half years of hunting, eighteen cougars were also killed in Barton's Flat and adjacent areas. The lions were killed for bounties. Needless to say, the eighteen lions would have been valuable in helping control surplus deer in an area that needed such control. Sumner summarized this need when he stated in a letter to the writer: “. . . We do find in Sequoia, where the interrelation of deer and lion ranges have been more closely studied, *the undamaged deer range definitely corresponds with the best populated lion range.*”

A cougar study, as a part of a comprehensive management plan, has been advocated for Sequoia-Kings Canyon National Parks. However, initiation of the plan has been delayed by lack of funds. It is felt that such a study might point the way for similar studies in

other national parks and monuments, as well as in non-park areas.

Cougars and other predators could help control excess ungulate populations in parks in other States also. The Leopold report on park management—so-called after its chairman, Dr. A. Starker Leopold—advocates control by natural predation whenever possible. But, as the report points out, natural predation alone cannot do the job because predator populations are at a low level in the majority of American parks and monuments. This is due, in part, to earlier control programs within the parks themselves. Now the major obstacles in effectively using natural predation are excessive outside predator control programs. For many years the National Park Service has attempted to cooperate with other wildlife agencies in establishing buffer zones around the parks and monuments to protect predators. Its efforts have met with little success.

There has been considerable discussion about re-introduction of predators into some of the parks and monuments; wolves in Yellowstone, and coyotes in Saguaro National Monument for example; but until the general public understands the ecological values of such plans—and the economic values—there is little hope that reintroduction can be carried out on a major scale.

While excessive populations of big game are the most urgent problems in parks and wilderness areas, the destructiveness of smaller mammals, particularly the rodents, cannot be overlooked—nor the role of the cougar and other predators in controlling them. Overpopulations of the porcupine can be a menace to trees in parks, and particularly in wilderness and primitive areas. Several studies have shown that the porcupine ranks second to deer in the food chain of the cougar. Such studies have been made in Arizona, New Mexico, Utah, Nevada, Washington, and British Columbia. Fishers and wolverines were once considered the porcupine's major enemies, but unfortunately these animals are now rare. Thus the cougar—and to a lesser extent the coyote, bobcat and lynx—should be given consideration in control work.

The present ecological study of the cougar in an Idaho primitive area will shed more light on cougar-porcupine relationships. This study, conducted by

Maurice Hornocker of the University of British Columbia with the cooperation of the Idaho Fish and Game Department and the University of Idaho, is the first major study of the cougar in a wilderness environment.

Cougar in Idaho

Idaho, along with the majority of western States, has a deer and elk problem—the problem of maintaining steadily increasing herds on dwindling habitat, and the problem of adequate harvest in such remote areas as the Selway-Bitterroot Wilderness. Yet the cougar is still classified as a predator and is subject to year-around hunting. In fiscal 1963-1964, for example, a total of 138 cougars were killed by hunters and by the Division of Wildlife Services—the former Branch of Predator and Rodent Control of the Department of the Interior.

With the exception of Colorado, where the cougar has been declared a game animal, all the western States classify the big cats as predators. Thus while control efforts have lessened, cougar sport-hunting has increased. The majority of game department personnel favor game-animal status for the cougar, and, in some instances, outright protection. Pressures from livestock operators—principally sheepmen—and a minority of sportsmen keep the cats in the “noxious animal” class.

A period of crisis now faces the cougar and all other wildlife species we have classified as predators. The Leopold Report on predator-rodent control

programs at the Federal level left no doubt that present programs are excessive, unnecessary, and fraught with ecological hazards. Secretary of the Interior Stewart L. Udall has promised changes in line with the report. Only time will reveal whether these changes will occur in time to halt present tragic trends in our management of predators and the so-called “nuisance animals.”

The cougar, a majestic symbol of wilderness country, is dependent on man's actions now and in the immediate future. Its past history has been dark; its present status is uncertain; and the future may bring extinction. Dr. Clarence Cottam, Director of the Welder Wildlife Foundation, agrees that “The future of the cougar is not bright. In my opinion, the best chance for its survival is to convince the public that it has economic value from the standpoint of tourism and sport hunting.”

The late naturalist-biologist Olaus J. Murie, who had a great reverence for all life, was emphatic in his championship of the cougar and other so-called predators. He wrote: “The use of the term ‘vermin’ as applied to so many wild creatures is a thoughtless criticism of nature's arrangement of producing varied life on this planet. We desperately need to know what we are doing for our own ultimate welfare.”

We can, at best, have only a facsimile of “. . . a vignette of primitive America.” That vignette will have a muted spirit without the wolf, grizzly bear, coyote—and cougar. ■

Although deer are now the principal prey of the cougar, the large predators were instrumental in helping to balance elk herds in Yellowstone Park with available forage, eliminating in part at least the need for artificial reduction programs and baled-hay feeding like that shown in the photo at right, taken in the Wyoming's National Elk Refuge by O. J. Murie.



Salmon: River of No Return

By Neal M. Rahm

FROM IDAHO'S SAWTOOTH RANGE to the Snake River west of Grangeville a jet liner would log perhaps 175 air miles. But the Salmon River, heading in the Sawtooth, seems almost reluctant to part with its mountain companion. It jogs east, north, west, north again, finally almost south before it completes a 450-mile journey to the Snake. In between lie some of Idaho's most spectacular and fascinating river gorges. *Tom-Agit-Paw*, the Shoshones called this home of the chinook and steelhead, "the big fish

water." It was a good name, and it still is quite adequate.

For many years the Salmon between North Fork and Riggins had another name, "River of No Return." This, too, was appropriate. In 1805 Lewis and Clark lost little time in abandoning the Salmon as a potential route to the Pacific. They elected to cross the rugged Bitterroot Mountains instead. Despite their later hardships, it was a wise choice. Not until a half-century later did a float-boat survive the Salmon downriver trip. Nearly a hundred years

In its long journey from the rugged Sawtooth Range to the Snake River, Idaho's Salmon River runs through many miles of deep canyons with numerous stretches of white-water rapids to challenge the boatman.

U. S. Forest Service photograph



more passed before a heavily-powered boat completed an upstream voyage.

For most of today's travelers the river trip is still one way. Float-boats and rubber rafts far outnumber the small fleet of river jetcraft and conventional motorboats. The latter, however, offer a fascinating river experience for travelers who lack the time and skill required to float the river. Skill is a requisite. This is not a river for the uninitiated.

The River of No Return is one among a number of rivers that has been recommended for early classification



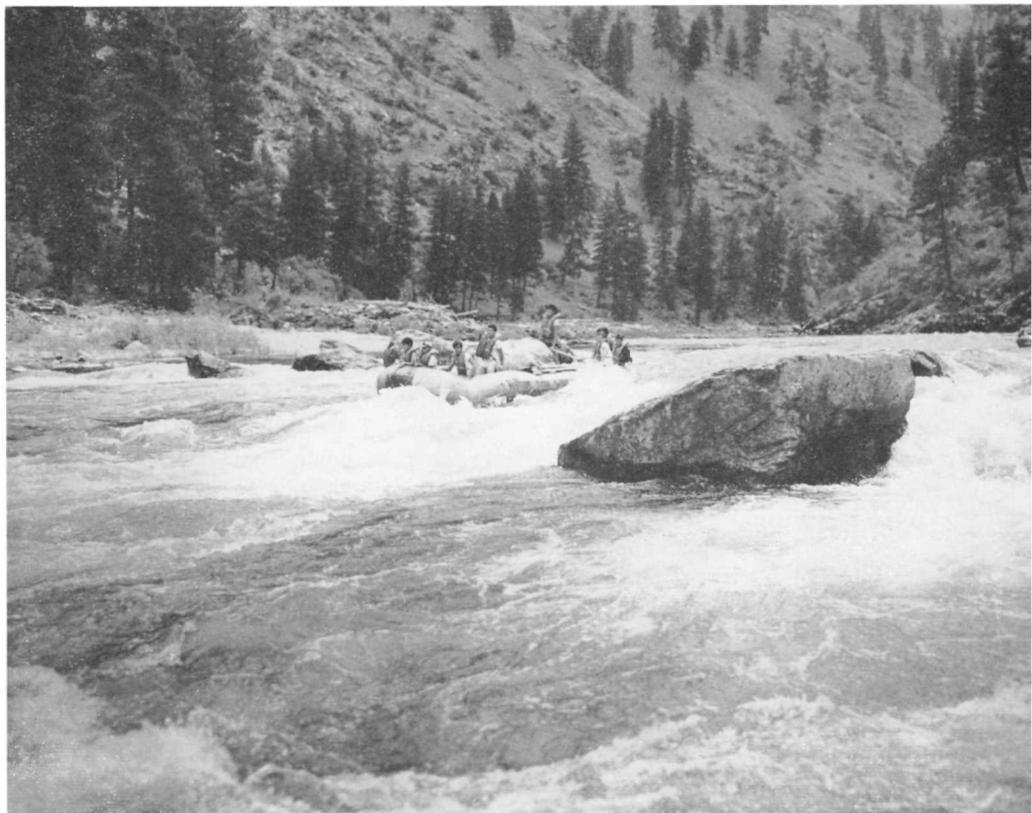
U. S. Forest Service photograph: Leland J. Prater

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A jetboat of the Salmon River Forest Service Patrol makes its way up Devil's Teeth Rapids. Patrolmen are often able to provide helpful information and advice to boating visitors.

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A group of YMCA boys from San Rafael, California, runs the white-water rapids below Lance's Bar on the Salmon in a rubber raft.



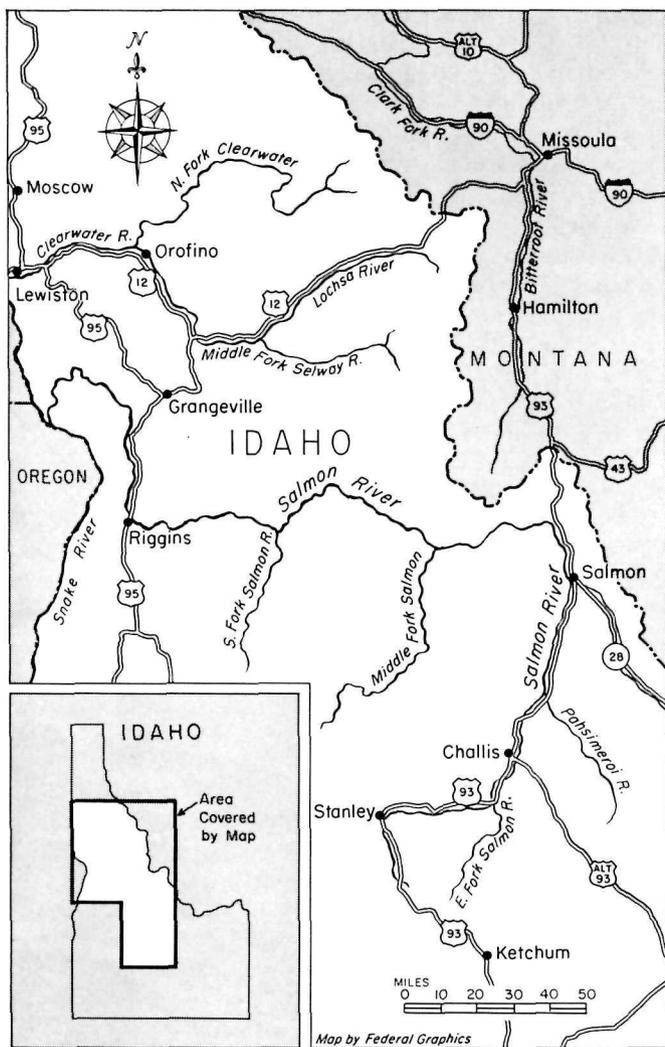
U. S. Forest Service photograph: Leland J. Prater

as a National Wild River. It flows through four national forests—the Salmon, Payette, Bitterroot, and Nezperce. The latter two are in the Forest Service's Northern Region, which I administer. The Salmon River forms part of our boundary with the Intermountain Region.

Last September my Inland Empire Forest Advisory Council and I examined part of the River of No Return by jetboat. This group of Spokane and Northern Idaho educators and businessmen meets regularly to view and advise me on national forest management programs. I wanted them to see this little-known recreationist's paradise. We saw small segments of the Salmon River Breaks and Idaho Primitive Areas. We looked at today's land uses along the river. We talked about long-range multiple-use management planning for this mighty river canyon.

Recreation management programs and visitor information services have been initiated, following studies by the two National Forest Regions. Picnicking and overnight camping spots have been constructed on a number of the river bars. Prominent rapids are signed. The fire-prevention patrolmen provide information and advice to boaters.

My advisory council and I discussed the need for expanding public services in this majestic river canyon. We considered the River's present unique qualities, unharnessed by dams and in part roadless. We talked about the Salmon River Breaks Primitive Area through which we traveled by bus. When Congress considers the potential value of this riverbreak zone as wilderness, the public value of the road must be weighed. Consideration will be given to long-time suggestions that a public highway parallel the



river. Our trip was largely exploratory. Later, however, those proposals will be discussed more fully and I will again ask the Council's advice on them.

It was a fascinating experience. All of our downstream voyage from Mallard Creek to Lake Creek was within a canyon a mile or more in depth. There was plenty of white water, including two rapids around which we walked. Otherwise our journey was fast and comfortable. We quickly learned how to brace for the pounding water of big rapids and little ones. The first dozen plunges through white water were exciting. We may have become momentarily blasé about the whole experience. Then huge boulders loomed ahead. It is often essential, we learned, to skirt them closely to find deep water and proper currents. Our pilot stopped in one or two eddies and let us watch the second boat run boulder-strewn stretches. It provided a greater thrill than our first-hand experiences. Our companions looked very vulnerable.

Portions of the massive canyon walls are solid rock bluffs. Most are timbered slopes. The higher-elevation trees, Douglas fir, grand fir, and lodgepole pine yield to ponderosa pine, brush, and grass along the lower canyon walls. Multiple burns have left large areas almost treeless. Forest fires ignited near the river levels tend to run up the slopes at a

damaging and dangerous pace, and the Forest Service operates a fire prevention patrol on the river during the hazardous fire season. The grassy hillsides and open timber stands supply an abundance of game foods—browse, grass, and forbs. The Salmon canyon is a fall and winter haven for both big game and smaller wildlife species.

Because our trip was made in September, we saw no wildlife, except a jar of pickled panthers (of which more later). During the winter and spring we would have seen an abundance of deer, elk, mountain goat, bighorn sheep, and bear. Smaller mammals like cougar, coyote, lynx, beaver, otter, marten, and mink are not uncommon.

We also, unfortunately, were between fishing seasons. This is rather loose terminology for a river with resident populations of rainbow trout, Dolly Varden, cutthroat, smallmouth bass, and whitefish. To Idahoans, however, "fishing" means that the chinook salmon or steelhead runs are on. Whenever these mighty fish appear, community populations dwindle and that of the canyon swells.

Rapid Fluctuations in Population

Multiplying the year-around population is not difficult. Our small group almost doubled it throughout a seventy-mile stretch. There are only a few scattered residences on forest homesteads or mining claims, so widely separated that many river travelers stop and visit at each. It was our good fortune to do so. We had a special invitation from Frances Wisner at the Campbells Ferry Ranch. The coffee pot was on and we enjoyed a good visit with Frances and some of her neighbors. The Salmon River folks visit quite frequently despite the fairly long walks or river trips required.

Another dozen miles downriver we stopped at Buckskin Billy's and examined his hand-crafted guns. Billy's isolation from the cares of civilization provides the time to turn out the weapons with only the most primitive tools. His workmanship is beautiful, and even the flintlock shoots. Billy also displayed his jar of pickled mountain lion kittens, which were less beautiful.

At Mackey Bar, Al Tice's resort offered a more modern touch and a fine lunch. Its landing strip provides supplemental access to the unroaded canyon. It appealed to us more than a smaller strip we had seen earlier which rises at a brisk seventeen-percent tilt on a short sidehill. Only skilled mountain pilots use it.

We made one more stop: at the Shepp Ranch. Here we learned the romantic story of Polly Bemis. Polly, a Chinese slave girl, was won in a poker game. She and her husband lived on the river for many years. Long after his passing Polly moved to Grangeville, where she is buried.

The folks who live along the river would not live elsewhere; they make occasional trips to civilization, but they always return. Supplies and mail come in from time to time by plane, boat, or by backpack. It is a rough life and a lonely one, but they all enjoy it.

We regretfully left our boats at Lake Creek to end our trip by bus, time limits having prompted the decision. The Salmon continues another ninety miles before reaching the Snake River, and some day I will return and travel the remainder of this fabulous river gorge. ■

THE ELEPHANT TREE

By O. F. Oldendorph

THE ELEPHANT TREE, *Bursera microphylla*, is found in the United States only in the desert regions of Arizona and southern California. In California, it is known to exist in two areas within the State's largest park, Anza-Borrego Desert State Park.

Anza-Borrego is on the eastern side of the Laguna Mountains, about a hun-

dred miles east of San Diego. The elephant trees are found in the Fish Creek and Bow Willow areas of the park. The group near Fish Creek is better known, and may be reached with little inconvenience; it is about one and one-half miles from the highway. Sedan-type automobiles may easily negotiate the half-mile of dirt road that leads

from the paved highway to a small parking area. Beyond that point, deep loose sand makes it advisable to proceed on foot.

The country is dry, rocky, and bright. During the winter months the desert sun makes it an area of pleasant days, but dusk comes early and brings chilling cold. In spring blooms appear

The elephant tree, or elephant bursera, occurs very sparingly in the United States, being limited in range to the desert mountains of southeastern California and southwestern Arizona. Specimen below was photographed in California's Anza-Borrego Desert State Park.

Photograph by the author



on the barrel cactus, ocotillo, and indigo bush, and small wildflowers dot the sandy washes. During the summer months, from June through September, temperatures are unbearably high except for those acclimated to the dry heat.

A foot-trail winds toward the elephant trees, which are growing in an expanse of desert strewn with white granite boulders—the outwash from the mountains that rise to the south and west of the area. Most visitors see only five or six trees, but surveys have indicated that a thousand trees may exist within a few square miles.

The elephant tree is as unusual as its name indicates. In botanical works it is often described as a “dropsical” tree, a term which fits well because of its fat and pudgy appearance. Though in Mexico the tree may attain a height of thirty feet, the largest tree in the Fish Creek area of Anza-Borrego Park is eight to ten feet high. The trunk is disproportionately thick for a tree of such moderate height. About eighteen inches in diameter at ground level, it divides into five or six thick branches little more than a foot and a half above-ground. The branches divide again, taper sharply, and reach laterally and

upward in contorted patterns, a growth habit that may account for the plant’s common name. Smaller branches separate from the main arms and also taper sharply. Small, fern-like sprays of tiny, eighth-inch-long green leaves sprout from twigs that emerge from branches. Trunk and large branches are covered with a thin, parchment-like layer, light yellowish-tan in color, which cracks and peels from the branches. Smaller twigs that support the leaf sprays are dark red.

Elephant trees within the state park are protected by law against experimenters, but botanical descriptions always mention that the thin, peeling layer of tan bark covers a layer of green bark. Under the green layer a thick, corky layer is found with beet-red sap, which flows freely if the tree is cut or deeply bruised. Although the tree is protected, the branches and trunks of the Fish Creek specimens bear scars where insensitive people have cut them. Such areas show a hard, woody structure, quite unlike the uninjured surface.

The elephant tree blooms in early summer and produces small, five-petaled, white waxy flowers with yellow centers. A delightful fragrance per-

vades the air, a spicy aroma, somewhat like cedar or pine, yet different from either. Some people describe the odor as being similar to that of tangerine peel; but the description also falls short.

The elephant trees of Anza-Borrego Park were not always so accessible, and it is not surprising that they were not “officially” discovered until the late 1930’s. Before that time, there were accounts of desert prospectors who found contorted trees with branches that looked like elephants’ trunks, and which bled copiously if cut with a knife. The red sap that flowed from the wounds made the stories even more intriguing.

History of Discovery

In January, 1937, Dr. E. M. Harvey of the United States Department of Agriculture and Don Admiral, a Palm Springs naturalist, discovered the trees during an exploration of the Anza-Borrego region. They definitely established the location of the trees in the Fish Creek area.

A November, 1947, article in *Desert Magazine* rekindled interest in the trees at the San Diego Museum of Natural History, where scattered accounts had been heard for fifteen years. A museum party set out to survey the area reported in the magazine, and their success was related in the *San Diego Tribune* of 24 November, 1937. A later article, dated 26 January, 1938, quoted Clinton G. Abbott of the Museum of Natural History: “We had the thrill of finding a grove of the trees. We counted seventy-five, about three hundred were sighted through field glasses and we believe there may be a thousand. All of the trees in San Diego County are in the area likely to be included in Borrego Desert Park.”

Today the trees are indeed within the park boundary. A black-top road has been constructed in Fish Creek Wash and a jeep trail and parking area have been added to bring visitors close to the trees. But the trees remain much the same as they did thirty years ago, and the summer temperatures still reach 104 degrees and much higher. A park sign advises visitors to carry water when they hike to the trees. Man can change some things, but the nature of the desert remains aloof to change. It is best that way. ■

Specific name of the elephant tree, microphylla, was derived by the botanist Asa Gray from the minute leaves and leaflets that characterize the plant.

Photograph by the author



*Report of the President and General Counsel, Anthony Wayne Smith,
to the General Membership of the*

NATIONAL PARKS ASSOCIATION

on the Occasion of the Annual Meeting of the Corporation and Trustees, May 19, 1966

PLANS FOR THE establishment of a great new national park in the North Cascades Mountains of the State of Washington will command the close attention of conservationists for the next year or two.

The recommendations of the North Cascades Study Team, which has included personnel of the Departments of Interior and Agriculture, have recently been made public; hearings have already been held, and more will doubtless follow. Out of them will come definitive proposals for the protection of wild country in the Cascades and for the development of compatible recreational access in suitable areas.

The National Parks Association made the first recommendations for interdepartmental cooperation which resulted in the establishment of the Study Team. The hope was that the bickering and conflict which had characterized relationships between the U. S. Forest Service and the National Park Service in the past could thus be ended; while the Report was far from unanimous, it reflects a cooperative spirit which has justified this hope.

A primary goal of resources management planning for the Pacific Northwest should be the preservation of ample areas of untouched wilderness for human appreciation and enjoyment.

This was the central proposition in testimony advanced by the President of the Association on invitation at hearings of the Committee on Interior and Insular Affairs of the Senate of the United States on February 11 and 12, 1966, at Seattle, Washington.

Detailed recommendations as to the areas which should be included in the proposed new national park, in the wilderness system, and under special management in the national forests, were set forth in this testimony, which was reported to the membership in the *National Parks Magazine*.¹

A major problem has been the destructive cutting of timber and the unduly heavy recreational development which have characterized U. S. Forest Service management in the Pacific Northwest; a complementary problem is the danger of overdevelopment in the form of roads and facilities for mass recreational use by the National Park Service.

Despite, or perhaps because of these dangers, an unprecedented opportunity lies before the Nation to launch a creative program of environmental protection in the Pacific Northwest, and your Association will undertake to continue and enlarge its constructive work in this field.

CLOSELY RELATED TO the protection of the North Cascades is the defense of Olympic National Park. Olympic includes some of the most spectacular virgin forests and some of the finest scenery in North America. The unique and irreplaceable moss-hung rain forests of its western slopes contain scientific, artistic, and environmental treasures which must not be vandalized. But precisely such vandalism would follow if any of these rain forests were opened up to logging by changing the boundaries of the Park as proposed in the recent and highly objectionable Overly Report, which recommended the deletion of the Bogachiel-Calawah forest from the Park and likewise a large area bordering on Quinault Lake, within which there has

The American people, in our judgment, are likely to react with increasing anger to proposals of any kind which look toward the constriction or injury of the national park or wilderness systems. When the Overly Report was published, this Association protested strongly to the Secretary of the Interior and submitted the protest for the record at subsequent hearings (referred to above) on the North Cascades.

These developments in respect to Olympic Park are the more surprising for the reason that the present Secretary of the Interior designated a committee in 1961 to make a study of the Quinault. The majority recommendation was that the area be kept in the Park. For some reason, which at this writing we have been unable to identify, the Quinault Report was never publicized, and has apparently been forgotten.

MOST CONSERVATIONISTS HAVE been deeply disappointed by the official proposals for the establishment of a Redwood National Park, limited as they have been to an inadequate acreage in the Mill Creek area in the Coast Redwoods Belt in California, neglecting the Redwood Creek area which had been the focus of previous National Park Service recommendations, and which was favored by many conservation organizations.

This Association had proposed the inclusion of both the Mill Creek and Redwood Creek areas, with the maximum acreage suggested by any of the conservation or other groups interested in Redwood protection. It seems likely that pressure for a much larger park than that comprised in the official plans will continue. Meanwhile unfortunately, heavy cutting continues in the monumental groves, apparently in some cases in an effort to mar them beyond hope of inclusion in a park.

Lying behind the Redwood Park controversy is the history of the destruction of the California Coast Redwoods Forest by unsound harvesting during the span of several generations, but particularly the last 20 years.

Sequoia sempervirens is a species which regenerates well in the shade and lends itself readily to individual tree selection and long-rotation sustained yield management.

It is quite unlikely that the prevailing practice of clear-cut operation, leading to inexcusable resources destruction, can be altered short of the establishment of a Redwood National Forest comprising the entire Coast Redwood Belt. Such a national forest might be based on outright public ownership or the acquisition of ecological forestry easements. It should not be assumed that it is too late even now to take this approach to the preservation of substantial portions of the Redwood Forest; for those areas which have been cut over, and where regeneration will require many decades, public acquisition of land or easements might be a boon to the operating companies and the plants and communities which depend upon them.

For the immediate present, however, the primary goal of the conservation movement will continue to be the establishment of a Redwood National Park, so located and of sufficient size to merit the name.

AT THE OPPOSITE corner of the country, in central and southern Florida, a battle has been raging for several years, the outcome of which will determine the future of the Nation's unique subtropical wilderness, Everglades National Park.

¹"The North Cascades," *National Parks Magazine*, April, 1966.

Here we have a situation where water drainage projects, promoted by real estate speculators, have resulted in cutting off the immemorial flow of water from Lake Okeechobee southward through the Everglades country into the Park, which was established some 20 years ago by Congress at the behest and for the benefit of the American Nation.

The money, running into hundreds of millions of dollars, which has been used or is planned for use for these drainage projects, which also have a minor flood control significance, has been supplied by the Government, under pressure from the speculative interests in question, in conflict with its own purposes in establishing the Park.

This Association, working closely with the National Audubon Society and other conservation organizations, has been calling attention to impending destruction of the Park for a number of years and has been protesting against inaction. As a result of these efforts, negotiations between the National Park Service and the Army Engineers have finally brought forth plans by the Engineers for the deepening of canals connecting Lake Okeechobee and the Park, thus helping to channel water southward, as against dumping it into the Atlantic and the Gulf when flood conditions threaten.

There has not, however, been enough attention paid to the recommendations of this Association last year that a deep water reservoir be constructed in the northern portion of the conservation areas in which water would be reserved expressly for Park purposes; these reservoirs could be filled when water was abundant, as against dumping to the Coasts, and released later in the appropriate season when needed in the Park.² There would appear to be serious questions of proper timing, as well as adequate storage, which may not be sufficiently answered by merely deepening the canals.

There is also a problem of heavy seepage from the southernmost conservation area through the levee at its southeastern corner.

A troublesome, indeed a ridiculous, legal problem has arisen: do or do not the Army Engineers have the legal power to determine when releases of water shall be made from the conservation areas into the Park? The Engineers have denied that they have this authority, although the statutes would appear to give it to them; this Association has been pressing for a determination by the Solicitor of the Interior Department. We hope to get the question settled publicly before long; there has already been far too much delay.

Ominous implications accompany the recent Army Engineers proposals to alleviate the Everglades water problem. Recommendations are in prospect in a forthcoming report by the Engineers, based on current surveys, for the construction of a barrier along the western boundary of the Park, which could become a highway, or a system of dikes within the Park, intended to retard the flow of fresh water through the Park; the barrier, and probably also the dikes, might be highly destructive ecologically.

A further complication is the impending completion of a canal bordering the Park on the east which makes no provision against salt water intrusion from the coast; such intrusion threatens to destroy the unique plants and animals in a large area of that part of the park.

It is one of the functions of this Association, in such situations, to make independent investigations of critical problems like this, cooperating as closely as possible with the National Park Service and other responsible public agencies.

OUR MEMBERS ARE acquainted with the recommendations the Association has made for comprehensive regional planning in major regions around our great national parks.³

² "Water Picture in Everglades National Park," M. Straight, *National Parks Magazine*, August, 1965.

³ "Large Purposes, Large Plans," *National Parks Magazine*, January, 1965.

We advanced these recommendations first with respect to Yellowstone National Park,⁴ calling attention to the vast extent of the National Forests and other public lands outside of the National Forests, available for heavy-duty recreational development, and to the desirability of such development on private lands in the vicinity by private enterprise.

Early last year we made a study of Great Smoky Mountains National Park within the framework of the entire Tennessee Valley Authority-Great Smokies region, and we made similar recommendations for comprehensive regional planning for that region.⁵

This concept of broad regional planning has been given widespread approval; many public officials within the Interior and Agriculture Departments have agreed that it is sound. And yet, when it comes to the formulation of plans for road construction or wilderness protection in the parks, no attention is paid to the idea. The responsibility lies mainly with the Bureau of Outdoor Recreation, which has statutory authority to recommend programs which transcend departmental boundaries; it seems probable that the Bureau will not take the necessary initiative unless urged by the Secretary of the Interior, but the Secretary has not thus far provided the leadership.

IN THE GREAT Smoky Mountains situation, for want of a comprehensive regional program, things are going from bad to worse in respect to roads. Two decades ago the Tennessee Valley Authority entered into an agreement with North Carolina and Swain County to relocate a road which had run through the valley flooded by Fontana Reservoir; it was to circle the north shore through unspoiled mountain and forest country. The history of this agreement is lengthy and complex, but it seems clear that it could have been and could still be renegotiated in the course of dealings between the County, the State, and the United States, in dispensing untold millions of dollars in Federal assistance for highway construction and recreational development.

Instead, the National Park Service has indicated its willingness to accept a substitute agreement routing the road part way around the reservoir and thence across the mountains; it is difficult to know whether the lakeshore road or the mountain road would be the more destructive.

Conservationists, led by this Association, working closely with the Wilderness Society and numerous Smoky Mountains organizations, are opposing the road and urging that the traffic facilities, as well as heavy-duty recreational development, be located outside the Park, preferably on privately-owned land where they would be operated by private enterprise. The central core of the region, which is the Park itself, and suitable wilderness areas in the national forest, would be reserved for human use and enjoyment, protected from the traffic.

THE HEARINGS ON Wilderness protection in the parks will comprise a significant part of the work of the Association in park protection for the next six or eight years. The Secretary of the Interior is required by law to hold hearings in respect to each unit of the system having areas of 5,000 acres or more without roads, and to make recommendations to the President for their permanent protection as wilderness. The President then makes recommendations to Congress, out of which a series of new Wilderness Acts may ensue, giving statutory protection to the areas in question.

The law and traditions of the National Park System have always given a high measure of wilderness protection to the major national parks and monuments. The danger inherent in the Wilderness Act has always been that in an effort to

⁴ "A Yellowstone Regional Plan," A. W. Smith, *National Parks Magazine*, January, 1965.

⁵ "A Look to the Future in the TVA-Smokies Region," *National Parks Magazine*, March, 1965.

provide the additional statutory protection, the parks will be zoned for small wilderness areas and large facility areas. In view of the ample opportunities for mass recreational development on other public lands and on private lands outside the parks, the Association takes the position that the parks should be protected mainly as wilderness. This becomes entirely feasible if the comprehensive regional planning approach is taken, which favors mass recreational development elsewhere.

It is therefore apparent that this Association, with its allies among the other conservation organizations, has a responsibility to enter the administrative hearings on wilderness protection in the parks, with a view to getting maximum wilderness protection, and at the same time to press for the adoption of the comprehensive regional planning approach to both wilderness and recreation. These efforts will involve a heavy overload on our very limited staff and facilities.

THE PROTRACTED STRUGGLE to defend the Grand Canyon of the Colorado and related reaches of the River against hydroelectric power dams appears to be yielding fruit.

The Budget Bureau recommended last year against the construction of Marble Canyon dam, at least for the present; it is this structure which would back water through Grand Canyon National Monument and a considerable distance into Grand Canyon National Park itself; this Association had led conservationists in showing the economic unsoundness and lack of necessity for this project.⁶

In testimony given on invitation, this Association renewed its criticism of Bridge Canyon dam and questioned the soundness of Marble Canyon dam, a structure which would be located upstream from the Park and hence would not inundate any portion of the Park, but which would destroy a gorge having remarkable scenic significance.⁷

We pointed out that the Commissioner of the Bureau of Reclamation had said that large coal-fired thermal plants in the Colorado Basin are capable of producing firm power at from three to four mills a kilowatt hour or less, whereas hydropower at Marble Canyon would cost 4.2 mills. We suggested that water might be pumped into central Arizona from Lake Havasu by coal-produced energy, thus saving the magnificent Canyons of the Colorado; and further that there would be little opposition to such a program, which might therefore be enacted into law rapidly.

Our further investigations indicate that coal-fired thermal plants may be more economic than hydropower plants even for peaking power in the Colorado Basin. We are pressing these inquiries as this report is published.

The defense of the Colorado has aroused the loyalties and elicited the emotions of countless conservationists throughout the Nation and the world; it remained for the National Parks Association to contribute the element of economic and engineering analysis which may well prove decisive.

THE ISSUES IN THE effort to save the Potomac River Basin against the destructive dams proposed by the Army Engineers are beginning to narrow down significantly.

The Secretary of the Interior submitted an Interim Report on the Potomac to the President of the United States in January 1966 which could not be looked upon as a Model Program for the Potomac for the reason that it accepted or recommended the construction of at least five, and perhaps seven, Army-type reservoirs.

The broad coalition of farm, labor, conservation and citizens

⁶ "A Bridge Canyon Dam Is Not Necessary," S. Raushenbush, *National Parks Magazine*, April, 1964; "Water Challenge of the Pacific Southwest," S. Raushenbush, *National Parks Magazine*, June, 1964.

⁷ "Water for Arizona," A. W. Smith, *National Parks Magazine*, December, 1965 (Insert 12-65).

organizations, numbering perhaps 7½ million persons throughout the United States and the Potomac Basin, which has been led by this Association, reaffirmed its opposition to any major reservoirs of this kind on the Potomac.

We may credit to our efforts the fact that the principle of storing water in reservoirs for the dilution of pollution appears to have been abandoned in the Interim Report; albeit with some hesitation, the Report affirms the proposition that pollution must be kept out of our streams. Likewise, although rather unimpressively, the Report appears to favor the construction of networks of small headwaters impoundments of the watershed protection variety for the prevention of floods, the control of siltation, and good outdoor recreation, as against major flood control reservoirs.

The Interim Report even goes so far as to concede that the complete renovation of effluents from treatment plants in the Washington metropolitan area, with recycling through the fresh water estuary, may well be feasible in time. The weakness of the Report however is that it asserts that a technological lag of some twenty years must be assumed; this assumption appears to be in direct conflict with testimony given by Dr. Donald F. Hornig, Director of the Office of Science and Technology, Executive Office of the President, before the Senate Interior and Insular Affairs Committee, on September 8, 1965, essentially to the effect that such renovation and recycling can be accomplished with existing technologies.

As a stop-gap measure during the imputed twenty-year lag, the Interim Report recommends three dual-purpose water supply and recreation reservoirs of the Army Engineers type; it accepts the authorized Bloomington Reservoir, a major purpose of which is to supply industrial cooling water by the so-called once-through system, whereas prevailing practice makes use of cooling towers; and it even straddles the issue on the controversial Seneca Dam on the main river, which fully drawn down, would create a desert two-thirds the size of the District of Columbia.

The persistent efforts of this Association and its many allies in this important work may still make it possible to present the President of the United States in due course with the Model Program for the Potomac he has requested.

THE STATELY HUDSON RIVER was brought again into the forefront of conservation interest during the year by the issuance of a license by the Federal Power Commission to the Consolidated Edison Company for the construction of a pumped-storage power plant at Storm King Mountain.

Numerous and militant defenders of the scenic highlands, which had opposed issuance of the license, carried the case to the Circuit Court of Appeals and secured a reversal. New hearings will probably be held soon by the Commission; the National Parks Association has intervened, and will put its shoulder to the wheel in these protection efforts.

Numerous problems of pollution abatement, hydroelectric power plants, atomic energy plants, highway construction, and scenic historic preservation throughout the Hudson, Long Island, and Adirondack regions, have been exploding into crises. The Association has assigned special personnel and funds to these problems.

THE PARK SYSTEM continues to expand; as new proposals are advanced, the Association must evaluate them and make detailed staff analyses for that purpose. On invitation, occasionally, it testifies before Congressional Committee hearings, contributing its considered judgment to their deliberations.

Among the recent additions to the system have been Asateague National Seashore, which unfortunately brought with it an undesirable road through the Chincoteague Wildlife Refuge; and Cape Lookout National Seashore in North Carolina. Remaining for consideration, among others, will be the proposed Oregon Dunes, Pictured Rocks, Sleeping Bear Dunes, and Indiana Dunes.

There is a serious question whether the new parks and seashores will remain merely parks on paper. The sale of passes to provide revenues for the Land and Water Conservation Fund has been disappointing; for this and other reasons, the Fund will probably never support the expanded park and recreational program the Nation has been led to anticipate. One way to help might be to expedite the exchange of in-holdings for scattered public lands as authorized by existing law; but bureaucratic fumbling has interfered with exchanges.

There is also a serious question whether, as the system is expanded, the existing units and the wild country within them will be compromised and sacrificed. This danger is exemplified by the cases of Everglades, Smokies, Grand Canyon and Olympic, cited above. There is a continuous pressure for overdevelopment by roads and facilities; wilderness may not be accorded the protection it could have under a regional planning system. In the absence of firm protective policies in the Department and the Service, this Association and its allies fulfill an essential watch-dog function.

BYOND THE RANGE of the National Park system proper, we continue to concern ourselves with the protection of wilderness in the national forests and the wildlife refuges. We struggle to get attention for such concepts as that of ecological forestry, under which we would subsume the management of the Coast Redwoods in California on a long-rotation individual-tree selection basis, and the Douglas-fir forest of the Pacific Northwest on a very small patch-cutting basis, as against large-block clearcutting.

We continue to publicize the soil conservation program and to cooperate with organizations and government agencies having responsibility in this field.

While the problems of green space protection in our major metropolitan areas are so numerous and formidable as to preclude our giving them individual attention in most instances, considering our financial and staff limitations, we find it possible to lend support from time to time to some beleaguered city park, or to block some destructive freeway through suburban open spaces.

We continue to press for better policies in the design and construction of the major national highway systems, supporting efforts to bring such agencies as the Bureau of Public Roads under rational control.

The conflict between unlimited population growth and any hope of protecting a reasonably natural environment for the human race becomes daily more apparent to greater numbers of people. This Association has been lending a hand by means of a series of well-received articles in the Magazine by able writers, and we propose to continue these efforts.

The introduction of the concept of natural beauty, and the acceptance of responsibility by the Federal Government for its protection and enhancement, comprise a milestone in recent public policy.

Recent years have seen the addition of new statutory tools to the working kit of protectors of a good environment. Such were the Water Quality Act, the Water Resources Planning Act, and the earlier Land and Water Conservation Fund Act. Numerous problems of the implementation of this legislation have arisen which require the attention of this Association.

More and more it becomes apparent that the coordination of Federal programs as they affect the environmental resource of the Nation must be undertaken at the level of the Executive Offices of the President. The Budget Bureau holds the purse strings and is in a position to resolve such conflicts as that between drainage and the protection of Everglades Park. In addition however some such institution as a Natural Resources Council, comparable to the Council of Economic Advisers, is probably desirable.

WE MANAGE A NUMBER of component programs; our Student Research Program, intended to stimulate interest in

environmental problems in the universities; our Business Vacation Program, which looks toward the stimulation of well-planned private recreational business on the outskirts of national park regions, drawing heavy visitation away from wilderness areas; and our Washington Conservation Education Program, consisting of lectures, motion pictures, and field trips.

Our New York Honorary Committee, under the Chairmanship of Mr. George S. Leisure, brings us the endorsement and interest of prominent men in business, conservation and foreign affairs. We maintain our continuing interest in overseas conservation programs, including the work of the International Union for the Conservation of Nature, and the American Committee for International Wildlife Protection; and we publish articles continuously on national parks in other countries.

Our work has been facilitated by the development of a panel of professional consultants in park management, river basin planning, forestry, ecology, engineering, economics and press relations.

The membership of the Association continues to grow steadily, having reached a total of 33,033 members on stencils as at December 31, 1965. This figure reflects a heavy and systematic culling of membership failing to pay dues promptly. It represents a steady growth during the year despite the substantial increase in dues imposed beginning January 1, 1965.

OUR DUES AND our income from a modest portfolio of investments, comprise the principal financial foundation of all our work. However, a vitally important component is also supplied by our annual campaign for contributions of additional funds from our members and a few deeply interested foundations. A relatively small but dedicated group among the members contribute from \$1,000 to \$20,000 a year apiece. A somewhat larger sector makes gifts ranging from \$25 to \$1,000 a year. About one-third of our entire membership makes a financial contribution of some kind, over and above their regular membership dues.

In addition, we find with gratitude on more than one occasion, as a usual thing, in each year, that a devoted member has remembered us in his will.

Major bequests are received by the Association from time to time which have ranged between \$25,000 and \$175,000, adding significantly to the investments which the Association may rely upon for permanent and continuing income. It has been suggested to us that comparable contributions made during the lifetime of the donors would have the double merit of giving great assistance to the work of the Association financially, while at the same time permitting personal cooperation and consultation with the contributor.

The work of the Association is mainly educational. *National Parks Magazine* is our major educational vehicle. Other programs, including the Washington Conservation Education Program and the University Research Program contribute. But the inquiries undertaken by the Association into such questions as the management of the water resources of central and southern Florida, or the comparative costs of generating energy on the Colorado River by competing systems, are conducted in a spirit of high scientific responsibility; the Association thus engages in ecological, biological, economic and governmental scientific work of cardinal importance.

In addition, as an aspect of its activities which cannot always be effectively publicized, the Association serves in effect as an unofficial, objective, detached advisor to and constructive critic of Government operations and agencies in the environmental resources fields. Thus, membership in the Association brings not only the monthly *National Parks Magazine*, which we consider to be without superior among all conservation publications, but also participation in public affairs related to resources at the highest levels of the Federal governmental structure. ♦ ♦ ♦

Rock Gardens of the Wilderness

By Frances Morton

THE SIERRA NEVADA IS AN IMMENSE granite block four hundred miles long and up to fifty miles wide, dividing much of the length of the State of California. Within its boundaries are many wilderness, wild and primitive areas containing majestic peaks, glistening glacial waters and deeply-cut gorges. They also contain a smaller natural phenomenon often overlooked by visitors: natural rock gardens. Side by side with towering peaks and nestled beneath aged evergreens, these miniature gardens rank among the most beautiful of nature's accomplishments. The wilderness traveller misses an amazing flower show when he does not stop—and stoop—to see the tiny blossoms at his feet or the taller blooms among the tremendous jumble of rocks, crevices, and ledges.

In Hoover Wilderness, just off Tioga Pass highway leading into Yosemite National Park, it is difficult to overlook the colorful rock gardens. Here a one-day hike will reveal hundreds of wildflowers in full bloom from mid-July through August. Some of the flowers are rare, some common; but all should be left for the enjoyment of others.

Colors of the Wilderness

Each summer, wildflower seeds sprout into flamboyant color. The red Indian paintbrush blazes from heavily-grassed meadows strewn with rocks and boulders, and on bordering slopes spirea mingles its delicate pink blossoms with the deep red or lavender mountain penstemon. Above them, in the even more arid soil, tall fireweed bends before mountain breezes. Nearby, sun-orange mule-ears stand stiffly. Frequently, at the feet of all these flowers, white phlox grow so densely that they create a landscape resembling a white-dotted green carpet.

Around the lakes and streams, in the rich moist soil, tiny ground-hugging flowers such as American laurel and mountain heather bring the visitor to his knees to inspect perfection of texture, design and color. Among this group are wild onions and shooting stars, which stand somewhat taller than their neighbors. Two of the moisture-loving flowers look like tiny pink elephants; one of them is the little elephant's head, six to fourteen inches high. These are difficult to locate; but, once found, they are easily identified. There are also larger elephant's heads

which grow one to two feet tall and blossom in clusters. These need careful inspection to reveal the pink "elephant ears" and "trunk."

The crowning floral beauty of the Hoover Wilderness Area is the varicolored columbine, found on sunny, dry slopes. Many wildflower admirers have seen the more common yellow-orange columbine, but not so many are lucky enough to sight the white, pale yellow, faint lavender or muted color combinations of columbine which are present in this specially protected unit of the national forest system. ■

Contributing to the beauty of the high, wild country of California's Sierra Nevada are myriad flowering plants that thrive in the scanty soil amid a welter of rock.

Photograph by the Author





Photograph by Nick Elena, courtesy California Department of Fish & Game

Don't Tame

FLOWING MORE THAN A HUNDRED miles through High Sierra meadows, down sixty miles of steep, cliff-walled sheer rock canyons, through virgin pine forests, across ancient gold-bearing river bars and finally tumbling into a confluence with its other branches to form the great pool behind Oroville Dam, the Middle Fork of the Feather River is today California's last remaining untamed, unspoiled, wild rushing river.

National interest focuses on the Middle Fork, as it is one of the rivers suggested for study in the National Wild Rivers study program ordered by our government to insure the beauties and benefits of these free-flowing rivers for ourselves and the generations yet to come. As California is our most populous State and a rapidly growing mecca for tourists from all other States, anything that happens to the Middle Fork of the Feather affects us all. Presently we own and manage this river, for it is within the boundaries of our great multiple-use Plumas National Forest.

The Feather River has lived under a Damoclean threat ever since the rice growers of the upper Sacramento Valley saw in its water a source of supplemental irrigation. A neat water and power "package" was put together and first presented back in 1950 in the application of the Richvale Irrigation

Rising in the heartlands of northern California's High Sierra, the unspoiled Middle Fork of the Feather River tumbles through sixty miles of pine-clad canyon on its way to the main stem of the Feather and the Sacramento Valley.

the Wild-Flowing Feather

By Dewey Anderson

District for permission from the California State authorities to build eight dams that would impound water in reservoirs and let it out through turbines; the generated electricity was to be sold under contract to the nation's largest private utility, the Pacific Gas and Electric Company.

It was a neat idea in that revenues from the power company were intended to pay the costs of construction and operation of the water program. The irrigators would obtain rice water at relatively low cost, while the Pacific Gas and Electric Company would obtain cheap hydro-produced electricity for peak-load usage in the heavily-populated Sacramento Valley. The farm cooperative could make a "case" in the public interest with access to low-cost Rural Electrification Administration funds. This was the shield behind which the private utility could stand. The utility company would thus obtain power from a federal source which it could not hope to get by its own efforts.

Plan Undergoes A Change

This first all-out proposal having met with the vigorous opposition of conservationists generally, as well as that of the Forest Service, the Plumas County government and the California Fish and Game Department, the rice growers modified their plan. A modified proposal received approval of the California State Water Rights Board and is now before the Federal Power Commission for a license to construct. Thus, today, the vote of a five-man

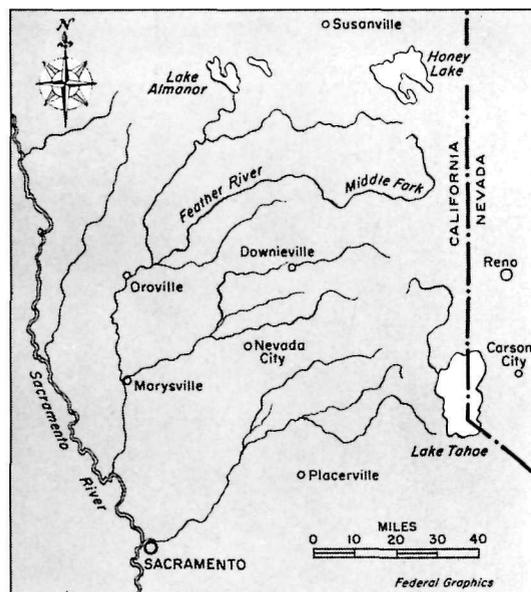
commission sitting in Washington, D. C., is all that could prevent reduction of the incomparably beautiful free-flowing Middle Fork of the Feather River to a harnessed set of five dammed reservoirs and two giant powerhouses, suffering this great, natural rushing river to end its days in miles of canal pipeline.

What would be gained, what lost if the decision reached by the Federal Power Commission allows the destruction of this last remaining wild river in California? The testimony, briefs and studies of the parties at interest are voluminous and contradictory.

It is said that conditions have changed during the nearly one-fifth of a century in which the project has been afoot; that new sources of cheaper power, long-distance transmission, the Columbia California Intertie, atomic-fueled power generation and great new savings in steam plant fueling have combined to make the prospective source of revenue for the project, a PG&E contract, no longer attractive to the corporation.

It is said that higher costs of construction and operation of the project, higher cost of capital, lack of Federal funds, and the apathy of taxpayers when asked to bond themselves, combine to make the project no longer as feasible as it once appeared.

It is said that despite the fact that the Irrigation District let lapse its rights to share in California State Water Plan water and power to be brought in at Oroville Dam—which is filled by Feather River water and is close to the



lands these users would irrigate—a petition for this water and power would have to be honored. Acted upon favorably, it would provide these irrigators with cheaper water than their own proposed Middle Fork source, and bring it to them from two to four years sooner.

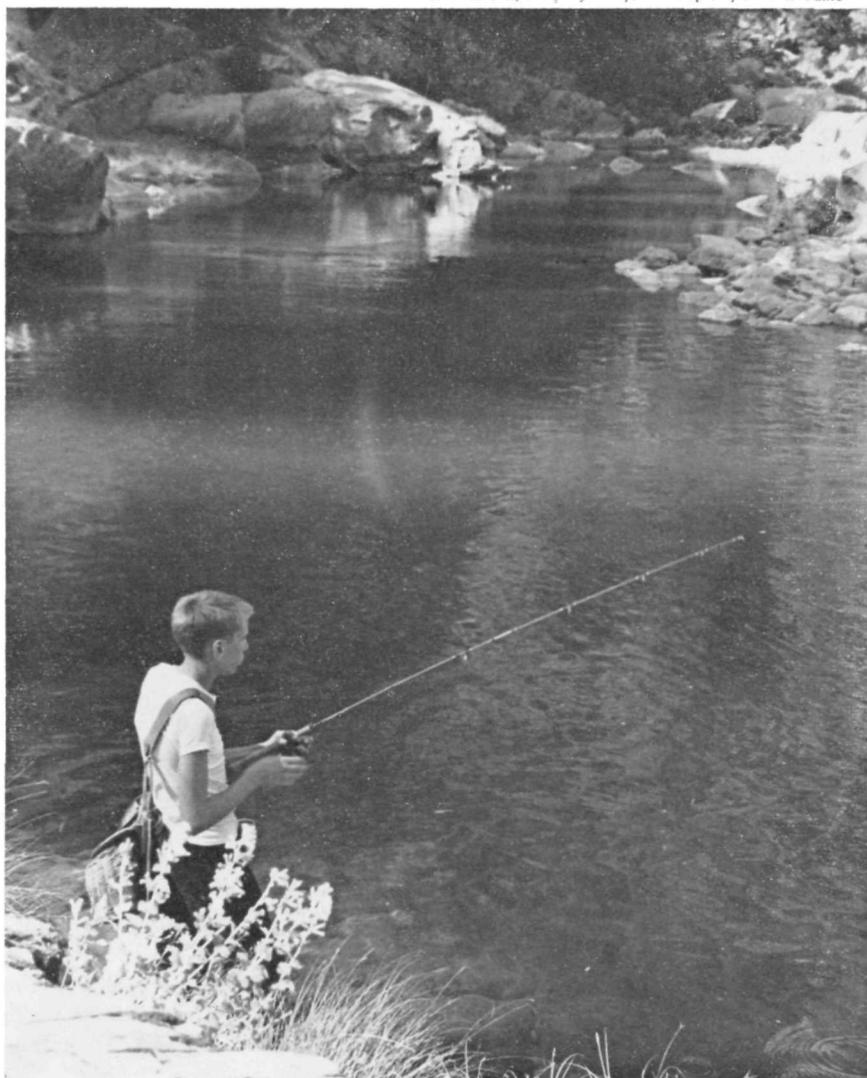
It is surmised that the prospect of "forgiveness," or scale-downs of debts incurred, keep the irrigation district leaders from abandoning their efforts to obtain the right to capture, harness and tame the Middle Fork of the Feather River. It has been a long, hard, costly fight, and free-born Americans do not give up easily.

Nor has the PG&E said that it would not take the power produced at public expense off the district's hands at a price, for hydropower is still relatively cheap and well-proven when derived from such a source as this wild rushing river; and this power would still meet the corporation's need for peak-load distribution. But "price" is still a question to be answered; and until a firm contract is forthcoming which awaits Federal Power Commission authorization of the District's plan this remains one of the doubtful aspects of the whole enterprise.

In fact, if the Federal decision is deferred very long, the project could be folded up and laid away for all time because of this one decisive issue of its financial feasibility.

The clear, cold, unpolluted waters of the swift Middle Fork of the Feather provide ideal habitat and spawning grounds for the beautiful rainbow trout.

Nick Elena, courtesy California Dept. of Fish & Game



Dr. Anderson is executive director of the Institute of Public Affairs in Washington, D.C. The Institute is a non-partisan, tax-exempt organization whose public affairs studies have, over the years, merited general acceptance for their timeliness and objectivity.

To sportsmen and outdoor enthusiasts the Middle Fork of the Feather River holds special and pointed appeal. There is no such stretch of natural rainbow trout habitat left anywhere in the Far West, except possibly in Alaska. The river elevates from a few hundred feet to nearly 8000 feet. It has never been contaminated. It has the abundant

natural feed needed to enable rainbow trout to grow big fast, free of disease, rough fish, predators and other hazards; many stretches of the river form the natural spawning grounds of these rarely beautiful game fish. The Middle Fork is accessible, but remains in a state of wilderness not overridden by weekenders and litterbugs. It is one of the few remaining rivers rewarding the trout fisherman with a good catch for a day's effort. Its camp sites and back-packer spots are so placed as to afford visitors the charm of living in surroundings so fresh and full of beauty, so rich in wildlife living naturally that one shudders to think of it all being spoiled by an act of man that would inundate long stretches of it, collaring it with huge piles of concrete topped with humming dynamos and high-voltage lines.

Good Recreation Plan

The Plumas National Forest and the county have combined to develop a program of recreation for the Middle Fork which approaches the ultimate in best use of a still-primitive area. It should serve as a model of what we could expect from our own newly-legislated National Wilderness Area program.

Reasonable ease of access is assured for those who will plan well and make the effort required to enjoy a primitive area. In doing so, they will be more than amply rewarded, physically, emotionally and spiritually by this close affinity with nature. For the Middle Fork of the Feather traverses incomparable country, affords sights so rare nowadays as to remain forever indelibly imprinted in one's memory. It insures great sport fishing for rainbow seldom had anywhere anymore, and provides mountain camping at its best in a balmy climate, where wildlife abounds uncorrupted by dependence on man.

All the rewarding values of a free-flowing river are ours today on the Middle Fork of the Feather. They may not be ours tomorrow. But if we act wisely and well now, showing the needed courage and restraint, we can make secure the future of this natural heritage that has been given us for those who follow in the generations yet unborn. This is what wise national policy would seem to require of us at this moment. ■

Clouds envelop the mist forest in Great Smoky Mountains National Park, muffling footsteps and creating for visitors "a world that seems a thousand miles from civilization."



Photograph by the Author

Path Through the Mist Forest

By Marie B. Mellinger

THE PATH THROUGH THE MIST FOREST is a mountain trail starting on the road from Newfound Gap to Clingman's Dome in Great Smoky Mountains National Park, leading through the spruce-fir groves toward the LeConte Trail. If you follow it as far as the first trail shelter, you will traverse a wonderland of trees and moss and mist. Most of the time low-lying clouds perform a daily ballet through the tree tops; for this forest receives about eighty-five inches of water in the form of fog and rain each year. Wet and dripping in the occasional bursts of sunshine that light up the woods, the glitter of wet foliage and the vivid green of moss and fern creates a real-life fairyland.

Botanists class the spruce-fir terrain of the Smokies as Canadian in zone, with a climate roughly equal to that of northeastern Maine or the Province of

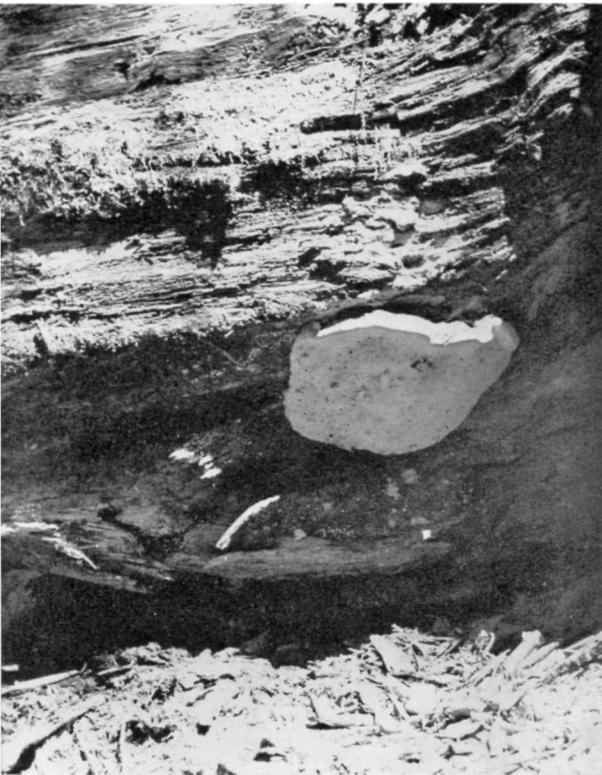
New Brunswick. But in the latitude of Great Smoky Mountains National Park, the cold-climate forest occurs above five thousand feet. Here the dominating trees are the Fraser fir and the red spruce. The higher the elevation, the purer are the stands of spruce.

The Fraser fir is especially showy when the young, pale-green, upright cones deck the trees like candles. The bark of this fir is often filled with blisters of resin; it is the "she-balsam" of mountain residents. Red spruce is known as "he-balsam," and spruce groves are the favorite haunts of the red squirrel, or chickaree. Occasional red maples, yellow buckeyes and beech are found among the spruce and fir forests; but most common among deciduous trees of the mist forests is the yellow or Allegheny birch, found as high as the six-thousand-foot elevation.

In the forest along the trail the trees

grow so closely together that there is little light, and the shrub understory is largely absent. Most common shrub is the hobble-bush, or wayfaring tree, blossoming in April with showy white flower clusters. This is followed by the red-berried elder and the wild hydrangea. Skunk currant and the round-leaf currant, both with ill-smelling leaves and sour red berries, grow in straggling colonies in the moss. In openings where trees have fallen the thornless blackberry and the red raspberry share the extra sunlight with the mountain ash.

Early spring brings trout lilies and spring beauties, while blue-beads blossom on the mossy banks along the trail with colonies of painted trillium and bluets. Few plants are found abloom in midsummer save for ghost-like white Indian pipes and the yellow dwarf ragwort and wood sorrel, pretty wildling



Common fungus of the mist forest is the weeping polyporus (above) which grows on the undersides of logs. Fern shown below is the delicate toothed mountain wood fern. Both photographs were taken by the author.



with shamrock-shaped leaves and pale pink striped blossoms.

With the oxalis, the ground cover is mostly made up of the toothed mountain wood fern, a wide, lacy-leaved, handsome fern that fills almost all spaces between the trees. There are said to be about three hundred species of mosses, lichens, and liverworts in these mountains, and it seems as though all of them must be present in the mist forest. There is such a wide diversity of form and shaded color that one is bewildered; there is the good smell of wet moss and fern and fungus, the moss being so thick that every footfall is hushed. Mosses and lichens ring the tree trunks and the limbs of the dripping evergreens.

We see and smell so many kinds of fungus growths that we are reminded of the saying, “. . . the afternoon had a fungus smell . . .” The plants grow from fallen logs, from tree limbs, from the moss, and the very ground of the trail itself in a profusion of odd shapes. There are rose-red Russulas, olive Entolomas, brick-tops, conspicuous yellow-warted Amanitas, velvety mauve Lactarius, and the umbonate brown tops of the flourishing Cortinarius—some of the two thousand species found in the park.

Fairy Caps and Rings

The little fairy caps, *Mycena*, seem especially abundant in the spruce forest. There are orange and spotted, viscid yellow, and yellow and red bleeding *Mycenas*, all with slender stems and tiny umbrella-shaped tops, decorating every fallen log. One can also find the “fairy ring” of the high country, formed by the silvery-grey tufted *Marasmius* mushrooms.

Firs and spruces have ladders of bracket fungi, especially the conspicuous snow-white brackets of the expanded pleurotus, the hard and leathery red-brown conches of the spruce *Fomes*, and the fir polypore, this last with papery-thin brackets shaded in light grey and purple. On under sides of logs are velvety flat patches of the weeping polypore, while clustered *Collybia* is common on old spruce logs, often twenty to thirty stems twisted together in a group, each stem topped with a bright golden dome. Also on spruce logs are the gelatinous, spiny-capped false *Hydnums*.

There is something awesome about the mist forest that makes one want to speak in a whisper; yet it is by no means a cheerless place. There is the constant background music of dripping water and the chorus of bird songs. The birds of the mist forest are mostly boreal species. Here the olive-sided flycatcher nests, probably in its most southerly breeding range. Brown creepers use the hanging usnea (old man's beard) lichen for their nests. Red-breasted nuthatches and golden-crowned kinglets also nest in the spruce and fir. Those shy sprites, the winter wrens, nest in tangles of upturned roots.

Chickadee and Junco

Most common birds are the black-capped chickadees and the Carolina juncos; both make their presence known by their twittering and songs, and their habit of flying just ahead of one along the trail. Noisiest inhabitants are the hairy and red-headed woodpeckers, busily drumming dead trees. Most warblers prefer the lower pine and hardwood forests, but the beautiful Blackburnian and the black-throated green are both denizens of the mist forest. Occasionally one sees flocks of crossbills feeding in the spruces.

During a walk through the forest a ruffed grouse may be heard drumming, or one might fly up from the trail; the birds occasionally nest at elevations of up to six thousand feet. One may be lucky enough to hear the hooting of a barred owl or the peculiar whistle of the little saw-whet owl.

Two birds seem most expressive of the high, lonely world of the mist forest, however. The shy, wild song of the veery seems to be the very spirit of the forest, and the big, black raven makes one aware that he is in a vast forest area. Arthur Stupka, park naturalist, has said that “no bird is as symbolic of wilderness and of solitude” as the raven.

Strangely, although traffic is often bumper-to-bumper on both the Clingman's Dome spur and the Great Smokies transmountain highway, a short walk into the woods takes one into a different world—a world that seems a thousand miles from civilization. Rarely one may meet a fellow hiker or camper on the trail, but the wonderful world of the mist forest is mostly all yours to experience and enjoy. ■

News and Commentary

Small Plans for Wilderness

So far as the National Parks Association can discover, official planning for wilderness under terms of the Wilderness Act of 1964 is being done on the basis of splitting parks and monuments into small wilderness areas and large recreational facilities. The Association has repeatedly called on the Director of the National Park Service and the Director of the Bureau of Outdoor Recreation to exercise their authority under the Land and Water Conservation Fund Act for planning on a region-wide basis; it has cited two regional planning studies already undertaken by the Association. ("A Yellowstone Regional Plan," *National Parks Magazine*, January, 1965; "A Look to the Future in the TVA-Smokies Region," *National Parks Magazine*, March, 1965). The Association's recommendations have so far been greeted with general approval by concerned government agencies, along with complete refusal to take any action on them. We have the impression that this inertia stems from the Secretary of the Interior.

Wilderness Hearings and Reviews

The National Park Service has announced that public hearing dates have been scheduled for June 13, in Gatlinburg, Tennessee, and June 15, in Bryson City, North Carolina, on the question of areas in Great Smoky Mountains National Park that are suitable for wilderness designation under the Wilderness Act of 1964. The Gatlinburg hearing will commence at 9 a.m. in the civic auditorium, while the Bryson City hearing will commence at 9 a.m. in the courtroom of the Federal Building. Additional information and a map of the proposed wilderness area boundaries may be obtained from the Superintendent of Great Smoky Mountains National Park, Gatlinburg, Tennessee 37738, or the Regional Director, National Park Service, Federal Building, Box 10008, Richmond, Virginia 23240.

NPA understands that the Park Service currently has under review 22 other units of the park system; of these, plans for the following are farthest advanced: Craters of the Moon in Idaho; Theodore Roosevelt in North Dakota; Lassen Volcanic in California; Sequoia in California; Kings Canyon in California; Isle Royale in Michigan; and Yellowstone in Wyoming, Montana and Idaho. It is expected that hearings will be held on these units during the period June-September,

1966; no specific dates for hearings other than those on Great Smokies had been released at the time of this writing in early April.

NPA understands further that reviews are under way but are in a less advanced stage for the following park system units: Bryce Canyon, Capitol Reef, Arches and Cedar Breaks in Utah; Badlands in South Dakota; Cumberland Gap in Kentucky, Virginia and Tennessee; Mammoth Cave in Kentucky; Shenandoah in Virginia; Everglades in Florida; Chiricahua, Petrified Forest, Saguaro and Wupatki in Arizona, and Pinnacles and Lava Beds in California.

A Park Service spokesman has indicated that the above lists are tentative and that units may be moved from one list to the other. In any case, only 19 of the above units will be scheduled for hearings in the first review period; this number complies with the one-third requirement of the Wilderness Act. When hearing announcements are made details will be included as to where information material, including maps relating to the area under review, may be obtained.

Also under terms of the Wilderness Act, the U. S. Forest Service has been conducting field examinations of national forest Primitive Areas for their suitability or non-suitability for inclusion in the National Wilderness Preservation System. The Service has scheduled the following approximate public hearing dates for 11 Primitive Areas (a hearing has already been held on the San Rafael Primitive Area in California): Mount Jefferson in Oregon, June 15, 1966; Spanish Peaks in Montana, July 15, 1966; Sycamore Canyon in Arizona, February 1, 1967; High Uintas in Utah, October 1, 1966; Flat Tops in Colorado, September 1, 1966; Stratified in Wyoming, November 1, 1966; Devil Canyon-Bear Canyon in California, August 1, 1966; Mt. Baldy in Arizona, September 15, 1966; Pine Mountain in Arizona, November 15, 1966; Desolation Valley in California, December 1, 1966; Ventana in California, January 15, 1967; and Upper Rio Grande in Colorado, February 15, 1967.

For Wilderness Act purposes, all or parts of 28 national wildlife refuges—mainly small, unusual island refuges established for colonial nesting birds, in most of which special permits are necessary for entrance—have been scheduled for immediate study by the Interior Department's Bureau of Sport Fisheries and Wildlife. The list of refuges includes: Bering Sea, Bogoslof, Forrester Island, Hazy Islands, St. Lazaria, Semidi, Si-

meonof and Tuxedni, all in Alaska; parts of the Kofa Game Range in Arizona; parts of Havasu Lake in Arizona and California; Cedar Keys, Island Bay, Key West, Passage Key, Pelican Island, Pinellas, all in Florida; Moosehorn (two units) in Maine; Monomoy in Massachusetts; Huron and Michigan Islands in Michigan; Wichita Mountains (parts) in Oklahoma; Oregon Islands and Three Arch Rocks in Oregon; Copalis, Flattery Rocks, and Quillayute Needles in Washington State; and Gravel Island and Green Bay in Wisconsin.

Indiana Dunes Lakeshore

Not many years ago the people of Illinois, Indiana and Michigan could have set aside, with national help, a significant length of Lake Michigan shore for its great natural beauty, scientific interest and outdoor recreational potential. Now the southern Lake Michigan shore is disappearing swiftly under commercial and real estate development, and a belated effort is being made to preserve some of the remaining natural shoreline in an Indiana Dunes National Lakeshore before it is completely overtaken by industrialization.

These were the views expressed on invitation by Anthony Wayne Smith, President of the National Parks Association, when public hearings were held in Washington in early April on the question of the proposed Lakeshore. Pointing out that the size of the lakeshore has shrunk even since it was considered in 1964, Mr. Smith said that the public interest would best be served by affording protection to the remaining area before further deletions were made necessary by development encroachment. Presenting the statement in behalf of Mr. Smith was Paul M. Tilden, assistant to the president and editor of *National Parks Magazine*.

Forest Service Appointments

Arthur W. Greeley, deputy chief of the U. S. Forest Service since 1959, has recently been named associate chief of the Forest Service, a new position created by a reorganization within the Service, according to Forest Service Chief Edward P. Cliff. Mr. Greeley, son of a former Forest Service Chief, William B. Greeley, commenced his service career as an assistant ranger, later holding the positions of forest supervisor and then assistant director of an Experiment Station to the Regional Forester, first in Alaska and later in the North Central States.

M. M. Nelson will be deputy chief in

charge of administration of the National Forest System, Chief Cliff has announced; a new position which combines his previous duties as deputy chief in charge of national forest protection and development with Mr. Greeley's former duties. Mr. Nelson will be assisted by two associate deputies, Burnett H. Payne, former assistant to Mr. Greeley, and Richard F. Droege, former regional forester of the Northeastern Region.

Vassar Conservation Course

Vassar College in Poughkeepsie, New York, has introduced a new course into its interdepartmental curriculum. The course will focus on the protection and development of the Hudson Valley and its resources, and will give students a broad understanding of the study of other river valleys. Name of the course is "The River: A Case Study of Man's Relation to His Environment in the Mid-Hudson Valley." The course features a series of lectures by ecologists, engineers, professors and journalists, and will explore such questions as the future of the Hudson River Valley, the effects of pollution on the natural biotic community of a river, the river and human values, and governmental devices for river basin administration.

House & Garden Tours Assist Preservation Projects

The bloom of the redbud and dogwood on the Eastern seaboard has indicated ever since 1930 that the annual Maryland House and Garden Pilgrimage, which takes one through Maryland's tidewater country to admire the beautiful homes of a past era, is about to be held once again.

Wye House, in Queen Anne's County, Maryland, one objective of the House and Garden tour.

Jack Engeman Studio



Proceeds of the pilgrimage help maintain the splendid 18th century Hammond-Harwood House in Annapolis as a museum; and further, go toward similar restoration and preservation projects throughout the State. This year's land pilgrimage is scheduled for April 28 through May 9, and will consist of ten land tours. In addition there will be two day-long water cruises (May 14 and 15) from Baltimore Harbor into Chesapeake Bay and up the Chester River to Chestertown; reservations are necessary for the water trips. Tour books and further information may be obtained from Pilgrimage Headquarters, Room 223, Sheraton-Belvedere Hotel, Baltimore, Maryland 21202.

A Public Awakening

For the first time in American history, perhaps, a newspaper has conducted a popularity poll on natural beauty—and for conservationists the results are heartening. On October 3, 1965, the *San Francisco Chronicle* published the results of a series of questions it had asked about natural beauty; the answers reflected a genuine concern for protection and preservation of the natural environment. Eighty-five percent of those questioned called conservation an "urgent problem to which high priority should be assigned" by the Federal government. Apart from action taken by the Federal government, ninety-four percent of those questioned believed that States and cities should spend more money and effort to foster highway beauty; eighty-five percent of those questioned remarked that California agencies, particularly the Division of Highways, were not showing proper concern for preservation of natural beauty in the State, and ninety-three percent of those questioned felt that highway engineers should be able to design more beautiful roadways than they have in the past. Over half of the people participating in the poll indicated that the conservation of natural beauty will be a significant issue in future political campaigns.

Tribal Lands Vanish

Recently forty Seneca Indian children were moved out of their old red school house on ancestral tribal grounds in New York State and packed off to a modern elementary school to be "integrated" into a new way of life. With their departure the last Senecas left their ancient lands in New York. Actually they had been forced out by flood waters slowly backing up behind the Kinzua Dam, a Corps of Engineers project authorized despite a treaty signed between the Senecas and a representative of George Washington in 1794, which granted the Indians the right

to live on their tribal land "as long as the moon rises, the grass is green, the river flows and the sun shines."

The moon still rises, but now it shines on new ranch-type houses built for the Senecas near the Allegheny River just west of Salamanca. The Indians now live in new houses built for them by the Federal government; and although their homes have been called the best Indian housing available in the nation, the attitude of the Indians is that "I'd rather they let us alone." The grass is no longer green on their ancient lands, for there is no grass; it is covered by concrete and water. The river stagnates rather than flows, and is so polluted that it tastes to the Indians like a chemical mixture. When the sun shines it illuminates a modern suburban community that is really a "relocation camp" to the Indians, who prefer their old ways of life.

On their ancestral lands, the Senecas enjoyed privacy, a wilderness atmosphere, frequent sightings of wildlife, and the security of familiar surroundings. Now they see not wilderness but roads and cars; wildlife has long since fled, and privacy is at a minimum. Furthermore, old Route 17, which followed an Indian trail down the river valley, is being relocated on higher ground despite the protests of the Indians, and a projected new expressway will cut through much of the remaining ancestral lands, with a four-lane right of way. The Senecas have been paid for loss of their lands; but as George Heron, administrator and treasurer of the Seneca nation, exclaimed, "you can't put a dollar sign on ancestral land."

NPA Protests C & O Canal Hunting Suggestion

The National Parks Association, through President Anthony Wayne Smith, recently lodged a vigorous protest with Secretary of the Interior Stewart L. Udall over published reports that the C & O Canal National Historical Monument ought to be opened to public hunting. The remarks are credited to the superintendent of the monument itself, W. Dean McClanahan, and were made at a Potomac Basin workshop in Hagerstown, Maryland. The superintendent apparently recommended that the status of the monument be changed to historical-recreational from historical-preservational; under the change, zones would be provided in which public hunting would be permitted.

President Smith's letter strongly protested any plans to open the monument—under whatever category—to hunting. Recognizing the contributions that sports-

men's organizations have made to conservation, the letter emphasized that hunting would interfere with the recreational pleasures sought by the majority of monument visitors, and that if the area is to remain a monument, national policy dictates that there be no hunting; that a change in status to recreational area as an excuse for opening the monument to hunting would be a subterfuge setting an objectionable pattern for the entire park system. It was further pointed out that uses of the recreational areas proposed by the superintendent would hardly be compatible with the natural, quiet outdoor recreation which is now enjoyed by the monument's visitors.

Most objectionable, Mr. Smith wrote, was the fact that the superintendent had apparently undertaken to make his statement official policy, since there had been no other official announcement; under the circumstances, a reprimand seemed in order.

Pesticide Residues Widespread

Pesticide residues are now found in animals throughout the world, according to Dr. E. H. Dustman, director of the Department of the Interior's Patuxent Wildlife Research Center at Laurel, Maryland. Dr. Dustman made his statement at the recent Public Symposium on the Scientific Aspects of Pest Control, held in Washington, D. C., where he reported that chlorinated hydrocarbon pesticides have been found in nearly all vertebrate samples analyzed in recent years. Bald and golden eagles, all species of big game, small birds, fish, and shellfish were found to be contaminated. Residues of DDT, dieldrin, heptachlorepoxyde and benzene hexachloride persist in the environment for many years after their application, said Dr. Dustman.

End to "Gasoline Alley"?

Some heretofore unlikely participants in the current campaign to beautify America have seemingly hopped aboard the conservation bandwagon. The American Petroleum Institute, in a recent presentation for Mrs. Lyndon B. Johnson, promised to try to end the clutter and dirt of the old "gasoline alley" days and embark on a campaign of its own to design clean, functional, and well-landscaped gasoline stations. An Institute representative claimed that many companies no longer provide gaudy plastic banners for their service stations, and discourage "conspicuous piles of tires and pyramids of empty oil cans" as "amateurish merchandising."

Commenting on the unesthetic condition of many service stations at present,

the representative said that oil companies do not design nor build all their stations, and that "the oil companies are not in a position to mandate and enforce a uniform standard of housekeeping for all dealers who handle their brands." No mention was made of possible courses which might be taken by oil companies to assume more control and responsibility concerning the stations.

Reverse Osmosis Plants

The Office of Saline Water in the Department of the Interior has recently awarded two contracts for West Coast reverse osmosis desalinization plants. Both of the plants will be designed primarily for conversion of brackish water; one of them will, however, be designed to handle sea water also; the plants will have initial capacities of 10,000 and 50,000 gallons of fresh water daily. These two pilot plants, the Office of Saline Water has indicated, represent the largest reasonable units that could be constructed at present to further test and develop the promising reverse osmosis process.

Reprieve for Condors

The voters of the United Water Conservation District of Ventura County, California, have decided against authorization of the controversial Sespe Creek project, which if carried out would most likely result in extinction for the rare California condor, of which there are about 40 individuals remaining. The project, which would have been built by the Bureau of Reclamation in cooperation with the local Water District—a water-selling company incorporated under California laws—involved several dams near the edge of the condor nesting sanctuary and an access road through the sanctuary itself. Opposition to the project was led by a group of local citizens called the "Sespe Taxpayers Association." They argued that the economics of the project were faulty and that good water was available at reasonable cost from other sources.

Clean Air Act Standards

New Federal standards for limiting emissions of major pollutants produced by motor vehicles were recently announced by Secretary of Health, Education and Welfare John W. Gardner. The standards, which will apply to all 1968 model automobiles and light trucks—American-made or imported—are intended to reduce the flow of hydrocarbons and carbon monoxide into the air. Carbon monoxide is a lethal gas, and hydrocarbons are a prime ingredient in the formation of smog.

These standards, issued under provisions of the 1965 Clean Air Act Amendments, will enable the Secretary of the Interior to revise controls in accordance with improved technology and further research on the effects of motor vehicle pollution. Present research provides evidence that such pollution contributes to eye and throat irritations, and may have other harmful effects on human health.

Conservation Fund Grants

Assistance for the lagging Land and Water Conservation Fund came recently when the American Conservation Association and the Old Dominion Foundation granted the Bureau of Outdoor Recreation a total of \$25,000 for public education purposes in connection with the Fund. Revenues from sales of the 1966 "Golden Passport" and other categories of recreational area entry cards are used in part for acquisition of new national reserves such as parks and refuges.

Redwood Economic Study

Secretary of the Interior Stewart L. Udall has announced completion of a study of the possible impact of the proposed Redwood National Park on the people and economy of Del Norte County, California. The study, prepared by Arthur D. Little, Inc., presents both long and short range implications of the park's establishment.

13th Watershed Congress

At the 13th National Watershed Congress, to convene May 15-18 at the Sheraton-Oklahoma Hotel in Oklahoma City, the general theme for discussion will be titled "New Tests in America's River Basins." Special attention will be given the possibility that the nation's urgent water needs may lead to short-sighted river basin planning; in connection with this, a wide range of viewpoints will be presented on the problems of upstream and downstream interests in river basins, water pollution control, and protection of resource values which could be endangered by dams and reservoirs. Key speaker will be Under Secretary of Agriculture John A. Schnitker, who will discuss "The Nation's Stake in River Basin Development." Many other officials representing soil and water conservation districts, state and municipal governments, and groups concerned with natural resources will make presentations. The Congress is sponsored by 25 national business, farm, civic and conservation organizations, including the National Parks Association; it is intended to focus attention on vital issues in water matters, and to explore ways of enlarging participation of local interests in resource affairs.



WHERE TO CAMP

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THE CONSERVATION DOCKET

SEVERAL IDENTICAL BILLS TO ENLARGE THE boundaries of Grand Canyon National Park have recently been introduced in the House. H.R. 14176 (Saylor), H.R. 14177 (Dingell) and H.R. 14211 (Reuss) would add to the park the 198,280 acres of Grand Canyon National Monument; the upper one-third of Lake Mead National Recreation Area (689,120 acres); 161,100 acres of the Kaibab National Forest; public domain lands of 52,800 acres; and possibly 409,800 acres of lands within two Indian reservations. Total maximum size of the enlarged park would be 2,084,695 acres. The bills were referred to the House Committee on Interior and Insular Affairs. Additional redwood bills, H.R. 13589 (Whalley) to establish a Redwood National Park, California, and an amendment to S. 2962 (Kuchel), the Administration bill, are before the Committee on Interior and Insular Affairs. The amendment (Metcalf and others) is intended as a substitute for S. 2962; it would nearly double the proposed park area.

H.R. 14001 (Rogers) would enable the Secretary of the Interior to investigate the advisability of establishing a Fakahatchee Strand National Monument in Collier County, Florida. To the Committee on Interior and Insular Affairs.

H.R. 13994 (Kastenmeier) provides for the establishment of a Saint Croix National Scenic Riverway in the States of Minnesota and Wisconsin. To the Committee on Interior and Insular Affairs.

H.R. 13447 (Dingell), now before the Committee on Merchant Marine and Fisheries, would authorize the Secretary of the Interior, in cooperation with the States, to preserve and make accessible estuarine areas of the nation valuable for sport and commercial fishing, wildlife conservation, recreation, and scenic beauty.

Several bills have been introduced to establish a Wolf National Scenic Waterway in Wisconsin; S. 2894 (Nelson) has been referred to the Committee on Interior and Insular Affairs, and H.R. 12670 (Race) and H.R. 12671 (Reuss) are before the same committee. The bills provide for preservation of the Wolf River for its water, fish, wildlife, and recreation values.

To reserve public lands for a National Wild Rivers System and provide a procedure for adding to the system, H.R. 12797 (Sickles) has been introduced and referred to the Committee on Interior and Insular Affairs.

Two bills to insure the preservation of hiking trails in the United States have been introduced in the House; H.R. 12393 (Taylor) is designed to facilitate the management and use of the Appalachian Trail. H.R. 14222 (Rivers) would establish a nationwide system of trails. Both bills are before the Committee on Interior and Insular Affairs.

H.R. 12163 (Fogarty) would require certain standards of nonpersistence of synthetic pesticide chemicals manufactured in or imported into the United States. Referred to the Committee on Interstate and Foreign Commerce.



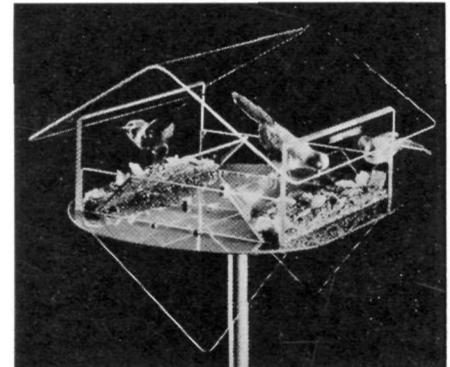
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Reviews

BIRDS AROUND THE WORLD: A GEOGRAPHICAL LOOK AT EVOLUTION AND BIRDS. By Dean Amadon. Doubleday and Company, Inc., 227 Park Avenue, New York, N.Y. 10017. Illustrated. \$3.95.

To many naturalists and most natural scientists, birds are fascinating creatures. One haunting question about birds—their geographic distribution—is particularly thought-provoking. Why are certain species found in their particular habitats? Why does the little yellow Kirtland's Warbler, for instance, nest only in Michigan's jack-pine country, and winter only in the Bahamas? Why are snowy owls found in the Arctic but not in the Antarctic? How did the flightless dodo get to the tiny island of Mauritius, far out in the Indian Ocean—the only place where it occurred? (Probable answer: the dodo's ancestors flew to the island; the birds became flightless in time, and extinction followed when man arrived on Mauritius).

This book seeks the answers to such questions. Unlike most books on birds, which give descriptions of the range of species, *Birds Around the World* enriches the reader with an understanding of the distribution of birds. The effect of physical barriers on population distribution; various ecological requirements; the factors which either restrain or facilitate geographical expansion of a species; and other important ecological considerations are discussed in a well-written text enlivened by interesting case histories and anecdotes.

WAPITI WILDERNESS. By Margaret and Olaus Murie. With photographs and drawings by Olaus Murie. Alfred A. Knopf, Inc., 501 Madison Ave., New York. 1966. \$5.95.

In 1927 American newspapers were filled with tales of the "starving elk of Jackson Hole." The famous Wyoming elk herd was in trouble, and transfers to the already established National Elk Refuge, near Yellowstone National Park, could not solve the problem. So the old United States Bureau of Biological Survey (now the Fish and Wildlife Service of the U. S. Department of the Interior) hired Olaus Murie—a research biologist—to study the elk in the field and determine every factor affecting their welfare. "This was just the kind of free yet demanding assignment I loved," wrote Olaus. ". . . I arrived at the village of Moran and in the dusk, across Jackson Lake, saw those peaks rising straight up on its western shore . . . I felt like starting right off afoot to find those

elk." Thus young Olaus, his cheerful wife, their two-year-old son and infant daughter moved into a sturdy cottage in Jackson, and began their love affair with the people and the animals and the wilderness of Jackson Hole.

While Olaus and his family were at Jackson Hole, the Grand Teton National Park was established. There was a raging controversy up and down the valley about the park—a controversy which erupted into bitter vocal feuding. Olaus tells the story in an intimate, spicy manner.

All of the book is dotted with details and sprinkled with such intimacy; Olaus and his wife Margaret have written *Wapiti Wilderness* with wit, bubbling enthusiasm for life, and above all, genuine respect for and understanding of the wilderness and its creatures. This is not, perhaps, mainly a book about wapiti, nor wilderness. This is a chapter from the lives of the late Olaus Murie, and his wife, Margaret; and as such it provides a delightful view of these two great adventurers to whom the American conservation movement owes such a profound debt of gratitude.

PLANNING YOUR VACATION can be a joyful task with the aid of several brochures prepared by the Department of the Interior for those wishing to explore our parks, monuments, and public lands this summer. Two general pamphlets, *Criteria For Selection of National Parklands and National Landmarks* and *Long Range Objectives and Goals For the National Park Service* give the visitor an idea of what to look for in parks and monuments and how to enjoy their outstanding features. *Wildlife on the Public Lands*, a color brochure distributed by the Bureau of Land Management, tells about the wild animals of desert and tundra and where to find them on BLM lands. An excellent large-size color brochure, *This Is Yosemite*—written by Chief Park Naturalist Douglass Hubbard—provides a fine guide to Yosemite National Park. It contains maps and pictures of points of interest in the park, as well as information on roads and hiking trails, and includes some of the human and natural history of the park. The brochures, or information about their purchase, may be obtained from the National Park Service, Department of the Interior, Washington 25, D. C. 20240.

MARINE MAMMALS OF CALIFORNIA. By Anita E. Daugherty. State of California Department of Fish and Game Resources Building, 1416 9th Street, Sacramento, California 95814. 86 pages. 50¢.

This pocket-sized paperback, delightfully illustrated, devotes a page and a

picture each to thirty-three ocean-dwelling mammals. Whales, dolphins, porpoises, fur seals, sea lions and the sea otter are discussed in language that will please the scientist and fascinate the layman; habits and habitats are described, and the mysteries which often surround marine mammals are reviewed in detail. Author Anita Daugherty, a marine biologist with the Department of Fish and Game for more than twenty years, combines scientific fact with esthetic values and comes up with a guide which will be a collector's item for wildlife enthusiasts.

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THE LAND AND WATER CONSERVATION FUND, established little more than a year ago, was created to help Federal, State and local government agencies to provide new parks, wildlife refuges and outdoor recreational lands for Americans, and to help in the purchase of tracts needed to round out already existing preservation and recreation units. The Fund receives revenues from entrance and use fees at many of the various Federal areas which have been reserved for protective and recreational purposes; agencies administering these lands include the National Park Service, U. S. Forest Service, Bureau of Land Management, Bureau of Sport Fisheries and Wildlife, Tennessee Valley Authority, Bureau of Reclamation and Corps of Engineers. Into the Fund also goes the revenue from sale of surplus Federal lands and from a Federal tax on fuel used in pleasure boats.

AT THE TOP OF THIS PAGE is a facsimile of the 1966 Federal Recreation Permit—the wallet-sized “Golden Passport”—which admits purchaser and all persons in his private vehicle to Federal reserves charging entrance fees. Cost of the Golden Passport is \$7, and it is obtainable at any of the 7000-odd entrance-fee areas; at all offices of the Government agencies listed above, and from the Bureau of Outdoor Recreation in Washington, D.C., and its six regional offices. There are also four lesser categories of “passports”: blue permits, good for visits to one area for 30 consecutive days for the holder and all persons in his private vehicle, costing from \$3 to \$6 depending on area; a blue-slash permit, valid for 30 days at one area for an individual only, at \$1.50 to \$3; a green permit covering an individual and all others in his private car for one day and the following morning, at \$1; and a green-slash permit covering an individual only, for one day and the following morning, at fifty cents.

Purchase of a Federal Recreation Permit of any category entitles one to the immediate benefits of America’s great systems of public outdoor reserves, for a day, a month, or a year; at the same time, it will help insure that more such reserves will be available to Americans for the future need.

National Parks Association

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