

NATIONAL PARKS *Magazine*



Kalalau Beach in the proposed Kauai National Park,
Island of Kauai, in the Hawaiian Archipelago

March 1967

Good News on the Grand Canyon

An Editorial

THE GREAT GOOD NEWS of the year thus far in conservation is the announcement by the Johnson Administration of a program to get water into Central Arizona without damming the Grand Canyon of the Colorado.

The new plan is to build the necessary aqueducts and pumping plants to carry water from the reservoirs behind the Parker and Davis dams, well below Hoover Dam, into Central Arizona, and to purchase the electric power needed for the pumping from the new combine of privately and publicly owned electric utilities in the Pacific Southwest known as WEST.

Interior Secretary Udall, in making the announcement for the Administration, stated that the new decision was "a victory for common sense."

More than a year and a half ago this Association advocated precisely the solution which has been adopted, in a statement given on invitation of the Subcommittee on Irrigation and Reclamation of the Committee on Interior and Insular Affairs, House of Representatives, August 31, 1965, by the President and General Counsel of the Association as follows:

"Supplementing my statement of yesterday, in view of the question put to me at the end of the session, the immediate problem before all of us is to help Arizona get the water it needs right away.

"This is a question of aqueducts and pumps and the electric power to do the pumping. This electric power can be produced by coal-fired thermal plants at from 3 to 4 mills or less, according to Commissioner Dominy. Hydroelectric power for pumping purposes will be more expensive; 4.2 mills for Marble Canyon. One coal-fired thermal plant, capacity 600,000 kilowatts, the prime power capacity of Marble Canyon, will do the entire pumping job.

"Why should we choose the more expensive method when a cheaper one is available? In this case the cultural values also favor the cheaper method.

"Why should we embark on a course involving a multitude of bitter conflicts and protracted delays, when a better course is available which everyone would support?

"The interests of the people of Arizona dictate that there be no further delay in getting water into Arizona; the prompt way to get water into Arizona, the cheapest way, and the way which will have the least opposition, is to use coal.

"I would make this practical suggestion to the subcommittee: authorize the construction of the pumps and aqueducts at once; authorize the construction or licensing of a 600,000 kilowatt coal-fired thermal power plant to do the pumping at 3 to 4 mills delivered cost at once; put the money the water will earn into a development account for research and development in fission, fusion, and solar energy and in water production for southern California

and Arizona, looking toward the use of the Gulf of California and the Pacific Ocean.

"There could be a very broad consensus on this approach. I do not know who would oppose this approach."

We reiterated our views on the aqueducts, pumping plants, power-purchase approach two months ago in the following language:

"True it is that Bridge and Marble Canyon dams on the Colorado have not been authorized. An outpouring of protests from conservationists and citizens generally helped to block the destruction of long reaches of the Grand Canyon.

"Technical analyses by this Association and others revealed superior ways to provide water for Central Arizona, electric power, and funds for the development of the Colorado Basin. Regional conflicts also had a part in the outcome; the promoters overplayed their hands.

"Whether a constructive program for the Colorado, based on modern technology, as contrasted with the idols of hydroelectric power, will now emerge, remains to be seen. We have expressed our view that the problem of water for Central Arizona might easily be solved by the prompt construction of the necessary aqueducts and pumping plants, and by the purchase of the pumping power from privately owned utilities generating current from coal; and that if funds are needed for future investment, they can come from water sales, the sale of power from existing dams, or earnings on savings accounts which could be established now."

FIVE YEARS AGO we devoted a special issue of *National Parks Magazine*, April, 1962, to the impending attacks by the forces of so-called development on the Grand Canyon. We had intervened as early as the summer of 1961

(continued on page 9)

You Can Help to Confirm the Great Victory at Grand Canyon!

Readers who wish to commend President Johnson on the program of his Administration to get water into Central Arizona without building dams in the Grand Canyon should address the President, The White House, Washington, D.C.

They may also wish to urge him to make the entire Grand Canyon of the Colorado River between Powell Reservoir and Mead Reservoir a national monument by Presidential Proclamation, thus protecting it permanently against licensing for dams by the Federal Power Commission.



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Front cover photograph by Robert Wenkham

For several years past there has been discussion in the conservation world of a possible large national park in the western part of the Hawaiian island of Kauai. There, civilization has touched the countryside in a fairly light way so far, leaving few scars on the imposing headlands of volcanic rock, facing the great Pacific with occasional narrow beaches of coral and seashell fragments, and upon a wilderness interior whose higher parts are drenched by perpetual rains. Within the possible park are several impressive and colorful canyons, like that of the Waimea River shown on page four; a very large and unusual "swamp" replete with a great wealth of tropical plants and animals; delightful green scenery, and, in general, a variety of natural and human history features which many feel might well qualify the area for national park status. Recently the National Park Service has presented a formal proposal for establishment of the park, indicating that the Service has completed its preliminary studies and is ready to present the idea to the public.

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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In the south-central portion of proposed Kauai National Park, Waimea Canyon cuts a great gash in the bright-hued lava flows which form the core of Kauai Island. Here and there along the walls of the canyon are waterfalls whose streams head in the rain-drenched plateau country in the background.



At Ke'e Beach in the proposed park a pandanus tree spreads its distorted arms over a palm grove fronting the foaming Pacific.



All photographs appearing with this article were taken by the author.

Suggested for preservation are 97,000 acres of shoreside cliff and wilderness interior on the Island of Kauai in the Hawaiian Archipelago.

A KAUAI NATIONAL PARK

By Robert Wenkham

FAMED THE WORLD OVER FOR ITS South Sea beauty, Hawaii is faced today with widespread erosion of its natural scenic resources by a rapidly expanding population which, if unchecked, might well destroy the very attractions that have made the Islands one of the most desirable destinations in America.

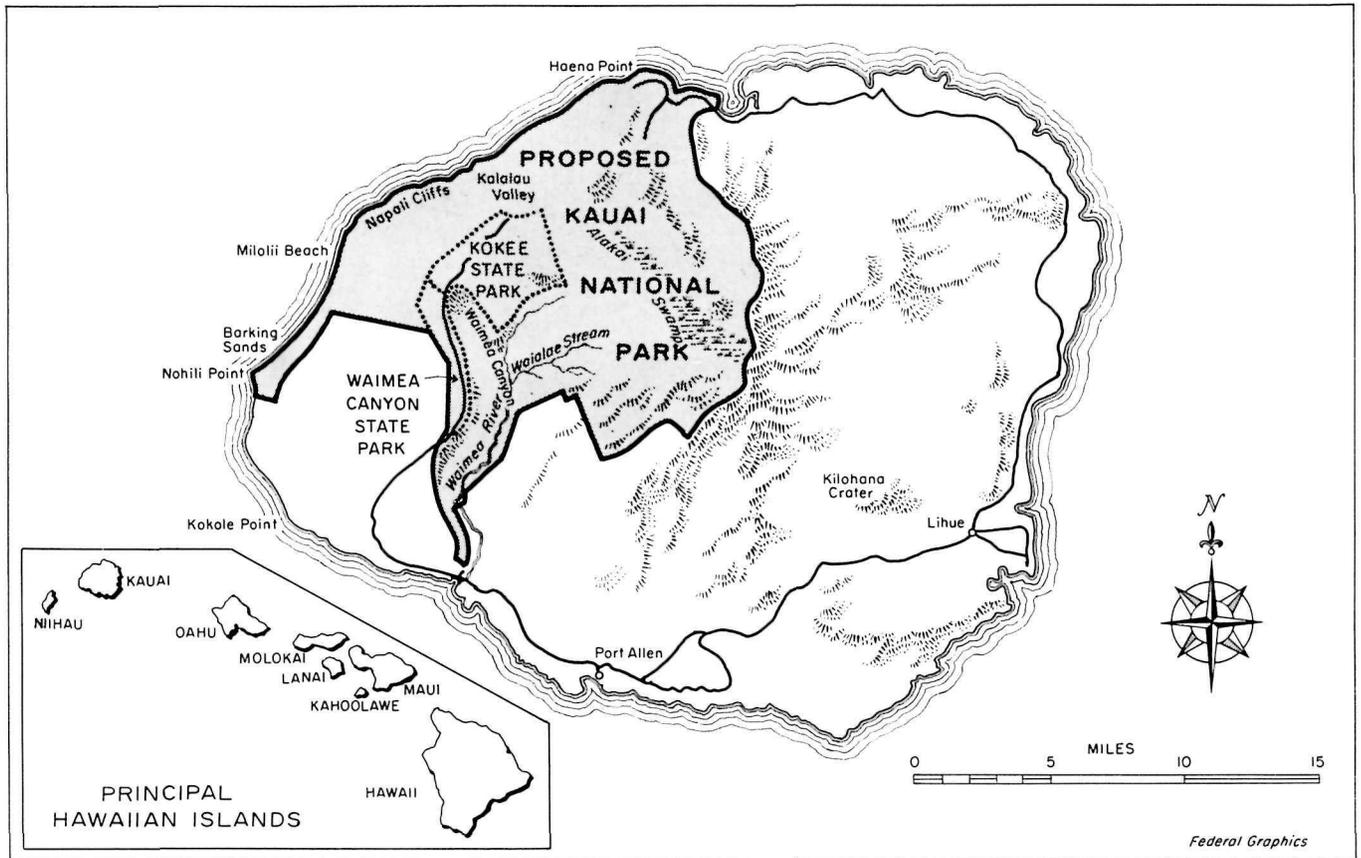
On the Island of Oahu, Waikiki Beach has become a narrow strip of sand walled in by concrete high-rise hotels, constructed on land selling for \$95 a square foot, and covered with Coney-Island crowds, who are attracted by its reputation and year-round 80°

transparent water. Only on the neighboring islands of Hawaii, Maui, and Kauai are the waving palms and open spaces of tropical wilderness still available in quantity to the visitor hoping to escape the honky-tonk tourism so familiar in the continental United States.

On Kauai Island, in particular, the Napali Cliffs, Barking Sand Dunes, and the Alakai Swamp offer rare tropical beauty. The gracefully fluted cliffs of Napali rise directly from the blue Pacific to elevations of 3000 to 4000 feet. The spectacle of this scenic coastline culminates in famed Kalalau Val-

ley where the stone ruins of Hawaiian villages, ancient at the time of Captain Cook—yet still populated fifty years ago—lie buried beneath thorny exotic growth. Nearly vertical cliffs enclosing the valley are alternately revealed and then obscured by shifting clouds carried on tropical trade winds, and momentarily colored by rainbows arching across the mist.

The broad sweep of white coral sand at Barking Sands ends abruptly at Polihale Springs where the Napali Cliffs rise from the sea. For fifteen miles Napali continues, sliced sharply by deep, narrow valleys, many inacces-



sible except from small boats in the summer. Deep brown volcanic colors are broken by occasional green accents of grass cut short by grazing goats, until the more verdant amphitheater of Kalalau provides water for the bright leaves of mango fruit and kukui nut. At Hanakapiai and Limahuli, misty jungle softness darkens the trees clinging to steep walls. At Hanakoa a 2000-foot string of white water drops from the heavens and squirms along the valley floor beneath red-ringed groves of mountain apple trees.

Alakai is called a swamp because of its heavy rainfall rather than any lack of drainage. Streams rise and fall with the rain and sprinkle all year long over rocky waterfalls into Waimea and Wainiha Canyons. It is twenty square miles of wilderness bog, rich in species of sedges, flowers, and many lobelias found nowhere else in the world. Three species of birds, the Kauai creeper, akialoa, and nukupuu, are found only in Alakai. They persist precariously, in constant danger of extinction from environmental alteration and the introduction of alien plants.

Until recently the highlands of Kauai

Island were another "land that no one knew." Few visitors saw beyond the public lookouts at Waimea Canyon and Kalalau Valley in the small state parks. The hundred square miles of wilderness back country and thousand-foot cliffs dropping straight into a blue Pacific Ocean were seldom visited except by an occasional hardy hunter, backpackers willing to venture along trails which are little more than tracks in the jungle, or beachcombers willing to swim ashore on isolated beaches through wind-driven surf. This beautiful land of the ancient Hawaiians was protected by inaccessibility. The cry of birds found nowhere else on earth was shielded from civilization by a virtually impenetrable tropical rain forest. The very absence of properly maintained trails protected rare biota from destruction; an inadequately financed Kokee State Park was its own

Robert Wenkham, of Honolulu, is Hawaii vice-president of the Federation of Western Outdoor Clubs. He was a member of the Interior Department's Ad Hoc Study Committee for a Kauai National Park.

best protector of the fragile native forest.

The hundred-dollar jet fare from California has pushed Kokee Park from back-country to a nationally advertised tourist shop—over night. Fifty-passenger tour buses and swarming sightseeing helicopters dumped more than 150,000 tourists into unprepared Kokee and the Napali Coast last year. Kauai's scenery has been viewed by and large as little more than a natural asset to be exploited as a tourist attraction. Helicopters have been permitted to land anywhere. Trail builders have advanced with bulldozers and weed-spray crews into the jungle of Alakai Swamp. Ill-advised roads have been constructed and military radars have scarred the hilltops. The land once seen as a unique part of America's scenic beauty is fast becoming a tourist wasteland.

An inadequately staffed and financed state park system, still in its infancy, has failed to protect the wilderness heart of Kauai from damage. The state's Division of Forestry and the Division of Fish and Game have administered the remaining state lands out-

side the two small state parks primarily as hunting preserves for Kauai's small cadre of sportsmen. The Department of Land and Natural Resources has proceeded apace with plans for a half-mile-long earth dam and reservoir on Waiakoali Stream, in the center of Alakai Swamp, which would destroy a thousand acres of rich swamplands, world-famed for their rare and unique biota.

Multiple-use advocates see no harm in clearing Kokee State Park of its native trees and replanting with marketable timber, to be logged off under concepts combining commercial and recreation uses. It is seemingly of no concern that such a program may well destroy native plant and bird life, leaving little but thorny blackberries and lantana covering muddy trails in an alien forest.

No appropriate agency has taken action to guard against continued stripping of the Napali reef and shore of shellfish and sea life. Helicopter loads of collectors have descended upon Milolii Beach and departed with virtually every live, mature shell growing on the only Napali reef. The protection of Napali reef life by "inaccessibility" has been wiped out by daily helicopter flights.

Parks As Refuges

One of the important assets of any organized park is the peace and quiet of open space. Escape from concrete walls, telephones, cables, and rush-hour traffic—pressures of our modern civilization—finds release on the beaches, in the woods, and in the fresh air of high mountains. The increasing usurpation of the peace and quiet of Kokee Park by sightseeing helicopters and low-flying aircraft is denying to the general public the use of these park lands for the purpose for which they were set aside and improved. Wilderness in Kokee-Napali is gradually being whittled away.

The Air National Guard, National Aeronautics and Space Administration, and the U.S. Navy have all constructed radar and tracking facilities in the scenic mountain country with little concern for damage to public recreation opportunities or investigation of ornate sites. Neither the Division of State Parks or the Division of Forestry has voiced concern over renewed ef-

forts to build a destructive 'round-the-island highway along the rim of Kala-lau Valley which would consume a swath of tropical beauty from Kokee to Haena. The bulldozed scars of the abortive beginnings of this road remain a mute testimony to disregard for park values. Through the years many individuals and people in authority have, unfortunately, looked upon Kokee-Napali as an area for economic development without considering the inherent worth of its natural beauty.

The proposed Kauai National Park covers 150 square miles on the eroded slopes of an ancient volcanic mountain. It is a vast wilderness, covering a unique variety of geological terrain ranging from the desert sand dunes of Barking Sands, wet by only a few inches of rain a year, to the perpetually drenched summit of Waialeale, where an average 600 inches of rain credit the mountain swamp as the wettest spot on earth. Beyond these extremes of climate, untold centuries of erosion have gouged out a colorful

3000-foot-deep canyon into the stratified lava flows of ancient Waialeale Volcano, creating a "Grand Canyon of the Pacific," rimmed by delightful walking trails skirting the edge of perpetually wet Alakai Swamp. The mountains are a botanist's paradise brightened with rare plants and bird songs heard nowhere else.

Two Points Of View

Advocates of the national park proposal cite the problems of providing increasing opportunities for recreation and a wilderness experience for larger numbers of visitors and residents, while still protecting Hawaii's irreplaceable natural assets. They say that wilderness protection and sufficient funds to support such protection has apparently been lacking. The dilemma of "use-but-don't-spoil" has not been solved. Instead, they fear, the Kokee State Park region is being allowed to spoil while not providing opportunities for greater use.

Opponents of the national park pro-

Below, a "fern jungle" in Alakai Swamp. The 20-square-mile swamp is created more through excessive rainfall than poor drainage, and is a haven for several species of birds found only in the proposed park area.





The Barking Sands of the southern Napali coastline are dunes of shell and coral fragments that creak or "bark" underfoot.

posal cry "Federal land grab" and claim the vast state-owned lands have received excellent care by state park and forestry personnel. The owners of private cabins on state leased land within the proposed park boundaries and the fewer than two hundred hunters in the county of Kauai have raised further objections, saying their cabins and hunting grounds will be taken away. The sightseeing helicopter operators claim the National Park Service

will prohibit helicopters, and raise the ancient argument that older people and those unable to make the strenuous pack trip into Kalalau will be unable to see the natural beauty of Napali. Others advance the argument that park rangers will stop them from picking wild fruits and flowers.

"A Superb Addition"

In any case, most conservationists and many other Americans consider

the Kokee-Napali scenic lands a unique and valuable asset to the State and Nation. Secretary of the Interior Stewart L. Udall has said, "I consider this one of the most important and significant areas proposed for addition to the National Park System during the nearly five years I have been Secretary of the Interior. It is one of the crown jewels of the islands and would be a superb addition to the national park system." ■

Good News on the Grand Canyon

continued from page 2

in the Federal Power Commission proceedings involving the proposed license for a dam at Marble Canyon, in opposition particularly to the proposed Kanab Creek diversion which would have taken most of the water out of the Grand Canyon through the Park. We had anticipated the possible reactivation of an application for a license at Bridge Canyon. We had noted that proposals might be advanced for the construction of dams by the Bureau of Reclamation at both Marble and Bridge Canyons and that the appropriate agencies of the conservation movement would undoubtedly, as a matter of fact, oppose such projects.

Thereafter, as grandiose projects for the manipulation of the water resources of the Pacific Southwest, and indeed the entire Pacific Coast, unfolded, we presented a long series of careful analyses and commentaries showing the superiority of an abundance of alternatives, including the approach which has now come to be adopted.

We published highly competent technical studies proving that Bridge Canyon Dam, below Grand Canyon Monument, which would flood into the Monument and Park, was not needed as a money earner for purposes of new investments in California, because enough money would be earned by the sale of water in Arizona.

We called attention to the fact, which was even then being admitted belatedly by the Bureau of Reclamation, that the pumping power for the Central Arizona Project could be produced more cheaply by coal-fired thermal plants than by firm power at Marble Canyon Dam, which had previously been proposed by the Bureau.

We showed also that when it came to peaking power for sale, with a view to building up an investment fund for southern California, atomic energy coupled with pumped storage would probably be more economical than hydroelectric power with long-line transmission from Bridge Canyon to Los Angeles.

We inquired very sharply into the profitability of the Marble and Bridge Canyon hydroelectric power projects as money earners, against the background of readily available low-cost coal resources in the Colorado River Basin and the impending advances of atomic energy; the hydro projects were looked upon as a bad risk for public investment.

More recently we advanced the novel proposal of a deferred construction account involving, instead of a high-risk public investment in hydro projects of doubtful profitability, a Federal loan to a basin agency at $3\frac{1}{4}\%$, capable of re-investment at $5\frac{1}{2}\%$, yielding a much larger fund over a 50-year period than the hydropower projects could possibly hope to yield.

Throughout the course of these successive technical analyses we maintained our position that the main purpose of a Central Arizona Project should be to get water into Central Arizona as quickly as possible by the simplest feasible method, and that the best method would consist of the construction of the aqueducts and pumping plants and the purchase of the necessary pumping power from existing utilities; the Johnson Administration has put its firm stamp of approval on this proposal, and the indications are that the Administration plan will be adopted.

A significant part of the proposal is that Grand Canyon National Park be expanded to include Marble Canyon. This Association has advocated, in testimony given on invitation, that the entire river between Powell and Mead reservoirs, including the sites of both Marble and Bridge Canyon dams, be protected against Federal Power Commission licenses by incorporation into a national park or monument. Protection as a national monument could be extended by Presidential Proclamation, thus setting these issues to rest the right way for good.

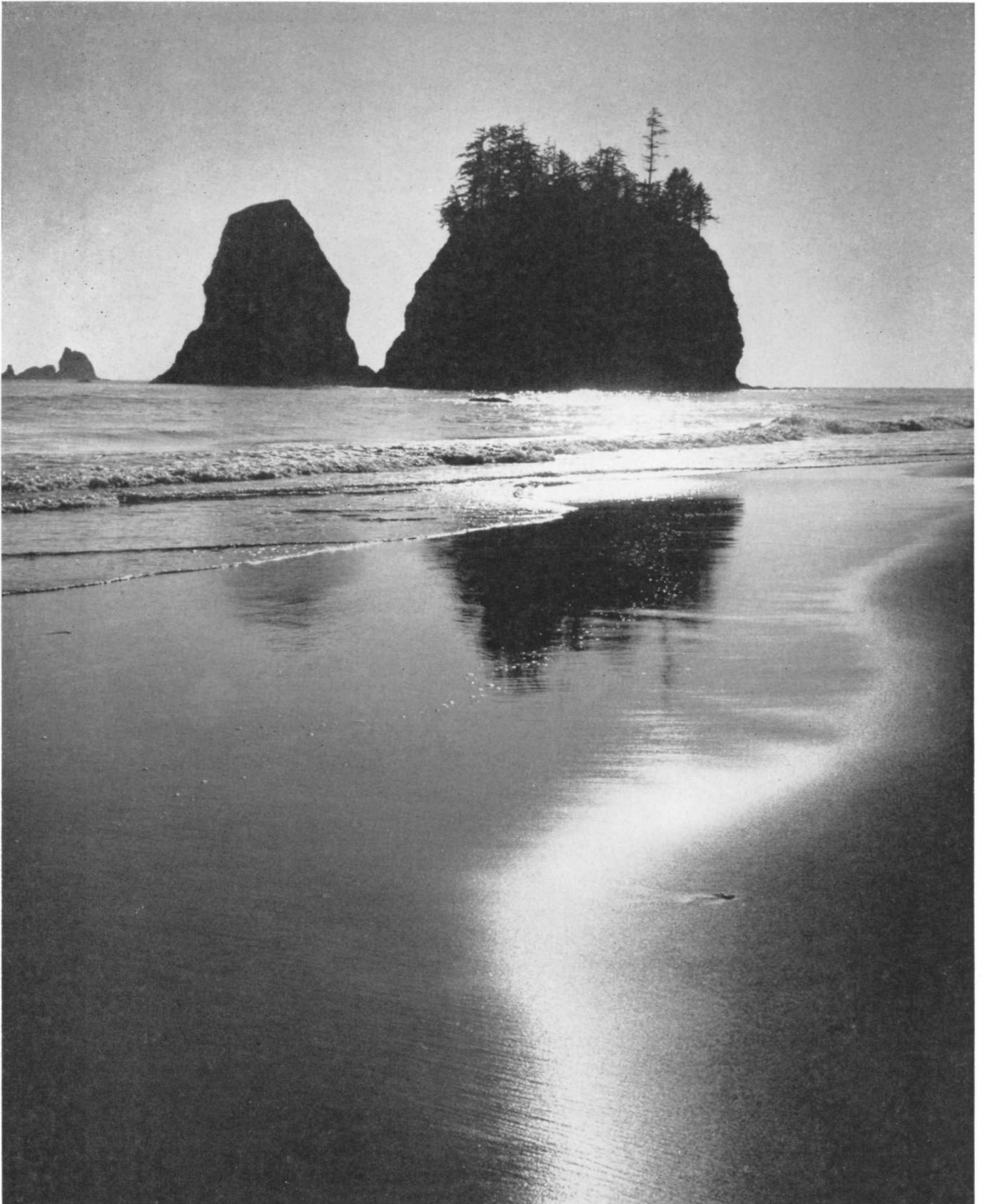
THIS SUCCESS FOR CONSERVATION could never have been achieved without the well-nigh complete solidarity of almost the entire conservation movement.

The position of conservationists in the protection of the Grand Canyon of the Colorado has likewise had the solid support of the vast majority of the American people.

We would comment also that the outcome demonstrates the need for independent, scientific and educational institutions like the National Parks Association, which are able to bring the light of unbiased and objective inquiry to bear on the great public issues of our times.

Conservationists generally will be happy to congratulate President Johnson on this momentous decision by his Administration to protect the Grand Canyon of the Colorado for America and the world.

—A.W.S.



Photograph by David Muench

Atop the sea-stacks of Olympic Park's Ocean Strip the bald eagle finds a nesting-place.

Some Animals of Olympic Park

By Stephen F. Arno

EACH SUMMER HIKERS AND HORSEMEN pass over the more than 600 miles of trails maintained within Olympic National Park, while automobile visitors travel to scenic locations all about the park's periphery. Photographers, fishermen, mountaineers, botanists, and other adventurers take happily to the Olympic wilds. But this primeval realm has not been saved for the benefit of human visitors alone; there is a large lobby of permanent residents, too.

These year-around occupants constitute the wildlife of Olympic and include birds, fish, and some 54 species and subspecies of mammals. They are an integral part of the primitive scene, and their presence makes a visit to the park doubly worth while.

For several years—first as a student and resident of Bremerton, and later as a student trainee naturalist at Olympic Park—I explored the park's back country. In so doing I encountered most of the well-known animals. Looking back over these experiences makes the park seem a kind of wonderful menagerie, where man meets animal on an almost equal basis. In fact, when one faces a thousand-pound bull elk, chunky black bear, or wiry mountain goat close-up, he realizes just how physically weak man is!

Washington's Olympic Peninsula, on which the park is located, possesses a windswept, wild coastline, moss-laden rain-forests of great trees, and lovely lowland lakes nestled in carpets of virgin forest. There are cloudcapped peaks, sparkling alpine tarns, some sixty glaciers, alpine tundra, and mountain meadows par excellence. The heartland of this splendid peninsula is protected in Olympic National Park.

A primary consideration in the establishment of Mount Olympus National Monument in 1909—forerunner of today's larger park—was protection for the fine herds of Roosevelt elk found there. Today, approximately 6000 elk live on the Olympic Peninsula. Some of these huge animals, largest elk in North America, live all year in rain-forest valleys or near the ocean coast; but many migrate to the high-country meadows for summer.

I saw my first large elk herd while cross-country hiking

on Mount Carrie, directly across the broad and deep Hoh River Valley from Mount Olympus. It was mid-September, the start of mating season, and the crisp air rang with the distant bellowing of bull elk, who were starting to round up their harems. Suddenly my hiking companions and I saw a herd of 50 elk in an alpine meadow below us. I jogged down toward them to get some photographs. Cows and yearlings trotted off, but a few brawny bulls with huge antlers did not flinch. I was wary, then; but a year later I came too close for comfort.

Naturalist Bob Taylor and I were spotting elk on our day off near Mount Appleton. It was the end of a wet August, and the elk were out in force to enjoy a brief bit of dry, but cloudy weather. Spotting a band of elk half a mile away on Appleton's southeast slope, Bob cupped his hands, filled lungs and cheeks with air, then let loose with a bellowing bull elk call.

I watched through binoculars as the dozen cows and yearlings rose to their feet and stared straight at us. More animals began to stream from the dwarf timber; then a string of elk started up the mountain. Apparently the cows were in no great hurry to get on with the mating season, so they decided to leave. There were 40, 50, 60, finally a line of 70 elk, including 48 cows, 4 spikes, 17 calves, and one aged bull. They stretched out single-file behind an old cow who led a precarious climb straight up the steep snow-slope toward a saddle between the mountain's two summits. Both of us marveled to see elk, old and young, pick their way up that precipitous slope. The old cow and her immediate followers stood silhouetted for a few seconds at the top, then the string disappeared down the other side. Three bull elk in a nearby meadow continued to eat, noting the show with only passing interest.

Later, while climbing along a rugged crest, Bob pointed out several bull-elk-beds where lone bulls had spent the summer nights beneath an alpine fir or mountain hemlock. Near those roosts were saplings scraped clean of bark by antlers as the bulls removed velvet antler-covering in preparation for fall battles over herd supremacy.

At the head of Soleduck River, we came to what Bob

had been awaiting—a handsome, tan bull, with a small harem, that might answer his bugle. We spent half an hour creeping through scrub trees to the edge of the meadow where this band grazed. Then Bob put great effort into an ear-splitting bellow. I watched uneasily as 300 pounds of elk, with 11 points on its rack of antlers, climbed deliberately toward us. I hastily retreated a few feet farther into the brush as the bull came within 40 feet of Bob. The elk stopped there and eyed us keenly; but Bob, unperturbed, scraped and beat a stick in the brush, simulating the rubbing of antlers on shrubs before battle. I was further alarmed to see the bull walk to a nearby sapling and polish up his rack. Once, along the park's Ocean Strip I had come across a set of antlers which were 6 points each, 3½ feet long, and together weighed 20 pounds—very potent weapons. And so, to my relief, the bull began to walk back toward his harem of 7 cows and 4 calves who had barely noticed the excitement.

Black-Tailed Deer Are Abundant

Black-tailed deer are favorites with park visitors in the Olympics for several reasons. They are common throughout the peninsula; they often congregate about campgrounds and roadways; and they look shy and lovable.

At mile-high Hurricane Ridge, on the threshold of the wilderness, deer are abundant. One cloudy day in June a friend and I drove into the Hurricane Ridge parking area in time to see a tiny, spotted fawn disappear behind his mother into a woods across the meadow. Minutes later the cow emerged alone.

The two of us crept into the trees and soon found the fawn, weeks old, curled up between fallen logs. Just as I took a photograph a beam of sunlight fell on its spotted coat. In a flash the fawn bolted away.

Once a visitor picked up a similar fawn in his arms and brought it to a ranger, explaining that the little fellow had been orphaned. This proved embarrassing, as the ranger had to rush the fawn back to the exact spot where the cow had left it before the mother returned. Young fawns often do not run when approached by a human, but instead lie noiseless, obediently awaiting their mother.

Does and fawns are frequently approached by park visitors with handouts of bread or candy. Though this feeding may seem harmless, it is damaging. Deer may become dependent on such offerings, for they seem to prefer sweets to natural forage. Begging deer become scrawny and unkempt, boycotting their staple diet. When winter comes and food of any kind is scarce, they may perish. Most beggars are does, bucks usually being stand-offish. Beggar does may become unable to supply their fawns with enough milk, and tragedy can result.

Occasionally children will tease a beggar and the animal will strike back with sharp hooves. One naturalist recalls the time at Yosemite National Park when a youngster was severely gashed in this way.

A chubby, golden-brown rodent called the Olympic marmot, or whistler, lives all year in the high-country meadows. It resides in colonies with other marmots, making its burrows in the fertile earth. Humans usually need only to visit any mountain meadow on a sunny day in the Olympics to hear the marmot's shrill whistle of alarm. Standing



Photograph by David Muench

Atop Hurricane Ridge in the high country of Olympic National Park.

at its burrow entrance, the marmot looks like a "super prairie dog". This largest member of the groundhog family will scamper into its hole when strangers get close. But the marmot is curious, and if the visitor waits a few yards away, he will likely see a furry head peek out at him. The marmot may next climb out all the way to get a better look.

Adult marmots weigh up to 18 pounds at summer's end, after stocking up on rich forage in preparing for their 8-month hibernation. Marmot is king of the Rip Van Winkles, for it sleeps about 85% of its lifetime. On hot summer afternoons the marmot takes a siesta in its cool cellar, and morning and evening it basks in sunshine on a warm rock. Young marmots, called kittens, frequently box and wrestle, to the delight of human onlookers; but in its seemingly easy life, a marmot must constantly beware lest he end up as dinner for the coyote, bear, or other predator.

Few visitors to Olympic National Park ever see the

predatory animals, such as coyote and cougar, that help maintain the balance of nature here. Even seasoned back-country travelers rarely encounter the predators face to face, though their signs are often abundant. Some authorities believe that the peninsula has one of the highest population densities of cougar of any large area in the nation.

The coyote is an effective predator, serving to keep down the numbers of rabbits, marmots, and other small animals. With the coming of civilization, coyotes, whose population remains rather stable, must fill the gap left by the vanishing wolf. The large Olympic wolf, a magnificent mammal, was poisoned and hunted into extinction early in the 1900's, before the park was created.

Hikers and climbers are apt to find coyote droppings almost anywhere in the Olympics, but this sign is especially prevalent on high rocky ridges. Breaking the dried-up scat apart, one soon discovers a variety of bone seg-

ments and fur, including that of marmot, smaller rodents, and occasionally mountain goat.

Mountain goats were not original residents of the Olympic heights, but since their introduction in the 1920's, before the park was established, they have thrived. Only a few of these snowy dwellers of the rocky crags were planted at Lake Crescent, but now a few hundred traverse the ledges throughout much of the range. Having watched the animals stroll calmly across almost nonexistent breaks in a sheer mountain face with no apparent regard for gravity, I was surprised to be able to meet one face to face. But such encounters are fairly common on Klahhane Ridge, 2½ miles by trail from the Hurricane Ridge highway. In eight trips there one summer, the least number of goats I saw was seven, and that day I had gone only halfway. Here, a herd of perhaps 40 goats has made its home overlooking the San Juan Islands of Puget Sound, Mount Baker, and the North Cascades.

Billy Goats and Bears

One summer evening I was walking along the ridge-top trail when, rounding a hump, I met two billy goats grazing peacefully next to the path. I got out the camera and stepped to within 25 feet of a very muscular 200-pound goat with 8-inch horns. With my small telephoto lens he more than filled the frame, so with trembling hands I decided that that was "close enough." Several times I chanced upon family groups, with new kids about the size of cocker spaniels, who could cover the roughest terrain.

Bears are a problem in many national parks. Here, too, there have been some garbage-can raiders, but they are the rare exception. Black bear and grizzlies are the only two species of bear in the 48 conterminous States; however, the "blacks" may appear in various color phases ranging from almost blonde, cinnamon, and bluish gray, to deep chocolate and plain black. Olympic has the only truly "black" black bears, and plenty of them. Like much other wildlife here, however, bruin is shy.

Hikers camping in the back-country should take care to wrap their gear at night—especially food—in canvas and string it from a limb high above ground. Why? Bear, deer, mice, chipmunks, bushy-tailed woodrats, gray jays, and even ants are some of the answers. More than once I have been aroused by a meadow mouse darting over my sleeping bag. Had there been some food left out he would have taken his share.

Once a four-point buck deer got into packs we had left nearby when camping above timberline. I awoke to rattling utensils, and saw the buck with his nose in our packs. Jumping up, I yelled and waved. I put the packs between myself and my fellow camper, and was asleep again when my partner stirred and asked what I wanted. He thought I had tapped his shoulder, but we looked up to see the buck. I still do not know if the deer rapped to ask a question, or was just on his way into our gear again. The buck was later found chewing on my leather camera strap.

At Lower Cameron Shelter we had the misfortune of having a bushy-tailed woodrat discover our equipment at night. We had hung up food safely, but I awoke to a flat air mattress and saw the villain dashing about. A survey showed he had nibbled holes in my air mattress, sleeping



Photograph courtesy National Park Service

A small herd of Roosevelt elk graze a flowered meadow in the Queets Valley of Olympic Park.

bag, both rubberized ponchos, tennis shoes, knapsack, and both pairs of boots.

Olympic has its share of birds, too, nearly 140 varieties in all. Perhaps most exciting to watch are the bald eagles, many of which roost in tall trees and snags along rivers and on the park's Ocean Strip. Eagle feathers nearly two feet long are not uncommon along the wilderness shore, where the magnificent birds can be seen soaring high above the beach.

Three of us once decided to tackle a conical sea stack (rock island) accessible at low tide. A few spruce trees crowned the top, which would have barely held a telephone booth. We were half way up when a shadow skimmed across us. Jerking back our heads, we beheld an impressive aircraft with talons for landing gear and a 5-foot wingspread. Realizing the eagle's nest was probably on the summit, we took the hint, and retreated hastily.

Ravens live at Hurricane Ridge winter and summer. Frequent visitors to the area will almost certainly see these king-sized crows that are acclaimed by authorities as being one of the most intelligent birds. The raven is a scavenger, not above picking up a choice live morsel such as a mouse or mole.

In summer many species of large hawks glide in circles over the high country. The big fellows like red-tailed hawk and Cooper's hawk have been seen ganging up to dive-bomb marmots, apparently trying to injure an adult or carry off a kitten. Predaceous birds work to keep down rodent populations in the lowlands, too. I was driving along the highway near Port Angeles when a large hawk swooped

out of the trees and flew straight across the road a few yards from my windshield, holding a mountain beaver in his talons. Before I realized what had happened, he reached the forest on the other side.

The blue grouse or "fool hen," almost the size of a chicken, delights visitors to the park's high country with its unruffled habits. People can often take pictures and approach within inches of the bird, even when it is leading a brood of chicks. But most of the bird species in the Olympics are songbirds, whose voices fill the air on sunny days.

The residents in the Olympic wilderness live in close proximity to each other. This point was well illustrated to us on an August morning as we hiked across the headwaters of Lost Creek, deep in the wilds. First we came upon three deer grazing on the lush forage. Around the corner we spotted eight elk, and between the two groups was a chubby black bear gathering goodies in the low brush. Several minutes later we watched a pair of mountain goats breakfasting like contented cows on the slanted ledge of a nearby cliff.

All around us were meadows beaming with multi-colored flowers, glistening patches of snow, a jagged mass of nature's own skyscrapers, deep valleys leading down into thick, green forests, clear mountain water, wholesome air, and country that puts man's landscaping efforts to shame. This was home to elk, marmot, goat, and grouse; it was man's too. But it is fitting that he is not a permanent resident, for then the wonderful, wild menagerie of the Olympic Peninsula would be no more. ■

Strip Mining in Pennsylvania

*A start has been made toward restoration
of surface-mined lands to productivity*

By Ginny Ade

NOT LONG AGO AN EDITORIAL IN *Outdoor People*, a Pennsylvania newspaper, was discussing the philosophy and mission of the modern conservation movement. What are the great problems of the world today? it asked. "Communism? The innate search for freedom within man will overcome Communism. Economics? The world will always find a way to carry on trade. Dictators? Political power? Unemployment? These problems fade into insignificance beside conservation. If our natural resources are gone, what will we eat? Where shall we find clean air to breathe? Where will clean water be found? Man will always find a way to rebuild society, but he cannot rebuild anything if he has destroyed the fruit of the earth and stifled its ability to give us sustenance."

And although it has been a long time coming, at least a start is being made toward solving one of our most serious conservation problems—the restoration of strip-mined lands in our coal-producing States. Among these, Pennsylvania is leading the way in its all-out effort to erase strip-mining ravages of the past. More than 200,000 acres in Pennsylvania have been affected by open-pit mining, and more than 3000 miles of the state's streams polluted by drainage of acid waters from strip and other mines.

Pennsylvania has not, of course,

been the only state subjected to the systematic denuding, defacing, and abandonment practices of the strip miners. Ohio, Illinois, Kansas, Missouri, and Kentucky—to name a few other States—also had sections of their countryside exploited and left unreclaimed. But Pennsylvania was one of the first States to enact legislation aimed at counteracting the evils of 140 years of disregard for even the weakest strip-mining laws.

Evils of Coal-Stripping

What were some of these evils? Aside from the total esthetic desolation of strip-mined lands, there has been the disruption of the tax assessment program in many counties, in at least one case creating such a hardship so as to cause economic crisis. In addition, improper strip mining has led to pollution of streams and flatlands. Most seams of coal contain sulphur as an impurity, which when wet, through chemical reaction produces sulphuric acid. Runoff water from both strip and tunnel mines has bled into creeks and lakes, destroying vegetation, fish and other animal life. Waste coal has often been left in the bottoms of open-pit mines in disregard of law. Also, poorly done stripping opened a potential path for acid drainage when a cut would peel overburden away from an old drift mine. In Pennsylvania strip mine operators have, in the past, left rubble

behind, to drift down on public highways to be removed at public expense. These are but a few such evils.

Recent surveys have indicated that approximately 112,000 acres in the anthracite region of eastern Pennsylvania have been disturbed by the deep mining and strip mining industries. From the early 1800's until the 1930's all anthracite was mined by sinking shafts deep into the earth. Following World War II, stripping became increasingly predominant in the anthracite area. Though this activity bolstered the economy of the communities temporarily, it had detrimental side effects. The green valleys and hillsides and sparkling rivers and streams of eastern Pennsylvania were once as beautiful as any in the northeastern part of the United States. But coal mining left its scars and created depressing conditions for people living in the region. Today they suffer the discomfort of windblown dust around active strippings, and live with the stench of the ever-burning culm or slag piles.

However, those interested in attracting outside industry to the area finally were convinced that renovation would be impossible unless something was done about restoring, at least as far as possible, the beauty of the countryside. The only answer was either to cover raw disturbed land and ugly culm piles, or to shield them from view. The efforts of community groups are cur-



Photograph courtesy "Outdoor People"

Strip-mining of a Pennsylvania farm cut off the water supply of an adjacent farm, forcing its owner to sell out.

rently being expended in both directions.

Conservationists recognized early the seriousness of problems resulting from the strip mining operations in Pennsylvania. Both the Department of Forest and Waters, and the School of Forestry at Pennsylvania State University set about making experimental tree and shrub plantings. The primary objective was to determine survival, height, and relative vigor of various species of trees and shrubs after a number of growing seasons to guide future plantings. Also, it had to be determined which trees did well in the four different types of soil banks, soil acidity being one of the most critical factors. Today, by making use of these findings, approximately 10,000 acres of strip-mined banks and other lands disturbed by mining operations are successfully planted each year.

What finally brought about the state's present tough strip-mining law?

Conservation-minded Pennsylvanians were still without effective strip-mining laws at the beginning of the 1960's in spite of years of effort. In 1961 a strong strip-mine control bill was introduced into the Pennsylvania legislature. After a hard fight it passed the house, only to be watered down in the state senate with crippling amendments, before passage.

Conservationists At Work

This served to rally the conservationists in earnest. The secretary of the Pennsylvania Federation of Sportsmen's Clubs, John F. Laudadio, reaffirmed the Federation's stand for full reclamation of strip-mine sites. Another group joined with the organized sportsmen's groups. It was called the Save Our State (SOS) Conservation Association, and it also pressed for a tougher strip mining control law. Membership of all Pennsylvanians was solicited by this group.

On July 10, 1963, Pennsylvania newspapers carried the headline "Senate O.K.'s Tough Strip Mine Law." The conservationists, however, looked upon the bill's approval as almost anticlimactic after 20 years of efforts.

On the other side of the fence, strip-mine operators were rather quiet, though one supporter predicted the measure would result in 100,000 Pennsylvanians going on relief as soon as the law went into effect. He implied that it would spell the end of open-pit mining in the State.

What were the strong points of the bill? Essentially, it contained a set of sharp teeth requiring that a strip mine operator be licensed (\$300 per year) and that the license could be revoked permanently for violation of the law. The operator was made responsible for prevention of stream pollution, acid drainage, and siltation under penalties of up to \$5000 and a prison term. The bond which had to be posted was in-



Photograph courtesy "Outdoor People"

Land in the photograph above has been stripped for coal and restored to contour under Pennsylvania's strip-mine law.

creased and stiffer pre-stripping plans were required. Also, the law stated that the land must, in general, *be returned to contour*; meaning, of course, that the strip-mined land, after restoration, would possess as nearly as possible the same slope as the original terrain. This marked the beginning of a new conservation era in Pennsylvania.

A new "clean streams" law also became effective January 1, 1966. It requires treatment of mine acid and material, and states specifically that no leeway in this matter be granted to coal companies by the Sanitary Water Board. Public interest in clean water passed this bill!

The open-pit mining laws have been extremely effective, both in returning mined land to a desirable condition and in preventing pollution from open-pit mining, according to J. M. Cunningham, the Director of Bituminous Conservation and Reclamation in

Pennsylvania. As of the present, he says, more than 7000 acres of land have been restored in accordance with the requirements of the new legislation.

What does the future hold in store for strip mining country-wide? Some specific aspects of present-day strip mining in our country project a surprisingly bright picture. Strip mining is an economical way to meet the ever-increasing demand for coal, 53 percent of which is used to generate electricity to meet the industrial needs of our growing population and industries.

New Lakes Created

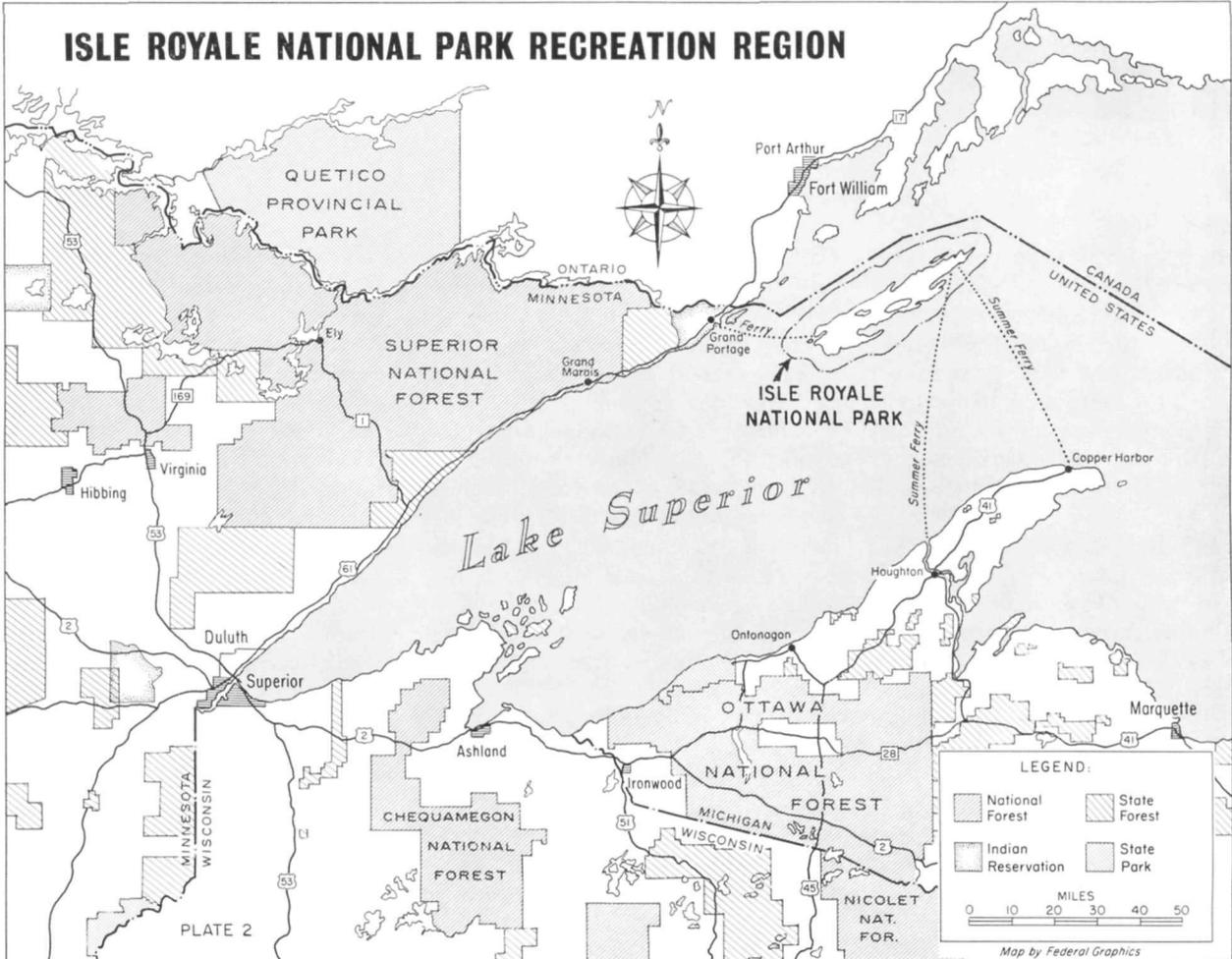
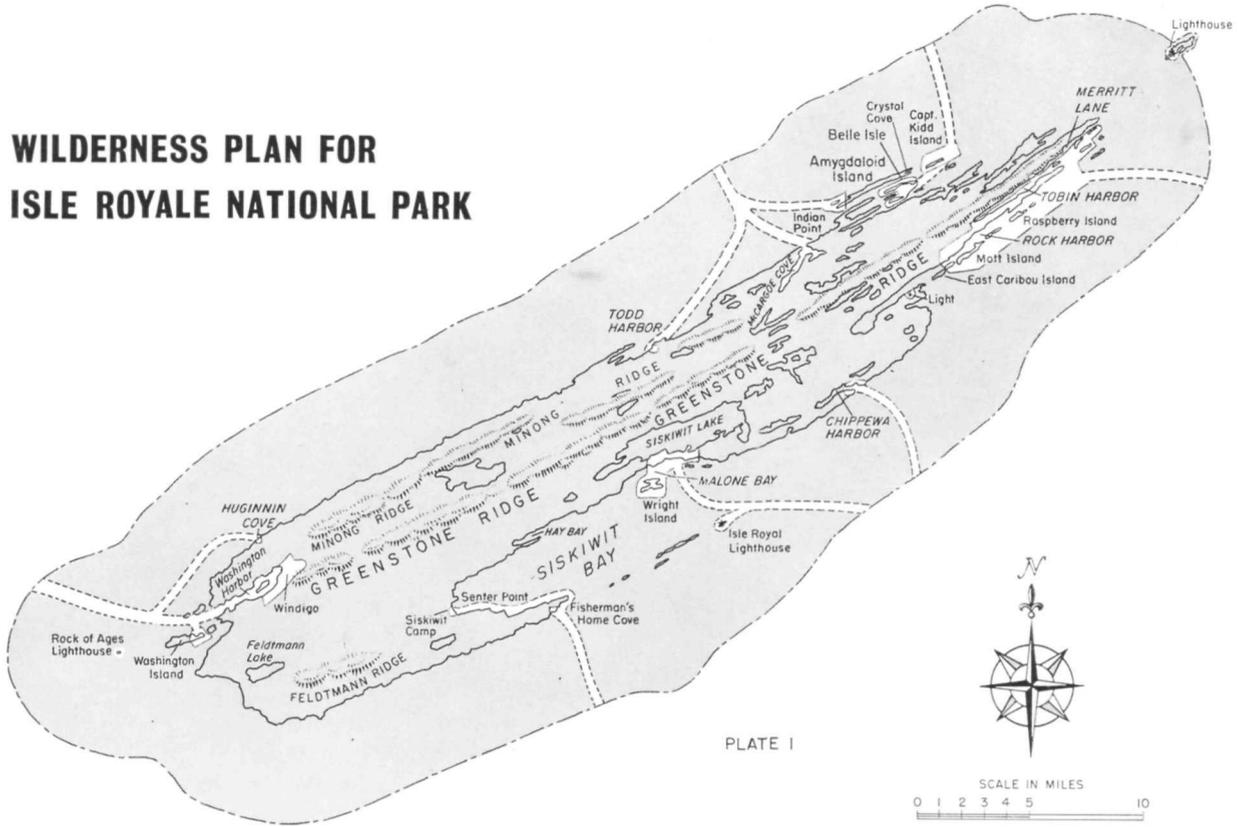
Through the efforts of the Mined-Land Conservation Conference, a coal-industry financed and supported national conservation group, all manner of new lakes are being created by the construction of small dams. Through rainfall or filling from natural springs, these new lakes offer family fun—swimming, boating, fishing, or

just plain loafing—on the water or attractive shores for new homesites or summer hideaways.

New forests are created by taking advantage of the knowledge gained in experimental plantings. The soil is tested and proper trees planted. New farm and grazing lands are brought into being on former strip-mined sites. New wildlife areas are being created through conservation efforts supported by strip-mine operators. A manager is sometimes permanently installed to develop an entire area according to a plan. Roadways and picnic areas are all included in the works, wildlife areas are stocked, and fishing lakes provided.

Conservationists realize that none of these gains are made overnight, but are a necessary part of a long-range program. If reclamation of strip-mined lands continues at its present pace in Pennsylvania and elsewhere, perhaps the memory of the havoc wrought in the past can gradually be erased. ■

WILDERNESS PLAN FOR ISLE ROYALE NATIONAL PARK



A Wilderness Plan for Isle Royale National Park and the Surrounding Region

Synopsis of a presentation by the National Parks Association at public hearings of the National Park Service on establishment of wilderness in Isle Royale National Park, at Houghton, Michigan, January 31, 1967

ISLE ROYALE NATIONAL PARK IN Lake Superior is a highly scenic preserve which brought into the park system a classic sample of north-woods wilderness whose plant and animal communities have been little disturbed by man in recent times. The island harbors the only known breeding population of timber wolves south of Canada and in general presents an exceptionally fine arena for the study of natural life communities. Because of the relative isolation of the park, visitation is moderate; because the island is almost completely under jurisdiction of the Park Service, the Service can exercise complete control over development of visitor facilities, and thus over the impact of visitation on the park's ecology and wilderness nature.

The primary objective of a national park is protection of its scenery and natural and human history; but the time has long since passed when this can be accomplished by considering the park as an entity in itself. A large region around the park must also be looked at with a view toward distributing through it sightseeing and recreational activities which do not neces-

Shown on Plate I opposite is NPA's Wilderness Plan for Isle Royale National Park. All land and water within the exterior boundaries of the park, shown shaded, would be included as wilderness with exception of: Coast Guard lighthouse facilities, Park Service facilities and the present lodge on the island, visitor access areas with cabins or campgrounds, trail bases of perhaps 40 acres each to serve wilderness trail users and reached by access ribbons, and such commercial fishery in-holdings as presently exist. Exclusions are shown in white and access ribbons in white within dashed lines. Plate II details parks, forests, and Indian lands of the recreation region surrounding the park.

sarily require a national park setting, but which might otherwise be focused on the park to its eventual deterioration. The National Parks Association's wilderness plan and supplemental regional recreational plan is designed to preserve the wilderness attributes of Isle Royale Park and to protect it from future overcrowding.

Much of the land and water within the exterior boundaries of the park should be classified as part of an Isle Royale Wilderness, as shown on Plate I opposite. Exceptions are noted in the caption of the map in column 1.

In designating exclusions from wilderness it must be recognized that access to this particular park is by boat. Craft large enough to operate safely in Lake Superior are motor-propelled and operating freely offshore, would violate the wilderness concept. The Plan therefore provides access ribbons to wilderness trail bases by water. The trail bases would provide docking and camping facilities for trail hikers. Provision is also made for the landing of seaplanes and arrival of large public transportation vessels arriving from visitor reception centers outside the park, discussed beyond.

The small population of wolves on Isle Royale lives in balance with a moose population which is in turn dependent on brush and small-tree browse. Sufficiency of browse is related to the effects of past forest fires; and studies are being made to determine which natural fires should be allowed to burn and which should be suppressed. It is expected that a plan will materialize from the studies which will make it possible for wolves and moose to maintain themselves indefi-

nitely on the island in a natural way.

The restoration, stabilization and interpretation of historic and prehistoric events on the island—ancient copper mining, for example—should be studied with an eye toward conducting at least part of this work on the mainland adjacent to the south where similar historic and prehistoric conditions prevailed, in order to avoid an unnecessary increase in visitation which could be served as well elsewhere. Construction of trail shelters or trailside campgrounds in the wilderness should be discontinued and existing shelters removed.

Isle Royale Park lies within an extensive region of lake, stream and forest country which has great recreational potential, some of which is already being realized. In the region mapped in Plate II opposite, there are 4 national forests, 19 state parks and 28 state forests in the United States, plus a provincial park in Canada. The present number of public and private campsites is about 7200, and this supply is likely to increase considerably in the near future. Advantage of such alternative recreation opportunities should be taken. Vacation resorts could be established in towns like Grand Portage or Houghton which would offer shopping facilities and a wide variety of physical recreation activities as well as a system of campground referral services, all as part of carefully planned regional development programs.

Only through such broad regional planning can the north-country wilderness quality of Isle Royale National Park be protected from the crowds of the future. ■

News and Commentary

Great Falls As a Refuge

Facilities before people! This appears to be the present motto of the National Park Service in more than one situation. A new visitor center has been decided for the erstwhile tranquil Great Falls Park on the Potomac above Washington. Conservationists concerned with the Falls as a refuge for people from the pressures of the city have protested against the location, too near the Falls; and against the architecture, inappropriate to the history of Washington's Potomac Canal and to the woods and gorge. But to no avail, of course; the Director has announced that the contract will proceed as let. Once a man could be alone here with the river; now, after he gets through the parking lot, it will all be explained to him by the Ranger.

Staten Island March

The height of some kind of absurdity was reached recently when Mayor Lindsay of New York, Parks Commissioner Hoving, and U. S. Senator Javits led a march of conservationists in protest against the proposed six-lane Richmond Parkway on Staten Island, within the city. The parkway has been pushed by Robert Moses, head of the Triborough Bridge Authority, an inveterate big-road builder. It will destroy much of the remaining green space on the island. The U. S. Bureau of Public Roads has rejected an alternate route recommended by the

Mayor, who has halted construction for the present. When top-ranking State and City political leaders must take to mass protests the time has come for a vigorous shakeup in the big-road program by the President of the United States through the new U. S. Department of Transportation.

Third Potomac Conference

Away back in early 1964 a group of Potomac Basin conservationists and other persons interested in Basin water problems held a conference in Winchester, Virginia, to discuss ways and means of protecting the Basin from the high-dam plan of the Army Engineers. That conference has been credited with influencing Government thinking in the direction of a model plan for the Basin. The model plan commenced to develop a little later, but somehow the Army dams, which have been pressed by the Corps for various reasons at various times, managed to remain in the picture despite overwhelming Basinwide sentiment against them.

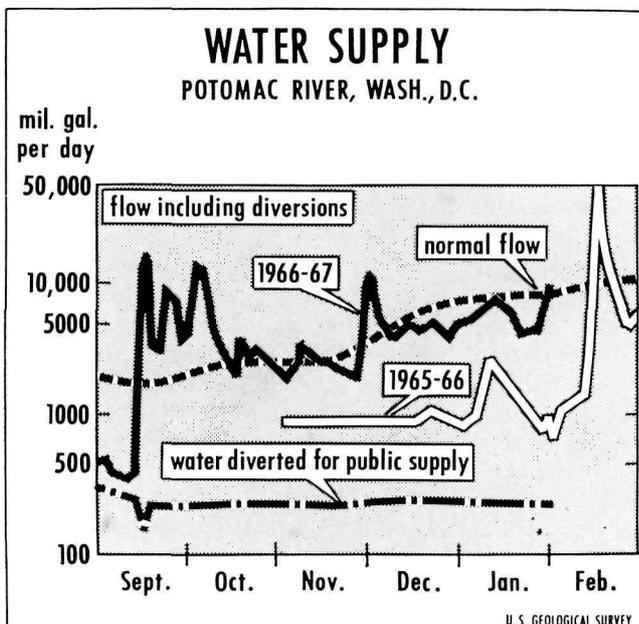
In the Spring of 1965 the high dams cropped up again, this time under the guise of "mountain lakes". A second convention of the Conference was called in June of that year to deal with "mountain lakes" and to restate the fundamental needs of the Basin water-wise: cleanup of the Potomac and re-cycling of water for the nation's capital to ensure an adequate future supply, with reliance on small headwater Soil Conservation Serv-

ice type impoundments for water control.

Time rolled on, and in August 1966, the Engineers published their Interim Report on the Potomac River Basin, calling this time for three big reservoirs, apparently as a start toward their overall high dam program for the Basin. Again the Conference met in December of the year, at Winchester, to cut the ground from under the Engineers' Washington water supply argument with a well-considered plan for a Potomac estuarial intake and pumping station that would supply adequate water to Washington during times of low river flow, into the foreseeable future. It renewed its pledge to do everything in its power to oppose the Engineers' dams and reservoirs, with their massive destruction and unsightly drawdowns, and to obtain recognition for the alternative programs that it has recommended over the years.

California Wilderness Area

Conservationists have had cause for satisfaction, if not complete satisfaction, in the first Presidential recommendation to Congress for creation of additional legal wilderness under the Act of 1964. The Presidential recommendation is asking for a 143,000-acre San Rafael Wilderness Area in the Los Padres National Forest of California which will, aside from its own wilderness merits, afford considerable additional protection to the California condor, a seriously endangered native species of animal. In public hearings of the Forest Service, conservationists, led by the Wilderness Society and National Parks Association on the East Coast and the Sierra Club on the West



Normal Flow of Potomac River Ends Washington's Great Water Scare of '66

The great Washington Water Scare of 1966 seems to have been drowned in some very normal Potomac River flows this winter. The U. S. Geological Survey has been publishing little charts right along, showing that the scare was baseless. We reprint a recent one herewith; even at the end of a dry September there was an ample margin between supply and demand; since then the supply has been better than usual. As the city grows, and demand gradually rises, in the next few decades, a supplemental water supply intake can be built in the freshwater estuary to close any temporary gap, and big Army-type reservoirs will never be needed. If this is done, the old C & O Canal can be made into a National Historical Park, protected forever for the people of Washington and America.

By the end of January the flow of the Potomac River at the nation's capital had reached about 10,000 million gallons a day, about 10 times the flow on the same date last year, quieting the Great Water Scare of '66. The map was prepared by hydrologists of the U. S. Geological Survey.

Coast, had asked for inclusion of 154,000 acres in the Wilderness; the Forest Service's initial proposal called for 110,403.

The acreage set by conservationists as an optimum wilderness was not a figure that looked hopefully toward a compromise; the additional land would have reached the Sierra Madre Ridge of Los Padres Forest—part of the foraging range of the condor—and thus would have afforded the great bird, whose numbers are now estimated at about 50, some additional protection. Conservationists seem pleased in general, however, with the President's request.

Interior Department Appointments

Among recent Interior Department appointments are one in the Bureau of Land Management and another in the Park Service. John A. Mattoon, Assistant Regional Forester in charge of the information and education program of the Intermountain Region of the Forest Service in Ogden, Utah, has been appointed Chief, Office of Information in the Bureau of Land Management. Also, announcement has been made of the appointment of Dr. Ernest Allen Connally to Chief of the newly established Office of Archeology and Historic Preservation of the National Park Service.

Outdated Thinking

Several months ago this Magazine printed an article written by a widely known consulting engineer, Ellery R. Fosdick, in which the author stressed the need for some realistic thinking on the matter of making a start at re-using our nation's output of wastes, both from the viewpoint of natural resources conservation and that of environmental pollution. The message apparently reached Maryland too late, for a recent plan in that state calls for a pilot project on using abandoned coal strip-mines as repositories for the state's solid wastes, with due attention to the dangers of ground water pollution. The wastes, excluding sewage, would be dumped into the strip pits, and covered with dirt from the original stripping process. In the light of the technology that now exists for reclaiming solid wastes, this approach seems to date back to the days of the Stanley Steamer, and it is not encouraging to see the U.S. Department of Health, Education, and Welfare, which has been telling people to think more about solid waste reclamation, spend more than a hundred thousand dollars in a demonstration grant for the proposal.

The Shale Oil Question

Development of the nation's greatest remaining source of fossil fuel has come

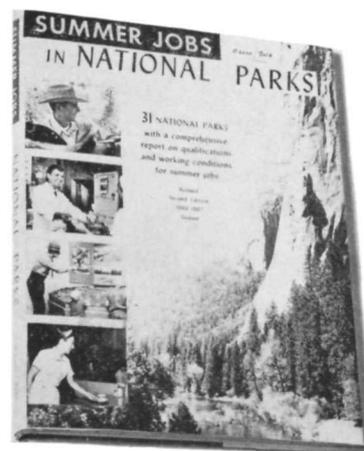
a step closer with the Secretary of the Interior's promulgation of a five-part program to promote economic recovery of so-called shale oil from the Eocene Green River rocks of Colorado, Wyoming, and Utah. Oil shale is the general term for sedimentary rock that contains a greater or lesser proportion of various hydrocarbons which, through treatment, may be made to yield oil; a very large percentage of rock which can be mined on an economic basis lies within the public lands. The general question of shale-land development has been active for a number of years, and became more so about two years ago when the Secretary's special advisory group—the Oil Shale Advisory Board—rendered its views on the ground rules that ought to be observed if it was necessary to develop this immense national resource at the present time. The board was not by any means unanimous in thinking that there is a pressing need just now for shale-oil development, in view of ample existing supplies of petroleum in this country and elsewhere. Beneficiation of shale-oil lands is bound to bring the nation face to face with some very large questions in conservation, since one of the mining methods foreseen is stripping of shale, with all its potential attendant evils.

In any event, the Interior program calls for these things at present: clearing title to public oil-shale lands; "blocking up," or exchange, of scattered oil-shale lands now in private hands for Federal lands of equal quality; granting of provisional development leases, with regulations as to good conservation practices; finding of ways to retort the oil-shale underground, to eliminate the need for strip-mining; and initiation of a program of governmental research by the Geological Survey, Bureau of Mines, and Bureau of Land Management.

Australia Views Its Parks

We have heard it is possible that an expert in American national park affairs may go to Australia's State of New South Wales as an advisor on the system of parks that has been proposed for the State. Mr. Sam P. Weems, career Park Service man and most recently superintendent of the Blue Ridge Parkway, is the man who may act as consultant in what seems to be a general tightening up of management in the Australian park system, with particular attention to New South Wales and its projected parks. What the Australians have in mind, apparently, is an upgrading of their national and state parks to "world standards"; the better protection of their natural and historic resources, and the

(Continued on page 22)

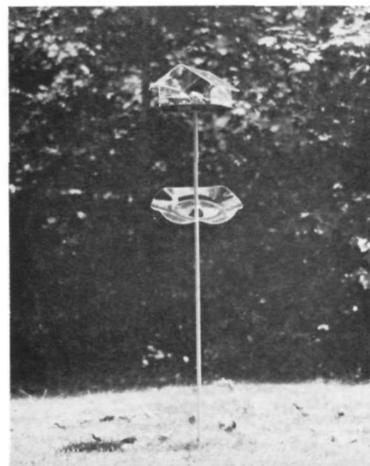


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establishment of some new parks, especially in New South Wales. The Australians apparently have some ideas as to how parks might be furnished with buffer zones for the stricter protection of some of their endangered species of animals. It might be hoped that, as a consultant, Mr. Weems would make liberal use of the original purposes for which American parks were established, so as not to transplant to Australia such notions as small wilderness and large development, and some other current ideas of the sort.

More Space Garbage?

Some conservationists and many astronomers will recall the Air Force's program of several years ago—the so-called West Ford Project—which flung many millions of fine copper wires into orbit around the earth for some experimental purpose or other. Conservationists objected to the stunt on the grounds of damage to the natural environment, while astronomers viewed it in terms of interference with their conventional and radio telescopes (and some of them, in terms of the natural environment also).

Now a new orbiting nuisance is being considered by the National Aeronautics and Space Administration, and the Defense Department, consisting of a mirror of some 2000-foot diameter, which might, among other things, be used to illuminate Vietnam during the night for the convenience of the military. Some of the "other things" would include increasing the illumination in polar latitudes, for what that is worth, lighting blacked-out cities, and assisting in recovery operations. Studies of the project are being funded to the tune of nearly half a million dollars.

Conservationists will no doubt take just as dim a view of this bizarre project as they did of West Ford, and the astronomers have indicated their unhappiness on the same grounds as before. In addition, biologists have suggested that interruption of natural plant and animal rhythms ought to be considered before the project get much farther. We suggest that the idea be junked, along with any others of the sort that may be hatching in that part of the scientific world that constantly gets more money than it can put to useful purposes.

Summer Studies in Natural History Interpretation

In association with the regular forestry summer program, the Department of Forestry of the University of Michigan's School of Natural Resources offers a unique and intensive eleven-hour undergraduate program in outdoor recreation and natural history interpretation. Three courses will be offered during the period between June 12 and August 19, 1967; Forest Biology, Forest Recreation Field Studies, and Field Studies in Natural History Interpretation. For additional information or an application write to: The Dean, School of Natural Resources, University of Michigan, Ann Arbor, Michigan.

Various Wilderness Hearings

The Fish and Wildlife Service has announced public hearing dates for inclusion of areas in a number of its units as legal Wilderness. The units and hearing dates are: Hart Mountain Antelope Refuge, April 12 at Lake County Courthouse, Lakeview, Oregon; Salt Creek Unit of Bitter Lake Wildlife Refuge, April 5 at Chavez County Courthouse, New Mexico; St. Lázaria, Forrester Island and Hazy Islands Wildlife Refuges, April 4 at Support Building, Juneau, Alaska; Chupadera, Indian Well, and Little San Pascual Units of Bosque del Apache Wildlife Refuge, March 29 at National Guard Armory, Socorro, New Mexico; Copalis, Quil-

layute Needles, and Flattery Rocks Wildlife Refuges, March 28, at VFW Hall, Aberdeen, Washington.

Also, Cedar Keys Unit, Cedar Keys Wildlife Refuge, April 7, at Don Ce-Sar Office Building, St. Petersburg Beach, Florida; Michigan Islands Unit, Michigan Islands Wildlife Refuge, March 29 at County Fairgrounds, Petoskey, Michigan; Edmunds Unit, Moosehorn Wildlife Refuge, April 12 at Calais Memorial High School, Calais, Maine; Passage Key Unit, Passage Key Wildlife Refuge, April 7 at Don Ce-Sar Office Building, St. Petersburg Beach, Florida; Pelican Island Unit, Pelican Island Wildlife Refuge, April 2 at New Community Building, Vero Beach, Florida; Three Arch Rocks and Oregon Islands Refuges, April 4 at Extension Service Building near Fairgrounds, Eugene, Oregon.

A brochure concerning each proposal, with map and information, may be obtained from the appropriate Refuge Manager at the following addresses: Hart Mountain, P.O. Box 111, Lakeview, Oregon 97630; Bitter Lake, P.O. Box 7, Roswell, New Mexico 88201; St. Lázaria, Forrester and Hazy Islands, P.O. Box 500, Kenai, Alaska 99611; Bosque del Apache, P.O. Box 278, San Antonio, New Mexico 87832; Copalis, Quillayute Needles, and Flattery Rocks, P.O. Box 3737, Portland, Oregon 97208; Cedar Keys, manager of the Chassahowitzka Wildlife Refuge, Route 1, Box 153, Homosassa, Florida 32646; Island Bay, same as for Cedar Keys; Michigan Islands, manager of Shiawassee Wildlife Refuge, RR 1, Saginaw, Michigan; Moosehorn, P.O. Box X, Calais, Maine 04619; Passage Key, same as for Cedar Keys; Pelican Island, Merritt Island Wildlife Refuge, Box 956, Titusville, Florida 32780; Three Arch Rocks and Oregon Islands, W. L. Findley Wildlife Refuge Manager, Route 2, Box 208, Corvallis, Oregon 97330.

The U. S. Forest Service has announced it will hold a public hearing March 15, in the Business Administration Auditorium on the Northern Arizona University at Flagstaff, on establishment of a Sycamore Canyon Wilderness of 46,542 acres within and contiguous to the Sycamore Canyon Primitive Area. Further information and a map may be secured from the Forest Supervisor, Coconino National Forest, P.O. Box 1268, Flagstaff, Arizona 86002; individuals desiring to submit a statement for the hearing record rather than present it in person at the hearing should send it to the Regional Forester, U.S. Forest Service, 517 Gold Avenue, S.W., Albuquerque, New Mexico 87101.

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THE CONSERVATION DOCKET

AS OF THIS MID-FEBRUARY WRITING MORE than 5000 bills have been introduced into the House, and nearly 1000 into the Senate, since the 90th Congress convened January 10. Among these, many have at least some bearing on the work of the conservation world; and a selected few are listed below with their committee referrals. ("S" indicates a Senate bill, "H.R." a House bill).

S. 4, to establish a Big Thicket National Park in Texas, of not more than 75,000 acres. To Interior and Insular Affairs.

S. 20, for a review of national water resource problems and programs. Interior and Insular Affairs.

S. 23, authorizing the Interior Secretary to make disposition of geothermal steam. The bill would forbid geothermal steam leasing on lands of the park system, wildlife refuges, game ranges and game management areas. Interior and Insular Affairs.

S. 25, to establish a Great Salt Lake National Monument in Utah. Interior and Insular Affairs.

S. 26, to make a very substantial addition to existing Canyonlands National Park in Utah. Interior and Insular Affairs.

S. 119, to establish a National Wild Rivers System. Introduced by Sen. Church and co-sponsored by 36 other Senators. Interior and Insular Affairs.

S. 217, to reclaim and conserve lands affected by coal mining; short title, Mined Lands Conservation Act. Interior and Insular Affairs.

S. 322, to amend Migratory Bird Conservation Act to prevent sale or transfer of national wildlife refuge lands without approval of Migratory Bird Commission. To Committee on Commerce.

S. 351, to establish a Fossil Butte National Monument in southwest Wyoming, of not

more than 8500 acres. Interior and Insular Affairs.

S. 368, to establish the Saint Croix National Scenic Riverway in Minnesota and Wisconsin. Interior and Insular Affairs.

S. 451, to amend the Clean Air Act to authorize investigation of means for propelling vehicles so as not to contribute to air pollution. Committee on Public Works.

S. 453, to authorize a program of research and development for electrically driven vehicles. Committee on Commerce.

S. 514, to establish a Redwood National Park in Humboldt and Del Norte Counties, California. This is the so-called big redwood park bill, as opposed to the Administration's more modest proposal in Del Norte County's Mill Creek region. Interior and Insular Affairs.

S. 695, for protection and preservation of estuarine areas. Committee on Commerce.

S. 702, to establish a Sandy Hook National Seashore in New Jersey. Interior and Insular Affairs.

S. 704, to establish a Buffalo National River in Arkansas. Interior and Insular Affairs.

S. 778, to establish an Apostle Islands National Lakeshore in Wisconsin. Interior and Insular Affairs.

S. 827, to establish a nationwide system of trails. Interior and Insular Affairs.

H. R. 9, to authorize construction of the Colorado River Basin Project, including the Bridge Canyon dam. Interior and Insular Affairs.

H. R. 25, companion bill in House to S. 695 above. Merchant Marine and Fisheries.

H. R. 96, to authorize a research program on underground transmission lines. Interstate and Foreign Commerce.

H. R. 405, to establish a national policy and program for predatory mammals. Merchant Marine and Fisheries.

(to be continued in next issue)

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Occasional Publications of the National Parks Association

On the Potomac River Basin

- The North Branch of the Potomac. 3 pages, with chart and map.
- Clean Water for Municipalities, Industries and Recreation in the North Branch Potomac River Basin. 5 pages, with table and map.
- Financial Feasibility and Drawdowns, Interim Report, Army Engineers, 1966. 6 pages and 2 tables.
- Summary of a Model Program for the Potomac. 2 pages.
- Analysis of the Potomac River Basin Report of the District and Division Engineers, Corps of Engineers, U.S. Army. 20 pages, with tables and map.
- Washington's Water Supply. Schematic map, 17x22. (Proposed supplemental intake and pumping plant on Potomac River estuary for emergency water needs.)

On Other Conservation Topics

- Water for Arizona and Marble Canyon Dams. 4 pages.
- Report of the Advisory Board on Wildlife Management (The Leopold Report). 6 pages.
- A Statement on the Basic Facts About Reservoir Drawdowns. (folder).
- Report on Present Status of a New Simple Low Cost Coal Sewage Treatment. 5 pages, with schematic diagram.

Single copies of occasional publications are available without charge. Larger quantities are available at cost.

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

On Park and Regional Planning

- A Look Toward the Future in the TVA-Smokies Region. 8 pages, illustrated with photographs and maps.
- Wilderness in the Smokies. 4 pages.
- A Wilderness Plan for Craters of the Moon National Monument and the Surrounding Region. 9 pages, with 2 maps.
- A Wilderness Plan for Lassen Volcanic National Park and the Surrounding Region. 8 pages, with 2 maps.
- A Yellowstone Regional Plan. 12 pages, illustrated with photographs and maps.
- A Preliminary Wilderness Plan for Sequoia-Kings Canyon National Parks and the Surrounding Region. 13 pages, with 2 maps.
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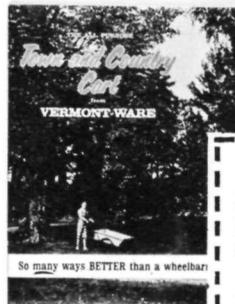
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