NATIONAL PARKS & *Conservation Magazine*

The Environmental Journal

June 1973

NPCA • National Parks & Conservation Association • NPCA

the EVERGLADES

THROUGH COUNTLESS AGES, long before the white man, or any men at all, touched the American continents, the river now called Kissimmee meandered through a hundred miles of central Florida marshlands to pour itself into the body of water which we know as Lake Okeechobee. From the Lake, down through a vast river of grass, the Everglades on the east and through Big Cypress Swamp on the west, the waters moved in shallow sheets southwestward through what is now Everglades National Park and the mangrove woodlands of the Gulf of Mexico and Florida Bay and out to sea. Fresh, brackish, and salt, in sequence, they supported an unsurpassed wealth of plant, bird, and reptile life which has been in great danger from the activities of man in recent times.

With the speculative real estate development of the east coast of Florida in the 1920s came marginal settlement also in the Everglades. Tropical storms were bound to cause floods in time, and when they did, a clamor arose for draining the inland waters to the ocean and gulf. With drainage came further settlement, and the rich marshland soils, shortlived though they were, proved an irresistible lure to agriculture.

Within a decade or so, the process known as full development was well under way: drainage canals, storage reservoirs, irrigation, water supply canals, channel straightening, and dredging and filling. The operation was called the Central and Southern Florida Flood Control Project, and as it moved forward, the Kissimmee River was straightened and shortened to fifty-eight miles, and the surrounding marshes were progressively drained.

LONG CAMPAIGNS were mounted by conservationists to save at least a portion of the Everglades and Big Cypress. The establishment of Everglades National Park was the major victory in this effort. From the beginning, the new park fell under the usual developmental pressures for internal concessions, roads, canals, and motorboat access. Park protectors resisted, and protective trends may now be well under way, including eventual removal of internal facilities beyond the park boundaries.

More sinister was the continuously growing threat that the water supplies to the park which arrived through the Everglades would be diverted. A great demand for water emerged as the coastal cities grew. The impermanent agriculture which had come with drainage pressed for more drainage, and yet for irrigation. During the drought years of the 1960s, the park almost died.

Discovering a source of new political power in the possibility of cutting off development on the Kissimmee River, conservationists met the water supply issue in Congress and obtained statutory guarantees that if additional water resources were to be developed in the Kissimmee and Okeechobee areas, the park would have a priority for its needs.

MEANWHILE a new danger arose, the proposal to build a giant jetport to occupy some forty square miles of Big Cypress Swamp, spreading noise, pollution, roads, facilities, and traffic throughout the heart of the Big Cypress and Everglades country, through which the vital water flowed down to the park. Conservationists organized the Everglades Coalition, one of the most powerful combinations of environmentalists ever brought together, and later the Environmental Coalition for North America, and succeeded in stopping the jetport, getting guarantees of removal of one runway which had been built and hopefully relocating the jetport at an ecologically acceptable site.

BUT THE DANGERS for Big Cypress, and with it the vital flow of water to the western side of the park, were not yet over. Dredging and filling for real estate speculative purposes were gathering momentum. The National Parks and Conservation Association and the National Audubon Society together brought suit to enjoin the destruction of Gum Slough by these methods, and won a temporary victory, but the issue is still in doubt.

Proposals were then advanced by the President and by Congressional leaders for the acquisition of most of the Big Cypress for inclusion in a national recreation area within the National Park System. Most recently the State of Florida has offered to purchase a substantial portion of Big Cypress if the federal government will acquire the balance. A controversy rages between the Administration and

Continued on page 35

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COVER *Black Canyon of the Gunnison, by Ed Cooper*
Meandering streaks of delicate but sharply contrasting hues decorate Painted Wall, towering starkly 2000 feet above the Gunnison River. Over the eons the forces of earth-building have dealt harshly with the plateau's underlying rocks, which have been squeezed, distorted, and invaded by veins and stringers of lighter colored granite. Many awesome sights await the intrepid traveler who will venture through the depths of the dark canyon. (See page 4.)

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weathered american chestnut trunk
jack jeffers photograph

BLACK CANYON

DARK CHASM OF BEAUTY AND GLOOM

A TRIP THROUGH COLORADO'S RUGGED GORGE CHALLENGES HIKERS' ENDURANCE AND LENDS INSIGHT TO AN ANCIENT INDIAN SUPERSTITION

MICHAEL HAMRICK

The Ute Indians, who for centuries camped and hunted in the area of the Black Canyon of the Gunnison River in southwestern Colorado, held a superstitious dread of that awesome gash in the earth's surface. They believed that anyone traveling through the canyon would never come out alive. Today many parties have traveled through the canyon by raft and on foot. We decided to attempt the latter mode.

The four of us departed from East Portal at 9:00 a.m. on a Saturday morning in October. The weather was overcast, and a light rain had fallen earlier that morning. As we waded into the knee-deep water below the Gunnison Tunnel Diversion Dam with our destination thirteen miles and four days ahead, I could not help being slightly apprehensive.

At The Narrows, five miles below the beginning of our trip at East Portal, the river narrows to sixty feet wide and the canyon walls rise vertically for two thousand feet. We saw waterworn sculpture like that below throughout our trip.

PHOTOGRAPHS BY MICHAEL HAMRICK

Near the general store–gas station village of Sapinero, in southwestern Colorado, the Gunnison River has carved a narrow chasm westward for about fifty miles. The most spectacular part of this canyon lies within the Black Canyon of the Gunnison National Monument. The name refers to the shadowed blue-grey gloom of the light in the canyon.

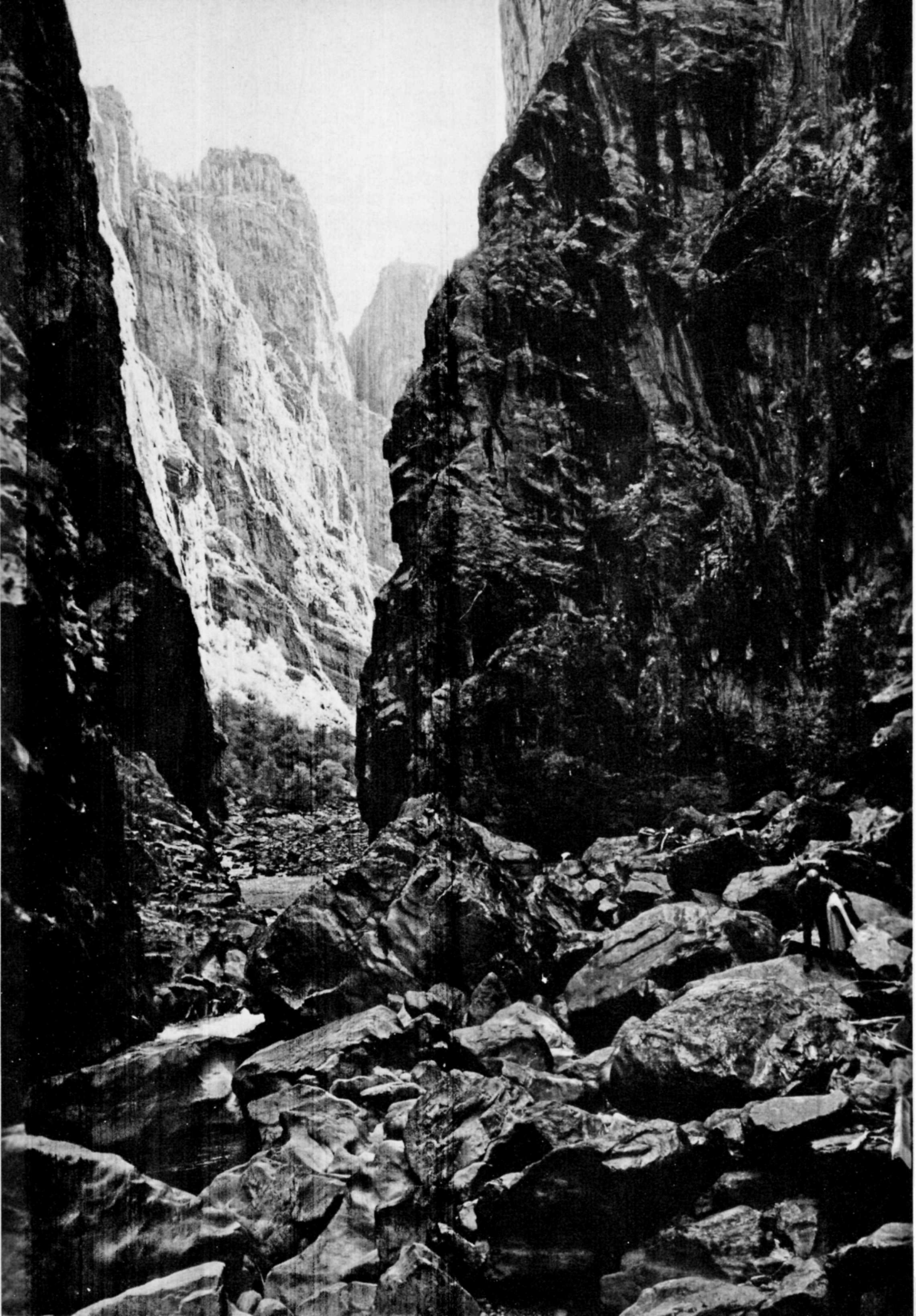
Undisputedly, the Black Canyon is one of the great wild canyons of the southwest, with a savage beauty all its own. The depth of the canyon, measured from Vernal Mesa (elevation 8,000 feet), ranges from 1,730 feet to 2,425 feet within the boundary of the national monument. The distance from the north rim to the south rim is 1,300 feet at the most narrow section, and riverbed width is 40 feet.

Geologists believe that the process of erosion through the schist, gneiss, and crystalline-granite that form the canyon walls took more than 2 million years. In the eastern part of the monument sheer pinnacles and needles as high as 400 feet abound.

Traveling on the north shore we covered the first mile making good time on a trail made by the footsteps of many fishermen. Abruptly the trail began to steepen and finally came to an end. Ahead lay a deep pool at the bottom of a vertical thirty-foot wall. We investigated the possibility of climbing higher in hopes of going above and around it, but an easy pitch could not be found.

Turning back, we walked upstream a short distance to a flat, rocky area and changed into sneakers, which we would wear on all crossings. (Sand in our hiking boots would have caused much grief.) I stepped into the 53° water first and found out quickly that the moss-covered river rocks had no intention of letting my sneakers hold onto them. Almost losing my balance, I returned to shore and found a large stick of driftage to use as a third leg.

We were required to cross the river several times during the morning to avoid vertical cliffs that descended into deep pools of blue-green water. The previous week we had discussed river crossings at length, and I found myself dreading them at various times during preparation for the trip. Frankly, I did



not look forward to them, because I am not a strong swimmer; nor did I like the idea of being cold and wet. Much to my delight the crossings were very pleasant, and the cool water had a soothing effect on my hot, tired feet.

All along the river large rocks had been carved by the water into beautiful pieces of sculpture. Dipping up and down, we frequently had to climb as much as fifty feet up the canyon walls to avoid large piles of boulders and driftage. In some places it was easier to travel higher on the wall than to negotiate these chaotic piles, even though we had to push our way through heavy brush.

Rain persisted as the afternoon wore on, becoming ever heavier until we were forced to take shelter in a driftwood lean-to, which we luckily discovered at the height of the downpour. Our lug-soled boots were no better than skates, and no amount of finesse would make them hold to the slippery rocks. A fall would have meant more than bruises.

We were fascinated by numerous rock spires that began at the water's edge and disappeared into the fog 200 feet above the river. It seemed as if the ceiling of fog were being supported by these tremendous needles, some of which were as much as fifty feet in diameter.

Soon the rain stopped and we continued slowly. To our surprise the canyon began to widen, and we were again walking on a fisherman's trail with tin cans peering out at us from under the brush and small clumps of grass. Obviously, a route down to the river from Gunnison Point existed.

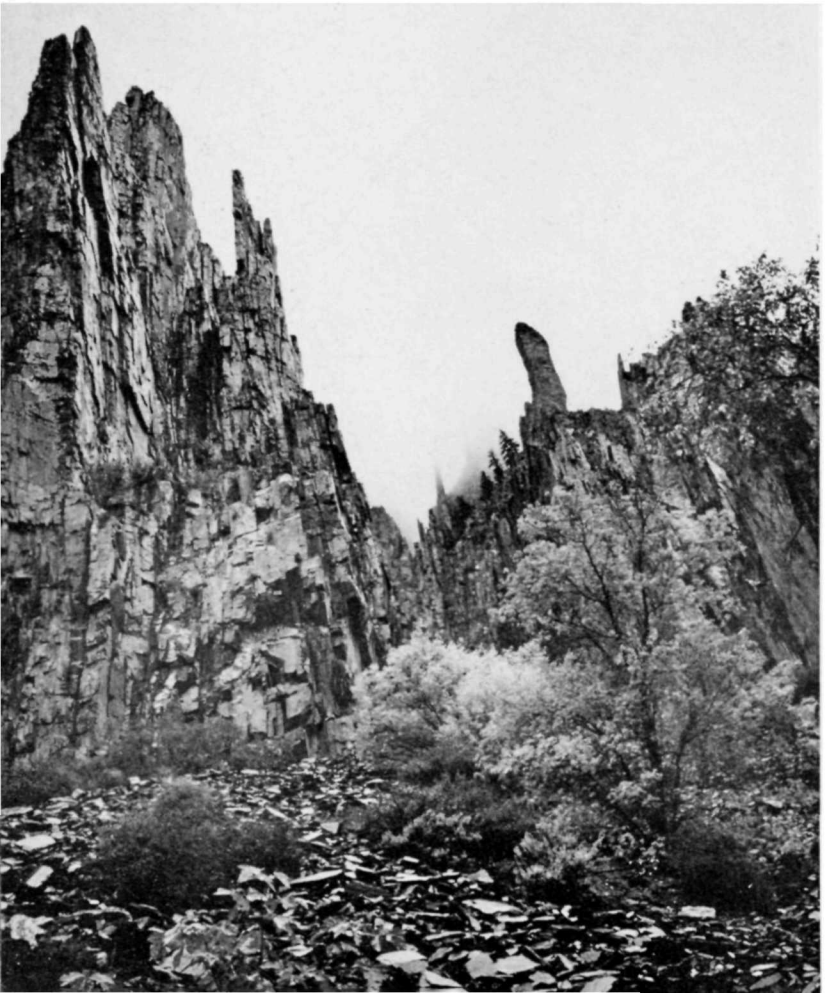
We scrambled over boulders, through some underbrush, and half-fell, half-slid down a large rock and onto a sandy beach thirty feet wide and sixty feet long. It had an overhanging roof of solid rock to shelter us from the mist that still persisted. We lost no time preparing camp and had a good fire going by 6:30 P.M.

Next morning, the slit of light above us was blue. We could see the south rim and clearly make out the hand railing and fence at Pulpit Rock View.

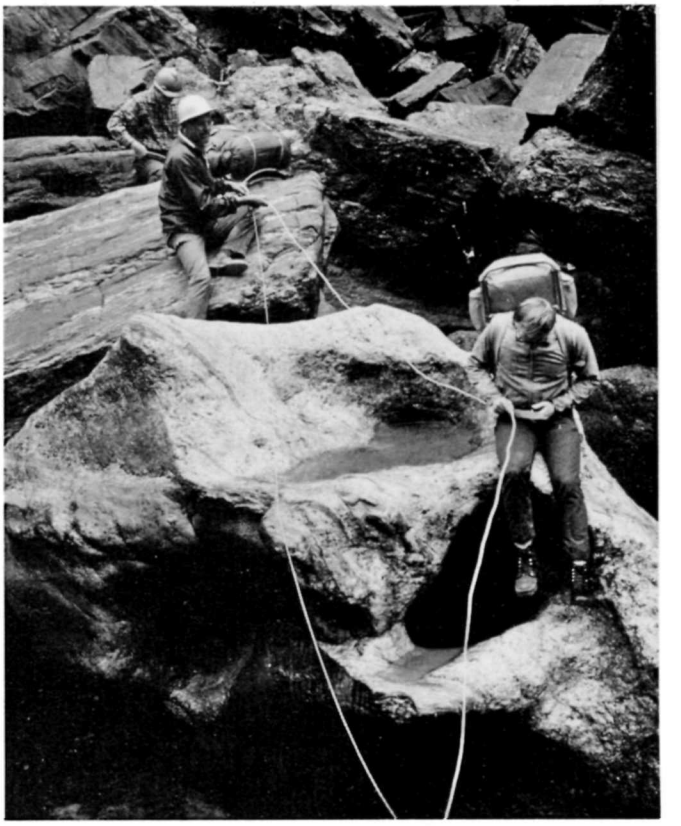
We were on our way by 9:00 A.M. and had not gone far when the canyon walls began closing in on us. The riverbed at this point was completely blocked by boulders from rock slides, some as large as railroad cars. The water was flowing around, under, and through them. All the rocks were covered with lichens, and we did not feel at ease while standing on them. One slip would mean a fall into the churning water and probable death, as one would be sucked under the rocks. We roped up and crossed the river to the south side and lined over our packs on a temporary tramway.

We negotiated ledge after ledge, crouching as we passed overhanging rocks so they would not snag our packs and throw us into deep pools of azure water. It took us most of the morning to cover one mile. By noon we were confronted by vertical rocks on both sides of the river, known as The Narrows. We pro-

Needles below Gunnison Point—those on the left about 400 feet high—seem to support a ceiling of fog.



With the riverbed clogged with enormous boulders, Dick prepares to belay Terry across the slick rocks.



ceeded to lash together our air mattresses with pieces of driftwood while the sun shone warmly on our naked bodies and caused our spirits to rise. Our preparations for transporting gear on the raft were going well, and the water felt good after we had been working in the sun for thirty minutes. Once ashore we moved on downstream to a sandbar and lunch.

We had no sense of scale in the gorge. We would sight an outcropping of rock ahead that looked no more than a hundred yards distant, yet thirty minutes of walking as hard as we could push brought it no closer. At 1:00 A.M. we could see Painted Wall rising 2,000 feet above the river, but it had not grown much larger by 4:00 P.M. We were all getting tired, especially Dick, who at fifty years of age was keeping up with and sometimes getting ahead of me, slightly more than half as old as he.

Dense thickets of currant, wild grape, and poison oak "trees" as large as three inches in diameter hampered our progress along the north shore. At places we came upon isolated piles of driftwood, some as much as sixty feet in elevation above the present water level of the river. It was difficult to imagine the quantity of water that had deposited the piles that high and the amount of energy it would contain. There was no way to determine how long these piles had been resting at their present location. Some piles contained pieces of milled lumber as well as pieces of tree trunk. One pile included a tree fifteen inches in diameter and about twenty feet long.

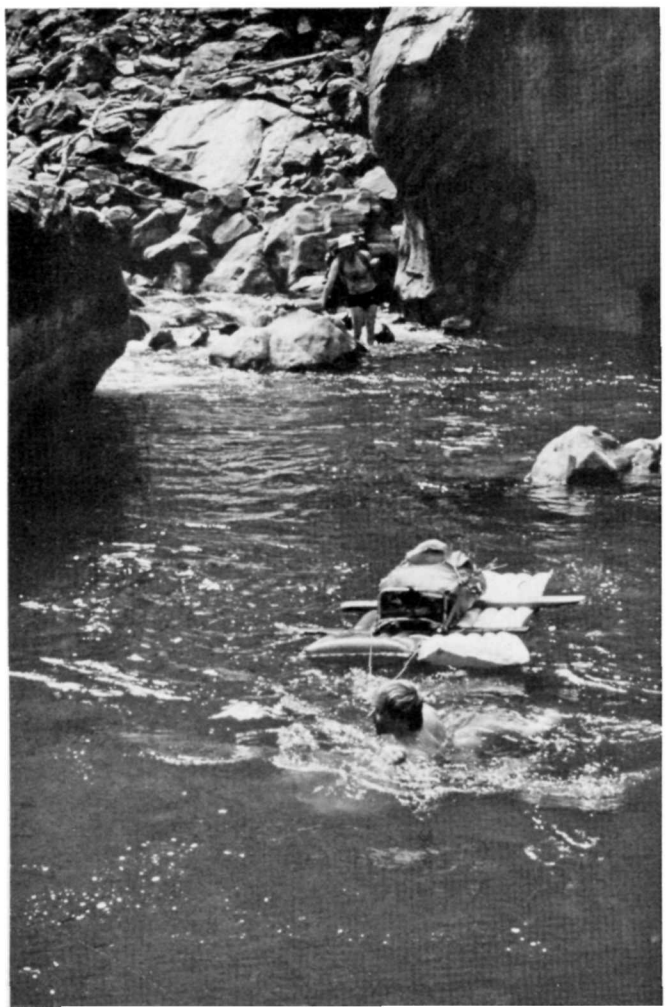
Keeping our balance on the steep slope of the canyon wall was difficult. I stopped from time to time whenever I came to a secure spot and looked around in amazement at the vast expanse of vertical rock that had only a narrow opening directly overhead to let in the daylight. The demands of our strenuous pace were becoming obvious as I stumbled through thickets of poison oak growing out of the talus.

As we passed directly below Chasm View Overlook, we came upon an odd assortment of artifacts that reminded us of a civilization high above. An old "Dobbs" hat had been snared by a small bush. Over there was a coke can. Here, a smashed pair of sunglasses. Climbing over an outcropping of rock, we broke out of the brush to enjoy a fine view of the river 200 feet below us turning to the south just past Chasm View Overlook. We would make camp here.

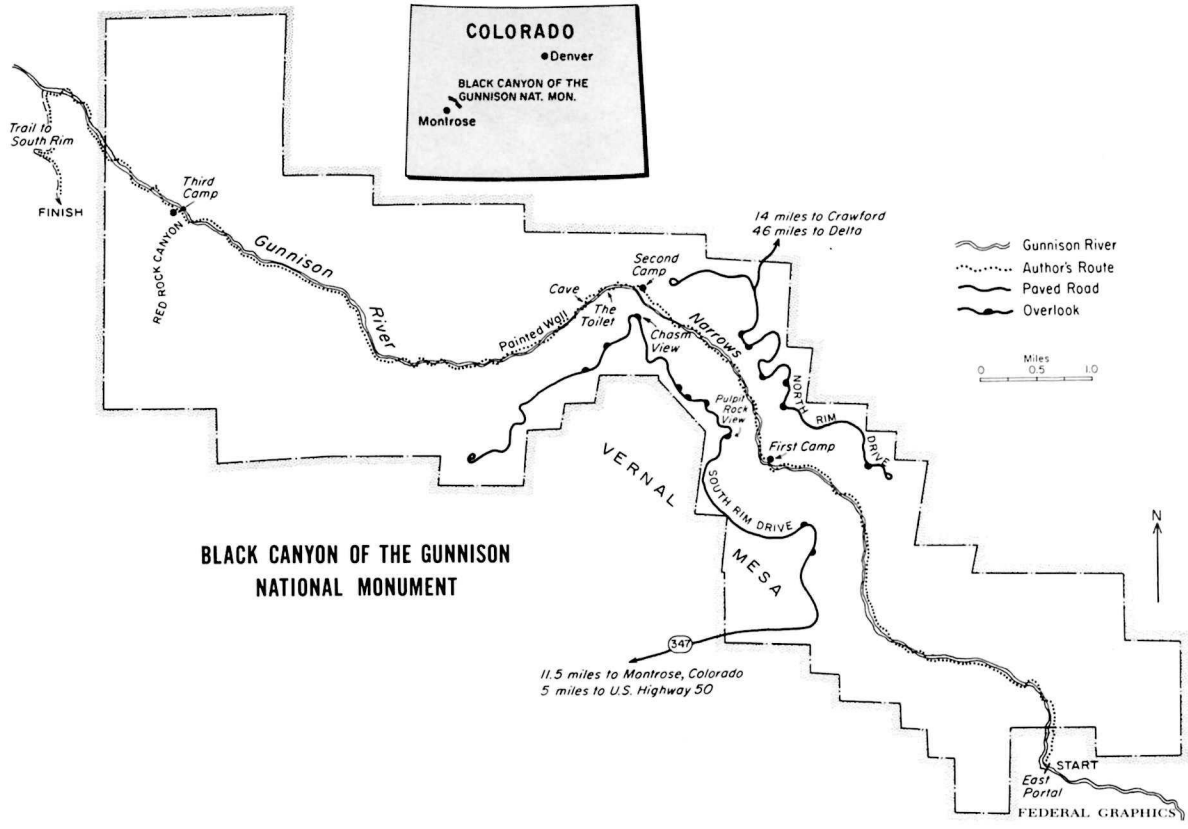
Working with driftwood and small flat rocks, I was able to construct a flat area about two feet by five feet on which to put my body for the night. The others made pallets wherever they could. We were lucky to find that our camp for the night had an abundance of dry firewood, which we used to broil trout for supper. This feast required most of the evening.

The third day I awoke at 6:00 A.M. and lay on my rock bed studying the somber patterns and shapes on the blue-grey canyon walls. I could not see the sky from where we had slept, and I looked into what seemed to be a large water tank of solid rock.

We had to cross the river many times during our trip—here just upstream from The Narrows.



Water churning under the hole in this rock inspired our dubbing it "the toilet."



The two days of walking on hard rock and uneven surfaces had made our feet very sore. I put on three pairs of socks to cushion my feet from the constant bruising they would receive again this day.

We organized our gear as quickly as possible and ate a hurried breakfast. After covering 100 yards we crossed over to the south side of the river, which was again completely covered by rock slide. Our pace was slow because of our sore feet and the uncompromising terrain. After an hour we could still view our previous night's camping place. By 10:00 A.M. we were confronted by boulders so large we could not climb over them, and a roped river crossing was in order. Traversing this chaotic section of rubble, we came upon a rock thirty feet in diameter with a large hole in it. The churning water below made it resemble a flushing toilet.

Another hour passed, and we arrived at the cave at the base of Painted Wall. Inside we found that it contained evidence of many visits—the last one by members of a float party four months earlier. We found their rubber raft in shreds and a note saying they planned to hike out Red Rock Canyon.

For several hours we did not stop, and, as the miles fell past, the canyon opened up and the bright blue sky and sun were a welcome change from the depressing monotony of subdued light. By early afternoon we had made six crossings. There were many side canyons, most of them dead-ending abruptly at sheer cliffs below the south rim.

Crossing the river became more difficult in the weakening light. Shallow areas could not be distinguished from deep ones. We made camp on a sandy beach just below Red Rock Canyon. While wet clothing dried by the fire, we sat and talked about the trip. Brown trout broiled in butter supplemented our freeze-dried fare.

The fourth day we continued downstream and turned south on a trail known by local people as the Wildcat Trail; however, it is not marked on any map. An hour later we emerged onto the open, rolling, sunny expanse of the south rim.

After the rigors of our trip and the gloom and isolation of the deep, narrow canyon we understood more clearly the superstitious fear the canyon had generated in our Indian predecessors. ■

Hikers or rafters making the trip through Black Canyon of the Gunnison should allow a minimum of four days. For reasons of personal safety, all parties should contact the U.S. Bureau of Reclamation's Power Operations Dispatch Center, Montrose, Colorado (303-249-4551), and ascertain the amount of water to be released and in what velocities during the days of their trip. Two hydroelectric generating plants immediately upstream from the national monument may release water as necessary to meet electric power demands and cause the river elevation to fluctuate over a range of up to twenty feet within several minutes.

Black Canyon of the Gunnison National Monument is covered on U.S. Geological Survey 7½-minute quadrangles Red Rock Canyon and Grizzly Ridge, Colorado (available at USGS map distribution outlets).

THE DESERT TORTOISE

R. Bruce Bury
Ronald W. Marlow

ENDANGERED SPECIES

WILL IT SURVIVE?

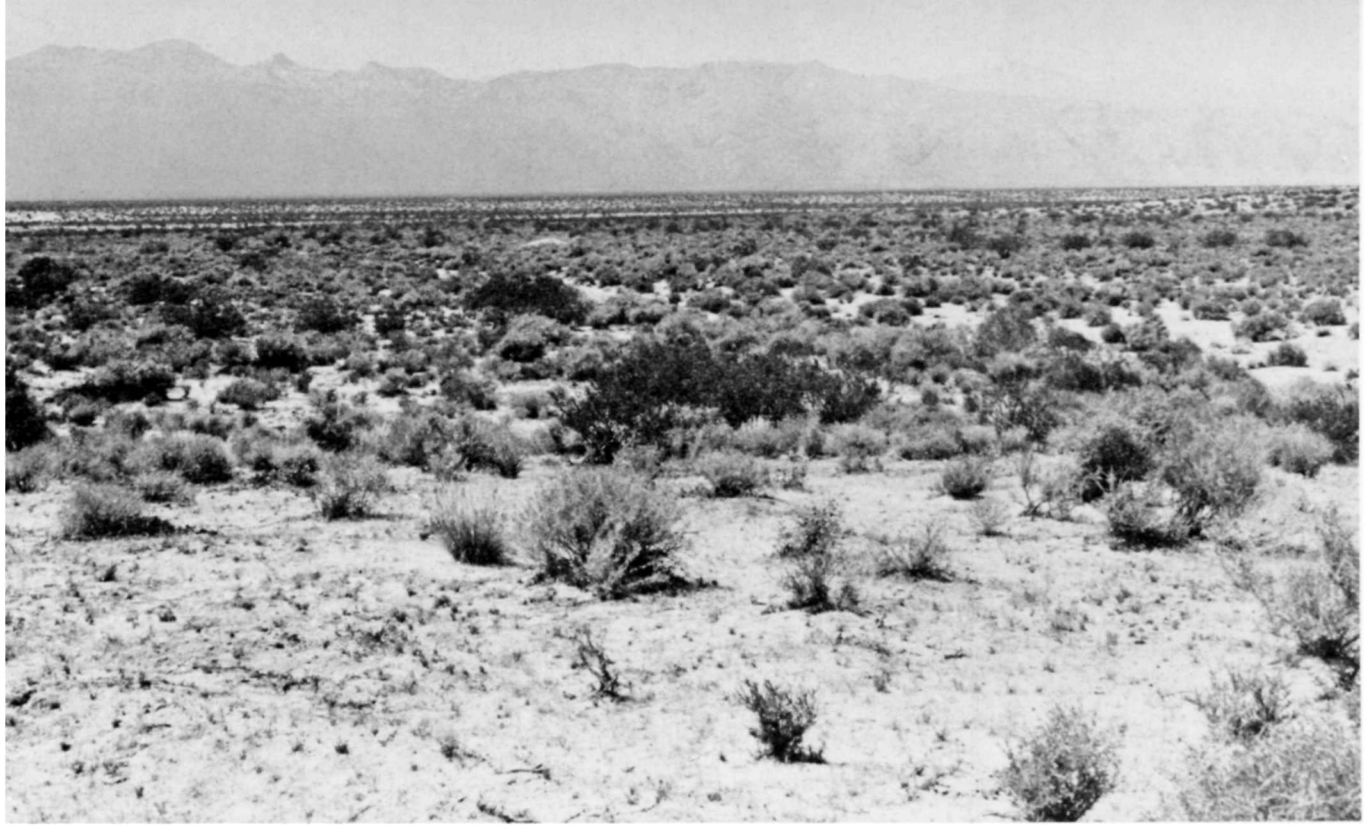
Man's developments and machines are encroaching the habitat of the desert tortoise

As the desert tortoise lumbers across flat or dune, its dome-shaped, armorlike shell and slow, deliberate movements suggest a miniature tank on reconnoiter. The military image is misleading, however, for the desert tortoise is completely harmless and inoffensive to man. Unfortunately, man is not harmless to the desert tortoise, and the reptile is threatened with extirpation throughout large parts of its range.

The desert tortoise is one of four North American species of true tortoises, all of which belong to the genus *Gopherus*. They represent one of the most ancient groups of animals and are the largest desert reptiles of the New World. The Texas, or Berlandier's, tortoise, *G. berlandieri*, is found in southeastern Texas and extreme northwestern Mexico; the gopher tortoise, *G. polyphemus*, lives in the Gulf states; and the bolson tortoise, *G. flavomarginatus*, is a relict form restricted to the margins of a few dry lake beds in north-central Mexico. The desert tortoise, *G. agassizi*, occurs in lowland deserts of western Sonora, western Arizona, southern Nevada, the southwestern corner of Utah, and the Mojave Desert of California.

The deserts of southwestern North America are hostile environments for any animal. Austere conditions include long droughts, sporadic rains, poor drainage, flash floods, violent sandstorms, shifting sand dunes, large fluctuations in daily temperature (with up to a 50°F difference between night and day), freezing winter conditions, hot summers, sparse vegetation, and saline or alkaline soils. Nevertheless, thousands of years of evolution have adapted the desert tortoise physically and behaviorally to withstand the rigors of desert life.

The long life span of this tortoise helps account for its survival in arid environments. Individual turtles mature between twelve and eighteen years of age and may live fifty years or more. Their long span of reproductive years provides opportunity for the production



The desert tortoise is well adapted to life in our southwestern deserts . . .

of many clutches of eggs. This is vital to the species because of a high mortality of eggs and hatchlings through desiccation, heat, and natural predators. While heavy armor and large size help to protect the mature tortoise from predators and harsh desert conditions, the shells of young tortoises are soft and do not fully harden for five to ten years. During this time the young tortoises are at the mercy of most predators.

During drought years and other periods of exceptionally severe environmental conditions, when forage is greatly reduced, the tortoise lessens or stops its surface activity. It lives underground in burrows, nourished by body stores of water and fat until conditions allow it to emerge. The underground retreats also provide shelter from roaming predators and other desert stresses. The desert tortoise digs its own burrow, characterized by a dome-like entrance necessary to accommodate its high shell. In spring some tortoises use several burrows in the course of a few days, whereas others return to the same burrow each night. During mild weather desert tortoises frequently may be found in shallow burrows or, occasionally, parked for the night under creosote bushes or in shallow depressions. In hot weather these tortoises seem to use deep burrows, some of which extend more than ten feet underground. The burrow is home and castle, and loss of such an underground retreat spells death.

The life style of the tortoise differs from that of either mammal or bird. Warm-blooded, mobile desert animals sometimes migrate to new areas; the tortoise seems to live its life in a well-defined area. It is the original landowner in many parts of the southwestern deserts; but it does not compete with livestock, harm crops, or annoy humans.

Remarkable as the natural endowments of this animal may be, they are of little help in coping with modern man and his ever greater intrusions into desert tortoise habitat. Tortoise populations are mostly composed of adults, many of which have been in the population for decades. The death or removal of a few large tortoises, perhaps even only one in some situations, can destroy a population's breeding capacity for many years. More and more highways, off-road vehicles, agriculture, and suburban development have already decimated many tortoise enclaves.

Throughout its range the desert tortoise is afforded some protection by laws or regulations, but these have not proved adequate. Mexico requires a special permit to capture and export tortoises; and because tortoises now are protected wildlife, permits generally are not granted. Arizona law forbids killing of tortoises; they may not be sold, offered for sale, bartered, imported, or exported without authorization from the Arizona Game Commission. Catching or killing the animal is illegal in Nevada. A law protecting the tortoise recently was enacted in Utah. California has the most stringent regulations: it is unlawful to sell, purchase, needlessly harm, possess, take, or shoot a desert tortoise. In 1972 the tortoise was selected to be California's "state reptile." Recent California legislation prohibits importing or selling any North American tortoise of the genus *Gopherus*.

In spite of such laws the desert tortoise is still threatened over much of its territory. Wildlife biologists Howard Leach and Leonard Fisk of the California Department of Fish and Game report that the species is seriously threatened with extirpation in many parts of California. They expect urbanization to virtually

eliminate the animal from the upper reaches of the Mojave Desert. It is likely that its status in other states is no better.

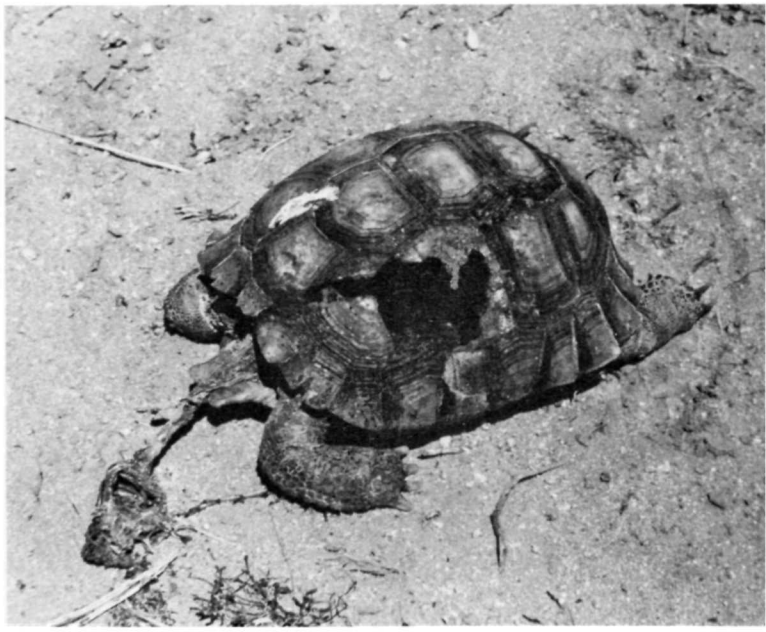
Surveys of desert tortoise populations in the western Mojave Desert by the authors indicate some of the direct causes of their decline. Every year more suburbs and cabins encroach on the desert. High-powered sales pitches convince people that they should buy lots for retirement or speculation. Desert flats are bulldozed and laced with roads for future developments; then the areas lie fallow. Some of these schemes presently are faltering because of a slowing of California's growth rate, but the bare desert earth remains as a grim memorial to former plant and animal communities. Agriculture, new freeways, and recreational developments engulf large parcels of desert land. Flocks of sheep strip annual plants from the desert as they sweep across private and public lands every year.

Some people take pleasure in shooting defenseless animals. Bullet-riddled carcasses of the desert tortoise rot along many desert roads. On only two miles of dirt road north of California City in the Mojave Desert we found eight dead adult tortoises that had been shot. An individual in southern California boasted to us about how he uses young tortoises as skeet targets. A federal trapper in the Mojave Desert reported one of the cruelest incidents we have heard: a sadistic person lined up forty-seven tortoises and killed them all with shotgun blasts. Such occurrences pose a challenge to responsible sportsmen, because if these few people are not curbed, it may be judged necessary to regulate tightly or ban hunting on the open desert.

Automobiles are another major contributor to the decline of this tortoise and other desert life. Large numbers of animals are smashed on both paved and dirt roads each year. The present flurry in construction of more freeways and secondary roads will only compound the problem. We have learned that some drivers veer off the pavement in order to hit tortoises and hear them "pop" under the wheels of their vehicle. A desert naturalist reported an incident in which fourteen tortoises were placed under a wooden plank to be crushed by a car driven over the board.

The increasing popularity of dune buggies and dirtbikes—stripped-down, high-powered, noisy off-road vehicles— poses one of the worst menaces to tortoises and other desert wildlife and vegetation. This problem increases dramatically each year. California alone estimates over 800,000 off-road vehicles in the state, and most of these are used in the desert. Such machines tear up the delicate layer of desert topsoil, kill vegetation, smash creosote bushes, gouge the land, collapse tortoise burrows, hit tortoises and other animals, crush nests, and generally raise havoc with wildlife.

For many people locked up all week in cities, escape to the open desert is a major weekend activity. Unfortunately many people do not come for peace and relaxation with nature. Instead they unleash their



PHOTOGRAPHS BY RONALD W. MARLOW

. . . but
the tortoise
cannot cope
with
modern man's
intrusions
into
his habitat.

frustrations by terrorizing the desert with noise, air pollution, litter, and machines—the very things other visitors come to escape.

The frequent cross-country races are nothing more than organized mayhem. One example stands out. The 1971 Barstow to Las Vegas Hare-n-Hound motorcycle race enlisted over 2,000 riders for the "world's largest bike meet," which cut a 150-mile course across lowlands and mountains. It was great action for the motorcyclists, but a time of devastation for the desert. More than 150 organized off-road vehicle races were held on public lands in California in 1971. The desert cannot survive with its present occupation by man's mechanized army.

The plight of the desert tortoise is not hopeless. We need positive programs to protect its habitat and ensure its survival. Some individuals, governmental agencies, and conservation organizations are trying to promote concern for the animal. In 1970, for example, the California Department of Fish and Game cited a man for collecting tortoises for the pet trade. He had shipped 105 animals to a pet store in Utah, and he had 185 tortoises in his possession when he was apprehended. A local judge fined him the maximum $500. This was the first prosecution for illegal possession of tortoises. Two national herpetological societies have endorsed resolutions calling for a ban on the sale and trade of all North American tortoises, and for increased efforts on the part of states to protect habitats within their boundaries. The desert tortoise appears on Appendix II of the recent International Convention on Trade in Endangered Species of Wild Flora and Fauna, which at the very least may help to mold public opinion in matters of wildlife protection. Also, implementing legislation in the U.S. in this respect will almost certainly cover interstate commerce in this species, which also will be helpful.

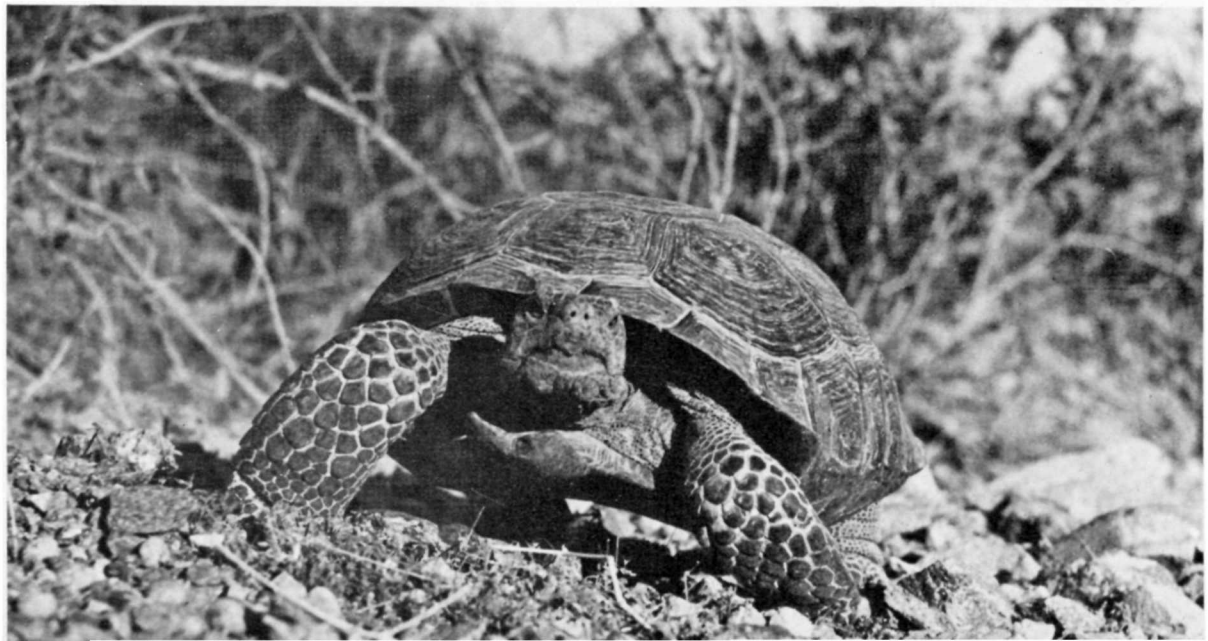
One proposal for reducing tortoise deaths on roads is to move tortoises into new homes away from highways. The desirability of transplanting tortoises, however, is in serious doubt because many tortoises do not survive the move. Alternative measures are available, including installation of low fences along freeways and other high speed roads. Drivers can be told to be on the lookout for tortoises, and road signs indicating tortoise crossings on secondary or dirt roads might reduce the mortality.

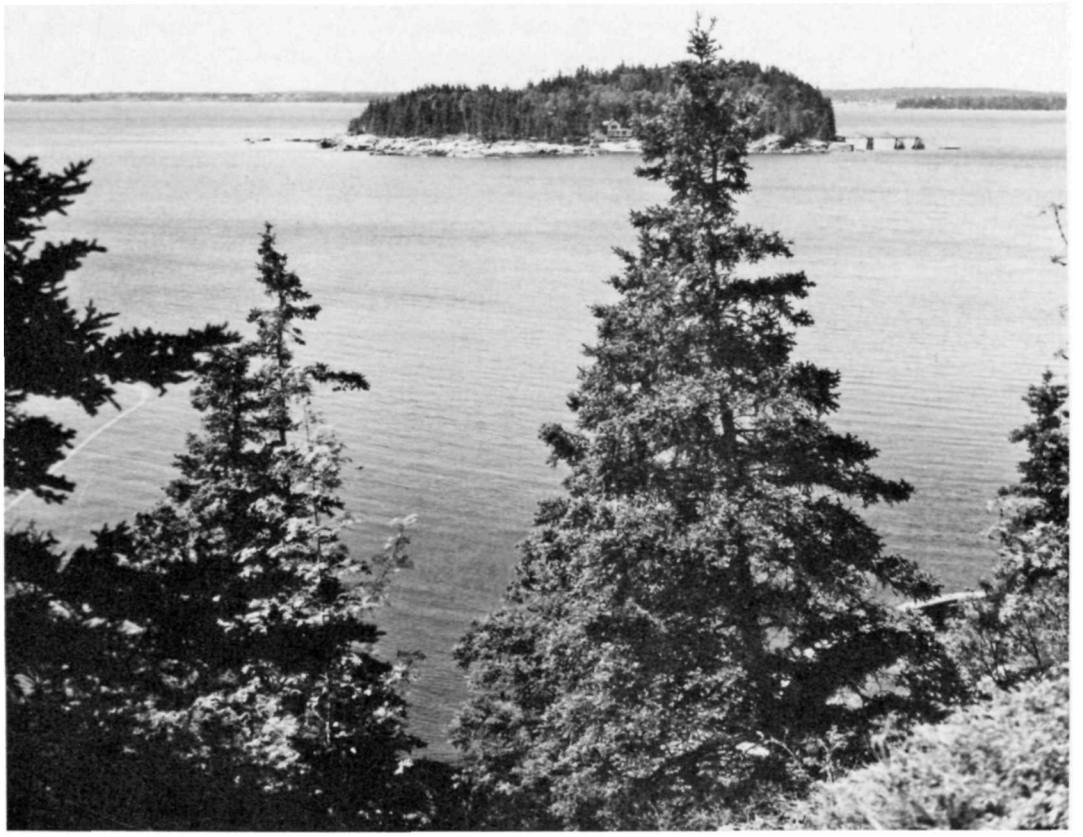
Some curious and well-meaning people take tortoises home as pets. Although this is illegal in California, thousands of tortoises are believed to be in captivity. These private holdings deplete wild populations and serve also to encourage others to obtain their own animals. Desert tortoises are adapted to breed and survive in the desert, not in the home. Captive animals do not readily re-adapt to the rigors of the desert and, in fact, may die if released. Returned tortoises that survive cause genetic mixing of populations in different regions, which is detrimental to natural biological phenomena.

Some progress is being made to set aside suitable areas for desert wildlife. Several federal research natural areas, national monuments, and California state parks exist in the desert region, but relatively little lowland desert is protected. The Bureau of Land Management is considering establishment of a large parcel of low desert in the western Mojave Desert as a reserve where tortoises and other wildlife can roam unmolested. A military base is in process of setting aside part of its lands for a desert wildlife reserve.

Comprehensive plans for conserving every major desert region should be formulated soon, and appropriate areas designated for preservation of natural resources. Human intrusion on and recreational use of these areas should be limited. If these measures are accomplished, the desert tortoise will be able to continue on its harmless way in its natural homeland living free and in safety. ■

Bruce Bury is chief of the herpetology section of the Bird and Mammal Laboratories, U.S. Bureau of Sport Fisheries and Wildlife, Washington, D.C. He recently completed a doctorate degree at the Museum of Vertebrate Zoology, University of California at Berkeley. Ronald Marlow is a graduate student at Berkeley. Both men are actively working to protect natural areas in western North America to assist endangered species.





PHOTOGRAPHS BY RUSSELL D. BUTCHER

Conservation easements by private landowners are helping to save the wild beauty of the coast of Maine and point the way for similar actions elsewhere

A NEW APPROACH TO CONSERVATION IN MAINE

RUSSELL D. BUTCHER

THE RUGGEDLY BEAUTIFUL COAST of Maine is a unique region, more like parts of Scandinavia than the United States. As the gull flies, the distance between Kittery and Eastport is only about 230 miles. Yet, if the scores of bays, harbors, coves, points, and peninsulas were straightened out, the coast would extend for more than 2,600 miles. Add to this the 2,500 coastal islands, which range in size from 100 square miles down to clusters of spruce-covered islands of a few acres each and tiny treeless ledges where great colonies of gulls and terns nest in summertime.

For many years people in Maine have been quietly working to save some of this wild beauty. Beginning at the turn of the century, private individuals began acquiring some of the mountains, lakes, forests, and seashore on the largest island, Mount Desert—a program that led ultimately to the founding of Acadia National Park. In addition to protecting some 30,000 acres on Mount Desert, the park includes lands on Isle au Haut, part of mainland Schoodic Peninsula, and a number of smaller islands. Acadia is still the only national park in the northeastern states and the only one in the country made up entirely of lands donated to the federal government.

In more recent years several conservation-oriented organizations have acquired, by gift or purchase, a number of small islands and coastal properties, which they maintain primarily as nature reserves. A few other places are protected by the U.S. Fish and Wildlife Service and various state agencies.

A new approach to land conservation is beginning to supplement the achievements of these existing programs. It is called the conservation easement—an ingenious legal device by which landowners may establish environmental safeguards for their property while continuing to own it.

Interest in the conservation easement concept arose several years ago because the majority of coastal islands were still vulnerable to rapidly increasing pressures of real estate speculation and development. Most of the islands are privately owned, tenuously protected by individuals who live or summer there and who cherish the wildness and quiet, simple kind of life.

There was no guarantee that these places would always remain undisturbed and unchanged. In earlier years their vulnerability to major disfigurement was minimal, because relatively few people were interested in Maine islands. But as increasing numbers of city people have begun looking for coastal and island properties, land prices have climbed from only a few dollars to thousands of dollars per acre. Real estate speculators have started moving in, eager to cash in on the new opportunities.

At the same time higher rates of land taxation have begun to penalize those who want to keep their properties beyond the grasp of subdividers. Inflation of land values has also steadily eroded the ability of conservation groups and government agencies to purchase lands for protection.

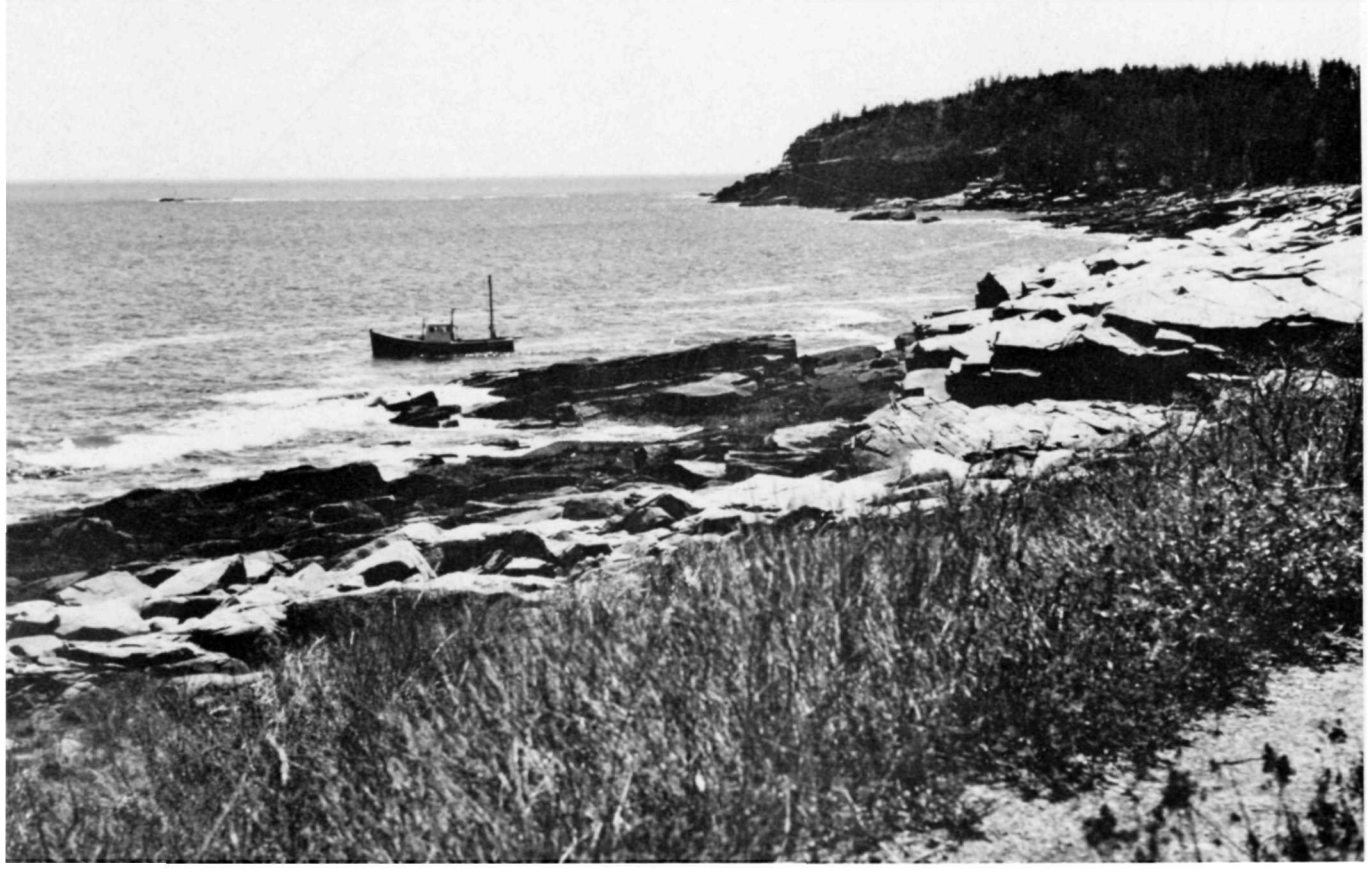
Consequently, in February 1970 the Maine state legislature responded to the growing coastal threat by passing a bill that permits widespread application of the conservation easement. Under this landmark environmental law, conservation easements are binding written agreements between a landowner and a governmental agency by which the owner voluntarily places specific restrictions on the use and development of his land. He then gives the state or federal land-management agency the right to enforce his restrictions in perpetuity. This does not mean the land becomes public property, nor does it give the public a right of access. It simply means that the owner has legally ensured the protection of important scenic and environmental qualities while continuing with his own private use of the land.

The owner benefits from tax incentives brought about by a likely reduction in the market value resulting from the existence of the easement. In general, one could expect that the more restrictive the easement is, the greater the reduction in land value and the lower the property tax. Or at least, over the years, the rate may rise more slowly than on lands without such an easement. Under existing federal tax policy the owner may deduct the value of a conservation easement that he has given to a governmental agency or a charitable private organization.

Unlike lands in a state or national park or wildlife refuge, his property continues to provide tax revenues in support of the local economy—an especially important consideration in Maine.

The specific terms of conservation easements may differ widely. Some prohibit any alteration of the natural landscape or construction of new buildings, while others provide for limited development in the future, such as new dwellings for heirs. A twenty-acre island in the midcoastal region, for instance, is pro-

Lobstering along the Maine coast.



tected by an easement that allows only the one existing house or its replacement, stipulating that it must continue to be screened by trees from the view of passing boats and must not be relocated to the seaward side of the island, which fronts on the heavily traveled waterway.

Easements elsewhere allow for small-scale farming or somewhat higher housing densities than currently exist. Yet, all easements set definite limits on future development that avoid the often intensive and abusive impact of corporate land developers and speculators.

In October 1971 the Maine Coast Heritage Trust, with headquarters in Bar Harbor, was founded by a group of concerned local and out-of-state citizens. This is the first organization created to help implement the 1970 law by informing interested property owners of the conservation easement opportunity "for long-term protection of their land against inappropriate private developments."

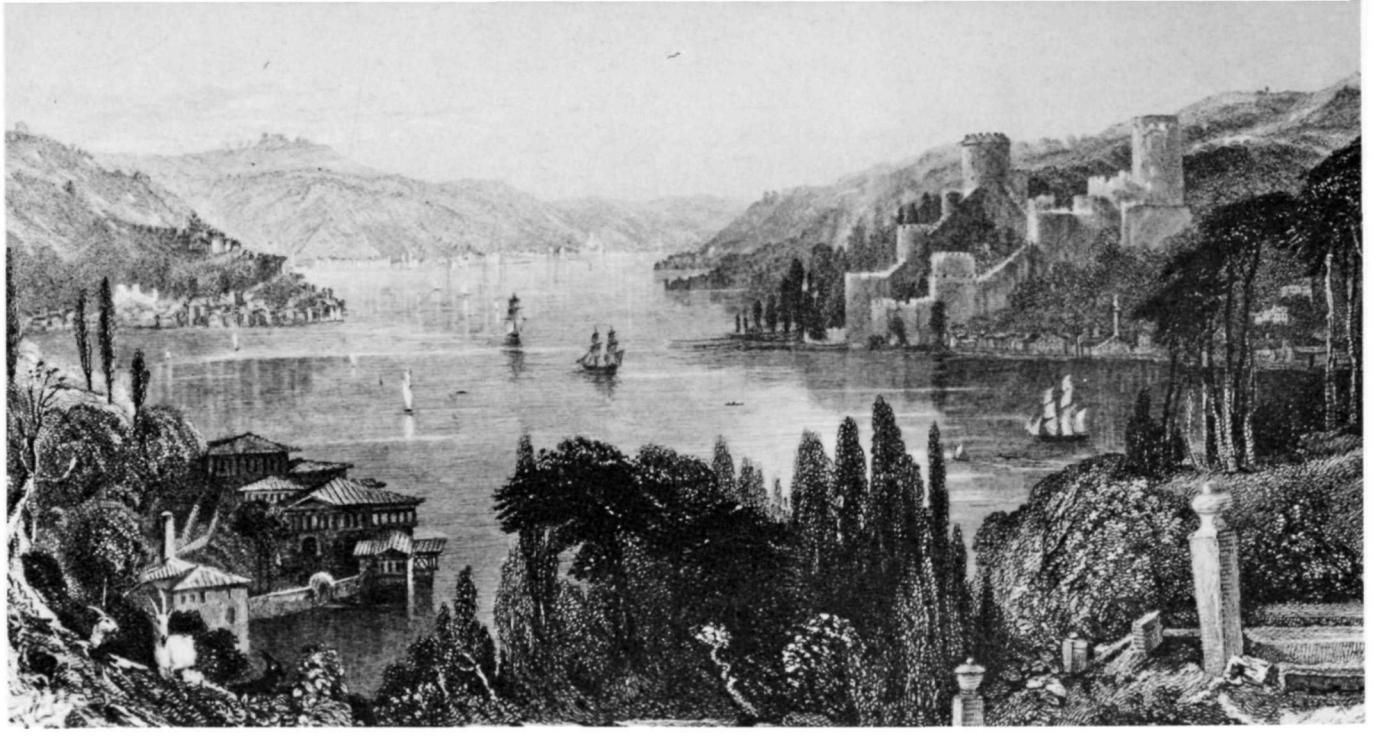
Since then several staff members, assisted by many volunteers, have traveled up and down the coast, meeting with scores of landowners, discussing with them the wide variety of easement options, and helping some of these individuals draw up easement agreements.

Progress in these first few months has been extremely encouraging. Easements now cover thirty-seven island properties, totaling about 4,000 acres. Some of these include the whole of an island or even a group of islands, while others apply to parts of islands. The responsibility for enforcing these easements has been given either to the National Park Service, the Maine State Park and Recreation Commission, or (recently) The Nature Conservancy. Prospects look favorable for increasing progress in the months ahead, as the idea spreads and more island owners learn of its advantages.

As Robert O. Binnewies, executive director of the Maine Coast Heritage Trust, has said, "The conservation easement provides a means whereby landowners—as custodians of a national heritage—may help assure that the Maine coast will not be adversely changed. We are encouraging them to protect *what is*, so that tomorrow's voyagers along the coast will not inherit only memories of what was."

The conservation easement is, thus, rapidly taking its place as a significant part of the overall effort to save the Maine coast from the kinds of development and exploitation that have blighted so many other areas of the world. The success of this approach hopefully will encourage people elsewhere to follow Maine's example—especially where, as here, it may not always be possible or desirable to purchase lands outright for parks and nature reserves. ■

Russell Butcher has long been a contributor to this Magazine. His new book, *Maine Paradise: Mount Desert Island and Acadia National Park* (illustrated with color photographs by the author and Marie Ivey Menzietti), is being published in June 1973 by The Viking Press. A resident of Mount Desert Island, Russ Butcher formerly held editorial and writing positions with the National Audubon Society, the Save-the-Redwoods League, and the Sierra Club.



the BOSPORUS

a national park on two continents?

article by CHARLES E. ADELSEN
photographs by HENRY ANGELO-CASTRILLON

a proposed intercontinental park in Turkey
would preserve the shores of the Bosporus
from overdevelopment

FOR THOUSANDS of recorded years, and for eons before that, the great seastream of the Bosporus—the only outlet of the Black Sea, that vast landlocked sea constantly fed by the waters of the Danube, the Dniester, the Dnepr, and the Bug—has coursed its way in a generally southward direction between the green hills of Asia and Europe at Istanbul. Man early established himself and his institutions here, and while a city's name has changed from Byzantion to Augusta Antonina to New Rome to Constantinople and finally to Istanbul as Megaraian gave way to Roman, Roman to Byzantine, and Byzantine at last to the Ottoman Turk as its overlord, man did little here to disturb the balance of nature that prevailed on the Straits. And as he built—whether humblest village of fishermen or farmers, or fanciful sea-palace of an emperor, or the rustic *yali*, the waterside mansion of the class of latterday Pashas—man's insistence that palace or village be surrounded by a greenery led him, as it had historically so often in Japan, to lend charm to a natural environment.

The Industrial Revolution—which everywhere else in Europe overthrew the stability of village life and created the evil spectacle of the urban industrial slum, predecessor of our modern urban heartlands of social problems, crime, and the general unrest of the economic and ethnic ghetto—came late to Turkey. In fact, not until after the first quarter of the twentieth century did the Industrial Revolution, with its manifold afflictions and opportunities for mankind, touch the Turkish people at all. With the sweeping social reforms of

In spite of the continuing encroachment of modern high-rises along the slopes of verdant Bosporus hills, remnants of the vanished time of the early nineteenth century portrayed in the engraving by Thomas Allom at left yet remain. Preservation of such areas becomes more urgent daily.

Atatürk, modern Turkey's great founder, industrialization of an erstwhile agricultural people became official mandate, the obligatory aim of a people, for whose Moslem majority life's labor had always meant service for the state—in military or civil service, for the established Faith, now and then as a scholar, and most usually as tiller of the soil.

The Pasha class of Constantinople built great estates, or wooden *yalis*, of many stories overlooking the Bosporus—houses made regal and mysterious by watergates, private entrances by sea for gilded caiques. Such palaces were surrounded by vast tracts of greenwood—not only the lush natural cover of the land but groves of costly imported magnolias or cypress or cryptomeria.

The population of Constantinople, like its titled lords, found its greatest pleasure among the flowering copses of spring hillsides, in meadows deep with grass and bright with flowers. The court itself celebrated Tulip Fêtes that honored the flower native to the Turkish steppe; and as late as the early twentieth century the people prided themselves in being able to identify this or that spring along the Straits simply by tasting of its waters. In a society where religion forbade spirits, thirst was quenched by fruit juices—the original "sherbets"—and especially by water.

At such resorts as the Sweet Waters of Europe or the Sweet Waters of Asia—the latter on the Bosporus' Asian coast where royalty had built itself a tiny rococo palace and where clear streams rich with fish poured into a still-untainted Bosporus—commoner and prince alike consorted where each spring judas trees covered hillsides with violet mist and magnolias were bright bursts of flowers against the somber dignity of slim cypresses. Lindens, so old that each had its own legend, were the pride of each village on the Bosporus shores. Folktales and folkways, a life style all its own, and especially a reverence for nature as the most congenial atmosphere for man to live in, evolved as the *leitmotif* of existence along the Asian and European shores of the Bosporus.

Perhaps some hidden atavism of the Turk, some longing of the soul for the forsaken and forgotten steppes and dark mountains of Central Asia—the "homeland"—led the men and women of this most sophisticated of all cities, ruler of subjects on three continents, to hide themselves, as it were, among the unspoiled delights of green banks and deep forests, from time to time preferring these surroundings to the palaces and courtyards of the "Second Rome." The European saying, "A city is ever a prison to the Turk," far from being intended derisively only indicated the people's great love for the wilderness spaces of an ancestral past.

The Bosporus, as no other stream has ever meant for any other place, became the soulstream of the great city, even as it was its practical water highway. But the idyll was interrupted as the afflictions, more quickly than the blessings, of industrialization settled themselves upon the Straits and upon the city itself.

THE GOLDEN HORN, fed by the twin streams comprising the European equivalent of the Sweet Waters of Asia, led more and more with the passing of each year into a vile sink of pollution as factories made of the golden harbor a veritable cloaca of their untreated wastes. The gentle Imams, the prayer leaders at the holy shrine of Eyüp Sultan on the upper reaches of the Golden Horn, men who for centuries had cared for wounded or sick storks

brought to them for their healing ministrations, found their charges too often with feet and feathers begrimed by oil or the foul outflow of small factories on the inlet.

The *bülbül*, the nightingale, still sang on those spring nights on the Bosporus when fireflies sparked the dark woods with their off-and-on love signaling; and hedgehogs still took their nocturnal ambles among the wet grasses where pine woods yet clothed Bosporus slopes; but as woodlands fell, first to the axe and then to the wholesale slaughter of the chainsaw and the bulldozer, wildlife of every sort simply disappeared. Now one hunts to hear the tiny bird's song where once it was a matter of almost any sleeper saying, like the poet after a night on the Straits, "Last night the nightingale woke me."

The Bosporus itself, which more than any other single facet of Istanbul determines the ambiance of the city; the Bosporus with its hills, woodlands, its flowing surface changing color from pewter gray under rainy skies to apricot touching an almost Mediterranean blue under summer sunsets, while shearwaters skim, north to south and back again, over its choppy currents; this Bosporus of song and poetic tradition is today assaulted by urban expansion unreasonably accelerated by vaguely designated "land developers" and suffers the accumulated attrition of often unplanned industrialization as modern ways settle, all at once, upon an ancient landscape.

Enormous coal deposits, mountains of black fossil fuel, rise where gates of an abandoned *yali* once opened on a wooded shore. The daily waste of scores of passing oil tankers turns beaches inhabited since Roman times but until now always pristine bathing areas into shorelines of body- or boat-fouling scum. In the wake of a craze for cheap-to-manufacture plastics the limbs and bodies of castaway children's dolls thrown onto the beach by wave action have turned one deserted strand near the mouth of the Black Sea into a nightmarish tableau of what seem to be hundreds of dismembered human parts. Plastic, the "permanent garbage" of our generation!

Worst of all, as apartment living has become the habit of the people of a painfully overcrowded city, builders have turned to the hills and the shores of the Bosporus, where lonely hilltops under the wide sky, graced perhaps with a stand of old cypress or a mossy graveyard of topsy-turvy ancient Ottoman gravestones, have become the envied "luxury sites" for hivelike and always enormous high-rise apartment blocks.

Public lands on the Bosporus have become fair game to a people guileless in themselves—squatters newly arrived from Anatolian villages, followers of the *fata morgana* of "the city and its gold." Allowed to occupy such lands if they are able to raise a roof over their heads in a single night, such migrants swell the city's population of workers necessary to Istanbul's proliferating factories. To the factory such blameless souls bring the necessary muscle that new industry requires. To the hills of the Bosporus they bring the problems of supplying sanitation, water, and electricity. And they bring their goats.

As if these developments were not enough, the great intercontinental Bosporus Bridge due to span the Straits this year, besides providing the admitted blessing of accelerating traffic from Asia to Europe, will open its lanes to new waves of motor cars and trucks each day, promising to lead to the sudden urban settlement of until-now-untouched woodlands and farmlands of the Asian shore of the Bosporus, posing still greater dangers to the natural-cultural balance of life as it is still lived among the greenery of the less accessible bank of the Straits.

A cry from sources as disparate as university students, Turkey's few conservationists, and long-time residents of the Bosporus was heard as the Bosporus forests and the Straits coasts were increasingly menaced by spreading asphalt and rising concrete and the Bosporus itself became increasingly less accessible. While the measure of public discontent with the state of things became plain, so did the relative lack of coordination among the well-intended guardians, official or self-appointed, of a priceless heritage. In a society where concern for the ecological health of the environment had not yet become a part of the public thinking, where conservation was a problem singularly that of the forester and no one else, who were the few "guardians" of water, soil, and air on the Bosporus?

There was a Turkish Society for the Preservation of Nature, vocal and active, in Ankara, the nation's capital, and in Istanbul. Such an individual as Bay Çelik Gülersoy, lawyer, editor, and a director of the Turkish Touring and Automobile Association, had for years bombarded the public with books and bulletins citing the natural and historic values of Istanbul, particularly those of the Bosporus. In his role as the Bosporus' "Tom Paine" he has long rallied what forces he could—by pamphleteering, conferences, campaigns—particularly in defense of the Straits' abused forests and of its *yalis*, those structures perennially victims of fire and of sheer destructive neglect. A powerful patron of the Touring and Automobile Association's conservation efforts has for years been Turkish industrialist Dr. Necat Eczacibaşi. Such respected newspapers as *Milliyet (The Nation)*, and *Cumhuriyet (Republic)* have constantly editorialized in the name of Turkish conservation; and as recently as February 1973 the *Daily News*, Turkey's only English-language paper, invited its readers to participate in a nationwide contest whose ambitious aim was to find the best way to save the Turkish environment. Less than a year earlier, Turkey's only national television network had aroused its viewers with a series of telecasts exposing the perils of environmental abuse. With such concentrated notice of what was by now a public problem, it would no longer be possible to say, as had only years before the then Minister of Culture, that in Turkey there was not even the beginning of a public awareness of such a thing as ecology and of the need for conservation of the nation's natural and historic resources. If—where political and economic matters of necessity demanded priority treatment—a segment of enlightened public thought was at last awake to the unhappy state of affairs on the Bosporus, what avenues toward eventual solution afforded themselves to those eager to become activists in the worthwhile cause of bringing order to the balance of things on the Bosporus?

On October 17, 1972, photographer Angelo-Castrillon and this writer opened in Istanbul what was the first exhibit of its kind ever to be shown in Turkey. Called "Environment and Civilization," the exhibit dedicated itself to the total environmental-ecological situation in Turkey but especially focused its attention on the Bosporus, on the endangered green hills and shores of the Straits. The exhibit was presented under the auspices of the Turkish Society for the Preservation of Nature (Türkiye Tabiatini Koruma Derneği); and we enjoyed the unstinting cooperation of Dr. Turhan Istanbullu of Istanbul University's Forest Faculty, a leader in the Istanbul branch of the Society. At animated open forums, a part of the exhibit program, Dr. Istanbullu was an articulate defender of the cause of conservation on the Bosporus.

"Environment and Civilization" also provided a useful forum for Turkish youth, as two young Turkish students of the Forest Faculty, Gengiz Soğancioğlu and Cengaver Artunç, both in their early twenties, indefatigably hour after hour briefed visitors on the need for conservation and urged on them the meaning of conservation on the Bosporus. But Gengiz Bey and Cengaver Bey were far more than enthusiastic youthful rhetoricians. From February 1972 to October 1972 they had spent two months engaged in in-depth research; another four months devoted to walking, in Asia and in Europe, all the shores and hills of the Bosporus, learning about the natural and the man-made features of the Bosporus; three months spent laboriously creating four great charts—maps high as the room in which they were now shown, on which all the forests and woodlands of the Bosporus were indicated, where sources of dangerous pollution were exposed, where areas of recreation were still available to the public or were sealed off from public use by often unnecessary structures. Appropriate legends in Turkish and in English made the huge charts virtually

Nondescript new buildings continue to invade Bosporus shores, razing woodlands and historic structures. Properly restored to reflect the styles of their period, the mansions of the "Turkish Venice" at Arnarutköy could recreate the ambiance of a vanished day while serving as cultural centers and art galleries helping to preserve Istanbul's gracious past.

Dr. Turhan Istanbullu (left center) of Istanbul University's Forest Faculty and (right) Dr. Fahri Atabey, Mayor of Istanbul, attend the opening in October 1972 of Turkey's first exhibit devoted to environmental problems in Turkey.

self-explanatory. When the young conservationists were pressed for an answer as to why they had sacrificed so much time and energy to the creation of their conservation charts, they replied that, looking beyond the opening of the Bosporus Bridge in 1973 and the subsequent rush to "develop" the Asian coasts of the Straits, they had done what they could to show how the natural, historic, and recreational values of the shores might be safeguarded and preserved for the Turkish people. Others were not unaware of the special heritage of the Bosporus, its natural beauty as well as its extraordinary historic values. Istanbul's enlightened mayor, Dr. Fahri Atabey, was enough impressed by the conservationists' charts that after attending the opening of the exhibit he sent his aides to study the handiwork of the two young conservationists for several days.

Day by day conservationists found themselves asking if by proposing new legislation and by enforcing existing regulations more could be done to save the special environment of the Straits. Could a few dedicated Turkish conservationists and their friends in Turkey and abroad be able to explain to starry-eyed "promoters" that here were invaluable intrinsic scientific and scenic values; that here, too, were elements basic to the "new industry" of tourism that could be cherished and saved without abandoning the obligatory national goals of modernization and industrialization? Would the high and tragic price of overdevelopment, of a polluted waterway, of lost-forever parkland and woodland be lamented only after the deed was done and its terrible bill paid?

To find an answer to some of these questions, we queried the Turkish Society for the Preservation of Nature's Dr. Istanbullu. His attitudes are significant because they stem neither from the "save-the-beauties-of-the-Bosporus" posture of the perennial sentimentalist nor from the "let-us-make-of-the-Straits-another-Miami-Beach" camp. They are the feelings of the scientist as to what may or perhaps may not be done to save certain tangible and spiritual values of a designated landscape.

When asked if a national park on both shores of the Bosporus might be the most effective way to save the natural beauties of the Bosporus as well as its historical sites, Istanbullu expressed his doubt that joining the two sides of the Straits under "one national park status" would be an easy task. Looking at such a park from the contemporary attitude of *land-use planning*, he replied, "One of the most important problems of our day is to reevaluate and plan the general and special urban functions of Istanbul as a city, bearing in mind the historical, cultural, and natural factors. Solving this problem would involve serious research and investments at a government level, which is a step further than a national park."

We asked if such a national park, already separated by the waters of the Straits, could be designed with its components scattered along the shores of the Bosporus as isolated areas of conservation in order to save as rapidly as possible such areas from the urban expansion that threatens both shores of the Bosporus.

To this, Istanbullu replied, "It is essential to protect parks and woodlots, which have decreased considerably under the pressures of urban development. In order to be able to do that, the legislation of resettlement has to be reviewed, and the powers of the municipalities must be limited. At present, it is possible to protect forests, and what are considered to be forests, that are bigger than three hectares and under the rules of the Forestry Acts. Areas smaller than three hectares and that are not covered by the Forestry regime are not protected satisfactorily." Dr. Istanbullu spoke of the difficulty in controlling the fragmentation of private ownership. In a curiously "Through the Looking Glass" sort of way, a forested property that, because of its relatively large size, may not be disposed of for "nonforest" use can, if subsequently offered for sale as smaller units, become fair game to the developer.

The idea of a single national park still uppermost in our minds, we asked if it would be possible to integrate, under one administration, all of the important and significant forests of the Bosporus that are now under diverse ownership.

Dr. Istanbullu replied, "It is quite possible. The easiest way is to expropriate the forests and parks which are under private ownership and have them under a special organization." It is appropriate to remark here that such expropriation would, of course,

entail adequate financial compensation to former owners.

Could, we asked, a rapid survey and subsequent legislation be carried out in order to put aside these areas as an immediate step toward the total preservation of not only the green areas with their fauna intact but also areas of historical and cultural importance that are now threatened by uncontrolled urban expansion that may be encouraged by the opening of the new bridge on the Bosporus?

Dr. Istanbullu answered, "All sorts of information about the city of Istanbul is available. It is therefore possible to complete the existing data by using aerial photographs and other means. There is nothing at all that would cause a time-loss."

We wanted to know what institutions and organizations in Turkey could be vital in such an act of preservation.

"There are a number of official and unofficial institutions which would play a role in the realization of protection," Istanbullu replied. "Among the official ones we can count are the Ministries of Resettlement, Tourism and Information, Forestry, National Education, Youth and Sports, and add to these the High Commission for Monuments, and universities with their related faculties. The unofficial ones would include associations like the Turkish Society for the Preservation of Turkish Nature and the Turkish Touring and Automobile Association."

We asked him what legislation already exists or could be suggested to preserve immune those areas demanding protection from possible attempts to bypass protective regulations.

Dr. Istanbullu answered, "At present, the laws for Resettlement, and Expropriation, and Forestry, and Foundations, and the High Commission for Monuments can be counted on as effective regulations."

We felt an interested public would want to know if there is any organization in Istanbul, or in Turkey, that concerns itself with the specifically Turkish historical-cultural heritage that has developed in Istanbul since the fifteenth century and throughout subsequent centuries up to and including the early part of the twentieth century—such a unique historical-cultural environment that expresses itself in the houses, the streets, squares, and life-ways of past times still exists today.

Istanbullu suggested that "The High Commission for Monuments takes care of that by law. In addition, the city planning and landscape architecture departments of the universities are working on this subject with an increasing zeal and are having a greater say in the problem."

We asked to what extent public and official opinion would support the saving of this Turkish heritage of such great cultural importance and of such great potential for tourist trade.

"It is possible to get considerable support from official institutions and public opinion in protecting areas which have touristic potential and cultural value. In order to be able to do that, individual efforts are needed; and new organization and qualified personnel, in the application of plans and projects, are needed."

For example, a trained resident ecologist is needed at Istanbul.

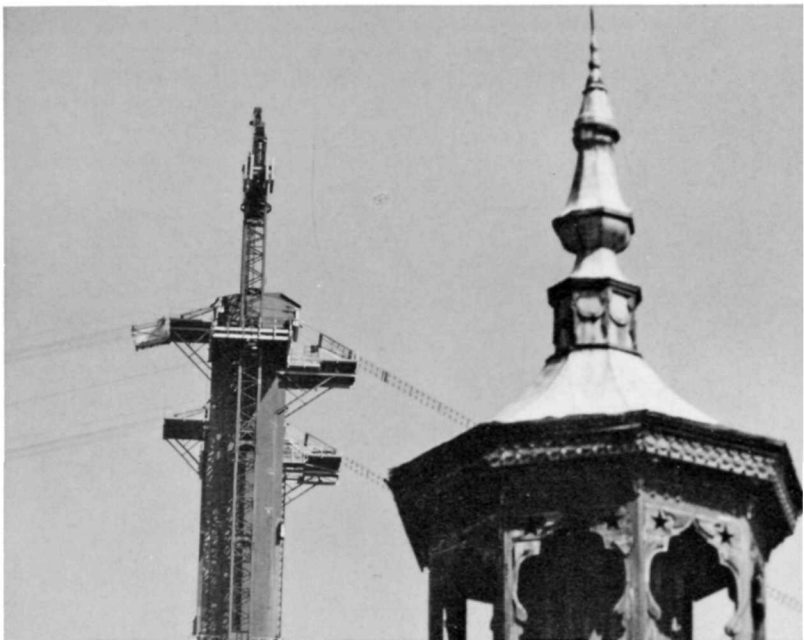
We felt the interested public at large would want to know if any law exists that protects or encourages public access to the shores of the Bosporus.

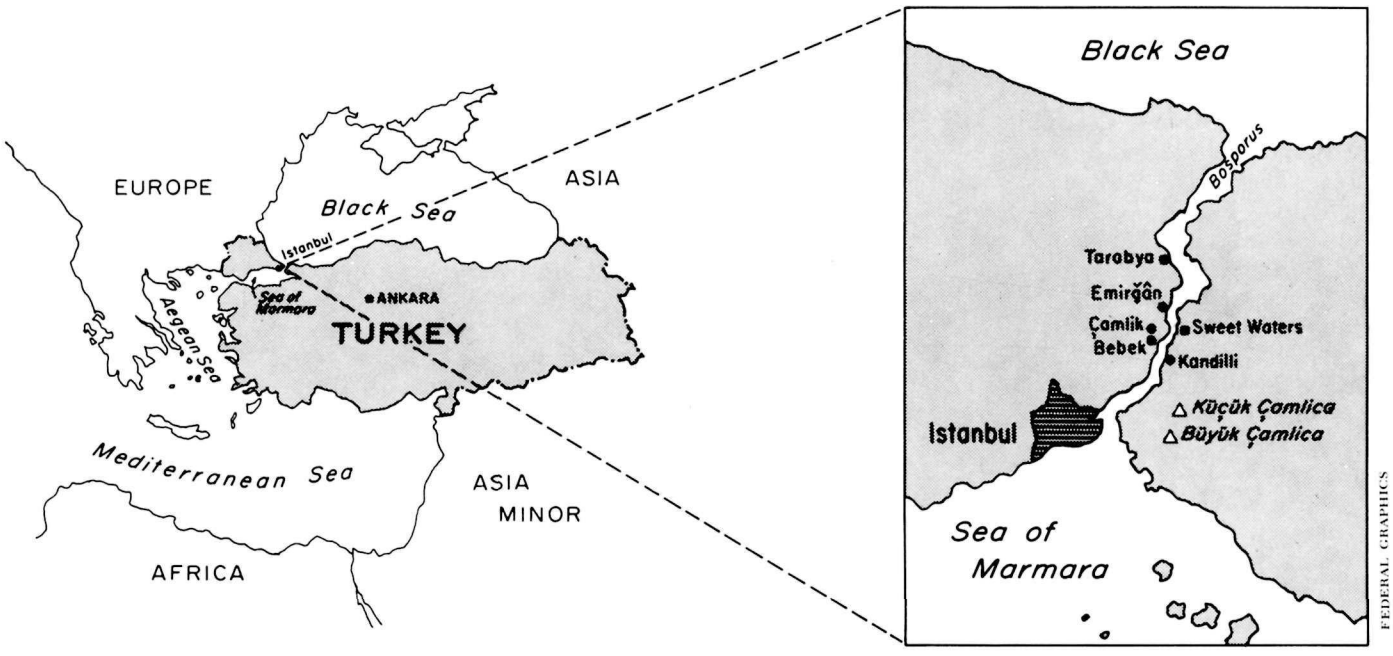
Istanbullu answered in hopeful terms, "A bylaw of the Construction Law which was announced on July 20, 1972, covers this area. Even though, this bylaw provides precautions by no means sufficient; it is important in the sense that it is a beginning." We asked if such a unique bicontinental (Asia and Europe) national park in Istanbul could preserve one of the world's most beautiful and historic areas, the Bosporus, and thus assure the greatest future tourist attraction of Turkey—Istanbul.

Dr. Istanbullu, teacher and conservationist, replied, "Even the smallest precaution, from the standpoint of protecting the natural, historical, and cultural values of Istanbul and the Bosporus, would certainly be of immediate importance from the touristic angle."

WHAT EMERGES from our own more than twelve-year vigil on the Bosporus and on the adjacent waters of the Black Sea and the Sea of Marmara is that the effects of pollution on that water system are now so manifest that there is general public dismay at the rareness of certain fishes in the Straits, fishes once common on the table of the Istanbul housewife. There is, in a similar way, revulsion at the mistreatment of the Bosporus–Marmara waterway where, for health reasons, certain beaches now and then are closed in the name of public safety where ocean-going vessels—mostly foreign, rather than Turkish—have besmirched mile upon mile of otherwise magnificent beaches with oil and a city's common refuse makes public bathing a dangerous undertaking precisely where the greatest numbers of Istanbul's men, women, and children choose to swim when summer, with all its prolonged periods of greatest heat, comes to the great city. From such dedicated conservationists as two young Turks

Symbols of the past and of imminent change stand juxtaposed on the Asian coast of the Bosporus. The wooden minaret of a very old mosque stands before a soaring steel tower of the new intercontinental Bosporus Bridge.





Areas that merit protection in a Bosporus National Park are indicated on the detail map. Küçük Çamlica and Büyük Çamlica are considerable heights overlooking the Straits and all Istanbul. Formerly covered densely by pines, Küçük Çamlica is being settled upon by private dwellings. Tarabya is worthwhile for both its forests and its architecture. Emirğân is already officially a park, which includes the Woods of Emirğân; it is the site of an annual tulip festival on a former Ottoman estate. Kandilli is one of the very finest dense forests on the Bosporus, but it, too, is losing its trees as private dwellings encroach. The Sweet Waters of Asia, with protection, could return to their age-old function as a lovely wooded resort of the simplest and most beautiful sort for the people of Istanbul. Bebek, a village of still almost pristine Ottoman architecture, nestles in a valley covered by two of the most magnificent stands of trees on the Straits. Nearby Çamlik's sudden overdevelopment, however, now encroaches on one of the fine forests of Bebek. The Asian and European shores of the Bosporus at and approaching the entrance to the Black Sea—now under strict control (but nonrecreational use) by the national government—might eventually, when Istanbul's explosion of population becomes unendurable, become part of a future Bosporus National Park.

hard at work for almost a year on handmade charts of the Bosporus, as well as from the more mature pronouncements of a Turhan Istanbullu, one learns that the public's yearnings for Bosporus hills kept green, assured sanctuaries for wildlife where the all-too-common poacher is neither the deliberate threat to wildlife that he is now nor the accidental one that his frequent presence in wildernesslike recreational areas poses to hiking families and children, and that a desire for Bosporus waters kept clean for fish and for bathing have reached coordinated expression at an influential intellectual level.

Ideally, a bicontinental national park, administered as it must be from Ankara, the nation's capital, would be a great and unassailable safeguard of the total historic and natural environment that cries out now, so urgently, to be saved. That the constituents of such a park would not, in all cases, be contiguous is of relatively little importance. California's Golden Gate Recreational Area, as much an area for conservation as for actual "play," will exist—as Turkey's great Bosporus National Park could exist on either side of its own Straits—north and south of the deep and turbulent waters of the Golden Gate. The United States Department of the Interior has recommended funds for the initial stages in the creation of the Golden Gate Recreational Area. Partisans of the bicontinental Bosporus National Park should be encouraged by this American example of farsighted conservation of an environment infinitely more valuable to mankind, in terms of preserved natural and historic areas as well as recreational opportunities, than all of the developments dreamed of by exploiters with myopic vision.

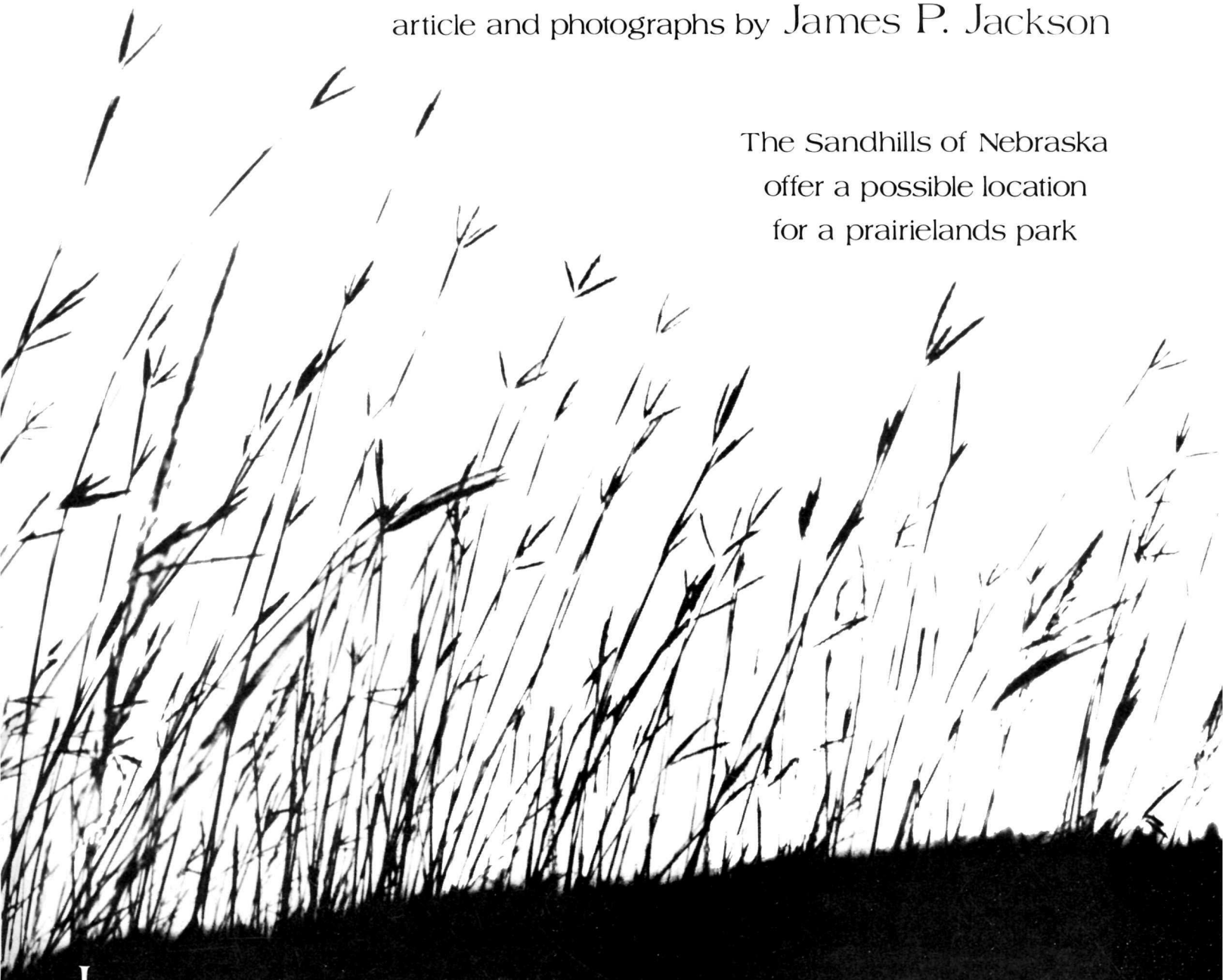
ONE STANDS on Bosporus hills and envisions forest cover forever protected here as well as historic monuments of the Ottomans and of even vastly older times preserved by a great national park. One looks for the day, with more hope now than ever before, when the disappearing *bülbül* will sing in great numbers again from the wild dark waters of the Black Sea and all along the Straits to the tideless Marmara that the poet Yeats, in reference to the abundance of its sea life, called the "dolphin torn sea." And one, seeing where the bulldozer has cut down the forest but where green trees may rise again, remembers how, with a deep humanism rarer than in most statesmen, Atatürk, loving his nation's green mantle once said, "There is no Fatherland without forests." ■

For more than twelve years writer Charles E. Adelsen and writer-photographer Henry Angelo-Castrillon have lived in Turkey and have written and photographed as a team, specializing in the history, natural environment, and culture of the ancient land mass of Turkey.

VISIONS OF PRAIRIE PARKS

article and photographs by James P. Jackson

The Sandhills of Nebraska offer a possible location for a prairielands park



In our great system of national parks and monuments there still is not one unit devoted exclusively to the preservation and interpretation of the plants, animal life, geology, and scenery of the heartland of America: its prairielands. Many suggestions, proposals, and studies have focused on such a unit, or units, over the decades; but the fact is that up to the present time, and for various reasons, nothing has been done. The idea remains a challenge that, considering today's unrelenting pressures upon suitable sites, becomes more urgent with each passing year.

Prairieland ecologists, more keenly aware of the need than the layman, argue for more than one prairie unit in the national parks system. They long ago pointed out that in that vast expanse between the eastern deciduous forest and the Rocky Mountains there are basically three prairie environments. One is represented by the tallgrass prairie, best exemplified in the Flint Hills of east-central Kansas; the second, the shortgrass prairie, typified in the high plains of eastern Colorado; the third, somewhat a blending of the other two, is midgrass prairie such as that of parts of Nebraska and the Dakotas. Although the flora and fauna of the three overlap, each has its diagnostic and dominant species. Thus ecologists argue for three separate prairie parks, a large and difficult order.

One overall problem is an indifferent public attitude toward prairieland. As a pioneer legacy many Ameri-

The Sandhills region is endowed with many marshy lakes and potholes—havens for waterfowl and shorebirds. Avocets (above right) nest in the Sandhills, and the long-billed curlew, largest of all American shorebirds (above left), finds the center of its breeding range in the western Sandhills. Although mule deer are the most abundant large animal in the Sandhills, limited numbers of white-tailed deer and pronghorn also live in the region.

cans view the midcontinent prairies as the "Great American Desert." Summer tourists, driving west toward the Rockies, often think of Kansas, or Nebraska, or the Dakotas as a monotonous void to be crossed as rapidly as possible. They have no particular feeling for a prairie sunrise; they do not see the pronghorn, nor hear the curlew; and they know little about this great undulating world of grass. What they are likely to remember is the dust and hardship of covered wagon days and the threat of the Indian, as depicted by Hollywood. Can the public be convinced of a national need for a prairie national park? For three such parks? Will there be time enough before all sizable areas of prairie are too abused or dissected to qualify for national parks status?

These questions remain to be answered. In 1960 a study was published by the National Park Service proposing a Tallgrass Prairie National Park in the Flint Hills of Kansas, to be comprised of 57,000 acres of unplowed prairie. All of this land was in private ownership. In spite of broad support within the state and elsewhere Kansas ranchers strongly opposed the idea, and the proposal was dropped.

The effort in Kansas was revived in 1971, and proposals for a Tallgrass Prairie National Park were introduced in both houses of Congress that year. The proposals did not specify any particular locality but stipulated a park size of between 30,000 and 60,000 acres; so far they have not received widespread attention.

At the present time, no legislation authorizing a Tallgrass Prairie Park in Kansas has been introduced in the Ninety-third Congress. However, plans are again underway in the offices of Kansas Senator James B. Pearson and Congressman Larry Winn, Jr., to seek the most effective method of promotion for a prairie park. A geographically separate prairie park may be incorporated in a larger proposal for protection of historic sites in the Cherokee Strip area. The ultimate site selection may be contingent on the completion of on-site feasibility studies by the Interior Department.

In thinking about the possibility of one or more sizable prairie preserves it is clear that two things must happen. First there will have to be more publicity detailing in understandable language the need for acquiring them. This implies that the public barren-vision syndrome must be broken. Then ecologists' dream of three prairie parks must be clarified and sharply delineated. This means that all potential sites for tallgrass, shortgrass, and midgrass preserves must be identified, evaluated, and finally tested for public reaction in the states in which they lie.

With these things in mind it may be useful to look at another potential site for a prairie national park—

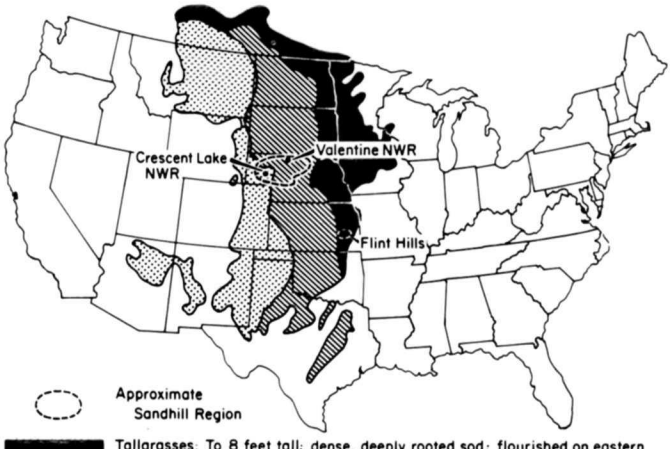
this one in the Sandhills region of Nebraska. Here again a mere name suggests barren sand dunes, the void on the map, the place to be traversed quickly. In fact, this is not the case.

In the Nebraska Sandhills there are unbroken horizons of grass-covered dunes, broad meadows populated by deer and antelope, and countless lakes abounding with waterfowl and shorebirds. It is a large region, measuring roughly 200 miles east and west and 100 miles north and south and containing more than 10 million acres of unplowed prairie. It has remained unplowed because its "soil" is almost pure sand, held together only by the deep, tangled roots of perennial prairie grasses. Nebraskans have known better than to destroy the living carpet of the Sandhills. The region is a great sandy sponge, much of which has no surface drainage. Its larger lakes actually are surface extensions of a high water-table.

Although some ecologists classify the Sandhills as midgrass prairie, the region is rich in tall grasses where cattle have not been allowed to overgraze. Dominant species in meadow areas include big bluestem, Indiangrass, switchgrass, cordgrass, and western wheatgrass. On the dunes areas—locally known as "choppies"—dominants include sand bluestem, little bluestem, sand reedgrass, and sand lovegrass. The shortgrass species, blue grama and buffalograss, dominate only on the highest dunes and on overgrazed sites.

In spite of its tall and abundant native grasses, the Sandhills region is more widely known for its wildlife. It is prime habitat for deer, grouse, and waterfowl and supports a modest population of pronghorn antelope. It is also a haven for a surprising variety of shorebirds and small mammals. Here the handsome long-billed curlew, largest of all American shorebirds, attains its greatest breeding population anywhere. The western Sandhills support other nesting shorebirds such as the avocet, upland plover, Wilson's phalarope, and the ubiquitous killdeer. Among its common mammals are the coyote, jackrabbit, and such less likely species as

DISTRIBUTION OF MAJOR GRASSLANDS TYPES



Tallgrasses: To 8 feet tall; dense, deeply rooted sod; flourished on eastern prairies of relatively heavy rainfall and in more westerly moist lowlands and ravines

Midgrasses: 2 to 4 feet tall; forms clumps; adapted to less abundant rainfall

Shortgrasses: To 16 inches tall; forms dense but mainly shallow sod; adapted to semiarid western high plains and driest areas of eastern prairies

the raccoon, skunk, and beaver. There are even porcupines in its few widely scattered groves of trees. A small mammal that one would expect to find is, on the other hand, not present in the Sandhills: the prairie dog, which apparently is not well adapted to digging in such loose, sandy soil.

To Nebraskans the Sandhills region is synonymous with cattle country. It provides abundant water and reasonably good grazing but is easy to overgraze. Early indicators of overgrazing are replacement of tall grasses by shorter grasses, or the invasion of weedy forbs, depending upon site conditions. But in the Sandhills there exists also the more obvious threat of blowouts—bare patches of shifting sand that tend to grow ever larger once initiated. Most ranchers know better than to permit the spread of blowouts; they often mulch such areas with leftover wild hay. Yet lesser indicators of overgrazing are easy to find in the Sandhills, especially to eyes trained in range management.

These comments are not meant to imply that the Sandhills has been so abused as to eliminate it as a site for a prairie national park. Except around its periphery, the native grasses of its 10 million acres have never been turned under by the plow. The Sandhills region is, in fact, the only remaining unbroken expanse of American prairie large enough to accommodate a really sizable prairie national park on the order of 200,000 acres.

From the viewpoint of the ecologist such a park would have to be of sufficient size to support original plants and animals in natural balance. The American bison would be restored. The minimum size required for the purpose likely would be not less than 200,000 acres, although this is a rough figure and open to scientific debate.

The potential for a prairie national park exists today in the Sandhills of Nebraska. A vast acreage of relatively undisturbed prairie exists there, some of it already in public ownership. The Sandhills encompass three tracts of federally owned land that possibly could serve as nuclei for the park. One of these, not so attractive as the others, is the Bessey Division of the Nebraska National Forest, consisting of 90,000 acres south of Halsey. It contains the world's largest man-planted forest, much of which was destroyed by a 1965 prairie fire. It does not possess the numerous lakes and plentiful wildlife of the other two areas, which are the Valentine National Refuge, of 71,000 acres, and the Crescent Lake National Wildlife Refuge, of 46,000 acres. Both of these units, which are under jurisdiction of the Department of Interior, are well within the Sandhills. Whether a national park could be created in the Sandhills region of Nebraska would depend first on the people of Nebraska and finally on the whole American public.

In September 1972 more than 200 ecologists and other interested persons met at Manhattan, Kansas, for the third biennial Midwest Prairie Conference. They expressed their opinion in a resolution that stated, in part, "The Prairie Conference endorses strongly the establishment of the proposed Tallgrass Prairie National Park in Kansas; it further suggests that other portions of the prairies be sought in other states as necessary parts of a North American Prairie National Park system." It is a worthy goal but one that demands vision and publicity to capture the interest of the American people. ■

James P. Jackson, a biology teacher with training in ecology, is active in several conservation organizations and devotes his summers and spare time to freelance writing and photography on nature, conservation, and travel topics. Regarding the Sandhills he says, "I have made numerous extended visits, including field observations, photography, and contacts with natives of the region and with others who are acquainted with its ecology." He also has presented several slide lectures on the Sandhills as a potential site for a Prairie National Park.

Much of the Sandhills region consists of undulating dunes of sand held in place by a carpet of native grass (right). Below, the typical Sandhills blowout to the right of the fence resulted from overgrazing. Sunflowers and other forbs are now stabilizing the erosion.

NPCA at work

Back Bay Refuge Tentative regulations for controlling the problem of off-road vehicle use in Back Bay National Wildlife Refuge on the coast of Virginia have been reported here in several recent issues. Now, in attempting to implement new regulations that would largely prohibit ORV use in and through the refuge, the Bureau of Sport Fisheries and Wildlife has encountered a new snag in a series of suits brought by property owners below the refuge beach, real estate developers, ORV users, and the city of Virginia Beach.

Property owners and developers apparently want the refuge open to owners and salesmen; ORV users and the city want it open for general vehicular use. The Bureau and a number of intervenors, including NPCA, are supporting the Bureau's proposal for ORV use only by permanent residents and others through a controlled permit system. Thus far the federal judge in Norfolk, Virginia, hearing the case has granted a preliminary injunction allowing use of the refuge beach until September by most property owners. NPCA continues to support Bureau regulations and will be reporting further on the matter.

On lead shot We reported here in May that the Interior Department had not been responsive to NPCA's petition for a hearing on proposed rulemaking requiring substitution of iron shot for lead shot in waterfowl hunting by June 1974. Since then, Interior's acting assistant secretary, Curtis E. U. Bohlen, has acknowledged receipt of the request, without however making response in regard to the petition, filed jointly by NPCA and the Humane Society of the United States.

NPCA has written Secretary Bohlen saying that the petition deserves a response that would either grant, deny, or set a date for a hearing on the proposed rule. "As a practical matter, we can determine no reason why the proposed rule we have suggested cannot be published, comments solicited, and a hearing held, since this will insure full public knowledge," said NPCA. "A final rule could then be published based on comments received and the results of the public hearing."

NPCA pointed out to Mr. Bohlen that the department's record on switching to iron shot has not been good. Some chronology: iron shot was suggested and actually used in the 1950s; in the 1960s, the Bureau of Sport Fisheries and Wildlife determined its feasibility in tests; in 1972, there were informal plans for a switch by the 1974–1975 waterfowl season; but in early 1973 the department's informal plans were looking toward the 1975–1976 season. "The time for positive action has long since passed," NPCA asserted.

The Association also pointed out to Secretary Bohlen in a separate letter on the same subject that the state of Maryland has elected not to impose a ban on use of lead shot for hunting waterfowl during the coming season. Thus the Association has recommended as an interim measure that iron shot be required for hunting waterfowl or other marsh birds on all national wildlife refuges where such hunting is allowed. The absence of iron shot in the Maryland program should, said NPCA, guarantee sufficient supplies of the new ammunition for use on all refuges. "Wildlife refuges should be kept free as soon as possible of the deadly contamination of lead shot. We can no longer allow deposition of this toxic substance on some of our nation's prime waterfowl habitat . . . when a suitable alternative is readily available," urged NPCA.

Northeastern rail plan The report of the Secretary of Transportation, Claude S. Brinegar, on the northeastern railroad problem is of interest to NPCA, which currently is involved in litigation before the Supreme Court over rail freight rates for recyclable materials. NPCA and three other concerned organizations have asserted that the quality of the environment will suffer if the advantage enjoyed by primary materials under the Interstate Commerce Commission freight rate structure is perpetuated.

In a letter to Secretary Brinegar NPCA has indicated that it shares Transportation's desire for an effective and efficient rail transport system, but has found several aspects of the proposed northeastern railroad system reorganization disconcerting. The report, in NPCA's view, concentrates too heavily on short-term economic priorities of the private sector to the exclusion of public values such as environmental quality. This is particularly true, NPCA said, in regard to Transportation's recommended relaxations and abbreviations in the regulatory framework of the ICC. "We have not yet learned of the existence of an environmental impact statement in connection with the report," NPCA said, "and would appreciate receipt of information relating to your plans for filing such a statement."

The Gettysburg tower In the May issue we discussed the proposed observation tower on private land adjacent to Gettysburg National Military Park in southern Pennsylvania, and actions taken by NPCA regarding its protection up to the time. We said that circumstances had afforded the National Park Service a new opportunity to comply with the National Environmental Protection Act and to amend Service decisions that had placed the public interest in jeopardy at the battlefield. At the time this was written the Service had made no response.

NPCA has written Park Service Director Walker more recently saying that the Service's failure to respond to the earlier letter appeared unjustified, since issues raised were not complex. The letter was written in hope that the Service would make a good-faith consideration of the merits of the case, and that there

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Our Wildlife Refuge System in Trouble

a staff report

NPCA RECENTLY HAS FOUND that a major cutback in operation and management of the national wildlife refuges will take effect July 1, 1973. Services will be reduced drastically on 10 refuges, and 16 will be closed. The affected refuges are located in 16 states ranging from Texas to Florida, Vermont to North Dakota. Additionally, budgets for many of the approximately 324 other refuges have not been increased enough to cover salary increases and inflating costs of equipment and materials. Thus the number of minor budget cuts, which inevitably will result in decreased emphasis on wildlife and associated public values, probably far exceeds the 26 refuges for which major or total program curtailment is planned.

Before attacking the Bureau of Sport Fisheries and Wildlife or the Department of the Interior for closing refuges and decreasing other services, one should look at the issues and facts. For the past several years the total budget for all wildlife refuges has been nearly static, or the same from year to year, apparently because of the Office of Management and Budget (OMB), which passes *judgment on the* proposed budgets and expenditures of all federal agencies. During these years of static budget the rate of inflation has been high and salaries have increased substantially. In addition, many refuges have been added to the national wildlife refuge system—nine having been added since June 30, 1972. All these increases have tended to substantially reduce the *real* budget of the system. Hence, for the coming fiscal year, those responsible for maintenance of the system have had to make some hard decisions on priorities. The threatened closures, major reductions, and many minor reductions in the refuge system have sprung from these hard decisions.

It would seem pointless for NPCA or others to berate the Bureau of Sport Fisheries and Wildlife for reductions that cannot be avoided. Money that is not there cannot be spent.

The OMB seems to exercise control over federal expenditure in at least two ways: (1) it controls the amount of money requested from the Congress; and (2) it impounds (withholds) funds that have been appropriated by Congress. For example: the Environmental Protection Agency is not able to spend millions of dollars appropriated for the Clean Water Program, because OMB has impounded the money. (NPCA at Work: Feb. 1973.) The other type of control seems somewhat more insidious and less visible, for OMB exerts major influence before the public or Congress knows the amount of money that is actually necessary.

We may assume, for example, that the Bureau of Sport Fisheries and Wildlife wants enough money to operate the refuges adequately. However, NPCA is advised that before the Bureau is allowed to make budget requests, OMB has, through instructions to the budget office of the Interior Department, indicated what percentage increase in budget request, if any, will be allowed for the coming fiscal year. The Bureau then prepares a tentative budget request based on those instructions.

However, before the request becomes a part of the Administration budget and is submitted to Congress, OMB takes yet another swing at a budget request that may already be too low to allow the Bureau of Sport Fisheries and Wildlife to adequately perform the activities mandated by Congress. This last blow (assuming funds are not impounded following approval by Congress) comes during a hearing before OMB budget examiners. After the hearing, decisions are made, presumably by the budget examiners and others in authority at OMB, regarding the requested expenditures that are to be allowed. (It is not clear, incidentally, how, or on the basis of what criteria, the decisions are made.)

In any event, once decisions are made, the Bureau is told what its budget requests will be. In recent years the best description of these requests is inadequate and insufficient. (However, it should be made clear that the appropriate division of the Bureau has the power to allocate its funds between projects.)

As NPCA has been able to piece them together the sequence of events in the approval of an agency's budget for any given fiscal year seems to be: (1) winter-spring of the preceding year—message from OMB indicating percentage increase in request, if any, to be allowed. (2) late spring–summer of preceding year—tentative guidelines are developed during contact between Interior's budget office and OMB. (3) September–October of the preceding year—hearings at OMB to decide what requests will be made. (4) January of the current year—total Administration budget request submitted to Congress for approval. (5) July 1, the new fiscal year—budget takes effect, assuming approval by Congress.

Thus, the refuge closures that will begin in July of this year apparently cannot be changed in any meaningful way. Hope for our wildlife refuges and the entire environmental movement as well seems to lie with the future.

A number of questions remain to be asked in the context of this report. Why, and on what basis, is the public excluded from the workings of OMB? How are the decisions made that tend to force agencies of government into dereliction of the jobs that are mandated by Congress? Why are the provisions of the National Environmental Policy Act of 1969 not followed? What are the criteria by which decisions are made? The public apparently cannot even evaluate decisions, because the decisions are hidden and internal mechanisms are vague at best.

CLOSURES SCHEDULED	MAJOR REDUCTIONS SCHEDULED
Deer Flat NWR, Idaho	Big Lake NWR, Ark.
Minidoka NWR, Idaho	Lake Woodruff NWR, Fla.
Big Stone NWR, Minn.	Flint Hills NWR, Kans.
Valentine NWR, Nebr.	Clarence Cannon NWR, Mo.
Sheldon National Antelope Refuge, Nev.	Desert National Wildlife Range, Nev.
San Andres NWR, N. Mex.	Cedar Island NWR, N.C.
Swanquarter NWR, N.C.	Pee Dee NWR, N.C.
Lostwood NWR, N. Dak.	Pungo NWR, N.C.
Sullys Hill National Game Preserve, N. Dak.	Slade NWR, N. Dak.
Optima NWR, Okla.	Buffalo Lake NWR, Tex.
Hagerman NWR, Tex.	
Muleshoe NWR, Tex.	
Missisquoi NWR, Vt.	
Fisherman Island NWR, Va.	
Mason Neck NWR, Va.	
Wallops Island NWR, Va.	

Wildlife refuges were set aside primarily to benefit wildlife; however, now the refuges are apparently not allowed adequate money to accomplish this task. Unfortunately, and alarmingly, the problem is bigger than refuges alone; it is bigger than BSFW; it certainly affects the National Park Service, the entire Department of the Interior, and indeed the whole federal executive structure. It threatens in a very real way to frustrate the efforts of many agencies of government to maintain a livable environment.

NPCA has written OMB asking for two things: a description of OMB structure, and personnel relating to natural resource programs; and the reason why OMB does not follow the pertinent requirements of the National Environmental Policy Act when making substantive natural resource decisions. Members who wish to ask additional or similar pertinent questions for themselves, or want to urge greater consideration for needed environmental programs, should write expressing their concern to: Mr. Harry C. McKittrick, Chief, Interior Branch, Office of Management and Budget, New Executive Office Building, Washington, D.C. 20503.

(continued from page 27)
might be cooperative negotiations with NPCA. "The Park Service apparently prefers to allow the tower to be built before responding to the letter and to permit the controversy to be resolved by its default," said NPCA in part. "It would appear that confrontation in the form of litigation is the only acceptable . . . mechanism by which we can secure consideration of inquiries and proposals in the public interest."

Problem at Manassas Another park system matter, related in a general sense to the Gettysburg case, is the proposed construction by the Marriott Corporation of a "theme park" and light industrial park on a 513-acre tract adjacent to the west boundary of Manassas National Battlefield Park in Prince William County, Virginia. The "park" has been projected by the developer for two million visitors in 1975 and three million by 1984. The development originally was proposed for Howard County, Maryland, but was rejected there after vigorous local opposition.

Now the Prince William County site has aroused strong opposition in northern Virginia among environmentalists, Civil War enthusiasts, and others. It also has become a matter of interest to the National Parks and Recreation Subcommittee of the House of Representatives. On invitation, NPCA presented its views on the matter to the subcommittee.

NPCA said it had already joined with local groups and individuals in a county board and planning commission hearing on the "park," and had argued that a decision by the board on the proposal would be premature because of lack of information from the developer. (The board since has endorsed the proposal.)

NPCA told the subcommittee that the "theme park" and industrial park would threaten the battlefield park in several ways—by a vast increase in traffic in and around the park; by degradation of its streams by pollution; by pollution of its air; and by increased visitation to the battlefield itself. Objectionable noise would mar the tranquillity of the preserve and destroy its atmosphere; while a further intrusion loomed in a proposed 350-foot-high observation tower somewhere on the development tract.

A number of other threats to the park were explored for the subcommittee by the Association which, in summary, suggested that the subcommittee could move to authorize acquisition of all or sufficient interests in lands adjoining the national park system unit to adequately protect it.

On tanker rulemaking NPCA and five other environmentally concerned organizations recently have submitted comment to the United States Coast Guard on its advance notice of proposed rulemaking on design standards for large new oil tankers operating in U.S. navigable waters. The Coast Guard has announced its intention to require that segregated ballast systems, achieved in part by use of double bottoms, be incorporated into the tankers; also to require all tank ships, new and existing, to have the capability of retaining wastes on board for shoreside disposal.

Comment of the organizations, presented by attorneys Eldon V.C. Greenberg and Robert M. Hallman, both of the Center for Law and Social Policy, commended the Coast Guard on both proposed requirements. It was noted, however, that such limitations, imposed only on large future tankers and big oil barges, would undermine the Coast Guard's pollution abatement objectives as stated, since they would not affect tonnage now under construction or already in use. The organizations urged a cutoff date of no later than 1978, after which no oil-carrying vessel would be permitted to trade in U.S. waters unless it met segregated ballast and double-bottom requirements. The organizations also urged that requirements apply to all sizes of new tankers, not to large and very large tankers alone. "We wish to emphasize the importance the environmental groups attach to prompt adoption of segregated ballast and double-bottom requirements for oil-carrying vessels that trade in this nation's navigable waters," they said, "and [we] commend the Coast Guard's initiative in this area."

Endangered species The House Subcommittee on Fisheries and Wildlife Conservation and the Environment has held public hearings in Washington on several bills for the conservation of endangered species and, on invitation, NPCA has offered testimony on the bills with special reference to HR 37, which the Association felt might serve as the implementing legislation for the Convention on Endangered Species, recently signed by the United States.

NPCA suggested that HR 37 could be brought more nearly into line with the needs of the Convention if certain changes were made, among which would be a broadening of the definition of the term "species" and a clear definition of the term "endangered" (as formulated by NPCA and reported on these pages several times in the recent past). NPCA recommended that the Interior Secretary be required to grant a public hearing when a private individual can demonstrate that habitat destruction or overexploitation of a plant or animal has occurred or is likely to occur, or to publish his reasons for not granting a hearing; also that control over endangered species programs should lie with the Interior Secretary and not with the Commerce Secretary. Beyond these points NPCA strongly suggested that the definition of the term "take" be expanded to cover any activity that directly or indirectly causes harm to an endangered species. The definition, said NPCA, also should include de-

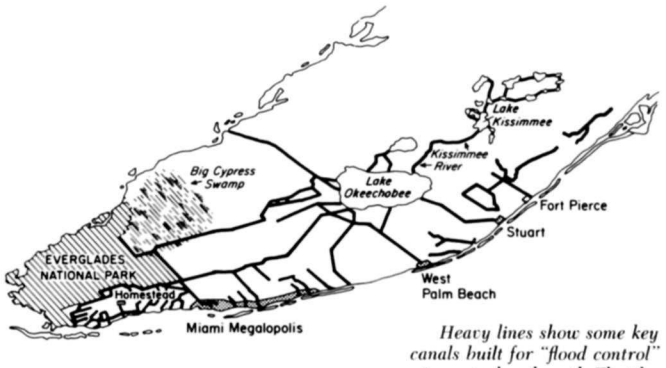
(continued on page 31)

In central Florida, "flood control" turns sour

"One of the highlights of the past year was the start of construction of the long-awaited $35 million program to improve the Kissimmee River and to build a network of canals and structures in the upper Kissimmee basin."—From the 1962 annual report of the Central and Southern Flood Control District.

"We've got to undo what we did there. . . ."—Dr. John Degrove, board member of the Central and Southern Florida Flood Control District: April 1973.

The Kissimmee River project was only one of the vast networks of canals, levees, pumping stations, and related works constructed largely with public money over the past few decades to drain and "improve" the Everglades. True, the purpose parades under the nominal title of "flood control"; but this title was adopted only after the hurricane-triggered floods of 1926 and 1928 had caused severe loss of life in south Florida. The drainage and development scheme has been around for more than a century, and some of its real purpose was quite early set forth when, in 1848, a report to the U.S. Senate said that "the Everglades could be reclaimed [for agriculture] by a sensible system of canaling and by deepening of various streams." Whatever it currently may call itself, "flood control" in central and south Florida is primarily drainage, irrigation, and land development; it always has been, and so it remains. Today the construction is done by the Army Engineers; operation of the completed works is the responsibility of the Flood Control District.



Heavy lines show some key canals built for "flood control" in central and south Florida.

The merits of the plan always have been debatable, depending on point of view; but the effect of the continuing scheme on the ecology of central and south Florida and on Everglades National Park is not debatable—it has been atrocious.

In 1961 the Army Engineers set about to carry through another facet of the overall plan, canalization of the Kissimmee River northwest of Lake Okeechobee and drainage of its adjacent swamplands to the extent of some 40,000 acres. When the project was complete, the river had been straightened and shortened from its original meandering 102-mile length to 58 miles. Gone are the marshlands; but the ever-increasing pollution out of central Florida, once photosynthesized into relative harmlessness by the vast swamplands, is not gone; it is carried south now into Okeechobee, principal water reservoir for southeastern Florida's coastal megalopolis and in part for Everglades Park.

What to do? "Perhaps we ought to de-authorize the old project and go to Congress to get some help to undo the unanticipated bad effects," Dr. Degrove is quoted as saying. The best estimate for "some help" is about $88 million. This would remake the Kissimmee in its old image, marshes included; but there is a problem. The Flood Control District must go to Florida's public for money to start a land repurchase program before the Engineers can start the remaking. And, thanks to "land enhancement," as the Engineers have delicately termed a correlative benefit of "flood control," some of the former "worthless" Kissimmee marshlands are selling at around $4,000 an acre. Beyond this, pessimists have pointed out that it is not easy, and it may be impossible, to restore the Kissimmee or any other wrecked watershed to its original natural regime.

In 1964 NPCA was saying editorially that "southern Florida presents a picture of complete chaos in federal public investment: fresh water being drained out to sea by canal when it should be stored for manifold uses; water applied to agricultural expansion while the nation seeks to reduce farm production; national financing and mortgage guarantees being used to stimulate urbanization where it is already excessive; and space and defense contracts enticing industrial construction where it is out of place; all the resulting water uses moving inevitably toward the ruination of the life-environment for people in Florida. . . ."

The "flood control" project for central and south Florida marched on; but the sad story of the Kissimmee River seems to have amply justified NPCA's continuing role in trying to prevent even more drainage and development in the central and south Florida watershed. □

In the early 1960s the Army Engineers began work on one of the many facets of the central and south Florida "flood control" project—canalization of the Kissimmee River and drainage of its adjacent swamplands. The river is a prime supplier of water to Lake Okeechobee, which in turn is a reservoir for towns and lands farther south, and in part for Everglades National Park. The operation has brought on a severe pollution problem, and there is talk of restoring the Kissimmee's wrecked watershed to its original condition, if that is possible.

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struction or threatened destruction of habitat, and pollution by substances such as pesticides, which constitute "taking" in a very real sense.

Refuge wilderness NPCA has submitted comments, on invitation, to the House Subcommittee on Public Lands regarding wilderness designation of lands in Brigantine National Wildlife Refuge in New Jersey by the Bureau of Sport Fisheries and Wildlife. The Association strongly supported a 16,800-acre plan that has wide support both regionally and among national environmental organizations. It rejected as inadequate the Administration's current smaller proposal, which seems to be based on three considerations: existence of mosquito ditches in the refuge, need for maintaining the ditches, and possible need for additional freshwater impoundments for waterfowl.

However, NPCA pointed out that the ditches normally are narrow, are bordered by lush salt-marsh vegetation, and blend well with natural features; that their presence ought not to exclude an area from wilderness designation. The Wilderness Act specifically allows management activities as long as they do not interfere with wilderness character, the Association said: "Certainly, maintenance of the ditches with hand tools will not be an overwhelming assault on a wilderness." NPCA also raised the question whether the ditches were appropriate to a wildlife refuge.

As for freshwater impoundments, NPCA told the subcommittee that they seemed unnecessary and perhaps even detrimental. The proposal backed by environmentalists centers on protection of salt marsh–estuarine areas; these and similar areas already constitute the best waterfowl habitat on the Atlantic Coast. In particular, such impoundments at Brigantine Refuge provide poor habitat, and also freeze over in cold weather. "They should not, in our opinion, be fostered or even contemplated on estuarine refuges by the Bureau," said NPCA. "Objections to 'wilderness' based on the possible need for impoundments of dubious value certainly seem unwarranted."

NPCA has written the Bureau commending its proposal for wilderness in the vast Hawaiian Islands Wildlife Refuge, which covers much of the island-and-water habitat of the Hawaiian Archipelago. The Association expressed particular pleasure over the Bureau's inclusion of the refuge's 302,000 acres of submerged lands, noting that such lands may, among other useful purposes, provide significant scientific information. The Association agreed with the Bureau on a small exclusion in the proposal—Tern Island and adjacent submerged lands—on the grounds that military use has destroyed its ecosystem and prospects for reclamation seem unlikely.

Potomac dam hearings Once again the Army Engineers have returned to the Potomac River Basin in an attempt to implement further their years-old plan for at least sixteen high dams on the river and its tributaries—a plan long opposed by NPCA, many other concerned organizations, and countless residents of the basin. The Engineers have reactivated plans for a dam on the Monocacy River near Frederick, Maryland—the Sixes Bridge—and another on a branch of the Shenandoah River near Staunton, Virginia—the Verona. These formerly were justified by the Engineers mainly for dilution of pollution; they are back again primarily for water supply, along with a new factor called "stream enhancement" by production of "stable ecological conditions"; plus alleged recreational benefits. The switch was forced by the Water Quality Control Act of 1972, which forbids consideration of pollution dilution in justifying federal dambuilding.

The Water Resources Subcommittee of the Senate Public Works Committee has held public hearings in Washington on river basin authorizations and new water project proposals submitted since passage by the Senate, earlier in the year, of the Rivers and Harbors Act of 1973 (which as of this writing had not been acted on by the House). The two projects were contained in these proposals, and on invitation NPCA submitted its views on them.

In brief summary, NPCA was highly critical of the Engineers' failure to provide the public with information on the projects, particularly regarding benefits and costs; also of the fact that no relevant environmental impact statement had been filed as required by law. The claim of "stream enhancement" through "stable ecological conditions" was called a "travesty on the concept of ecology," while the alleged recreational values of the two dams and their reservoirs were labeled "equally false."

Real purpose of the reservoirs, said NPCA, is water supply for Washington, and the way to provide emergency

water for that city during dry years would be to utilize the fresh water of the Potomac estuary as advocated and as proven feasible by the Association in a competent engineering study (the Fosdick report). A pilot plant for the purpose soon may be under construction; it was characterized in NPCA's testimony as "too little, but not too late."

NPCA offered essentially the same testimony at Washington hearings on the same matter conducted by the Army Engineers in Washington a few days before the Senate hearing.

news notes

Notice to NPCA Members

Many members of the conservation and environmental organizations listed below have called attention to the activities of door-to-door canvassers soliciting funds to support environmental improvement. The undersigned organizations have no connection with the group behind this activity. They do not condone or approve of this method and wish to remind their memberships that only a relatively small part of contributions to such canvassers, who are paid well for their efforts, is ever spent for environmental protection. This notice is signed by Defenders of Wildlife, Environmental Policy Center, Friends of the Earth, Fund for Animals, Izaak Walton League, League of Conservation Voters, National Audubon Society, National Parks and Conservation Association, New Rochelle Citizens for a Better Environment, New York State Environmental Planning Lobby, Sierra Club, Wilderness Society, and Zero Population Growth.

East African tours A new addition to NPCA's East African field trips combines wheels and wings. With the stay lengthened by several days and all the longer distances in Africa spanned by air, there is time to see much more of the region than is possible on one of our regular East African tours.

While it includes all the experiences featured on our regular tours, this trip adds several new ones. A flight to Zanzibar affords opportunities to see an old Arab town, spice cultivation, and copra processing. Another takes in the Samburu–Isiolo Game Reserve, noted for reticulated giraffe, Grevy's zebra, gerenuk, crocodile, and hundreds of species of birds. The local Samburu tribe is as impressive as the Masai. A visit to Eliye Springs on Lake Rudolph, in northeastern Kenya, unfolds a desert landscape unlike any previously seen. And a climactic horseback-camel trek provides two luxurious overnight campouts—one on the edge of the Kipsing escarpment, the other on the Uaso Nyiro River. (Those who prefer can ride land-rovers instead of horses.)

Groups on this trip are limited to nine members, with a leader equipped to interpret East Africa, as all our leaders are. Costs—at this writing still under negotiation—will be at least $1,850 for land arrangements, plus seasonal air fares.

A step backward In view of today's changing attitudes on the roles of wild animals of all kinds as coexistors with man rather than adversaries, it is with some surprise that we report existence in the South Dakota legislature of a bill aimed at providing bounties on foxes, raccoons, and skunks within the state, "including parks and monuments," as the notice says. Money for the bounty program would come partly from the state predatory animal control fund and partly from the game and fish commission, and would be paid to South Dakotans possessing resident general hunting licenses. This information comes to NPCA through the Bounty Information Service, S.C. Post Office, Columbia, Missouri 65201.

Ice Age Reserve A federal-state plan for land acquisition, development, management, and maintenance of the Ice Age National Scientific Reserve in Wisconsin, generally sited on one of the nation's finest exhibits of various landforms created by, or left by, the most recent advance and retreat of the Pleistocene ice sheet in North America, now has been arranged between the National Park Service and Wisconsin. We say "generally sited" because the reserve actually is composed of nine separate and widely scattered sites. Part of the reason for the wide scattering is that several of the units lie athwart or adjacent to the sinuous line that represents the southern limit of ice advance in the region; again, other units are situated on the line of juncture between two ice lobes—the Green Bay and Lake Michigan lobes—and contain the heaped-up earth debris caught between the two.

Wisconsin will administer the nine units of the reserve with assistance from the National Park Service. State and federal governments will share equally in the cost of necessary land acquisition—some of the lands were already owned by the state—and a formula has been worked out for cost sharing in development and operation. When completed the reserve, first authorized by Congress in 1964 and formally established in 1971, will include trails, picnic areas, campgrounds, wayside exhibits, and interpretive centers.

It is worth noting that some conservationists have thought this unique scientific reserve might form the nucleus for a system that would include outstanding glacial relics in other northern states. The nature of the reserve and the manner in which it has been set up, they think, seem to lend themselves to eventual inclusion of choice areas in other states on terms satisfactory to both state and federal governments.

conservation docket

NOTICE OF PUBLIC HEARINGS

On June 1 at Sun Valley, Idaho, and again on June 4 at Casper, Wyoming, the Public Lands Subcommittee of the Senate Committee on Interior and Insular Affairs will hold public field hearings on predator control.

On June 5 and June 18 and 19 the Senate Subcommittee on Minerals, Materials, and Fuels of the Interior and Insular Affairs Committee will hold public hearings in Washington on S 1134, dealing with hard mineral resources of the deep seabed. Hearings will commence at 10 A.M. in Room 3110, New Senate Office Building.

On June 28 and again on July 17 the Subcommittee on Water and Power Resources of the Senate's Interior and Insular Affairs Committee will hold information hearings on the National Water Commission Report. Time and place: 10 A.M. in Room 3110 of the New Senate Office Building in Washington.

Legislation bearing on various facets of the national park system recently introduced into Congress has included:

VAN BUREN SITE: S 1496 and HR 6513, to establish the Van Buren–Lindenwald Historic Site in New York. To Interior and Insular Affairs committees.

SHENANDOAH PARK: HR 6552, to designate certain lands in Shenandoah National Park as wilderness. To Senate Interior and Insular Affairs Committee.

APPOMATTOX COURT HOUSE: HR 6499, to authorize the expansion of the boundaries of the Appomattox Court House National Historic Park. To

House Committee on Interior and Insular Affairs.

CALIFORNIA DESERT: HR 6451, to provide for the establishment of the California Desert National Conservation Area. To House Committee on Interior and Insular Affairs.

YOSEMITE PARK: HR 6342, to designate certain lands in Yosemite National Park as wilderness. To House Committee on Interior and Insular Affairs.

SEQUOIA & KINGS CANYON: HR 6343, to designate certain lands in Sequoia and Kings Canyon national parks as wilderness. To House Committee on Interior and Insular Affairs.

COLORADO RIVER DAMS: HR 6255, to amend the Colorado River Storage Project Act to remove the prohibition against constructing dams or reservoirs authorized in the act within national parks or monuments. To House Interior and Insular Affairs Committee.

PARKS PROTECTION: S 1368, to prohibit the use for public works projects of any lands designated for park or recreational purposes, or for the preservation of their natural values unless they are replaced by lands of like kind. To Senate Interior and Insular Affairs Committee.

SANTA MONICA PARK: HR 6011, to establish the Santa Monica Mountain and Seashore National Urban Park in California. To House Interior and Insular Affairs Committee.

> Bills introduced into Congress are referred to standing committees of House or Senate, which may then refer them for initial consideration to appropriate subcommittees. Public hearings on bills may be called both by subcommittees or standing committees. NPCA members, as citizens, may write committee and subcommittee chairmen asking that they be placed on lists for notification in the event of hearings. Members may also submit statements for the hearing records if unable to appear in person. Copies of bills may be obtained from the House Documents Room, Washington, D.C. 20515, or the Senate Documents Room, Washington, D.C. 20510. In the Conservation Docket, HR indicates a House bill, S a Senate bill.

BIG THICKET: HR 5941, to authorize establishment of the Big Thicket National Biological Reserve in Texas. To House Interior and Insular Affairs Committee.

DANIEL BOONE TRAIL: HR 5878, to amend section 5(c) of the National Trails System Act to provide for study of the Daniel Boone Trail to determine the feasibility and desirability of designating it as a national scenic trail. To House Interior and Insular Affairs Committee.

GRAND CANYON PARK: S 1296 and HR 5900, to further protect the outstanding scenic, natural, and scientific values of the Grand Canyon by enlarging Grand Canyon National Park in Arizona. To Interior and Insular Affairs committees.

Legislation concerning fish and wildlife matters has included:

WOLF ISLAND WILDERNESS: HR 6327, to designate certain lands in the Wolf Island National Wildlife Refuge in Georgia as wilderness. To House Interior and Insular Affairs Committee.

LEAD SHOT BAN: HR 6410 and HR 5986, to amend the Fish and Wildlife Act of 1956 to protect game and wildlife resources by prohibiting use of lead shot for hunting in marshes and other aquatic areas. To House Merchant Marine and Fisheries Committee.

OKEFENOKEE WILDERNESS: HR 6395, to designate certain lands in the Okefenokee National Wildlife Refuge, Georgia, as wilderness. To House Interior and Insular Affairs Committee.

PREDATOR POISONING: S 1390, to authorize a national policy and program with respect to wild predatory mam-

mals; to prohibit the poisoning of animals and birds on the public lands of the U.S.; and to regulate the manufacture, sale, and possession of certain chemical toxicants for predator control. To Senate Commerce Committee.

WOLF STUDY: HR 6019, to require the Interior Secretary to make a comprehensive study of the wolf for the purpose of developing adequate conservation measures. To House Merchant Marine and Fisheries Committee.

LEG-HOLD TRAPS: HR 5917, to discourage the use of leg-hold or steel-jaw traps on animals in the U.S. To House Committee on Interstate and Foreign Commerce.

FISH STREAMS: HR 3830, to amend the Fish and Wildlife Coordination Act in order to provide assistance for the preservation of natural game fish streams in the U.S. To House Merchant Marine and Fisheries Committee.

DOG & CAT PRODUCTS: HR 4530, to prohibit the importation into the U.S. of commercially produced dog and cat animal products and to prohibit dog and cat animal products moving in interstate commerce. To House Ways and Means Committee.

Forestry legislation recently introduced has included:

LOG EXPORTS: HR 6347 and HR 6182, to prohibit the export of logs from the U.S. To House Committee on Banking and Currency.

ALDO LEOPOLD WILDERNESS: S 1419, to designate the Aldo Leopold Wilderness in the Gila National Forest, New Mexico. To Senate Interior and Insular Affairs Committee.

FRENCH PETE: HR 4373, to establish the French Pete Creek National Woodlands Recreation Area. To House Interior and Insular Affairs Committee.

TIMBER SUPPLY: HR 6256, to amend the Multiple Use and Sustained Yield Act of 1960 with respect to the maintenance of an adequate supply of timber for the U.S. To House Agriculture Committee.

FOREST FUND: HR 6053, to provide for balanced protection and development of the national forest system and privately owned forest lands through establishment of a forest lands planning and investment fund. To House Agriculture Committee.

Miscellaneous environmental legislation has included:

MINING REGULATION: HR 6709, to provide for the environmental regulation by EPA of mining activities and for the restoration by the Army Engineers of abandoned mined areas. To House Interior and Insular Affairs Committee.

RECREATIONAL FEES: HR 6654, to exempt citizens of the U.S. who are 65 years of age or older from paying entrance or admission fees for certain recreational areas. To House Interior and Insular Affairs Committee.

SHORELINE EROSION: HR 6674, to amend the Coastal Zone Management Act of 1972 to determine the causes and means of preventing shoreline erosion. To House Merchant Marine and Fisheries Committee.

Continued from page 2
Congress over priorities in authorization and the size of possible appropriations. And the Big Cypress dies.

The economic advantages of the protection of natural conditions in the region have always been obvious to thoughtful people. Everglades National Park attracts vast numbers of visitors every year from all over the United States, and indeed the world. The valuable shrimp fisheries in Florida Bay and elsewhere near the park are a significant economic asset, both for the industry and for the markets which it serves. The Florida Everglades country is famous on an international basis as a scenic and recreational wonderland, as a biological treasure house, and as a potential refuge for the survival of numerous gravely endangered species of plant and animals.

THE National Parks and Conservation Association has taken a strong lead in all of the protective measures for Florida wetlands from the beginning. It supported the establishment of the park and efforts to acquire large inholdings which were left untouched at the outset. It opposed the opening of the so-called Canal 111, just east of the park, a commercial project which would have brought saline water into the park and destroyed its ecosystems.

The NPCA was the first national conservation organization to break the news of the jetport project and take a firm stand against it. With the National Audubon Society it organized the Everglades Coalition, the Washington operations of which, in opposition to the jetport, were managed mainly from the offices of the NPCA. Its President serves as Chairman of the Environmental Coalition for North America, which put its weight behind the Big Cypress acquisition proposal.

As noted, NPCA joined with Audubon to defend Gum Slough. It testified on invitation in the hearings which resulted in the statutory guarantees of water from Lake Okeechobee. It developed a wilderness protection plan for the park and has carried on continuous educational work on these issues in *National Parks and Conservation Magazine.*

NOW a new and favorable development has occurred. We have been at pains to point out from the beginning that the preservation of the wetlands of central and southern Florida was not merely a project for the protection of nature. The issues ran to the entire human environment as well as the plant and animal world. They involved the danger of disruption of the fine weather conditions which attracted people to Florida. Above all, the water supplies of the communities on the Atlantic and the Gulf were in danger. And finally, with commercial and residential development on the upper reaches of the Kissimmee River watershed, it becomes apparent that without the winding rivers to slow the flow and the broad marshlands to purify the waters of pollution, and apparently in spite of measures which will presumably be taken to prevent pollution at source, the downstream communities, east and west, will not be able to maintain the quality of their vital municipal water supplies.

So great and startling has been this discovery that prominent leaders of the development movement in Florida have reversed their positions and are asserting the need to undo the so-called progress of recent decades and restore the primitive natural conditions of the region. The Kissimmee itself, it now appears, channelized and straightened as part of a project costing $30 million, must now be restored to its meanders, and its neighboring marshes redeemed, at a cost of perhaps $80 million. The folly of the original enterprise now becomes apparent, and yet also the courage of the men who recognized the mistake and are prepared to assist in undoing it.

Now for certain we have proof positive of man's intimate dependency on the natural environment of which he is a part. The ecological imperative has once again been demonstrated: man must learn to live with nature, or he shall not live at all. The slowly winding Kissimmee gave time for the disintegration of pollutants; the lush wetlands permitted some of them to settle out. Nature's gradual redemption had been conferred on the much abused waters flowing from the north. But when the primeval settling basins and the natural filters were destroyed, the filth poured down to the Lake and out through the conservation areas and conduits to the crowded cities of the coast. And so the destructive works must all be undone.

APPALLING, indeed, is the story. But a turning point may have come. If now there can be a general admission of the need to preserve the wetlands and lakes of Kissimmee, Okeechobee, Big Cypress, and the Everglades, this magnificent region may still be protected and restored for the sake of the abundant life it contains, the plants, fish, birds, mammals, reptiles and amphibians, and the human beings who compose, here in the Everglades, as everywhere in the world, the indivisible Community of Life.

—Anthony Wayne Smith

OUR WILDLIFE REFUGES ARE IN TROUBLE

Today budget restrictions threaten to close some of the units of our magnificent national wildlife refuge system and to limit protective activities on others. (See page 28.)

One of NPCA's primary priorities is the protection of wildlife in this country and elsewhere. NPCA has worked vigorously for an international treaty on endangered species, for abolition of the use of hard pesticides, and for elimination of wildlife poisoning. NPCA seeks to increase public and government awareness of the wildlife crisis by publishing each month an authoritative article on an endangered species of animal. NPCA will continue to work for these goals and others necessary to protect wildlife and its habitat.

But we need help. To improve and expand our wildlife programs, we must have the continuing and faithful backing of our members. When renewing your membership, we urge you to give serious consideration to upgrading your renewal to as high a category of membership as you feel your circumstances will permit. Additional funds will make our partnership even more productive.

NATIONAL PARKS AND CONSERVATION ASSOCIATION
1701 Eighteenth Street, N.W., Washington, D.C. 20009