

NATIONAL PARKS &

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Magazine*

The Environmental Journal

December 1973



Civilization and the Animals

THE SLOW TIDES OF WINTER have been moving down steadily from the north, blanketing field and forest with glittering snow, whipping hard winds. The once-chattering streams lock themselves firmly under ice. Cottontail, bobcat, fox, venture forth but rarely into a cruel, brilliant world, lingering as long as possible in seasonal slumber. Junco and chickadee possess the icy trees alone.

This is the winter also of the world's sorrow, enduring for years, its origins lost in the past, its future a gray horizon. In these days of worldwide trouble, deeper than anything men have ever known before, it would be well to plot a forward course, to visualize a new life which still could be, to make specific plans to survive and surmount.

IF WE LOOK AHEAD to the civilization which could still be created on this planet if we can but weather the violent storms of the present, we think, of course, of a world at peace, with plenty, justice, and freedom, for all. How remote these ideals seem at the moment!

Surely we think also of a value system largely inverted from the present, where deliberation will replace acceleration, where psychological and environmental security may characterize a genuine community, and where grave overcrowding will give way to spaciousness, and to opportunities for quietude and solitude.

And in terms of the physical environment, we visualize a restored countryside, small cities intimately conjoined to the land, fields flowing into rich and perpetual forests, rivers as fresh and clean as they were throughout America before the white man touched the continent.

Changed attitudes toward cosmos, toward our fellowmen, and toward the other living creatures of the planet, the plants and animals, of whose community we are an inextricable part, must also mark the transformation, else it will not take place.

A GENUINE CIVILIZATION, if it is to emerge, will set itself the task, among many others, of restoring and permanently protecting and preserving as many of the now rare and endangered plants and animals as it can possibly rescue. Let us visualize a world in which there is room not only for man at liberty, but for the descendants of the present remnants of the lion, the tiger, the cheetah, the wolf,

the falcon and eagle; the great whales and dolphins of the seas; the lumbering grizzly; the sinewy cougar.

We would live in a world in which the great horned owl and the snowy owl may venture in safety from man through winter woods; where finch and warbler and sparrow may nest in spring and summer in an amplitude of open countryside and forests; where condor, kite, heron, and hawk may be certain of survival.

The truth is that the heritage of wildlife, now so greatly imperiled everywhere, has been a large part of the wealth of the world. In the creatures which surrounded them, men found interest, beauty, amusement, companionship. And yet at the precise moment when we might be working our way through chaos from poverty to plenty, we stand in mortal danger of losing these riches by ignorance, carelessness, avarice, and cruelty.

WE SPEAK of the ecological imperative, and it is high time that we did so. The last few years have spread a revelation abroad in the world, a knowledge that we are but part of the community of life, and that those acts which endanger any fragment of that community may imperil the whole. This is not sentimentality; it is the hard, scientific truth.

A presumption of fact must now be recognized, that the serious impairment or destruction of any living species, plant or animal, endangers the entirety, and specifically endangers man. The restoration of the plant and animal life of the planet is thus a commandment of human survival.

But it is not enough to recognize this truth intellectually. We need a sense of identification with all the other creatures. The fact of interrelationships exists; we must hasten the day when the organic knowledge of this relationship is embedded deeply in the conscious and unconscious mind of every human being. Only after such identification will the conduct required for survival be forthcoming.

AND YET more is needed. Our thought may pursue the knowledge of the interrelationships of species; we may relate by empathy and sympathy, by identification, to the individuals in the network of life around us, and to the community of

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FRONT COVER Window Westward, Big Bend National Park, by J. Y. Bryan

BACK COVER Rio Grande at Big Bend, Mexican peaks in distance, by Ed Cooper

The Rio Grande forms the southern boundary of Big Bend National Park, Texas. Cutting at right angles through ranges and basins, the river forms an environment distinct from other portions of the park. Expanses of desert sweep away to the horizon; mountain ranges rise abruptly above arid flatlands; limestone ledges reveal fossils sixty million years old; and the steep-walled canyons and the ribbonlike stretches of plant life define the river course. (See page 4.)

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RUNNING A DESERT RIVER

By VIRGINIA McCONNELL SIMMONS

The Rio Grande in Big Bend National Park
offers boaters a variety of scenery
and a glimpse of a timeless river culture

IN ONE MORNING a river runner can lose a race with a roadrunner and be driven against a canyon wall by fast water. In one afternoon he can see cactus clinging to a cliff and fern clinging to a cave. In one evening he can be serenaded by braying burros and flutelike canyon wrens. Where is the setting of these diversities? In Texas, of course.

Although one would rarely think of Texas for running white water, the Big Bend of the Rio Grande del Norte has been gaining in popularity for float trips in the past decade. Yet reliable information concerning suitable sections of water, conditions that affect planning, and the rewards of this trip remain at a premium outside the immediate area.

In April 1973 our party of four set out to run the Rio Grande from a few miles above the west boundary of Big Bend National Park to below the park's east boundary. Highlights were to be transits of the three major canyons within the park—Santa Elena, Mariscal, and Boquillas—and intervening stretches of open river. The total distance of the trip would be about 117 miles. We would allow ten days for floating at a relaxed pace, exploring side canyons, portaging, shuttling cars, and unforeseen exigencies. Six or more days are usually considered necessary for this trip, according to the *Guide to Backcountry Roads and the River*, published by the Big Bend Natural History Association. But after nine days we had floated only 30 miles of the 117 we had originally projected. What were we doing on this slow boat to Big Bend? We were absorbing the scenery and life of a desert river in all its beauty, paradoxical variety, and stubborn torpor.

For better or worse, a river determines what its travelers will see and how they will see it. A trip down the Rio Grande in Big Bend reveals a geographical cross section, slice by slice, as most visitors to the park are unable to observe it. The park's southern boundary is the river, cutting at right angles through ranges and basins and hosting an environment distinct from other portions of the park. A boater riding this meandering "fenceline"

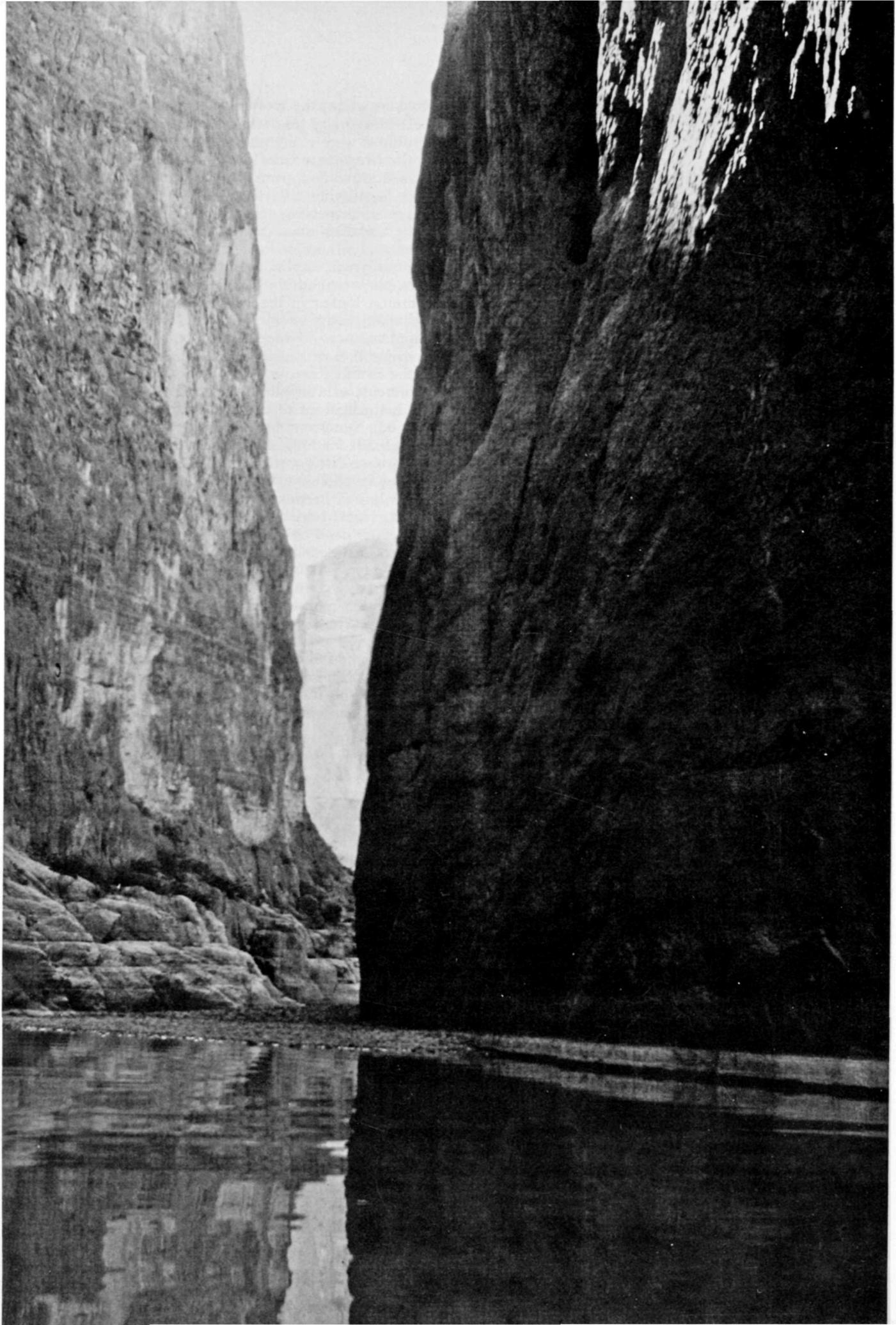
crosses the grain of a variety of topography, geology, wildlife habitats, plant communities and cultures, with the United States on the left and Mexico on the right. And the river also alters those features by its presence.

To a boater the river itself is an ever-present center of interest. One might be surprised to find a stream flowing in this desert. Although the Rio Grande's headwaters in Colorado are sizable, the river usually dries up before reaching El Paso, Texas. However, the Rio Conchos, draining mountains in northern Chihuahua, enters the Rio Grande above Presidio and renews the stream. Unfortunately for boaters, crops grown in arid regions require water. An irrigation dam completed on the Rio Conchos in 1968 cut its flow significantly, and a second dam now under construction on the same river, together with a dry spring, resulted in a near-record-low water level for our trip. Future river runners probably cannot expect much different conditions except during unusual weather.

Confronted by these circumstances we revised our plans, electing to run only the three major canyons and to eliminate about sixty miles of intervening basin country. After obtaining the necessary boating permit from park headquarters, we made a car shuttle past Castolon to the picnic ground at the mouth of Santa Elena Canyon and left the other car at Lajitas, a small trading-post west of the park. At Lajitas we launched our rubber rafts in the main river. In the past, boaters have usually put in at a slough behind the store, but we found this trickle un-navigable. The next day it was row, row, row your boat all the way, except when we were in the water hauling our craft across gravel bars. Only ten miles below Lajitas, and still a mile short of the canyon, we accepted the river's pace and made camp with a weary "mañana."

Without any sense of frustration one can surrender easily to a lazy man's timetable. Here, near the latitude of 29° and at an elevation of 2,000 feet, the temperature was in the eighties while snow still fell at home in the

Santa Elena Canyon



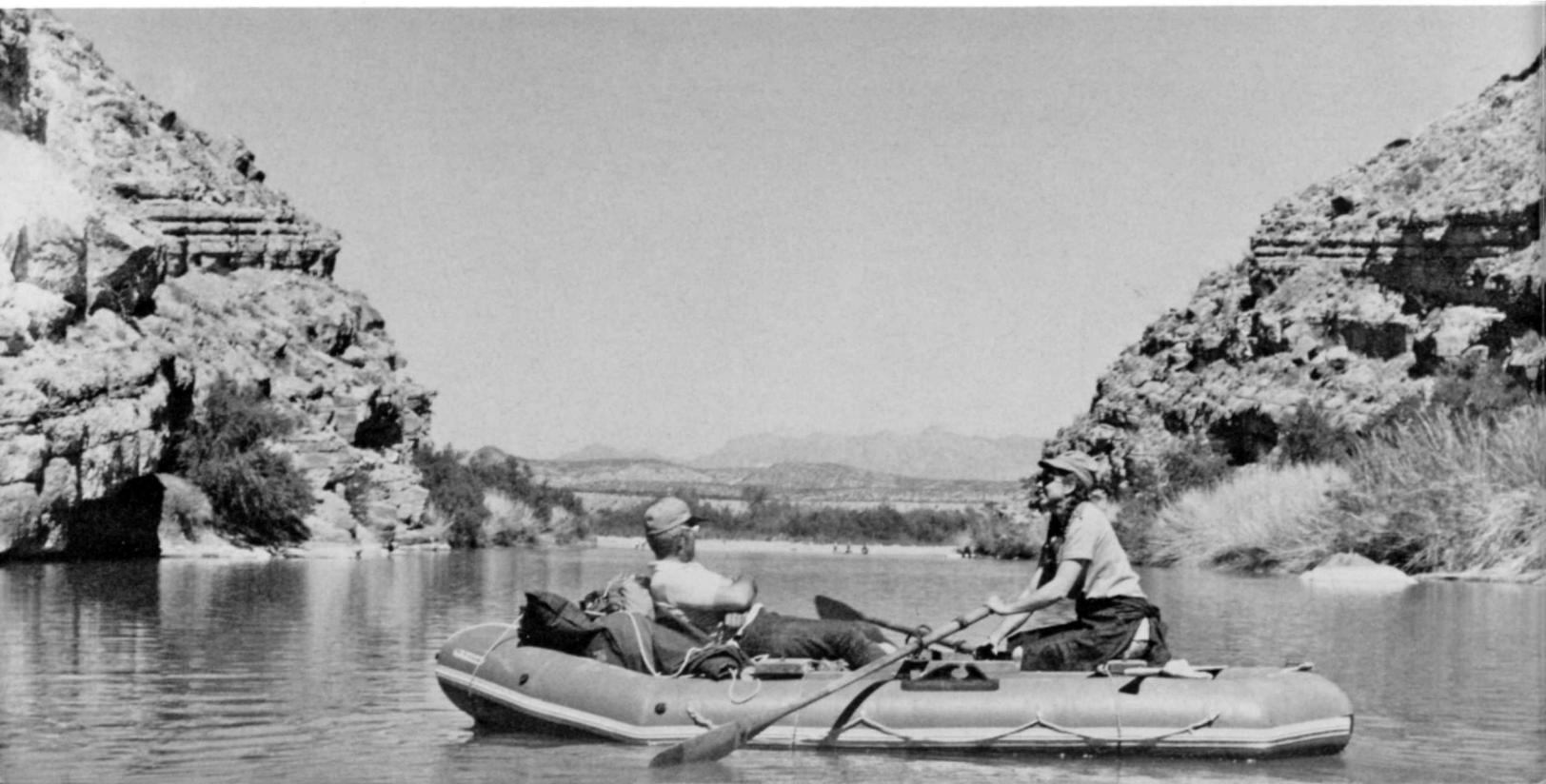


Rockies. Also, the river was unfolding the Chihuahuan Desert to us. Along the floodplain and its adjacent scrubhills were many plants that are familiar elsewhere in the West—creosote bush, salt cedar, mesquite, willows, cottonwood, prickly pear, and yucca. But soon we were identifying different plants—giant reeds; Mexican poppies; strawberry cacti; catclaw and eagle's claw cacti; and club moss, or "resurrection plant," folded into a brown ball until a rain would uncurl its stems with a show of green elegance. Entirely missing were the junipers, pinyons, century plants, and other natives that are common higher in the park.

Animal life was more difficult to see, although we found tracks of coyote, deer, raccoon, and beaver almost any time that we pulled up to a muddy shore. Just once, in the evening at our first camp, did I hear the quick hoof-beats of a javelina. Mexican burros, on the other hand, strolled out of the brush at every beach, or so it seemed. Numerous lizards and turtles could be spied, though not for long, and bats winged over most of our campsites. Birds were the chief delight—rough-winged swallows, cliff swallows, spotted sandpipers, various ducks, green herons, a golden eagle, cardinals, canyon wrens, black phoebes, and vermilion flycatchers—the *brasita de fuego* or "little coal of fire." The sight of road-runners darting in and out of thickets, however, struck us as being completely out of the context of a raft trip.

In the approach to Santa Elena Canyon from Lajitas, the region's physiography provided constant interest. Flat-topped buttes around Lajitas gave that settlement its name, which means "mesa" or "flat rocks," while across the river the name of a Mexican mountain, Sierra Mulatto, describes its color. In the limestone ledges we passed in the first few miles we observed many fossil clams more than sixty million years old. The slate-

The major obstacle for boaters running Santa Elena Canyon is a massive rock slide, where a portage is required. After a portage the reward is a restful cruise toward the mouth of the canyon, with the Chisos Mountains in the background.



colored limestone soon became less conspicuous, replaced by dark brown bluffs, part of an intrusive sill capped by cream-colored limestone.

Around each twist of the stream we watched for the one cone that would signal the entrance of Santa Elena, for near this sentinel would rise the grey limestone wall of Mesa de Anguila, or Sierra Ponce, as it is called on the Mexican side. Here an angling slit is the dramatic gateway. By climbing shelves of rock outside the entrance, we gained a cactus-framed view of the first hundred yards or so of green water and sheer cliffs that characterize this canyon.

Despite the narrowness of the canyon, about fifty feet in many places, we found the water still low and clogged with gravel bars. Nevertheless, crosscurrents, for which this canyon is infamous, dealt us a few swift thwacks against overhanging cliffs in the first mile. But the major obstacle for us, as for all boaters in Santa Elena, was an immense rock slide where a portage is required, approximately two miles into the canyon. At the slide, with boulders as high as twenty feet usurping the river channel, our shallow water became a real asset. Most parties are forced to carry all equipment a quarter of a mile over the upper edge of the rock pile on the Mexican side, climbing almost 250 feet in the process. With boats and oars, frames for the boats if heavy-duty equipment is used, life preservers, camera gear, food, drinking water, air mattresses, and sleeping bags, one can spend several man-killing hours on the Mexican portage. Low water, though, permitted us to line our boats down the American side for fifty feet or so, leaving a portage of only about two hundred feet down the American side. That was exertion enough to win our respect for the difficulties the slide has presented to others.

Camping that night just below the slide on the Mexi-

can side, while we enjoyed watching fireflies in the shadows of a moonlit canyon, we recalled that this beautiful spot was what Robert Hill once called "Camp Misery." Hill, who completed the U.S. Geological Survey study of the Rio Grande in 1899, had just spent three days portaging the Mexican side with three-hundred-pound boats and gear for a scientific expedition, which accounts for his dismal reaction. Earlier, the boundary survey conducted in the 1850s was shut out of all of the canyons, both by the actual difficulties of Santa Elena and by other imagined ones. The Texas Rangers, however, succeeded in exploring Santa Elena, Mariscal, and Boquillas canyons in the 1880s. Today because of the hazards, which have been known to take lives, Santa Elena is still less frequently traveled than Mariscal. Boquillas, though relatively easy to run, is least traveled because of its comparative remoteness.

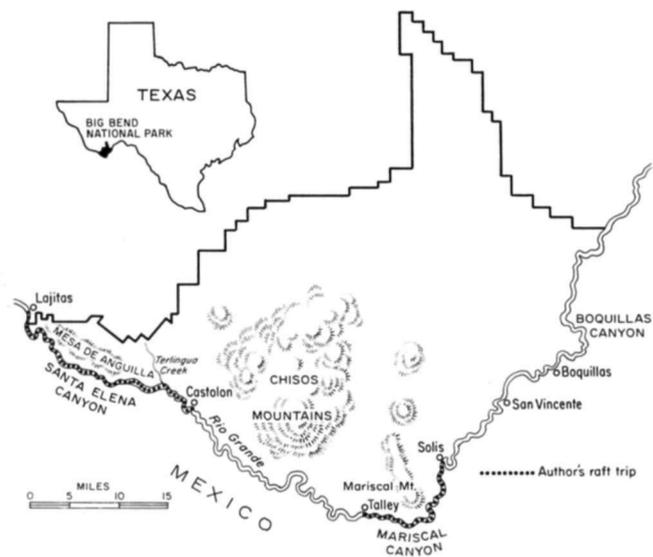
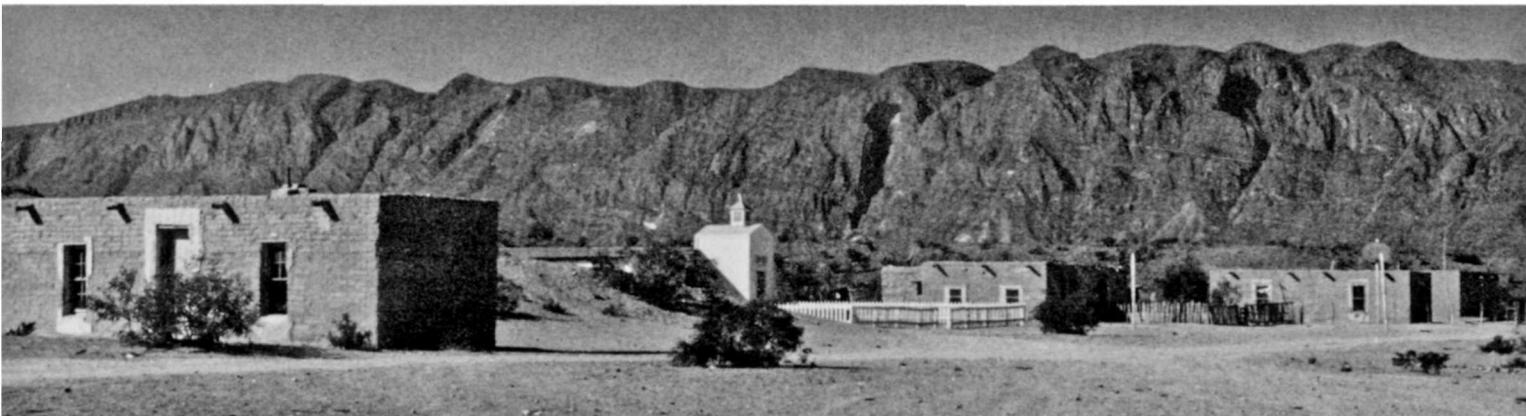
With the rock slide behind us we were ready for a restful cruise through the depths of Santa Elena, and our necks soon became stiff from gazing up at 1,200-foot cliffs. About three miles below Camp Misery we beached on the reed-lined bank to explore Fern Canyon, a white grotto in a slot on the south side. A short clamber into it earned us a startling sight of maidenhair fern clustered against shaded rock walls and mirrorlike pools of water trapped in the angles of the canyon's floor. Below this spot Santa Elena's cliffs were pitted with caves, both large and small, the biggest of which is said to have been the hideout of smugglers or rustlers, either version being unlikely in view of the inaccessibility of this canyon to anyone except boaters.

All too soon we were approaching the mouth of the canyon with the hazy blue outline of the Chisos Mountains rising in the distance. Hiking up a short footpath from the picnic ground at the mouth of Terlingua Creek

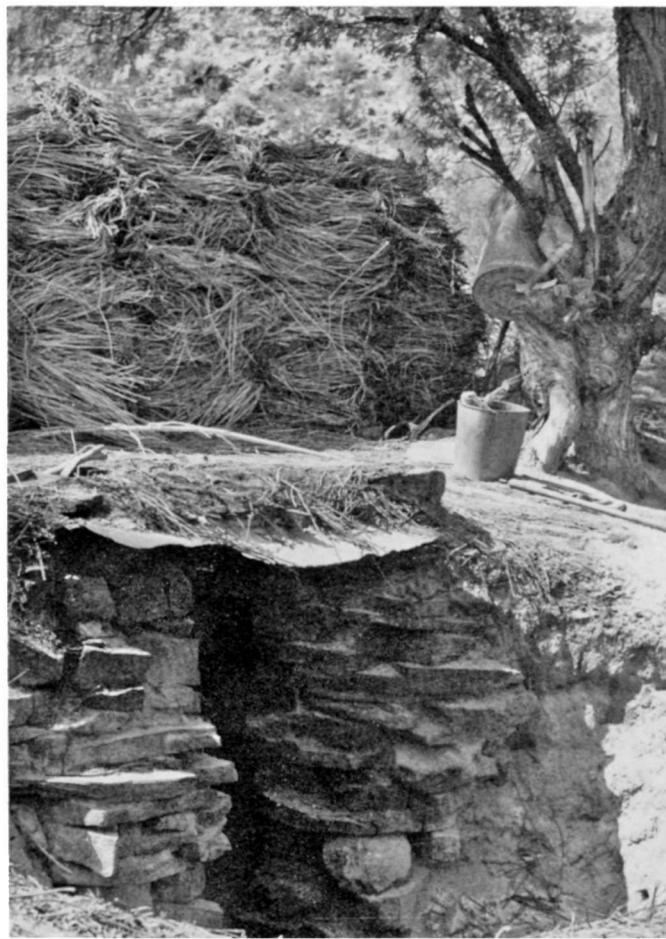
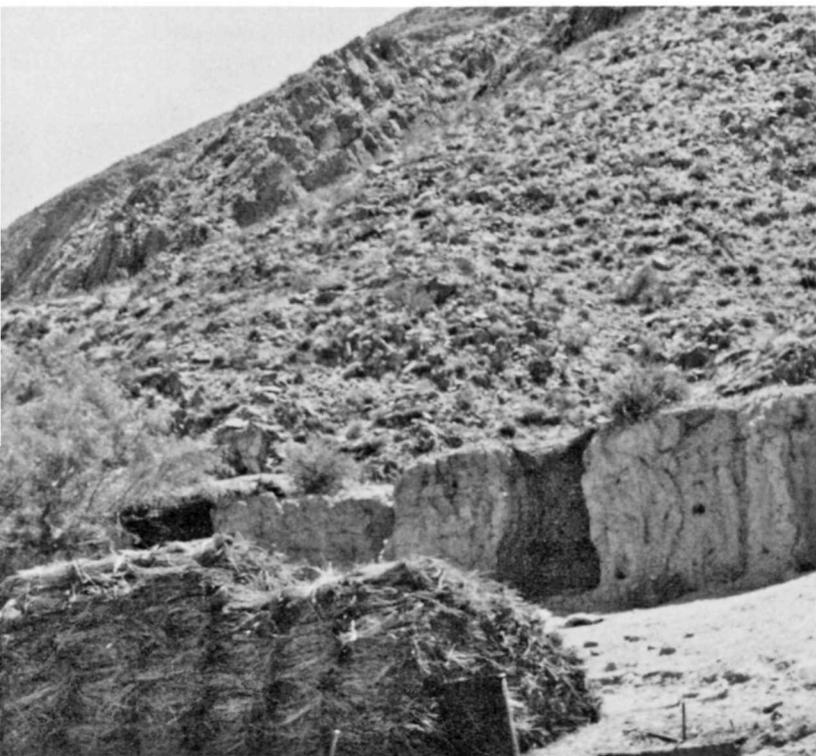
Mariscal Canyon has sparser vegetation than is found in Santa Elena Canyon, and the 1,600-foot cut through Mariscal Mountain is deeper and the limestone is more ragged and broken than that of Santa Elena.

PHOTOGRAPHS BY THE AUTHOR





San Vicente, above, basks silently in the sun about a mile from the Rio Grande. Sierra San Vicente forms a rugged backdrop. This Mexican village, consisting of a few adobe houses, a church, a school with neither teacher nor students, and one small store, stands outside of today. The men of the village work at the candelilla camps, such as the one shown below and left. These dugout shelters serve as homes for some of the men. A stack of candelilla (wax euphorbia) is in the foreground. Pictured below is a fire pit, where drums of sulphuric acid and river water are heated to remove the waxy coating from the stems of the candelilla. The product of this operation is used locally for candles, but its chief commercial purposes are for polishes and chewing gum.



and wading in the cool water of the Rio Grande were the tourists, who always come as a small psychological shock to "hardened" river runners. However, these picnickers in retrospect seemed to be better outdoorsmen than were some boatmen who had preceded us down Santa Elena. One campsite, decorated with the usual packaging debris from gear, food, and beer, also turned up a memo with the names and addresses of the party who had camped there, as a testimonial of their indifference. We filled a jumbo-size trash bag with litter in the seventeen miles between Lajitas and Terlingua Creek.

With Santa Elena completed, we shuttled our cars around the Chisos Mountains for our next run, Mariscal Canyon. Talley, our embarkation point, is near the southernmost tip of the Big Bend and two hundred feet less in elevation than Lajitas. Here the surrounding hills were more arid, it was more summerlike, and the prickly pears were bursting into bloom. Surprisingly, in these unpromising conditions farming was once carried on at Talley and, in fact, in most of the bottomland along the river until the creation of the national park.

Mariscal, which we entered about a mile below Talley, differs from Santa Elena Canyon not only in its sparser vegetation. Although the 1,600-foot cut through the long ridge called Mariscal Mountain is deeper than that through Santa Elena Canyon, the limestone is more ragged and broken, revealing the mountain's folding and faulting. In the cracks and ledges are footholds for hedgehog cacti, the red-spined Texas barrel cacti, and false agave.

Not having met anyone in Santa Elena, we found Mariscal almost crowded when we saw two parties in one day. Both consisted of young people in lightweight, four-man rafts that were too small to carry their passengers, much less any provisions. Four in one boat and three in the other floated past, all partly submerged in chill water as evening shadows descended. Because Mariscal can be run in one day the trip is popular and, happily, is free from the abuse that campers administer, as in Santa Elena. But since the *mañana* spirit was in command of our itinerary, we camped on a grassy beach, despite the fact that our total run between Talley and Solis was a mere ten miles. As a result, we had ample time in Mariscal Canyon for photography, exploration, and fishing. The most rudimentary tackle nearly produced a catfish dinner, but our catch was too small to feed four, so it was returned to the river to swim another day. No fishing license is required in the park, and large catfish frequently are caught. At the Lajitas trading post we had seen the heads of a thirty-pounder and a fifty-pounder strung in a tree.

Where the canyon is bisected by a north-south break, we stopped to see a wax-rendering plant on the Mexican side. A great stack of *candelilla*, or wax plant, had been carried in on burros and lay near a large fire pit, where drums of sulphuric acid and river water are heated to remove the waxy coating from the stems. We later located other similar operations downstream. The product of these "factories" is used locally for candles, but its chief commercial purposes are for polishes and chewing gum. It is said that some wax is smuggled into the United States due to the plant's widespread removal from Texas.

The primitiveness of the wax-rendering operation was accentuated by a row of dugout dwellings, one room each, where workers live. While we were photographing the area, a handsome young man rode into camp on his burro and approached us with a direct "*Porqué?*" His manner implied that such intrusions are not always welcome, but a few questions in Spanish mellowed him enough that he told us about the wax-rendering operation and informed us of some nearby petroglyphs.

We took out at Solis. Like Talley, it is neither farm nor settlement today but merely a campsite. With time for boating gone and with curiosity about the river's human life mounting, we packed up our rubber boats and visited two Mexican villages. San Vicente, a mile or two across a tilled floodplain, consisted of a handful of adobe houses, a church, a school with neither teacher nor students, and one small store. No one spoke English here, but the dignified merchant told us that the men of the village worked at the *candelilla* camps. San Vicente stands outside of today.

On the other hand, the larger town of Boquillas, where a rowboat ferries tourists to and from the park on the American shore, shows the effects of accessibility. When we walked into town, schoolchildren running home for lunch with their books and pencils in boxes on their heads could beg for nickels bilingually. Still, Boquillas is scarcely modern, for on one side of the central plaza a pig was eating lime skins tossed from a *cantina*, while on the other side a road grader with all its tires flat was serving as a hitching post for a string of burros. The grader probably was intended for work on a road to be built across the Sierra del Carmen, where a Mexican national park is to be created *mañana*, thus forming an international reserve.

International relations along the Rio Grande have not always been so peaceful, though. Some buildings still in use at Castolon were built for a United States Army post when bandits used the river ford there during Pancho Villa's heyday. And nearly two centuries ago Spaniards protected several crossings there from Comanche Indians, who raided as far south as Durango. At old San Vicente Crossing a Spanish presidio was established on the south side of the river. The buildings have crumbled now, but here and at other sites the river shows traces of its historical diversity.

We left the Rio Grande with the awareness that we had only begun to see all that the desert river had to offer; but what we had seen had given us an understanding of a Big Bend that is different from the uplands of the Chisos Mountains. For a few days we were part of the life of the river in the desert, and the experience will be a part of our lives always. ■

Virginia McConnell Simmons has written numerous books and articles on the regional history of the West and has worked as editor for the State Historical Society of Colorado. She has traveled extensively throughout the Southwest by trail and by river.



PHOTOS BY THE AUTHOR



THE KIT FOX

The bantamweight of the dog family
needs help to survive

By **FRANK J. TURKOWSKI**

One of our most interesting wildlife species is in trouble. America's smallest wild canine, the kit fox, is threatened over most of its range, and one subspecies, the San Joaquin kit fox, is classified as being rare and endangered. These bushy-tailed desert inhabitants would probably be in a better predicament if more of us could see them or become acquainted with their life style. These graceful and delicate mammals give the impression of a precision work of art that required an extra amount of exactness to detail.

The bantamweight of the dog family weighs in at between four and six pounds. Female kit foxes weigh slightly less than male kit foxes. Height at the shoulder is a little under twelve inches, the head and body length is about eighteen inches, and the tail is about a foot long. Coloring is buff with grizzled gray over the back and white underparts. A black spot from which long sensitive

whiskers or vibrissae extend is located on each side of the nose. In fact, the kit's general appearance resembles a miniature version of a coyote.

Kits are well adapted to their natural habitat. The black tipped, bushy tail can be wrapped around the body somewhat like a blanket during cool desert nights. Their hearing is keen; the long, pointed external ears collect sounds like a funnel. Foxes that occur in sandy areas have ears lined with thick, stiff hair to prevent blowing sand from entering. What one writer calls a "desert snowshoe"—stiff tufts of hair between the toes—prevents the kit's feet from sinking into the sand.

Kit foxes occur in the desert areas of Oregon, California, Nevada, Utah, Arizona, New Mexico, Texas, and northern Mexico. A close cousin, the swift fox, lives on the grassland plains of Canada and the northern and central United States. Some zoologists consider kit and swift foxes similar enough to be included in the same species. However, there are minor differences in size, anatomy, and coloration between the two. The longer-eared kit fox goes under the scientific alias of *Vulpes macrotus*, whereas the swift fox is called *Vulpes velox*. Both species' preference for open plains probably reduces competition from the larger red and gray foxes, who prefer rocky or bushy areas.

As might be expected, because of their delicate physiques, kit foxes eat primarily small animals. Kits are usually closely associated with kangaroo rats, their staple food. Evidence of kangaroo rat chases are sometimes visible in sandy areas. Tiny kangaroo-like footprints, complete with dragging tail, are obliterated by the round, dainty tracks of a running kit fox. Once in a while the hopping tracks disappear into a burrow, indicating that the intended prey is sometimes the winner of the race for life. Occasionally, kits eat larger prey such as jackrabbits. It must be quite a sight to see one of these foxes capture a jackrabbit that is about the same weight.

known. However, where they have been studied, kangaroo rats, cottontails, black-tailed jackrabbits, white-footed mice, ground squirrels, birds, lizards, crickets, grasshoppers, and even cactus fruits and scorpions are listed as kit fox foods. They utilize their foods efficiently; the entire prey is eaten and usually swallowed whole after being bitten a few times. Like most canines, kit foxes bury surplus food. However, they do not always retrieve it, much to the delight of crows, ravens, buzzards, and skunks. In desert habitats, where annual rainfall may average six inches or less, insects probably provide necessary moisture when drinking water is scarce. In fact, several zoologists have stated that a permanent water supply apparently is not necessary to kit foxes. They occasionally consume grasses and nonfood items such as stones; one Arizona kit fox even ate a milk carton. It had been theorized that they eat grasses to scour out tapeworms from the alimentary tract.

Little is known about kit fox courting and mating behavior, but from my observations these activities seem to be typically doglike. Adults normally pair and mate during the spring of their second year. Most are monogamous for the entire breeding season, but sometimes a male may mate with several females. A male usually pairs with a different mate each year. Potential parents dig several dens before the arrival of the pups. The kits are born in the spring when chances for their survival are greatest due to the abundance of prey. They are born in an underground den after a gestation period of about fifty-three days. Litters may contain as many as seven young, but the average is four. The pups weigh about two ounces at birth and are nursed by their mother from her six milk spigots for eight to ten weeks. Pups' tails do not attain a bushy appearance or black tip until they are about two months old. The male apparently does most of the hunting for his mate while the pups are young. The

Tiny Desert Canine

Like most other carnivores, kit foxes are also opportunistic and take advantage of areas where prey animals concentrate. For example, in Arizona they often capture insects under electric lights at a dam on the Colorado River. One family of San Joaquin kit foxes preyed on large pocket gopher populations living in alfalfa fields. They will eat dead animals on roads and will decoy to the sound of a predator call that sounds like a wounded jackrabbit. They cannot pass up what might be a free meal.

Kit foxes are usually nocturnal, but they sometimes hunt during daylight, especially on cloudy days. Most hunting activity occurs in short periods with several rests in between. Like their sense of hearing, visual and olfactory senses are keen, and they use all these senses to locate their prey. Because kit foxes are rare in many parts of their range, their diets are not completely

youngsters first emerge from the den when they are about one month old, at which time the parents begin bringing them solid foods. Sometimes both parents hunt together, and most hunting at this time of year is confined to the den area. The father stays near them and may have a separate den. Like many growing youngsters, the spindly-legged pups are curious and often explore the den area to prey upon insects or lizards. These "small game" hunts train them for their future hunting activities.

The youngsters stay with the parents about five months; but when the den is abandoned, the pups must support themselves. They attain adult size by this time and may stay together for a short time, but usually they soon become solitary until the next mating season. Unlike most canines, adult kit foxes are not greatly disturbed by humans near their dens. Once, while I was



Food items of the kit fox include, clockwise from bottom left, kangaroo rats, scorpions, spiders, pocket mice, and centipedes. Kangaroo rats form the staple item in kit fox diets in most habitats, while insects provide extra necessary moisture in areas where the average annual rainfall is six inches or less. Kit foxes also have been known to consume cactus fruits, birds, ground squirrels, and jackrabbits.



observing a den, a female casually approached and sat down to watch me watching her. The pups were instinctively more cautious; and when I approached the den, they withdrew inside, but I could hear their high-pitched growls. I made a mouse-like squeak, but they could not be induced to look out. Most carnivores are not preyed upon by other predators, but the small young kit foxes look appetizing to golden eagles, hawks, coyotes, and wolves. To protect themselves, kit foxes do not entirely emerge from their den until they have surveyed their surroundings.

Kit foxes usually rest inside their dens during daylight in winter but may spend more time outdoors during warmer days or when pups occupy the den. The homing instinct is well developed, as suggested by one escaped specimen that returned to its den twenty miles away. Kit fox dens are not elaborate; however, a family den is larger than one occupied by a solitary fox. They are sometimes merely an enlargement of another animal's burrow, are often located in open areas, and usually have at least two entrances, but some have as many as ten. The excavated dirt forms a mound around the entrance that prevents flooding of the burrow during heavy rains. The entrances vary from one to three feet in diameter and become narrow as they extend downward into tunnels leading to a large nursery.

While kit foxes are raising a family, they may move from one den to another. They probably move both to take advantage of a more abundant food supply and to reduce flea infestation. After all, kit foxes would not be typical canines without harboring a few fleas. The larvae and eggs of these bloodsucking parasites thrive on the dirt floors of the dens. Few parasite studies have been done on kit foxes, but only two species of fleas have been reported for them in Arizona and California. Strangely enough, these species are common parasites of many

mammals, including man and domestic dogs. Ticks, tapeworms, and roundworms are other unwelcomed guests carried by kit foxes. Kits are also susceptible to rabies.

Though kit foxes are always well groomed, they would not be eligible for Good Housekeeping Awards. There is usually debris around the den, such as feathers, fur, and bones. But kits can be hospitable and sometimes share their dens with other animals such as burrowing owls, lizards, and many insects.

Regarding vocal traits, kit foxes are the sopranos of the dog family. They have a short, high-pitched bark. Their growl sounds almost like a purr ending with a hiccup, which one biologist says resembles a perking coffee pot. When greeting other foxes or humans, they make a whimpering sound like a domestic puppy. Scent glands are also used for communication in doglike fashion.

Like most wild animals, kit foxes lose their glamour when maintained in captivity. Their urine is odoriferous because it is very concentrated, an adaptation that helps to conserve water. They will chew on furniture or other expensive objects. Two kit foxes, obtained as pups by one zoo, became quite tame. They displayed typical doglike greeting behavior toward their keeper—they whimpered and wagged their tails when greeting him, and they also liked to play chasing games.

Wild kit foxes are harmless to humans when unprovoked; and when someone is bitten by one, it is usually the human's fault. I had an unforgettable experience with a male fox that I attempted to photograph. The fox was captured alive and given a fear-reducing tranquilizer so it would assume a natural pose. Normally, undrugged kit foxes can be easily intimidated and herded about their cages. However, when I entered the cage of the tranquilized fox and approached with my camera fo-



A kit fox den may be located at the base of a tree, in an open area, or under a bush.

cused, he attacked! The tranquilizer apparently had eliminated all fear. I was left without a picture and with teeth marks on my hand and a foolish grin on my face. This small five-pound fox had become a wolf!

Kit fox fur is soft and dense, and in the past it was frequently used for trimming coat collars. It is reported that in 1912 one firm sold 35,222 kit fox skins. In 1919 a trapper reported taking over 100 San Joaquin kit foxes from a small area in one week. The fur does not wear well, and fortunately the pelts are not in much demand now, so kit foxes are seldom selectively trapped.

Inasmuch as kit foxes are so adaptable, one may wonder why they are rare or endangered. There are several threats to their survival in our modern world. One is the encroachment of housing construction on their habitat. Because they consume insects, they are probably also adversely affected in agricultural areas where crops are sprayed. In habitats where they depend greatly on prairie dogs, kit foxes are affected when these rodents are poisoned, both by the reduced food supply and by eating poisoned prey. Many kit foxes are killed by automobiles on highways. Presumably they are attracted to the roads because of the concentration of insects and other dead animals. Their tameness and natural canine curiosity may also be leading to their downfall, as some people kill any wildlife on sight. Hunters who decoy these foxes by using a predator call claim that the kits approach very close and some even sniff at their boots. Campers have told me about throwing food to kit foxes that approach their campfires at night.

Most conservation and wildlife agencies are becoming concerned about kit fox preservation. However, few federal agencies and state game and fish departments have had funds available to do the research that would be a basis for the management of this species. In 1969 the California Department of Fish and Game became con-

cerned about one subspecies, the San Joaquin kit fox. The Special Wildlife Investigations Project began a study to obtain kit fox life history information. In 1971 California's Game Commission declared the San Joaquin kit fox rare in accord with the California Endangered Species Act. Perhaps other states would protect their own kit foxes if they could conduct such studies.

However, all is not lost yet, for in many areas kit foxes seem to be thriving. I know of several dens in Arizona where litters were recently raised successfully. Also, public attitude is improving and more people are beginning to be concerned with preserving our wildlife. With recent governmental restrictions on the use of poisons and the increasing public appreciation of wildlife, perhaps they have a chance. The establishment and maintenance of national parks, wildlife refuges, and primitive areas within the range of kit foxes could provide a stronghold for their survival. Educating the public to their esthetic value and their endangered status is also a necessary step in kit fox conservation. Kit foxes are an integral and important part of a complex ecosystem. This is justification enough to preserve this beautiful miniature native dog for the benefit and enjoyment of future generations. ■

Frank Turkowski holds a Bachelor of Science degree and a Ph.D. in zoology from Arizona State University. Presently Dr. Turkowski is a wildlife research biologist cooperating with the Arizona State University Zoology Department and the U.S. Forest Service on carnivore and desert cottontail studies. He is also studying the behavior of the Arabian oryx, an endangered antelope, and desert bighorn sheep as consulting biologist for the Phoenix Zoo.

crisis in a ravaged land the CALIFORNIA DESERT

STANLEY MEDDERS

man's activities are destroying a fragile ecosystem
in a once-unspoiled land

NOT MANY YEARS AGO the desert of interior southern California was a relatively unspoiled, vast open space as large as the state of West Virginia. Even as late as 1960 its great stretches of rugged mountains and desolate valleys were still among the least man-damaged areas of the earth's surface.

Today this situation has changed dramatically. Unless urgent measures are taken to halt current destruction in the California desert country, its harsh beauty, its highly specialized flora and fauna, and its legitimate outdoor recreational resources will succumb to the mechanized pressures of an ever-increasing nearby human population.

Military operations and off-road vehicle use already have severely damaged countless acres of desert land, stripping them of their sparse but ecologically natural vegetation. In this fragile land of little precipitation and thin soil, it takes between 50 and 100 years of natural processes to repair such damage, even assuming no further devastation in the same area.

Unfortunately, plant destruction is still occurring all across this desert. Of the more than 700 species of flowering desert plants—about a third of which are unique to the region—many are being wiped out or reduced in numbers by human activities. Plant and animal collection, livestock grazing, real estate development, irrigation, and smog are taking their toll on desert life.

Illegal plant collection by both amateur and commercial collectors has seriously reduced a number of desert plants, some of which are endangered in this locality at least: the California fan palm, saguaro cactus, crucifixion thorn, dune primrose, desert holly, desert lily, ocotillo, and barrel cactus, to name a few.

Creeping fingers of airborne pollutants from large cities on the desert's fringe, already blamed for the destruction of farm crops farther west—first destroying most of Riverside's romaine lettuce crop, then hundreds of pines in the San Bernardino National Forest—may now be threatening the nearest of the desert's plant life.

Indiscriminate sheep and cattle grazing has caused perennial shrubs and grasses to be replaced by ephemerals and other inferior species ineffective in holding together the fragile desert soil. This unregulated livestock grazing—added to the destruction of vegetative cover by millions of visitors on foot and in vehicles—causes erosion and seriously reduces the quantity and quality of wildlife habitat, diminishing not only the populations of bighorn sheep and deer, but that of such rare or

endangered species as the southern bald eagle, American peregrine falcon, greater sandhill crane, Yuma clapper rail, and black toad.

Additional habitat has been destroyed by construction of "recreation homes," most of them shacks consisting of occasionally occupied boxlike cubicles. More yet is lost to poorly planned road construction and to some 250,000 mining claims, 95 percent of which may be invalid because of lack of mineral discovery.

Desert tortoises and fishes, snakes, and lizards are disappearing at an alarming rate. The number of herpetologists who swarm across many areas may, in fact, far exceed the number of reptiles presently there. Many lizards and snakes die when they are moved from their native habitats and carried back to "civilization." Desert tortoises often are shot or turned on their backs to perish slowly in the hot sun.

Because of human destruction of habitat, a number of species or subspecies of desert fishes already have become extinct; others are so endangered that only immediate action can save them. Such rare fishes as the Mojave chub, speckled dace, and several of the desert pupfishes have fallen victim of overcollecting, introduced species, or habitat destruction. Competition for food and cross-breeding have caused some desert populations of fishes to be completely replaced. On the Lower Colorado River, diversion of water for agriculture and industry has nearly eliminated a large native fish, the once prolific squawfish.

Even California's colorful past, both historical and scientific, is being heedlessly destroyed. Vandals have demolished many historic desert buildings, have defaced petroglyphs, and have desecrated prime archeological sites. By trampling ruins and illegally removing relics from important paleontological and archeological locations, pot hunters have destroyed forever in many cases any chance scientists might have had of reconstructing the meanings of fossils and artifacts of ancient Shoshonean and Yuman civilizations.

Such destruction is widespread throughout the California desert. In San Bernardino County, for example, there are between 500 and 1,000 petroglyph sites, some dating far back into prehistory. Inaccessible a mere ten years ago, they are presently within easy reach of vandals in off-road vehicles of various kinds, who deface the ancient art galleries with chalk and paint, or use them for target practice. Souvenir hunters pry petroglyph slabs off rock walls, while builders quarry them for construction material.



More than 2,500 riders line up almost as far as the eye can see for the Barstow-Las Vegas race.

Other desert localities suffer similar damage. For example, in the Yuha desert east of San Diego vehicles are destroying the Giant Intaglio, a huge prehistoric land drawing. Archeological sites at "Hole in the Wall" in the eastern Mojave have been totally vandalized, and those at Imperial Sand Hills are being systematically destroyed by gravel mining. Paleontological deposits are being removed from Rainbow Canyon near Barstow, an area that contains some of the most important fossil vertebrate finds in North America.

Scenically, the California desert has fared no better. Abandoned boxcars, old refrigerators, and automobile bodies discarded in the burr sage take decades to rust away in dry desert air. Even in the most remote areas litter left by picnickers and campers and the garbage from thousands of desert households will mar the landscape for years to come. Along many stretches of highway every creosote bush is festooned with old newspapers, carelessly thrown from passing cars and blown about by desert winds.

The California desert represents about one percent of the world's desert lands, stretching from the Sierra Nevada and Death Valley to the Mexican border about 240 miles away, and from the Colorado River to the vast southern California coastal metropolitan complex. In the coastal megalopolis lies the major threat to the survival of the desert; for people there, representing almost 65 percent of the state's population, can move in only one direction—toward the 25,000 square miles of desert.

Developers and entrepreneurs are casting increasingly covetous eyes at the desert, where there are thousands of acres of prime land—land to be exploited for urban development, industry, mining, and agriculture. Fringe cities are desperately searching for places to dump solid wastes and, ever more frantically, for recreational elbow room to satisfy burgeoning populations. Either of these projected uses would place a great strain on the desert's ecology; together they will present problems of the first magnitude.

Consider only the demand for recreational use. The Bureau of Land Management of the Interior Department estimates that by 1980, leisure time in southern California will increase by 84 percent over actual figures for 1968 and that by 2000 the five million visitor days to the desert made in 1968 on its lands will soar to nearly fifty million. Such an increase could mean only one thing in terms of desert use under today's conditions: total ecological disaster for an already overtaxed land.

The issues of solid waste disposal and irrigation present similar dilemmas. Both Los Angeles County, with its approximately thirteen million tons of waste annually, and San Bernardino County, with another three million, already have critical disposal problems. These counties, and others in and around the desert, see limitless dumping grounds in the sandy vastness.

They see, too, a potential agricultural paradise in the California desert, if only more water were made available. Actually, according to BLM, the amount of

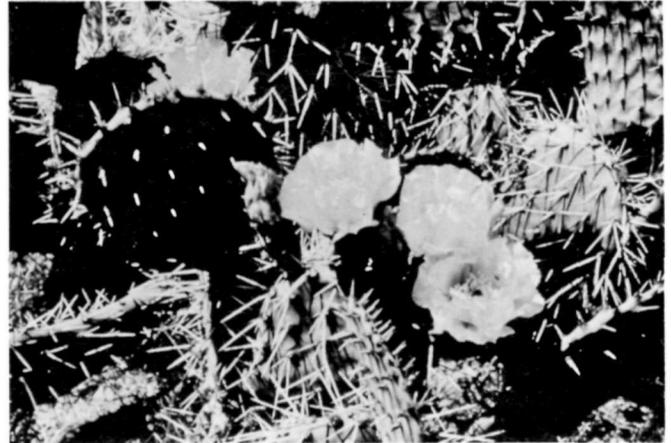


Above, El Mirage Dry Lake in BLM's Riverside District is a popular area for ORVs, sand sailers, gyrocopters, and gliders. Below, vandals often strip smoke trees of their foliage or set them on fire.



irrigated acreage could increase over present figures by nearly 70 percent, or to some two million acres. Availability of additional water, however, would bring more than agriculture; it would bring mushrooming new communities in the Mojave and Colorado deserts, new industrial plants, mining, agriculture, suburban sprawl. The consequences: more "people pressure," increased litter and pollution, further degradation of the state's historical and archeological past, additional destruction of plant and animal habitat.

If these projected uses were forced on an already impaired desert, it would be difficult indeed to save any meaningful part of a region described by one Department of Interior official as a "fragile environment, easily scarred, slowly healed, historically protected only by an



Pricklypear cactus and other cactus, once growing profusely in much of the desert, are becoming scarce due to removal by plant collectors. Below, the kangaroo rat is well adapted to the desert, obtaining his water from the seeds he eats; but destruction of food plants is reducing his numbers at an alarming rate. Desert tortoises are often shot outright, turned on their backs to die slowly, or collected as pets by desert visitors.

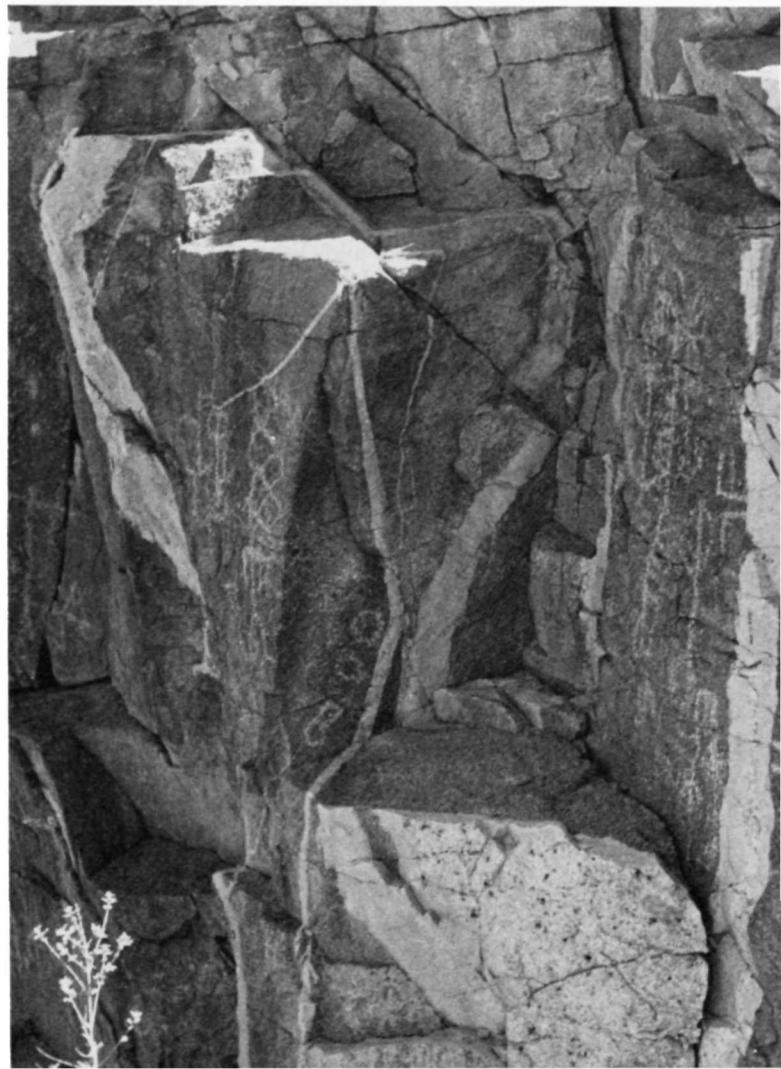
PHOTOGRAPHS BY THE AUTHOR





distressing desert phenomena

Abandoned automobiles, abandoned shacks, never-completed cabins—these are familiar sights that blight the California desert. Petroglyphs—designs carved into rock by prehistoric Indians—are disappearing at an alarming rate. Today these ancient works of art are often used as target practice. Those on badly fractured rock like that shown here are easily pried out and carried away by vandals. Some petroglyph-adorned rocks are even being quarried as building material.





Motorcyclists begin a race in BLM's Riverside District— crosscountry through a "fragile environment, easily scarred, slowly healed. . . ."

inhospitality which modern technology is rapidly making meaningless."

If the California desert is to be saved, it will be only through a powerful rehabilitation program and stringent regulations, rigidly enforced by the Department of Interior. Even now salvage problems are many and are complicated not only by the desert's size but particularly by an almost complete lack of adequate and consistent desert resource protection policy.

There are currently several measures in Congress aimed at establishing a California desert national conservation area. One such measure (S 63), co-sponsored by senators Alan Cranston and John V. Tunney, would provide for the protection and administration of this desert through a program of multiple use and maintenance of high environmental quality. It would establish an advisory commission to advise the Secretary of the Interior on long-range programs and management of the desert. Several generally similar bills are in the House of

Representatives, with Robert B. Mathias, Jerry L. Pettis, and other California congressmen as sponsors.

In the meantime, counties in the desert are flying blind, because no policy exists, even at the state level, to guide them in making decisions on desert land use. Existing protective laws are woefully inadequate; but even if there were strong laws, BLM would have far too few employees, at this time at least, to enforce them.

If this discussion constitutes a none-too-encouraging picture, it was intended to do just that. On a more optimistic note, BLM, which administers eleven million acres of this desert land, has recently initiated hasty measures to check the destruction there. In making a comprehensive study of the desert environment, a bureau committee soon discovered that the situation is so critical that corrective measures should be taken immediately.

Most pressing of these needs, the study disclosed, is the establishment of a uniformed ranger patrol, much like that of the National Park Service. A large ranger force, empowered to issue citations, might help prevent further damage and destruction to the desert's biological, historical, recreational, and scientific resources.

Given a BLM ranger force, however, there would still remain the urgent need for a visitor conservation education program aimed at a better public understanding of the delicately balanced desert environment. To meet this need the committee recommended establishment of a desert center and a supportive system of way-stations strategically located throughout the desert to provide information and interpretive services.

Recognizing, though, that neither of these suggestions would restore resources already destroyed or satisfy the growing demand for desert recreation, the BLM study group made several other recommendations: emergency

development of spring areas along the Mojave River into which to transfer the few remaining populations of rare desert fishes; closing of the most seriously damaged habitat areas pending recovery of their vegetation and wildlife; establishment in selected areas of off-road vehicle and hiking trails, scenic nature routes, and locations where pot hunters might explore and dig to their hearts' content.

But the Bureau has not made such obvious recommendations as the incorporation of more desert land into Joshua Tree National Monument, California's great Anza-Borrego Desert State Park, and Death Valley National Monument. Nor has it given serious thought to the creation of small nature preserves from such conspicuous areas as the thick fields of cholla cactus stretching back from both sides of Highway 66 for a distance of about twenty-five miles west of Needles on the Colorado River. One of the best stands of cholla in the state, these rare fields and the remarkable or unique areas all across the desert deserve protection before it is too late, perhaps by identification as a reserved natural area.

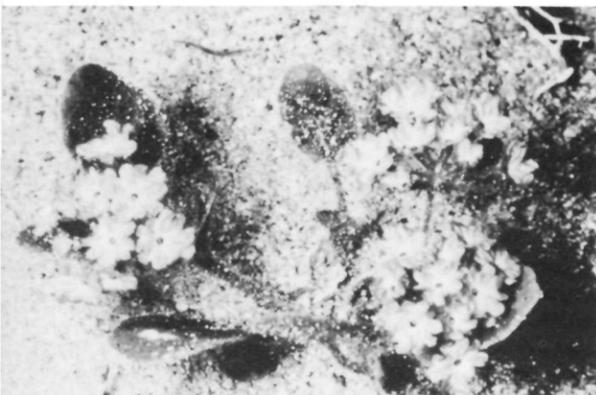
But multiple problems still hover as ominously as

southern California smog over our last frontiers of public land in California and other public land states as well. Vital to the solution of these problems is a strong and competent Bureau of Land Management, equal with the other federal land management agencies in its authority to make and enforce decisions on the best uses of the public's lands, free of the existing welter of antiquated and often conflicting laws. ■

For a report of the current status of administrative and legislative decisions affecting the California desert and other BLM lands, see page 28.

Stanley Medders, a high school language teacher near San Francisco, has always had a deep interest in the desert areas of California, Arizona, and Nevada, spending all possible free time in Death Valley and the Mohave and Sonoran deserts exploring, photographing petroglyphs, and studying plants and animals. Last year he spent a six-month sabbatical there. Mr. Medders has published many nature articles in western periodicals, and currently he is working on a book about Indian civilizations of the California desert.

By 1972 (right) slopes as well as assembly areas were nearly stripped of vegetation by intensive ORV use since 1968 (left), when motorcycle use began in this area south of Dove Springs in BLM's Bakersfield District.



Sand verbena and other wildflowers are being eradicated by off-road vehicles.





THE RESEARCH RANCH

A DREAM BECOMES REALITY

Land stewardship is one family's
answer to the permanent
conservation of land they love

By **ARIEL APPLETON**

THE RESEARCH RANCH, now a laboratory of nature for environmentalists, students, teachers, and researchers, universities, private foundations, and governmental agencies, was just a gleam in the mind's eye six years ago. Since 1959, our family had been in the traditional business of raising registered Hereford cattle on this land, which then went by the name of Elgin Hereford Ranch. This lovely mile-high country lies along the western piedmonts of the Huachuca Mountains, north of the Mexican border, seventy miles southeast of Tucson, Arizona. Five different ecosystems are contained within its boundaries: short-grass prairie, oak savannah, oak woodland, riparian, and piñon juniper. Summer temperatures are in the 80s, bringing a 2½-month rainy season that lush-greens the rolling hills and valleys. Rainfall and vegetation differ greatly from the Sonoran desert environment that surrounds Tucson. Oak, sycamore, willow, and ash trees flourish, and occasional winter snowfalls add variety to our visual joy.

Cattle ranching in the arid Southwest is not profitable for the average rancher, whose economic hopes lie more in the ever-rising price of land. A hundred acres may be needed to support one mother cow and calf. Their preference for grass over the mixture of grass, forbs, and browse that sustained the indigenous deer, elk, and antelope before cattle were introduced to the West in great numbers creates a hardship to the land.

The death of a ranch owner presents an even greater threat to the land. Inheritance taxes on acreage that is constantly increasing in value as population pressures expand become prohibitive, necessitating sale to the highest bidder, most often a subdivider.

After a two-year stay in Costa Rica, where my husband directed a seventy-member team of Peace Corps volunteers, we returned to Arizona hoping to find an alternative to the DTs of death, taxes, and subdivision so that our ranch could be preserved unscarred and so that natural successions of all the varied forms of indigenous life could thrive to provide pleasure and information to future generations.

Our ongoing interest in wildlife preservation prompted the idea that the land might be used as an effective breeding and holding area for endangered species, so we started off on a cross-country series of zoo visits and meetings with members of the American Association of Zoos and Aquariums. The people we met with were interested in our idea, but we were too inexperienced and lacked sufficient funding, beyond our gift of the land, to foster any gene-bank projects.

When we limped home from our zoo safari, a lot wiser about exotic wildlife but nowhere on our ranch prospects, we were visited by a professor from the University of Arizona who had heard that we might be willing to suspend cattle grazing. He had been looking without success for a thousand-acre, ungrazed area to be used for a seven-year research project funded by the Atomic Energy Commission and involving computerized environmental analysis and aerial photography. The purpose of the project would be to develop a new technique for reclassifying the 280,000,000 acres of short-grass prairie that range east of the Rockies from the Canadian border to the Mexican border. When we realized that no sizable area of unmanipulated land in the state of Arizona was available for this purpose and that these thousand acres would constitute a laboratory for a tenth of the United States, we knew we were on the right track.

The use of our land for this project marked the beginning of our dream turned into reality. Thanks to the patience, foresight, and generosity of my husband, The Research Ranch was established in 1968 as a non-profit, private operating foundation for the purposes of research, conservation, and education, with a funding of \$100,000 to cover ranch overhead for an initial period. Land and buildings, with the exception of our own house, were leased to the Foundation for \$1 a year. A

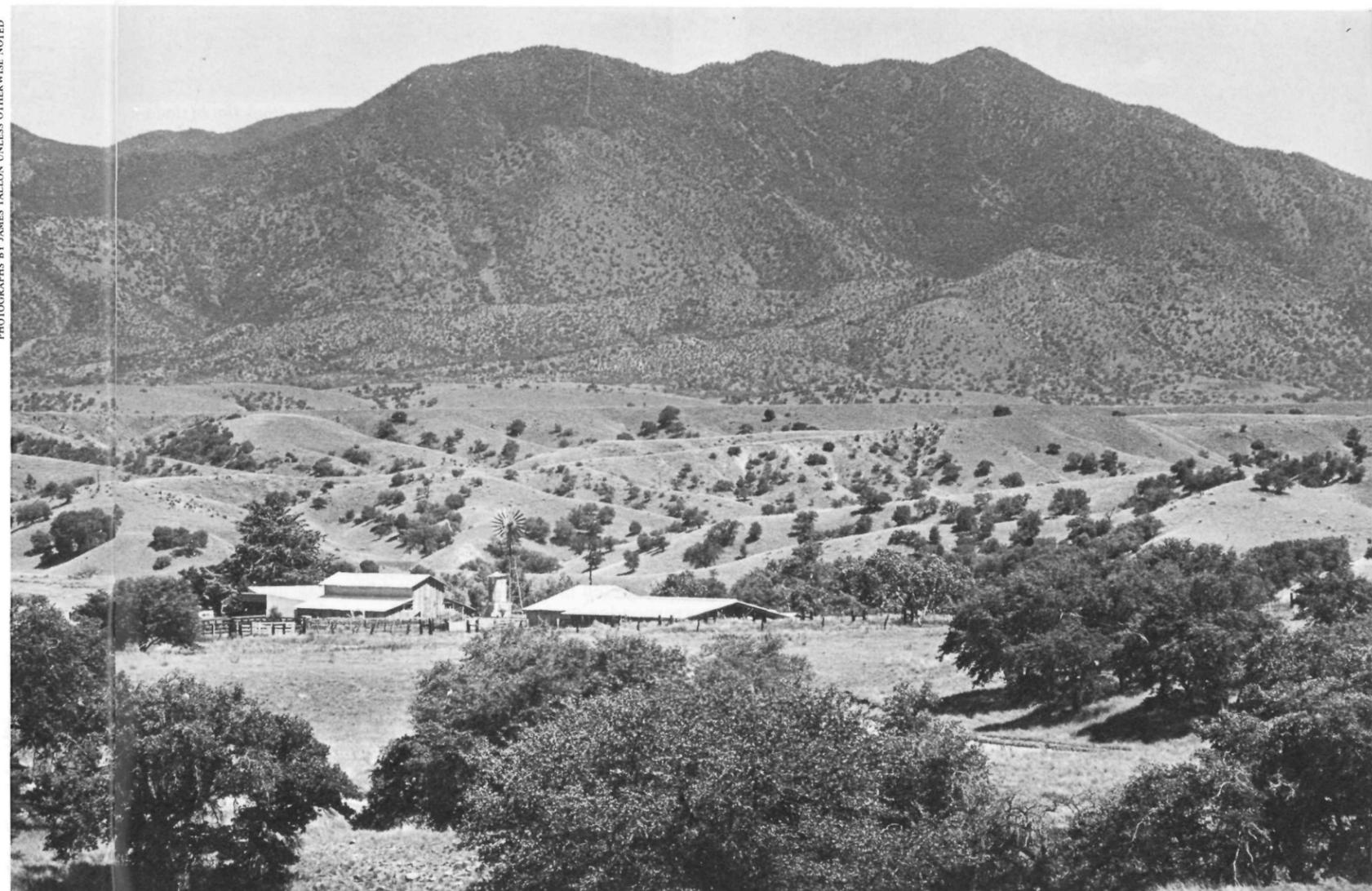
phased process of conveying ownership to the Foundation through yearly gifts of land and buildings is in process, and provisions have been made for the continuation of these gifts after our death.

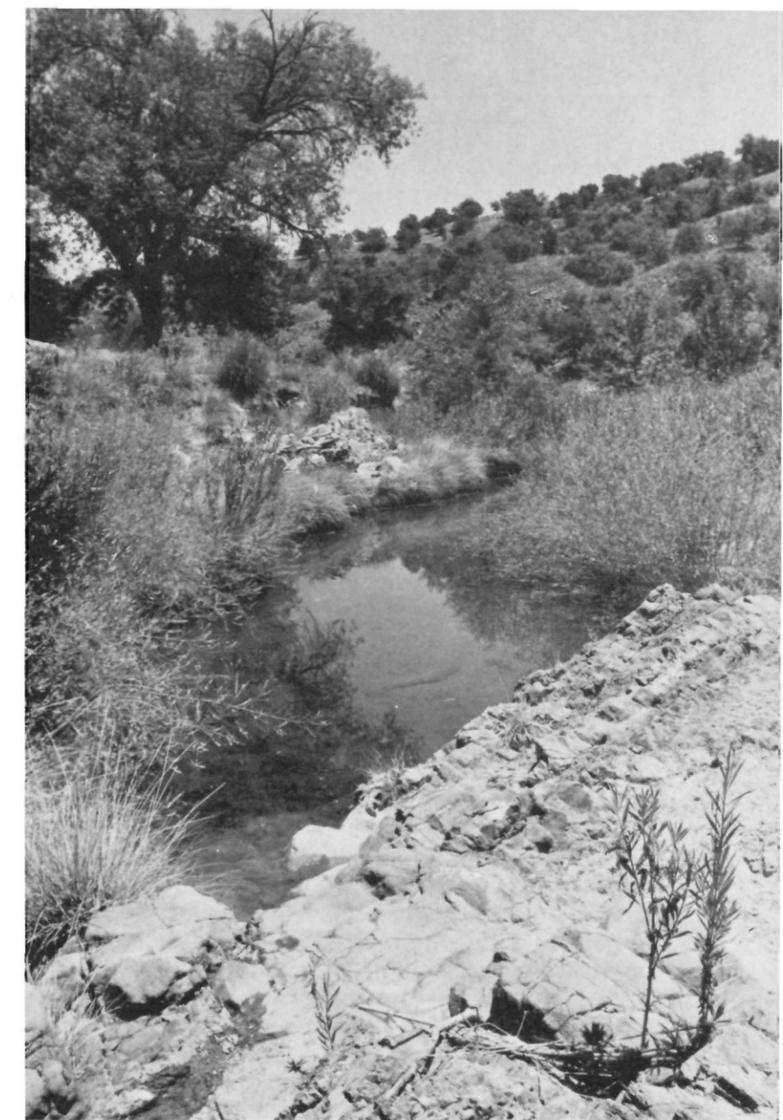
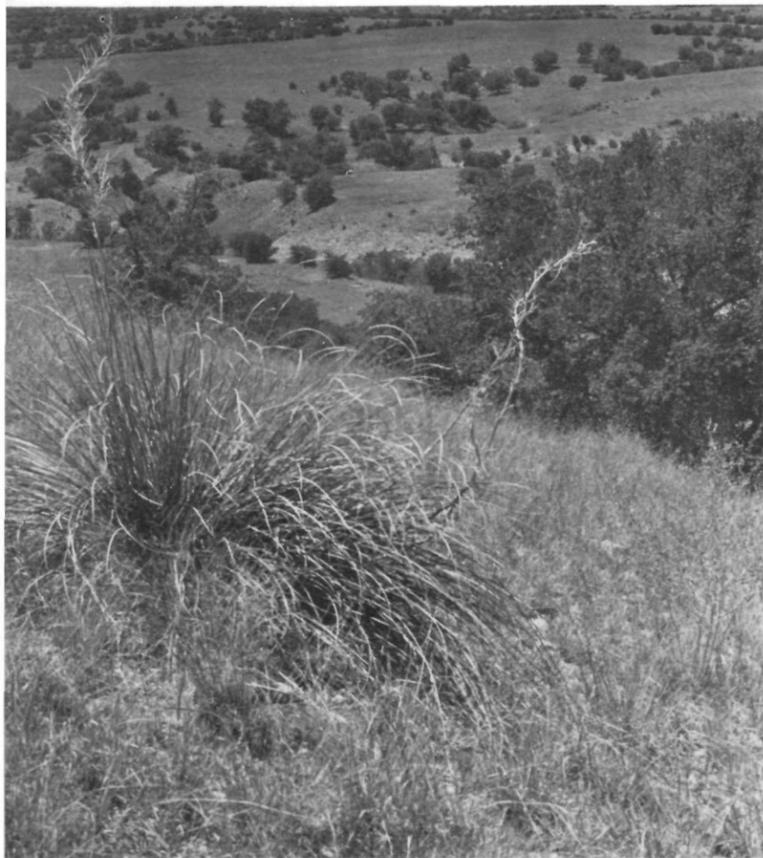
We have received help and support from many interested people. John Perry, Assistant Director of the Washington National Zoo, a man who is actively involved in conservation of endangered species and sympathetic to our ideas, has introduced us to many of the current members of the Ranch's Board of Trustees, people who have brought us their friendship along with their highly qualified judgments and skills.

The federal government has also been helpful to us. Only 15 percent of Arizona is privately owned, the larger proportion lying under the control of both state and federal governments. The Research Ranch holdings consist of 3,500 acres of deeded land, approximately 2,300 acres leased for grazing purposes from the state of Arizona, and 2,200 from the U.S. Forest Service. The Forest Service has broken tradition with a forward-looking agreement to commit its grazing acres to the purposes of research, conservation, and education, and has joined our Board of Trustees as an institutional member. We hope that the State Land Department of Arizona will take similar steps.

As the availability of the Ranch for research became known, a series of self-funded projects was initiated,

PHOTOGRAPHS BY JAMES TALLON UNLESS OTHERWISE NOTED





Five different ecosystems are contained within the boundaries of The Research Ranch. At left the Santa Rita Mountains form a backdrop for oak savannah, with bear grass in the foreground.

Another example of an oak savannah ecosystem is pictured above, with the Huachuca Mountains in the background. At right O'Donnell Canyon Stream is host to ash along its bank, piñon juniper in the background.

some sponsored by universities, some by organizations such as the National Science Foundation. These projects range from a study of food selectivity factors of grassland finches to a comparison of environmental conditions on grazed versus ungrazed land; and from wildlife research to reintroduction of indigenous animals—for example, the Arizona subspecies of the black-tailed prairie dog, poisoned out of existence in the state as early as 1931. The only endangered species breeding program now under way concerns the largest North American land tortoise—*Gopherus flavimarginatus*, more commonly referred to as the Bolson tortoise—discovered in Chihuahua in 1958 and heretofore doomed to the cooking pots of hungry Mexicans. Its native climate and vegetation are similar to those of the Ranch. We have taken one female through two successful hibernation seasons and expect to acquire a spouse and a harem to introduce into several acres of fenced bottomland.

The sole project funded by The Research Ranch has been an ecological inventory of vegetation types present at the time cattle were withdrawn from the Ranch. This

inventory was compiled by Colorado State University through ground sampling with the information computerized and stored in a data bank at the University of Arizona. The data will be updated periodically as successive changes occur. Some changes are already apparent, such as the resurgence of tree growth in the dry and wet river washes, which should lead to changes in bird, mammal, insect, and reptile habitat. As the seed heads mature and become available, uncropped by cattle, the buildup of wildlife continues. Hopefully, fire, and its ecological role, too little researched to date, will be studied in 1974.

Ranch visitors by the hundreds—scientists, students, and interested laymen—are finding their way here, and correspondence is both national and international. Three eastern college groups have spent environmental semester time at the dormitory facilities during 1972 and 1973. These facilities are also used by professors and graduate students involved in research projects. In 1974, a teacher training program is projected by the University of Colorado that may provide a solution to our growing

concern about furtherance of ecological education versus overuse of land for which the primary goal is the preservation of biotic communities.

The work load grows, but rewards are great. We have received an education in environmental processes that would have been difficult to acquire at the university level, although seminars, conferences, and college courses have enlarged our perspective, as have occasional exposures to grantsmanship on the funding level and goof-offmanship at almost any level!

Perhaps our greatest reward springs from the realization that our four capable and sympathetic children have relinquished future ownership of the land that enriched their childhood in favor of a new ethic of land stewardship. The support they have brought to us from their own fields of competence—law, architecture, wildlife behavior, and psychology—has been invaluable.

Occasional publicity stimulates questions about the steps that we took to create this foundation. We welcome them, always with the hope that there are people throughout the country who will join with us in

permanent conservation of land they love and in the protection of open space that will be of value to their future.

It seems that man is in the infancy of understanding of his spiritual, nontemporal needs. One solution may lie in renewal of a long lost realization that earth is the matrix of man. With responsible attitudes of stewardship, most certainly without the arrogance of dominion, we may yet find a way to live in brotherhood with all the forms of life that earth sustains. ■

Ariel Appleton grew up on a country coastline north of Santa Barbara, California, where her companions and teachers were those "other nations"—mammal, reptile, bird, and plant. She says she has no special degrees or training—"just a feral kinship" with the natural world. This article was originally written for and published by the annual alumni magazine *Gone Away* published by Foxcroft School, Middleburg, Virginia, from which Mrs. Appleton graduated. Now she is president of The Research Ranch and a trustee of National Parks and Conservation Association.

NPCA at work

Park Service decisions NPCA President A. W. Smith has written Nathaniel P. Reed, Assistant Secretary, Fish and Wildlife and Parks, Department of the Interior, expressing dismay over the many impending violations of law, policy, and good management in certain units of the national park system.

President Smith cited the situation in Badlands National Monument as one example. Over previous objections of the Office of the Secretary of the Interior, the National Park Service apparently has decided to allow a highway to be built through Badlands National Monument. President Smith noted that this decision was made without determining whether any feasible and prudent alternative to building the highway through the monument existed, which is in violation of the Transportation Act and is an apparent dereliction of duty on the part of the Park Service.

A similar serious condition exists in Chickamauga-Chattanooga National Military Park in Georgia. The Park Service is allowing a highway to be built through this land, which is maintained on the National Register of Historic Places. Although in this case determination of alternatives was made, "the determination was grossly inadequate, ignored feasible and prudent alternatives, and was criticized by the Advisory Council on Historic Preservation," President Smith wrote.

President Smith also expressed concern over the proposal to expand mechanized ski facilities in Lassen Volcanic National Park and the proposed Grand Teton jetport. As we reported in the past two issues of this Magazine, these proposals are in apparent violation of the National Park Service Organic Act, which states that the purpose of the Service is to promote and regulate the use of land under its control, "which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein—and to leave them unimpaired for future generations."

President Smith commended the Service for its opposition to airport expansion within the Cape Cod National Seashore, but at the same time expressed disappointment that the Office of the Secretary of the Interior has not supported the Service in this issue.

In urging Secretary Reed to take appropriate actions to meet these challenges, President Smith offered to meet with him to discuss these matters in further detail. We will keep readers informed of the status of these decisions in future issues. Members wishing to express concern over any or all of these proposals can write The Honorable Nathaniel P. Reed, Assistant Secretary, Fish and Wildlife and Parks, Department of the Interior, Washington, D.C. 20240.

Grand Teton jetport impact statement In the past two issues of the Magazine we reported on the proposed jetport in the Grand Teton National Park, Wyoming. NPCA has expressed its concern over this

project in letters and testimony ever since the proposal was first made. In its latest effort to put this issue in proper perspective, NPCA submitted comments on the draft environmental impact statement on the jetport to the Department of the Interior on September 26, 1973.

In its statement, the Association termed the impact statement inadequate. Among NPCA's objections to the statement was that it does not discuss the impact of the disposal of the wastes that are expected to be generated by the airport from terminal sanitary sewage, hard minerals, oil solvents, and degreaser wastes. The Association also stated that the effects of air and noise pollutants presently occurring in the park and projected additional pollutants should be determined, and that it is simply unacceptable to state that the impact or the potential impact of these pollutants is unknown.

NPCA called for a clear and comprehensive master plan for the park that clearly addresses the presence and proposed expansion of an airport within the Grand Teton National Park. The Association also questioned the legality of the current special-use permit governing the airport, saying that such a permit was apparently not approved either by the national office or the appropriate regional office of the National Park Service.



Weather modification NPCA recently wrote Director of the National Park Service Ronald H. Walker concerning reports of United States government weather modification projects. Because the long-term effects of man-made weather change on animal and human habitat are largely unexplored, and the possible consequences unknown, the Association suggested that the National Park Service formulate a specific policy concerning weather modification projects. The questions to be answered in formulating this policy would be: Are weather modification experiments carried out over any national parks? If so, which parks are involved and are any wilderness areas affected? How do weather modifications carried out on land adjacent to national parks affect the parks? We are awaiting a reply to this letter.

Attempted hatchet job on yule tree Following the announcement by the National Park Service that they were planning to plant a live Colorado blue spruce on the Ellipse in Washington, D.C., to serve as the national Christmas tree rather than cutting one each

year, John A. Nevius, chairman of the D.C. City Council, wrote Interior Secretary Morton protesting the new plan. Nevius, calling the plan "a callous disregard for local interests," expressed fear that there might be a great loss to the local economy if huge crowds were not attracted by the smaller, permanent tree:

Responding to both the Park Service's plan and local objections, NPCA wrote Secretary Morton wholeheartedly endorsing the planting of a permanent tree to perpetuate and enhance the annual celebration.

NPCA pointed out that a permanent tree would have a negligible adverse impact on tourism and that planting a yule tree in the nation's capital could serve as a good example to the many other municipalities throughout the country who have also been using a cut tree annually. NPCA congratulated the Park Service for putting the best interests of the local area and the entire country in proper balance.

Law of the Sea Recently, at the invitation of President A. W. Smith, Ambassador John R. Stevenson, Special Representative of the President for the Law of the Sea, came to Association headquarters to discuss the status of the Law of the Sea Conference with the NPCA staff and many other environmental and labor representatives. Ambassador Stevenson, who heads the U.S. delegation to the multinational Law of the Sea Conference, was accompanied by Professor John Norton Moore, Chairman of the National Security Council Interagency Task Force on the Law of the Sea; Burdick H. Britten, State Department Deputy Coordinator for Ocean Affairs; and Stuart P. French, Director, Defense Department Law of the Sea Task Force.

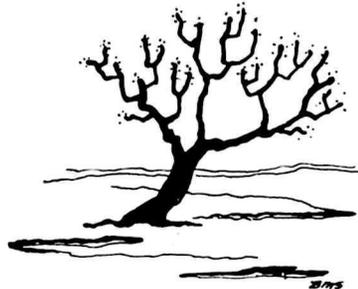
Detailing the current status of negotiations, Ambassador Stevenson expressed optimism for an ultimate solution to the variety of controversial issues confronting the nations involved. Among the major elements that seem to be emerging from extensive preparatory sessions are the following:

1. A maximum limit of twelve

miles for the breadth of the territorial sea.

2. Adequate guarantees of transit in straits used for international navigation.

3. Broad coastal state control over seabed and living resources beyond the territorial sea, coupled with provision for the interests of the international community as well.



4. Protection of the marine environment and provision for scientific research through a balancing of coastal state and international community interests.

5. An international regime for the deep seabed, considering the interests of both the developed and the less developed countries.

Following Ambassador Stevenson's discussion of current negotiations, Professor Moore addressed the group on the specific elements of the conference that relate to the environment. These included:

1. Marine pollution, primarily from three sources: land, marine vessels, and mineral and petroleum removal from the seabed.

2. Fisheries. The United States delegation favors a species approach with international management of highly migratory species and preferential host nation management of anadromous and coastal species within its twelve-mile territorial sea, at least.

3. Deep Sea Mining. The exploration for and removal of hard minerals, petroleum, and natural gas from the outer continental shelf and the deep seabed beyond a single nation's jurisdiction are the major concern here.

Professor Moore described the Law of the Sea Conference as the most significant multinational conference since the formation of the United Nations and the most complex ever.

Nuclear power export challenged

In a lawsuit filed in the U.S. District Court for the District of Columbia, NPCA joined with the Sierra Club and Environmental Defense Fund to challenge a major federal effort to promote the export from the United States of nuclear power generating equipment and fuels.

The suit, brought under the National Environmental Policy Act of 1969 against the AEC, Department of State, and the Export-Import Bank, seeks a declaration that NEPA applies to federal actions assisting nuclear exports, including the entry by the United States into bilateral cooperation agreements for the export of nuclear equipment and fuels, the sale by the AEC of fuel-enriching services to foreign users, the financing of export transactions by Eximbank, and the licensing of equipment and fuels by the AEC. The lawsuit also seeks to enjoin the three federal agencies from further actions of this type without the safeguards required by NEPA.

NPCA took this action as a result of grave questions about the rationality and justification for consuming scarce fuel resources to enrich nuclear fuels for export and about risks of nuclear power production and processes to health, safety, and natural environmental values. These questions warrant full and careful consideration and assessment by the public.

New threat for Mason Neck Once again, the Mason Neck National Wildlife Refuge near Washington, D.C., is encountering a serious threat to its existence as one of the few remaining habitats for the American bald eagle on the East Coast and the only such refuge established solely for the bald eagle.

Due to the vigorous efforts of many environmentalists, the funds for Mason Neck that had been cut by the Office of Management and Budget earlier this year were restored in an Interior Department appropriation bill. However, a new threat to the refuge looms in the form of plans for a new general aviation airport adjoining the refuge on property of the U.S. Army, Fort Belvoir, Virginia. These plans were

revealed by the Virginia Aviation Authority and the Federal Aviation Administration (FAA). If constructed, this airfield would handle nearly 400 flights daily by small, private airplanes. Plans are also being made to eventually lengthen the proposed runway to handle "executive jets."

NPCA has written the U.S. Army saying that it "has concluded that the operation of a general aviation facility on the proposed site would have serious detrimental repercussions on the neighboring Mason Neck Wildlife Refuge, as well as the Northern Virginia Regional Park Authority parklands on Pohick Bay and the national historic sites of Gunston Hall and Pohick Church." We are awaiting a reply to the letter.

Subsequently, Virginia's Governor Linwood Holton said that he will order an environmental study of the proposal and that no airport will be built if the findings indicate damage to the refuge. However, with Virginia's gubernatorial election in November, the final decision will be up to the next administration. Also, we have recently learned that the U.S. Army plans to withhold permission for airport construction at this time. However, indications are that the issue is unresolved due to the full support for the airport by the Department of Transportation. Thus the fate of the eagles of Mason Neck remains uncertain.

Tule elk refuge Hearings were recently held by the House Subcommittee on Fisheries and Wildlife Conservation and the Environment on House Joint Resolution 204 to establish the Tule Elk National Refuge in Owens Valley, California. The resolution would authorize the Secretary of the Interior to purchase any state or private land and use federally owned land in the Owens Valley watershed for the purpose of establishing a tule elk refuge. It would be up to the Secretary to determine the amount of acres needed to establish an adequate refuge.

On invitation, NPCA expressed its support for H.J. Res. 204 and similar measures inasmuch as they would provide concrete protection for the habitat of the endangered tule elk.

NPCA expressed the hope that

the appropriations that would be authorized by the resolution would be released for expenditure by the Office of Management and Budget (OMB). The OMB exercises control over the proposed budgets and expenditures of all federal agencies. As we reported in the June 1973 Magazine, during fiscal year 1973 OMB limited the budget of the Bureau of Sport Fisheries and Wildlife, which resulted in the virtual closing of sixteen wildlife refuges and the drastic reduction in personnel and maintenance in ten others; hence NPCA's concern for the appropriations for the tule elk refuge.

The Association suggested that provisions be added to the bill that would require the transplant of the tule elk to other suitable areas before the carrying capacity is reached on the proposed refuge. This provision is needed, NPCA stated, to ensure the survival of the species against the threat of disease or other natural disasters that might occur in any single area. At present only some 340 tule elk are located in the Owens Valley. (Eighty tule elk are found in the Cache Creek area near Sacramento and forty are located on the Tule Elk State Reserve in Bakersfield. Some ten elk are in captivity.)

This Magazine has reported in the past on the plight of the tule elk (June 1972). Conservationists have been urging for years that a federal refuge be established. But the tule elk competes with ranch cattle for forage in the Owens Valley. Because of this competition the remaining elk herd has been held to around 300 animals through hunts sanctioned by the California Fish and Game Commission. The establishment of a refuge would allow the number of the elk herd to rise to 500 within the refuge boundaries. If NPCA's suggested provisions are incorporated in the resolution, any elk above the carrying capacity of the proposed refuge would be relocated into other appropriate habitats. This measure would provide for the survival of the species more effectively than in the past.

Others would also benefit from the establishment of the refuge. In its statement to the subcommittee, NPCA pointed out that the water rights of the city of Los Angeles would be protected, because much

of Owens Valley is owned by Los Angeles as an important watershed. In addition, the refuge would also protect a number of other rare or endangered species of wildlife—among them the Sierra bighorn sheep, California cougar, southern pine marten, desert tortoise, and Owens Valley pupfish.

ORVs in the California desert The Bureau of Land Management, which manages 25,000 square miles of the California desert released a "Preliminary Draft California Desert Off-Road Vehicle Recreation Management Plan" on September 6, which purports to control ORV use of the fragile desert environment so as to assure a suitable balance between the need for ORV use areas and the need to protect valuable natural resources. The plan would leave 95.7 percent of the desert open to ORV use. BLM intended to implement the plan on November 1, 1973, but did not publish the plan in the Federal Register and thereby limited public comment.

NPCA has sharply criticized the substance of the plan and the manner in which it was developed, and demanded preparation and circulation of an environmental impact statement for public comment on the significant and potentially devastating effects of ORVs on desert ecosystems.

BLM has now assured NPCA that the plan will not be implemented until the impact statement process has been completed, but will implement only those portions of the plan that close to ORV use areas containing Indian pictographs and thereby protect the areas from vandalism and ORV damage.

Corps' Potomac project For many years NPCA has consistently opposed the construction of unnecessary and destructive large reservoir-lake dams on the Potomac River, and has proposed, instead, the development of an estuarial intake on the river to provide an economically, ecologically, and technically acceptable supplemental source of water for the Washington, D.C., metropolitan area.

In September NPCA commented on the draft environmental impact statement issued in August by the Army Corps of Engineers in con-

junction with its proposal to construct an estuarial intake to withdraw and pump up to 100 million gallons of water a day to Washington, D.C., during periods of low flow and high demand. The Association expressed enthusiastic support for the implementation of this approach but criticized the Corps and the impact statement for failing to consider a similar facility of greater capacity, noting that a larger facility capable of pumping more water could meet much more and possibly all of Washington's water demands and thereby render construction of destructive dams upriver unnecessary.

NPCA also criticized the Corps for inadequate consideration of other alternatives that might be combined with a larger intake facility, such as water conservation drives, peak demand pricing structures, restrictions on luxury and non-essential uses of water, wastewater recycling, and land treatment of wastewater.

NPCA urged the Corps to expand the capacity of the intake facility and to remedy the inadequacies in the impact statement.

Report to members We want to thank our members for their patience over the past few months as we converted the membership file to computer operation. This conversion was a massive undertaking, and many errors were made during the process. We are glad to report that the conversion is complete now; many of you will find service improving substantially.

Starting within the next month you will be receiving with your renewal acknowledgement a short survey asking impersonal questions about a variety of areas. Your answers will be anonymous, but they will help us to serve you better. We shall deeply appreciate your cooperation in answering them.

At the same time we are investigating additional membership services and will advise you on them later.

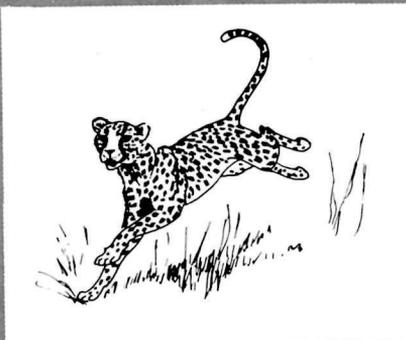
All of us here want to extend our sincere thanks for the loyal and active support you have given your Association. Without it, we could never accomplish our aims of protecting the national parks and helping to solve the serious problems of our environment.



news notes

Gettysburg tower approved During the past year we have reported several times on the proposed observation tower to be built on private land adjacent to Gettysburg National Park. For nearly three years building of the tower has been intermittently carried on and halted according to the decisions of several lower level courts. The tower was opposed by NPCA and other conservation groups on the grounds that the National Park Service had

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put the public interest in jeopardy by not filing an environmental impact statement when it granted a right of way over park land to the developer. The tower has also been criticized for its lack of esthetic value and for the commercialization it would bring to the park area. The state of Pennsylvania described the tower as "visual pollution." Accordingly, in June 1973 the state secured a temporary restraining order and the project came to a halt at the 166-foot mark (the tower will eventually reach 307 feet). We are very sorry to report that in what seems to be the last of a long series of hurdles the Pennsylvania State Supreme Court ruled in favor of the developer and rejected the state bid for a permanent injunction.

Conservation awards As we reported in the August Magazine, Dr. Spencer Smith, Jr., secretary of the Citizens Committee on Natural Resources, a leading environmental lobbying organization, and Jerry T. Verkler, for many years staff director of the Senate's Interior and Insular Affairs Committee, were among the twenty people who received American Motors conservation awards in 1973. Dr. Smith also serves as chairman of the board of NPCA.

At a reception at Association headquarters in October, Mr. Ed Zern, on behalf of American Motors, formally presented Dr. Smith and Mr. Verkler with these awards. Dr. Smith was lauded for his direct, effective impact on progressive conservation legislation over a period of 20 years and for his skill and patience in bringing together the

often conflicting viewpoints of contemporary conservationists. American Motors added that Dr. Smith had contributed as much or more to the direction of national conservation programs as any currently active environmentalist.

Jerry Verkler, widely known in the nation's capital and elsewhere in the country as a person deeply concerned with the nation's natural resources and environment, was cited for having furnished invaluable guidance over the years to such landmark legislation as the Wilderness Act and the establishment of the Council on Environmental Quality, as well as to measures for new national parks, monuments, seashores, and the general betterment of the American environment.

BLM: Public lands in limbo The Bureau of Land Management (BLM), the Interior Department's neglected stepchild, was established in 1946 to manage the nation's public lands that were not under control of other agencies such as the National Park Service or the U.S. Forest Service. The BLM maintains approximately 450 million acres of the public domain, attempting both to preserve these invaluable lands for the future and to manage them for the multiple uses of the present.

Controlling 60 percent of all federally owned lands, the BLM has

operated since its creation without a unified statute providing the management authority necessary to preserve these land treasures. Rather, the BLM has had to operate under the limitations of a series of diverse and often conflicting laws, generally created for single purposes and in many cases obsolete today. The diversity of the federal mandates implemented by the BLM is reflected in their titles: The Taylor Grazing Act of 1934, The Outer Continental Shelf Act, the General Mining Law of 1872, The Mineral Leasing Act of 1920, The Classification and Multiple Use Act of 1964, and the Public Land Law Review Commission Act of 1964. In addition, over 3,000 other laws also affect these public lands.

Because of the enormity of its task, the BLM is in urgent need of a statutory charter providing adequate authority for effective management of the lands under its supervision. Several bills now before Congress could accomplish this; however, they are languishing in Committee. In the Senate, Senator Henry M. Jackson, Interior Committee Chairman, has introduced a bill, S 424, the National Resource Lands Management Act of 1973 (more commonly, the BLM Organic Act), to provide the statutory authority necessary for BLM to function effectively.

On introducing the bill to repeal

A CITIZEN'S VOICE IN GOVERNMENT

Organizations like the National Parks and Conservation Association, which enjoy special privileges of tax exemption, may not advocate or oppose legislation to any substantial extent.

Individual citizens of a democracy, however, enjoy the right and share the responsibility of participating in the legislative process. One of the ways citizens of a democracy can take part in their government at state and federal levels is by keeping in touch with their representatives in the legislature; by writing, telegraphing, or telephoning their views; by visiting and talking with their representatives in the national capital or in the home town between sessions. Every American has two senators and one congressman with whom he may keep in contact in this manner.

The best source of information for such purposes is the official CONGRESSIONAL DIRECTORY, which can be bought through the Government Printing Office, Washington, D.C. 20402. It tells you who your senators and congressmen are and lists the membership of the various Congressional committees. It also gives full information on the personnel of the various executive bureaus of the government whom one may contact about administrative programs and policies.

The CONGRESSIONAL DIRECTORY for the First Session of the 93rd Congress is available in three editions, prices of which include postage: bound in hard cover, \$6.80; paperback, \$5.50, and thumb-indexed, \$9.35.

the many outdated and inconsistent laws and to organize the BLM under a single basic statute, Chairman Jackson stated that "past policies and laws were designed to dispose of public lands so that private interests could put them to productive use. In the future we must preserve them for all Americans." In addition, he added that "it is high time that these lands, valuable for their recreation and scenic values, as well as for mining and grazing, are accorded the respect and treatment they deserve."

The bill directs that the Interior Secretary conduct an inventory of all national resource lands, giving priority to areas of critical environmental concern. In addition, the Secretary is required to develop a comprehensive land use plan for the national resource lands and to coordinate the plan with the National Land Use Policy Act (if enacted) which passed the Senate (S 268) in June 1973. In requiring proper management of these public lands, the provision requiring restoration/reclamation when land surfaces are disturbed is of particular importance to environmentalists.

Other important provisions of the bill require Senate confirmation for any new BLM director and provide for public participation and comment during the Interior Secretary's formulation of plans and programs

authorized by the proposed BLM Organic Act.

Despite a number of sound provisions in the bill, a significant omission has been made which many environmentalists consider essential. The Wilderness Act of 1964 did not provide for the establishment of wilderness areas on the lands controlled by the BLM. Thus, wilderness areas can be established by statute on these lands if an amendment is added to the BLM Organic Act permitting their inclusion. Although the Interior Secretary has established six "primitive areas" on BLM lands since 1970, these areas could be redesignated for another purpose by mere administrative choice. At least these six areas in Utah, Arizona, and Montana must be included in the wilderness system by statute in order to assure their more permanent protection.

Although hearings have been held on the BLM Organic Act in the Senate, similar bills in the House

have not yet been seriously considered, perhaps because the House Interior Committee is considering the inclusion of a public lands title in their version of the national land use policy bill. It seems likely that no action has been taken on the bill (S 63) to establish a California Desert National Conservation Area, introduced by Senators Cranston and Tunney, pending the outcome of deliberation on the BLM Organic Act and the Land Use bill.

Hawksbill turtle protected As a result of two citizens' complaints that jewelry made from the hawksbill turtle, an endangered species, was being sold in New York City, the federal government has taken legal action to halt importation and sale of jewelry made from the shell of this species.

Several major New York stores and other local dealers have signed a consent injunction forbidding them from trafficking in or selling

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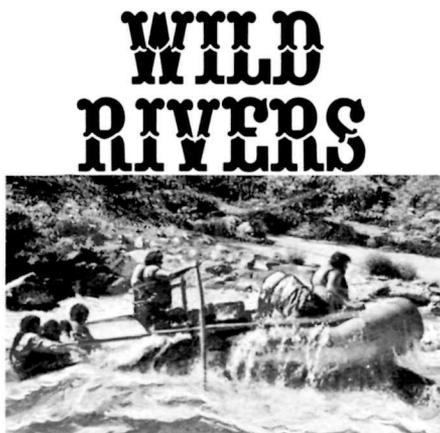
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hawksbill turtle jewelry—commonly known as “tortoiseshell” jewelry—or any other products of endangered species. An unusual feature of the consent injunction is that certain of the defendants are required to make their buyers aware, at least annually, of the laws relating to trade in endangered species of wildlife. These firms must also inform their employees, at least three times yearly, of the type of wildlife products that the firms must avoid buying. These firms will also forfeit their entire inventories of hawksbill jewelry to the U.S. Department of the Interior.

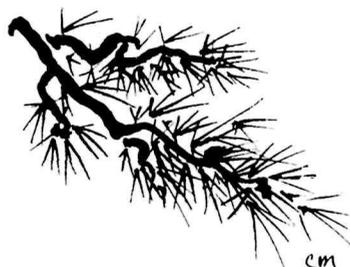
This action is a major step in saving this endangered species by effectively cutting off the United States marketplace for the products of the species. This was one of the primary aims of the Endangered Species Conservation Act of 1969.

Timber study A presidential advisory panel on timber and the environment has issued its final report, which has been endorsed by President Nixon. The report has met with praise from the timber industry and criticism from environmentalists. Specifically, the report proposes increased federal funding for forest management, beginning in the current fiscal year, and a forest development (reforestation) program with federal outlays of about \$200 million in the next few years. These proposals resulted from a cut in the Forest Service’s 1974 budget by the Office of Management and Budget (OMB) and a decision in 1972 by the Cost of Living Council and the Secretary of Agriculture to increase the production of timber in national forests by one billion board feet a year. Forest Service officials claimed that the budget cut along with increased cutting would further hamper efforts in reforestation, soil and watershed management, and meeting recreational needs.

The report states that the harvesting of old-growth stands of softwood timber, which are primarily located in the far West, can safely be increased by 50 to 100 percent provided that intensive management practices are adopted. Conservationists have criticized this recommendation, stating that the

panel ignored numerous studies that say that national forests are already being overcut.

The panel calls for a quick completion of the National Wilderness Preservation System in order to isolate forest areas where commercial timber production can predominate. This recommendation has caused concern among environmentalists in that it seems to place undue emphasis on wood produc-



tion in large forest areas and seems to ignore the principle of multiple use for recreation, watershed management, wildlife habitat, and timbering as delineated in the Multiple Use-Sustained Yield Act of 1960. This recommendation was also denounced by Forest Service officials.

Another recommendation proposed that more cutting and better timber management be carried out on private land. In addition, the report suggests negotiating with Japan to reduce her disruptive buying of western U.S. timber.

The study said that “large-scale” clear-cutting is generally undesirable but did not define the term “large-scale.” Clear-cutting is the practice of logging in which the forest is cleared from a considerable area at one time.

Besides disagreeing with the panel’s report on specific points, conservationists point out that the makeup of the five-member panel seems to have been tilted toward the timber industry viewpoint. The report will undoubtedly stir up much heated debate among environmentalists, the timber industry, and the government before the issues it discusses are resolved.

The tussock moth Northeastern Oregon and southeastern Washington have been hard hit by the tussock moth. In 1972 about 172,000 acres of timber were defoliated in

the Blue Mountains of the two states. The outbreak continued in the summer of 1973 with the result that over 500,000 acres have been defoliated in varying degrees. The moth attacks primarily Douglas fir, white fir, and subalpine fir trees. Young caterpillars do the most damage, feeding on new needles in the spring and turning to the older needles as the caterpillar increases in size.

As a result of the infestation the Forest Service requested permission from the Environmental Protection Agency in April 1973 to use DDT to control the moth. However, EPA held firm in denying permission. Former EPA Director William F. Ruckelshaus noted that application of DDT would have to be made from the air, making it difficult to avoid streams and other surface water. Deer, elk, cattle, and sheep graze in the area, and there are many birds and other animals in the area who would also be susceptible to harmful DDT residues. Since issuing the denial EPA has tried to halt the moth onslaught with Zectran and other chemicals that are considered safe for wildlife. However, several authorities state that the use of Zectran has not been effective in controlling the moth.

There is also hope that the moth will die out naturally. Populations have been known to die out from a natural virus in the third year of an outbreak. Of 33 recorded infestations since 1928, 80 percent collapsed in the third year. It was hoped that the present infestation would be controlled naturally in 1973, but it seems that the present moth population will take longer than the usual three years to die out.

The tussock moth controversy may cause a major showdown between EPA and other governmental agencies. Congressmen from Oregon have introduced several bills that would allow the use of DDT on the tussock moth. A measure introduced by Rep. Mike McCormack would take all DDT decision-making from EPA and give it to the Secretary of Agriculture. Other proposals call for hearings before the Senate Interior Committee on EPA’s April decision.

conservation docket

As the end of the first session of the 93rd Congress rapidly approaches, the pace of activity on the floor of both the House and the Senate has increased considerably. Measures of interest relating to the environment which have been recently acted on in either house have included:

Big Cypress: The House passed the bill to establish the Big Cypress National Preserve in Florida by a vote of 376 yeas to 2 nays. The bill is designed to assure the preservation, conservation, and protection of the natural, scenic, hydrologic, floral and faunal, and recreational values of the Big Cypress watershed. The Senate has taken no action on this measure at this writing.

Grand Canyon: The Senate passed S 1296 to enlarge the Grand Canyon National Park by voice vote. The measure brings approximately 1,268,739 acres into the Grand Canyon National Park by incorporating the Grand Canyon National Monument, the Marble Can-

yon National Monument, and portions of the Lake Mead National Recreation Area into the park. This combination of areas will provide some 273 miles of the canyon as a single natural area managed by the National Park Service under the criteria governing a national park. The new park area would extend from the Navaho Bridge downstream to the Grand Wash Cliffs. The House has taken no action on this measure to date.

Shenandoah National Park: The Senate recently passed S 988 to create a wilderness area of nearly 80,000 acres in Shenandoah National Park, by voice vote. Senator Harry F. Byrd (Va.) led the effort to establish the wilderness area covering somewhat less than half of the 193,000-acre park. Although the House has held hearings on similar proposals, it has taken no further action.

Environmental Programs: The House has given final approval to the Conference Report on HR 8619, making appropriations for agricultural, environmental, and consumer protection programs for 1974. Among the environmental programs, the House appropriated

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nearly \$2.5 million for the Council on Environmental Quality, \$534 million for the Environmental Protection Agency, \$10 million for the National Commission on Water Quality, nearly \$335 million for the Soil Conservation Service, and \$180 million for the Agricultural Stabili-



zation and Conservation Service. In addition to appropriating program funds, the House also approved a measure in the conference report which would require the EPA to file environmental impact statements on its activities under section 102 of the National Environmental Policy Act of 1969. The Senate has not yet approved the conference report, primarily as a result of objections to the requirement for EPA to file impact statements.

Interior & Forest Service funds: HR 8917, appropriating funds for the Interior Department and the U.S. Forest Service, was recently passed by both the House and the Senate, after a lengthy conference to achieve a compromise on differences in the bill between House- and Senate-passed versions. The compromise bill appropriates a total of \$2,433,370,000, which was over \$173 million more than the original House request but over \$45 million less than the initial Senate version. Altogether the final appropriation is over \$72 million more than the Administration requested, but over \$206 million less than was appropriated in fiscal year 1973.

Included within the Interior Department's share of the total, the Congress has allowed slightly more

than \$351 million for the National Park Service, \$76 million for the Land & Water Conservation Fund, and \$92 million for the Bureau of Sport Fisheries & Wildlife. The U.S. Forest Service of the Agriculture Department receives \$387 million.

Strip mining: The Senate passed its bill to control the strip mining of coal by a vote of 82 yeas to 8 nays. Under the Senate-passed version of the bill the states would have primary enforcement responsibility for implementation of this first set of federal rules setting minimum compliance standards for coal strip mining companies. One section of the bill would require strip mining companies to submit detailed plans for reclamation of the land before commencement of mining. The plan would include measures for controlling erosion, preserving and replacing topsoil, and protection of water quality. The House has conducted extensive hearings and mark-up of its strip mining bill and there is expected to be substantial effort, led by Congressman Ken Heckler (W.Va.), to include a provision requiring the gradual phase-out of all coal strip mining.

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Wild & Scenic Rivers: The Senate passed S 921, to amend the Wild & Scenic Rivers Act, in order to extend the moratorium for five years on water resource developments and some mining activities on the rivers designated for study for inclusion in the wild and scenic rivers system. In addition, the bill authorizes \$20.6 million in additional land acquisition funds for the eight rivers originally included in the system. The House Interior Committee has reported out a similar bill, and final House action is expected soon.

Youth Conservation Corps: The Senate approved, by voice vote, S 1871, to expand and make permanent the Youth Conservation Corps. After a three-year pilot program, described by the Senate Interior Committee as an unqualified success, Senator Henry M. Jackson ushered the new bill through committee and the Senate floor debate. The bill authorizes \$100 million per year for the program and would employ up to 150,000 young men and women in programs ranging from construction and maintenance of trails and campgrounds to wildlife habitat and range management.

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life as a whole; but we shall not be adequately moved, even then, without the experience of love.

To say that one loves that incredible musician, the mockingbird, who sings from the nearby oak throughout the hours of night, all night long, moonrise to moonset, is to lay claim to a beginning wisdom of the heart, a first aspiration toward personal fulfillment. One watches the red fox follow the winding stream, observing him from a distance, admiring the russet flow, the balancing plume, sensing his knowledge of danger, his love of existence, and one yields to a protective love.

When, all in due course, these emotions of tenderness toward all the life about us infuse the hearts of a majority of men, then and then only will the love of man flow also warmly through the human community, and peace and goodwill amongst men have hope of survival in some measure through the long future.

ACIVILIZED MAN makes a crucial distinction between killing for pleasure and killing by necessity. Who kills from pleasure marks himself sadist or necrophilic, a menace to himself and the world. But most men are carnivores, and killing for food prevails. If plants are sensitive creatures, as may be the case, then killing for food is inescapable. In the absence of the great open spaces which once gave room for the large predators, wildlife management, with deliberate reductions of wildlife populations, becomes essential. The skilled hunter has a place in such management, but not the pot-shot. The wild predators, eventually restored, will resume their work of management in time.

The sense of beauty is a guide to survival. The color green attracts us, connoting lush pastures, rich fare for animals and men. Great scientists follow their esthetic intuitions; the pattern guides toward an understanding of electron and species. The bobwhite's pattern bespeaks the breeding delights of his forebears. But beauty solicits protection.

GREAT CONVERSIONS begin secretly, silently, in men and society alike; they move slowly beneath the surface of the mind for a long time, flowering into insight, culminating in transformation. Something of this kind has been happening in recent years throughout the world with respect to

men's attitudes toward nature. Conquest was the watchword until but lately; now it is widely understood that we are part of the community of life and will survive or perish with it

But this transformation of attitude compels a response in action. The steps which must be taken rapidly, both here in America and around the world, if a long series of extinctions of life is not to impoverish the planet irrevocably, are reasonably well known.

We have had the Stockholm Conference on the Human Environment, and the United Nations Environment Programme has emerged; it should have the firm support of all concerned citizens everywhere. Ahead lies the United Nations Conference on the Law of the Sea, with momentous implications for the survival of the oceanic fisheries and the prevention of deadly oceanic pollution, with its menace to all life everywhere. Soon we shall be involved in the United Nations Conference on Population, the success or failure of which, in practical terms, not merely rhetoric, can mean life or death, not merely for many endangered creatures all over the world, crowded to the vanishing point, but for millions upon millions of human beings as well.

WE HAVE BEEN making some progress, and that is well, but not enough. We have the Endangered Species Treaty, yet to be ratified by most of its signatories. We have gotten minimal protection for the whales, but by no means enough. We have the Endangered Species Protection Act, which requires implementation. We have outlawed DDT at home, but efforts are underway to restore it, and our American corporations continue to ship it abroad. Fur-bearing animals continue to suffer untold agonies in the brutal steel trap. The management of our wildlife refuges, vital to the survival of many species, suffers from a senseless deprivation of the financing necessary for management, protection, and interpretation. Clearcutting spreads apace in our forests, public and private, accompanied by the poisoning of land against rodents, carrying with it the decimation of birds and predators.

Greatly needed now is a strong unified conservation coalition, well financed from private and public sources, capable of mounting a vigorous species-by-species protective program and a nationwide, worldwide, plan of environmental restoration and habitat preservation.

—Anthony Wayne Smith



For more than fifty years, NPCA has deeply concerned itself with the many problems of national park management from roads, facilities, and inholdings to master planning and wilderness protection. Now we are involved with protecting the parks, in the interest of the people

who visit them, against the overwhelming destructive impact of automobile traffic, commercialism, and building of airports and highway systems. Won't you help us in this fight to protect our park system by asking your friends and associates to join NPCA.

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