

NATIONAL PARKS & *Conservation Magazine*

The Environmental Journal

November 1974

New Hope for the Parks...

AS WE WRITE, the Secretary of the Interior has not yet announced his choice for the vital post of Director of the National Park Service, which is about to become vacant.

If a selection has been made by press time, the critical decisions of the new Director will obviously remain to be scrutinized.

Together, the chooser and the chosen, will determine the future of the National Park System in large measure for a long time to come.

The NPCA has recommended to the Secretary that the selection be made from among persons in the Department of the Interior with seasoned experience in problems of the National Park Service; that the post be placed on civil service; that it be made subject to confirmation by the Senate.

We have urged also that the appointee be a person with a reasonably extensive public record of performance so that all of us can judge what his policies are likely to be.

The NPCA has also protested to the Secretary against what we regard as a long series of violations of the letter and spirit of the National Park Service Act during the incumbency of the outgoing Director.

AMONG THESE TRANSGRESSIONS in Yosemite alone have been the use of the Awhahnee Lodge for conventions; a quick-lunch project for Glacier Point; a cable-car proposal for Glacier Point; new luxury cabins in Curry Village; a plan to open Tioga Road and Tuolumne Meadows for mechanized winter sports and for through-traffic across the park; a project for facilities in wilderness areas, including hard-surface trails; the use of the park for TV motion picture production, with special conveniences for commercial interests; and other violations of natural conditions in the park which it is the responsibility of the Park Service to protect.

Elsewhere we have had such recent intrusions as the plan for the Kingsmill Interchange on Colo-

rial Parkway in Virginia, providing special-privilege access to a private luxury-housing project, and the atrocious deal with Park Reservation Systems which became the well-publicized subject of investigations by the Senate Interior Committee and the General Accounting Office.

THE NATIONAL PARK SERVICE ACT is very clear with respect to barbarisms of this kind. It spells out very plainly the requirement that the responsibility of the NPS is first of all to protect nature in the parks for the benefit of present and future generations, and to provide for use and enjoyment in a manner and by methods compatible with preservation.

The Act does not set up a double purpose whereby preservation and utilization are to be balanced by some kind of esoteric legerdemain understood only by park administrators working under political pressures; on the contrary, it specifies quite clearly that the first responsibility of the Service is to protect natural conditions in the parks, including the wildlife and scenery, for the benefit of the people, and only thereafter to provide for utilization, and by methods compatible with preservation.

The NPCA has stated to the NPS that if the violations of the letter and spirit of the Act continue as they have in the recent past, the NPCA will be forced to test the issue in court on the first suitable occasion.

YOSEMITE! That it should be desecrated in this manner! The Yosemite of John Muir! This early well-spring of the national park idea, motivating the enduring protection of the great beauties of wilderness, forest, mountains, wildlife, a tradition which spread across America and around the world!

Here in this valley your vision engages, high in bright daylight, leaping from ledges, plunging to

Continued on page 35

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NATIONAL PARKS & Conservation Magazine

The Environmental Journal Vol. 48, No. 11, November 1974
NPCA · National Parks & Conservation Association · NPCA

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COVERS Joshua Tree National Monument, by Ed Cooper
Granitic rocks eroded to a rounded smoothness (front cover) are characteristic of the topography of Joshua Tree National Monument. The monument shelters a multitude of fascinating animals and plants that have adapted to survival in the desert. The teddy bear cholla (back cover), for example, is only one of the many cacti there that can survive long periods without water. (See page 4.)

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National Parks & Conservation Association, established in 1919 by Stephen Mather, the first Director of the National Park Service, is an independent, private, nonprofit, public service organization, educational and scientific in character. Its responsibilities relate primarily to protecting the national parks and monuments of America, in which it endeavors to cooperate with the National Park Service while functioning as a constructive critic, and to protecting and restoring the whole environment. Life memberships are \$750. Annual membership dues, including subscription to National Parks & Conservation Magazine, are \$150 sustaining, \$75 supporting, \$25 contributing, and \$12 associate. Student memberships are \$8. Single copies are \$1.50. Contributions and bequests are needed to carry on our work. Dues in excess of \$12 and contributions are deductible from federal taxable income, and gifts and bequests are deductible for federal gift and estate tax purposes. Mail membership dues, correspondence concerning subscriptions or changes of address, and postmaster notices or undeliverable copies to Association headquarters in Washington. When changing address, allow six weeks' advance notice and send address label from latest issue along with new address. Advertising rates are available on request from headquarters in Washington.

the desert sanctuary of JOSHUA TREE

The desert is not a wasteland to those who understand the ways of its plants and animals

by CHRISTOPHER J. NYERGES

SO THIS WAS the creosotebush I had so often read of! I excitedly leaned over to get a closer look at the plant. A tea from its leaves is said to be excellent for stomach pains, and some claim that the plant has actually arrested and cured cancerous growth. The creosote bush is unusual looking, with its sticky, two-lobed leaves—not an especially beautiful plant, but it exudes the aroma of the desert.

Our journey to Joshua Tree National Monument, California, began early that overcast morning. My three companions and I drove out of the Los Angeles area wondering whether the thick fog also hung over our desert destination. I gazed out the window as we traveled, looking forward to seeing what familiar and new plants I would encounter. Whenever I travel into a new area, I habitually look for the wild foods and herbs I have studied. This practice gives me a more intimate feeling for, and a greater appreciation of, the various places I visit.

Orange and date palm groves gave way to drier land where yucca dotted the countryside, and I knew we were drawing near. As we entered Joshua Tree from the south, we became spellbound by the bizarre-looking Mojave yuccas, the eerie rock formations, an occasional low-gliding bird, and the crystal-clear sky that greeted us.

Joshua Tree National Monument is in the high desert country on the border between the Mojave and Colorado deserts and is preserved because of the diversity and richness of its desert life. After spring rains fantastic wildflower displays of white, yellow, orange, red, purple,

and blue carpet the desert floor. The unusual desert ocotillo is found throughout the area spreading its spiky branches to the sky. When the ocotillos bloom with their red flowers, they can best be seen in full splendor at the Ocotillo Patch in the central part of the monument.

Many small cacti can be spotted by the observant hiker. Pin cushion cacti and a few relatives of the prickly pear are common. The fruits that form on the prickly pear are a delicious desert food and were widely utilized by Indians of the Southwest. The young pads are also excellent when peeled and fried, although they are a bit slimy. These young pads, called *nopales*, can be found in the produce section of some stores of the Southwest.

A large shrub called bladderpod brightens the landscape with its yellow flowers. The characteristic feature of the bladderpod is its hollow and inflated seed pods. Even though the whole plant has a musky odor, the seed pods were used as food or seasoning by many Indians. The taste resembles that of mustard, to which it is related.

Mojave yucca, similar to and related to the Joshua tree, is abundant in the southern part of the monument. Joshua trees, generally larger than the Mojave yucca, are found mainly in the central and northwest sections of the monument. The Mormons are credited with having named the Joshua tree. It is believed that this plant, with its upstretched "arms," reminded them of Joshua praying. All yuccas, including the Joshua tree, bear edible flowers and have roots that, mashed in water, produce a soaplike lather.



ED COOPER

THE FANTASTIC rock formations throughout Joshua Tree National Monument are believed to be as much as 800 million years old. Pinto gneiss, a metamorphosed rock, is one of the most common rocks found there and can be identified by its thin layers of contrasting colors. Another common rock found in Joshua Tree is one similar to granite—quartz monzonite. In the northern half of the monument, unusual formations can be seen from several roadside stops. Two well-known formations are Skull Rock and Split Rock. On my first night in Joshua Tree, I could see in the rock formations silhouetted against the setting sun what seemed to be two old men playing cards!

More than 250 species of birds live in or visit the monument. Not all are permanent residents, however, for some spend only the winter or summer and a few are rarely seen. Among the permanent residents are golden eagle, scrub jay, Gambel's quail, great horned owl, raven, road-runner, woodpecker, and several species of sparrow.

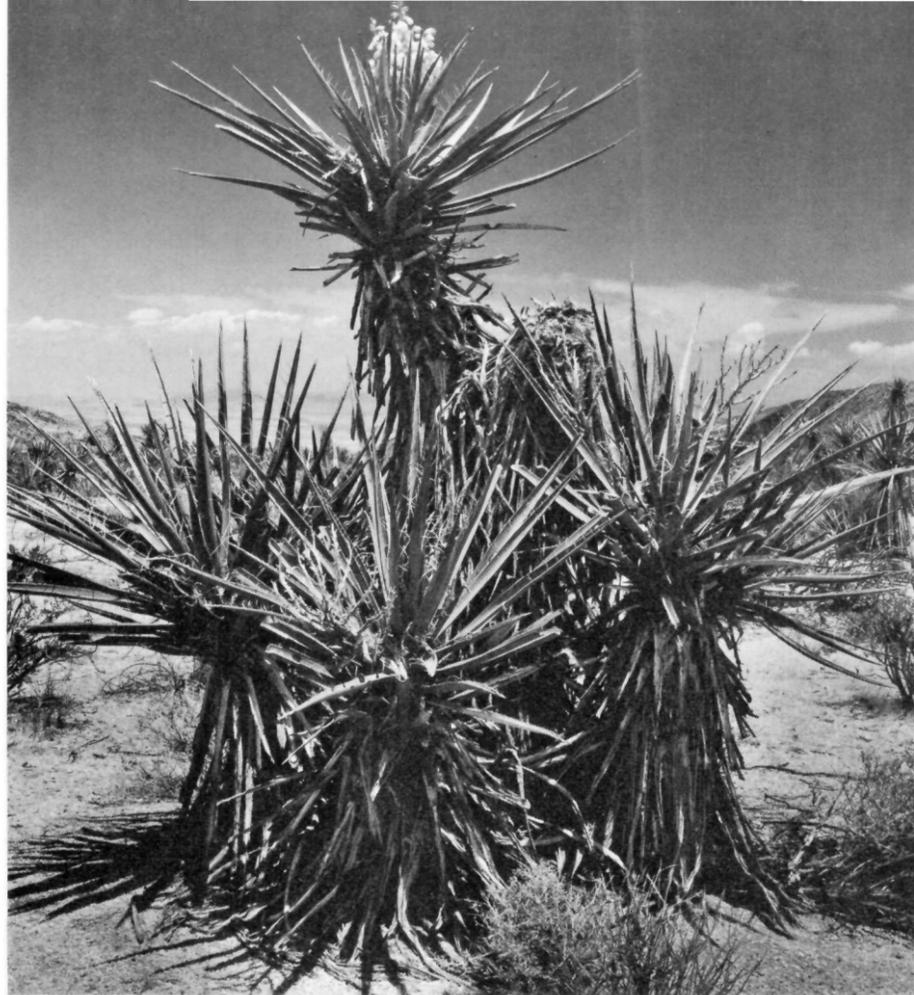
Toads and lizards are also common in the area. Snakes and other reptiles are common but rarely seen because of their shy nature. It is always wise to carry a snakebite kit with you in the desert and to know how to use it. About a half dozen species of rattlesnakes, including the sidewinder, are known to live in the monument, but this fact

shouldn't stop you from exploring the area. Just don't put your hands into holes or step over logs without first poking the hole with a stick or looking over the log. It is a good idea to wear high-top boots rather than sandals or sneakers when hiking in the desert. Rattlesnakes will leave if they hear noise, so sing and have a good time as you hike. Gopher snakes and other common snakes also make their home at Joshua Tree.

The desert tortoise, horned lizard, and iguana are all residents of this land. Chuckwallas, a large but harmless lizard, can sometimes be observed basking on the sunny rocks. When the chuckwalla tries to hide from attackers, it crawls into

a crevice and inflates its lungs to wedge itself in tightly. The meat of the chuckwalla is edible and was eaten by the Indians.

OUR FIRST STOP inside the monument was Cottonwood Spring, a palm oasis that is probably the most diversified and interesting area of the monument. After setting up camp there, we decided to do some hiking before the day was over. We headed toward the Winona Mill site and were hardly outside our campground when I noticed that Mormon tea was growing profusely all around us. This unusual plant usually looks like a dead plant, with only scalelike leaves, but when it blooms, its small, conelike flowers



Above, Mojave yucca; below, Joshua tree—related species



Mormon tea

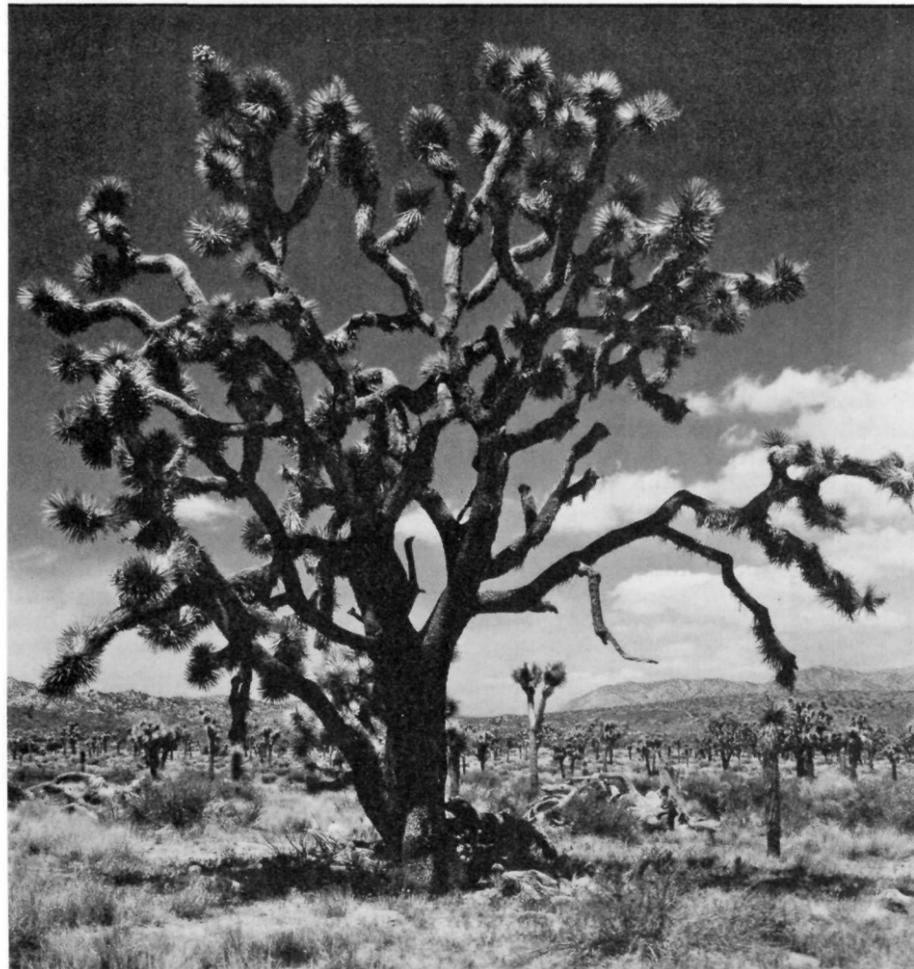
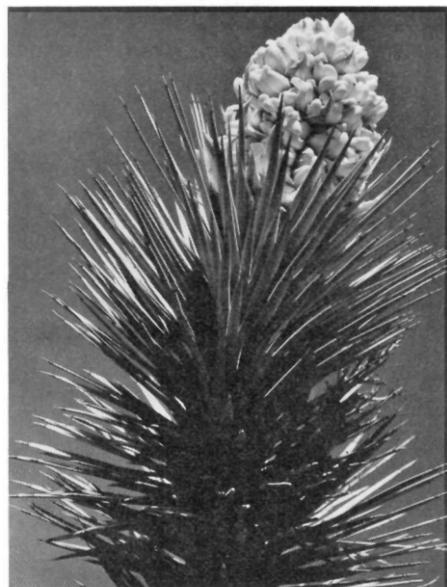


Flowers of manzanita



Below, Joshua tree blossom

Above, bladderpod; below, prickly pear cactus



DESERT PROVENDER

The Mojave yucca and the Joshua tree bear flowers that are edible. The dried or fresh stems of Mormon tea can be brewed for a tasty tea. The lovely flowers of manzanita feed the soul, and the berries that follow will nourish the body. Indians used the seed pods of bladderpod as a spicy food or seasoning. Young pads of prickly pear—peeled and cooked—make a good though somewhat slimy survival food; the reddish fruits that develop by late summer are delicious and were once widely utilized by Southwestern Indians.

National Park Service policy permits the gathering of fruits for consumption within national parks and monuments, but no foraging is permitted that would destroy any plant—for example, gathering roots, tubers, entire plants, or leaves.

are surprisingly beautiful. The dried or fresh stems can be made into a tasty, slightly stimulating tea. Mormon tea is named after the Mormons who used this plant quite commonly.

We discovered many wonderful desert plants on our short evening hike. We came across creosotebush, and I had to stop and admire it and feel its stickiness. The brilliant yellow flowering bushes of bladderpod colored the landscape. Near Winona Mill we saw traces of the early miners who once inhabited the area. Old foundations, waterholes, and stairways to nowhere were the only memorials remaining.

Climbing among some old foundations, we found ourselves walking through an area of soft adobe clay. I rubbed the brick-red clay between my hands to feel its soft, consistent texture. Digging my fingers into the adobe, I found a small piece of broken Indian pottery. Broken and scattered Indian artifacts are supposedly quite common over most of the monument. When discovered, they should be left in place, and visitors should never attempt to dig for artifacts. They might destroy important scientific evidence. Indians lived in this area for thousands of years. The most recent Indian inhabitants were the Serrano and Chemehuevi, who lived on the land during the early part of the twentieth century until it became settled by the white man. Many grinding sites and places of Indian habitation can be found throughout the monument, mostly near the springs and waterholes.

I noticed two desert foods at the Winona Mill under a large palm tree. One was saltbush, an excellent plant to eat when cooked. It is related to and resembles lamb's quarters. The other plant was desert mallow. It, too, betrays its relationship to the common mallows of city vacant lots. The slimy texture of the chewed mallow leaf makes its useful in treating sore throats.

That evening as we sat around our campfire telling tales of Indian lore the fire's flicker made shadows dance. Small rats were attracted to our fire from the darkness. They were cute little creatures, but I kept wondering what I would do if one crawled into my sleeping bag during

the night. When we finally did bed down, we had no sounds of running river or rustling trees to lull us to sleep, but the owls were out in full force to help us slip into darkness.

The next day we thoroughly explored the Cottonwood Spring area before moving on. We drove north through the Ocotillo Patch and the Cholla Cactus Garden, where we saw natural displays of majestic desert plants. We continually pulled over to the side of the road to photograph one beautiful scene after another.

Eventually we stopped at a campground between Sheep Pass and Ryan Mountain campground. Our camp was surrounded by a wide variety of desert plants. A manzanita tree was blossoming, and blue dicks were beginning to flower. Blue dicks

are related to onions and have edible corms. I was a bit surprised to see wild rhubarb growing there. Wild rhubarb, or cañagire, is related to curly dock and has edible leaves that are excellent when cooked.

Birds sang and wildlife scurried about that evening while we sat on a hill and watched the sun set. Sitting there at the peak of a rock formation, we felt the supreme power of this desert sanctuary, and we let it close our mouths and open our minds as darkness crept over the land.

The next morning we drove past other campgrounds, past cactus fields, past wildflowers. Outside the monument we saw many old abandoned cabins that gave the area a ghost town effect. At the town of Joshua Tree, we came to the high-

way, and then off we were, leaving the monument behind us. But we took part of it with us, for our bodies and souls were thoroughly refreshed and revitalized, and once again we were ready for the exciting challenge of life.

NO, THE DESERT is no barren wasteland. It contains a myriad of wondrous living things that have adapted themselves to the harsh, arid climate. So the next time you visit this legendary land, don't say, "There's nothing here." Instead, realize what *is* here—feel its slow pulse and become one with it. ■

Chris Nyerges, a student of botany, mycology, and herbalism living in the Southern California area, considers himself a "student of life."



ED. COOPER

GORILLA: The Gentle Vegetarian



Habitat preservation
is the key
to the survival
of man's closest
relative—
but captive breeding
is a temporary
expedient

by MAXINE A. ROCK

IN 1774 a terrified sea captain described "a wonderful and frightful production of nature" he had seen in the African jungles. Almost a century later, a missionary roaming the same jungles spotted "one of the most frightful animals in the world" and touched off searches for a creature believed to be part man, part monster, and part myth. That creature was the gorilla.

Long before the first baby gorilla was captured and transported to a London zoo in 1855, this "frightful production of nature" was shot on sight. Well into the 1920s gorilla hunting was a favorite safari sport, and the few young animals taken alive usually died within a few months.

Apparently, no one thought about gorilla survival until 1925, when naturalist Carl Akeley ventured into the Congo to obtain "specimens" for New York's Museum of Natural History. Akeley shot five gorillas. Later, when he returned to study the animals, he became so impressed that he regretted the shootings and started a conservation campaign. He asked the Congo government to set aside a large, protected gorilla park where scientists could come to study the great apes.

At that time the Congo was in the hands of the Belgian government. It listened to Akeley, took a horrified look at gorilla mortality figures, and established Albert National Park in April 1925 as a permanent sanctuary for the beleaguered animals. What happened since then typifies the clash between nature and man, and its resolution will probably determine whether any remaining gorillas survive.

Most wild gorillas today live in the spectacular thick jungle and mountain areas of the 8,000-square-

mile Albert National Park, which includes the entire Virunga volcano chain. The volcanoes, their boiling tips in the clouds and their scarred flanks draped with lush green vegetation, straddle the international boundaries of the Congo, Uganda, and Rwanda—as does the park itself. Here the soft-eyed wild gorilla moves slowly in the shadows of giant, moss-covered trees, peacefully sharing its habitat with wild pigs; huge water buffaloes; lumbering grey elephants; bands of chattering, colorful monkeys; innumerable birds; and insects of every size and description. The gorilla's only enemies are an occasional leopard and the constant, most feared intruder—man.

Many scientists contend that gorillas are man's closest animal relatives—closer, perhaps, than the more active chimpanzee. Because they are characteristically slow and silent, gorillas were the last ape known to science, and the one whose life still remains somewhat cloaked in mystery. Conservationists are rushing to unravel the mystery now, for the gorilla is listed in the Red Data Book of the International Union for the Conservation of Nature and Natural Resources (IUCN) as "a rare and endangered species threatened with extinction."

There are two forms of this giant primate: the mountain gorilla (*Gorilla gorilla beringei*) and the lowland gorilla (*Gorilla gorilla gorilla*). The lowland gorilla inhabits West Africa and was apparently separated from its mountain cousins by a dry period that occurred many ages ago. Aside from some slight color differences and the taller, more slender frame of the lowland gorilla, the two forms are virtually indistinguishable.

Mature male gorillas may stand six feet tall in a hunched-over position, resting on the front knuckles, and weigh up to four hundred pounds. But despite their imposing size, both captive and wild gorillas are usually placid and serene. George Schaller, the young zoologist who spent a year in the Congo in 1957 studying gorillas and later published his findings in a best-selling book, *The Year of the Gorilla*, noted that they are "eminently gentle and amiable creatures, and the dictum of peaceful coexistence is their way of life." Dian Fossey, who followed Schaller into the jungles and got even closer to gorillas than he did, although her work was briefer and not so widely publicized, thought of gorillas as "introverted, peaceful vegetarians." And Dr. Geoffrey H. Bourne, director of the Yerkes Regional Primate Research Center in Atlanta, Georgia, where the world's largest population of captive lowland gorillas now resides, describes gorillas as "peace-loving and amiable . . . not a violent animal."

GORILLAS, however, are no strangers to violence. Since the earliest Congo explorers penetrated the lush bamboo forests, gorillas have been shot for sport, captured for transport to zoos and laboratories, and speared by natives in search of meat. Traditionally, the capture of a baby gorilla involved the massacre of its mother and the entire family group; gorillas do not easily give up their young.

"But even though safaris are now armed with cameras, not guns," says Dr. Bourne, "habitat destruction poses a grave threat to the wild gorilla. More and more, the jungles are being wiped away to make room for farms, and cattle ranches right on the edge of the park are ruining the vegetation by allowing cattle to wander back and forth across boundaries. With their wild food supply dwindling inside the park, the nomadic gorillas are often forced to leave their jungle sanctuary and raid nearby farms for easier sustenance, and the angry farmers shoot them. I would guess that there are about 10,000 wild gorillas left. Their chances may be all right for the next

decade or so. But what happens to them after that depends on how much jungle is carved up for roads, and how much civilization pushes into lowland and mountain gorilla domain."

Even in the park, gorillas are not safe. In 1960, when the Congo wrested its independence from Belgium, Europeans left the country and the park was left unguarded. Schaller, who was visiting the Congo at that time, reported that native cattle ranchers let their stock invade the lush park meadows, and gorilla habitat was almost immediately endangered. Poachers lurked behind every bush—as they still do today—and only the fierce intervention of some local conservationists saved the gorillas.

Right now, says Dr. Bourne, "gorillas are being helped because Africans have begun to recognize the value of these large primates, and countries where gorillas live are refusing to export the animals. Being listed as an endangered species is an immediate help to the animal because that, too, limits its capture and export. But I know of nothing more specific being done to help gorillas. I'd like to see more preservation of their habitat, and more gorilla studies."

ONLY TWO major gorilla studies have been attempted that have received some scientific recognition: Schaller's observations of the animals in the wild and an intensive laboratory study of captive gorillas at Yerkes. Schaller's work came first. He spent hours in the jungle, soaked and muddy, recording every move of the elusive animals. All he had to go on, at first, was an occasional heel print in the dust; a mound of dung, much like horse manure; a stripped bamboo shoot or a denuded vine that the animals had eaten; or, best of all, nests on the ground or in the trees, where the band had stopped for the night. Once in a while, Schaller heard the soft grunt of a gorilla. Then, peering through the tangled underbrush, he could watch the family—usually a dominant male, a few females, an adolescent male or two, and some infants.

A wild gorilla family is dominated

by the largest and strongest male, called a silverback because of the steel-grey hairs that ripple on the backs of mature males. The silverback decides when to get up and when to sleep, when to feed, when to nap, and when and where to travel to another spot. He is the unchallenged leader and protector of his family group, although he seems to rule with tolerance and self-restraint. He uses a stare to subdue unruly youngsters, a scream and chest-beat to frighten possible enemies. Now and then a silverback will engage in bluff charging, but it really is bluff; actual physical assault by gorillas is rare. Dian Fossey, who spent over 2,000 hours observing gorillas, said that only once did she have a scary moment, when five large males charged at her, roaring. When they were three feet away, she spread her arms and shouted "Whoa!" The gorillas stopped.

If gorilla males are so timid, why do the others stay with him? "Because they like and know one another," says Schaller. Occasionally a young male will wander from the group, and even a female might stray for a short time. But the animals always seem to return to the "family." When gorillas are on the move, or separated by dense underbrush while feeding, they call to one another in a low-pitched "u-u-u" or "bu-bu-bu" sound to avoid being lost.

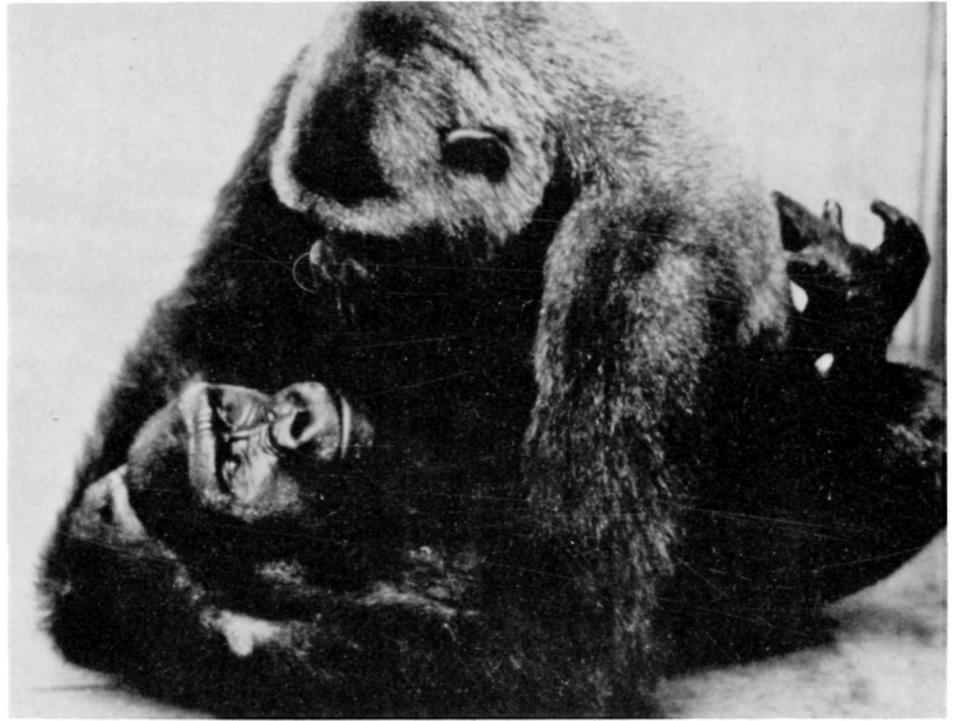
Wild gorillas are devoted mothers. From birth to three years of age, when gorilla young are classified as "infants," their mothers provide food, protection, shelter, transportation, and emotional support. Babies are weaned at about eight months and take their first, shaky steps away from their mother's side at about that time. But they are not ready to join the group and live independently until they are three. From then on, to the age of six, the youngsters are called "juveniles," and many of them still frequently visit their mothers for a comforting hug. At about the age of six, males experience a growth spurt, and some early-maturing females may even begin their monthly menstrual cycle. The males, which grow much larger than the females, become silverbacks shortly after the age of ten.

Then, they may leave the home troop and go off to start a family of their own. Schaller estimated the probable life-span of a normal wild gorilla at about twenty-five years.

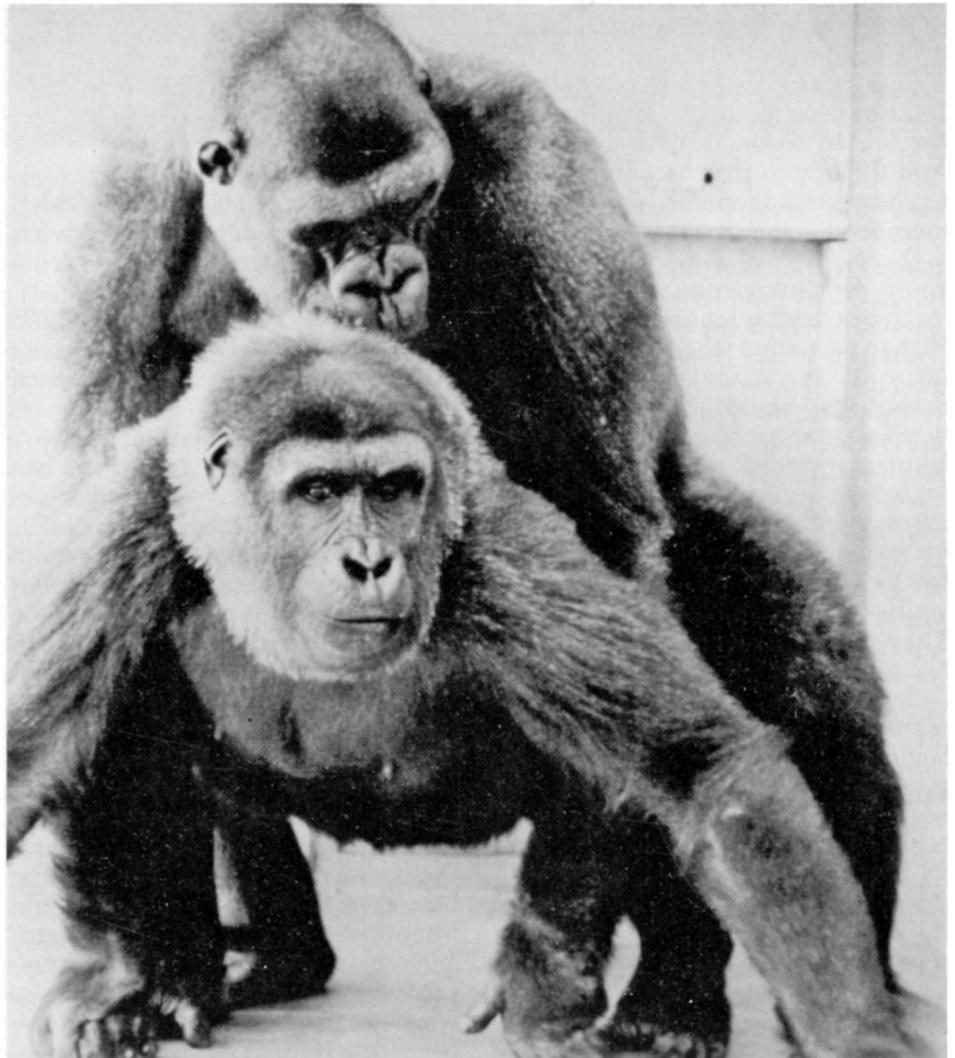
A male may lead the family, but it is the female—the gorilla mother—who introduces new members to group life. Day begins for wild gorillas when the first slanting rays of sun warm their swaying nests. A few females, prodded by their squirming infants, may leave the nest first, but breakfast does not begin until the silverback arises and starts to feed. Because of their enormous size, gorillas spend most of their time foraging for food: wild celery, bedstraw, thistles, bamboo shoots, and fruit in season.

After the early morning search for food is over, wild gorillas take a nap, usually between 9 and 10 a.m. If it is sunny, they stretch out on the forest floor, grinning. During this time the energetic youngsters often chase one another and wrestle; the adults calmly tolerate this annoyance. After the nap and playtime the group forages again, alternating periods of eating and resting until the forest grows dim and the dark animals blend into the shadows. Then the band huddles sleepily near the silverback, awaiting his decision on where to bed down for the night. As soon as he begins to break branches and build his nest, the others follow suit; and soon all the gorillas are asleep in their solitary beds.

"No aspect of gorilla behavior has received more study than that of nest building," wrote Schaller. He noted that "the inborn tendency" to build nests seems to be present in wild and captive gorillas alike. Only about 10 percent of the gorillas Schaller studied slept without nests, and captive gorillas almost always put branches around them before sleeping if the materials are available. Baby gorillas build clumsy "practice" nests as early as eight months of age, although they con-



Photographs courtesy of Dr. Ronald Nadler



At right above, Kishina's mother and father exchange loving looks. At right, Paki, the female (bottom) and her mate copulate—the only known photograph to capture a captive gorilla mating.

tinue to sleep with their mothers until they are juveniles. Schaller noted that "the only requisite of a nest site is the presence of some vegetation with which to construct the nest."

IF A CAGED GORILLA has no nest-building material, no green-hued forest, and no mist-shrouded meadow, can it still survive and reproduce? Dr. Ronald Nadler of Yerkes, who is now working on the second major gorilla study—this one in the laboratory—says yes: Give a gorilla an adequate diet and reasonable cage space, he declares, and all it really needs to remain healthy and normal is social interaction with other gorillas, particularly a mother.

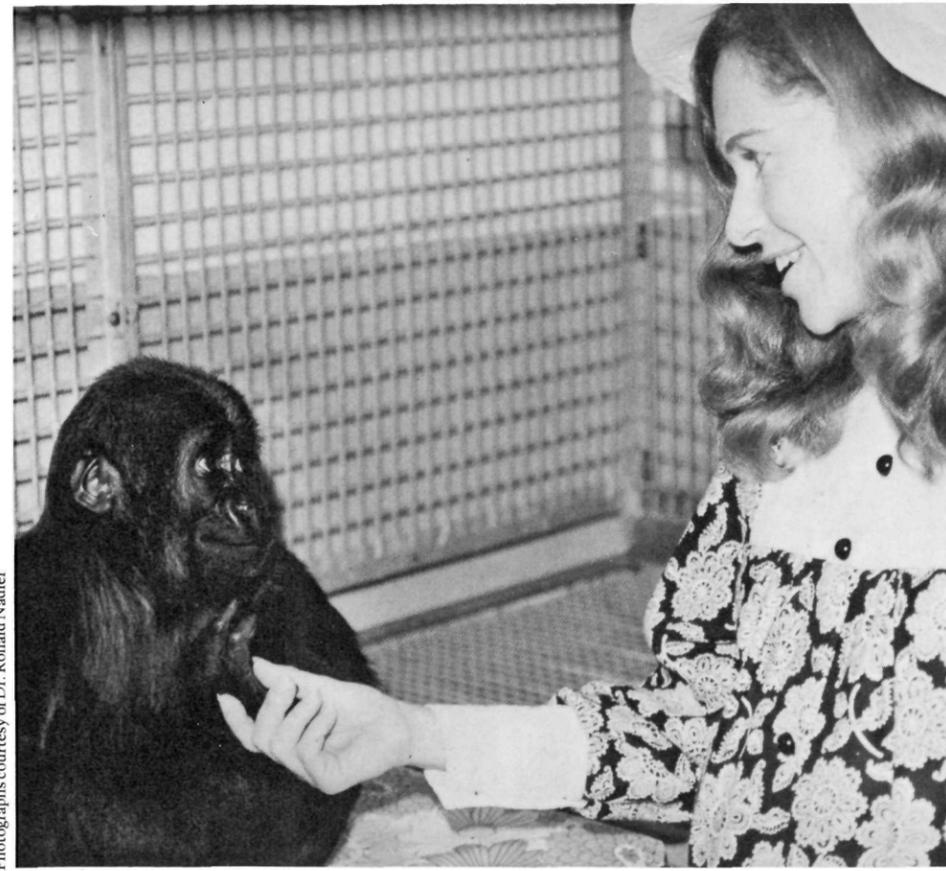
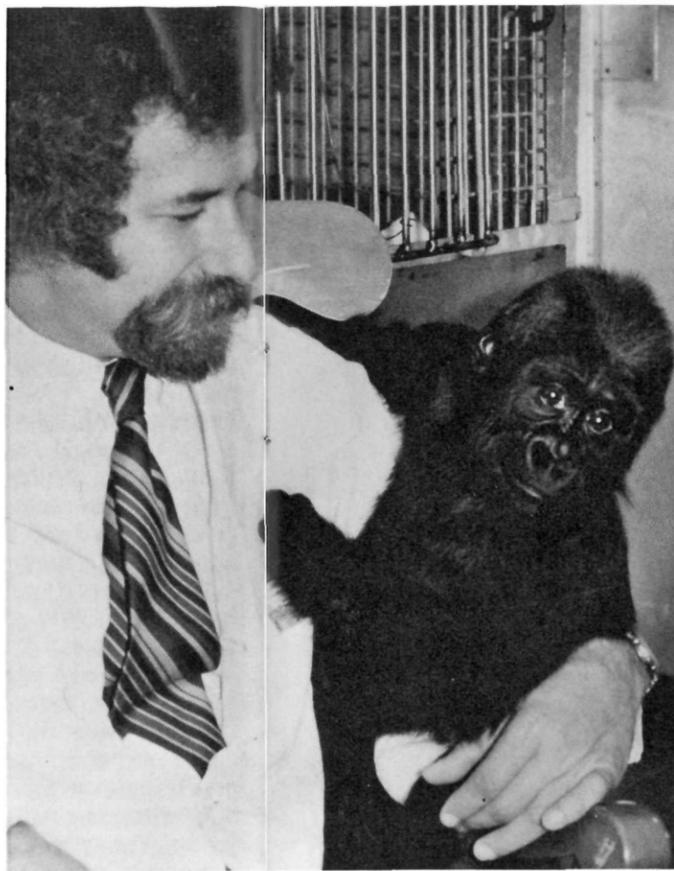
"Originally," noted Dr. Nadler, "no one made a concerted effort to breed gorillas in captivity. Zoo directors usually bought an isolated animal and fattened it up to enormous proportions as a showpiece. But now, with wild gorilla habitat increasingly endangered, we're thinking in terms of keeping the species alive by captive breeding. And the key to that breeding seems to be social contact with other members of the species."

Dr. Nadler is a wiry, energetic young psychologist with a penchant for pipes and scientific perfection. He has picked up where Schaller left off and is studying hormonal responses, social behavior, and mother-infant interaction in fifteen laboratory-raised gorillas. The animals live in small indoor-outdoor cages and are brought together daily for social and sexual interaction. So far, two babies have been born to a young female of the group, Paki. They are Kishina, now two years old, and a newborn, Fanya. Paki had little mothering experience, and she seemed to reject Kishina, who is being raised in the Yerkes great ape nursery. She is having better luck with Fanya, who will, says Dr. Nadler, "stay with her mother if at all possible."

Dr. Nadler is probably one of only two or three specially trained observers ever to witness the birth of a gorilla. His notes may be the only such records of a gorilla birth in the world today, for even Schaller, in his



Kishina, below, the first gorilla to be born at Yerkes Regional Primate Research Center, Atlanta, Georgia, rests after her two-day-old physical examination. Center, Dr. Ronald Nadler treats Kishina, then about a year old, to a ride in a rocking chair at the Yerkes great ape nursery. At far right, Kishina smiled readily for her friend, author Maxine Rock.



Photographs courtesy of Dr. Ronald Nadler

year of tracking, never got that close. Dr. Nadler has seen first-hand what can happen when an infant gorilla is separated from its mother: Kishina is being raised by humans, and Dr. Nadler says her chances of ever being a mother herself are "lessened by this experience."

"To treat a gorilla totally like a human is probably worse than isolating it altogether," Dr. Nadler observed. "Experiments here at Yerkes showed that chimps raised alone in little boxes were neurotic, but chimps raised with a lot of human contact were worse!"

If the key to gorilla reproduction is group experience, Dr. Nadler's studies may unlock the barriers to survival of the species in captivity. "I don't see the chances for wild gorilla survival as very good, unless more sanctuaries are provided for them in their native lands," Dr. Nadler said. "I suppose we could import them to the United States and release them here, but as a practical matter who would come up with the money and the land we need? It's more likely that zoos and

places like Yerkes will keep the species alive."

Zoos are becoming more sensitive to the plight of the gorilla, and some successful breeding programs have already been established at the Cincinnati Zoo; the Columbus, Ohio, Zoo; the Lincoln Park Zoo in Chicago; the San Diego, California, Zoo; and the National Zoo in Washington, D.C. Overseas, the Basel Zoo in Germany has had success in gorilla breeding, and so has the Frankfurt Zoo and the Kyoto and Ritsurin zoos in Japan. Efforts are being made to house gorillas in large, family-oriented compounds instead of isolating unmated animals in barred cages. Yerkes is attempting to bring its gorillas out of the laboratory and into the sunlight by moving selected breeding animals to a "social life" compound at its field station in Lawrenceville, Georgia.

But captive breeding, however successful, is something Dr. Nadler calls an "end-of-the-line" effort, and "so something to fall back on when everything else fails." He and Yerkes director Dr. Bourne agree that habi-

tat preservation is the key to gorilla survival.

Right now, the key may be stuck. Albert National Park is there, but Dr. Bourne explained that "protection for the gorilla within this vast park is limited. Yes, there are dedicated rangers, but they are overworked and have only limited supervision. They apparently have a hard time keeping up with gorilla poachers." Gorillas remaining outside the park are in constant danger from hunters and from continuing devastation of their jungle habitat.

According to Dr. Bourne, there is hope that the "relatively new" African governments will provide increasingly better protection for the park and be able to control the hungry farmers and cattle grazers whose activities press in on the area from every direction. "The capacity for better protection is there," he said, "but it's far more complicated than snaring a poacher or shooting away the cattle. The people of Africa want 'progress,' and their notion of what that means conflicts with the safety of the gorilla."

IN THE AUGUST 1973 issue of *National Parks and Conservation Magazine*, East African ecologist Dr. Norman Myers noted that all African wildlife are caught in the squeeze between progress and preservation. He called it "a problem of revenues" and suggested that the proposed World Heritage Trust might provide at least a partial solution.

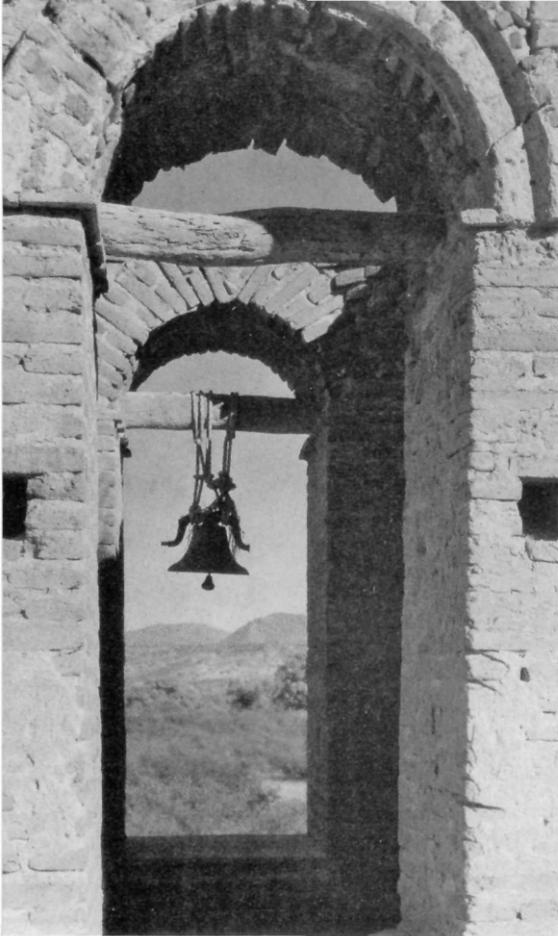
The Trust would be a hefty UNESCO fund, with monies contributed by member nations to the tune of about 1 percent of their usual UNESCO bill. Affluent countries would presumably fatten the pot by additional voluntary contributions, and nations in need could draw from the Trust to help protect their wild heritage.

UNESCO's General Conference adopted the World Heritage Trust in Paris in November 1972. It has some impressive UN support. The U.S. Congress has ratified the Trust, and other concerned governments of the world are considering the proposal. When it goes through, the World Heritage Trust could well play an

important part in preserving wild gorilla habitat.

For now, however, two major questions remain: Can land exploitation pressures on Albert National Park be held back? Can the affected African governments keep scraping together the money for park protection—and find some for protection of the animals living outside the park? According to Dr. Bourne, "Nobody can really tell what the answer will be. But," he added, "I would hate to think that man in his quest for land and money brought his closest animal relative to the brink of extinction and then, for lack of funds, pushed it over the edge."

Maxine A. Rock is a science writer specializing in conservation and ecology. Her articles on the great apes have appeared in national and local magazines and newspapers, and she has worked closely with the Yerkes Center for over five years. A past staff member of NPCA, Ms. Rock helped form the Zoological Society of Atlanta shortly after moving to that city in 1969 and is now studying plans for a new Atlanta zoo.



NATIONAL PARK SERVICE



A mariachi band plays lively tunes at the Tumacacori fiesta.

NATIONAL PARK SERVICE

FIESTA AT TUMACACORI

by ROSALIE STUART FRANKLIN



Tumacacori National Monument is the scene every December of a festive celebration

EVERY YEAR at Tumacacori, Arizona, the site of an ancient Spanish mission and now a national monument, a day-long fiesta is celebrated that is open to the public.

In 1974 the fiesta will be on Sunday, the first of December, on the feastday of St. Francis Xavier, the man most deeply admired by the famed cowboy Father Eusebio Kino, a Jesuit priest who first rode north into the little Pima Indian village of Tumacacori in 1691. Father Kino founded the mission for Spain, introducing ranching to the Indians of the region; by 1698 fields of wheat and herds of cattle, sheep, and goats flourished.

Later the Franciscans took over the Province of Sonora mission chain, of which Tumacacori was a northern outpost, and constructed the present church, as well as a courtyard surrounded by arcades and living quarters, storerooms, workshops, classrooms, and granaries. However, in 1821 Mexico won independence from Spain, and the new government was unable to provide adequate military defense against

Apache raids on the missions; in addition, Mexico discontinued financial support. Gradually Spanish priests and settlers abandoned the frontier missions. In 1844 Mexico sold the Tumacacori mission lands to a private citizen, and the last Christian Indians left. Erosion and treasure hunters exacted a heavy toll on the deserted church until it was proclaimed a ten-acre national monument in 1908.

The fiesta, a colorful day of merrymaking, appropriately blends joyous Spanish and Mexican customs and Anglo ways with the gentle dignity of the ages-old Indian culture that Father Kino found thriving in the vast Pimeria area to which he brought Christian civilization. Sponsors are the Arizona Commission on the Arts and Humanities joined by the Tumacacori National Monument and the Knights of Columbus of nearby Nogales, Arizona.

In 1973 the Knights sponsored the visit to Tumacacori of Archbishop Carlos Quintero Arce of Hermosillo, Mexico. It was a truly historical event, inasmuch as this was the first

time since 1820 that a bishop of Sonora province had visited Tumacacori; and, of course, in 1820 all the surroundings were still Spanish territory. His Excellency celebrated the mariachi Mass in the ancient adobe and burned-brick mission church, assisted by Father Edward Carscalen, chaplain of the Knights of Columbus. The music—vivid and joyous—was provided by Los Changuitos Feos de Tucson, one of the foremost musical groups of the Southwest. They are Mexican-American high school boys who have toured as much as thirty thousand miles in a year without missing a day of school. Their name is an affectionate term meaning "ugly little monkeys."

The fiesta consists chiefly of entertainment by various dancing and musical groups; exhibit booths of native craftsmen demonstrating the arts of pottery making, wood carving, basket weaving, and leather tooling; and booths where native Mexican and Indian food such as tortillas and popovers are prepared. The booths are likely to be staffed by the San Carlos Apaches, the



Anita Antone weaves intricate baskets.

ROSALIE STUART FRANKLIN



Alfonso Flores makes art of dead wood.

ROSALIE STUART FRANKLIN



The youngest salesgirl at the fiesta.

ROSALIE STUART FRANKLIN

Yaqui Indians of the Old Pascua in Tucson, the Papago Indians of the surrounding region, and by local Mexican-Americans.

For example, Anita Antone, a Papago Indian, specializes in "close weaving" of baskets in the time-honored traditional style that she learned from her grandmother, who in turn was taught by her mother. Anita Antone's handsome, perfectly crafted baskets are collectors' items. Laura Kermen, Papago potter, is equally skillful at demonstrating the making of regional pottery. Alfonso Flores, on the other hand, designs one-of-a-kind wood carvings of animals and birds from oak and mesquite wood that he searches out in the surrounding Santa Cruz valley. Branches, roots, and burls already shaped by nature inspire him to transform them into Arizona road-runners, owls, mountain lions, doves, and crested quail. Señor Flores learned his art as a child from his father at their home near Oaxaca, Mexico. He now has his own shop, La Tienda de Oaxaca, at nearby Tubac, Arizona, a well-known artists' colony.

Maria Rodriguez or Ramona Alegria, both of Tumacacori village, demonstrate the gentle art of making tortillas. With smiling eyes and small hands they deftly pat out the dough and let you try patting it yourself if you like. Then when it's done they watch you eat it hot, saying softly when you've eaten the last bite, "There, isn't that better than the ones you buy at the supermarket?"

The Papago women make a local delicacy that is just as enticing, called a "popover." It is made of fine white dough fried in deep hot fat and eaten with honey. The crisp, clear Arizona air challenges the appetite, and one finds oneself going happily from booth to booth. There are delicious homemade tacos, tamales, and burros, a nourishing regional favorite—tortillas stuffed with chili or red beans.

Throughout the day, singing and dancing groups entertain. Mariachi bands from both sides of the border play contagious music. There is the Grupo Folklórico de Pima College de Tucson, a youthful vivacious troupe that gracefully interprets the cul-

tural heritage of old Mexico. The Mariachi Cobre, the "Brass Mariachi Band," graduate members of the Changuitos Feos, play violins, guitars, vihuelas, and cornets.

But the fiesta is not the only attraction at Tumacacori. A small but very fine museum located at monument headquarters depicts the Tumacacori of old through visual displays. The visitor can take self-guiding walks about the grounds, leading through the museum and the old walled patio garden to the church. North of the mission church is a small cemetery where many Christian Indians are buried. After the mission was abandoned, it was used as a corral. The graves visible today are from a later period. The original church, begun around 1800, still

stands, although it is now partially in ruins. A new roof was placed over the nave to protect it from the weather, but recent repair work has been limited to preserving the original construction. There are many details in this baroque building to fascinate the student of history or architecture, from the pleasing symmetrical facade to the fading interior colors applied long ago by native Indian workmen.

Tumacacori is located forty-eight miles south of Tucson on U.S. highway 89, just eighteen miles north of Nogales. Buses pass between Tucson and Nogales several times daily. The nearest rail connections and commercial airport are in Tucson. For the day of the fiesta the customary modest admission fee to the monu-

ment is waived. Picnic grounds are nearby; parking is free.

The Arizona sun of December shines warmly. Even while the excitement of brassy mariachi music fills the clear desert air and light-footed young dancers entertain, it is a slow-paced, leisurely day—a day filled with visiting, with laughter, with children chasing each other, with the strum of guitars, and with the aromatic fragrance of fresh, strong coffee.

The fiesta usually is attended by several thousand people strolling through the shady patio garden, admiring the Spanish fountain and the spiny desert plantings, exploring the cool, half-ruined mission church, and munching burros and drinking purple punch while being treated to a colorful musical event. The scene recalls the brief sermon of the Jesuit historian Father Polzer at the memorial Mass in 1972 when he suggested that surely on this festive, sunny day, the good God wants everyone to go out and have a good time. ■

Rosalie Stuart Franklin is a free-lance writer/photographer who loves to travel and write about her experiences.



NATIONAL PARK SERVICE



NATIONAL PARK SERVICE

HOMAGE TO HISTORY . . .

Each December visitors gather at the annual fiesta at Tumacacori to enjoy a variety of entertainments and to celebrate the many customs and cultures that have played a part in the history of this southern Arizona mission. But the fiesta is not the only reason for visiting Tumacacori. The mission church is a typical frontier church of the Spanish colonial era. In the late 1700s a chain of such missions was built by Franciscan priests on sites established by the Jesuits in order to bring Christian civilization to native Indian peoples. This mission, along with many others, was abandoned after Mexico won her independence from Spain in 1821. The new government was unable to defend the missions from hostile Indian tribes and discontinued financial aid. Gradually the deserted church fell to ruins until it was saved from complete destruction when it was proclaimed a national monument in 1908.



Downtown Santa Cruz, once derelict, now sports a beautiful nine-block mall.

JUST ELEVEN YEARS AGO, California's coastal city of Santa Cruz, eighty-two miles south of San Francisco on Highway 1, faced certain economic ruin. With the downtown area virtually derelict, the community was confronted with the ubiquitous problems of the modern American city. Empty shops, unsightly signs, and shabby store fronts led to discouraged owners and declining real estate values. Many fine old houses and historical buildings sat neglected and deteriorating. And the beachfront area had taken on the seedy look of a third-rate traveling carnival.

Today the city not only has regained much of its turn-of-the-century elegance when it bore the imposing title of "Queen of Monterey Bay" but has proved emphatically that the increasing trend toward inner-city decay—and subsequent flight to the suburbs—can be reversed.

THE STORY of the revitalization of Santa Cruz, population 40,000, began in 1963 when Chuck Abbott, seventy-year-old itinerant photographer, left his ranch near Tucson in search of a retirement community with trees, water, and charm. He found all three on the banks of the beautiful San Lorenzo River, in a lush green valley where tree-studded mountains leave

Sparked by one man's determination,
the revitalization of Santa Cruz
could serve as a model
for deteriorating cities

SANTA CRUZ: ONE CITY'S SOLUTION TO URBAN DECAY

article and photographs by STANLEY MEDDERS

an unruffled sea. Even before arriving in Santa Cruz, Chuck and his wife Esther had decided that they wanted the multiple conveniences of living downtown; but because they couldn't find a neighborhood free of blight, their only recourse was to make one. So shortly after buying a late-Victorian style home only three blocks from the main street, the two houses next door, and five apartment buildings across the street, the Abbotts began what Esther referred to as "civic improvements with lasting value." Hiring students from the nearby University of California to work with them, they soon transformed the houses into some of the most attractive in Santa Cruz.

Abbott had several purposes in mind when he renovated his property. Not only did he want to improve the appearance of the neighborhood and to create cheap yet attractive housing for those with low incomes (he rented the refurbished houses to the elderly and the apartments to students), but he hoped to set an example to other property

owners in the area by demonstrating what could be done to restore vintage homes.

He even went through the neighborhood and to town meetings, talking diplomatically of civic pride, and before long many residents began to spruce up their homes and gardens. Gradually, the pockets of blight that had surrounded the Abbotts' property began to disappear.

THEN CHUCK tackled a problem of far greater magnitude. Ever since his arrival, the deteriorating buildings and ugly signs along Pacific Avenue, the main thoroughfare, had been a source of deep concern to him. Effecting a solution would be an extended and difficult process, but Chuck loved a challenge and he had a plan—one that took him and twenty-one of Santa Cruz' civic leaders to Southern California. There they talked with Fred Sharp, Pomona's city manager, toured the downtown area, then inspected maps and financial records of the city's recently constructed mall.

Before 1962 Pomona, with a population of 75,000 but a trade area three times as large, had found itself in much the same situation as Santa Cruz was currently in. On Second Street, the blighted downtown business section, twenty-six shops were vacant, and pigeons and bats shared the top floors of other abandoned buildings. A shopping center one and a half miles east of town was diverting so much cash from the central core that downtown merchants were frantic. They spent \$681,000 to have nine beautifully landscaped blocks of mall constructed. The result: an 89 percent increase in retail sales and approximately \$10 million in new construction, the first along Second Street in more than a decade.

Several months after the trip to Pomona, Chuck was able to interest Neal Walton, Santa Cruz' City Planning Director, in the mall idea; and the two traveled throughout central and southern California, visiting and photographing successful malls in Fresno, Visalia, Burbank, San Fernando, El Monte, Riverside,

The before and after photographs of downtown Santa Cruz at right illustrate Chuck Abbott's determination and the cooperation of the town's merchants. The nine-block Pacific Garden Mall, dedicated in 1969, has completely changed the appearance of the once-shabby downtown shopping area. Its street is open to one lane of traffic and is bordered by wide, tree-shaded, tiled sidewalks. Not only has the appearance of the area changed, but business has never been so good for local merchants.



and Santa Monica.

Shortly after returning to Santa Cruz, Chuck left on a tour of the United States. Stopping off in Grand Junction, Colorado, he photographed the first semi-mall (limited auto traffic) constructed west of the Mississippi—one that soon brought the downtown area 57 percent of all city sales and won for Grand Junction the National Municipal League's award as All-American City.

Before coming back to California, Abbott had photographed every mall in the country, as well as shopping centers, examples of urban blight, and projects many communities had undertaken to alleviate the problem.

THEN HE BEGAN the slow process of selling the community on construction of a mall in Santa Cruz. First, he contacted the downtown merchants who would be assessed \$100 per frontage foot to pay most of the \$324,000 construction costs. (If financed under the 1913 Improvement Act, construction would cost the owner of a 25-foot frontage, for example, \$19.75

per month over a 15-year amortization period.)

Assembling a slide show from the 5,000 pictures he had taken, Abbott presented it to anyone who showed the slightest interest in remodeling Santa Cruz: merchants, fraternal organizations, civic agencies, service groups, senior citizens, and college students. And to each of his audiences, he explained everything he had learned about inner-city decay and urban renewal during his months of study and picture taking, carefully playing up the problems as well as the benefits.

THE MALL idea is right," he said, "but we have to revitalize the downtown area, not just garnish it. A mall is a promise of beautiful things to come, a way to show our dedication to the ideal of making our community alive—esthetically as well as commercially. The mall project can't be just an isolated development, though. It must have good traffic flow and adequate parking facilities, and, most important, it must be a part of the

overall planning picture for the entire city.

"Many malls have stimulated foot traffic 75 percent and increased retail sales by 20 percent or more. Even poorly designed and poorly operated malls have deterred the rush to shopping centers. A well-designed one with adequate parking, attractive facades, and smart merchandising can compete with shopping centers and remain a healthy core of any community. All it takes is the will to get the job done and the desire to profit by others' mistakes."

Soon, much of Chuck's enthusiasm had rubbed off on the community. Twenty-two prominent residents formed an organization called the Santa Cruz Downtowners. Each contributed \$100 to further investigate the feasibility of a mall, and they invited Jerry Fossenier, designer and builder of the Grand Junction mall; Mayor Harry Faull from Pomona; and engineers and designers from San Fernando, Burbank, and El Monte to present their ideas before Santa Cruz groups.



Santa Cruz, once a deteriorating community beset with the same problems facing many urban communities in the United States today, is now known as the "Queen of Monterey Bay." The results of the Santa Cruz Restoration Area Project, part of PROD (Private Rehabilitation of Downtown), are illustrated in the before and after pictures above and at right. A beautiful pond and landscaped walkway and clean, modern buildings have replaced shacks and derelict buildings. Under PROD, not only are new buildings being built, but old, historic structures are being refurbished.



Meanwhile, a Mall Committee began gathering all possible information on problems the city might encounter in building a mall and refurbishing buildings. They came up with some eye-openers. First, they discovered that if extensive remodeling (any that costs as much as 50 percent of the assessed valuation of the property) is undertaken on old structures, the buildings must then be made to conform to existing building codes. They had considered applying for funds from the Federal Housing and Urban Development (HUD); but when they learned that if they sought HUD assistance they would have to bring at least half of the older buildings along Pacific Avenue up to stringent government urban renewal standards, they rejected this idea.

FINALLY, though, they uncovered two facts that would be good selling points to present to both the merchants and the community at large: that the downtown area annually produced \$29 million, or 38 percent, of the city's total taxable sales, and that assessed land values on Pacific Avenue had remained dormant during the past ten years while surrounding land values had gone up more than 100 percent.

While the committee was digging up facts, Chuck trudged along Pacific Avenue in a mall construction sign-up among property owners. It was necessary to get 60 percent of the merchants' signatures before the City Council could create the assessment district by a simple majority vote. Before he was through, he had not only 70 percent of the owners signed but an assurance by the Chamber of Commerce that it would take over the "Refixture, Refurbish and Remodel" campaign whereby overhanging signs would come down and store, restaurant, and hotel interiors and exteriors would be remodeled and repainted.

BY THE TIME mall construction began in July 1969 Santa Cruz had new and widened bridges over the San Lorenzo River, many refurbished homes sitting in well-tended gardens, tree-lined side streets, a new library, post office, county buildings, and several

hundred new parking spaces located just off Pacific Avenue.

The Mall Committee had decided early in its planning sessions that Santa Cruz would have a semi-mall but one that later could easily be converted to a full facility (no automobile traffic) if the community so desired. Now they began to figure out ways to save money, because since they had originally planned the improvements, construction costs had risen by as much as 25 percent. The solutions were to ask the community to donate planters, trees, benches, and fountains and to leave much of Pacific Avenue's existing paving and sidewalks intact during construction, then to overlay these areas later with additional paving, bricks, or tile—a plan that won the approval of property owners because their businesses would thus undergo a minimum of disruption.

As the mall neared completion, Santa Cruzans discovered what Chuck had meant earlier when he spoke of the overall planning picture for the entire city, for now he plunged into his biggest project to date: PROD, or Private Rehabilitation of Downtown (and the beach area).

THIS ISN'T actually a new program," he told the community. "The home refurbishing, garden improvement, store remodeling, and mall construction are all part of PROD. There are perhaps only one or two opportunities every century to alter the physical profile of a community in a manner that strives to balance social, economic, and environmental factors. Our opportunity is now. PROD will create a heart for the community, a city center. It will restore sound old buildings, reduce all civic blight in Santa Cruz, in short, revitalize the entire city."

To rehabilitate the blighted beach area, he proposed the reconstruction of homes and sound period buildings; construction of quality apartments and condominiums; incorporation of the "health spa" concept, which could provide year-round employment for students; and the creation of environmental complexes such as Jack London Square in Oakland and Ports-o'-Call in San Pedro.

And to institute the remainder of the PROD program, he offered the following proposals, some of which are already being implemented: a Heritage Preservation Committee to restore and preserve old properties with period atmosphere; a Design Review Board to effect realistic density zoning changes; and a Job Training Corps (JTC), under the direction of skilled senior craftsmen, to refurbish older property. The JTC, in providing jobs for students, would at the same time make it economically feasible to remodel older buildings and still keep rents reasonably low.

THE PACIFIC GARDEN MALL was dedicated in November 1969. Its zig-zag street, open to one lane of traffic, is bordered on both sides by wide, tiled sidewalks, attractive building facades, and brick and redwood planters filled with shrubs, trees, and a profusion of multicolored flowers. Art shows, concerts, theatrical productions, and street dances held there attract a multitude of pedestrians; and the shops on such occasions are filled to overflowing. Merchants are quick to admit that business has never been so good. "We would have soon gone under if the mall hadn't been built," many say candidly. "Now our downtown area is so pleasant and attractive that people come all the way from Monterey and San Jose to shop here."

Not long after the mall was completed, Chuck began making plans for a spring fair. His purpose was twofold: to present various programs to show specifically what Santa Cruzans still needed to do to control pollution and to solve environmental problems in the area, and to further one of his pet projects: that of bringing together two important segments who too often aren't part of community programs—senior citizens and college students. "He's a firm believer that so-called gaps don't really exist between these two groups," says Esther, "and that, basically, they have much to offer—not only to each other, but to the community as well."

Now each April during the Street Fair, whose theme is "How to Love the Earth," environmental displays

are set up and literature passed out on every street corner. After the rock groups have performed, the theatrical companies have taken down their improvised stages, and the many booths—where everything from ceramics to woven goods are sold—have been dismantled, the elderly climb on buses with college students and head for Cabrillo College and the University of California. There they hear lectures and see films and slide shows on local environmental problems, then hold discussions on what they can do to assist in solving them.

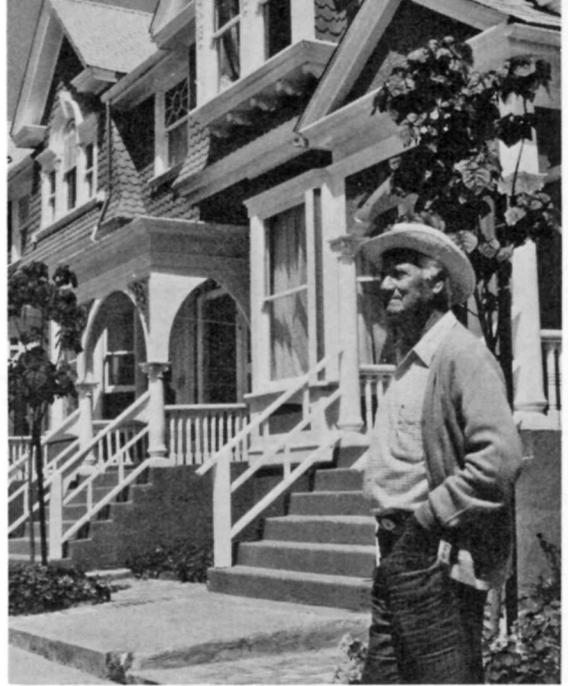
Today PROD projects still go on in Santa Cruz, not only downtown but in outlying districts where residents landscape, restore, and renovate in a continuous effort to make the section where they live as attractive as the downtown, inner residential, and beach areas. The Heritage Preservation Committee, continuing its renovations of historical buildings, is currently planning to restore the original town clock. And the Downtown Businessmen's Association, determined to keep the central core as beautiful as it was when first completed, suggests and supervises constant improvements, flower replacement, and daily cleanups along Pacific Avenue.

ALTHOUGH the spring fair still attracts thousands of participants, no fair has been as well attended as the one in 1972, which was dedicated to Chuck Abbott. After that year's fair, the Santa Cruz *Sentinel* ran a three-page article on the man who—with no thought of personal gain—had served as catalyst to revitalize the city.

Chuck glanced at the article briefly, blushed, then wandered on up the Pacific Garden Mall, the inevitable cap planted squarely on his head, his blue eyes smiling as his thoughts turned to a few years hence when Santa Cruz—already the Queen of Monterey Bay again—would be the undisputed showplace of the Pacific Coast. ■

Stan Medders, a high school language teacher, has published about ten free-lance articles on city management, planning, and beautification.

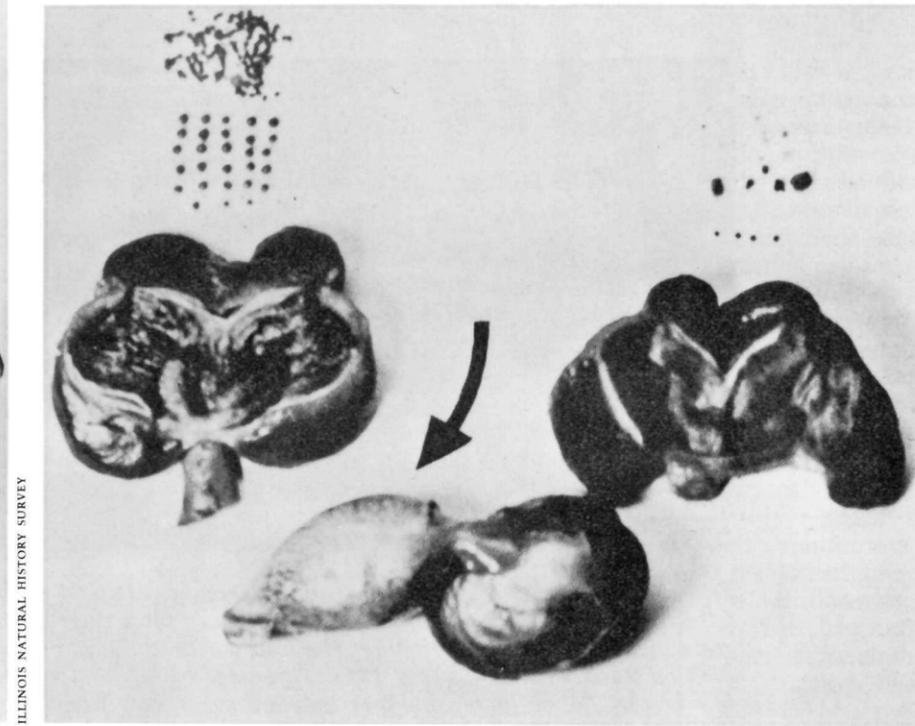
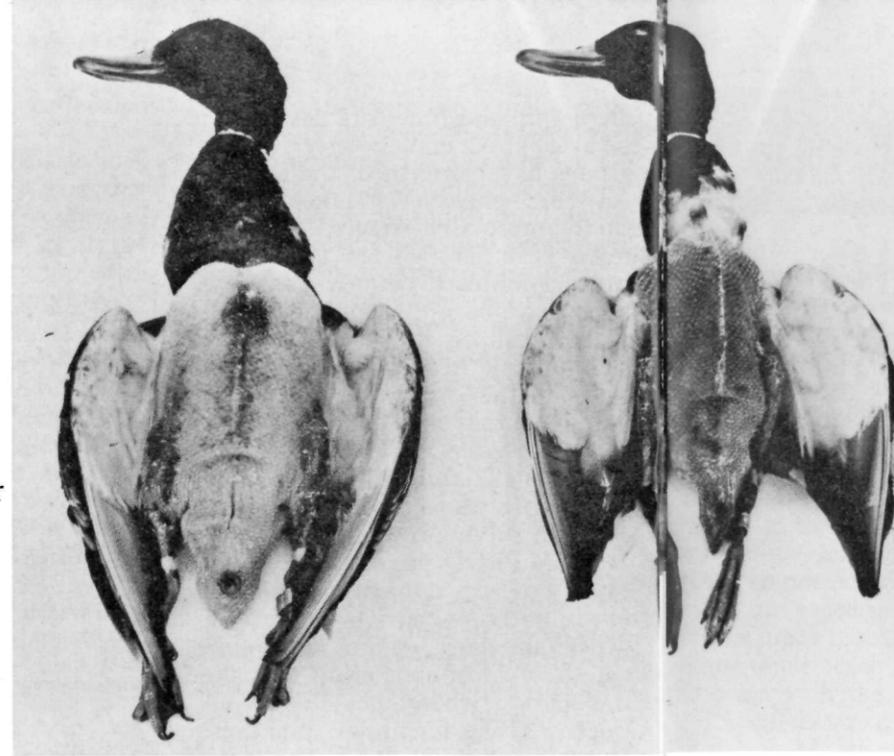
Chuck Abbott, the moving force behind the rehabilitation of Santa Cruz, stands in front of three houses, once condemned, that he bought shortly after arriving in Santa Cruz. He remodeled them and rented them to elderly tenants. Thanks to Mr. Abbott, landscaped malls (below), good low-rent housing, and modern construction have given Santa Cruz a new look.



a duck hunter speaks out on LEAD POISONING

Hunters and nonhunters must join together to save 2½ million waterfowl per year from death by lead poisoning

by WILLIAM B. PETERBURS, JR.



The dissected gizzards at left and right reveal twenty-eight and four lead shot respectively. Loss of gizzard muscle contraction caused food to become impacted in the distended stomach (arrow). The mallards at far left demonstrate the effects of starvation associated with lead poisoning. By the twenty-fourth day after ingesting two lead shot pellets, the duck at right had lost 45 percent of its original weight. The duck at the left is an unpoisoned bird of normal weight.

LEAD SHOT POISONING claims the lives of more than 2½ million waterfowl each year. Contrary to popular belief, wounds from lead shot do not cause this poisoning. Rather, the poisoning is caused by the birds ingesting lead shot that has missed the mark and settled to the bottoms of wetlands, river, and lakes, where waterfowl forage for food. Through a unique digestive process the bird swallows the lead shot, which then travels to the gizzard, where grit or gravel that has also been ingested abrades against it in a process analogous to the chewing of mammals. As the lead is broken down chemically, toxic lead compounds are formed and absorbed into the bird's circulatory system, usually causing death. Not only does lead shot affect waterfowl in this way, but it also works to paralyze the gizzard muscle, thus depriving the bird of its ability to "chew" and digest food. Death from lead poisoning may be relatively swift—perhaps one week—or it may be a lingering death by starvation, taking three to four weeks.

Lead shot poisoning of waterfowl was first noted in this country about one hundred years ago. However, alternative ammunition—iron, or, more properly, steel shot—was not developed until the late 1940s. At that same time a preeminent water-

fowl biologist, Frank Bellrose, of the Illinois Natural History Survey, began studying the effects of lead shot poisoning on waterfowl. Bellrose's paper, "Lead Poisoning as a Mortality Factor in Waterfowl Populations," published in 1959, was the result of an exhaustive ten-year study and is considered a classic in the annals of waterfowl biology. From analysis of the data he collected, Bellrose estimated that lead poisoning claimed 2 to 3 percent of the fall waterfowl population each year, or two to three million waterfowl.

In 1973 the Fish and Wildlife Service undertook an analysis of the lead levels in wing bones of ducks. This study provided an alternate source of information, because Bellrose's study had been restricted to an analysis of ducks' gizzards. The results of the 1973 study correlate with Bellrose's findings. In fact, the later study indicates that the waterfowl population is picking up an even heavier lead burden than Bellrose's findings indicated. This result should be expected because we now have fewer waterfowl, more hunters, less waterfowl habitat due to encroachment of drain and fill projects, and greater concentrations of lead in the environment than in the 1950s when Bellrose completed his survey.

Lead poisoning is pervasive; it occurs in varying degrees on all hunted waterways, in all flyways, and it affects all species of waterfowl. However, because diet has a significant effect on susceptibility, some waterfowl are affected more than others. Puddle ducks—primarily mallards—consume large quantities of seeds and grains and are the most seriously affected by lead poisoning. Diving ducks have a beneficial softer diet, but Bellrose found that a higher percentage of diving ducks ingested lead shot and in greater quantities than puddle ducks, so a small change in the divers' diet can wreak havoc. For example, in the spring of 1972 scaup and goldeneye began eating considerable quantities of seeds near Rice Lake, Illinois, and 1,000 to 2,000 of them succumbed to lead poisoning.

Another large die-off occurred in the spring of 1972; about 5,000 Canada geese died from lead poisoning on the Eastern Shore of Maryland after feeding in a shot-over area that had been exposed because of a drop in water levels. Again, in spring 1974 several hundred swan died of lead poisoning along their migration route between Canada and the United States. The suspected source of lead was a Canadian waterfowl hunting area near the Michigan border. However, experts state that

spectacular die-offs such as these, usually associated with large concentrations of birds, are only a surface manifestation of the far greater losses of all waterfowl species that occur on a daily basis—unnoticed and unreported.

PRESERVATION of additional habitat, though sorely needed, is not a practical approach to solving the lead poisoning problem. Excellent habitat acquisition programs are already underway, and it is difficult to keep up with losses of habitat to drain and fill projects. Research biologists are continually searching for ways to reduce hatch mortality and disease. But attempting to compensate for the loss of 2½ million birds per year cannot be as effective as saving those 2½ million birds in the first place. The "Gold Standard" of production is one duckling raised to flying stage per acre, or 150 per shoreline mile. By this measure 2½ million acres or 17,000 shoreline miles of prime waterfowl habitat would be needed to offset the annual toll from lead poisoning. Thus, by ending lead poisoning immediately, we could essentially produce 2½ million more ducks, or save 2½ million acres of additional habitat that would be needed to produce them.

An alternative is available that

could do just that. Steel shot is a practical, available, and nontoxic substitute for lead shot and would greatly reduce waterfowl losses each year. To be sure, a few birds fifty years from now would still die from ingesting lead pellets that are now in the habitat. But waterfowl studies indicate that most birds are poisoned by ingesting lead shot that was expended during the *current* hunting season. Therefore, a majority of the birds could be saved by switching to steel shot. In addition, as time goes by, the old lead shot will settle out of the birds' reach. In fact, waterfowl biologists state that shortly after the substitution of steel shot for lead shot we would see a significant decrease in the number of lead-poisoned waterfowl.

If a viable alternative to lead shot is available, what objections are made against its use? First of all, a box of steel shot shells would cost more than a box of lead shot shells—based on 1973 figures from Maryland, from \$1.29 to \$2.69 more. However, inasmuch as the average hunter shoots only about two boxes of shells a season, the increased cost would represent only a small fraction of his total outlay for waterfowl hunting.

Secondly, anti-steel-shot spokesmen claim that gun damage costs as the result of the switch would be

high. However, a Department of Interior Environmental Impact Statement showed that choke expansion damage is no more likely to occur when steel shot is used than when lead shot is used. Raising a spectre of death and personal injury in discussing a switch from lead to steel shot exaggerates and denies the facts.

Although I cannot back my claim by statistical data, it has been my experience in talking with duck hunters during the past six years that the vast majority of them would be willing to pay more for shells and, if necessary, buy a new shotgun or barrel if it meant saving millions of waterfowl. At one of the first meetings I attended, a young duck hunter expressed the feelings of many hunters when he commented, "We can always buy another shotgun or barrel, but we cannot buy another wild duck." In fact, without waterfowl, the sport would die and the value of the shotgun would be academic.

A third objection cited by anti-steel-shot spokesmen is that steel shot is not as efficient as lead and would increase unretrieved bird losses by three million birds. However, 1972 and 1973 studies by the Fish and Wildlife Service, which covered 20,000 hunter days in all kinds of weather conditions, indi-

cate that the use of steel shot would increase the annual unretrieved bird losses by 200,000 to 400,000. Considering that at least 2½ million birds would be saved from lead shot poisoning if we switch to steel shot, this figure seems like more than a reasonable tradeoff. It is also a tradeoff that may not be as drastic as it might seem. I am convinced that as hunters gain experience shooting with steel shot, the number of unretrieved birds will be reduced considerably, even to the extent that the losses may be lower than they are today with lead.

ASK HUNTER and nonhunter alike to consider the fragility of our waterfowl resource, dwindling available habitat due to drain and fill projects, and the cost and absurdity of attempting to offset lead poisoning losses by acquiring more land for additional protected habitat. Of course, we must continue acquiring waterfowl habitat because every year more and more wetlands are destroyed by draining and filling in the name of "development." But accepting the death of 2½ million birds every year as inevitable, then attempting to compensate for it, is not the solution to lead poisoning—especially not when we have a much simpler and more practical solution at our fingertips. A conservation ethic and a humane approach to life demand that all of us join forces and actively support the use of steel shot instead of lead shot for waterfowl hunting.

Bill Peterburs, a duck hunter from Mequon, Wisconsin, employed at Wisconsin Telephone, has been donating his free time for the past six years researching, writing, and lecturing on lead poisoning and steel shot. He is a retired Colonel in the Army Reserve, Chairman of the Migratory Waterfowl Committee of the Wisconsin Conservation Congress, and the Citizen's Representative on the Secretary of the Interior's Technical Coordinating Committee on Iron Shot. In 1974 the Wisconsin Wildlife Federation named him "Wisconsin's Conservationist of the Year" for his efforts on behalf of waterfowl.

READERS: To find out how YOU can help stop the ravages of lead poisoning, see NPCA at Work, p. 25.



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

The Canada geese in the photograph above were picked up on Rush Lake, Wisconsin, in the winter of 1968–1969 when more than 1,000 geese died there of lead poisoning. The lead poisoned ducks below died on Rush Lake in January 1973. These dead birds are only a few of the 2½ million waterfowl that die every year from lead poisoning—unnoticed and unreported.



THE WISCONSIN SPORTSMAN

NPCA at work

The Interior Department has proposed a ban on lead shotgun ammunition for waterfowl hunting throughout much of the United States starting in 1976. NPCA submitted comments on both the draft environmental impact statement (DEIS) and proposed regulations that are designed to stop further poisoning of birds from ingested lead pellets, which results in the death of several million waterfowl each year. (See page 22.) While commending the Interior Department on a generally excellent DEIS, NPCA urged that the proposed timetable for implementing the ban be changed to begin with the Atlantic Flyway in 1975, and then to proceed to take effect more speedily in other areas, and that the ban protect birds including rails and cranes in addition to the ducks, geese, swans, and coots covered in Interior's proposal.

The DEIS demonstrates in unbiased language the problem of lead poisoning and the feasibility of the proposed substitution of steel shot. Data show that steel shot is as effective as lead shot in hunting field tests, and that crippling losses resulting from steel shot will be more than offset by an *immediate* saving of the lives of several million birds per year that would otherwise ingest lead pellets that were shot in the same given year.

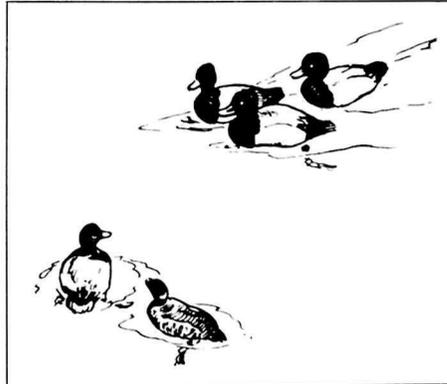
The draft statement supplies solid evidence that barrel damage due to the use of steel will be slight and changes merely cosmetic in American, single-barrel shotguns of modern manufacture. Even in shotguns that are not of such manufacture, the strong likelihood is that the average hunter would have to shoot ten years or more before perceptible damage occurred to a shotgun.

The DEIS presents a complete picture both of a serious problem and of a workable solution in the use of steel shot. Within that context the proposed rule—to implement the switch to steel shot in the Atlantic Flyway in 1976, in the Mississippi Flyway in 1977, and on a hot-spot basis in the Central and Pacific Flyways in 1978—is incomplete and inadequate.

This proposed rule should be changed to reflect the urgency of saving water-

fowl from needless deaths. Implementation should therefore begin in the Atlantic Flyway in 1975, not in 1976. The Mississippi, Central, and Pacific Flyways should switch to steel shot in 1976. Inordinate delay in the timetable is not justifiable because industry can manufacture and distribute adequate supplies of steel shot for the Atlantic Flyway for the 1975 season and for other areas for the 1976 season.

Furthermore, in no event should the



Central and Pacific Flyways be allowed to switch to steel shot on hot-spot basis. These flyways must be required to convert entirely to steel shot. It may be true that ducks in these western flyways are subject to less lead poisoning than ducks in the Atlantic and Mississippi Flyways. However, this is no reason to allow poisoning to continue. In addition we know from this DEIS as well as from innumerable studies that waterfowl dying in hot spots represent only a fraction of the total deaths of waterfowl from insidious and omnipresent lead poisoning. Thus, the proposed regulations relating to hot spots would stop only the most visible losses.

NPCA also emphasized that the proposal should include a ban on hunting rails and cranes with lead shot. The DEIS notes that rails are subject to lead poisoning. Although lead poisoning of cranes is unknown, cranes are also shot over wetland waterfowl habitat. Thus, hunting of rails and cranes threatens to pollute waterfowl habitat with lead shot.

NPCA has urged the Secretary of the Interior to promulgate the rules we have suggested, thereby putting the interest

and well-being of waterfowl above all other considerations. In our view, to do otherwise would be an abuse of discretionary powers granted the Secretary in the Migratory Bird Treaty Act.

Interested readers are urged to submit their comments on the draft environmental impact statement, urging that the Interior Department drop the inadequate protracted timetable in their proposed regulations and instead implement a more comprehensive and timely rule as follows: A *complete* ban on lead shot and a mandatory use of steel shot for hunting all waterfowl, rails, and cranes beginning in the Atlantic Flyway in 1975 and in the rest of the flyways in 1976. Be sure that you clearly state that you are commenting on DEIS 74-76 and that you would like your comments to be incorporated into the final environmental impact statement. Write:

Lynn A. Greenwalt, Director
U.S. Fish and Wildlife Service
Attention: Office of Environmental
Coordination
Department of the Interior
Washington, D.C. 20240

NPCA is disturbed by OMB-imposed personnel ceilings that restrict the operations of the National Park Service. These ceilings reduce the effectiveness of programs for visitor safety, and for interpretive and protective services in the national parks.

Manpower ceilings are set for each federal department by the OMB. Insufficient personnel and other administratively imposed restrictions threaten the viability of the National Park System. NPCA is convinced that one remedy would be opening up the budgetary administrative process to more public information and participation.

In response to inquiries from NPCA President A. W. Smith, Mr. Frank Zarb, Associate Director of the Office of Management and Budget (OMB), stated that the 1975 personnel level for the Department of the Interior was transmitted by OMB to Interior Secretary Rogers Morton, leaving it to Morton's discretion to decide on the allocation of personnel to various agencies under his department. (The Park Service then must identify its needs on a priority basis and allocate positions accordingly.)

NPCA expressed our concern to Secretary Morton, asking why restrictive levels were imposed by his office on the National Park Service in contrast to

other Interior agencies that may not have had similar restrictions.

In an attempt to influence future budgeting priorities for our national parks, NPCA representatives will meet with OMB officials in October to discuss the NPS budget for fiscal year 1976 prior to its preparation.

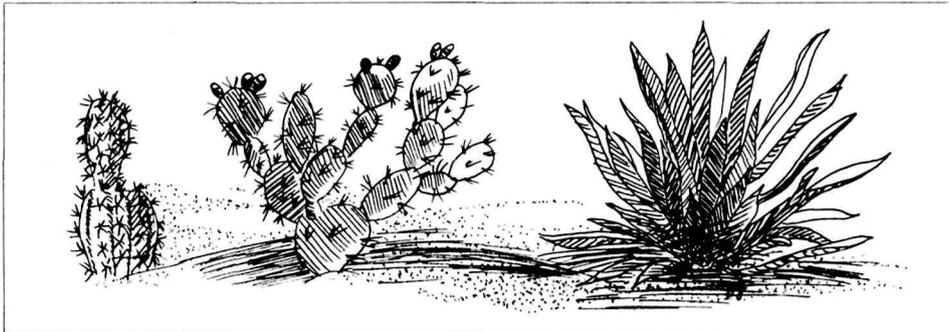
However, such informal consultations do not meet the need for open public meetings during the budgetary process. In NPCA's opinion, the provisions of the National Environmental Policy Act re-

In attendance at the workshop were participants from the Council on Environmental Quality, Department of the Interior, U.S. Forest Service, National Arboretum, National Science Foundation, International Union for the Conservation of Nature and Natural Resources, and several states and Canada, as well as representatives from the American Horticultural Society, The Nature Conservancy, and NPCA.

NPCA has long been concerned about rare and endangered species of plants,

Congress and publication of the list in the Federal Register, the Secretary of the Interior will be authorized to protect those species as described in the Endangered Species Act of 1973. This act protects endangered species of plants from destruction by actions authorized, funded, or carried out by the federal government, and from interstate and foreign commerce.

In addition, Congress will be considering enacting further measures based on Smithsonian's recommendations. NPCA will bring you information on the contents of the report in January.



quire the development of an environmental impact statement to accompany all tentative and final agency budgetary proposals, and also require that such statements be made public. NPCA will continue to press for public involvement in the formulation of a budget that can and does have profound impacts on public natural resources.

Preservation of endangered species of plants is finally receiving long overdue attention, as the Smithsonian Institution is preparing a list of endangered species of vascular plants and recommendations for saving them.

The Endangered Species Act of 1973 directed the Smithsonian Institution to review species of plants that are now or may become endangered or threatened and methods of conserving such species, and to report to Congress by December 28, 1974, the results of such review, including recommendations for new or amended legislation for protecting endangered plants.

Accordingly, in cooperation with other federal agencies and all 50 states, the Smithsonian Institution had assembled by August 1974 a preliminary list of species of plants that are endangered, threatened, or extinct. In early September the Smithsonian convened a Workshop on Endangered or Threatened Higher Plants of the United States to present the preliminary list to selected parties from the scientific community for comment and recommendations.

having publicized this topic many times over the years. At one time NPCA attempted to assemble information on all endangered plants of the United States, such as Smithsonian is now doing. But we did not have adequate resources to coordinate such a large and complicated project. Therefore, we are pleased that the Smithsonian has undertaken this effort. An NPCA project growing out of our concern for endangered plants is the Association's pilot program to restore the American chestnut to the Appalachian forests—which, incidentally, has elicited much helpful response. (See September 1974 issue.)

Although several states have made good efforts to identify rare and endangered plants within their borders, September's workshop was the first such meeting ever convened on the national level to consider the conservation of endangered plants. Until now no coordinated national effort has been made to protect plants; Interior's Office of Endangered Species has directed its attention entirely to endangered fish and wildlife. Heretofore not enough was known about the status of plants in order to plan an effective conservation program for them. Smithsonian's first-phase effort will provide this information with regard to higher plants. The second phase will include identifying endangered nonvascular plants such as mosses, lichens, and fungi.

Upon acceptance of Smithsonian's list of endangered and threatened plants by

Urging a halt to the hunting of grizzly bears in the Yellowstone ecosystem, NPCA has organized a protest endorsed by nine other leading conservation organizations. The coalition has formally protested to the directors of the Wyoming and Montana state fish and game departments and to the U.S. Forest Service, asking for a moratorium on the scheduled grizzly hunting season within the ecosystem.

The organizations making the request for a moratorium, along with NPCA, are National Audubon Society, Sierra Club, The Wilderness Society, Friends of the Earth, Environmental Defense Fund, Defenders of Wildlife, Humane Society of the United States, Animal Protection Institute, and New York Zoological Society.

This concerted action by conservationists is based on the findings of the National Academy of Sciences' committee report on the Yellowstone grizzlies. The NAS report states that total man-caused removal of grizzly bears in the Yellowstone ecosystem should be limited to ten per year, beginning in 1974, and asks for full cooperation from the states of Montana, Wyoming, and Idaho. Similarly, the U.S. Fish and Wildlife Service, after reviewing the status of the grizzlies in the Yellowstone ecosystem, has recommended listing the grizzly bear as "threatened" in accordance with the Endangered Species Act of 1973. Furthermore, the Fish and Wildlife Service concluded, "... we also recommend that sport hunting be temporarily banned in the ecosystem and that a grizzly may be taken only if it is a serious threat to human safety."

In consideration of these reports and in view of other causes of death such as accidental mortality, poaching, killing of individual depredating bears or bears that endanger human health and safety,

NPCA believes that a total ban on hunting grizzlies within the Yellowstone ecosystem must be enforced until such time that the grizzly bear population is restored and the species is no longer "threatened."

In response to our urgent request for an immediate halt on seasonal hunting, conservation groups received refusals from Mr. White, Director of the Wyoming Game and Fish Department, and from Mr. Woodgerd, Director of the Montana Fish and Game Department. Then in September NPCA turned to U.S. Forest Service Chief John McGuire in an appeal to him in his role as protector of the national forests involved in the hunt.

The Yellowstone ecosystem is about five million acres, of which more than two million are within Yellowstone National Park, and the ecosystem includes parts in the abovementioned three states. The lands on which the hunt is scheduled, however, are almost entirely within national forests (Gallatin National Forest, Custer National Forest, Shoshone National Forest, and Teton National Forest). NPCA urged Chief McGuire to act swiftly to prohibit the hunting of grizzly bears in those national forests within the Yellowstone ecosystem by exercising authority provided in Forest Service regulations on protecting rare, vanishing, and threatened species on Forest Service lands.

Chief McGuire, presumably acting in response to the requests of the conservation groups, asked the state of Montana to close its part of this ecosystem to grizzly hunting.

This controversy will have been decided by the time the Magazine reaches our members. Watch for future reports.

The Nantucket Sound Islands of Massachusetts have become the target of the type of large scale commercial and residential development pressures that, if unrestrained, eventually turn wild moors, fragile dunes, coastal marshes, and historic sites into common suburbs. NPCA recently testified on invitation in general support of S 3536, a bill that would establish the Nantucket Sound Islands Trust for these islands off the southern coast of Cape Cod. This body would be created to preserve for future generations the islands of Nantucket, Martha's Vineyard, Tuckernuck, Muskeget, No Man's Land, and the group of islands known collectively as the Elizabeth Islands.

The principal innovation in this bill is that it would set up three island trust commissions to manage the land and waters in the trust area. The commissions would have federal and state representatives, but the majority of the members would be local island people. Areas would receive a management classification according to the degree of development or nondevelopment permissible.

NPCA is delighted with the portion

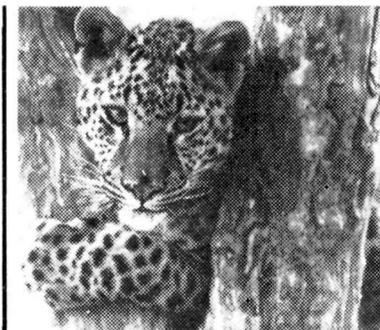
of the bill advocating the formation of the No Man's Land National Wildlife Refuge. No Man's Land Island is already under the jurisdiction of the Department of the Interior, but it has been used under an agreement with the Navy as a bombing range.

NPCA also indicated support of provision in the bill that no bridges or tunnels should be built to the islands and that additional steps should be taken to monitor and control access to the is-

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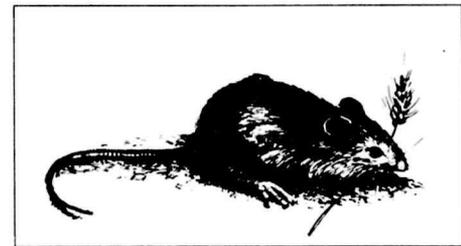
lands and to make public and private transportation more consistent with preservation aims. NPCA supported help for local communities in controlling land use. However, we noted that the commissions were left out of the planning and land use control activities in the bill's "hardship" clause, and NPCA urged a substantive voice for the commissions in the appropriate sections of the bill.

NPCA stated that swift passage of S 3536 is necessary. The legislation may not represent the degree of control that many would like. However, it may well represent a model that proves effective in solving myriad dilemmas involved in achieving optimum land use.

Corporate powers are exploiting national park resources and apparently leading the National Park Service into dereliction of its protective mandate. NPCA recently urged National Park Service Director Ronald H. Walker to take immediate action against proposals endangering Yosemite National Park in California and Colonial National Historical Park in Virginia, and to establish policy direction prohibiting any developments that promote private profit at the expense of natural environments and other public park resources.

Hollywood has arrived at Yosemite National Park. MCA-Universal, the principal owner of concessioner operations in the park, is advancing a series of proposals geared to priming park visitors with expectations of glamorous recreational living rather than appreciation for parks. NPCA objects to such proposals as construction of an artificial viewing shelter, gift shop, and "fast food service" on the summit of Glacier Point, which would, of course, sacrifice the natural integrity of this magnificent cliff in order to ensure swarms of tourists for the concessions. NPCA also protests other proposed commercial lures such as 150 new cabins in Curry Village, wilderness enclaves for backcountry camps and "surfaced" backcountry trails, and opening Tuolumne Meadows, a fragile subalpine meadow, for winter sports by opening Tioga Road to winter traffic. The most distressing feature of these plans is that most of the proposals, although clearly related to MCA's private business activity, are expected to be presented as "alternatives" in the forthcoming NPS Master Plan for Yosemite National Park.

In the course of filming the television series "Sierra" in Yosemite, MCA producers have apparently forgotten the purpose of national parks. The film crew and cast have taken a large number of park lodging units out of public service and occupy considerable space with equipment and vehicles. Part of Curry Village is being used as an indoor set. A Park Service helicopter assists camera crews in the park, and off-duty park rangers are working as extras. Furthermore, in perhaps the most blatant outrage inflicted upon Yosemite's resources, MCA has perpetrated environmental manipulations—painting of the valley walls—for cinematic effects. The use of Yosemite as a television studio, not to mention MCA's plans to use the



park as a convention site during the off season, illustrates how completely MCA fails to perceive the national park as a public resource to be preserved and protected for all generations.

Another situation that carries overtones of corporate involvement in Park Service policy decisions is a proposal made by a division of Anheuser-Busch for a new road interchange in the Colonial National Historical Park in Virginia. Like Yosemite's concessioner problems, NPCA emphasized to Mr. Walker, this issue can be solved only by specific action from the office of the National Park Service Director.

As NPCA understands the situation, Busch Properties, Inc., is proposing an interchange on Colonial Parkway in the historical park for the purpose of gaining direct access to the parkway from their Kingsmill housing development, thus enhancing their land values.

Granting the Kingsmill access across the parkway right-of-way would violate several important written National Park Service policies regarding roads in national park areas. The general NPS policy is to discourage any projects within a national park that would stimulate nonpark uses or alter the park's character. The NPS Administrative Policies for Historical Areas certainly contains no provision for through-park access to pri-

vate lands outside park boundaries. This interchange would also violate the intent of the National Environmental Policy Act, which requires the federal government to ensure full consideration of environmental factors in planning federal actions.

NPCA indicated to Mr. Walker that we consider this situation distressingly transparent. In the face of substantial policy violations, the Park Service is apparently ready to capitulate to the economic goals of a powerful corporation. Although parallels to the Yosemite situation are obvious, the Kingsmill proposal is even more onerous because Busch is not in any way connected with the National Park System, and a compromise on this issue would set a precedent for unlimited scenarios in which corporations exploit national parks.

To register opposition to any implantation of corporate power in the National Park System, NPCA members are urged to write NPS Director Walker protesting the situations in Yosemite National Park and Colonial National



Historical Park, and ask him to initiate policy directives developing substantial changes in the NPS stance with respect to defining the limits of private enterprise in national park areas. Write:

Ronald H. Walker, Director
National Park Service
Washington, D.C. 20240

Wilderness proposals for Arches, Canyonlands, and Capitol Reef National Parks drew NPCA support at public hearings on August 12, 13, and 14 of 1974. Mr. Robert L. Coshland of Tucson, Arizona, represented NPCA at the hearings. Out of a total of 652,162 acres in the three parks, the National Park Service proposes designating 471,620 as wilderness. Mr. Coshland stated that he supported the general concepts of the proposals but that NPCA urges the Park Service to increase the total wilderness area, including an additional 38,510 acres in Capitol Reef National Park, and 4,500 acres of Red Sea Flat in Canyonlands National Park.

Our sincere thanks to Mr. Coshland for his efforts on our behalf.

Late in the first session of the United Nations Law of the Sea Conference, which concluded in Venezuela last August, the U.S. delegation submitted a revised set of draft articles dealing with the proposed coastal economic zone and the continental shelf. Part II of Articles 11-21 of these draft articles is concerned with the complicated and highly controversial questions relating to oceanic fisheries.

The new conservation principles submitted by the delegation as Article 12 (Conservation) are in large measure those recommended by NPCA President A. W. Smith, though somewhat modified, and consequently weakened in terms of the degree of protection afforded to ocean fish populations. Mr. Smith is the delegation member who, while serving as an individual, represents the environmental view.

Representing the first official departure from the antiquated maximum sustainable yield (MSY) test for setting fish stock catch levels, this new draft conservation article substitutes the scientifically based population level test. The obsolete MSY test permits maximum exploitation of separate fish stocks, with no consideration given to the health and stability of the species population as a whole, and no consideration of the interrelationships among species. In addition, Article 12 requires that species (such as marine mammals) that are associated with or dependent upon harvested species be assured protection above population levels at which they may be threatened with extinction.

Although this latter provision by itself does not seem adequate to assure full protection for marine mammals as required by the U.S. Marine Mammal Protection Act of 1972 (PL 92-522), it should be noted that no previous U.S. draft articles contained provisions for either marine mammals specifically or dependent species generally. Furthermore, the newly proposed Article 20 states that "... nothing herein shall prevent a coastal state or international organization, as appropriate, from prohibiting the exploitation of marine mammals."

Although these new draft articles represent a significant improvement over past versions, improvements will still be sought by NPCA during the interconference period between the conclusion

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of the first session in Caracas (August 1974) and the convening of the second session in Geneva, Switzerland, which is now set for March 1975.

NPCA spurred an investigation of the new campsite reservation program that was run for the National Park Service last summer by Park Reservation System, Inc. (PRS) of Cedar Rapids, Iowa. Public dissatisfaction with this company's performance was overwhelming.

NPCA President A. W. Smith contacted the Comptroller General of the Government Accounting Office (GAO) to urge an investigation, asking specific questions such as: How was the contract awarded? What performance bond, if any, was posted? What competitive bids were invited or offered?

PRS is being investigated by both the GAO and Senator Howard M. Metzenbaum of Ohio. The preliminary results of their investigations, following oversight hearings conducted by the Senate Interior Committee, are as follows:

- As many as 38,000 calls per day were met with only busy signals, and thousands of citizens were unable to properly plan visits to the twenty-one parks being handled by PRS.

- PRS was awarded the contract over another bid by Ticketron, Inc., the nationwide distributor of tickets for sports events and entertainment. Although the initial PRS proposal did not include nationwide private telephone service, their proposal was altered to include this service in later oral negotiations with the Park Service. The Park Service did not encourage Ticketron to pursue similar negotiations.

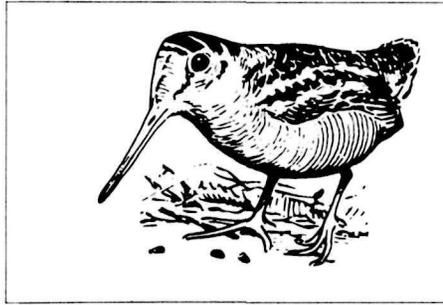
- PRS did not post the required \$100,000 performance bond until August 1, 1974, more than four weeks after PRS had been operating its services. During this time many park visitors were required to pay PRS directly for both the reservation fees and camping fees.

- Although the contract with PRS specifically required that PRS remit all camping fees collected during each calendar month to the Park Service by the tenth of the following month, PRS did not completely fulfill its contractual obligations. Substantial amounts of money were deposited in joint accounts with PRS and the Park Service, and about \$130,000 was held by a law firm for "later" disbursement to NPS.

Clearly, the public interest in the National Park System was badly served by the operations of PRS. Apparently the

contract for this new system was awarded to a personal friend of the Director of the National Park Service who never really demonstrated his ability to adequately provide the requested services.

The National Park Service terminated the contract with PRS effective August 29, 1974, granting the public some relief. However, PRS announced through its legal counsel (Curren, Saunders, Kayaian, and Kakita of Los Angeles) that it intends to withhold as damages "not less than \$457,000" from the federal government.



Many allegations remain to be answered by the National Park Service and PRS. Meanwhile all national parks will fill campsites on a first-come-first-served basis.

Preparations for the UN World Food Conference got underway in Washington recently with the convening of a major meeting between State and Agriculture department officials and a broad spectrum of nongovernmental organizations, including NPCA.

Keynoted by Ambassador Edwin M. Martin, Coordinator for U.S. participation in the World Food Conference and deputy-head of the U.S. delegation, the meeting exposed several contrasting viewpoints concerning world food shortages, the potential for widespread famine, economic development of the so-called Third World and the interrelationship of population levels.

Presenting the views of the UN Secretariat was Dr. John Hannah, Deputy Secretary General for the World Food Conference and former administrator of the State Department's Agency for International Development (AID). Dr. Hannah emphasized several points with which NPCA essentially agreed: that the population crisis throughout the world magnifies the food shortages and will continue to do so unless agricultural productivity is significantly increased in the less developed countries (LDCs); although food aid by the United

States and other industrial countries is presently essential, it cannot hope to provide the ultimate solution; increased fertilizer production is the key, and this should occur within the LDCs themselves. A startling fact that Dr. Hannah discussed briefly and that may hold the solution to increased fertilizer production is that oil-producing countries, especially those of the Middle East, continue the wasteful practice of flaring (burning off) the natural gas on-site in their oil fields rather than capturing it for fueling industry and agriculture. He noted that the amount of natural gas flared represents the power required to produce nearly four times the amount of fertilizer now needed by LDCs. In addition, both production and transportation costs would be considerably less if the fertilizer were produced there rather than in the United States or Europe.

Offering a somewhat contrasting viewpoint, Agriculture Secretary Earl Butz, who will head the U.S. delegation to the conference, labeled the talk of widespread famine as "apocalyptic nonsense" and reasserted his often-espoused belief that a more than adequate worldwide food production could be assured simply by guaranteeing that the farmers would have the proper economic incentive to maximize production.

The views of many NGOs were offered by Herbert J. Waters, Chairman of the World Hunger Action Coalition and President of the American Freedom from Hunger Foundation.

The Office of International Forestry, within the broad framework of offices and program areas that make up the formal organizational structure of the U.S. Forest Service, is a small office with the immense responsibility of monitoring all international activities relating to forestry. In the course of the past six months, however, the operating capability of this office has been severely handicapped by the retirement or transfer of key professional personnel. Until recently, the Forest Service had given no indication that these personnel were to be replaced, which bolstered suspicions that the office may be in the process of being phased out under pressure from higher-ups in the administrative hierarchy of the Department of Agriculture.

Because NPCA is dependent on the Office of International Forestry for much of its information relative to U.S. involvement in world forestry affairs, and

particularly with regard to the work of the Food and Agriculture Organization's forestry department, our concern over the seemingly precarious future of this office was made known to Forest Service Chief John McGuire; in the process, other key individuals and groups in the various sectors of the American forestry community were alerted.

As a result, NPCA received widespread support for its position to maintain the operating capability of the Office of International Forestry, and the Forest Service was quick to respond by appointing Dr. Bob Brandt as the new director of the office. However, due largely to manpower and budget constraints as well as the uncertain and unknown attitude of top Agriculture administrators, there is no assurance that the operating capability can be retained, or, for that matter, whether the office will be kept intact.

To complicate the situation further, NPCA is prodding the Forest Service to expand the coordination and communication functions of the office to include environmental concerns that have an international perspective.

Although international affairs are traditionally within the function of the U.S. Department of State, there is an awareness among many that other federal agencies or departments must become more involved in the technical and scientific aspects of foreign policy. For instance U.S. foreign agricultural policy is not giving adequate consideration to the relationship between forests and agricultural areas in terms of soil and water conservation. More scientific expertise is also needed in controversial areas such as energy, population, food, and the acquisition and distribution of raw materials among nations, especially in relation to tropical forest resources.

Haphazard recreational home development is slicing up the Massanutten Mountain area on private lands adjacent to and within George Washington National Forest in Virginia.

NPCA recently became involved in first-stage efforts to prepare a land-use plan for the Massanutten Unit of the national forest. This forest is a hub of outdoor recreational pursuits due to its proximity to the Washington, D.C./Richmond/Baltimore metropolitan areas.

Massanutten Mountain, because of its size, shape, and location, is a complex management unit. NPCA believes it is

significant that the Virginia Division of State Planning identified Massanutten Mountain to be one of four critical environmental areas in the region. The other three areas are the Appalachian Trail and the North and South Forks of the Shenandoah River. A major challenge facing land-use planners, therefore, will be to maintain the integrity of these four critical areas.

The most serious problem confronting the Massanutten planners is one that confronts resource managers and planners in other units of the national forest system, particularly in the East. This problem is the seemingly uncontrolled second-home recreational developments proliferating on inholdings and private lands adjacent to public national forest lands. Such developments detract from the forest appearance that is inherent to a quality outdoor recreational experience, and they preclude or detract from many other goods and services to be derived from our national forest resources.

There exists no panacea to this problem, but effective local land-use planning and controls are urgently needed to help protect the multiple-use and sustained-yield objectives of our national forests. Accordingly, the nature of existing controls for the use of private lands, and directions for needed change, should be incorporated into the Massanutten study. Furthermore, in determining the management directions for the Massanutten, the possibilities of each mode of private land acquisition should be described in detail. These include purchase, exchange, the acquisition of interests less-than-fee as with scenic easements, and, when necessary, the power of condemnation. It was recommended that a land-acquisition priority scale be formulated as a useful decision-making tool in this regard.

The general policy guideline here is that private land uses should not impair the use and enjoyment of other lands and waters in the region. This translates, for example, to restricted off-road vehicle use and no timber harvesting in ecologically fragile areas. Timber harvesting, on the other hand, is a legitimate use of Massanutten forest lands as long as single-tree selection or similar partial cutting systems for regeneration and management are employed. In short, this would mean no clearcutting except for very small patches that may be necessary to fulfill certain wildlife management objectives.

The orientation or philosophical perspective that NPCA would like the preliminary phase of the Massanutten study to have was reflected in the recent statement of Forest Service Chief John McGuire that "People have recognized that environmental media such as water and air transcend property lines, but they are just now recognizing that land is also shared, although owned by individuals. The cumulative effects of actions on any piece of land are felt across ownership boundaries with respect to natural environmental factors as well as social and economic components."

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Any citizen interested in conservation can now buy duck stamps. The Migratory Bird Hunting Stamp program is being expanded to encourage citizens outside the hunting community to buy the stamps, Rogers C. B. Morton, Secretary of the Interior, announced recently.

"This is a revenue stamp required of all duck hunters sixteen years of age or older. Conservationists of all persuasions can make a solid contribution to wildlife preservation by buying a duck stamp for five dollars at their local post office," Morton said. The revenue from the sale of these stamps goes directly into the purchase of lands for waterfowl nesting, resting, and wintering. More than 160 species of birds, a number of mammals, and fish are directly dependent on wetland habitat for survival.

Since 1934 more than two million acres of land have been purchased with duck stamp revenues. However, despite the preservation of this land, many other ecologically vital wetlands continue to be drained, dredged, filled in, and otherwise destroyed at a high rate. During the 1960s some 350,000 acres of small wetlands were drained in the northern prairies, more than two million acres of bottomland overflow areas were converted to cropland in the Mississippi River Delta region, and an estimated 150,000 to 300,000 acres of coastal marshes and estuaries were destroyed.

Sidestepping the intent of the Clean Air Act, the Environmental Protection Agency released regulations on August 27 that allow the states to decide for themselves the amount of significant deterioration of air quality they will permit within their borders. This issue of whether to permit deterioration of air quality where the air is already cleaner than that required by national standards was contested in the Supreme Court by the Sierra Club in 1972. The case was decided in favor of prevention of significant deterioration. However, the term "significant deterioration" has not been defined by the courts or by Congress, and the EPA has tried to avoid responsibility for its definition by letting the states decide the issue for themselves.

The regulations cover controls only for sulfur oxides and particulate matter, which are basically caused by industrial pollution. (Auto emission standards

control other air pollutants: carbon monoxide, hydrocarbons, oxides of nitrogen, and photochemical pollutants.)

EPA proposed that the states classify areas in which air quality is higher than national standards into three categories: Class I—areas where no change (deterioration) is desired; Class II—areas where some change in air quality is permitted within certain set limits; Class III—areas where deterioration is permitted up to the national standard to allow industrial and other growth. Classifications do not have to conform to existing air quality in an area. In other words, an area of pure air quality can be designated as Class III by the state. Although decisions must meet EPA approval, the only real criterion required is consideration by the states of relevant environmental, social, and economic factors.

The National Parks and Conservation Association and other environmental groups maintain that all national parks, national forests, and national wildlife refuges should be included in the Class I category.

In addition, to many environmentalists EPA seems unwilling to deal with the important implications this issue holds for land use and patterns of economic growth. Suit will probably be brought again against EPA, and it will ultimately be up to Congress to decide the intent of the act. Meanwhile even though 81 percent of the American people (according to an EPA poll) oppose further deterioration of air quality, big business is promoting "solutions" of the energy shortage that would be made at the expense of the nation's clean air.

The U.S. Forest Service is asking the public to comment on long-term management alternatives for the nation's forest resources. The alternatives are described in a draft document entitled "Environmental Program for the Future" that was recently released by the Forest Service as the result of a three-year effort.

This document, which was first brought to the attention of NPCA members one year ago, provides an overview of forestry issues in the United States and illustrates the varying amounts of forestry products and activities that can be expected in each of three levels of operation—low, moderate, and high—depending on budgetary and manpower constraints. (The "low level" in the document represents last year's level of Forest Service activities of all types.)

Each of these three levels of Forest Service activity is further divided into six major groups of systems. Five are based on the traditional multiple-use resource values—range, timber, recreation and wilderness, land and water, and fish and wildlife. The sixth is one called "Human Resources," covering such programs as Job Corps, Youth Conservation Corps, and Operation Mainstream.

The levels of operation and estimates of goods, services, and amenities to be derived from each are applied in the document to the nation's total forest resources. They encompass state and



private forest lands and activities including forestry research as well as all aspects of national forest management from timber stand management to building roads. In developing the draft of general alternatives, the Forest Service said it considered the use capabilities of all forest land, the estimated demands for products and services in the next decade, harmony with national issues and management goals, and effects of various levels of management activity on the human environment.

According to Agriculture Secretary Earl Butz, "Long-term planning for all forest lands is needed if Americans are to continue to enjoy an abundance of products and amenities from the one-third of the nation's surface which is in forests and related lands." He also said that public comment on the alternatives is needed to help ensure that future management of those resources will reflect the desires of the American people in an age of dramatically increasing demands for uses of forest resources and quality outdoor environment.

Copies of "A Long-Term Forestry Plan (Draft)—Environmental Program for the Future" and a shorter highlight version of the full report are both available free of charge from the Office of the Chief, U.S. Forest Service/USDA, Washington, D.C. 20250. After the public reviews and considers the alternatives, the Department of Agriculture will revise the draft program and issue a guide for the nation's forested land. Public comment on

the draft forestry plan should be sent to the above address before December 15.

More Notes. . . . The National Park Service has initiated a pilot solar energy project in Lovell, Wyoming. Solar energy will be used to provide most of the heating and cooling needs of a combined visitors' center-administrative facility serving Bighorn Canyon National Recreation Area. Wirth Associates of Billings, Montana, have a contract to design the structure. If this project is successful, the Park Service may use solar energy in other areas of the National Park System. Solar energy would be particularly advantageous in remote areas to which the transportation of fossil fuels poses difficulties. . . . The NPS backcountry management program, designed to protect fragile park areas from overuse, has been expanded to include twenty-three National Park System areas. In this program free permits are issued for use of the remote backcountry areas, and the number of permits is limited according to the capability of trails and campsites to accommodate backpackers without causing environmental damage. Backcountry users should write to the superintendent of the park where they wish to hike for information on the program in that park. . . . Americans have new travel habits in visiting the national parks, the Park Service recently noted. People are visiting fewer parks but staying longer at each park they visit, increasing visits to "close to home" parks, and increasing visits to National Park System historical areas. Total visitation to all park areas has decreased only slightly. NPS characterized the new trends as indicating more in-depth use of the park areas combined with energy-saving initiatives. . . . A forest fire that scourged the mountains in the Carlsbad Caverns National Park area this summer led to the discovery of at least three "new" caves. The openings to the three caves, which are in the Slaughter Canyon area, had been hidden by brush before the fire. A large colony of cave swallows makes its home in one of the caves. The three caves will be inventoried by the Park Service. . . . To determine whether armies of carpenter ants are responsible for recent fellings of giant sequoias in Sequoia National Park, an ant specialist is studying the problem for the Park Service. . . . Redwood trees are growing in Hawaii. The state forestry division started planting the redwoods on the

Kula Forest Reserve on the island of Maui in the early 1920s, so the oldest trees are now about fifty years old. The redwoods have been planted among other species of conifers and hardwoods as part of a reforestation program to develop watershed cover and plantation timber on the treeless southwest slopes of Haleakala. . . . Industrial lead has contaminated a remote canyon of Yosemite National Park, according to researchers from the California Institute of Technology. The lead discovered in the canyon, which is a full day's hike from the nearest road, came from auto emissions. Researchers concluded that few areas in the country remain free of industrial lead pollution, and that typical humans are "badly contaminated" with the lead. The study estimates that 195 pounds of lead are dropped into the valley every year, mostly during snowfalls. . . . Last May forty-one endangered Aleutian Canada geese were released into the wild on Agattu Island in the Aleutian Island chain. Subsequently five pairs (or approximately half the geese of breeding age) nested, and several broods resulted. The geese that were released came from a small captive flock at the Patuxent Wildlife Research Center in Maryland, and it is hoped that they will help build up the wild population of this subspecies, which includes only approximately 300 individuals. . . . The new Great Dismal Swamp National Wildlife Refuge will soon include an additional 14,000 acres. The Nature Conservancy recently bought two parcels of forested bogland on the Virginia-North Carolina border, and will turn them over at cost to the Interior Department for addition to the existing 49,000-acre refuge. A loan from Aetna Life and Casualty facilitated the purchase. . . . The Reserve Mining Company case seems to be headed for the Supreme Court.

BULLETIN

Ronald H. Walker has resigned as National Park Service Director, it was announced on September 11. In accepting the resignation, Secretary of the Interior Rogers Morton asked Walker to continue his duties until January 1, 1975. The announcement came in the midst of continuing controversy over several aspects of Walker's administration of the National Park System. Details will follow in the December issue.

conservation docket

Although the second (final) session of the 93rd Congress is drawing rapidly to a close, as usual much significant action is still occurring. Action of interest to NPCA members includes:

New River: Although passage on the House floor is not yet assured for S 2439, which would authorize a study of a portion of the New River in North Carolina and Virginia for inclusion in the Wild and Scenic Rivers System, the bill crossed a major hurdle when it received final approval by the full House Interior and Insular Affairs Committee by a vote of 21 to 15. Debate on the measure during its final committee markup session had been intense and at times heated. Opponents of the study of the New River argued that the Federal Power Commission has already licensed the Blue Ridge Project, a pumped storage, double-dam power project proposed for the section of the river to be studied; that the proposal for wild and scenic river status was suggested only to block the power project; that the power was urgently needed; and that the river didn't even qualify under the terms of the act. However, in presenting the prevailing arguments, committee members favoring the study countered that the Blue Ridge Project would be a net consumer of electric power rather than a net producer, because a pumped storage facility generally consumes three power units for every two it produces; that the economic benefits of the project would be more than offset by the \$8.5 million annual loss in agricultural revenues that would occur when 44,000 acres were flooded; that the 1,500 jobs created, which would last only for the duration of project construction, would be offset by the 3,000 people flooded out by the dam and reservoir; and that the New River was well qualified for study for inclusion in the Wild and Scenic Rivers System. This bill now awaits full House debate and vote.

Public Works Appropriations: Recently signed into law as Public Law (PL) 93-393 was HR 15155, which releases appropriations for public works for fiscal year 1975. The law provides over \$4.5 billion in new obligations, with the major split giving the Atomic Energy Commission nearly \$1.8 billion, the U.S. Army Corps of Engineers over \$1.7

billion, and the Bureau of Reclamation nearly \$473.9 million.

Some of the Corps projects contained in the act include the Tennessee Tombigbee Waterway in Alabama and Mississippi, \$37.9 million for construction; the Warm Springs Dam in California, \$3.0 million for construction; the Inland Waterway, Delaware, Maryland, and Virginia, \$75,000 for planning; the Potomac River estuary pilot water treatment plant, \$350,000 for planning; the Red River Dam in Kentucky, \$500,000 for construction; the Dickey-Lincoln Dams (St. Johns River) in Maine, \$800,000 for planning; the Bloomington Dam in Maryland and West Virginia, \$7.2 million for construction; the Meramac Park Dam in Missouri, \$2 million for construction; the New Melones Dam in California, \$15.5 million for construction; the Tocks Island Dam in Pennsylvania, New Jersey, and New York, \$1.5 million for comprehensive review and analysis; the Gathright Dam in Virginia, \$6 million for construction; and the Verona Dam in Virginia, \$200,000 for planning.

For the Bureau of Reclamation projects, \$24.6 million goes to the Upper Colorado River Storage Project, \$55.8 million to the Colorado River Basin Project, and \$27.6 million to the Colorado River Basin Salinity Control Projects among others.

Solar Energy: HR 11864, aimed at accelerating the development and use of solar energy for heating and cooling was

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signed into law by the President on September 3 as PL 93-409. The act authorizes \$5 million each for HUD and NASA in FY 1975 and a total of \$50 million over the next four fiscal years.

Geothermal Energy: HR 14920, the Geothermal Energy Research, Development, and Demonstration Act, was signed on September 3, 1974, as PL 93-410.

Youth Conservation Corps: S 1871, to expand and make permanent the Youth Conservation Corps, was signed as PL 93-408 on September 3, 1974, by the President. This act amends the Youth Conservation Corps pilot program contained in PL 92-597, which was enacted on October 27, 1972, for two years.

Safe Drinking Water: Passage of Safe Drinking Water legislation during the 93rd Congress, which once seemed virtually assured, now appears uncertain.

After passing the Senate in June, 1973, S 433, the Safe Drinking Water Act, has gathered dust while the House Interstate and Foreign Commerce Committee considered its version, HR 13002. The latter was reported out of full committee on August 10, 1974, following an intense campaign of opposition from the petroleum industry, which objected to the bill's strong protection for underground water supply sources, and the Office of Management and Budget, which complained that the bill would preempt state authority.

Since the favorable committee report, HR 13002 has been tied up in the House

Rules Committee. Although Rules agreed to act on the bill by October 1, this delay will likely be enough to preclude the time that would be required before the session adjourns for a House-Senate conference following House passage of HR 13002.

Ocean Fisheries: S 1988, now called the Emergency Marine Fisheries Protection Act, has been reported out of the Senate Commerce Committee to the floor, but was then re-referred to the



Senate Foreign Relations Committee, which declared joint jurisdiction over the bill. Although hearings have been held by the Foreign Relations Committee, no final action has been taken. This bill would extend the U.S. coastal fisheries jurisdiction to 200 miles pending conclusion of a multilateral treaty at the Law of the Sea Conference.

Great Dismal Swamp: PL 93-402, to establish the Great Dismal Swamp National Wildlife Refuge in Virginia, was signed by the President on August 30.

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Continued from page 2

forests, that mightiest cataract, Yosemite Falls. Here from this outlook, from wind-swept Glacier Point, long eyesight may capture the far white Sierra. Silence and solitude, waterfalls plunging, forests arising, rivers and valleys, truly a paradise, garden of the mythical gods!

VITAL as the great natural parks may be as records of the past, as the bearers of invaluable genetic strains, as present sanctuaries for the tortured human spirit, their true function is nonetheless to preserve during these grave and hopefully passing days a vision of a beautiful natural world within which a high civilization may ultimately be set by the soaring spirit of man.

The invaders who besmirch with their tawdry commercial purposes this vision of a new world of tomorrow seated in a spacious natural environment and in scenery such as the great national parks now enshrine must be exposed for what they are—as insensitive, ignorant, presumptuous invaders—and their works must be thrust out and kept out of the parks.

A KEY TO THE PROBLEM of preservation and compatible utilization is the protection of park visitors against the overwhelming pressures of the traffic. Precisely in Yosemite do we have the best example of such a solution in the form of highly acceptable public transportation. The free public coach system inaugurated there some three years ago has been a popular and successful institution. The public has shown its preference for putting the private car aside and using public transit.

Within this context it has been possible for the NPS to limit the areas within which the private car is used and actually to tear up blacktop parking lots and replace them by pleasant outdoor visitor areas where rangers can explain the wonders of the park to curious visitors.

The new plan evolved from an understanding on the part of park management, supported increasingly by national policy, that most people who visit the parks come there to see and enjoy the forests, flowers, wildlife, and open spaces, and to get away from urban conditions, typified most symbolically by that very family car which brought them from the prison cities to the great outdoors.

For many long years the NPCA has urged that the alternative of comfortable public transportation be provided in the parks; that long-line

bus systems be developed to bring people from outlying communities into the parks, connecting with the internal public transit system; and more recently that the NPS assist in developing alternative public transportation by rail or bus from metropolitan areas to the regions near the parks.

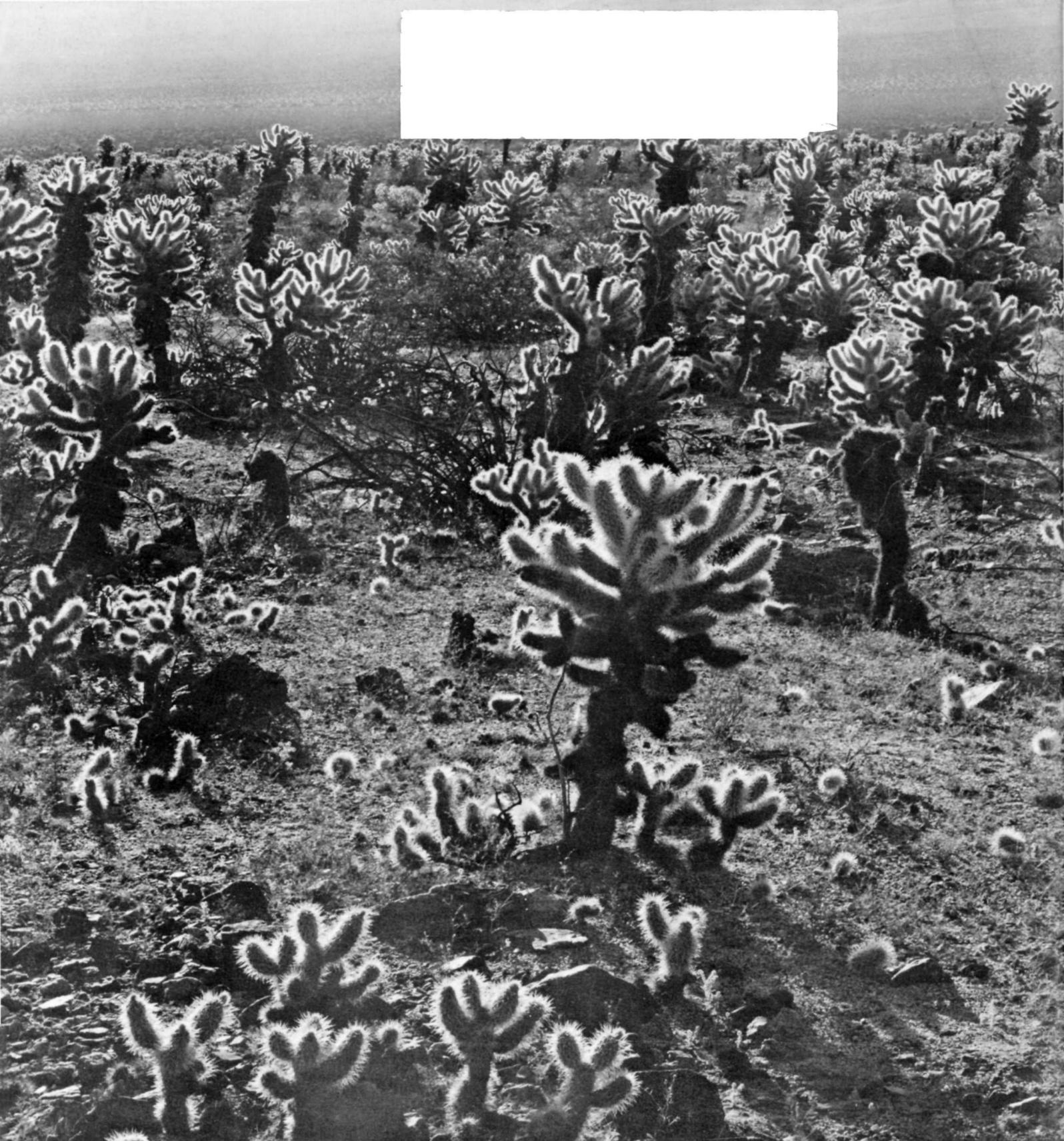
THE DEVELOPMENT of conveniences of this kind becomes daily more important as the cost of travel by private car climbs astronomically with the prices of gasoline and the automobile itself. Above all it is people of limited means who must be given this kind of help in getting out to the parks and using them, for they will be less and less able to afford such travel alone.

Also essential to the relief of pressures of overcrowding will be regional planning for park protection and utilization on an interdepartmental basis. The purpose of such planning should be to provide abundant outdoor recreational opportunity for everyone, dispersed through all the public lands and privately owned facilities beyond the public lands. This means unpretentious and unmechanized campgrounds and comparable facilities in the national forests, in the public domain, in the state parks and forests, and at privately owned vacation and travel centers, probably more highly developed, in communities in the vicinity of the parks. The NPCA has published many specific examples of such plans, but they have yet to receive serious consideration by the responsible public officials.

YELLOWSTONE, where the national park idea was born a century ago; Grand Canyon, spectacle of the ages; Big Bend, with its rocky gateway for the Rio Grande; Everglades, recently saved from disaster by the combined efforts of conservationists all over America; Padre Island, Assateague, Cape Cod, pristine seashores; Isle Royale, with its wolves; Olympic, with its verdant rain forests and snowy peaks; Mt. McKinley, far north, symbol of the endangered Arctic; and across the seas the Serengeti of Africa, the lush preserves of India, the scientific reserves of the Soviet Union—all these are treasures garnered through a century of human vision.

Just as the vision arose first in America, so must it be protected first of all here, for the example of callous destruction may well spread around the world, and precisely at the time, in this most critical age of the human spirit, when the symbol is most important for human survival itself, and hence for survival of all life on the planet earth.

—Anthony Wayne Smith



HELP PROTECT YOUR PARKS

For many years, NPCA's main interest has been in protecting national parks from destruction of natural values by excessive roads, off-road vehicles, mining, airport construction, overt commercialism, and traffic abuse. Now we are advocating wilderness and other natural preserva-

tion in the national parks, methods of preventing destructive impacts of mass recreation, and additional funding for Park Service interpretive programs. The support of you and your friends through membership and contributions will go far in helping us accomplish these goals.

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