

NATIONAL PARKS *Magazine*



Monument to erosion:
Angel Arch, in Utah's Canyonlands National Park

April 1969

FIFTIETH ANNIVERSARY NATIONAL PARKS ASSOCIATION

Springtime and the Animals

SPRING HAS COME AGAIN TO THE TEMPERATE EASTERN SEABOARD, and with it great tides of birds returning from the south, the Caribbean, the far reaches of Latin America.

Redwing and meadowlark are calling again from the fields, the robin from the lawns; possum, raccoon, skunk, and fox, which crept in close to the barns and houses during the winter, have scattered into the woods.

Sharing responsibility for the protection of the national park system, we remind ourselves of the major importance of the parks as wildlife refuges; and of our strong interest in the wildlife refuge system and the national forests.

The parks are symbols, in their wildlife aspect, of that human concern for the non-human life of the planet, without which mankind itself may well vanish.

The late Prime Minister Nehru, as we were told by M. Cecil Mackey in our magazine for December, 1968, contended that it is the act of preservation itself which is most important.

The character of a man is indivisible; if he lacks reverence and respect toward his animal neighbors, he will also lack respect and concern for men.

Among the many mortal emergencies with which modern men are grappling is the impending extinction of many species of plants and animals all over the earth. Such events are irreversible and they must have urgent attention in the work of conservationists everywhere.

Despite the elements of domination and destruction in our western tradition, there are also potentially strong lines of insight, sympathy, and responsibility toward nature.

Before the commandment was given to men, as related in Genesis, to be themselves fruitful and replenish the earth, after the great disaster, they were instructed to bring forth every living thing, that it might breed abundantly on the earth, and be fruitful, and multiply on the earth.

And the sense of the surrounding reality of the natural world, its independence and grandeur, which is expressed in organ tones in the Book of Job, particularly Chapters 38 and 39, is perhaps unsurpassed in any literature.

And surely the figure of the Good Shepherd, which appears as early as the Psalms and as late as the Gospels, central as it is to the tradition, should be drawn upon with confidence.

More prosaically, the interest of the scientist in all of nature, which is both esthetic and intellectual, can provide strong footing for preservation in a scientifically-minded society; the parks, refuges, forests, scientific reservations, and the plant and animal communities within them, must be protected permanently in the name of the systematic inquiries our age values so highly.

But the protective impulse runs deeper. The delight which many young children take in kittens and puppies, and the squirrels and pigeons in the parks, suggests that the human interest in other living creatures may have inborn roots.

What is perhaps more certain is that as human beings mature they assume responsibility, as part of their pattern of growth, for the protection of the world around them, the plants, animals, and people in that world. Growth cannot occur unless such responsibility is assumed; we take it that this is what Nehru meant.

And so, assuming that this society may survive long enough to mature, it will concern itself increasingly with the restoration and protection of all the life which surrounds it.

It will and must, for one thing, get the pesticides and other poisons promptly under control. We cannot go on saturating the world with insecticides and radioactive isotopes which build up in the food chain, even at the antipodes; nor drench-

ing it with surplus chemical fertilizers.

National and indeed international institutions must be established, and promptly, to provide for the survival of creatures whose life environment is being destroyed; parks and other nature preserves must be created; irresponsible commercial traffic in pets, hides, and experimental animals must be stopped; new habitat must be found and old habitat restored. The International Union for the Conservation of Nature should be strengthened; strong machinery should be incorporated into the framework of the United Nations for many of these purposes.

Corresponding with the people who use the parks, we recognize a humane trend. Wildlife photography becomes increasingly popular and can call for high skills in tracking the target. The widely practiced art of bird watching, particularly with binoculars, is equally rewarding with small mammals and big game; if excuses are needed for getting out into the woods, such pursuits can provide them readily.

The ecological concept, not new, but having taken on a new life recently, can hopefully be of great assistance; not so much the notion of niches, which suggests isolation, but the idea of the balance of nature, presupposing interdependence.

Ecological wildlife management will mean the management of refuges to meet the interlocking needs of all resident species, not merely one favored purpose. It will mean management for the protection of non-game creatures as well as those favored by hunters; and with a view to the survival of predators quite as much as their prey.

Ecological forestry will mean the management of timber resources elsewhere than in unmanaged areas like the national parks, for the protection of soils, watersheds, and watercourses, and for the sake of the wildlife, recreational, and scenic resources as much as for the production of wood, and wood products. If this results in an economic burden it must be met by industry or government.

Ecological watershed management will mean the protection of soil, farmlands, woodlands, wildlife and scenery, often as against the construction of reservoirs, even headwaters impoundments, and other incompatible development; the purpose is to preserve a livable environment for people, including the natural surroundings of stream valley and river bottom.

Practically, the stabilization of world population is an inescapable necessity here. Stabilization, for Americans who dare to preach about the matter, must begin in the United States. This means a spreading ethic of the two-child family. Rapid stabilization is necessary from a strictly human point of view, because congestion is producing an increasingly ferocious world; but it is also indispensable if we are to preserve any semblance of the great abundance of plant and animal life which once surrounded us.

Joshua Lederberg has noted recently that we have only begun to domesticate the range of plant and animal species which might be available; this thought has far more than merely economic and scientific implications.

Martin Buber, referring to the singular human achievements in taming animals (a process which he considered to be reciprocal), wrote of persons who have in the depths of their being a potential partnership with animals, persons not predominantly of an animal nature, but rather those whose very nature is spiritual.

Psychologically and philosophically, we are dealing here with the phenomena and concepts of empathy, sympathy, and identification with an attitude toward life which senses plants, animals, and men bound up in one community, one entity. The creation, or recreation, or consolidation, and the dissemination of this outlook is a categorical imperative of our times.

—A.W.S.



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Front cover color photograph by Gene Ahrens

Dominating the natural history interests of the Canyonlands of the Green and Colorado rivers is the geological story—which in a sense is also the scenic story—for geology here is responsible for as strange and colorful a melange of rock forms as can be found anywhere. In this portion of the Colorado Plateau running water has etched deeply into soft, pastel hued sandstones and mudstones of the “middle ages” of earth’s history, the Mesozoic Era. Here, in the terrain that was brought under national park system protection in the fall of 1964, running water has produced myriad canyons, needles, fins and arches, a maze of sculpture which Major John Wesley Powell described in 1869 as “grandeur, glory and desolation . . . all merged into one.”

The Association and the Magazine

The National Parks Association is a completely independent, private, non-profit, public-service organization, educational and scientific in character, with over 39,000 members throughout the United States and abroad. It was established in 1919 by Stephen Mather, the first Director of the National Park Service. It publishes the monthly *National Parks Magazine*, received by all members.

The responsibilities of the Association relate primarily to the protection of the great national parks and monuments of America, in which it endeavors to cooperate with the Service, while functioning also as a constructive critic; and secondarily to the protection and restoration of the natural environment generally.

Dues are \$6.50 annual, \$10.50 supporting, \$20 sustaining, \$35 contributing, \$200 life with no further dues, and \$1000 patron with no further dues. Contributions and bequests are also needed. Dues in excess of \$6.50 and contributions are deductible for Federal taxable income, and gifts and bequests are deductible for Federal gift and estate tax purposes. As an organization receiving such gifts, the Association is precluded by law and regulations from advocating or opposing legislation to any substantial extent; insofar as our authors may touch on legislation, they write as individuals.

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ESCAPE TO THE CHANNEL ISLANDS

By Darwin Lambert

EXPERIENCES TAKE ON MEANING IN RELATION TO THE whole pattern of living; hence this sail to Southern California's Channel Islands is remembered in a frame of the automobile travel so characteristic of the American world. My wife and I had been locked in the lines of traffic that bind the continent. We had endured the mechanical roars and sizzles and had even occasionally picked up, though as from far away and long ago, the once-familiar voices of Earth—the wind's whisper at a rest stop when no trucks were near, a quick snatch of meadowlark song (rendered eerie by our speed), and, once in Wyoming, real thunder so loud as to drown, briefly, the artificial kind. In populous California the freeway rush and rumble

Anacapa, one of the two Channel Islands that comprise California's Channel Islands National Monument, appeared ahead of the "Swift" like broken pieces of a sponge . . .

Photograph by Christian Schneider



had knotted our nerves to the point of conscious discomfort. Venomous red-brown gases had visibly mixed with the fashionable gray air to produce our darkest hour. And then, through a sudden window, we caught sunlight dancing on whitecaps of the sea.

We had reservations on one of the summer cruises of the square-sailed *Swift*, arranged by the Los Padres Chapter of the Sierra Club. Thirty-six passengers went aboard in Santa Barbara harbor early in the morning, and the ninety-foot schooner moved smoothly into long, easy swells of the Pacific. Deep down somewhere a diesel engine hummed with such subdued constancy I soon forgot we were not under sail on the way out. Persistent mist weakened the sun's warmth, and a sweater felt good. Get-acquainted groups formed fore and aft, sometimes drawing in the bearded captain or members of the crew for exchange of information about the ship, the land behind us where mountains backdropped the tree-filled city, and the islands still hidden by mists ahead.

As quickly as they sprang up, however, the conversations tended to falter in competition with the overwhelming reality around us. The gently rising and falling rhythm of the darkly deep but translucent ocean necessarily became our rhythm. Sea birds, generally larger than birds of the land, appeared and disappeared singly or in multitudinous flocks or wriggling lines dropping into troughs and rising to visibility again, silent or stridently calling. I found myself feeling the sea as wilderness, a living vastness connecting me into a circuit of mysteries without end, an unfathomable force drawing us all into unity with Earth, healing our emotional wounds, releasing our imaginations.

The mainland faded before the islands appeared and we were part of the slow-pulsing deep. Quietly we asked each other the names of birds—scoters buzzing the waves? brown pelicans perhaps flapping and fishing? what kind of gulls? We became aware of darker shapes in the dark water, moving near the surface, occasionally showing an erect fin. We became shark-spotters and tried to point out the sea-slicing fins to each other before they disappeared. Blue sharks, the captain reassured us, harmless to man. Porpoises performed, and we watched for other marine mammals of the seal type, being told no other place near population centers has numbers and variety of such creatures to match those here.

Several small, fast boats and the gray mass of a freighter moved within range of our vision. Identification of a distant shape as an oil-drilling platform launched speculation as to the future of these waters and the islands toward



The National Park Service has proposed that, with addition of San Miguel, Santa Cruz and Santa Rosa islands, the existing Channel Islands National Monument be redesignated as a national park.

Map by Federal Graphics

which we were heading. There was mention of millions of dollars recently paid by petroleum firms for rights in Santa Barbara Channel. Someone else mentioned the threat of damage from rapidly increasing recreational boating and other activities without adequate protective controls.

In 1938 the two smallest islands were set aside as Channel Islands National Monument to preserve a bare minimum of sea-bird and marine-mammal rookeries along with land flora and fauna exhibiting evolutionary divergence through isolation from the mainland. In 1959 the Pacific Coast Recreation Area Survey reported that "some of the finest opportunities here are found on the Channel Islands which are located approximately 25 to 50 miles off the coast of southern California. Although extensive overgrazing by domestic livestock has been tragically severe in some locations on the islands, the existing biologic, historic and archeologic values are supremely interesting and unique. There is in fact nothing comparable found along the entire Pacific Coast in the way of maritime ecology which is still relatively untouched." In 1963 the Interior Department issued a 20-page booklet putting an official foundation under a proposal of conservationists for a Channel Islands National Park.

MEASURES HAVE BEEN INTRODUCED in recent Congresses to establish such a park, to comprise the islands of Anacapa, Santa Barbara, San Miguel, Santa Cruz, and Santa Rosa in the Channel Islands group, together with the lands, submerged lands, and waters within one nautical mile of the shoreline of such islands. Total land area would thus be about 132,350 acres compared with only about 1,350 accounted for by Anacapa and Santa Barbara, which with surrounding waters now constitute the monument. So far the proposals have received little attention.

While discussing the possibilities we kept watching for land, and at last a shape loomed in the thinning mist ahead and to our right. It was Santa Cruz, most massive of the islands, rising nearly half a mile above sea level, its 65 miles of coast enclosing 62,000 acres. Our mist-screened view suggested a cliff-wall several hundred feet tall leading from breaking waves or light-colored beaches to a gradually rising plateau that extended toward mountains largely hidden in clouds.

All five of the islands, in fact, are furnished with scenic

cliffs and splendid beaches, both sandy and rocky, as well as with impressive sea caves, rock bridges and pillars, and extraordinary forms of life. Santa Cruz, which would constitute the center and nearly half the area of the park, has extensive grasslands, forests including oaks, almond and the unique island pine; a drainage pattern of streams—three of which are called rivers—and numerous waterfalls marking cliffs with evanescent white lace. It has the most noted cavern, Painted Cave, with an entrance that could engulf a seven-story building. Coves suitable for anchoring small boats are distributed around the shore. There would be abundant opportunities for swimming, and for skin and scuba diving to explore colorfully intriguing underwater scenery enlivened by fantastic flora and fauna. Ashore there would be picnicking, camping, even wilderness hiking among scenes mixing the strange with the familiar.

Santa Rosa, of 55,000 acres, across five miles of ocean westward from Santa Cruz, and San Miguel, of 14,000 acres, three miles beyond Santa Rosa, remained invisible from the *Swift* that morning even when the sun brightened. Santa Cruz and Santa Rosa are privately owned at present, being largely used for livestock grazing, with small acres cultivated. The Navy leases 64 acres on Santa Cruz; the Air Force, 336 acres on Santa Rosa.

Just within the past year scientists have ascertained San Miguel to be the one spot on earth where six different sea mammals congregate. The northern fur seal and Steller sea lion travel south from Alaska to San Miguel, while the Guadalupe seal and elephant seal migrate from southern waters to the island. The California sea lion and harbor seal are residents at this unique meeting place. San Miguel is federally owned and now administered by the Navy, which has officially agreed to protect scientific values pending transfer of the island for national park purposes when

it is no longer needed for military uses. These values include, in addition to the remarkable congregation of sea mammals, important breeding grounds of sea birds, deposits of fossils, and numerous village sites representing human occupancy for many thousands of years, up through the time of the Chumash Indians who were living on the Channel Islands when the first white men came. Santa Rosa also is important paleontologically and archeologically, and its surrounding waters hold vast reaches of kelp that could furnish refuge for the sea otter. These rare animals, once nearly wiped out by fur-seekers, have recently been increasing in numbers but are thus far seldom sighted here.

THE EIGHT CHANNEL ISLANDS—three to the south, including Santa Catalina, long a resort near Los Angeles, not being involved in the park proposal—are summits of mountains once part of mainland California. Their geologic history includes volcanic eruptions, continental crackings, massive liftings and sinkings. Their separation from the mainland, though not so ancient geologically, has been of significant duration biologically. Isolation has now continued so long that the processes of evolution have made the island's flora and land fauna teasingly different. Among the 830 kinds of plants identified thus far botanists have found 80 with variations so great as to require designation of separate species or subspecies. Zoologists note similar changes and now, for example, consider the fox of San Miguel different from that of Santa Rosa, and both different from the fox of the mainland.

Anacapa appeared straight ahead of the *Swift* like broken pieces of sponge over which powdered sugar had been unevenly dusted. Playful guesses about this frosting ranged from wildflower masses or summer-dried lichens to volcanic ash or hail from a freak storm, but we were soon near enough to confirm it as the droppings of innumerable birds (perhaps mostly western gulls) perching and nesting on the seemingly porous stone or circling and crying above. Pock-marked Anacapa has peaks up to 930 feet high. In clear view it becomes a broken chain five miles long and as much as half a mile wide, penetrated by tentacles of ocean. Near its eastern end the Coast Guard maintains a lighthouse, and the end itself consists of a statuesque pinnacle and a great arch open to sea and air from both sides.

The *Swift* anchored in Anacapa's Frenchy's Cove, and our escape from today's normal world was further emphasized by the manner of our landing. Six at a time we donned bright-orange lifejackets and descended by rope ladder into a small boat. It nosed close to the pebbly beach, but not close enough for us to reach shore. We stepped into water up to our knees and waded.

On the beach above recent high tides a row of sleeping bags, a hiker's pack and a coffee pot marked where campers had slept and planned to sleep again. Higher up a camp for two occupied an entire shelf on the steepening slope. Spots suitable for camping on Anacapa are few and everything must be brought, even water and fuel. On the largest shelf we found was a park ranger's summer home-office of canvas on a wooden frame. A privy stood nearby. The national monument is inappropriate for any but the lightest of visitation, having primitive public facilities and services.

Summer rangers also occupy cliffy Santa Barbara, a

square mile of gentle peaks, grassland meadows supporting unusual terrestrial birds, and rocky shores where large numbers of sea birds and mammals congregate. Campers and picnickers have an opportunity to view a small but permanent sea elephant herd on that island. The Park Service *Cougar* patrols the waters and shores of both islands, and the summer rangers have radio-telephones on which to call monument headquarters, or in emergency the Coast Guard.



Photograph by Mike Affleck

In Anacapa's Frenchy's Cove the party went ashore in small groups by motorboat to explore the pebbly beaches and to gain narrow ridges for a visual search of offshore rocks.

Photograph by Christian Schneider



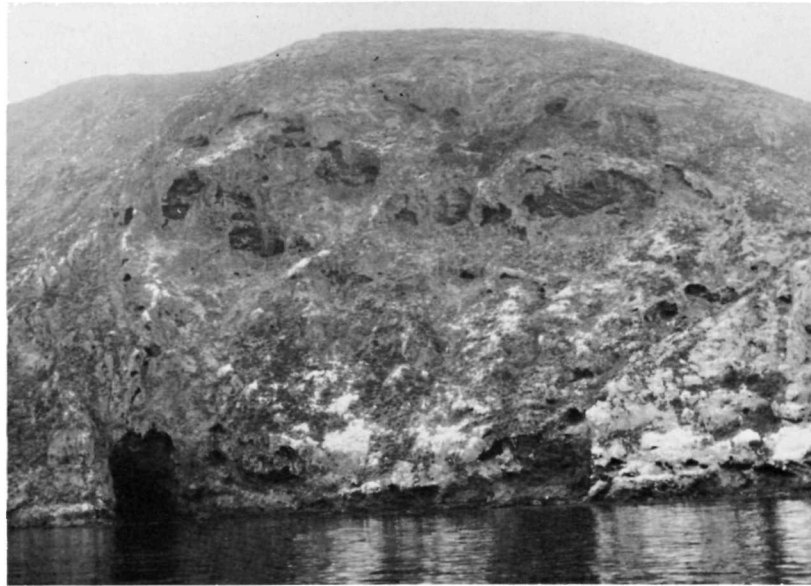
While Anacapa, like the other islands, is green during the winter rains (about 13 inches a year) and colorful with flowers in spring, it looks like a desert in summer. When we could spare our eyes from concern with footing on slidy slopes and often-narrow clifftops, they sought offshore rocks and ocean spray, or searched southward for Santa Barbara island and northward for Santa Barbara city (neither quite visible then) or tried to spot the actual nests of the ubiquitous, sharp-voiced gulls or signs of other moving life. The furry brown California sea lion, a large "eared seal," appeared many times as an emergent head which, depending on angles of light and view, struck several of us at first as a floating skull. We saw seal-like forms just above water on distant rocks, but found no colonies that day, nor confirmed sight of the rarer marine mammals such as the big-nosed sea elephant, the sea otter, or the Guadalupe fur seal, once considered extinct.

Our attention, with so many intriguing demands upon it, had to be specially drawn to the giant coreopsis, a woody sunflower which, in April, blooms golden masses visible across miles of water. The flowers now were gone and the once-green leaves dried, dropped or collapsed. Santa Barbara Island is the leading habitat, but on Anacapa we saw stands resembling miniature dead palm trees which, we were assured, needed only rain to turn green again and possibly go on growing year after year to attain the height of a man, with trunks up to six inches in diameter.

WE WENT DOWN THEN to the tide pools and tried to find clear places for our feet on barnacle-encrusted rocks while watching crabs hide, or light-green sea anemones wave their tentacles for food, or mussels close their bivalve shells. Samples of seaweed washed up for our inspection, and always the surging ocean involved our senses and our deeper feelings in a magic that was both stimulating and soothing. We entered a cave from a beach and found it filled with the roar and seethe of waves, opened with a view of the *Swift* lying at anchor.

Our time out of this world was short, hardly more than a preview demanding attendance later at the full show. Yet, sailing back to the mainland, no motor now but the wind in the white-cloth squares, the slap and splash of water, the sudden sight of flying fish soaring over the waves, the dorsal fins of sharks again, and a porpoise game and the curious heads of floating sea lions, we relaxed in a healing peace that all moderns, surely, would like to know. The captain brought out a guitar which found skilled fingers and awakened voices to song.

Involved in currents of wordless reality, we thought little then. Later, again caught in our car on the freeways, we were reminded by the grinding contrasts how great is the human need to journey, occasionally, out of this world. The two small islands of the national monument are little more than fragments of a scientific exhibit, too tiny and totally rugged for even the most nature-oriented recreation on any substantial scale. Half a hundred clifftop walkers would overcrowd the trails we explored on Anacapa's rock. The barnacles and limpets by the tide pools would be crushed by a load limited to only a few dozen feet a day. The sea cave we explored could hardly impart its mood of mystery to more than a boatload at a time. Multiply the



Photograph by Eileen Lambert

All five of the islands proposed for the national park have impressive sea caves like that above. Below, a colony of seals and sea lions relaxes on the sand of a San Miguel beach.

Photograph by Robert Belous



day's recreation of the *Swift's* passengers by ten, say, and all of Anacapa would be overburdened. Santa Barbara Island provides more space for the hiker and camper, but faces the danger of impaired natural conditions from the boating population of Los Angeles and Orange counties.

Only if the three larger islands are added to form the national park—and if that park is kept free of highways and cars—will the healing, vitalizing experience of the Channel Islands be available to significant numbers of Americans. ■



Photograph by Karl Bitterling

In the Lüneburg Heath nature preserve southeast of Hamburg, West Germany, visitors find a peaceful rural expanse combining beautiful landscape and centuries-old agricultural activity. Beyond the horse-drawn cart at left stretches part of the extensive forest that covers nearly 30,000 acres of the preserve.

Photograph by Dr. A. Schultze-Naumburg



At right, a picturesque barn in the Lüneburg Heath preserve, where the traditional architecture of rural Germany is one of the tourist attractions.

Some 4,000 North German moorland sheep like those at right are supported by the Lüneburg preserve's ancient heath.

Photograph by Dr. A. Schultze-Naumburg



LÜNEBURG HEATH: A GERMAN NATURE PARK

By Alfred Toepfer

WHEN THE VEREIN NATURSCHUTZPARK E.V., Germany's National Park Association, was founded in Munich in 1909, it decided to acquire or lease three original and characteristic landscapes—in Lower Germany or the north German plain, in the hill country and in the high mountains—and to preserve them for future generations.

Successful initial steps were taken in 1910 toward creation of the present nature preserve in the Lüneburg Heath, southeast of Hamburg. A clergyman, Pastor Bode, and an ornithologist, Dr. Flöricke, appealed to the public. The district magistrate, Councillor Ecker, and Kaiser William II were among the first to promote the idea and give it a practical start. Against the opposition of the Prussian parliament, the Kaiser authorized the Verein Naturschutzpark to organize a large-scale lottery. The lottery and numerous voluntary contributions, including one from the Kaiser himself, enabled the acquisition of most of the association's present Lüneburg Heath preserve within a few years' time, before the outbreak of World War I.

Between 1920 and 1922 the district president of Lüneburg, in behalf of the Prussian government, issued conservation regulations still in force in the reserve of nearly 50,000 acres which exists today. The area was registered in 1936 as the first in Germany's nature conservancy book.

In 1938 the German armed forces sought to take over the preserve for use as a training area. The national forestry superintendent personally thwarted this intent. However, World War II frustrated plans of the Nature Conservancy Office to expand the preserve and establish it as a national park along with a few additional German landscapes.

After 1945 the British used nearly the entire preserve as a military training ground. In 1956 they withdrew to the western portion, which embraces approximately half of the heath area. This part of the preserve has been

devastated by the almost continuous maneuvers of armor.

Today nearly 30,000 acres of the Lüneburg Heath Naturschutzpark are covered by forest and nearly 12,500 acres by heath. The balance is used for agriculture.

A century ago heath and moors extended over some 45,000 acres, as they had for perhaps 6,000 years. Through many centuries the heath has been used for bee-keeping and the breeding of North German moorland sheep. Economic use of the area continues unchanged and pays fairly well. Some 4,000 ewes graze on the heath throughout the year. In summer the flocks are swelled by an equal number of lambs. During blossom season there are nearly 400 beekeepers tending some 12,000 apiaries. Thus the heath is by no means simply a museum landscape.

Generations have been inspired by the poets and painters who have captured the wonderful charm and magic of this unique landscape.

The moorland's charm is not limited to the unusual scenery. Hundreds of prehistoric and very early landmarks are scattered over the entire region, among them numerous burial mounds dating from the Bronze Age.

The quiet heath has preserved it all. Too, villages and farm buildings evoke the rural architecture of the Middle Ages. The Verein Naturschutzpark is endeavoring to conserve and maintain—and restore in case of damage or deterioration—these historic monuments.

The National Park Association is under unsalaried, volunteer management. Donations from industry meet approximately 80 percent of its large expenditures.

In 1968, in recognition of its work and planning for the Lüneburg Heath Nature Preserve, the Verein Naturschutzpark was awarded the European Diploma of the Council of Europe. This is the first German nature preserve to be recognized by the highest European body. ■

*Everything we value as
the "American way of life" is
being threatened by overpopulation*

OVERCROWDING and US

By Paul R. Ehrlich



National Park Service

In America today human pressure on parks, beaches and resorts is intense. The scene above was taken at Giant Forest parking lot, Sequoia National Park.

POPULATION PRESSURE HAS BEEN DEFINED AS "NUMBERS threatening a value." By this standard, the United States is today a seething nexus of population pressures; virtually everything we value as the "American way of life" is currently being threatened by overpopulation. Yet very few Americans seem to be aware of the threat. Certainly, most informed Americans recognize that we are facing staggering problems—pollution, congestion, urban blight, resource depletion, overcrowded schools and courts, social unrest—the list goes on and on.

They are also aware that many areas of the world are facing a rapidly widening population-food gap. They know that people are starving to death every day, right now, and that the situation will probably get much worse in the very near future. These Americans will agree that India has a population problem, that Latin America and Southeast Asia have a population problem, even if they are a bit unsure just what should be done about it. But they *don't* think the United States has a population problem. All of *our* problems are environmental—with the proper action they could all be solved. Foresight and planning will allow us to provide for all future Americans. They assume the United States has the means to feed its increasing population for centuries to come—after all, we are paying farmers now *not* to grow food. And all those empty miles in Nevada, in Utah, in Arizona—we have lots of room for expansion. The population problem mentioned with increasing frequency by the news media is very foreign and distant, pertaining only to the far corners of the globe. It is really no concern of ours—except of course for our humanitarian desire to alleviate suffering among the less fortunate citizens of underdeveloped countries.

I must disagree. There is a growing number of signs that there are today already too many of us in the United States. We create more solid waste than we can dispose of, so it litters our landscape. We produce more sewage than we can treat, and along with myriad byproducts of our affluent society it pollutes our waters. We lower our water tables as we attempt to assuage our growing national thirst, permitting salt water to invade water-bearing strata. We ignore the principles of ecology when we cut forests, plow fields, and battle insect pests, thereby slowly ruining the food-producing capacity of our land. In many areas vehicular traffic is inexorably grinding to a halt as more and more people travel overcrowded streets and highways. The air in many cities is unfit to breathe; indeed, people are being advised to flee them if they wish to preserve their health. Parks, beaches, and resorts are mobbed. Ghettos and urban slums grow, and riots have become, like thunderstorms, a regular summer phenomenon. While the centers of our cities decay into uninhabitable slums, prime farmland is swallowed up by subdivisions. American babies suffer malnutrition, and some starve to death. There are not enough doctors to treat our population. Our schools are understaffed and overcrowded, as are hospitals and most other social agencies.

From rubbish to riots to starvation we are faced with an array of problems, all of which can be traced, at least in part, to too many people. That there are many other factors, and that any one of these problems, taken alone, might *theoretically* be solved without reducing the size of

the population, is irrelevant. Few of our problems can be isolated, and none can *realistically* be solved without stopping our population growth. After all, if our problems are in fact soluble without population control, why are they not being solved today? Smog is nothing new, and it is rapidly getting worse. Ghettos are nothing new, and neither is urban blight; but we see little improvement in either condition. Our water shortage and pollution problems have been recognized for decades, and yet they continue to grow worse. Indeed, our water problems are so severe that Dean Richard Jahns of Stanford's School of Earth Sciences recently said to me that the only remaining question was whether we will run out of water quantity or quality first! For years our highways have been jammed, our schools and hospitals overcrowded, and our resorts mobbed, despite continual efforts to relieve each of these situations. In our search for solutions we have insisted on considering each problem in isolation, ignoring its relationship with each of the others, and to population size. It is not surprising, then, that our attempted solutions fail. Continually increasing population, coupled with our incredible level of consumption, keeps the best efforts we are able to make far from adequate. Until the interrelationships of our problems are recognized and programs are adopted which include population control, our "solutions" are doomed to failure. A friend recently put it very well: "Whatever your cause, it is a lost cause without population control."

AMERICANS, AS INDIVIDUALS, show little sign of giving up the behavior patterns which, multiplied by 200 million, result in our current dilemma. These behavior patterns are based on deeply held beliefs and attitudes. One, of course, is the belief that every couple has the right to have as many children as it wishes and can afford. This "right" has deep social and religious bases, and is still considered to be taboo for discussion by most politicians and public officials. The most important issue of the day, population control, is seldom mentioned. I say *the* most important issue because the only other issue of similar magnitude is peace—and peace with an exploding population is as likely as Niagara Falls reversing itself.

Another fundamental attitude can be traced to the philosophy of the frontier. We have now exhausted all of the world's frontiers, and have no more vast new areas to settle and exploit, occasional nonsense about interplanetary colonization notwithstanding. We stew in our own effluents, and yet we act as if we could leave our ruined farmland, littered and polluted landscape and teeming cities and move on to a fresh frontier if we wished. Those days are gone forever, but the philosophy lives on in our behavior. As yet Americans have not made the ideological change necessary to living in a limited environment with limited resources.

Many Americans, however, do realize that we are running out of air, water, and other natural resources, and that we have no frontier to escape to. Unfortunately, that is where another dangerous false premise appears: our faith in Science and Technology. Overpopulation scares were wrong before—Science and Technology will save us again. Poison in the air? We'll invent new automobiles, filters, precipitators, and whatnot to clean it up. Running out of water? Nuclear power for desalting sea water, new



Our water supply: the remaining question is whether we shall run out of quantity or quality first.

methods of treating sewage, cloud seeding, and other vast public works will take care of that. Not enough food? We'll develop ways to grow crops in the sea, new high-yield grains, and perhaps new means of "creating" protein. Limited natural resources? New building materials, energy sources, and synthetics will solve that.

It all sounds so simple. But none of these things will come about soon enough or in quantity enough, even with a level of funding and cooperation unknown in the history of the nation. What are the chances that the consensus and the cash to attempt technological solutions will materialize? One need only pick up a daily newspaper to read of the defeat of school bonds, the financial plight of urban transit proposals, the inability of state and federal governments to compel pollution abatement, of the lack of satisfactory techniques to cure our various social ills. This inaction is not the cause of our impending disaster, but it accelerates the arrival of the day of reckoning. The cause is unchecked population growth, with which no amount of money and technology can ultimately cope.

Of course, a major cause of the overpopulation of the United States is our economic philosophy. Our prosperity is believed to depend on a growing population and monumental waste. Population growth is hailed by businessmen and politicians alike as ensuring our economic future. Each new baby is viewed as a potential consumer of manufactured goods. In this day of automation, however, we must also learn to view each new baby as a potential member of the unemployed, an additional polluter, a user of irreplaceable resources, an increaser of crowds, and even a potential rioter. It is, in fact, likely that our population growth is a drag on our economy, just as population growth is unquestionably a drag on the economies of undeveloped nations. Some of our distinguished economists now feel that our capitalist system need not be fueled by an ever-growing population. Dr. J. J. Spengler has said: "In the future, economic growth will depend mainly upon invention, innovation, technical progress, and capital formation,

upon institutionalized growth-favoring arrangements. Population growth will probably play an even smaller role than I have assigned it in earlier discussions. It is high time, therefore, that business cease looking upon the stork as a bird of good omen." The continuing success of our capitalistic system aside, it is futile to depend on population growth and resource depletion to support our economy indefinitely. Many vital resources are in limited supply and will eventually be exhausted. Furthermore, no biological population can continue to grow forever. For instance, continued human population growth at the present rate would raise the population density on Earth to some 1700 people per square yard in about 1000 years. Needless to say, we shall never reach this hypothetical density.

Recently, attempts to get Americans to act on the population problem have been impeded by irresponsible statements that the population explosion in the United States is over. These statements are based on statistics showing our birth rate to be at a record low—about 17 per thousand per year. There is an all-too-human tendency to grasp at any hopeful straw in a grim situation, and the low birth rate is just such a straw. Unfortunately, it is the difference between birth and death rates that is critical, not the rates themselves. Since our death rate now stands at about 9.5 per thousand per year, our population is increasing at a rate which will allow it to double in about 90 years. Those who cheer the recent decline in the birth rate should also remember that birth rates are changeable, like the weather. They have minor fluctuations as well as long-range changes, determined in no small degree by the state of the economy, wars, family-size fads, and so forth. The current low should no more be hailed as the end of our population explosion than should a warm December 26th be welcomed as the coming of spring. We are a long way from a stabilized population. In fact, our birth rate will almost certainly rise in the next few years, as the women born in the post World War II baby boom reach their peak reproductive years. We cannot continue to leave our population size fluctuations to chance, any more than we leave our economic growth to chance; there is too much at stake.

IF THE UNITED STATES is overpopulated now, it is only logical to ask how many people this country should have. Unfortunately, there is no easy answer to this question. I once hoped to start a discussion by throwing out 150 million as a suggested optimum population size for the United States. It is a size familiar enough to be "real" to most people. A population of that size is fully capable of running a highly technical, affluent society—our population was about that large in 1950. In an age of missiles 150 million Americans would be more than capable of defending themselves. We fought World War II with fewer people. Reducing our population to this size would reduce the pressure on irreplaceable resources and vital institutions, especially if the reduction were accompanied by an intelligent program aimed at restoring a liveable environment and maintaining the population in balance with that environment.

Ultimately we will be forced to reduce our population to a level much below 150 million. As the 20th Century

Dr. Ehrlich, author of *The Population Bomb*, recently published by Ballantine Books of New York City, is in the Department of Biological Sciences at Stanford University.

Fund Survey *U.S.A. and Its Economic Future* put it: ". . . the United States now is definitely labeled as a have not country for many vital materials, a label it will have to live with in the years ahead." Unless a world disaster intervenes to end all population problems forever, we will rather quickly exhaust our supply of non-renewable natural resources, and we will have to find ways to live on renewable resources. We will be compelled to maintain a population size consistent with that requirement. And that day is coming sooner than many Americans realize. As famine strikes much of the rest of the world (estimated by agricultural experts William and Paul Paddock as most likely to occur in the mid-1970's) we will be denied many of the materials we now import. Starving nations are not going to be willing to send us raw materials when we are unable to send them food, and regardless of what some "experts" say we cannot hope to feed the entire world. Money will be worthless to these nations—they will be unable to buy food elsewhere, either. No one is so naive as to believe other nations will continue to supply us with the materials for our good life while they quietly starve.

The United States cannot avoid serious problems when other countries slip into massive famine. But starvation is just one potential consequence of the worldwide population-food-environment crisis, and the other consequences contain other, more deadly threats to our existence. If international pressures caused by massive starvation erupt into the holocaust of World War III, we will not be able to escape. If new deadly virus strains develop in the seething masses of hunger-weakened people or escape from our biological warfare laboratories, they will be quickly spread around the world by modern transport, and we will not escape. So, in addition to a fearsome array of domestic problems, all related to overpopulation, we are facing a really desperate worldwide situation, also due to overpopulation. We can ignore the world problem only at the peril of all mankind.

The United States is the world's richest nation, its greatest super-power. But all of this wealth and power will not permit it to remain aloof in this crisis. If there is to be any hope of getting the world through the coming crisis with civilization intact, the United States must assume the lead in taking drastic action immediately. This gives us one more urgent reason for decreasing our population. For us to succeed in persuading other people to decrease their birth rates we must be able to advocate "do as we are doing," not "do as we say." There are many who are eager to accuse us of racism or national interest—to deny them ammunition for this attack, we must be doing what we demand of others. ■

The National Parks Association is privileged to reprint in abridged form, as a supplement to *National Parks Magazine* for April, 1969, one of the most important recent studies of policies governing the operation of the national park system. The report is entitled *Man and Nature in the National Parks*. The authors are Dr. F. Fraser Darling and Mr. Noel D. Eichhorn. The report was published by The Conservation Foundation, which has given its permission for the reprint and its approval of the shortened version.

Man and Nature is a treatise on the importance of protecting natural conditions in the national park system. The Association has long been the leading private advocate of a high measure of protection as contrasted with commercialization and overdevelopment. We have been gratified by the strong support for such protective policies accorded in the present report by its authors.

The full text of the report, attractively published with a number of excellent photographs, can be obtained at \$1.50 a copy prepaid from The Conservation Foundation, 1250 Connecticut Avenue, N.W., Washington, D.C. 20036. Additional copies of the present reprint can be obtained from the National Parks Association, 1701 Eighteenth Street, N.W., Washington, D.C. 20009, at 10¢ each, \$1.00 a dozen, postpaid.

MAN AND NATURE IN THE NATIONAL PARKS

REFLECTIONS ON POLICY

F. Fraser Darling and Noel D. Eichhorn

Preface

THIS IS A REPORT on an inquiry conducted by F. Fraser Darling, vice president of the Foundation, and Noel D. Eichhorn, an associate of the Foundation, into some of the social-political-ecological problems of the national parks of the United States.

The study was made possible by a generous grant from the Old Dominion Foundation, for which The Conservation Foundation is grateful.

While the study and the resulting report were delayed by three serious illnesses, the authors' findings are pertinent to the continuing dialogue in and out of government on the use, protection and extension of the National Park System.

Fraser Darling, an ecologist, and Eichhorn, a geographer, examined the impact of man on the national parks. Their conclusion: the national parks now face dangers from within, in addition to the older and more generally recognized external pressures for economic exploitation of the parks' timber and mineral resources. These new dangers come from increasing number and densities of people, spending more of their increasing leisure time in the parks, bringing more of their automobiles and accompanying paraphernalia into the parks.

National parks can mean different things to different men,

as Fraser Darling and Eichhorn note. But if the priceless values of the parks are to be enjoyed and sustained today, tomorrow, and for posterity, man would do well to heed their warnings and recommendations on National Park Service policy and administration. Fraser Darling and Eichhorn hasten to point out that the Service is already implementing some of the recommendations offered by two official committees which reported earlier. This is heartening.

But more remains to be done—for the parks and people of this nation, and for another reason. Conceived in the United States, the national park concept is "an inspiration to the rest of the world," as Fraser Darling and Eichhorn observe. Other nations draw upon the National Park Service for policies, programs, and training. Thus for our own sake in the United States and for others drawing upon our example, it is essential that the very highest national park standards be established and maintained.

RUSSELL E. TRAIN, President
The Conservation Foundation
December, 1967

Introduction

WE START FROM THE POINT OF VIEW that the national park idea is a major and unique contribution to world culture by the United States. The idea has now been in practice for nearly a century from the time when 3,400 square miles of high country in Wyoming were designated as Yellowstone National Park. Its origins lie within the Romantic Movement and it is a later manifestation of the spirit of equality and brotherhood of the American and French Revolutions. The reawakening of the awareness of nature so evident in the writings of Rousseau and in the poems of Wordsworth and Coleridge was expressed for Americans by Emerson, Thoreau and Bryant with a typical desire to weave it into the stuff of life in a country of opportunity.

The carrying of the national park idea into fruition in the United States has continued to be an inspiration to the rest of the world. The idea has also borne fruit in other parts, particularly in Africa, but the parentage is never forgotten, and the National Park System and the National Park Service of the United States are looked up to in a very special way. The sanctity of the parks, the careful blending of architecture, the ways of doing things to give animals and plants and scenery their foremost places: all this is appreciated abroad as well as at home.

The early history of the national park movement was one of idealism and solid propaganda effort. Roads were begged as a means of getting people into the areas to gain support for the idea. Certain animals were protected even to the extent of reducing the numbers of natural predators. Large hotels in pleasant rustic style were built near the major scenic attractions. In addition to appreciation of nature, healthful outdoor exercise was encouraged.

Since that earlier time both parks and country have changed. The impacts of the internal combustion engine and the increase of leisure were not clearly foreseen and the National Park System is now suffering physically from the success of public interest expressed as numbers of visitors. As population and productivity have increased, wild country outside the parks has diminished, and the fishing and camping which were once found close to home in abundance are increasingly looked for in the national parks which no longer seem remote.

The initial unselfish and generous gesture of sanctuary and inviolability for animals, coming from an era when wildlife management had not been studied, has later raised problems of conservation of vegetation. The larger numbers of visitors with more modern standards of comfort and more sophisticated ways of amusing themselves have raised others sorts of conservation problems. The pressures of these human and animal populations in the parks have demonstrated the necessity for continuing ecological research and land management evaluation if the areas are to be sustained for posterity. The dangers to the parks from within must be met as surely as attempts by exploiters to log or mine the areas.

The inquiry which this report represents was envisaged in the spring of 1961, at a time when ecological conditions in many national parks were causing concern to those individuals

within the National Park Service sensitive enough to be aware. Members of the Service who talked with The Conservation Foundation made it plain to us that research in depth of a socio-ecological kind was necessary and that guidelines to such research were far from clear.

In some measure the urgencies of 1961 have been relieved by the reorganization which has taken place within the National Park Service and by the reports of two official committees appointed after our work began.

The Leopold Committee¹ reported early in 1963 with admirable plainness and brevity. The report was reprinted by several outdoor magazines and many thousands of copies were distributed. Its influence on National Park Service policy has been considerable.

The Robbins Committee,² on which one of us had the honor of serving, spent more time and made more detailed inquiry. Its report was disturbing in that it showed the low status of research in the National Park Service despite the obvious need for such work to solve existing problems. The report was critical and widely quoted, but the influence on National Park Service policy seems less marked than that of the Leopold Committee, which also commented on the paucity of research. Many of the Robbins Committee's specific recommendations have been acted upon, however, and a new position of Chief Scientist has been established.

Our survey has been of a more informal kind than is possible for a formal committee and we have cast our net very widely. A national park exists in an intricate complex of political, social, legal, intellectual and sentimental factors. The terrain of a national park cannot be treated as a museum piece to be preserved behind glass. Some things are possible and some are not; compromise is necessary and inevitable, but it would be wise not to follow a policy of expediency. However biological our initial approach may have wished to be, as ecologist and geographer we have faced the larger field, knowing our limitations, and aware that our report must be concerned with policy-making more than with biological detail.

We are grateful to the Department of the Interior and Secretary Udall for constant encouragement and kindness to us in the course of this study; the National Park Service, in the field and in Washington, has been most generously helpful in discussion, making documents available and giving us the time of its representatives in the parks, often at busy periods. Our thanks to the Director and to the members of the Service can never be adequately expressed. If they will take it that way, our plain criticism of certain items in policy and administration is the highest compliment we can pay to what is a *corps elite* in the service of the United States.

¹ U.S. Department of the Interior Advisory Board on Wildlife Management; A. S. Leopold, chairman. Its report, *Wildlife Management in the National Parks*, was submitted in 1963 and published by the Interior Department in mimeographed form.

² National Academy of Sciences-National Research Council Advisory Committee to the National Park Service on Research; W. J. Robbins, chairman. 1963.

The Nature of a National Park

OUR FIRST QUESTION is both provocative and pragmatic: "What is a national park for?" We have consistently asked this artless question in the course of our travels and have received widely different replies. The question has been put to many members of the National Park Service in Washington and in the field, with equally divergent replies.

We can forgive the fluffiness of the description in the Yellowstone Act of 1872, for the draftsmen were treading where angels have burned their toes, but it says, "a public park or pleasuring-ground for the benefit and enjoyment of the people," and also that "the natural curiosities or wonders" were to be retained "in their natural condition."

What is a pleasuring-ground? This phrase is truly archaic, at least 18th century, and given to such London gardens as Vauxhall. Presumably the 19th century Congress passing the act did not see the wilderness of the Yellowstone quite like that, but as the national parks have developed through nearly a century of increasing population, wealth, leisure and mobility, there are certain people who would like to see some parts of the parks much like a Vauxhall, with the equipment for entertainment and enlargement of concessionaire interests.

We can surely take it as an overall expression of informed and serious opinion in the nation, that people do wish the national parks to be unspoiled by development, and that they do wish the heritage to be preserved "unimpaired," as the acts and official proclamations have it, for posterity. Nevertheless, we must emphasize the difference of types of country involved in the system, the difference in reasons for designation, and the difference of ways of acquisition of the terrain.

Yellowstone was the first and the place which Congress called "pleasuring-ground." It remains as nearly typical as any one park can be of the large virgin western national parks. It is unlikely that many people thought the Yellowstone Act was intended to preserve what is now called wilderness; the area of the park was far better explored than most of the mountainous west and, therefore, less wild. The pleasures of the park were first: curiosities of nature, geysers and hot springs; second: spectacular scenery, the canyon and the falls; and third (perhaps): the abundant wild game and the setting of grasslands, lakes and forests. For most people the order of these remains unchanged, although the "perhaps" has been removed from the third as less and less of wild nature remains outside the parks, and there are some parks, like Isle Royale, which are nearly pure wilderness.

YELLOWSTONE was public domain, not fully explored, and the start of a national park was from scratch: but what of Acadia, Cape Cod and the Virgin Islands? New attitudes of what is a national park are necessary, and to bring the present-day Yellowstone notion or the undisturbed wilderness notion to bear on these three properties would be merely silly. Even Yellowstone is hardly undisturbed wilderness.

Acadia began with a gift of 6,000 acres by local landowners and since has been much increased in size by the munificence of the Rockefeller family. The island was already much changed from any primitive condition. The area had had permanent settlement for 200 years and sporadically by the French long before. Now, in addition to local ways of earning a living from the sea, it is a popular holiday resort with summer homes and yachting anchorages.

Why have people come to Acadia in the past? For a wild coast, woods coming down to the sea, good anchorages and a way of life slower than in the rest of the country. National park intention here, surely, is to restrain development but not stop it; rather to guide it in traditional fashion and prevent unsightly advertising. There is nothing disturbing in essence because the boundaries of such a national park are intricate and rather odd, and private landholdings either in or adjacent to the park should have no fears of their quiet style being upset. A national park of the Acadia type requires a careful planning or zoning scheme which can be enforced and which can give continuity.

Cape Cod is another example of a long settled area receiving welcome protection in the National Park System. The architecture of the traditional houses is part of the delight and the long-established golf course is a green, well-tended man-made landscape which is an asset in the total environment of Cape Cod. The work of the National Park Service as a body with power in rehabilitating the sand dunes is beyond praise. If

drivers of sand-buggies object to their amusement being curtailed they must remember that the sport of setting light to haystacks has also been curtailed. Here again, the National Park Service intent is care in managing a pleasing man-made landscape and continuing living place, by means of overall planning.

St. John in the Virgin Islands is an entirely changed landscape from the primitive, but it is still a pleasing one. The Caribbean is becoming a vast holiday ground with soaring real estate prices, a premium on beaches, and all the possibilities of unsightly development. Indeed, spoliation has already gone far with building on tiny lots. The national park will have considerable biological value in allowing recording of the rehabilitative powers of nature, and on the occasion of our visit we were glad to see botanical research in active progress. The park will preserve some beaches from commercial exploitation and prevent the littoral fauna from being impoverished. The Virgin Islands National Park will for many years be primarily an adjunct to a popular holiday area, but this in no way belittles the high educational and natural history value this reservation of land can have. The climate will cooperate with the National Park Service in recreating a Caribbean wilderness through time.

These three newer national park areas are near to being "pleasuring-grounds" in a style of decorum and sense of preserving for future generations. But "unimpaired" is not the word to be used in managing them. There will be development and change within the range of what these parks represent. Portions of Acadia and Virgin Islands will certainly be restored to nearly as close an approximation of the pristine state as can be found in Yellowstone, but to lose the existing integration with the neighboring human communities in accomplishing this would be tragic.

Our feeling in discussing the problems of these areas with people inside and outside the National Park Service is that opinion has scarcely become flexible enough as yet to accept them as pointers of change in national park conception. To treat them in the arduously learned discipline of the wilder parks would lead to frustration and possible disaster.

We shall deal later with the misfortune the National Park System suffers from having no adequate planning or zoning legislation governing the type of development of areas adjacent to the parks. Sometimes, the United States Forest Service marches with a national park and the result is as near perfection as could be hoped, but there are Gatlinburgs, Cherokees, Estes Parks and White's Cities, which show that some people visiting national parks desire some of the amusements reminiscent of Coney Island; and others, not expecting these, will nevertheless use them on a wet day. Enjoyment of a pleasuring-ground can be interpreted anywhere between the extremes of walking alone in deep wilderness and rubbing shoulders with others on a beach. Is national park enjoyment to compass this span entirely? We have had uncritical and philanthropically-intended answers that it should, although most answers have piously included the proviso that the provision for enjoyment should be such that the national parks are "maintained in absolutely unimpaired form for the use of future generations."

We can neglect that small, uncritical, overgenerous section of opinion that would include Jones Beaches, but would point quite plainly to the fact that we have found no uniformity of interpretation of what a national park can be within the administration of the National Park Service itself. Whatever the pattern, a fabric must have a warp fiber.

We have heard so often the remarks, "Parks are for people" and "It is no good having beautiful areas if the public cannot get into them and see them." Uncritical acceptance of the

implications of these remarks would push aside the welfare of the biological communities represented in the parks, reduce scenery to the bare physiography and its interplay with the climate, and deny continuing existence of truly remote places. Further, in a time when the population is expected to increase considerably along with leisure time and technical ability in moving over remote country, we are bound to ask whether the parks are to be considered as expendable assets, and what kind of enjoyment of national parks will be available for posterity. It is our belief that many people "enjoy" the parks although they do not visit them. The very fact that such preserved areas exist is a matter of immense satisfaction to people who take the view that nature exists in her own right and that it is the

The National Park Resource

THESE is, in the histories of communities in relation to their resource base, a period of learning how to reach the resource and use it, followed by a period of rich enjoyment which seems endless in that happy time; then there comes a choice of working out the resource and losing it, or learning the art and science of conservation that the resource may be perpetuated by wise use. The forest estate of the United States passed through the stages of being a menace to be pushed back, a resource to be used without thought, and finally an estate to be cared for under a body so eminent and able as the United States Forest Service. It is fully realized that there is some blessed, happy moment when the population and the resource are in some momentary balance of usefulness, enjoyment and ecological repose. Unfortunately, the moment of our human enlightenment comes later than the moment of optimum and in the whole story of conservation we are stopping gaps and trying to repair the damage we have allowed to occur. In mentioning the forest estate we have used an example where the resource is finite at any one time, the measure being board-feet and the variables being climate, water supply and fire. These variables are studied intensively to build up a corpus of knowledge of forest management.

The national park estate is finite in acreage, but the resource of national pride, enjoyment and usefulness in the life of the people cannot be set down as board-feet. It is in large measure intangible and we find that most inconsiderable plants, animals and ecological relationships are important parts of the resource both for enjoyment and for maintenance of the biome. The fact that few people understand the scientific detail of the ecology makes no difference to the assumption that a landscape in ecological repose is generally one that gives pleasure.

We return to the question, "What is a national park for?", which, if satisfactorily answered, should help to define what a national park should be, irrespective of the several differing reasons why areas are designated as such. Everglades was designated primarily because of the wonders of the wildlife, plant and animal, in the unique set of circumstances. A new research plan for this park indicates a re-emphasis of the primary obligation and the need to implement it. Certain developments and trends in other national parks in the last 15 years cause us to doubt whether, even if now feasible, there will ever be a real return to a purer conception of the national park. We are well aware that there must be evolution in conceptions and trends but we find ourselves unable to get away from the uncomfortable impression that policy is philosophically unsure and that this is contributing to the general deterioration apparent in several properties.

duty of reflective man, with his dominance over the planet, to conserve the areas represented by national parks for the reasons they were chosen for that dignity.

Our own definition of legitimate enjoyment of national parks would be that it should be of that order which places first the ecological well-being of those areas in relation to their perpetuation as natural biological communities and expanses of natural scenery. The question should be asked: "What is *this* national park for?" This does not preclude development but it limits it to that which is appropriate and calls for individual consideration of every situation where development is contemplated.

Further uncertainty is exhibited by the multiplicity of decisions and different policies resulting from excessive decentralization. The early conception of the National Park Service was for close overall control of properties by the central agency. Despite the obvious necessity for some proliferation and for more flexibility of action within each park, the need remains for the Service to act as one being, firmly convinced in its policy.

The story of the growing pains of the national park heritage has been admirably told by John Ise in his critical history, *Our National Park Policy*. Part Two of this great book describes the several administrations under different directors since the establishment of the National Park Service in 1916 with Steven Mather in charge. This date is memorable for it unified administration and made codification possible. Mather was an example of a rich man giving the rest of his life and a large part of his fortune to achieving what he thought a National Park System and a National Park Service should be. Through the vigor and charm of his personality elan was high and the panache incomparable. Not only has the force and excellence of his administration persisted far beyond his short directorship of 12 years, but the spread of the national park idea about the world has been attended with the same ideals as to standards even if these are not always reached.

Ise quotes the now famous letter of May 13th, 1918 of Secretary Lane to Steven Mather outlining administrative policy [but] throughout [the letter] one finds no mention of wildlife or wildlife policy and no ecological notions whatever; we can see that from such a wise and statesmanlike manifesto following nearly half a century of almost failure, it would be difficult to graft on the biological philosophy which is now generally held by critics of the policy of the National Park Service. Our thinking is almost entirely in line with the Leopold and Robbins Committees whose attitude in short is that unless a biologically informed policy is fully accepted and initiated immediately, the status of the national park heritage is going to deteriorate in all those qualities which inspired its designation.

One thing is certain: there can be no absolute set of standards and statement of policy, and any manual of national park management must emphasize the need for flexibility and impress the fact that every park or monument is such by virtue of individual claims to beauty, history or scientific interest and uniqueness. Flexibility should be always in the realm of procedure enlightened by knowledge, and not in principles driven by expedience.

It is necessary to examine certain democratic convictions

critically in relation to national parks: because they are out of doors, is the visiting capacity to be limitless? A national park has linear boundaries and a vast amount of empty air but its capacity is a matter of subtle and expert assessment. If the stage of "standing room only" is reached, the natural pageant which the people have come to see is largely obscured. The fact must be faced up to that in our era of growing population, more leisure and increased mobility, a national park has need to post a "house full" sign at the gates long before "standing room only" is reached.

We have been under the impression throughout our survey that visitor statistics showing high rates of increase year by year are welcomed as valuable weapons in getting larger appropriations for the National Park Service. Development takes place which will encourage more visits rather than conserve the unique habitats which the parks represent. The supreme example of what appears to us as wholly mistaken policy at this time is the erection of a large building at Petrified Forest on Highway 66, specially designed to entice the public from the highway and to advertise the national parks and monuments. This large building deriving from the pueblo style is so much larger than any pueblo and so lacks the varied surface texture of genuine pueblos that the effect is saddening. An intimate style carried to the megalithic is self-destroying. The building itself violates pristine national park thinking, but its function seems to us out of phase because the present urgent problem is how to cope with 120 million visitors each year to the parks; there is no call for advertising the attractions.

Thinking independently as individuals we have both felt uneasy about the conception of Mission 66. It has seemed to us that this operation over 10 years has been to increase visitation, making it easier to get into the national parks and that the visitors should be more comfortable in various ways once they are there. Mission 66 has done comparatively little for the plants and animals.

THE ENORMOUS INCREASE in drive-in campsites is an example of very expensive facilities which do nothing at all for the ecological maintenance of a park. Some superintendents have resisted proposals to increase drive-in campsites because they restrict ranger activity and impose a burden beyond the capacity of the existing staff. Part of a ranger's responsibility is to get around his beat of the park and to know what is happening in fields other than the human; in fact, at the busiest time when he should be everywhere he tends to become a camp-ground supervisor. We would go farther and say that in an age of better roads and automobiles no more campsites should be made in national parks, and when the present ones need repair, in most cases they should be abandoned and helped to return to the biome by natural succession. Demand for camping space might be controlled to some extent, while at the same time reducing the considerable uncertainty attending a hopeful camper's finding an empty spot at a busy weekend, by requiring advanced bookings for the most popular camp grounds.

Since national parks, too, have limited capacities, it does not seem unreasonable to require those persons wishing to remain overnight also to make reservations in advance. Indeed, it would not be inappropriate to extend the idea to include even day use of such over-popular national park attractions as the Yosemite Valley and Cliff Palace at Mesa Verde. Another possible control on camp ground and park use might be a higher entrance or user fee. Rates could be adjusted to make the most popular spots the most expensive. Curiously, the new Land and Water Conservation Fund entrance permit,

called the "Golden Passport," reduces season rates at most national parks by more than half. Where an increased charge for entrance to a national park would seem sensible in a time of over-use, here is an inducement to entry.

One officer in one of the parks we visited gave us a phrase which we think cannot be bettered. He thought that if the parks were to be preserved in face of steeply-rising numbers of visitors which are politically difficult to control, advantage should be taken of what he called "built-in frictions" to apply the brake. The 30 miles of dusty road into Chaco Canyon was precisely such a built-in friction; failing immediate power to implement a well-planned policy of how to deal with the increased use which the automobile is bringing, it was folly to improve the existing road. Thinking in these terms we would emphasize again that each park presents a particular ecological situation and the only absolute administrative principle can be to consider first the ecological health of a park so that it shall endure for posterity.

We have implied that thought on policy must be flexible and have regard to history and change. How far is present policy an unthinking continuation or adherence to that of the pioneer stages of the national park idea? Yellowstone covers 3,200 square miles of high, rough and remote country. At least it was remote in 1872 and until, possibly, 1920. If it was to be visited, it was obvious that lodges such as those at Mammoth and Old Faithful should be constructed. The journey from Gardner to Old Faithful which once took two days now takes two hours. It is our opinion that the conditions of travel which necessitated accommodation centers within the parks have served also as a mental block to provision of all such facilities outside the parks, where they should be in an age of swift travel and heavy use.

If the national parks are to continue to be a retreat from urban civilization for increasing numbers of people, much of what was permissible in the less-crowded past will need to be more carefully controlled or eliminated. The Park Service has begun to move hotels and camp grounds away from the most spectacular scenery, but not very far away; the parks are still dotted with little islands of civilization. Current expensive development, designed to meet present demands, too often does not envisage long range values.

The Yosemite Valley is the heart of that lovely national park and its most wonderful feature. The Independence Day visitation in 1966 was 54,700. There are nine grocery and general stores in the Valley, seven service stations, a laundry, a barber-shop, three swimming pools, a stock stable, and 4,500 hotel accommodations. Camp grounds are heavily crowded and even the crime rate is increasing.

Our statement that the only absolute administrative principle in the National Park Service is to make ecological health or repose of an area the first consideration is but one way of expressing an idea which has been independently put already by the Leopold Committee on Wildlife Management in the Parks. Their report says "The major policy change which we would recommend to the National Park Service is that it recognize the enormous complexity of ecological communities and the diversity of management procedures required to preserve them." The Leopold Committee was considering wildlife management; our field is larger in that it includes the traumatic action and metabolic activities of that dynamic seasonal immigrant animal, Man. We have had the uncomfortable feeling in the course of our work that such members of the National Park Service as have a high ecological awareness are not taking a significant part in formulation of policy. They should be brought to the ultimate council table.

Development

THE NATIONAL PARK SERVICE tells us, we think much too frequently, that "Parks are for People." Our earlier dismissal of the phrase as inappropriate huckstering does not mean that we are unaware that the parks are indeed for people. In fact, "people," "park visitors," whatever they are called, are responsible for most of the change and development which takes place in and around the national parks. In a sense, even the wilderness portions of the parks are developed since there are trails even in the most remote places. In speaking of development, however, we are referring primarily to those constructions which prepare the park for the ordinary, nearly car-bound, tourist.

We learn that 5% of the Yellowstone National Park is taken up by development, a proportion which seems to us inordinately high, for the traumatic influence of this 5% will be over a much larger area. However, our point is that much of the recent development need not have been within the park at all. For example, the new employee housing area at Mammoth Hot Springs is plain poor planning (especially when remembering that Yosemite is taking ranger housing outside the park, but here we have two administrative regional headquarters pursuing opposite policies). Gardner, five miles to the north and outside Yellowstone National Park, 1,000 feet lower and far more accessible in the winter, would have been a better location for many reasons of cost, landscape and access to schools and stores. The good sense of this is admitted by the National Park Service but a policy of hesitation has won the day and the new Mammoth is a new eyesore. Canyon Village is another seasonal community which covers large acreage and is difficult to justify in its present position. It could just as well have been outside the park and would have played a larger part in the economy of the state of Wyoming. Some would justify the existence of Canyon Village because of its proximity to points of high scenic value in the park. We would take the view that this is a prime reason why Canyon Village should not be there. The same objections apply to trailer camps and automobile camps. They could be outside the park.

We have referred earlier to what appears to be timidity in allowing further building to take place where it is admitted existing buildings would be better removed. Big Bend National Park has as its heart a magnificent basin surrounded by the steep and spectacular Chisos Mountains. The park headquarters has been built 10 miles away outside the basin and it might have been hoped that further development would not have been in the basin. There had been some building of modest accommodations before the property was given to the nation by the state of Texas, when a C. C. C. camp was established in the 30's. These huts had later been run as a hotel operation and further service buildings had been erected. National Park Concessions, Inc., put up some more and better accommodations and there is now a good deal of sporadic unplanned development to be seen from the ground above the basin. In our opinion the basin is getting too full. More building is to be done by the concessioner but the new facilities will replace Dallas huts and there will be no increase in the number of beds. The National Park Service has tried unsuccessfully to reduce the campsites, realizing how easily the basin could be spoiled.

A bolder policy of bringing back the basin to something approaching its pristine state would result in a major scenic asset being able to make its full impact. We realize, of course, that we are suggesting a counsel of perfection, but it would be deplorable if the basin became a little Yosemite Valley by small stages for lack of a forthright initial policy. The camp

ground at least could go or be redesigned, but the concessioner's new and existing buildings must be accepted for the coming 25 to 30 years till they need renewal.

In many respects the period 1935-1940 could be thought of as an optimum in the management of the national park architecture of the United States. The standard of national park architecture was very high indeed, achieving a fitness with the environment which had obviously needed sensitivity in the design office. A well-illustrated book on park structures was issued by the National Park Service in 1935, compiled by Conrad Wirth 16 years before he became director of the Service. The architectural principles and ideals set forth are impeccable and are supported by photographs of existing entrances, signs, restaurants, accommodations and so on.

When we were in Santa Fe we visited the regional headquarters office of the National Park Service and found the building and interior furnishing a most pleasurable experience. The Hispano-Pueblo type of construction is entirely satisfying here.

With these standards so much in mind we have been less happy about more recent buildings, especially if the office of design is far removed from the site. We have remarked on the new staff housing at Mammoth in Yellowstone, which could scarcely be more out of keeping, and though there is nothing wrong with the individual houses of the new ranger village at El Portal outside Yosemite National Park, the layout of the site with a grid of streets is unimaginative and depressing. Not the National Park Service but Congress must be blamed for the parsimony which left the whole site in a raw unfinished state to be landscaped by the rangers themselves.

Another distressing departure from the standards of 1935 is apparent in Camp Eielson Visitor Center far into McKinley National Park, Alaska. The building itself is an appallingly ugly structure set ostentatiously on a knoll in a sublime valley, looking across to the massif of Mount McKinley. The building bears no relation of any kind to the landscape and is obtrusive to say the least. Earlier standards made a point of the buildings not being so.

LEST WE BE THOUGHT to be architecturally reactionary, may we record our delight in the controversial building in Dinosaur National Monument which exhibits the actual face of the quarry in which the skeletons of dinosaurs were set by nature. The glass roof follows the line of the hill which would appear had not the quarry been excavated. This visitor center-cum-museum is brilliantly conceived and we cannot imagine the spirit not being lightened by seeing and entering this building. Further into this 205,000-acre property the natural sandstone architecture of canyons and gorges is superb and uplifting. We were desolated, then, gazing from an overlook to see camp grounds below. Their siting here was quite unnecessary.

It would seem that the presence of a resident landscape architect in a national park is a considerable insurance against bad siting and bad design. Presumably he becomes identified with his terrain and feels for it. First thoughts are given a second time round and revised or even drastically altered or abandoned. It needs time for the unconscious to work and throw up significant points to the conscious mind. One of the reasons for the change from architectural styles of 1935 may well be that the buildings produced from such designs today would be far too expensive. We should accept the point and say how doubly careful one must be in siting them and modifying them to fit a particular landscape.

Camp grounds are extremely expensive of space and it is always difficult to make them esthetically pleasing when in use,

for the automobile and trailer together are no architectural addition to our culture. The camp ground seems to us rather a fetish: it is supposed to recreate for the public the joy of living in the open air, smelling wood smoke and seeing the stars, as so many pioneers were able to do. Putting aside false sentiment, the main attraction of the camp ground is that it costs so little to the user. It is a principal anxiety to the ranger staff.

The psychology of the camp ground is something else and to some of us a quite baffling phenomenon. Mr. Lon Garrison told us of his study in Yosemite in the '30s during which he found that many people apparently liked being crowded in camp grounds. At least, when the density of occupation of camp grounds decreased after Labor Day, there was a general movement from the outliers to the center, where the density consequently remained high.

We would repeat that throughout the national parks and monuments the whole principle and policy of camp grounds should be re-examined and clarified and not be obscured by romantic notions which are not quite true. Obviously, a family must be able to accommodate itself cheaply on a tour of many of the parks and monuments, and camp grounds are popular, but as the significant camping population moves in automobiles, these facilities should not continue in the choice areas of national parks. In most cases there is plenty of room for them outside the parks.

An incidental facet of the whole motor camping movement is the change in the character of the motel. These were once called "tourist cabins" and were very modest accommodations, cheap but decent, but such are now hard to find. The modern motel is more ambitious, with wall-to-wall carpeting and television, and far more expensive. Perhaps the National Park Service could subsidize plain accommodations outside the parks rather than make costly and unsightly camp grounds inside the boundaries.

If buildings and camp grounds are important as objects of early research preparation, they are no less so than roads and their location. Roads draw traffic, quite apart from relieving it elsewhere. Also roads have a habit of acquiring power in their own right. Throughout our history, roads, rights of way and easements concerning them have been major items of legal argument. Roads in and near national parks are tongues of penetration calling for highly concentrated thought and expertise in their planning, yet in the eyes of many people, not least the local politicians and business communities, roads are of essence good and rewarding. This philosophy is constantly pressing on the National Park Service and is even accepted by some individuals in the Service.

Allied to the notion of roads is that of footpaths to points of particular interest in national parks, and such magnificent walks as the Appalachian Trail. Nobody likes black-topped paths on nature trails in what is hopefully thought to be near wilderness, but the human foot in large numbers of pairs is extremely wearing on terrain. Nature has remarkable powers of recovery; indeed, the ecology of natural rehabilitation could be the subject of a valuable textbook, because the vast interplay of plant and animal species and climatic and geological factors is quite inadequately understood.

The Appalachian Trail itself, so grand in conception and achievement, is taking heavy punishment. We allowed ourselves to follow a self-guided nature trail of three-quarters of a mile in the higher ground in the spirit of uninformed interest, using our eyes and being helped by the excellent printed guide (which Uncle Sam offered at 5 cents, but if we felt we could not afford this sum, we were at liberty to take the folder and would we please replace it in the box on our return. This is a good gesture and we learned later that nickels were plentiful

in the collection box). The feet of nature lovers had worn through the moss-covered, spongy forest path to expose the roots of the spruces and balsam firs. The Appalachian Trail crosses this nature trail twice and here we found a trench 12-18 inches deep in the forest floor. Even the purest of nature lovers has physical weight and boots on his feet. Regrettably, we endorse the view that in the absence of any restriction in numbers, portions of the Appalachian Trail will have to be black-topped.

WE WOULD NOW TOUCH UPON a very large problem on which nothing we are likely to say will have much influence, but the problem can scarcely be set down too often, namely, the conduct of areas immediately adjoining national parks and monuments. The magnificent heritage of natural wealth represented by the parks is being endangered by the lack of planning control outside. We had this impressed on us forcibly early in our investigation travelling through Shenandoah along the Skyline Drive and along the Blue Ridge Parkway towards Great Smokies. Shenandoah and the Blue Ridge Parkway are inspiring examples of public endeavor towards beauty in development. Admittedly, we thought the craze for views was perpetuating too much of the sick upland farming, because land in the possession of the National Park Service is actually being leased back to farmers to keep it grazed. There were several bad stretches of erosion. Nature cries out that this ill-used land should go back to trees. Even on the glorious Shenandoah Skyline Drive there are those who complain it is becoming an alley in the trees. This is mere carping, for in fact, numerous viewpoints are kept clear and allow sudden surprises of superb quality.

The pleasure we experienced is emphasized to put our horror in proper perspective when we approached Great Smokies National Park through Maggie Valley. We were really upset by the billboards and signs, the decrepitude of subsistence farming and what it had done to intrinsically beautiful country, and the banal quality of resorts and souvenir trash. Cherokee was shattering, our cup of unhappiness being filled by seeing an Indian feathered from crown to heel sweeping up cigarette ends outside a souvenir shop. To pitchfork a facet of Plains Indian culture into Cherokee is affronting, but for the trappings of chieftainship to be worn by a sweeper-up of cigarette ends was revolting. Soon we were in the park and grateful.

Land prices rocket as soon as a national park is designated and there is little or no control of development on the land adjoining the national park. It may be said, indeed, that designation of a park precipitates unsightly development outside. Cherokee and Gatlinburg, Estes Park at Rocky Mountain and White's City at Carlsbad Caverns—these, surely, are misfortunes which the majority of American citizens would wish to prevent. Such communities have so much to offer in the way of service and that not unprofitably, that space trips at 75 cents, waxworks and the bawl of billboards could be dropped. The opposite extreme was apparent in that area of the Blue Ridge Parkway adjoining the Pisgah National Forest. Worn out farms had become summer homes and the proximity of forest and parkway would make a prospective purchaser confident that he would not be swallowed up in piecemeal development. Proper zoning control of areas adjoining national parks may come in due course, but it is probably a long way ahead. The National Park Service is alive to the handicap it suffers in controlling the situation and, in the example of Great Smoky Mountains, is setting a pattern which may well give an excellent temporary solution, but certainly not a radical cure.

The large problem of development in national parks is

inevitable; whatever is done and whoever does it is going to be criticized, probably unfairly. We are very conscious that as outsiders investigating wear and tear and maintenance of pristine landscape and natural communities of plants and animals, it would be so easy to descend into the ranks of unfair critics without any wish or intention to do so. We wish to emphasize once more our immense pride in the achievement of the National Park Service, spiritually and physically. The qualities which brought the achievement to fruition are still there and will continue; it must be remembered, however, that the Service is greatly expanded from earlier days, the

Management of Plants and Animals

WE HAVE INDICATED in the previous chapter that the human animal is, in a sense, an intruder in the national parks which must be protected from him by careful planning and regulation of use, but what of the animals which live in the parks, and the plants; what are the datum lines that might guide policy in making decisions on preservation of natural communities?

The first uncritical reply might be that it is fundamental in national park thinking that natural communities of plants and animals should be conserved. Of course it is: does not every ranger and naturalist, every museum, every admonishing and educational signboard draw our attention to the need for care? Indeed yes, but through park after park it is inevitable that certain species and groups of species are not quite getting full opportunity to survive. Only two national parks consistently hold wolves, namely, McKinley in Alaska and Isle Royale in Lake Superior. We know that it was not easy to get sanctuary for the wolf in McKinley, but the studies of Adolph Murie published in 1941 had early effect for the benefit of the animal. The wolves in Isle Royale came across the ice one winter and stayed. Their prey is the moose population and Durward Allen has directed a most enlightening protracted study of the relationship of the two species. Six hundred moose and 20 wolves appear to live in balance and we can say that by these two populations being together, the vegetational habitat is conserved. This in itself must mean the conservation of insect communities and other invertebrate relationships. In short, the National Park Service as managers are being saved a lot of trouble, work and thinking.

How different is the great pseudo-wilderness of Yellowstone where the wolf has no place because of down-country filtration into Montana and Wyoming. The result is an elk problem which was analyzed and pointed out in the '30s but which had to wait until the '50s and '60s before action was taken to reduce the elk population to 5,000. One of us had the opportunity to travel in the Yellowstone in 1950 at the time when the aspen groves were wrecks, and the general appearance of these areas was shocking. Our visit in the course of this study was in 1963 when the senior member was impressed by the generally improved look of the park but *the aspen groves had disappeared*: they had been replaced by grasslands which looked neat and tidy. This is how we might have seen it had not one of us not had the longer memory. In truth, allowing the elk in the northern herd to remain at a population of over 12,000 had removed an important species from the ecosystem and Yellowstone was less wilderness than before.

It has been suggested (in the report of the Secretary of the Interior's Advisory Board on Wildlife Management, *op. cit.*) that the national parks should present a "vignette of primitive America" and that "the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man." There is a danger that

national park system is expanded, and above all, the nation's use of the parks has expanded at a greater rate than has either the Service or the area concerned. The course of visitation since 1945 has been of the order of a flash flood, the simile breaking down in the fact that the visitation is no flash after which the terrain will be much as it was before, but a permanent inundation. Government, National Park Service and nation will have to adapt to a new way of life. But this does not mean necessarily that the ideals which brought the national parks into being and the Service to its achievement will have to be relinquished.

these phrases might be misinterpreted as meaning that the change and progression which are basic to natural conditions must be checked and the parks maintained as static museum exhibits. We should prefer to say that the wilderness character of the parks should be preserved by permitting natural processes to continue (except that no catastrophe could be permitted to lay waste an entire park). In some cases re-creation of an earlier, more primitive, scene may be desirable, but the opportunity for new landscapes and habitats to develop should not be proscribed. The larger parks have room for many differing successional stages, but no area is sufficiently large or sufficiently remote to remain entirely unaltered by the activities of man. In some parks the effect is very slight and little corrective action is needed. For others a semblance of wilderness is possible only with careful and intensive management.

At Yellowstone the National Park Service is saddled with the unpleasant task of killing a large number of elk each year when the animals are on winter range and more or less useless as food. Further, the reduced population will have a better calving rate and the numbers to be killed will remain high. The waste is dreadful but the alternative is not good. We talked with a member of the Wyoming Outfitters' Association who did not go as far as many of his associates who wished hunting to be allowed. He would like to see elk on the summer range moved eastward by helicopter or by good scouts, into the shooting country of Wyoming, and out of their Yellowstone sanctuary. His thesis is that the Yellowstone herd is being incremented annually by Wyoming elk because of the sanctuary the park provides. Also, he was dead against shooting in January and February and wished all reduction to be by live trapping and the animals to be let loose elsewhere in Wyoming. However, we learned from other sources that Wyoming already has elk problems and that live-trapped elk from Yellowstone are being more or less set down in feed lots until places can be found for them.

We talked with Dr. John Craighead, who has done so much work on the grizzly bears in Yellowstone. He would like to see more elk shot and left in the high ground as carrion for bears and any other carnivores and scavengers, but he admits this might create a build-up of grizzlies which would cause further trouble in due course. Our own comment on this would be to say that if there were to be a build-up of the grizzly bear population, they would begin to prey on the elk calves and this might be the best way of keeping the elk population stable.

The question of hunting in national parks has been debated with heat through the years wherever there is an animal population which might grow beyond the safe grazing capacity. So far hunting has been resisted except in Grand Teton where there has been controlled activity of this kind. In fact, public hunting is an extremely inefficient method of thinning a population of, say, deer or elk; sport hunters in general do not like walking very far and still less carrying a carcass

out of remote country. Many studies of amateur hunting pressures show this "roadside" quality of the Nimrods. The Chief Naturalist of Yellowstone, answering demands for public hunting to reduce the elk herd, said, "If their ability was equal to that of the 1,002 hunters in Grand Teton, nearly 18,000 hunters would have killed the 5,000 elk, plus 196 illegal moose, 410 illegal elk and 17 men, along with an undetermined number of bears, coyotes, bighorn sheep, antelope, bison, mule deer and horses." The idea is laughable when reduced to this kind of logic, but more detail is needed to make the situation clear.

We were alarmed to find the old established privilege of fishing in the national parks being given an odd twist by biologists of the Bureau of Sport Fisheries and Wildlife working on Yellowstone Lake: they alluded to the valuable fishery of the Lake as if it were a commercial asset and we heard questioned the fact that the white pelicans probably extract a catch equal to that extracted by the public. Could the pelicans continue to be allowed so much in view of the sharply rising number of sports fishermen?

Imagine our surprise on learning that the N. P. S. actually did control (a nice euphemism) the Yellowstone pelicans between 1924 and 1931, when the fish hatchery at the Lake was in operation. Fortunately such activity has not been resumed and policy, stated first in the early 1930's and adhered to since, has protected the rights of native predators "to share normally in the benefits of fish culture."

We would put the point of view at this juncture that the privilege of fishing in the national parks is one that needs radical reconsideration. The privilege was given without question at the beginning of national park history: the right to fish with a rod is the almost inalienable right of every American; but again we are up against what was once a perfectly sensible decision being carried forward into a period and circumstances entirely different. This right in our day is of the nature of vestigial remains in evolution. Earlier in national park history a certain amount of living off the country was considered a legitimate part of the park experience. To a limited extent fishing continues in this category today with some campers catching and cooking their suppers. The National Park Service promotion called "Fishing for fun" emphasizes the fact that angling as a sport is completely unrelated to any feeling of man's dependence on nature. This idea seems so foreign to the ethics of the National Park Service as we have known it, that we wonder how it came to be used even while admitting that the intention is to protect fish populations by reducing the kill.

In the past the National Park Service was so philanthropic and unthinking as to follow a policy of stocking remote lakes in fragile country where no sport fish existed formerly. The use of live bait introduced undesirable species, a most unecological procedure in conserving the parks unimpaired. Fortunately, the Service outlawed live bait in the parks many decades ago, but stocking once begun is difficult to stop. Fishermen "collect" remote lakes as status symbols and talking points; they will make great efforts to fish these remote lakes, involving much wear of trails and detrimental treading round lake edges.

Fishing, surely, is one of those outworn privileges in a national park of the later 20th century, the more so as so many impoundments of water have been made in many parts of the United States and where fishing is properly encouraged.

Shooting of wild game has long been prohibited in the national parks and the idea is so firmly implanted in the public mind that the proper control of animal populations by the National Park Service has been uncritically resisted until disaster point has been reached. The killing of fish is still something quite different in the public mind, yet if scientists,

moralists and esthetes were to sit down together to talk round the subject, they would find it difficult to state logical reasons for treating these various park vertebrates by such different criteria.

Our opinion is that giving sanctuary to the indigenous fish as well as to many other forms of life in the national parks would be a logical development which would have an immediate beneficial effect on the ecological pressures of various kinds we have mentioned. A beginning has been made in a few national parks where some waters formerly open to fishing are now closed because fishing and an overabundance of fishermen were clearly detrimental to scenery, wildlife and vegetation. All lake shores and river basin systems should be protected and the avian fauna depending on the lakes and streams for its food should have its first right respected. There is the further significant point that many human visitors to the national parks find immense pleasure in the bird life to be seen. Any restriction of it, such as of the white pelicans which appear to be direct competitors with the sport fishermen, would be abhorrent if the restriction were to allow a greater take by the fishermen in a national park.

AT THIS POINT we should like to comment on the general problem of exotics without suggesting that we presume to offer solutions. There is a general belief that the presence of exotics in a national park is to be deplored and that is probably sound enough. All the same, the ecology of exotics is quite complex and it is difficult to subscribe to the purist attitude we have heard so often both inside and outside the National Park Service. How many areas are free from exotics? What is and what is not an exotic by this time? Why is an exotic present? What is an exotic doing—good or harm, or both?

Of course, man is the great conveyor of exotics, purposely or accidentally, and everybody knows about rats and mongooses and garden weeds. Remarkably few people know that exotics have difficulty in breaking into a stable climax community, or that in the course of natural succession an exotic appearing, say as an annual weed, at an early stage is unlikely to persist into later and more complex stages of succession. The question of the status of exotics should not cause hysterical reactions until each example is thought through.

Our opinion is that even if one would prefer to be without these exotics, there is no point in wasting time and money getting rid of them. The appearance and spread of any exotic plant almost axiomatically should cause us to say, "What have we done to this ecosystem that allows this plant to take hold?" It is so often a matter of the mote and the beam.

But what of the goat, that Mephistophelean disastrous exotic which is established almost ineradicably over half the world? It is hurtful to have such hard feelings as we must have for this lovable, humorous, intelligent and persistent creature, but the species is a major problem, not least in national parks. But even here we have had disturbing doubts: our month in the islands of the Hawaiian group was most enlightening to our general education, including contemplation of the goat and its works. We sat along the Hilina Pali trail looking down from about 2,250 feet over the inhospitable lava slopes to a coastal plain west of Halape. Behind us were forests of *ohia* which all of us wish to conserve; the coastal strip was green with grass, the miles between were a-a lava. As we gazed through binoculars, about 1,000 goats were grazing and resting on the few hundred acres of grass. We grew reflective.

The Hawaiian group of islands is purely volcanic and, being so far from any other islands or continents, acquired naturally relatively few plants and animals. The natural communities were simple because Hawaii was hard to reach by floating seeds, spores and so on. Polynesian man colonizing Hawaii possibly 1,200 years ago found very little to sustain

him in the forests of tree fern. It would seem that in his wisdom gained by occupancy of so many islands, the Polynesian brought the breadfruit, taro and the yam with him and possibly a score more plants. Hawaii, then, gained some exotics and many others followed, plant and animal. The European discovery of Hawaii in the 1770's was not of a pristine plant and animal community. Introductions of new species were almost the order of the new experimental age. Some grasses had certainly arrived in Hawaii by then, but many new ones came with the Europeans and the weeds of arable land. Captain Cook presented the goats and was doubtless convinced of the benefits of this step.

So here were 1,000 descendants of those exotic goats comfortably ensconced on these few hundred acres of exotic grass. One does not have to be immoderately pure to declare war on the goats which sometimes come up the slopes and attack the fringes of the *koa* forest, but to be a logical purist on the matter of exotics, the grass should be pulled up and got rid of as well. Is that likely, or even possible? We think not.

But what of the grass? In the absence of goats to eat it, the grass will grow long and wither and become a fire hazard to the forest above. Possibly, lacking any better animal (and God forbid the rabbit!) there is an optimum population of goats which would subsist by keeping down the grass without having to go up to the fringes of the forest. If an ecological study supported such a view, the goat in severely pruned numbers in this particular situation would not be an altogether harmful exotic.

Let us now move over to the island of Maui where the great caldera of Haleakala lies at around 7,000 feet altitude between peaks of 9,000 and 10,000 feet. It is a superb property of the National Park Service, managed with impeccable restraint for the benefit of the natural communities of plants and animals in the crater. The goat is the enemy and nothing whatever can be said in extenuation of its presence. The leguminous *mamane* tree is indigenous and is being bitten back

The Concept of Wilderness in National Parks

WILDERNESS IS ANOTHER OF THOSE WORDS which have suffered some erosion or derogatory change of connotation through the years. The Oxford English Dictionary derives the word from Old English, possibly wild-deer-ness, but the plain definition is wild, uncultivated land, uninhabited by human beings but occupied by the wild animals. Webster says "a tract of land or a region (as a forest or wide barren plain) uncultivated and uninhabited by human beings . . . an empty or pathless area . . . a part of a garden devoted to wild growth." Through history the tendency has been to think of a cultivated place as being better or more acceptable than a wild one; then an untended garden became a wilderness in common parlance; and finally the politicians gathered the word into their fevered vocabulary to signify the state of being out of power. Webster, at least, has lifted the word from an utter abyss by speaking of a part of a garden devoted to wild growth.

The word has also kept its nobility for the few and in this day of human crisis we know there is nothing derogatory or outmoded in the notion of wilderness. The dedication of wilderness was a large part of the early national park idea, although but a few could have foreseen a time when little wilderness would remain. The Wilderness Act of September 3, 1964 was hard fought before it became law and is a true sign of our predicament.

to extinction by the goats which are partial to it. The particular type of *ohia* is also being attacked. That unique and spectacular plant, the silver-sword, is a favorite food of the goats; only the fact that most of the remaining plants are in a part of the crater which leaves the goats without any retreat into cliffs, has saved them so far.

There could be no driving of goats here in the crater in a habitat of cliffs; it must be steady picking off by shooting. But that would be useless unless infiltration could be stopped and that means a goat-proof fence along the 26 miles of the perimeter. The National Park Service has undertaken this \$75,000 task since our visit and every United States citizen should be grateful. This was a task undertaken solely for the benefit of the silent community of plants, and in the finest tradition of the national parks.

We have already noted our admiration for the National Park Service and system as they were during the 1930's. A particularly promising development of that period was the acceptance by the Service of the recommendations of Messrs. Wright, Dixon and Thompson as published in *National Park Fauna Series Numbers 1 and 2*. The authors of these reports were absorbed into the Service as a new Wildlife Division and a corps of biologists was established. For a few years park development plans had to be approved by the biologists as well as the engineers and landscape architects.

In most essentials the Leopold and Robbins Committees have only restated, 30 years later, the conclusions of Wright, Dixon and Thompson. It seems incredible that such a promising line of management should have been abandoned, particularly since ecological deterioration in many parks has now progressed so far that it is noticed by even the casual park visitor. We have spoken of what appears to be indecision in many areas of national park management. In the matters of ecological awareness and responsibility there seems to be positive resistance to new ideas, or re-acceptance of old.

The definition here is practical, a basis from which a Wilderness System can be identified and designated:

"A Wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this act an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

The wilderness we seek to protect in the national parks and forests carries much more than the necessarily bare description of the act. True wilderness has no voice except that drawn forth from the few human beings who have spent their 40 days there and have returned with that which they are unable to tell. Even so, we believe the wild areas we seek to protect have meaning also for the many who will never know them in their physical aspects. There is a wilderness of mind and spirit

which those who are called have the courage to enter, dwell there a space and return again; yet our minds and language are so full of simile and metaphor that this intellectual and spiritual wilderness is set about with forests, ocean, desert, and mountain; with storm, maelstrom, sunlit glades and far distance. To deprive the globe of physical wilderness would be to give a deep wound to our own kind.

We would say the national park idea in its highest expression is an aspect of true religion, and to have it beset by expediency in our time of need is grievous. All now realize that the national parks cannot be wholly a wilderness system in a modern world, but the national parks of the roads, the museums, visitor centers, campsites and scenic outlooks are in effect a staging point to the wilderness. When we are tempted to turn away, sickened at misuse and apparent non-participation by some types of visitors, let us remember the responsibility of our deep convictions of the true significance of national parks as part of our faith. If we become faint of heart this noble idea is lost.

Many, even most, national parks contain wilderness areas, but at this moment in time they need proclamation and the firm decision to hold them as such. When the Yellowstone was made a national park most of the country around was equally wild. This is so no longer and within the park we see that the true wilderness areas are not at the center but towards the boundaries, and we cannot but fear, though these areas are something special in our conception of the Yellowstone, not just wild country to walk in but the fiber of the national park itself. The parks are where they are because of these unique wonders which can be sustained only if the general wild quality of the park is respected.

The act instructs the National Park Service and other federal agencies over a period of years to identify parcels of land larger than 5,000 acres which might qualify as wilderness and to evaluate them for inclusion in a wilderness system. No minimum area is specified if it is worthwhile, even so little as 500 acres. Restriction of use of the parcels of wilderness will be mainly by controlling means of transportation. There will be no roads made into the land and no engines will be allowed, such as tote goats or inboard motors for boats. There will be no flying in. Pack horses are to be allowed, and rather surprisingly there does not seem to be a definite limit put on the size of the trains. No permanent structures will be erected.

The act does not allow itself to be bogged down by any scientific criterion of wilderness, and wisely. In general a wilderness area will appear in essentials to be unaltered by man, but the act recognizes that secondary forest or grassland may still attain to wilderness quality. Happily, elimination of mining is envisaged. Management, so far as it is necessary, will be permitted, but there will be no rules of management. All of this seems to us wise and far-seeing.

Procedure in terms of the instruction of the act seems fairly simple for the Forest Service, but the National Park Service will be in greater difficulty because of its innate philanthropic ethos which, perhaps, the Service does not quite realize is one of its potential weaknesses. Tentative wilderness zoning plans are already in circulation and we wonder whether some of these have been drawn on the basis of wilderness now, or of thinking in terms of zoning for development of visitor facilities in the future.

A decision not to build roads into a wilderness area surely should not mean that when wilderness (in terms of ecosystems) lies athwart an existing road, the boundaries of such a wilderness must go back in half a mile or more. Such a decision would leave wide corridors along roads as areas of potential development not managed as wilderness. Restriction on parking, pic-

nicking or camping along such stretches of existing road would be all that would be required to maintain the roadside corridors as essential wilderness. The National Park Service has given itself another arbitrary limitation, that wilderness should exclude those areas which might be in sight or sound of civilization. All of us might prefer it that way but it could be too harsh a criterion. An island in Florida Bay serving as a nesting site for roseate spoonbills and other water birds could be excluded for such a reason, whereas, as long as the public does not go ashore, such an island is essentially wilderness.

The criterion of roads in evaluation for wilderness will much affect Great Smoky Mountains National Park. We see from the tentative plan that whereas three-quarters of the park could be wilderness, imposition of arbitrary corridors either side of existing and proposed roads will reduce wilderness to only half of the park. This appears to us an unnecessary penalty to be placed on this magnificent area of natural forest.

We must realize here, of course, that there are two main calls for wilderness: first, the opportunities for ecosystems of plants and animals to survive; and second, the need of wilderness for the human soul, for shriving, purification and recreation. The difference between a strict wildlife reserve and wilderness in its mystical aspect may not be easy to set down on paper but the notions should be separate enough in the mind not to let one or other conception exclude an area from being designated and respected as wilderness. It is a primary duty of management of any national park that as much of its area as possible should be wilderness or near wilderness if management is to fulfill the intent of the 1916 act setting up the Service.

WE HAVE BEEN IMPRESSED by the documents emanating recently from the National Parks Association on the subject of delineation of wilderness. In the principles set forth in the Association's plan for Sequoia-Kings Canyon National Parks appears this statement which could scarcely be more terse and less equivocal: "*Wilderness starts at the road and any buffer to remove the sights or sounds of man should be internal to the boundary of wilderness. Otherwise, new incursions will result in a steadily retreating wilderness.*"

The President of the Association, Anthony Wayne Smith, has repeatedly emphasized in recent years how wilderness-consuming activities could be removed to the outside of national parks, and how planned deployment of recreational activities in existing publicly-owned lands adjacent or close to the national parks would go far to conserve those unique qualities for which the national park itself was dedicated and of which wilderness is of never-lessening significance. We ourselves have often had the uncomfortable feeling that the philanthropic ethos of the National Park Service has overshadowed the primary necessity to conserve the habitat. Implementation of the Wilderness Act by the Service should strengthen the ecological resistance of the parks to the pressures which beset them, but a misguided leaning towards dichotomy of values in assessments of national park terrain could well hasten decline of habitat rather than prevent it. Such a trend would be an ironical negation of what the Wilderness Act is designed to achieve.

Finally, we would emphasize that the National Park Service Act of 1916 contained all that was necessary to preserve the wilderness quality of the national parks. The interpretation of the act by the National Park Service achieved this end fairly successfully until the end of the Second War, but the inundation of the parks by visitors in the post-war years was not grasped by the authorities for the destructive phenomenon it was. We feel that the eclipse of Park Service Director Newton Drury was a function of this failure in understanding what was

happening. The Service as it later reacted to pressures was over-generous with a perishable and shrinking resource and did not act quickly enough in coordinating with other agencies to spread the load and to divert fun-seeking recreation to other areas than the national parks. The U.S. Forest Service was, in our opinion, much more politically aware of the trend of the times, as the National Park Service was naive. Mission 66, instead of being a far-sighted planning operation to conserve these choice areas, seems to have been conceived to allow more complete infiltration and uncritical use. We remain somewhat puzzled by—as it seems to us—the unfair political pressures which have been brought to bear on the National Park Service to dilute wilderness quality, e.g., the extravagant utterances concerning motorboating on Jenny Lake in Grand Teton National Park, and the relative peace with which the Forest Service has been able to conduct its wilderness-preserving and recreational policy.

The national park policies of the 20's and 30's were not adequate in the 50's and 60's, and the National Park Service has not adapted quickly enough to the new situation. Indeed, Mission 66 was in some measure in reverse trend. In singling out wilderness for special protection the 1964 act has certainly forced the National Park Service to reconsider some portions of its management policy, but a restatement of general national park principles in terms of the situation in the 1960's might have been more productive of safeguards for the parks. The present desire of the National Park Service

to designate as wilderness only areas of some subjective and probably hypothetical purity is another sample of high-toned fluffy thinking. Nearly all the parks were wilderness in reality or intention at their inception and should be so considered, without drawing imaginary lines of purity within the parks, caused by our intellectual differentiations of wilderness qualities. And effort must be concerted to moving outside the parks those so-called facilities which at present encumber them. Canyon Village in the one-time wilderness of the Yellowstone remains for us the type specimen of misconceived pandering to the less appreciative and more uncritical section of public taste. Surely the responsibility and part function of the National Park Service is to educate for taste and lead it.

In conclusion, we foresee a time of greater realization that in an area of large, mobile, leisured populations, it is a privilege rather than an unheeded right to visit the superb national properties maintained as well as they are by the devoted labor of the National Park Service in the field. Certain forms of decorous behavior should be accepted and not questioned. The National Gallery of Art and the great museums expect and get such behavior within their precincts. The national parks of the United States present the glorious creations of nature and no expediency or misconception of their beauty must endanger the world heritage of which they are so shining a part. Art is but an emanation from the matrix of nature to which we must return always for refreshment and new inspiration. ■



LAKE MANYAS:

A TURKISH PARK FOR BIRDS

By Charles E. Adelson

Photographs by H. Angelo-Castrillon

ON THE SHORES OF HISTORIC LAKE MANYAS, JUST inland from the Sea of Marmara port of Bandırma, Turkey has now established a sanctuary—a national park, purpose of which is preservation of the breeding grounds of enormous numbers of birds.

Visitors leave the Bandırma highway, where a rustic sign *Bird Paradise National Park, Recreation Area* points lakeward, and travel over wide fields roamed by sheep and young horses until they come to the tiny village of Sığırçık, where sheep dogs big as mastiffs share the street with high-wheeled peasant wagons and where a vast and welcome stork population inhabits the rooftops. Beyond the village, and at the end of a road often more or less under a shallow sheet of lake water with the coming of the rains, is Turkey's officially designated *Kuş Cenneti*, or Bird Paradise.

This is a pioneer effort in Turkey, an effort all the more worthy of commendation and notice because it ventures into fields of conservation and the maintenance of a special regional ecology where none had thought of venturing before. The hand of the central government at Ankara extends itself to Lake Manyas in a gesture of protection, and the park in a real sense is the property of the Turkish people themselves; truly a *national* park. But the elaborate administrative and security mechanisms we associate with

such parks in the western world remain to be implemented here. No corps of highly trained rangers devotes itself to interpretation or to thwarting the destructiveness of poacher or fowler. Not yet. But something has been done here that has not been done before. The *promise* at Lake Manyas is very great. The urgency of keeping the sanctuary alive, of educating the population in the meaning of the park, is overwhelmingly great.

The lake region has long been famous for its wild creatures. In the fifth century B.C., Xenophon wrote of the Lake Manyas countryside: "Agesilaus set off himself for Dascyleion the place where the palace of Pharnabazus (the Persian satrap) was situated and round about it were many large villages stocked with provisions and splendid wild animals, some of them in enclosed parks (*paradeisos*), others in open spaces. There was also a river (the modern Karasuyu or Black Water) filled with all kinds of fish, flowing by the palace. And besides, there was winged game in abundance for those who knew how to take it."

Today an imposing gate affords access to the sanctuary. A building is being improved as a small museum, tidy rooms are usually home to visiting ornithologists or wandering writers from abroad, and stern but friendly Ali Bey, in fisherman's boots probably, and just as probably stepping out of his flat-bottomed boat, welcomes you to



Inhabitants of the flat grazing lands in the vicinity of Lake Manyas were at first opposed to protection of the lake's birds, supposing them destructive to fish and trees; but now they are beginning to understand how the sanctuary attracts visitors, with their beneficial effect on the local economy.

Birds and their nests in the inundated willow woods at Bird Paradise National Park.



Bird Paradise. Ali Bey, a hearty Anatolian, is forester, self-taught naturalist, and self-declared "godfather" to the thousands of birds at the park. It is in his little boat that he regularly patrols the watery expanse of the national park, and it is in the same boat that visitors are taken out on the lake to see the herons, spoonbills, egrets, and cormorants who are the citizens of Bird Paradise. Poachers are the paramount worry of Ali Bey, though he does not hesitate to admonish even important guests who would clap their hands at the nesting birds to make them fly.

As summer grows golden in Turkey the whole area before the sanctuary headquarters is quite dry, lake waters having receded. One walks, then, wherever he may through willow woods. But with the coming of the spring rains Lake Manyas rises, and each willow tree becomes an "island"; and to the willows, and to the lake's thick reed patches, come thousands upon thousands of birds, each one eager to begin again the eternal nesting cycle that will keep alive its kind.

The herons, called "ash-colored herons" or in Turkish *külrengi balikçil*, are the most common birds on the lake. They arrive in February, breed in April, their young hatching in May. Now and then excited birds blunder into the wrong nests. Always the lawful tenants angrily stand their ground until the intruders fly off. The breeding grounds are an orderly social organization, with the various species each inhabiting favored nesting areas and "home owners" vigorously asserting their rights.

March finds the spoonbills surveying breeding sites. April sees them breeding, and young spoonbills mostly greet the world on a day in May. This month is breeding time, too, for the little egret. Among the Anatolians the little egret is known as the "little white heron" or in Turkish *küçük beyaz balikçil*. The name *balikçil* is a curious word applied to a variety of birds. Invariably it is translated "heron." More scrupulously translated, it approaches "fish(er)."

A much later breeder among the "fishers" of Lake Manyas is the purple heron, known to Turks by the rather

romantic-sounding name of "Judas tree heron," and to scientists by the less romantic term *Erguvani balikçil*. The purple herons' young appear in July.

Solicitous Ali Bey worrying over his birds, the purposeful scientists coming and going at the sanctuary, and that very official-looking gateway all indicate an atmosphere of well-being at Bird Paradise. And such is the state of the great refuge today. But the national park was at first obstructed by a stubborn peasantry to which, in a most peculiar way, all birds are *not* alike. The lordly storks of Sığırçık Village, of course, have never had a problem surviving. To the Turkish peasant the stork winging his way southward—according to folk belief, presumably to the land of Holy Mecca—and returning after completing his "pilgrimage," is the beloved "Pilgrim Stork." He is not only a pious bird, but in Turkey he is a universal symbol of exemplary family life. A medieval Turkish society devoted its entire energy to the succor of infant storks fallen from their nests, and even today the *imams* or chaplains of Istanbul's holiest mosque, *Eyüp Sultan*, do much the same good thing for old or injured storks found in distress along the Golden Horn. But the other birds on the shores of Lake Manyas have never enjoyed the easy way of the stork—at

least, not until recent times brought a changing attitude.

In one memorable year, when a moth (*Hyponomeuta*) caused grave damage in the willow woods, the villagers were up in arms, angry and sure that it was the hapless "fishers" who had stripped the trees of leaves. And the same villagers insisted that they were being robbed of their summer shade by birds that "broke the branches of the willows." When it became lawful to take unlimited catches of pike from the lake, and when as a result the uncountable numbers of tiny fish that thus survived found themselves in desperate competition for a diminishing food supply with, therefore, few fish growing to any size, the lake fishermen shook their heads and accused "those birds" of devouring all the bigger fish in the lake. To facilitate breeding of the wild birds, then, was unpardonable folly. Happily, the government thought otherwise. And slowly the villagers are accepting the notion that visitors to the park might some day give a substantial boost, with tourist *liras*, to the village economy.

THERE HAD ALWAYS BEEN Turkish minds, of course, to whom the prospect of a bird sanctuary at Lake Manyas was appealing. Focal point of a sort for Turkish conservation appeared in the 1930's with the arrival from Germany of the geneticist Prof. Dr. Kurt Kosswig. In those days he was primarily engaged in studying the fishes of Turkey's coastal waters and lakes. His work brought him to Lake Manyas, where he stood impressed by the sight of the breeding grounds, calling them those "miraculous woods." He saw Lake Manyas as it might be—a developed area of conservation, a place of sanctuary open to all Turks and the rest of the interested world. Later he would write: ". . . by bringing large groups of people here, it would be possible to show them one of the beauties of nature, and in this way it would be as possible to awake love for this beautiful aspect of Turkey and of nature itself." Other Turkish mentalities caught something of the fire of Kosswig's enthusiasm, and the pioneer national park is the fruition of their thinking, their idealism.

Plans are now afoot to attract yet other wild birds to nest at the lake. Pelicans, for example—as many as two or three hundred at a time—have come to Lake Manyas in the spring, but only as visitors. With encouragement and protection they might well decide to nest there. There is great hope that wild swans also will come to Bird Paradise, to nest and rear their young.

Today the great attraction of Lake Manyas is that within no more than 17,000 square meters (about 41 acres), and among eight thousand trees, the community life of many species of birds may be observed easily, even comfortably, without disrupting the peaceful continuity of that life. As many as 28 nests have been counted in a single tree of no great size. The bird life of the sanctuary is concentrated in a highly visible way in what is, in effect, a true theater of bird habit.

The lasting value of Lake Manyas and Bird Paradise is the assurance that here, safe from the gun, preserved from the accelerating encroachment of an increasing population and serving as a land and water sanctuary for wildlife after other lake areas have been reclaimed for agricultural use, will always exist a most unusual Turkish national park. ■



Ali Bey, zealous Anatolian "godfather" to the birds of Lake Manyas, is shown with nets typical of those used to bring in the giant catfish of the lake. Normally fishing in the area of bird breeding grounds is not permitted at the park.

There is a simple landing stage at the park for boats that carry visitors out under the willows during the period of inundation to see the thousands of nesting herons, spoonbills, egrets and cormorants.





Photograph by the author



Photograph by the author

Near Grandview Point in the Canyonlands, an odd group of nodules is weathering from the bedrock like so many misshapen cannonballs.

Upheaval Dome in the northwest quadrant of Canyonlands National Park is an enigmatic geologic phenomenon suggesting volcanic action that may actually be related to a salt dome lying at some depth below.

Some Thoughts on a Hike Through Canyonlands Park

By Phillip L. Nelson

A last glimpse of Yosemite Park's Long Meadow fades behind trees. One can feel expectation. A brook turns to mist and thunder. A stone grows to monolithic granite. The Land faces the Valley.

From the forest thrusts the rock, soaring, floating, hazy in a dream. Tensed and waiting, one can feel the culmination of all Yosemite approaching at the trail's next bend. It will shout the message only whispered by the miles before.

That bend does exist. It comes. The trail is paved beyond it. Mules stink beyond it. One must stop. Tuolumne Meadows, Cathedral Peak and Island Pass must be left behind, perhaps to whisper the message. There will be no shout. Too many people chatter.

THERE IS NO PLACE AS YET IN UTAH'S CANYONLANDS National Park from which the hiker must flee. Chesler Park is not yet a Yosemite Valley. Each canyon, promontory, rock and shadow can be explored by a hiker with ever-heightened expectation. A college friend and I found some of those rocks and shadows this past summer; and we also hiked through Yosemite National Park to the edge of Yosemite Valley. We have thought much. How does one, developing this new national park, insure that no "Valleys" will ever infect its land? How can the whole park be made to communicate most effectively with the people? What might Canyonlands say?

As we hiked farther into its sage and sandstone, Canyonlands became to us an area of two contrasts: the liveable-unliveable and the believable-unbelievable.

Springs that made the land liveable we found in believable country. A spring along the edge of Salt Creek, a bit of damp green in Horse Canyon or simply the level sand of a wash seemed real and not from a dream or the imagi-



Photograph by the author

Chesler Park in Canyonlands: in developing a new national park, how does one insure that no "Yosemite Valleys" will ever infect its terrain, that it may communicate more effectively with the American public?

nation. Even the most caustic and illusive seep, the faintest darkening of green in a shadow, a pocket of real soil: they spoke of possibility—of life.

The Indian ruins are a believable type, unlike the Mesa Verde variety that seems a part of some myth or fairy tale. We could picture people living once in Canyonlands as we hid from high noon's heat beneath an overhang. They probably did the same. Their land was just barely liveable, but they managed. They must have believed in their land. In Indian country we could see where flowing water cut the rock and could recognize a story of land formation. We could feel comfortable as we searched the sand for evening water.

But as the country gets wilder and the springs and ruins are left behind, the rock and sky begin to swirl faster and faster in the red heat. The dry green of Chesler Park's floor merely cuts its walls sharper into the sky. One could perhaps comprehend a conservative canyon wall above grass. That common plant lifts the walls of Chesler

Park yet farther away from one's ability to understand. Has it always been there? Can any explanation account for such an impossibility?

From timelessness to immediacy the impossibility spans—from Chesler Park to Upheaval Dome. A first page in the earth's autobiography might be Upheaval Dome. In the rawness of its dryness and color, of its rock and salt, one can feel the earth welling up in creation. One can get frightened, staring into its green center.

The diversity and the unity of Canyonlands led us to our interpretation; they might have led to another. Whatever the interpretation, it should cause one to perceive the unity from which it came.

The land is rock—rock being eroded away and in that eroding being changed and thus formed anew. Rock scoured by water and sand and seared by the sun's heat, inhospitable to any life; or rock holding some water and sand beneath those rays, and growing grass. Indian stones delicately holding their dried mud away from the ageless

rain; or destructive stones thundering down past Druid Arch in a sudden torrent.

Before being carried away by all this, there are the questions. What can one say about Yosemite Valley and Chesler Park? If one can feel the unity of the Canyonlands country (or of any country), one will realize that the whole land proclaims the same message. If one senses the diversity, one can begin to see that each part of the land speaks differently, in an endless variety of tones and tempers. One will then not elevate one feature above all others, idolizing it into infamy, but will perceive the clarity and place of whisper.

Can administrators and interpreters not, therefore, include the whole park in an effort to communicate with people? Possibly, visitors may have to be concentrated at certain locations so that other areas can still communi-

cate their message. But if one realizes the infinite possibility of a diverse land, one will refuse both to sacrifice any part completely and to allow any variation of the theme to go unnoticed.

The communication that is a goal of managing the area is also a tool in that management. Not all visitors can or will walk, but effective interpretation can replace many footsteps. It can replace at least enough to allow the concentration of hordes in precise, tasteful manner at each point where the land will speak to the visitors, to prevent the silencing of any voice.

Ranger Ryan graciously talked with us at Canyonlands about plans for the park. We did not at first understand when he spoke of an interpretive program based on the simplicity of rock and erosion. After more wandering over the sand and stone we began to feel what he meant. But

As a clear and colorful commentary on the work of erosion the terrain in Canyonlands Park is perhaps unexcelled in this country or elsewhere. View below shows a portion of Monument Basin from the so-called Island in the Sky.

Photograph by Gene Ahrens



the land will not interpret itself to all. The simpler the story and its presentation, the more care and effort are necessary in its construction and the greater will be its effect. A simple story of diversity and unity or of rock and water cannot be approached passively through "reliance on personal services and a simple story, not to be played up at all." Our footsteps were many: we have asked Interpretation to do much.

The difference between walking into Chesler Park and driving is as infinite as the wonder of its walls. The anguished silence of a ridge slashed by macadam could speak only of reproach. Ranger Ryan's words concerning the recent limitations on proposed road development were wonderful to hear. Care to keep concession facilities beyond the boundaries will make Interpretation's job at least possible to perform. Chesler Park has a chance.

We must let it continue speaking the very message that alone will give it the chance. The message must be spoken to us whose pollution and smog and slums have not yet been seen by the sandstone on the Green River. It is a message of feeling for the environment. At first it is an attempt merely to inspire an awareness of which feeling will follow. The message, however, can be communicated only through feelings of interrelationships. They might be the feelings in Philadelphia of men's wishes for themselves and the land, of an environment they chose to flee and another they chose to adopt, or feelings in Canyonlands of stone, water and life, non-human and human, for all time.

Canyonlands spoke well to us, fortunate to walk in its heat. Chesler Park could continue to shout among the whispering stones. Together, they can raise a message above our chatter. ■

To the north and west of the high plateau called the Island in the Sky a bright panorama of cliff and canyon rolls away to the horizon. The deep canyon of the Green River with its many tributary streams is at far left in the photograph.

Photograph by Gene Ahrens



News and Commentary

Defending Palisades Park

This Association last month took a stand with other conservation groups against any invasion of Palisades Interstate Park on the Hudson River as a substitute for the controversial Storm King Mountain hydroelectric plan, also opposed by conservationists.

The park-site proposal was one of the two chief issues in reopened proceedings before a Federal Power Commission hearing examiner in Washington on the pumped-storage power project. The other was New York City's objection to the Storm King site as too close to the Catskill Aqueduct, which the city contends is vulnerable to potential construction damage. The Palisades Interstate Park Commission registered its opposition to a park site, a suggestion of the FPC staff agreeable to the sponsoring Consolidated Edison Co.

Just before resumption of the hearings one of the utility project's leading local opponents, the Scenic Hudson Preservation Conference, was cited by the National Wildlife Federation as conservation organization of the year for 1968.

Secrecy at Assateague

The National Park Service has refused to make public on request a study of public transportation access to Assateague National Seashore which the Service claims indicates that such transpor-

tation is undesirable. The Service claims that the study is an intra-agency communication which federal law does not require it to release. The master plan for Assateague is far advanced toward finalization; the Service has been seeking support; this Association regards the plan as destructive to Assateague National Seashore and has published a Seashore Protection and Regional Development Plan of its own, copies of which are available to interested persons in reasonable quantities on request. A generous supply has been provided to the Service. In our judgment the public should have been brought into the master planning process for Assateague long ago. Under present procedures the plan will soon be crystallized irrevocably without public participation.

Park Road Hearings

The greater public participation recently initiated in connection with federally aided state highway projects is also to apply to major road projects within the national park system.

Just before leaving office, Secretary of the Interior Stewart L. Udall approved procedures guaranteeing an opportunity for both corridor and design hearings with respect to every major future road project in the park system that would be in a new location or would have "a substantial social, economic or environmental effect." Major roads, according

to the text of the new rules, are main entrance roads and arteries of the park circulation system.

Corridor hearings will cover the question of need for the road as well as its general location. Design hearings will cover the detailed location and major design features. Hearing notices will be mailed to news media, interested public agencies and civic and other groups asking to be on a mailing list for such information. And besides the hearings, the rules require solicitation of the views of interested government agencies at the start of consideration of major road development or improvement.

Except in connection with wilderness designations, for which hearings are required by the Wilderness Act, the National Park Service heretofore has not made use of public hearings in its road planning. Thus the new rules present a significant opportunity for conservationists and citizens generally to play a role in important decision-making. The new procedures, worked out in cooperation with the Department of Transportation, parallel those for other federally financed highway-building on which we reported last month.

IUCN Creates Education Post

The International Union for Conservation of Nature and Natural Resources plans to increase its efforts to stimulate conservation education. The union has announced the appointment of a Czech scientist and educator, Dr. Jan Cerovsky, as executive officer of its Commission on

Occasional Publications of the National Parks Association

On the Potomac River Basin

- The North Branch of the Potomac, 3 pages, with chart and map.
- Clean Water for Municipalities, Industries and Recreation in the North Branch Potomac River Basin. 5 pages, with table and map.
- Financial Feasibility and Drawdowns, Interim Report, Army Engineers, 1966. 6 pages and 2 tables.
- Summary of a Model Program for the Potomac. 2 pages.
- Analysis of the Potomac River Basin Report of the District and Division Engineers, Corps of Engineers, U.S. Army. 20 pages, with tables and map.
- A Statement on the Basic Facts About Reservoir Drawdowns (folder).
- The Potomac River Estuary as a Supplemental Source of Municipal Water for the Washington Metropolitan Region. 16 pages, with maps, tables and chart.

On Other Conservation Topics

- Report of the Advisory Board on Wildlife Management (The Leopold Report). 6 pages.
- Report on Present Status of a New Simple Low-Cost Coal Sewage Treatment. 5 pages, with schematic diagram.

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

National Parks Association

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Park and Regional Planning

As of presstime for the April Magazine the following Wilderness and other Plans for units of the national park system were available:

- Isle Royale National Park
- Pinnacles National Monument
- Sequoia-Kings Canyon National Parks
- Lassen Volcanic National Park
- Cumberland Gap National Historical Park
- Shenandoah National Park
- Mammoth Cave National Park
- Craters of the Moon National Monument
- Petrified Forest National Park
- Great Smoky Mountains National Park
- Yellowstone National Park
- Lava Beds National Monument
- Cedar Breaks National Monument
- Bryce Canyon National Park
- Capitol Reef National Monument
- Arches National Monument
- Chiricahua National Monument
- Colorado National Monument
- Everglades National Park
- Assateague National Seashore

Education. Formerly a volunteer vice chairman of the commission, Dr. Cerovsky is its first full-time professional staff officer. Recently he had been chief of research for the Czechoslovak State Institute for Protection of Monuments and Conservation of Nature and a faculty member at Charles IV University in Prague and the University of Agriculture in Brno. The commission's office is at IUCN headquarters in Morges, Switzerland.

Dispute in Colorado

An Arkansas Valley Conservation Council recently was formed in Colorado to promote alternatives to a proposed Army Engineers flood-control project on the Arkansas River below Pueblo. Though flood protection for six valley communities seems to be needed, the council opposes a plan to channelize 100 miles of the river in an area of relatively poor land. The channelizing, the engineers say, would cost an estimated \$57 million—more than the cost of buying up the entire flood plain, according to the council.

Forestry Leader Honored

Leadership in developing a program for protecting scenic values in the national forests has won recognition for Edward H. Stone II, chief landscape architect of the Forest Service. Mr. Stone, 35, who heads a 130-man staff, recently received one of 10 annual Arthur S. Flemming Awards given by the Junior Chamber of Commerce to outstanding young men in federal government service. His citation was for "recognition and incorporation of environmental architecture as an integral part of the professional skills used in the management of the national forests and

providing for the preservation of esthetic values of wild lands when the needs of civilization demand their modification." Another Flemming award was given to Barry R. Flamm, Forest Service international staff member recently assigned as Vietnam forester.

Tanzanian Marine Parks?

How much will the new African nations conserve of the magnificent natural heritage of their continent? One cannot read the report on a recent survey of the coast of Tanzania, on the Indian Ocean, without wondering about the answer to this question. The survey was made last year by Dr. Carleton Ray of Johns Hopkins University, a marine scientist. Dr. Ray found a rich resource, including some of the most spectacular coral reefs of East Africa. He also found, however, advancing destruction of the reefs and their teeming marine life by dynamiting by fishermen, over-fishing, shell and coral collecting, dredging, silting caused by upland deforestation and other abuses. Within a decade, according to his estimate, much of the economic and recreational value of Tanzania's coastal waters could easily vanish.

As the countermeasure, Dr. Ray proposes establishment of a network of marine national parks and reserves, as well as development of suitable conservation, tourist and fisheries policies to assure productive multiple use of Tanzanian marine assets. One can hope that the recommendations will bear fruit. *Marine Parks for Tanzania*, Dr. Ray's 47-page illustrated report financed by the New York Zoological Society, the African Wildlife Leadership Foundation and The Conservation Foundation, is obtainable for \$2 from the last

at 1250 Connecticut Avenue N.W., Washington, D.C. 20036.

NPA's Alaska Trip

The Association's Alaska field trip, which has been designed to emphasize not only the state's magnificent scenery and natural wonders but also some of its conservation problems and its national park and monuments, existing and proposed, has crystallized to the point where a firm date and costs can be announced. Be sure to see the advertisement on the next page for a summary of the trip's highlights and other information.

Research in Fire Ecology

An interesting conference was held in February in Tallahassee, Florida, under sponsorship of the Tall Timbers Research Station, a private center which has done valuable work in the field of fire ecology and controlled burning for the improvement of wildlife habitat. The meetings, on the ecological control of animals through habitat management, focused on possibilities of environmental modification by fire for the purposes of insect control. Based upon past performance, the conference report should provide helpful information for the further advance of the science of land management.

16th Watershed Congress

The 16th National Watershed Congress, sponsored by 27 leading industrial, agricultural and conservation organizations—including this Association—is scheduled for June 8-10 in Louisville, Ky. Details may be obtained by addressing the Congress at 1025 Vermont Ave., N.W., Washington, D.C. 20005.

(continued on following page)



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Photo by Charles J. Ott

Barren-ground caribou in Mount McKinley National Park

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C & O Hikers' Reunion

The 15th reunion hike of the C & O Canal Association, commemorating the successful protest hike against use of the historic Potomac waterway for a highway route, is planned for April 26 with a campout the night before in Berkeley Springs, W. Va. Details can be obtained from Ralph H. Donnelly, Hancock, Md. 21750.

Public Conservation Interest

At the 33rd annual meeting of the National Wildlife Federation in the nation's capital on March 1, the noted poll-taker George H. Gallup, Jr., effectively knocked the underpinnings from under the ancient argument that conservation thinking in the United States is mainly the province of bird-watchers and visionaries of one sort or another—that nobody else is really much interested. Gallup's national public opinion poll on the subject, sponsored by the Federation, showed that more than 85% of the American public is actually very much concerned about the environment and such evils as air and water pollution, soil erosion and wildlife destruction. Additionally, three of every four people interviewed favor dedication of more public land for conservation purposes, as for example national parks and wildlife refuges.

Of even more basic importance, perhaps, was the finding that half of the American public now feels that human population will have to be limited if present living standards are to be maintained.

If it is true, as one sometimes hears, that the most sensitive part of a person is his wallet, an important consideration in the study would be the willingness of the public to pay for an improved environment. Almost three of four people interviewed indicated that they would be willing to pay "something," the amount varying with depth of concern expressed.

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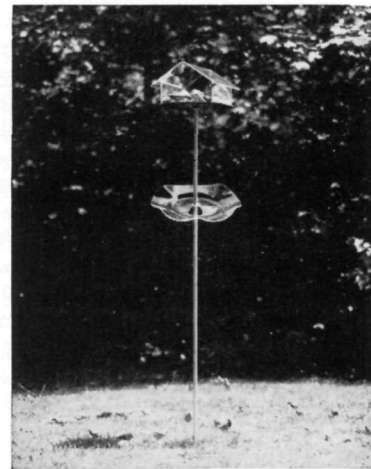


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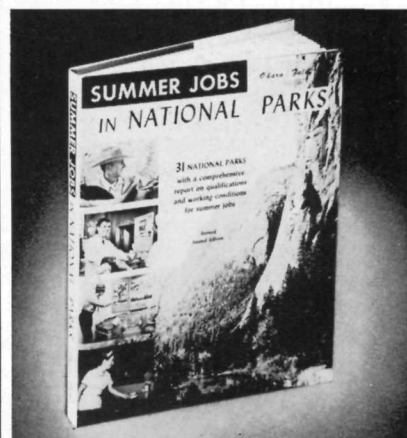


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ISSUE: TULE ELK

When the first settlers arrived in California, a handsome species of elk found nowhere else in the world roamed abundantly in the Central Valley and around San Francisco and Monterey Bays. By 1870, market hunting and changing land use had reduced the species nearly to extinction. A remnant had taken refuge in the marshes of Tulare and Buena Vista Lakes in the San Joaquin Valley, but there the tule (too-leh) elk, named after the bulrushes where they hid, were hunted by boat. A few hundred survived on the Miller-Lux Ranch, then California's largest, because rancher Henry Miller gave strict orders to his men to protect them.

In 1904 Miller offered to give a herd to the federal government. Twenty-one elk were transplanted to Sequoia National Park, and a few years later 10 more were established in Yosemite National Park. Some were kept for a time at a park near Monterey. But events continued to conspire against the beleaguered species. The Sequoia herd scattered and disappeared. The National Park Service decided against keeping fenced-in and exotic animals in the national parks. And with the subdividing of the Miller ranch in 1929, the remnant original herd came into renewed collision with farmers and livestock-raisers.

California created a small reserve at Tupman, near Bakersfield, and another small herd was established in rugged ranch country, partly federally owned, along Cache Creek in Colusa and Lake Counties north of San Francisco. Finally, however, it was decided that the best hope of keeping the tule elk extant in a natural state lay in relocating the remainder in a more remote and spacious area. This was the arid but beautiful Owens Valley, lying between the peaks of the Inyo-White range, along the Nevada border, and those of the Sierra Nevada. The tiny Yosemite herd was among the 54 elk moved to the Owens Valley in 1933 and 1934.

Though outside the tule elk's original range, the new habitat proved hospitable. But Owens Valley ranchers proved less so. In a decade the elk multiplied to 190. Cattlemen objecting to competition for forage and to range damage moved to curtail the increase. They won the cooperation of California's Fish and Game Commission, which permitted hunts that drastically cut back the elk in 1943, 1949 and 1955. Many survivors were left crippled.

In 1960, aroused by the effect and character of the hunts, California conservationists protested the commission's position. A scheduled hunt was cancelled, and after hearings the commission

adopted a revised policy of maintaining a somewhat larger elk population—250 to 300—and tighter hunting controls. No hunts now are held unless the annual count exceeds 300.

Some conservationists continue to be concerned, however. The Committee for the Preservation of the Tule Elk, formed in 1960, has questioned the accuracy of the counts and has been critical of the hunts. The committee contends that healthy animals, rather than the culls (sick, old or injured) theoretically targeted, are often the actual casualties. It thinks the range could carry more than 300 elk, and that the total should be allowed to grow. It is currently seeking a moratorium on further hunts.

Above all, the committee is eager to see implemented a proposal to make much of the Owens Valley a government-protected elk reserve. Most of the valley bottomland is owned by Los Angeles as a watershed. Two years ago the city council approved a resolution calling for establishment of a refuge on much of the city land. However, the rancher-oriented Inyo County supervisors are opposed, as are the Los Angeles Department of Water and Power, which profitably leases grazing rights, and the state Fish and Game Department.

Los Angeles' land is flanked by Inyo National Forest and by federal lands administered by the Bureau of Land Management. The Forest Service now excludes livestock from parts of the elk range, and BLM also is cooperating with the elk management program. Neither has so far embraced the refuge proposal. The Fish and Wildlife Service, which supported the idea of a refuge several years ago, has changed its mind. In the Service's judgment the tule elk is a rare but not currently endangered species. Still, the latest official aerial count in the Owens Valley is only 335, and some think this errs on the high side. Is a refuge indicated?

Tule elk fawn in the Owens Valley.



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Nesting spoonbills (Platalea leucorodia) in a willow at Turkey's Bird Paradise National Park on Lake Manyas, near the city of Bandirma. Rising lake waters fed by spring rains have isolated the tree, making it an island of refuge for the nesting birds.

Color photograph by Henry Angelo-Castrillon

As F. Fraser Darling and Noel D. Eichhorn point out in their recently published discussion of man and nature in our national parks, condensed and reprinted in this issue, "the carrying of the national park idea into fruition in the United States has continued to be an inspiration to the rest of the world." Two examples of that inspiration are published in the Magazine this month, though indeed the lapse of time between inception of each idea and the difference in philosophy of management of each area are quite large. One article originates in a nation possessing a well-crystallized protection and conservation philosophy, while the other is from a nation in which the notion of the national park and strictly protected area is relatively new and in need of all possible encouragement.

The National Parks Association takes a keen interest in the park and protective work being accomplished or contemplated in other parts of the world, and it reports on such work through the Magazine. As the Association and Magazine grow we shall be able to devote more pages to the international conservation and preservation picture; but in the meantime you can strengthen your Association's hand in dealing with the current multitude of conservation problems—domestic and foreign alike—in any of several ways. For example, you may contribute to the general funds of the Association over and above regular dues; help secure new members for the Association; or remember the Association in your will. All dues over and above basic annual dues, and all contributions, are deductible for federal income taxation; gifts and bequests are deductible for federal gift and estate tax purposes.

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