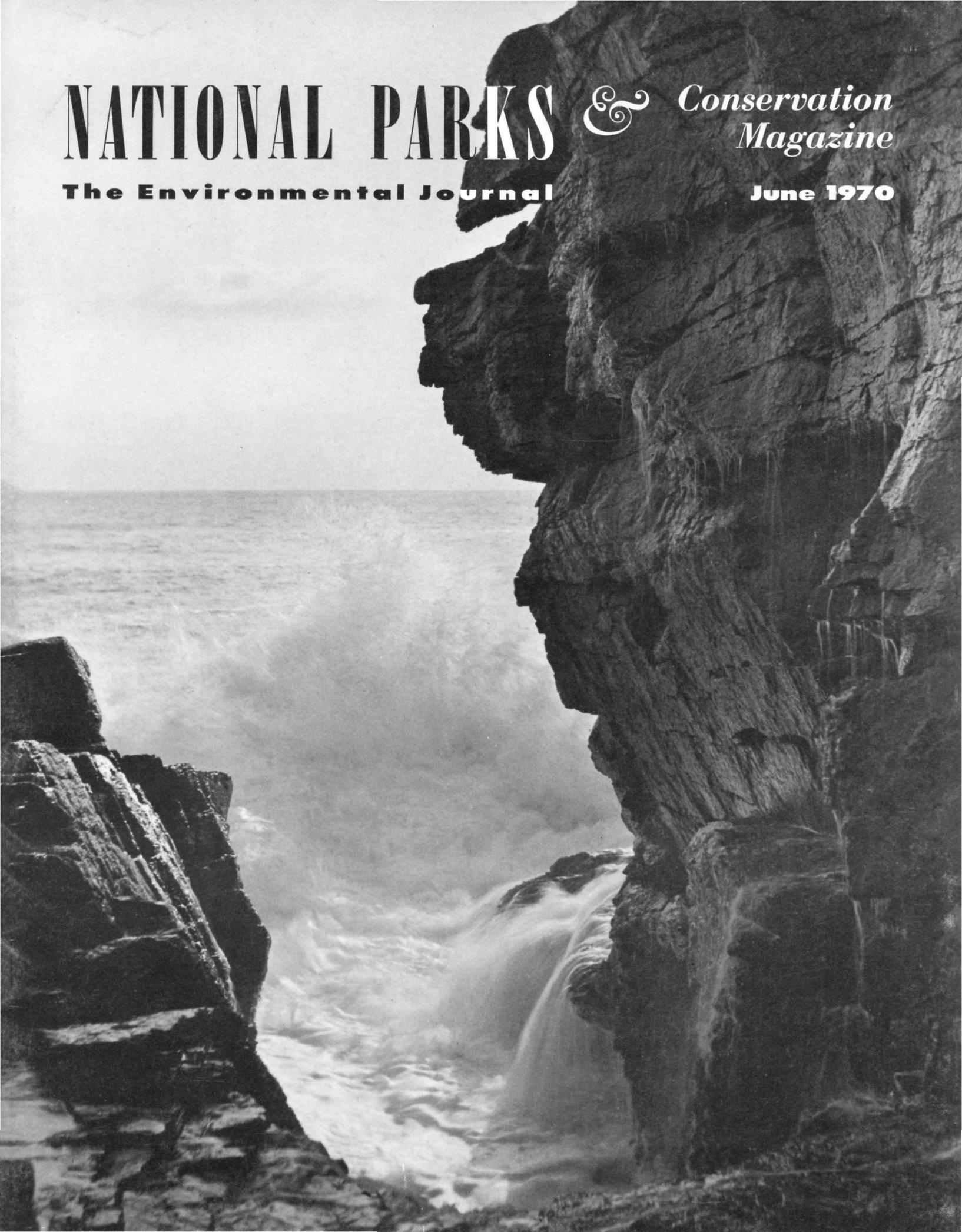


NATIONAL PARKS & *Conservation Magazine*

The Environmental Journal

June 1970



The Survival of Species

The recent Earth Day demonstrations all over the country have given impressive confirmation of a national will to resist the tide of environmental destruction which is threatening the survival of life on this planet.

That it was the young people of the country who staged the demonstrations augurs well for the future, because a bold new start is needed, and salvation will require the devoted labor of the oncoming generations.

We hope that Earth Day will be an annual event, reminding us of our obligations to the Earth and to the other forms of life which surround us, plant and animal. Perhaps the Spring Equinox, ancient season for celebrations of fertility and resurrection, may be the most fitting permanent anniversary.

And yet the success of Earth Day in uniting America against environmental pollution could blind us to other serious ecological problems. The prospect of choking in smog is startling; the sight of a befouled landscape is revolting; the threat of poisoning by contaminated food and water stirs people to action. Not so, perhaps, the less publicized process of the extinction of hundreds, yes thousands, of plants and animals all over the world.

To this problem of the impending extinction of countless forms of life everywhere on the planet, conservationists and environmentalists should now address themselves with vigor and determination. The integrity of the entire world-wide ecology, on which human life itself depends, is at stake. The time available for solving these critical problems is now very short.

The International Union for the Conservation of Nature publishes two Red Data Books, one on mammals and another on birds, which describe the endangered species. It is preparing two more books, one on reptiles and amphibians and another on flowering plants. The Secretary of its Survival Commission states that some 850 species of vertebrates alone are threatened with world-wide extinction in the not too distant future.

Among the causes are the explosive expansion of human populations; ruthless over-hunting, for food by the poor, for trophies by the rich, and for sales-items by the avaricious; the exploitation of marginal forest and marsh land for agriculture against impending human famine; the cancerous growth of huge urban aggregates everywhere as human populations leave the land; the destruction of soils and the advance of deserts; the conversion of timberlands into farmlands and cities; and the grave pollution of water, soil, and atmosphere, by excessive fertilization, the abuse of pesticides and herbicides, and combustion.

Ruined landscapes can eventually be restored, devastated forests can be replanted and may recover in time, soil erosion can be arrested, and even deserts may eventually be restored to verdure. But a species of plant or animal, once extinct, is gone forever. The evolutionary labors of the ages have been wrecked; mankind, by the measure of the loss, lesser or greater, but always in some degree, is in growing danger of its own extinction and in deeper aesthetic, scientific, and economic poverty than before, irrevocable poverty.

In the United States we have recently enacted the Endangered Species Conservation Act. This Act has given a measure of increased protection for endangered species where animals have been taken in violation of the laws of the state or nation of origin; yet serious problems of proof and enforcement remain. Tight restraints on local markets where furs and other animal products are offered for sale are greatly needed; consumers should reject these products. Such issues must not be

forgotten in the prevailing concern with the physical environment.

The Endangered Species Act provides that the Secretary of the Interior through the Secretary of State, *must* seek the convening of an International Ministerial Meeting on Fish and Wildlife, prior to June 30, 1971, and that included in the business of the meeting *shall* be the signing of a binding international convention on the conservation of endangered species.

There have been intimations that the responsible administrative agencies may attempt to draft a convention in private meetings which may include commercially interested parties. We think that the Ministerial Meeting should be held, instead, as required by law. The concerned public, including the public-service conservation organizations, all of them, is entitled to know what goes on, to participate, and to register its views. A Ministerial Meeting is required by the law, and the officials of the Executive Branch are not free to violate the specific mandate imposed by Congress.

Some observers profess to have noted a relative lack of concern among scientists for the survival of plants as contrasted with animals. They have proposed the establishment of seed banks to save what will doubtless be thousands of endangered species of plants all over the world. From such banks, seed would be replanted generation after generation, or could be frozen for long-term storage until the world comes to its senses, reduces its excess population by lowering birth rates, and gains living space for plants and animals, including men. And while we are commenting on endangered species, protection should be given to endangered insects as well.

The Nixon Administration will have a once-in-a-lifetime opportunity to take the lead internationally in the protection and re-establishment of endangered species all over the world at the forthcoming United Nations Conference on the Human Environment, which will be held at Stockholm in 1972. The international community has created significant institutions in other areas of major economic and social concern: the Food and Agriculture Organization, as one example; the World Health Organization, as another. An Environmental and Population Organization is greatly needed if the resources which only governments can mobilize are to be brought to bear on the solution of the inseparable ecological and demographic problems of Earth.

If such an approach to the peril of the world is to be initiated at the UN Conference, the delegation from the United States should include representatives of outstanding private, non-profit organizations which have demonstrated their concern for these issues. We feel confident that the Administration, with support from the statesmen in resources management which the Congress of the United States has put forth in recent years, and from the entire Nation, will rise to the occasion.

—A.W.S.

PLEASE COME TO THE RESCUE!

The endangered species of plants and animals over all the world need your help.

If you agree that a Ministerial Conference should be held, you may write to President Nixon at the White House, Washington, D.C., and say so. If you agree that an Environmental and Population organization should issue from the U.N. Conference on the Human Environment in 1972, you may write to the President and say so. Send copies of your letters to the Council on Environmental Quality, Russell E. Train, Chairman, Robert Cahn, and Dr. Gordon J. E. MacDonald, Executive Offices of the President, Washington, D.C. 20500. Please send us copies of your letters.

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COVER "Receding Wave at Thunder Hole" by W. M. Ballard

When conditions are just right on Mount Desert Island in Acadia National Park, the sea crashes into the narrow slot in the cliff at Thunder Hole, sending spray spectacularly skyward and displacing compressed air with a thunderous boom. To the southwest, on the horizon from Mount Desert Island, lies Isle au Haut. Relics of long-gone men, rugged hills, cliffs, hidden coves—Acadia's most remote outpost truly is her wildness area (p. 13).

National Parks Association, established in 1919 by Stephen Mather, the first Director of the National Park Service, is an independent, private, nonprofit, public-service organization, educational and scientific in character. Its responsibilities relate primarily to protecting the national parks and monuments of America, in which it endeavors to cooperate with the National Park Service while functioning as a constructive critic, and to protecting and restoring the whole environment. Membership dues, including subscription to National Parks & Conservation Magazine, are annually: \$8 associate, \$12 contributing, \$40 supporting, \$80 sustaining, and \$500 life with no further dues. School and library subscriptions are \$5 per year. Single copies 75¢. Contributions and bequests are needed to carry on our work. Dues in excess of \$8 and contributions are deductible from federal taxable income, and gifts and bequests are deductible for federal gift and estate tax purposes. Mail membership dues, correspondence concerning subscriptions or changes of address, and postmaster notices or undeliverable copies to Association headquarters in Washington. When changing address, please allow six weeks' advance notice and include old address (send address label from latest issue) along with new address. Advertising rates and circulation data are available on request from the Advertising Manager in Washington.

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conservationists turn on for children of the concrete

alice dennis
photographs by louise bucknell

THE SMALL BLACK BOY in the tree at the edge of the meadow looked around and called to a group of friends below, "Hey, man, it's beautiful up here!"

Two weeks previously this inner-city child was afraid to touch a tree and was even hostile toward one. Now he was graduating from a 2-week summer course in wading, climbing, stepping on stones, handling leaves, feeling grass, lying in the sun and watching clouds drift across his vision. He had completed his degree in listening, smelling, touching, hearing, and noticing nature for the first time in his life. He rejoiced in harmony with his element, earth and her glory. And her reflection lighted his eyes.

The black lad was one of 105 youngsters who, in groups of 35 over a 2-week period, participated in the first ecology-oriented program of its kind for the ghetto child sponsored and administered by a conservation society. The small but enthusiastic Audubon Naturalist Society of the Central Atlantic States with headquarters in Washington, D.C., pioneered the program during the summer of 1969 as an offshoot of its already successful inner-city nature courses given by member volunteers to fourth and fifth graders in three D.C. public schools. Founded in 1897, the ANSociety is independent of the National Audubon Society.

The conservationists were able to offer a nearby wildlife sanctuary for the initial summer experiment. In 1968 the Society had received from the will of Mrs. Chester Wells her 40-acre estate, Woodend, in suburban Chevy Chase, Maryland, along with its 32-room Georgian mansion for use as headquarters. Built in 1928, the house was designed by John Russell Pope, creator of the Jefferson Memorial and architect for the National Gallery of Art. Mrs. Wells, a nature lover, did not want her estate to be subdivided as a housing development; so she presented it to the Society, whose members she had admired during her lifetime. The property contains remnants of original farm planting, native woods, and grasses as well as decorative plantings, a pond, a small stream, and walking trails. Although surrounded by affluent suburbia, the estate is large enough that its wildlife remains abundant and varied.

The ANSociety's summertime program for the inner-city child has strengthened members' conviction that Americans are entering a new era in conservation education. Shortly after the assassination of Dr. Martin Luther King and the subsequent riots, the Society sought to create an experimental program in environmental education for children of the ghetto. Dennis W. Brezina and Mrs. Ann Morton, members of the Society's newly created Committee on Special Projects, began in 1968 to contact District of Columbia organizations to discuss such a plan. Contacted were the Urban Coalition, the Youth Program Unit of the D.C. Government, the United Planning Organization, the Washington Urban League, and the Public Welfare Foundation, as well as conservation education experts in the Departments of Interior and Agriculture and the Office of Education, and human resources experts in the Peace Corps, Teacher Corps, and area universities.

In August 1968 representatives of the Urban League, the Urban Coalition, and UPO met at Woodend with the ANSociety, where enthusiasm and a lively exchange of ideas predominated. By fall 13 conservation societies throughout the nation were contacted by letter to inquire what type program they offered deprived children. Few organizations had anything remotely comparable to the projected Society's program, but the replies strengthened the Society's conviction that such a program was symptomatic of conservation's new role in bridging the gap between white and black citizens, between urban and nature-oriented environments. Mrs. Margaret Callihan, former teacher and school director, was asked to coordinate the program.

In May of 1969 with H Street still burned out and the hot Washington summer on the horizon, the Society announced completed plans for its Inner City Program in Environmental Education.

"This is a basic departure from traditional conservation education programs," wrote Mr. Brezina, volunteer chairman. "The approach and techniques are experimental; the classroom is the outdoors; nonverbal communications—feeling and sensing nature—will be emphasized; ecology, the relationship between man and nature, will be the backbone of the curriculum."

The Society received a \$3,000 grant from the Hattie M. Strong Foundation to provide employment for six black group-leader college students from Federal City College and Howard University. These young men and women, who re-

ceived training as well as a week's orientation at Woodend, had no natural science background but had worked with ghetto children in recreation programs. Gerry Schneider, the Society's first executive director, who arrived June 1, worked as coordinator with Mrs. Callihan. Part of the financial grant was also used to hire a bus to transport the children.

The first step in the spring was to locate a school that wanted to participate. Recent Congressional hearings as well as studies like the Riot Commission Report stressed that such a program was more likely to succeed if predicated on community participation. The Society opted to work directly with black community leaders. It was felt that a school in which the Society's classroom visitor program was already in action would open the door for enthusiasm for the summer session. Logan School near Union Station met all criteria.

Mrs. Callihan met with Mrs. Lee Bowen, community coordinator at Logan, who stimulated community interest while Mrs. Callihan worked for ideas with the Neighborhood Planning Council and VISTA volunteers in the neighborhood. To learn more about the black community, ANSociety members attended Neighborhood Youth Corps seminars. Finally ideas from the school, community, and the Society were drafted into the Woodend Experiment.

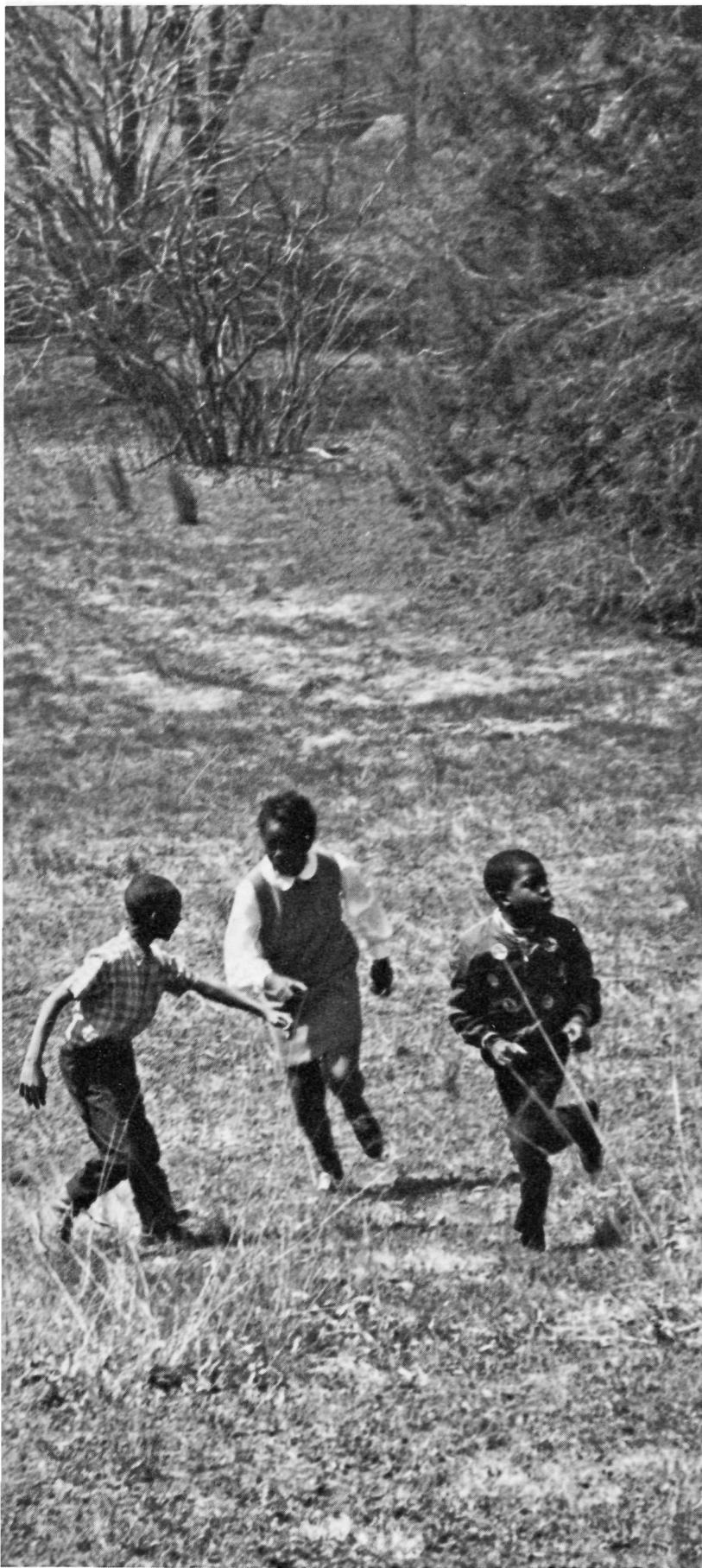
Five objectives were listed: (1) to give a group of inner-city children of the fourth- and fifth-grade levels a 2-week-long summer learning experience at the wildlife sanctuary; (2) to develop a more effective conservation education source for Washington children; (3) to provide meaningful paid employment for six group-leader instructors; (4) to develop in the children a greater interest in and appreciation of the natural world; (5) to instill in them an enhanced sense of respect and responsibility toward their own environment.

Working with VISTA personnel in the inner city, Mrs. Callihan began her recruitment of the children. Sign-ups took place in alleyways, on doorsteps, on the radiators of cars, and in second-story tenements. The black community had approved the program, and the reception was good. For the three 2-week periods during July and August 1969, three groups of 25 to 35 children would spend 3 to 5 hours each day, 5 days a week, at Woodend. Individuals would bring their own lunches, but a beverage would be provided. The children would be divided into small groups of four to six for outdoor nature experiences, the heart of the study.

When the first bus filled with 33 children rolled up the long, winding approach to the parking lot behind the Wells mansion, the two were at last face-to-face: children of the concrete and Mother Nature. From the children's standpoint, they were unknowingly entering the ideal learning situation. The motto of the program was "Trust in the power of something other than the human voice."

"We wanted to teach them to trust and respond to nature," reported Mrs. Callihan. Many of the youngsters had never felt grass beneath their feet; most came from row houses whose back alleys were littered with trash; many had never had a carpet in their homes.

The pond terrified them. They were afraid to step on the grass. All their lives they had been shouted at not to do



this or that. Suddenly here before them were rolling lawns of grass and wildflowers, meadows, a woodland where birds called, an intimate brook, and a smiling pond. In short, a miracle of invitation, and no one said, "Don't." No wonder they were wary.

Mrs. Callihan had great confidence that the introduction to nature would be felicitous. Since January, an experimental pilot group of fifth graders from Logan had spent one morning each week at Woodend under her direction as the Society and its volunteers moved toward a curriculum for the summer youngsters. The pilot students had also feared the pond at first but over the weeks had become acquainted with its wonders and finally reached the stage of hatching frog eggs in their palms as the gelatinous mass yielded squirming tadpoles. And best of all, they watched the seasons sweep over the countryside.

In the summer program the children of the concrete were to learn to frolic and rejoice in a natural setting. No plant or animal names were used in teaching sessions. Children were urged to use their senses to become acquainted with grass and bark, fur and feather exhibits. A raft was constructed. When bird nests were located, the youngsters were encouraged to try to build similar ones and to watch the progress of nestlings.

In addition to volunteering to help train the black group leaders, members also brought their own collections to share with the children, not as scientific exhibits but as examples of the wonders of the living environment—a rock collection to illustrate the beauty in stones, an extensive collection of bird nests, a pet raccoon, and pet skunks, who precipitated the only "serious" accident of the summer by biting Mrs. Callihan's finger.

One of the most important days of the 2-week "college" was the one spent back in the city in the child's home territory where with his group he remapped his own block; noting with a new perspective how his environment might be improved, even beautified.

At Woodend the learning procedure had been stimulated by games, scavenger hunts, mystery smell games, trail explorations. Dissecting microscopes were used to examine treasures from the wood. Mrs. Callihan reports that the children of the inner city also brought to nature their own form of definition, culled from the concrete childhood but nevertheless poetic. To a little girl, lying in a field of clover was like floating on popcorn, while a lad who had scooped up a handful of algae at the pond allowed that it smelled like collard greens.

After the summer was over, Logan School, as well as Gage and Kimball of the inner city, continued to participate in the classroom ecology project given by ANSociety volunteers for fourth- and fifth-graders. Here the child's own neighborhood is used as the laboratory with its own special ecosystem. The children are taken on one field trip to a nearby park or nature center.

The project consists of a 7- or 8-week course of 1-hour sessions in the autumn and spring with a different topic each week, including ecology, the green world, insects, pollination, birds, mammals. A slide show of common flora and fauna of the D.C. area is presented as a final summing-up of the course.

The hour begins with a 15-minute discussion of the day's subject, conducted as a question-and-answer period by a Society volunteer who has received a training course. Then the class breaks into five or six groups headed by a volunteer to take an outdoor walk. Each week the conservationists bring and leave three objects related to the topic, which the children may identify—two by sight and one, hidden in a mystery box which can be named only by touch. Books are also left to help identify the mystery.

Bridging the gap between a white middle-class conservation-oriented volunteer and a black inner-city child who often is hostile to nature requires a special adjustment by Society members, which comes partly from experience and partly from advice of earlier volunteers. For instance, sight-





Children attending the winter pilot program at Woodend before the summer experiment find nature as fascinating during cold weather as during warm weather. Above, with field glasses they observe birds on the estate. The house is shown in the background. Below left, youngsters seeking tadpoles and snails by the small stream study biology without being aware of it. Below right, children observe the bounty from the pond they learned to love.



ing uncovered garbage cans in alleyways, new volunteers might be tempted to relate the prevalence of rats to the situation. But as Irene McManus, assistant editor of *American Forests* and a volunteer teacher, learned, it is "a good idea to stay off the subject of rats completely. It usually turns out that one child in the class has had a bad experience with rats—either they'd been bitten or some member of their family had, and it's just too traumatic for them."

In exploring a vacant lot, the teacher and her small group discovered tiny insects they could not identify until the team stumbled over a dead rat and realized they had viewed rat fleas leaving the corpse.

When a fire drill interrupted a class where flowers were being studied for pollination, the children were careful to carry the flowers outside to safety. The volunteers had thought that in identifying stamen and pistil the youngsters would tear the flowers apart, but to the conservationists' surprise, most of the flowers remained intact as some of the children announced their intention of taking them home.

In order to reach more inner-city children during the 1970 summer on its very limited budget, the ANSociety has shifted its emphasis to concentrate on leaders. The summer budget will go exclusively into salaries to hire more black college students, who, after intensive training from the Society, will reach into the ghetto neighborhoods with a lively ecological program. Instead of transporting a mere 105 children to Woodend, the Society in the form of its black ambassadors hopes to reach hundreds of inner-city children in their home neighborhoods. Community nature centers will be headquarters of the movement.

"Our first summer's experience proved that Woodend is not the logical center for this type of program," Gerry Schneider reports. "The bus took \$1,200 out of our budget; the drivers often became lost and didn't deliver the children until after noon; the chance of resentment building up in an inner-city child driving past the homes of affluent Chevy

Chase is too great." The logistics of time and cost of transportation dictated that the Society shift its emphasis.

Bill Sessoms, a black sociology major at Federal City College, will be chief leader and Gerry's righthand man. Recruitment and training, as in 1969, was on a planned basis at the employment offices of Federal City and Howard University. Starting in March, the leaders received training at Morgan School Nature Center in Washington, a center underwritten by the Junior League. The Society also hopes to enlarge its volunteer courses in more city schools.

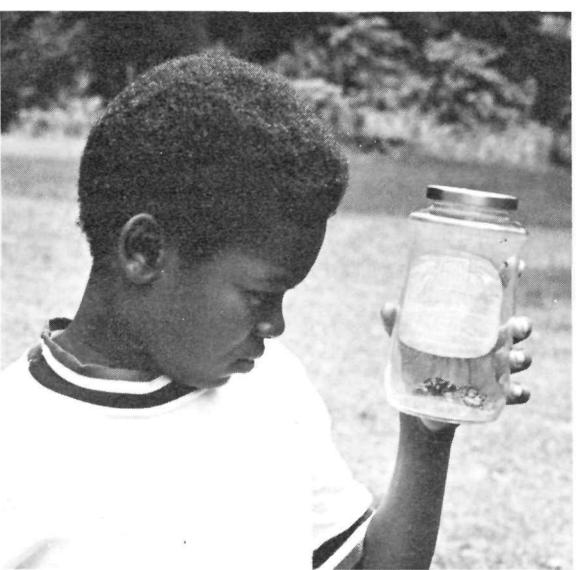
Working in the nation's capital directly with its black population, the ANSociety has great hopes for the children of the concrete. Moving quietly, scientifically, with careful preliminary planning and training, totally in harmony with the Negro leaders, with little or no fanfare, the ANSociety is sowing seeds of imagination, beauty, rapport, and responsibility for environment in the minds of ghetto youngsters. It is true that only 105 were reached last summer, but the successful small beginning was most provident.

What an opportunity for volunteer nature lovers across the country to share their lifetime of joyful observation with city children! What a bridge others might also build where the child of the ghetto may learn to walk in confidence toward a responsible acknowledgement of his environment and—more important—its resurrection. Thousands of bright lost children are waiting to be found and inspired. The conservationist is the extraordinary candidate who can, with no personal axe to grind and no affiliation but nature herself, offer to teach and to heal. ■

Alice Dennis, a former newspaper reporter and editor, is now a freelance writer specializing in nature and conservation-oriented subjects.

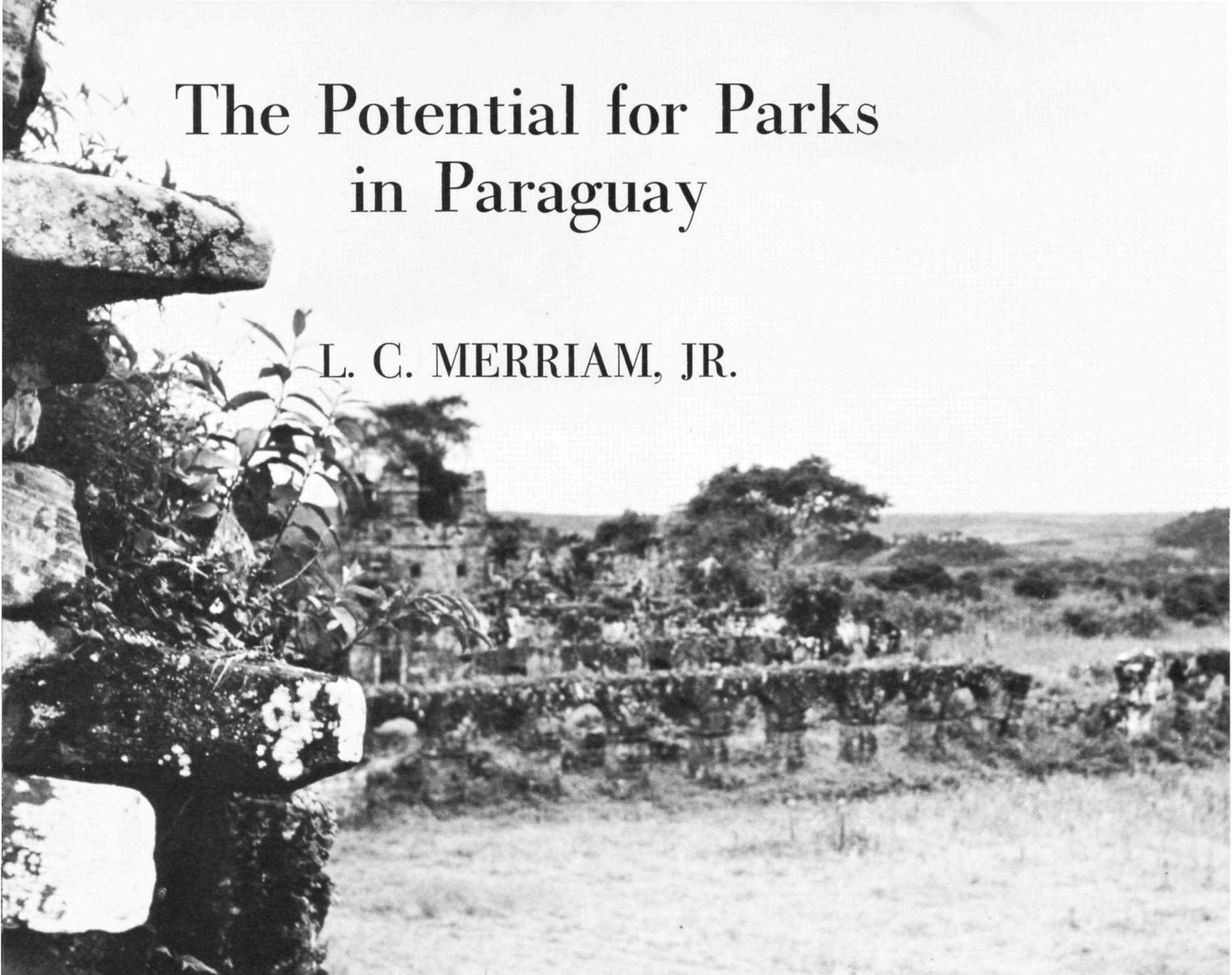


During the training program for black college student leaders, Mrs. Margaret Callahan, left, coordinator of the Woodend Experiment, describes the resources of the estate. Bill Sessoms, right, will be leader coordinator in 1970. Under his arm he carries one of the program "texts," National Parks Magazine. This picture, incidentally, was unposed.



The Potential for Parks in Paraguay

L. C. MERRIAM, JR.



Trinidad ruins of Jesuit mission

Although the possibility of creating natural national parks in Paraguay that meet IUCN criteria is limited, many interesting and unusual areas offer potential for parks adapted to local socioeconomic and political realities. There are superb waterfalls, interesting mountains, unique wildlife areas, and historic sites; but the country is relatively poor economically and underdeveloped. Paraguay has no designated organization for administering parks and recreation areas and no formal park system. Access for local people and tourists from neighboring Brazil, Argentina, and Bolivia is limited. There are major problems in land use on proposed park lands. Still, some of these problems and the present limited development of the country may yet be assets in providing parks and recreation areas and developing Paraguay's tourist industry.

Nearly as large as California, Paraguay is virtually a landlocked nation, bounded in part by the Paraguay-Parana River system leading to Rio de la Plata and the Atlantic Ocean, and enclosed by larger neighbors—Argentina, Brazil, and Bolivia. The climate is warm temperate. Geologically, the country is divided into three regions from northwest to southeast: the Paraguayan part of the Chaco trough lying east of the Andes and consisting primarily of flat swampy to dry forest land extending to the Rio Paraguay; the central Paraguayan swell with drainages into the Rio Paraguay, undulating topography and low mountains, containing much of the better agricultural

land; and the western border of the great Paraná Basin, an area bordering Brazil with high forest production and agricultural colonization.

Paraguay has a relatively low population, of which 49 percent is concentrated in the vicinity of the capital and only major city, Asunción. Although over 30 percent of the Paraguayans are illiterate and there are few technically trained, professional people, the situation is far better in Asunción than in the rural areas, where schools are mostly primary, often with only the first two grades. There is considerable poverty, but beggars are uncommon. Indians, especially on the Chaco ranches, are often in near feudal status, lacking both educational and cultural communication possibilities. Yet the current President, General Alfredo Stroessner, is working against great odds to improve social conditions, especially in rural areas; to improve and expand agriculture; to institute forestry practices; and to increase lagging exports and the inflow of foreign exchange. Tourism is seen as a way of increasing foreign exchange income.

One problem hindering tourism is that transportation facilities are limited, and road access is poor. Land transport for most farmers still consists of ox carts, horses, or burros. There are relatively few automobiles in Paraguay; they are expensive and nearly 90 percent are in the Asunción area. Buses, often with wooden bodies locally made, provide cheap transporta-

tion for the general public. Railroad service is primitive and limited, while more modern air transport is widespread but relatively expensive. Of over 3,200 miles of roads in Paraguay only about 400 miles are paved. The two paved routes are (1) from Asunción to Puerto Pres. Stroessner and (2) from Asunción to Encarnación. Other roads are dirt or stone, and most are closed in wet weather.

Planning to preserve Paraguay's assets is especially urgent in the face of slowly encroaching agricultural development. As roads open, agricultural development follows nearby, especially in areas open to colonization as in the Rio Paraná basin. The first phase in land use for agriculture is clearing, burning, and erecting one-room thatched-roof houses. A crop of *mandioca* (starch tuber) and perhaps corn is planted, which is hopefully supplemented by hunting in the nearby forest, where anything up to a jaguar is fair game. There is no real wildlife management in Paraguay, and hunting is regulated only in special zones. The land often is depleted in a few years, causing movement to other areas and repetition of the land-clearing pattern.

Though much of the land of Paraguay is privately owned, the government has expropriated large areas to encourage agricultural settlement and colonies, especially along the Rio Paraná basin. Inasmuch as many of the best potential park and recreation areas are located in this region—which the FAO Forestry Project also is now inventorying—it is important that planning identify such areas and that provision be made for future park allocations. Otherwise land-clearing, erosion, and other major changes may destroy unique sites.

In the Chaco west of the Rio Paraguay, with entry controlled by the Ministry of Defense, the problem is different. Here there are many large cattle ranches, visitors are few, and access is difficult; but there are extensive sport and commercial hunting operations, particularly for jaguar, ocelot, tapir, and ostrich. Some American hunters may go to the Chaco on safaris for jaguar, but there is a greater potential for non-hunting trips to see unusual wildlife in carefully planned reserves.

Currently, foreign travel to Paraguay is increasing rapidly, and local people are traveling more as roads are improved and paved. Presently, primarily Argentines and Brazilians go to Paraguay, especially during the winter (July–September). Studies of tourism indicate concentration in Asunción, where the few good hotels and restaurants are and where foreign goods not found in the visitor's country may be obtained. Outside the capital city there are only five hotels of second class

or better, the more common accommodation being the simple pension with dirt floor and outside toilet. Beyond Asunción, visitors and Paraguayans are attracted to the superb and world-famous Iguazu Falls across the border on the Iguazu River boundary between Brazil and Argentina. These two countries have created national parks at the site. Within Paraguay, nationals and foreign tourists are attracted to waterfalls, historic and religious sites, mountains, bathing areas, native Indian villages, fish and wildlife zones, and local crafts.

These latter items we termed "local indicators" for planning purposes and related them to outstanding areas identified for "national parks" or reserves in the Five Year Plan (1969–1973) prepared by the Dirección General de Turismo in collaboration with the Secretaría Técnica de Planificación. Of course, it was recognized that the areas identified in the tourism plan must compete for visitation with the unique Iguazu Falls and that all are presently isolated, only partly developed, or indicated only on paper, and many have not been visited even by the Paraguayan planners.

Considering the background data on Paraguay as to its physical-geographic character, historical, sociopolitical aspects, and stage of economic development, several classes of park and recreation areas were developed in the 1969 study. A major purpose of the classes was to help Paraguayans to think in terms of quality standards for parks. This is important in their interest. In order of decreasing naturalness and overall quality these classes are:

1. *Natural Parks*. Areas designated to preserve unique natural features, scenery, flora, and fauna with limited human interference and development, and of sufficient size to protect features from alteration by adjoining land use patterns and developments.

2. *Single Attraction Areas*. Areas designated to preserve a single feature, natural community, or historic site. Natural conditions are maintained with appropriate educational information. Management is related to restoring habitat, historic structures, and so on for visitor viewing.

3. *Mixed Use Parks*. Areas or regions containing diverse attractions and land uses that may be partly competitive. The attraction sites would be preserved and protected as in a natural park. In between, agricultural or other use and ownership would continue with buffer strips to protect the natural areas. Facilities for tourists could be provided in the agricultural zones. Highway development could be routed through these zones, also, with spur roads to the attraction sites.

4. *Waysides*. Areas along highways, streams, and so on that

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preserve scenic strips of trees or other vegetation, vista points for traveler use, and the like.

5. *Recreation Areas.* Land and water areas with scenic or other attractions but whose primary purpose is public recreation and enjoyment. Management is related to area protection, but developments are suited to recreation activities.

Several areas studied in the field and indicated in the Tourism Five Year Plan illustrate the use of the local indicators and these classes. No areas presently meet the natural park criteria; a simple highway wayside en route to the truly unique Iguazu National Park in Brazil is signed as a national park (Guayaki).

In the vicinity of Puerto Pres. Stroessner a few miles off the main highway to Iguazu National Park (Brazil) is Salto Monday, an outstanding waterfall of the Rio Monday and about 100 feet high. It is proposed for national park status, but there are several problems. Part of the land above the falls has been cleared for agriculture, and agricultural colonists' fields abut the river on one side of the falls. Access is by a rough dirt road and trail through colonists' fields. The site itself is worthy of preservation, and one side includes a natural forest buffer owned by the family of the Agriculture Minister who are interested in preserving the region. The river here is not blocked, and stream flow over the falls is constant. With careful relocation of colonists to better farming sites away from the rocky bluffs, the area could be preserved as a single-attraction area.

Near the city of Encarnación are ruins of the Jesuit mission of Trinidad, abandoned by royal Spanish decree in 1760. Remnants of a communal social group involving Jesuit priests and the native Indians, the nearly unrestored and interesting structures are important to the history of Paraguay and nearby Argentina. Adequate historical research, careful restoration, better control, and some interpretation are needed to make this scenically situated ruin the single-atraction historic area it should be. Presently there is a fence around the site, a local farmer collects entry fees, and there is a small unorganized museum. Still, many valuable artifacts have been destroyed or removed by vandals and collectors.

The 22,500-acre area designated by the Turismo Plan as Cerro Corá National Park is located approximately 20 miles west of the Brazilian border town of Pedro Juan Caballero in northeastern Paraguay. Though it is over 300 miles from Asunción by rugged dirt road, the locality is sacred to the Paraguayan people as the scene of the death of a national hero, Mariscal Francisco Solano López, and of the last battle of the tragic War of the Triple Alliance in 1870, which war had pitted Paraguay against Brazil, Argentina, and Uruguay for 5 years and reduced her population by over 50 percent. The central portion of the park includes the developed Cerro Corá battle monument area, an airstrip, and a military base. The setting is very attractive, as the distant landscape is dotted with limestone mountains of various shapes. The natural park includes one or two of the mountains and a good deal of cleared agricultural land in the local Instituto de Bienestar Rural (IBR) colony. Here again, the area is not a traditional national park, because agricultural development has changed the natural scene. Still, with careful cooperation between the Ministries of Agriculture, Defense, and IBR, a workable mixed-use park could be developed. This would include the integration of the history of Cerro Corá and its significance to Paraguayans, with suitable museums or exhibits, leaving the agricultural colonies intact with restorations of roadside forests. The limestone mountains could be protected by prohibiting agricultural use of their slopes (most contain soils or rock marginal for agricultural use), and by providing limited access roads for views or climbing. This would include zones

of protection for the mountains with agricultural development in the poor soils at their bases. Between the mountains and the central Mariscal López Monument, the agricultural colonies and development would remain. Park facilities could be placed in this central area with a suitable museum and interpretation at the Monument itself.

Combining local indicators of wildlife and historic interest with unusual scientific and scenic assets, the Chaco region west of the Paraguay River is a truly unique region seen by very few people. On the Rio Pilcomayo is an area of flat forest, plains, marshy lowland, and river bottom presidentially decreed as Tinfunque National Park. It is some 18 by 60 miles in extent without marked boundaries. A great diversity of birds and animals is to be seen here. With Professor Schade, Director of the Animal Museum of the National University of Asunción, we identified 58 species of birds (herons, eagles, falcons, ibises, storks, parrots, among others), some native only to this region. We saw various land animals as well, including foxes, armadillos, anteaters, pumas, peccaries, and deer. There never have been adequate inventories of Paraguayan fish and wildlife or any habitat studies.

The Ministry of Defense, which controls entry into and out of the Chaco, as well as internal management, restricts hunting on the Rio Pilcomayo regions of the Tinfunque National Park. A great part of the reserve is privately owned, much being on the Brusquetti Ranch, where grazing covers much of the area and casual visitors are not welcomed. In the park locality occurred much of the early fighting in the Chaco War (1932-1935) with Bolivia, which resulted in securing the territory for Paraguay. This war could be interpreted to visitors with a suitable peace memorial to both Paraguay and Bolivia. This would be another mixed-use park, combining the wildlife and historic reserve on the Rio Pilcomayo with the private ranch operations and local habitation.

The wayside class is represented by roadside strips of forest with pullouts for people to stop and the possibility of walks under the trees. The Guayaki National Park on the paved highway to Puerto Pres. Stroessner and Iguazu Falls is in this class.

Recreation areas would include bathing areas for the public along the Paraguay River near Asunción and combination of possible land access and water recreation sites on Lake Ypacaraí at San Bernardino 30 miles northeast of Asunción. Here the emphasis would be on recreational activities with consideration for the natural scene.

Since there is presently no parks and recreation organization to plan for and administer Paraguayan parks and recreation areas, an interdepartmental coordinating committee chaired by the Minister of Agriculture might serve to initiate a parks program. The FAO project could aid the committee by providing inventory information on remote potential tracts within the project area. The author developed procedures for this and explained them to project and counterpart personnel.

Paraguay has a great potential for park and recreation areas to serve not only the foreign tourist but also the local traveler and resident. The condition of roads, means of transport, expanding agricultural development, and isolation of tracts pose great problems, as does the lack of administrative organization. Yet there is a little time left to designate areas away from agricultural and road development and to plan carefully for the future. Quality standards should be carefully observed in park planning. Monetary benefits probably will be slow to come—an important factor to Paraguay. Still, once the natural assets are allocated to competing and destructive use and development, they cannot be restored as attractions. Only careful comprehensive planning can assure preservation of Paraguay's unique assets. ■

ISLE AU HAUT

Acadia's Wildness Area

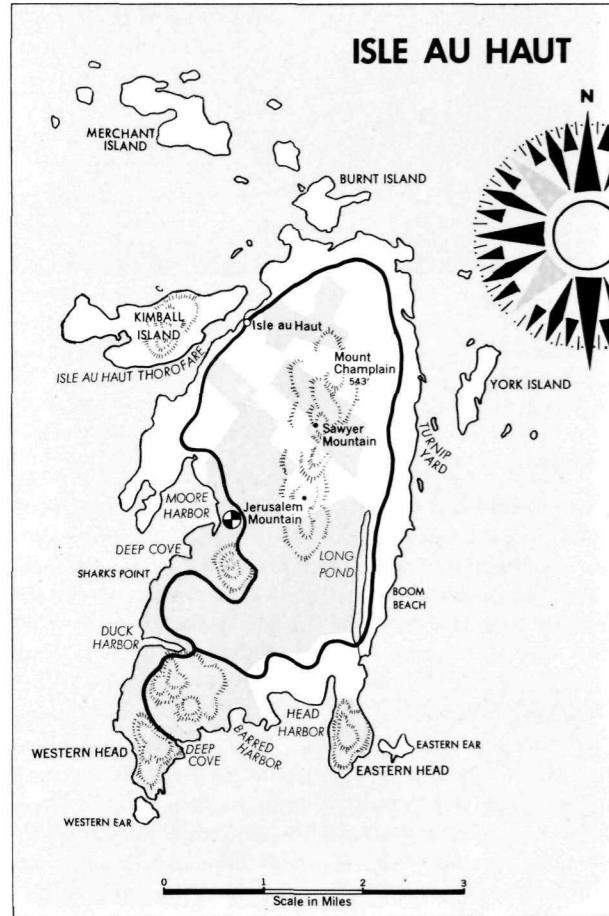
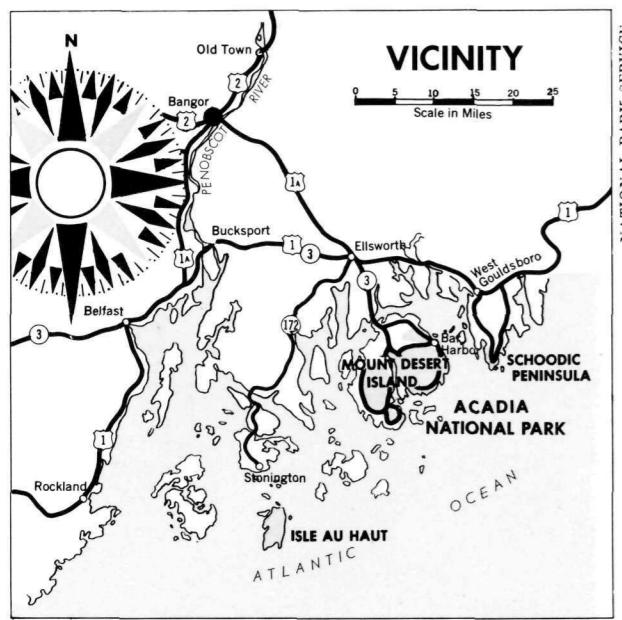
Thomas E. Jones

Duck Harbor

In wildness is the preservation of the world.—Thoreau

Henry David Thoreau's prescription for man was the tonic of wildness, and it reads in part: "We need to witness our own limits transgressed, and some life pasturing freely where we never wander." This insight into the nature of man was based on Thoreau's personal experience of recording the natural world while living at Walden Pond. Although the quotation implies a need for the stupendous and remote, Thoreau's theme was founded not on sensational subject matter, but on what Joseph Wood Krutch calls "the daily and hourly miracle of the usually unnoticed beauty that is close at hand." Instead of searching for the awesome aspects of the natural scene, Thoreau felt that we needed "not the unfamiliar, but the power to realize that the familiar becomes the unfamiliar once we really look at it. . . ." The inimitable descriptions found in Thoreau's journals attest to the validity of this statement and further inspire the reader to develop that "power to realize" to its fullest.

Isle au Haut could be properly named Acadia's Wildness Area for several reasons. First and foremost, Isle au Haut is a tonic of wildness in a double sense. It combines the qualities of the stupendous and familiar: what Thoreau called the "sight of inexhaustible vigor, vast and titanic features, the seacoast with its wrecks, the wilderness with its living and its decaying trees," with the sight and sound of the herring gull, robin redbreast, barn swallow and wren, of the rushing stream and roaring brook. Secondly, compared to other sections of Acadia National Park in Maine, Isle au Haut parkland is relatively undeveloped. At present camping facilities are primitive, with an area of open field designated as a camping area with one cellar hole sufficing as a fireplace. In addition, a 6-mile hike to the camping area is necessary, thus precluding elaborate camping equipment and excluding all but the most hearty and resolute campers. Finally, Isle au Haut is remote and inaccessible to vehicular traffic. It contrasts to the Mount Desert Island



Isle au Haut, Acadia National Park. Shaded area of land masses represents parkland.

park area, to which, as Gerald Warner Brace describes it, "The road from Ellsworth to Bar Harbor in July and August is like the narrow spout of a funnel whose wide intake is the nation itself." Isle au Haut is linked to the mainland only by a mail boat that operates three times per day at the most. As in Bar Harbor, the intake at Isle au Haut is the nation itself, but the funnel spout is far narrower and effectively cuts off casual stops by northbound tourists, which in no small measure has enabled the island to retain its wildness.

One of the early transoceanic explorers, Samuel de Champlain, gave the first written account of Isle au Haut in 1604 after he was dispatched by Sieur de Monts to explore the eastern coastline of the New World. Proceeding east of a land called "Bedabedec" by the savages (the region about Rockland and Camden), he noted, "there is another island which is so high and striking that I named it 'Isle Haut,'" translated "High Island" in English. While in the Penobscot Bay region, Champlain also sighted and named Mount Desert Island, or, as he originally named it, "L'Isle de Monts Deserts." These two islands, the most prominent features of the area besides the Camden Hills, were named to aid future navigators.

Although the written history of the Penobscot Bay area began with Champlain's log, evidence of an Indian era before his time is plentiful. Scattered about the shores of many islands are shell heaps, some visible on the surface of the sand, others covered with a foot or more of soil. These heaps mark a lengthy history of Indian summer excursions to the coastal islands. The Indian visits were not exactly like our conception of summer vacations, despite the feasting and celebrating that occurred. For the Indians the excursions were a vital part of the tribal economy; and once encamped on an island, they would set about the

summer's work. The men hunted seal and porpoises from their canoes, needing the skins for clothing and the oil for cooking. Ducks, valued for their feathers and meat, were the object of cooperative ventures called "duck drives." Men in canoes herded ducks into the natural harbors, making them easy prey for skilled hunters on the shores. Duck Harbor on Isle au Haut is named for its part in this sort of Indian hunt. In the meantime, the Indian women robbed nests of eggs and fledglings, gathered sweet grass for their basketwork, and dug great quantities of clams, which they would later dry and pack in bark containers for winter stews and soups. Lobsters were sought at low tide underneath the rockweed; they, too, were dried and stored for winter use.

Animal skeletons unearthed in the Indian shell heaps supplement our record of the wildlife present on the island centuries ago. Remains of river otter, mink, and muskrat can rarely be found anywhere except in the shell heaps. What caused these species to disappear is a matter for speculation; however, their appearance in the shell heaps points to at least one of their major predators, and the disappearance of the Indians in their turn points to still another.

Isle au Haut was first settled by Pelitiah Barter in 1792, a score of years after neighboring Merchant Island was settled. As on many islands, a few family names have remained current on Isle au Haut for long periods of time; the two Barter families on the island are descendants of that first settler. Inasmuch as families are few, the islanders are practically all related, forming one large island family.

The early settlers made their living at a wide assortment of occupations. Subsistence farming; the raising of potatoes and sheep; the harvesting of timber, fish, and lobsters; and blueberry picking ("plumming") in season—each was an integral part of the island economy. Shipbuilding also was an important activity, but the absence of white oak on the

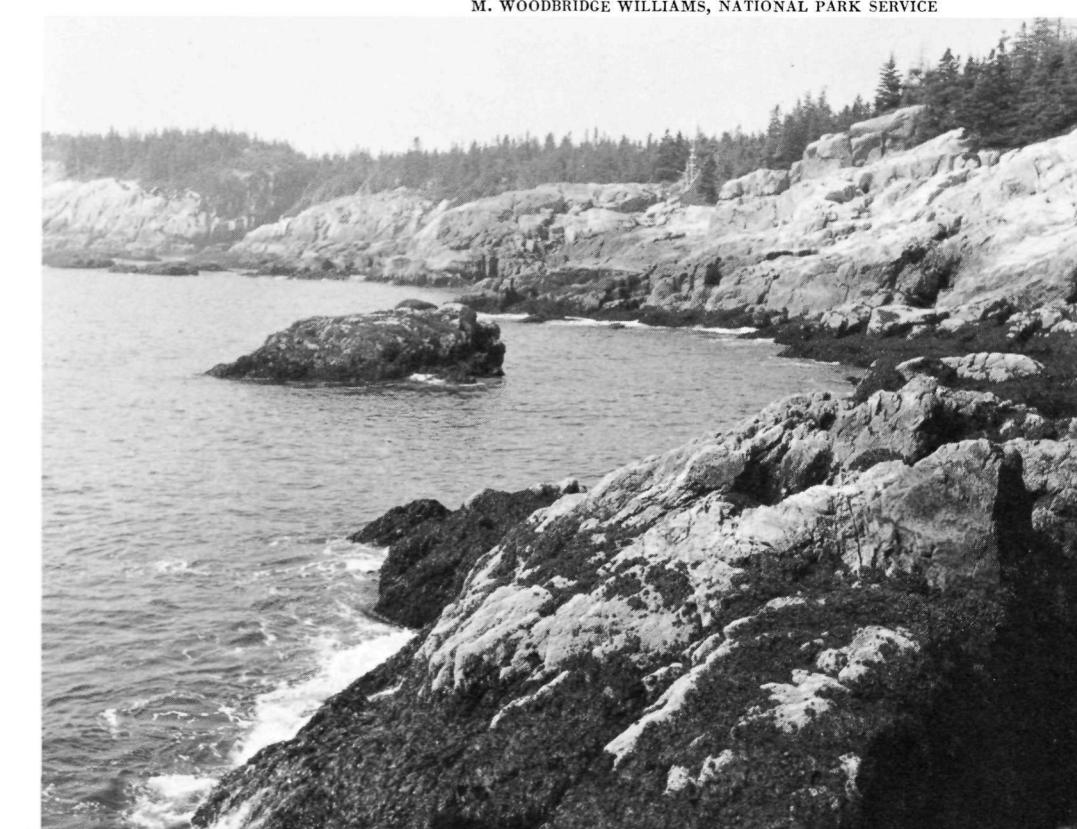
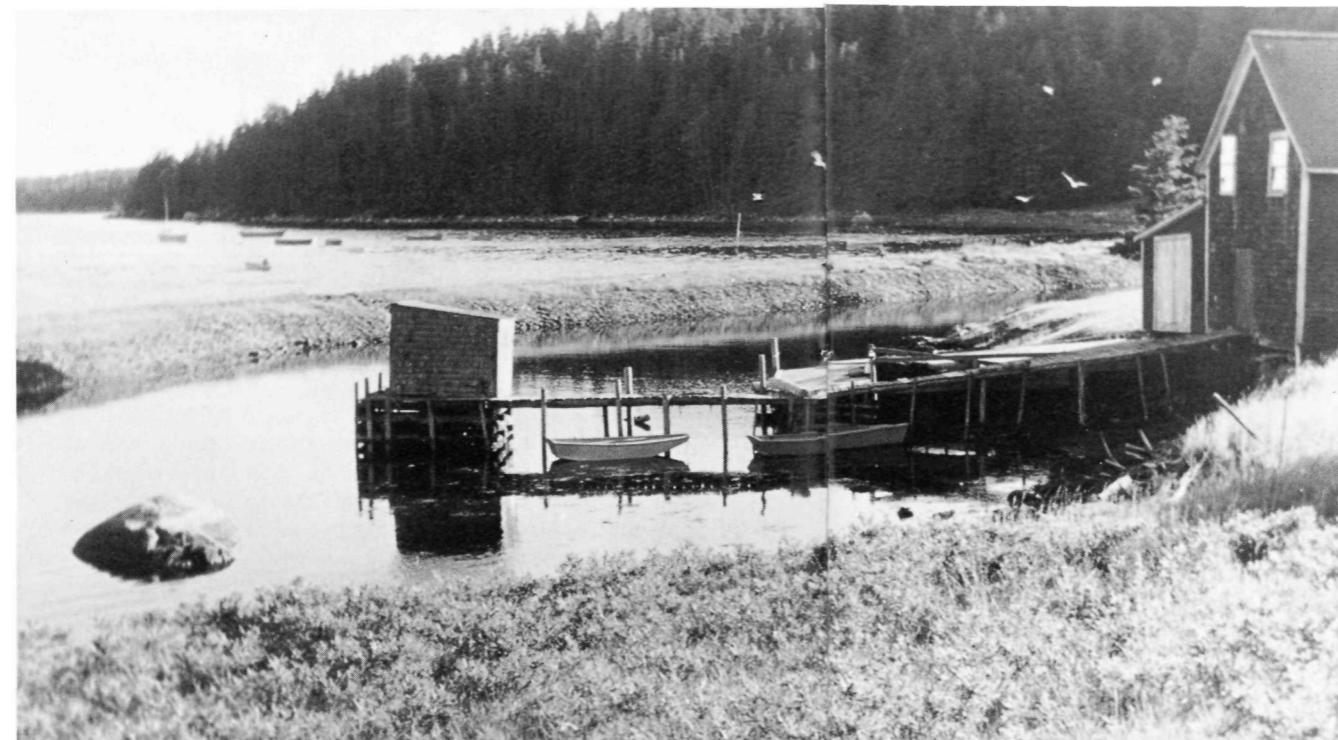
island prevented it from developing into a major industry. Much island timber, however, was used in the construction of small boats. Families that did not own wood lots fetched their wood from the mainland during the fall months.

According to George S. Wasson, whose book *Sailing Days on the Penobscot* gives a thorough account of Isle au Haut's history, the mid-1800's were the island's peak years. During that time fishing and shipping flourished, and so did the island's economy. A West India trade was carried out, the islanders exchanging cargoes of dried fish for rum and molasses, both indispensable commodities. Fishing schooners were divided into three classes known as Baymen, Labradormen, and Bankers. The first class transported island men to the Bay of Chaleur; the second, to the coast of Labrador; and the third, to the Grand Banks off Nova Scotia. Wasson says that these ships left with huge quantities of salt and would not return until they had caught enough fish to use up the entire load; sometimes bottles of rum were placed under the beds of salt to provide incentive to the fishermen.

During this era of prosperity the island reached its greatest population, reported to have been between 600 and 800 permanent residents. Since then the population has declined steadily. At the turn of the century, according to census figures, 182 persons lived on the island, and that figure has steadily diminished until during the winter of 1968 only 20 people remained.

Several factors contributed to this population decline. Some of the foremost reasons are the decline of fishing and shipping, the conveniences of mainland living, the advent of power boats, and the construction of lobster pounds and fish canneries on the mainland. One of the main benefits that had attracted people to move to Isle au Haut or to any of Maine's coastal islands was proximity to fishing grounds. When the internal combustion engine was introduced, the islanders' original advantage was eliminated.

Peaceful Moore Harbor contrasts dramatically with one of Isle au Haut's wild, rocky coasts.



Man no longer needed to use his muscle power to row; he merely flipped the ignition switch and tampered with his engine. As a result, the remote fishing grounds were easily accessible to mainland fishermen. Another problem was the scarcity of services on the islands. The absence of shopping centers, auto service garages, hospitals, large schools, telephone service, and a major electric power source all contributed to the movement away from island living.

When shipping and fishing declined and Maine stopped sending her ships all over the world, the world started coming to Maine for lobsters. Now Isle au Haut, as many of Maine's islands, has slowly become little more than a base of operation for lobstermen and a "summer island" for vacationers. Today Isle au Haut and many other villages located along the Maine coast live by the lobster. Without this crustacean the island would lose its basic industry, and the islanders would be faced with virtually no alternative than to leave their homes and seek work on the mainland.

The heavily wooded habitat noted by Champlain remains intact. Yet man has definitely left his impression on the island, as Mount Champlain's balded top testifies. In 1879 some blueberry pickers accidentally started a forest fire on the mountaintop, providing later hikers with a treeless vista. Because Isle au Haut, like many other coastal islands, is ill-equipped to handle any fire of sizable proportion, it is extremely vulnerable to devastation if fire breaks out. For this reason, carelessness cannot be tolerated, and permission

Thomas E. Jones is a student at Williams College in Williamstown, Massachusetts. He spent the summer of 1969 in a small woodland cabin on Isle au Haut in Acadia National Park. After the summer was over, Robert O. Binnewies, Chief of Interpretation and Resource Management at Acadia, forwarded to this Magazine a manuscript Tom had written. We are pleased to print in two parts, herewith and next month, what Tom Jones wrote that summer.

to build fires must be secured from Acadia National Park's fire control aides.

Man's impression also has been left on the shoreline. Recorded there is the history of Isle au Haut fishing and shipping, which is basic to an understanding of the people and their way of life. The waterfront contains relics of past activity—forgotten and unaccountable enterprises in cod-fish, mackerel, herring, and lobster—and present activity—lobster boats in various stages of repair, wharves piled high with lobster traps and buoys, fish weirs in the harbors. Everywhere along the shore a sharp-eyed beachcomber can find evidence of seagoing enterprises—sections of seines, faded lobster buoys, broken lobster pots, gaffs, oars. Occasionally one finds deer carcasses, the targets of a winter poacher's bullets.

Landward, away from the shore, close observation reveals the remains of many dwellings, remnants of a bygone era of prosperity. Numerous foundations, stone walls, and deserted fishermen's shacks and cottages are still visible on all parts of the island. On most of the island one can stand alone in complete human silence, greeted only by the sounds of herring gulls, wind, rushing stream water, or breaking surf.

From the sea, under sail or under power, you may view the island as Champlain did if you wish to follow his course through the Penobscot Bay area; but closer inspection is advised. Years ago the government dredged a channel through the Isle au Haut Thorofare, making the island circumnavigable. If you do not own a boat or if you plan to anchor in one of the many sheltered harbors, the island is circumscribed by a road, making it easy to reach the well-marked trails. If you do not own a map of the island, one may be purchased at the Isle au Haut village post office not far from the Town Landing. From there you may wish to plot a course of your own, to explore the island by foot—to discover for yourself what Thoreau meant when he said, "In wildness is the preservation of the world." ■



PHOTOGRAPHS BY THE AUTHOR



VIRGINIA M. CARTER

Nevada's Desert Waterfowl



PHOTOGRAPHS BY BUREAU OF SPORT FISHERIES & WILDLIFE
DEPARTMENT OF THE INTERIOR

Waterfowl—in the Nevada desert? The idea seemed absurd the first time I saw Stillwater, about 15 miles east of Fallon, Nevada, at the end of the pavement on State Highway 42. This small community consists of one tiny store, half a dozen cabins and trailers, and little else. We had the distinct impression that we had come to the end of the world. Except for a few willows growing along an irrigation ditch and the obviously cultivated lands, everything was gray—gray earth, gray shrubbery, and gray rocks. We were here because it is the gateway to the Stillwater Wildlife Management Area and Refuge, and we were in search of waterfowl and shorebird photographs.

Traditionally, this region was a natural resting and nesting spot for birds along the Pacific Flyway, but construction of Lahontan Dam on the Carson River had changed the land from desert to cultivated fields, consequently changing the marshlands, too. Then, in 1948 a cooperative agreement was entered into by the U.S. Fish and Wildlife Service, the Nevada State Fish and Game Department, and the Truckee-Carson Irrigation District to establish and administer the Stillwater Wildlife Management Area and

Wildlife Refuge. The area is interspersed with shallow marshes, which contain about 200 tiny islands, ideal for nesting birdlife.

Heading into the area, I especially noted the utter barrenness of the ground on one side, endless gray land that looked as though it lacked enough nourishment for a grasshopper—not a blade of grass or foliage visible, not even the grayish sagebrush so common elsewhere. On the other side was spotty green and yellow growth, low and stubby, a few thorny, dry-looking shrubs, and here and there a half-dead tree. The water in the irrigation ditches bordering each side of the road was shallow and dirty brown.

Then a bit of the gray earth came to life, scurried along the ground for a few feet, and stopped to watch us, unmoving, as we passed. Strange that a killdeer—for such it was—with its normally striking appearance, could blend in so perfectly with the earth that it could become almost invisible when not active. Only its incessant warning cry, "kildee, kildee," sounding to alert other unseen neighbors, gave it away and guided me to focus the long lens on it.

A little farther on, a loggerhead shrike, pretty little

sparrow-sized predatory monster—insofar as grasshoppers and other insects are concerned—and a sparrow hawk, half again his size, quarreled bitterly over which would have stewardship of the only tall (about 6 feet) bush in the immediate vicinity. We stopped to watch. The sparrow hawk, by far the largest of the two, held the thorn bush for a few moments, but then the fight was renewed; and when we went on our way, the shrike, or butcher bird, as it is also known, was in sole possession. Perhaps he had several grasshoppers, or some other prey impaled upon its thorns, for it was this habit that gave the bird its nickname. After winning control of the bush and driving his opponent off, however, the bird flew to a nearby NO HUNTING sign. Perhaps it was his way of telling us that the only hunters permitted here were wild ones.

Off to our right a long-billed curlew, watching us intently, began sounding its "klee-le-lee-lee," its incongruously long 9-inch bill wobbling with each high-pitched sound.

After the first 3 or 4 miles the land became marshy, and the irrigation ditches seemed to have some purpose for being, for they are the lifeblood of the marsh, home of thousands.

Over the roadway, some hundred feet in front of our car, a great blue heron, seeming to be in slow motion, ponderously flapped along, disturbed and dissatisfied by our presence here, for they are among the wariest of birds. Their 4-foot height places them among the largest of western shorebirds, and their blue and white coloring adds to their majestic and striking appearance. We stopped to watch as the slow flapping became a glide and the great bird settled down on the opposite side of a marsh pond, always keeping us under close observation. Although there are many of these birds in the refuge, we found that in order to get a picture, one of us had to ride in the back of the pickup. They did not seem to be unduly disturbed as long as no one got out of the vehicle.

Farther on we came to a group of four white-faced glossy ibis, their purplish, brownish feathers gleaming iridescently with each movement in the bright sun. Their darkness contrasted sharply against the green of the grass and the vividly blue water in the background. It is easy to see why the adjective "glossy" is a part of their name.

Not far past the ibis a bright-eyed lesser scaup duck floated serenely on the smooth water. A Caspian tern kept a wary eye on us and rose to circle overhead. Several of its fellows were fishing by a bridge over the ditch ahead of us, diving swiftly into the water and out again with considerable splashing. A group of swallows pursued the pickup, chiefly concerned with the hordes of mosquitos that seemed to follow us, though neither of us received so much as a single bite.

The view alternated, now dry and barren, then wide expanse of marsh and open, shallow water, marsh growth, and grassy land.

On a tiny island in open water a double-crested cormorant sunned itself, drying its feathers, one of the rare water birds whose feathers are not waterproof. We watched, wondering how long it could stand unmoving in this manner. At last, after a full 15 minutes the bird folded its wings, stood quietly for a bit, and dived into the water again. This bird is a real contradiction of nature—one of

the most superb swimmers in the bird world, it is compelled to dry its feathers in the same manner as the human housewife has to dry her clothes, by hanging them out to dry. The housewife's advantage is that she doesn't have to wear her clothes while they are drying.

In the distance we noticed a solid, snow-white line, contrasting with the blue of the water and covering its expanse over a wide area. The line seemed to be moving slowly, steadily, and with considerable noise. Viewed through the long lens, the line became an almost solid wall of white pelicans, moving and working in unison, driving a school of fish before them into the shallow water. These birds are especially useful in controlling the carp population, which here are considered a trash fish. Now, in May, the carp were spawning.

These fish, some of them at least 2 feet in length, were actually leaping out of the water in their excitement. Spawning in the shallows along the grassy and reedy shorelines, the water fairly churned with their frenzied activity, until, exhausted, they would lie quietly, their scaled backs showing a golden sheen in the sun. Then, once again would come a violent splashing and as suddenly quiet would reign again, with another golden back showing in the still bubbling water.

Here we picked up a group of avocets, or they picked us up, whichever you prefer. Self-appointed guardians of the shorebird community, they took to the air around our pickup, their high-pitched cries of alarm alerting every bird within hearing distance that an intruder was in their midst. The beautifully marked birds, their black and white and cinnamon colors flashing, escorted us a short way and then returned to earth to feed. Feeding, they swept the water's surface and beneath it with their long, upcurved bills, searching for the insects and small crustaceans that make up the major part of their diet.

Avocet



DAVID MCGLAUCHLIN



Western grebe and young



Avocets and black-necked stilts form a composition of oriental simplicity.

Always, it seemed, where we found avocets we also found their cousins, the black-necked stilt. Vividly marked, these tall, beautiful birds strode through the water with such grace and ease that their passage marred the smooth surface with scarcely a ripple.

In the water a chunky little ruddy duck, with his peculiar rusty coloring contrasting strangely with his pale blue bill, and slate gray coots, abundant on all waterways it seems, were joined by an attractive western grebe, who came up from beneath the surface. A beautifully marked horned grebe floated serenely on the water, its reflection on the smooth surface so perfect that it duplicated him. Of all the birdlife, we found the western grebe alone comparable, perhaps even superior, to the blue heron in ability to frustrate our best efforts of photography. The heron took wing just as focusing was completed; the grebe would simply dive below the surface with neither sound nor warning and come up 4 or 5 minutes later about 20 feet away. Using a long telephoto lens adds to the problem, for with it focusing is extremely critical.

Western grebes are at home only in the water, but in that element they are superb. Their legs are placed so far back on their bodies that they are literally helpless on land,

unable even to stand upright or walk about. They are compelled to proceed by a series of bumps and scooting forward on their breasts and bellies, using their legs only as a sort of spring propellant, whenever they are so unfortunate as to be accidentally caught ashore. In the air they are not much better, flying low and, on occasion, getting tangled up with such things as electric wires and tall trees. They cannot get into the air from land, but only from the water. In fact, one landed on the sidewalk near our home a couple of years ago and was unable to leave until carried to a pond nearby. Their takeoff from water is clumsy, with great thrashing and a considerable distance required to make them airborne, and their landing is almost equally clumsy. To add to their oddities, these birds consume large quantities of feathers, an appetite for which science has found no suitable explanation.

While we were photographing the grebe, a comical looking little Wilson's snipe watched us intently from a nearby fencepost, its long, thin bill emphasizing the chubbiness of its fat little body. Nearby, long-billed dowitchers probed in the mud for food, and three pelicans floated on the water, looking far less clumsy than they do on land. In the air these great white birds with their 9-foot wingspread are sheer grace and beauty.

Then, ahead of us, we saw the most beautiful bird of all. The glorious snowy egret, almost lost forever to the American scene around the turn of the century, when thousands of these beautiful wild birds were slaughtered and their young left to starve and die in the nests so that the adult feathers could adorn women's hats. Now they are under complete protection throughout the nation and cannot be killed or molested at any time.

It is a pleasure to watch them as they move in a stately manner through the shallow water, their trailing plumes waving softly in the breeze like a rippling white liquid. Like their close relative the heron, they will stand quietly for a long time, contemplating their water world, keeping a sharp lookout for the next meal. Then again, they may be lively, stirring up the water with their golden feet in the search for food.

Leaving the refuge, we watched a little dustdevil whirl its way across the seemingly endless desert in Bacchanalian revelry, drunk with the sheer expanse of gray-white land to play in. The tour ended as it began, with dry, gray earth and desert. But this time we noticed the distant background of high mountains, with their changing colors and spotty white snow trimming; and we realized that it is a beautiful land, pulsating with unseen and unsuspected life. ■

Snowy egret



E. P. HADDON

The Vixen and the Boy

Tom Browne

Drawing by Meredith Rode

When a fierce storm raged on some forgotten night years ago, it felled a huge old cottonwood tree right across the narrow deep creek that meandered placidly at the edge of Quilchena Meadows. And it was a fortunate happenstance, for it made a perfect bridge over which numerous raccoons and foxes could make nightly forages for mice and bugs and berries that abounded in the rich meadow-lands.

My neighbor lad down the road, the one I had named Young Thoreau—for he seemed so perfectly the counterpart of the great naturalist—often wandered the bottom-lands around the meadow to listen to the melodious symphony of birds and to read the latest news printed by the busy paws of its residents, which he examined much as a connoisseur would the finest of typographer's art exquisitely impressed upon the pages of some rare, magnificent work.

One day, returning from one of his solitary travels, he burst through my gate in great agitation.

"Know what?" he said, dark eyes flashing, cheeks burning with indignation.

"No, what?"

"Somebody set a trap on the log bridge in the meadows—and caught a fox."

"Oh, no!"

"Oh, yes! A mother fox. But I let her loose." His voice rose angrily at the crime he had witnessed. "She has babies needing her milk. She was such a beautiful fox, a red one, with a beautiful tail."

"I'm so glad you freed it," I said. "But with your bare hands—How did you, without getting bitten? Fox bites can be serious, you know."

"I know," he replied. "But will your friends harm you?"

I was immediately sorry for my scolding. "No, of course not. Not a real friend."

"She is my friend," he said confidently. "She licked my hands; she didn't bite. She knew I was helping her."

Every day after school, Young Thoreau headed for the meadow, where in the skirting woods he searched for his friend. At last he found her den. It was cunningly concealed in a huge mound of logs and earth, effectively hidden by the conglomeration of twisted fallen trees whose trunks had been whitened and smoothed by many years of wind and sun. And the vixen wisely left no paw prints, for on leaving and returning home she always ran the logs, slipping into and out of her den without leaving a trace.

In the warm spring days that followed, Young Thoreau spent all his spare time in the vicinity of the fox den. By minutely studying the wooded trails, examining each disturbed leaf, the scuffing of soil, and less often a paw print, he learned that she had a family of four or five cubs. Occasionally he saw the vixen but not any of her progeny, for they remained denned up in daylight. Only the vixen ranged far for food. Often, when the hunting was poor, she went hungry herself, bringing home what morsels she could find for her cubs.

Young Thoreau kept me fully informed of what was going on at the meadow, and although often I longed to accompany him on his invitation, I refused, feeling it was not my right to be anywhere near the fox burrow, as the vixen's nose undoubtedly would detect a strange presence

—the hated smell of an adult human. Although there had developed a remarkable rapport between the vixen and the boy, I was not sure she could abide me. There seems sadly a vast gulf between an adult and a young person, a fact sensed, strangely, more by wild creatures than domestic ones. Perhaps it is because youths generally are gentler both in thoughts and soul.

One day, a Saturday, when Young Thoreau had ample time to laze near the fox den, stretched on the forest's carpety floor, eyes marveling at the bluish hues of heaven, he heard voices and heavy footfalls.

He stretched out on his stomach, propped his chin on elbowed-up palms, and watched intently. Two rough-looking men emerged from the undergrowth, lugger heavy canvas sacks with ventilation holes—and implements to dig.

A feeling of dread filled Young Thoreau's heart. He was appalled to realize that someone else knew of the fox lair. These men were undoubtedly professional diggers seeking young foxes to sell to pet stores. They had previously located the den and set the trap to catch the vixen so they could secure the cubs unhampered.

"Robbers!" Young Thoreau raged under his breath. "Dirty den robbers!" They filled him with disgust. But he was not worried much at the moment about the safety of the foxes, for he knew the wily vixen had an exit on the far side of her den not discernible to the keenest scrutiny. He had watched the men walking all around the earthen mound looking for holes, but they had missed the exit hidden under an overhanging thicket of salal berries. In making it, the vixen had even pawed the earth inward to prevent its detection. But Young Thoreau, being part Indian and gifted with keen sight and utmost patience, had discovered it.

The men set to work vigorously, one grubbing with a pickaxe, the other tossing the earth with a shovel. Young Thoreau squirmed silently toward the rear exit of the den. He watched it intently as the raiders dug, the scraping of their tools probably loud as thunder to the foxes.

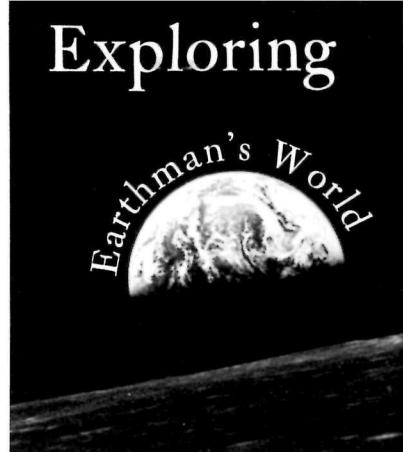
At last he detected a cautious shivering of the salal bushes, then the pointed muzzle of the vixen poked out. Her eyes, glowing like jewels, fell full upon Young Thoreau. After seconds she got his scent, seemed unafraid, then slithered out on her haunches, followed by sturdy cubs. They all padded away silently as a string of red phantoms so close to Young Thoreau that he could have stroked them.

The vixen, proud leader of the silent procession, turned her head to gaze on him in passing. He saw her jaws open, her white teeth gleam, her long red tongue fresh and damp with saliva, her eyes tender and soft. She was smiling at him. He smiled back joyously.

When the last of her cubs, in single file, had melted into the green shrubbery, Young Thoreau crept away as silently as they, passing close beside the toiling men who were puffing and grunting from their haste to reach their plunder at the heart of the den. They halted just long enough to pull on long, bite-proof leather gloves for the capture they momentarily expected.

Young Thoreau kept going, for he despised being in their presence. Before he had gone far, he heard their curses contaminating the clean forest air. But he chuckled to himself all the way to my place. ■

ULTIMATELY, IT'S THE CONSUMER



BRUCE COWAN

A series of short articles examining man's relationship to nature

Not long ago the electric company decided that a larger power plant was needed in our area. Generating energy from oil, the plant's most obvious feature would be a forest of towering smokestacks—each emitting tons of pollutants into the atmosphere. A new era was at hand. Our clean little town on the California coast would soon experience smog.

Naturally, people objected. The local newspaper was crammed with editorials condemning the proposed power plant. Letters of condemnation poured in from adjacent communities to support our cause. Nevertheless, the highly unpopular plant was built. True to expectation, it sent up clouds of yellowish smoke that hovered over the bay and cast a faint shadow of gloom on every life.

I didn't want the power plant either, and I complained about it. But did I have the right? After all, I use electricity.

I cry out every time a dam is built in a beautiful canyon, with another cascading mountain stream converted to a dead reservoir and another priceless habitat exploited by the motorboat. Yet I pour out thousands of gallons of precious water every summer to keep my lawn green—ignoring the possibilities of using drought-resistant shrubs and ground covers that would enhance the natural effect of my landscape much better than a lawn. I gripe because a lovely stretch of shoreline near my home is filled with signs reading, "Danger—Highly Contaminated!" I contribute to the pollution as much as anyone, but it would cost tax money to build adequate disposal systems—and I dislike paying taxes.

Our environment is being destroyed to the extent that our own existence is in jeopardy, and we point accusing fingers at industry. Yet, we continue to buy all kinds of goods we don't need. One TV is nice, but is an extra one for the bedroom necessary?

Some time ago I saw an excellent television documentary that showed the destruction by cattle and sheep overgrazing on our range and watershed lands; with most of the understory and grasses gone, the soil had largely eroded away. The narrator explained that the ranchers' greed for money is the basic cause of this destruction.

But is it? Ultimately, it's the consumer who is responsible—by creating demands.

Bruce Cowan holds a Master's degree in forest entomology and is employed as Environmental Horticulturist at Asilomar State Park in California, where his job is to propagate, plant, and preserve native vegetation in an area badly abused by overuse.

Protein is a necessary part of our diet. However, raising meat animals is an inefficient way to get this protein; too much of the food energy in an acre of plant material is burned up by the animal who eats it. There is simply not enough land available to grow enough meat to feed everyone in the world. Meanwhile, ocean fisheries are being depleted. As population increases, the situation will steadily worsen. Meat will become a luxury enjoyed only by the wealthy. Plants such as soybeans provide a cheaper and much more efficient source of protein than meat, and man's nutrition will depend more and more on foods made from soybeans. But how many of us are willing to try some of the meat analogues already developed?

It has been said that a pet dog in America consumes on the average more protein in a week than a person in India gets in a month. Don't get me wrong—I like animals. But a tiny dog can be equally as devoted a companion as a large one, and it eats only about one-fifth as much. Better yet, a parakeet makes an amusing, friendly pet, and the amount of food it consumes is minimal. There is even more to be said for tropical fish; an aquarium full of them can be maintained for an entire year on less than an ounce of protein.

I wonder how much good agricultural land around the world is being used to grow tobacco? While people starve, several countries and some of our own states continue to waste their rich soil on tobacco. Each time we buy a pack of cigarettes, we steal a meal from a hungry person, besides harming our own health.

Every year millions of young trees are cut only for the purpose of bearing Christmas ornaments on their drying branches. A week or two after Christmas, garbage cans are full of pathetic dead trees. Christmas trees are grown on farms that could better be used to grow food or beautiful timber-producing forests. We are a nation of people rapidly dis-

carding age-old traditions. What's wrong with buying a few lifelike plastic branches and making a new tree each year with the same branches? It could be done creatively, providing family fun.

One of our major concerns is air pollution. Until better rapid transit systems are built, our way of life requires most of us to have an automobile. But do we need two or three per family?

The oil industry is the cause of problems ranging from political tension in the Middle East to the potential destruction of the Arctic tundra. Because of oil, sea birds have perished by the thousands. Most of our pollution results from oil, its products, and by-products. On the other hand, the benefits of oil are many. From it we obtain plastics, synthetic fabrics, even certain medicines—to name a few. Oil is an irreplaceable resource. It is energy borrowed from the past. When it is gone, mankind will face great deprivation. Let's not waste it.

What can I, the consumer, do? I can avoid burning electric lights when I don't need them. I can conserve water. I can adjust my diet to contain more plant proteins and less animal proteins. I can stop smoking. I can drive a compact, economy car and use it only when I really need it. I might find that walking to the corner store, instead of driving, is good exercise; that a Sunday afternoon bicycle ride in the park is more rewarding than a drive on a crowded freeway; that paddling a canoe in a silent lagoon or down a lazy stream, watching a heron or a flock of ducks, is more thrilling than speeding in a motorboat.

I can reduce my demands on the economy and thus on the environment—and become healthier in the process.

Every consumer plays environmental poker, with life or death as the stake. Each of 200 million American consumers could make a big difference by assuming responsibility for his Earth and living accordingly. In this game, nature deals last. Let's play our cards right. ■

THE SENSE OF WONDER IN A CHANGING WORLD

DON GOLDMAN

October 4, 1957, was unusual in only one respect: the evening newspapers carried the story about Sputnik, the artificial satellite that had been successfully orbited by the Soviets. I read the accounts, then moved on to other matters.

The following morning my first class was with Dr. Huey L. Kostanick, a professor of geography at UCLA. The course, as I recall, was the Geography of Western Europe, but Dr. Kostanick didn't mention Western Europe that morning. What he did say was one of the most significant lectures I heard during 6 years at the university; there is no question but what it was thought-provoking and disturbing. I don't, of course, remember the professor's exact words, but his opening statement had an impact on me that has increased with the years. "Last night," he began, or in words to this effect, "when you went home, you learned of one of the truly significant events in man's history, an achievement that will rank with anything previously accomplished. As man has progressed in his knowledge of the world and his ability to use it, each advancement seems to flow from the last. Only rarely does something occur that is so innovative that it is unique and original; an event that is not just a continuation, but a beginning of something new and different. Sputnik was one of those. But . . ."

And here Dr. Kostanick touched on something that is of crucial importance: ". . . you probably scanned the news accounts with a degree of interest, perhaps even some surprise, and then went on to the sports page. Having grown up in a world in which every day's newspaper

describes new events, achievements, and gadgets that would have been beyond our grandparents' imaginations, you are accustomed to miracles as part of your daily diet. It is not surprising that you have lost the capacity of feeling wonder and awe and can fail to recognize the magnitude of an event like Sputnik."

What he said was disconcerting, the more so because it was true. I had failed to see that Sputnik was different—in kind, not merely degree—from the newest airplane or washing machine. I had somehow been lulled by the incredible tempo of man's daily technical achievements and his well-advertised "breakthroughs" and had scanned the news of this event as that of just another clever gadget.

Late one night last winter the Nation's Capital was treated to its first snowfall of the season. Jessica, just turned two, was brought from her bed and perched at the window. She gazed at the first snow of her memory, then gawked; she pressed against the pane to see better, and her mouth was agape. She looked at me with wide eyes and tried to pronounce it; then she laughed and pointed. Jessica was awestruck.

One does not expect a college student to drop his jaw at the sight of a snowflake, but why does such childish wonder dissipate so completely by adulthood? Having been born in 1935, my generation, and even more so those who are younger, has been subjected to such a bombardment of technological accomplishments and to such a rapidly changing world that it seems to have suffered an impairment of its capacity for wonder. How new a thing Sputnik was has become dramatically clear in the intervening 12 years as, true to form, each achievement has led inevitably to the next. We have sent men to walk and work in weightless space, have seen photographs of whole continents and the entire globe, and—as if stretching our sense of wonder to the extreme—have watched human beings

walk on the moon. Even before the latter incredible feat could be digested and placed in a rational perspective, we were seeing close-up photos of Mars on our television sets and deciding when to go there.

If indeed there is an impairment of our capacity for wonder, and in view of the present pace of change, those of us who believe strongly in the national park concept have some new and elemental questions to ask and answer. The safeguarding, elaboration, or evolution of that concept will rest with the attitudes and values of the succeeding generation to which it is passed; if the sense of wonder is gone, then that generation is radically different (in that regard) from the one that originated the concept and those that shaped it thus far, and we have reason to be concerned with how it will be received and treated.

The national park concept is, in a sense, the institutionalization of our ability to be amazed. It seems contradictory that a generation of Americans that was violently and relentlessly turning a wild continent into an urban nation could at the same time be amazed and incredulous at what they found in nature; but one need only read the accounts written by the earliest visitors to Yellowstone, Yosemite, or the Sequoias to see a vivid streak of childlike amazement. Faced with a seemingly endless number of beautiful and awe-inspiring scenes across the continent, still they were capable of sorting out those things that were so outstanding as to be different from the rest. More important, they recognized that a new concept of land use and ownership would be needed if these rare places were to be preserved. The resultant principle that was born with Yellowstone National Park in 1872 was amplified by the creation of succeeding national parks and was codified in the renowned National Park Service Act of 1916.

Such a remarkable approach to dealing with our land could not have been born nor nurtured under our form of government without having gone through the fire of debate. We are familiar with the acrimony that surrounded the national park idea in its early stages, which coincided with the beginnings of a sometimes conflicting American conservation ethic. It was a trying time in the conservation movement, as all family squabbles are, but it was vital to get it all said and understood if such a radical departure in government and land use were to stand. The issue was aired, and the concept was accepted to become a substantial and respected, and widely copied, part of the nation's natural resources management. From that day to this, every suc-

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ceeding proposal for a national park has been debated and fought and delayed on the merits and deficiencies of that particular proposal—but not since the issue was settled and accepted in the early days of this century has there been a serious or widespread challenge to the significance and need of the concept.

Why, then, should the present question be raised, especially when recent Congressional activity in adding to the national park system would seem to indicate that the concept is in caring hands? Because an ever-increasing segment of America's adult, tax-paying, voting, policy-influencing, and office-holding public has been raised and educated under the bewildering influence of a world of daily miracles, and that condition might signal some unexpected changes in the national parks.

A concept like the national parks is closely related to the value system and aspirations of the people. If, because of the technological and urbanized world our youngsters are being raised in, our national personality and values are in fact changing, we had better begin to consider those changes' effects on the parks.

There is another aspect of space-age living that bears consideration in the same connection. Some three-fourths of our population is urbanized. An increasing percentage of them, whether presently living in the central city or in the spreading suburbs, consists of second-, third-, and even fourth-generation city dwellers. Many, in the ghettos, and the totally urbanized and often decaying inner cities, live and work in surroundings utterly foreign to the land and its natural processes. They expect, and have become more or less inured to, physical and emotional discomforts of city life that earlier generations would have rejected. How will these urban Americans identify with our classic concepts of wild land and national parks if they don't recognize fumes and noise as degrading influences? Can people who have been raised to think that flowers are plastic and milk comes from bottles be expected to defend and promote a concept as distant and intangible as the preservation of wilderness?

Perhaps these basic changes in our way of life and our collective personality will have no adverse effects on our traditional conservation values; indeed, the lack of amenities in our cities and the lack of personal experience with nature might even stiffen our resolve to preserve the parks and wildlands. But on the other hand, there is no denying that the generation now in their late teens and their twenties is going to view life differently than their elders, and we may be facing some important shifts in our national

goals. Youthful attitudes toward conventional wisdom as regards such problems as racism, poverty, war, and education, as well as their forceful attempts to correct those problems, should certainly serve as indicators of possible new directions that government will have to take.

Those concerned with preserving national parks and open spaces no longer can count on automatic, emotional support from the public. If a sense of wonder and the ability to feel awe have always been important elements in the public's response to national parks, we must recognize that generations growing up with space flights and heart transplants are going to be more difficult to impress; if exposure to the land and an enjoyment of nature have been at the heart of our movement to preserve the parks, we must communicate in new ways with people who know only sidewalks and the sounds of traffic.

In other words, are they going to care? More specifically, can we help 2-year-old Jessica preserve her ability to be amazed so that it might enrich her adult life? Maybe yes, but we had better not take it on faith. The conservation movement, and especially those segments particularly concerned with national parks, wilderness areas, and the esthetic values of open space, must begin to consider the question. And we mustn't be misled by recent legislative successes previously alluded to—these marvelous additions to our public heritage of parks and wildernesses are products of traditional values and existing political forces and alignments. It is clear from our daily newspaper that both factors are changing. But in what direction? Will a national park be meaningful to Jessica in 20 or 40 years? Will its relevance to her life be self-evident as it is to ours?

Conservationists and naturalists may face a monumental task of communication and education. As never before they will have to concern themselves with cities and city people, their environments and values, if the traditional ethics and values of conservation are to endure in an evolving society. ■



Pariah Reborn

St. Genevieve and Salem formed
of ancient stone she rose;
from ancient mud
to haunt the sky.

Her gleaming silver spires reached past
the clouds to grasp the lightning
for her blood
lest she die.

Asphalt veins and concrete heart
pulse with mobile steel
on sap of trees
made velvet hard.

How high she rose to hide the sun
from eyes that must look up
from her disease
of disregard.

Through her midst a river flows
to clean her stagnant waste
from factory bowels
and human sweat.

And there are men within her midst
who feed her appetite
with their dreams
and lewd unrests.

Men who have sold their sacred soul
to her harlot stone
and steel schemes
and false quests.

An alluring mistress, she offers much
to men of little vision;
paper flowers,
plastic trees.

A desert world that's lost its green
and blue of water's edge;
sweet water showers,
and gentle breeze.

There is a memory in her stone
of ancient cities past,
and back to this
she must return.

And this, an ancient hieroglyph
of mud, she is a part;
and back to this
she will return.

Nelson E. Best, Jr.

news & commentary

TAPS HALTED BY COURT ORDER

The Trans Alaska Pipeline System (TAPS) has received a serious setback in the form of an injunction against granting a right of way by the Interior Department for the construction of a haul road parallel to the pipeline route. The haul road is essential to the building of the pipeline.

U.S. District Court Judge George L. Hart, Jr., granted the preliminary injunction because he said that plans for the road do not comply with federal laws, especially the new National Environmental Policy Act. The injunction was granted after a hearing on a suit to prevent construction of the pipeline brought by the Environmental Defense Fund, Friends of the Earth, and the Wilderness Society. Another suit against TAPS has been brought by five Alaskan Indian villages on the grounds that the pipeline would destroy their way of life. Earlier Hart granted a preliminary injunction preventing pipeline and road from crossing one of the villages.

The Interior Department is expected to appeal the ruling. If the judge is upheld, the suit could go to trial on the issue of whether TAPS will seriously damage the Alaskan tundra. The trial and subsequent appeals could take years, during which time construction would be stalled.

It seems likely, therefore, that conservationists may be granted some much-needed time. Studies of the Arctic tundra biome are necessary so as to gather the knowledge needed to develop North Slope oil without environmental damage. Industry, having invested huge sums already in North Slope oil development, is pushing for immediate clearance for TAPS to cross public lands despite the fact that no one yet has a clear idea of how to solve the pipeline's engineering headaches, let alone its environmental threats. The folly of investing so heavily in the unwarranted assumption that the public will allow its land to be misused should be industry's regret, not ours.

BUSINESS AS USUAL IN BABY SEAL BEATING SPREE

Nature dealt a blow to Canada's Ministry of Fisheries in the matter of the annual bloodbath staged by seal hunters in the Gulf of St. Lawrence. Once again thousands of baby harp seals were clubbed to death for their skins.

Few events rival the blatant, needless brutality of the massacre of 50,000 or so baby seals every March on the St. Lawrence. After last year's "hunt" and the ensuing international outcry, Prime Minister Pierre Trudeau, while expressing great boredom with the problem, announced new regulations. They stipulated, so it was said, that the pups could not be killed until they were a month old, at which time their fur has turned from white to brown and they can leave the ice and swim. Because they can swim, the reasoning went, hunters would have to shoot them instead of walk up and club their brains out. Besides, there would be less bad publicity because, said the bored Mr. Trudeau, "Those who protested the killings won't

be shown the same pictures of baby seals with their big blue or brown eyes."

As it turned out, all the regulations did was to move the hunt forward 3 weeks to the time when the seal pups *should* be a month old; they did not forbid hunting with clubs nor set a lower age limit. This year, for some reason, the harp seals whelped late; and when hunt time came, many of the cubs were still too young to swim. Once again the clubs cracked down and left mother seals staring mutely at humped masses of blood and flesh on the ice.

Some have tried to portray seal clubbers as honest fisherfolk peculiarly sensitive to the suffering they cause but forced by poverty to take part in the act. Accepting this unproven generality implies that poverty excuses cruelty, which it does not. Bloody practices like this degrade not only the perpetrators, but also the society and the government that permits them, and the whole race of man. Especially blameworthy are the consumers who create the demand for seal-skin products.

NO FUROR YET OVER MARIPOSA CAR BAN

So far there have been no riots, no bloodshed, and no governments toppled. All is apparently peaceful following what some of us thought could never happen until Doomsday—the banning of the automobile somewhere in America.

The somewhere was the Mariposa Grove of the Big Trees in Yosemite National Park, a place that never should have seen an automobile in the first place. For years visitors to the grove have chosen in overwhelming numbers to experience the giant sequoias sitting down in their cars. Instead they have experienced the exhaust and noise of traffic

jams that would do justice to Los Angeles in the rush hour. The Mariposa traffic long has been the cruelty joke of the National Park system. The Park Service finally decided it either had to widen the road or ban the cars. In a decision that has all too little precedent the latter course was taken. The ban has made walking through the grove more attractive, and presumably some former drivers are taking that course. For others who still want to take it easy, an open tram has been provided. The tram seats 50 in such a way as to give them an unobstructed view in almost all directions. In bad weather the tram is enclosed in a transparent plastic canopy.



DETERGENTS AND PHOSPHATES

Research results released recently by the Federal Water Quality Administration, Department of the Interior, are especially interesting to conservationists. They present the phosphate content of leading detergents (see below).

Several years ago detergent manufacturers yielded to intense public pressure to do something about the suds that were billowing from some people's faucets and wells. They changed the molecular structure of their detergents so that the chemicals could be broken down by natural forces soon after their discharge from the washtub. Now, although the suds have disappeared, there remains a problem of even greater significance—phosphate pollution.

Most detergents contain large amounts of sodium tripolyphosphate (STPP) additive. This breaks down into phosphate that stimulates plant growth. In excessive amounts it stimulates excessive growth of algae; lakes and ponds overfertilized by phosphate can become stinking sums full of green slime. In lesser amounts this potent fertilizer still can do great damage to aquatic ecosystems.

Meanwhile, conscientious consumers have been wondering what products they can use to avoid adding to phosphate pollution. A Columbus, Ohio, group—Operation for Our Children: A Better

PHOSPHATE CONTENT OF LEADING DETERGENTS

Product	Manufacturer	Percent Phosphate	
		Interior Dept. (as STPP)	Limnetics, Inc. (as phosphate)
<i>Pre-soaks</i>			
Biz	Procter & Gamble	73.9	40.4
Axion	Colgate-Palmolive	63.2	43.7
<i>Laundry detergents</i>			
Salvo	Procter & Gamble	56.6	35.3
Tide	Procter & Gamble	49.8	30.6
Drive	Lever Brothers	47.4	25.3
Oxydol	Procter & Gamble	46.6	30.7
Bold	Procter & Gamble	45.4	30.2
Cold Water All	Lever Brothers	(dry) 45.4	(liquid) 9.8
Ajax Laundry	Colgate-Palmolive	44.6	28.2
Cold Power	Colgate-Palmolive	44.6	19.9
Punch	Colgate-Palmolive	44.2	25.8
Dreft	Procter & Gamble	41.9	24.5
Gain	Procter & Gamble	39.5	24.4
Duz	Procter & Gamble	38.3	23.1
Bonus	Procter & Gamble	37.5	22.3
Breeze	Lever Brothers	37.2	22.2
Cheer	Procter & Gamble	36.3	22.0
Fab	Colgate-Palmolive	34.8	21.6
Wisk (liquid)	Lever Brothers	14.2	7.6
Diaper Pure	Boyle-Midwest, Inc.		5.0
Trend (dry)	Purex Corporation	..	1.4
<i>Dishwasher detergents</i>			
Cascade	Procter & Gamble	54.5	..
All	Lever Brothers	54.0	..
Calgonite	Calgon Corporation	49.4	..
Electrosol	Economics Laboratory	34.8	..

A CITIZEN'S VOICE IN GOVERNMENT

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

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

The best source of information for such purposes is the official *Congressional Directory*, which can be bought through the Government Printing Office, Washington, D.C. 20402, at the price of \$4.00. It tells you who your senators and congressmen are and lists the membership of the various Congressional committees. It also gives full information on the personnel of the various executive bureaus of the government whom one may contact about administrative programs and policies.

America—advocates a simple formula: presoak laundry in a solution of warm water with 4 tablespoons of old-fashioned washing soda. Then launder with 2 tablespoons of washing soda and any laundry product that contains 1 percent or less phosphate. Among the soap products found by Limnetics Inc., of Milwaukee, to contain no phosphates at all were Ivory Snow, Lux, and Vel. Other products listed by various sources as containing 1 per-

cent or less phosphate include Fleecy, Whistle, Jet Spray, Lestoil, Downy, Pine-sol, sal soda, and borax.

WHO ARE THE JUVENILES?

Bowling Green State University in Ohio began a 22-day environmental teach-in on April 2 as part of the nationwide student movement in behalf of the suffering environment, a movement welcomed by most conservationists.

The night before the teach-in began, university officials cut off all heat to the dormitories. The next morning there was no hot water for showers. At breakfast there was only cold food, served on paper plates.

The plan, according to a news report from Bowling Green, was drawn up secretly to give students "an idea of what they may have to sacrifice in order to curb air pollution." It should not be necessary to point out that no responsible environmentalist is advocating a return to the Stone Age. We are quite capable, with today's technology, of heating our buildings, our bath water, and our food without air pollution. As for disposable paper plates, they are almost symbolic of the solid waste pollution problem. Perhaps the officials' response was an honest *faux pas*, a bumbled effort at what someone thought was education. As served up, however, it looked like spitefulness.

NPA AT WORK

Once again the Everglades Coalition is going to bat for Everglades National Park. NPA President Anthony Wayne Smith, cochairman of the Coalition, testified recently on invitation at Senate hear-

ings on a perennial bill seeking increased authorizations for the Army Corps of Engineers' Central and Southern Florida Flood Control District. In behalf of the coalition, Mr. Smith said he is opposed to more money for the district and will remain so until the Corps promises to supply the continuing flow of water that the park must have to survive.

"The Everglades Coalition did not fight the battle against the giant airport and win it, for the purpose of seeing the conservation areas and Everglades National Park die for want of water," he said. The Army Engineers are supposed to provide adequate water supplies to the Everglades. In practice they have served the rapidly escalating demands of industrial, agricultural, and residential users at the expense of Everglades National Park and the conservation areas north of the park.

"Firm guarantees of adequate water supplies for Everglades National Park and the conservation areas have not been given as yet," Mr. Smith testified, "and until they have been given, we are opposed to any further authorization of funds for the Central and Southern Florida Flood Control District.

"Conservationists are concerned with the preservation of the conservation areas as well as the park, not only to preserve the irreplaceable sub-tropical plant and animal life which they harbor, but because they provide the foundation for the entire ecology of central and southern Florida on which elaborate food chains are based, and on which human life, as well as all other life in that area depends.

"If this park and its irreplaceable plant and animal life are to survive, guarantees of adequate flows of water, during good years and bad, must be provided by all governmental agencies having any responsibilities in the matter.

"The question is whether, once the levees around Lake Okeechobee have been raised, the lake has been deepened, and additional water has been stored there, the water will be made available to Everglades National Park, or whether it will be diverted unnecessarily to the imputed needs of urban, industrial, and agricultural expansion in the region." Mr. Smith maintained that the district, originally set up for flood control, has instead become "a drainage and irrigation project with attendant difficulties of the dissemination of pesticides and excess fertilizers.

"It is essential, in our opinion, that all further work on the Central and Southern Florida Flood Control Project

NPA's 1970 WORLD TRAVEL PROGRAM



Duane Schlitter

African elephant warns intruders away

ALASKA

**A: Jun. 15-Jul. 6
B: Jul. 5-Jul. 22
B1: May 23-Jun. 9**

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Trips B and B1, round trip from Seattle: The same as A but without the Inside Passage cruise. Limit, 20 each group. Trip B, \$1375. Trip B1, \$1340.

AFRICA

**C: Jun. 25-Jul. 17
D: Jul. 9-Jul. 31
E: Jul. 30-Aug. 21
E1: Sep. 3-Sep. 25**

Trips C, D, E, and E1: Observe African mammals and birds in their natural habitat—lion, giraffe, zebra, elephant, hippopotamus, rhinoceros, crocodile, and many others—in Kenya, Tanzania, and Uganda. See tribal life, national parks, and game preserves. \$1585, including round trip air from New York. Limit, 24 each group.

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be halted, until binding guarantees have been given in perpetuity by the Department of the Interior, the Department of Agriculture, the Army Corps of Engineers, the State of Florida, and the counties and their instrumentalities in the related areas of Florida, of water deliveries to Everglades National Park and the conservation areas on the basis of

the criteria of the National Park Service as a minimum.

"We would recommend against any further drainage, irrigation, or municipal or industrial water storage, supply, or distribution facilities in the Kissimmee River Basin or elsewhere in the region intended to distribute water for urban, industrial, or agricultural extension before the basic needs of the ecology of the region have been satisfied for the benefit of people and all life there."

Senators Holland (D-Fla) and Gurney (R-Fla) were sympathetic to the request for increased authorizations by the Corps. Senators Muskie (D-Maine) and Nelson (D-Wis) believe that a water management plan should be developed and adhered to by the Flood Control District before overdevelopment in the area creates even more demand for water outside the park and conservation areas. They said the limits of the water resources should be determined, and economic development should then take place according to the availability of water. This presumably would recognize park water needs ahead of ill-considered urban-industrial expansion in the area, which after all must have some limit.

- The Association was host to a group of 12 distinguished scientists working to save the American chestnut from extinction. Chestnut research has been following a variety of paths, and the symposium served to acquaint the workers in each area with the work being done in the others.

Mr. Smith asked for help from the participants in establishing a long-range natural-selection upbreeding program. This would involve collecting nuts from blighted areas from trees that still survived, which presumably had a measure of immunity, and planting in groves which would get protection from everything except the blight. At the end of perhaps 15 years, when the blight had killed all but a few survivors, nuts from the survivors would be replanted, and so forth, for generations, gathering increased immunity. The problem was one of social organization, requiring continuity for perhaps 200 years, but this program offered insurance of eventual success if other measures failed.

Dr. Jesse Diller described the government's efforts to develop a blight-resistant hybrid between the susceptible American tree and oriental cousins; Dr. Richard Jaynes of the Connecticut State Experimental Farm reported on his work with hybrids; Dr. John Genys described promising efforts to induce genetic resistance mutations with the chemical colchicine; and Dr. Ralph Singleton presented a paper on his attempts to in-

duce similar mutations with ionizing radiation. Dr. Singleton, who has demonstrated the good possibilities of his approach with corn, directs the chestnut development program of the Accokeek Foundation. Accokeek, Stronghold, Inc., and NPA are collaborating on efforts to restore the chestnut.

The group of scientists concluded that communication in the field is vital. Failures as well as successes should become known. NPA's population and genetics consultant, Dr. Robert C. Cook, suggested that all avenues of research should be followed diligently; he pointed out that by just this approach the atom bomb was developed in extremely short order.

Mr. Smith, who has been in contact with Dr. Ronald Melville of England's Kew Gardens, suggested establishing groves of trees in foreign countries that the blight has not (yet) reached. Dr. Melville has suggested both Australia and New Zealand as countries where climate and other conditions are right for such "insurance" groves. These groves would be a source of seed for research if and when the last scattered seed-producing trees in North America succumb. Mr. Smith has also discussed with Dr. Melville the possibility of establishing seed banks around the world for endangered plant species such as the American chestnut. Dr. Melville is compiling the Red Data Book on flowering plants for the International Union for the Conservation of Nature.

- Mr. Smith sent letters to four of the six men named recently to serve as the new Environmental Advisory Board for the Army Corps of Engineers. He noted in the letters that he was happy to see that the four had been named to the board "because I know your influence will be helpful, if anything can be helpful with the Army Engineers."

"Unfortunately," he went on, "I do not think that any influence, however constructive, can be helpful; the Army Engineers' programs are inherently unecological and uneconomic, and the main thing needed is to stop them. . . . And so, all told, I was sorry to see that you had accepted this appointment. The Army Engineers have only one purpose in setting up this structure; namely, to get window dressing."

The four appointees are Roland Clement, vice president of the National Audubon Society, Dr. Charles W. Foster, executive director of the New England Natural Resources Center, Dr. Charles H. Stoddard, former director of the Bureau of Land Management, and Richard H. Pough, chairman of the Open Space Institute.

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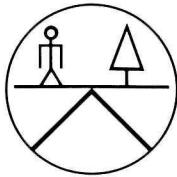
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CONGRESSIONAL REPORT

The Water Quality and Environmental Quality Improvement Act of 1970 has been signed by the President. It changes the name of the Federal Water Pollution Control Administration to the Federal Water Quality Administration, and authorizes \$15 million to the Secretary of the Interior for watershed pollution control demonstration projects. Another \$20 million are authorized for pollution control in the Great Lakes. An Office of Environmental Quality, with the chairman of the Council on Environmental Quality as director, will assist and advise the President on the environmental effects of federal policies and programs.

• Senator Charles Mathias (R-Md) has introduced legislation (S. 3713) to establish the Chesapeake and Ohio National Historical Park in Maryland and the District of Columbia, including 15,000 acres of land along the 185-mile canal. Mathias and conservationists believe this proposed park essential to comprehensive development of the Potomac.

• A national lakeshore is being contemplated for Lake Tahoe. S. 2208, introduced by Senator Alan Bible (D-Nev), seeks to study the desirability and feasibility of preserving the lakeshore.

• Environmental education legislation, H.R. 14753, introduced by Congressman John Brademas (D-Ind), may reflect the need to reorder national priorities. Unlike the impact on education of the space program, which emphasized technology, science, production, and development, environmental education "may mean the consumption of less of the goods and services now consumed, and equally important, the production of fewer goods and services to be consumed," according to Dr. Spencer Smith, secretary of the Citizens Committee on Natural Resources.

KNOWING-THE-ENEMY DEPARTMENT

Everyone is now for the environment. Listen, for instance, to a quote from the Pacific Northwest Power Company that has been circulated gleefully by the National Wildlife Federation. See how PNPC is for natural rivers. See how it gets to use the word "environment." "We believe the 'wild' river concept is based on a misconception. Any river is, in some senses, more attractive undeveloped than developed to some people. To others a lake environment created by a reservoir may be more attractive. It is our judgment that the enormous lake created by High Mountain Sheep [dam] will enhance rather than impair the natural characteristics of the Snake River."

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Limestone mountains rise in the distance in Cerro Corá National Park in Paraguay, one of the areas whose potential is evaluated in this issue beginning on page 10. As in other parts of the world, development is steadily encroaching on natural areas in Paraguay, and only comprehensive planning can preserve them from destructive use.

You can help your Association in its studies of vital environmental issues in several ways: by helping secure new members, by contributing to the Association over and above regular dues, or by remembering the Association in your will. Such contributions and bequests are deductible for federal tax purposes.

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PHOTOGRAPH BY LAWRENCE C. MERRIAM, JR.

